Inhabitable Voids

Housing Design in Iran's Period of High-Modernisation

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Inhabitable Voids

Housing Design in Iran's Period of High-Modernisation

Dissertation

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To my beloved partner,

Samira Jafari

Propositions

of the dissertation by Mohamad Sedighi "Inhabitable Voids: Housing Design in Iran's Period of High- Modernisation"

01. The design principles presented in the 'Habitat Bill of Rights' should be included in the curriculum of schools of architecture, to improve students' understanding on the design for human habitats.

02. Integrating courtyards or gardens, in the form of inhabitable voids, in the design of experimental housing models would trigger the 'collective memory' of Iranians and most people from Muslim communities in association with familiar objects, settings, and places.

03. The traditional Iranian courtyard house type (*Khaneh-Bagh*) creates a spatial condition with dual characteristics, enabling a co-existence between private and public outdoor life that is at the core of everyday patterns of inhabitation, in the Islamic World.

04. The notion of the 'New Creation' (*Khalq-e Jadid*) unifying two extremes of tradition-modernity in a creative way, as Nader Ardalan coined it, offers a new insight to the use of local archetypes, as a disciplinary design tool, in the architecture of dwelling.

05. The architecture of modernity, through the lens of public housing in Iran, was not based on eliminating traditional values, but rather, on both deconstructing and interpreting them to new contextual and programmatic circumstances.

06. Underpinning top-down housing design approaches with bottom-up and local initiatives would allow democratic over bureaucratic processes for developing human habitats, and encourage active involvement of people in creating their urban communities.

07. The domain of dwelling is the potential space of both interaction and resistance between an individual's world (imaginary and real) and that of their fellow members of society.

08. To make a larger impact on society, architects need to work for private or public developers, which would empower them to stimulate, create, and lead negotiation among visions and realities of stakeholders involved in the provision of housing solutions.

09. To dwell means to live in the traces that architects' creative and destructive responses towards place and climate have left.

10. Architects who build and design houses for the poor have wide ears and short tongue!

These propositions are regarded as opposable and defendable, and have been approved as such by the supervisors:

Prof.ir. D.E. van Gameren

Dr. N.J.A. Mota

Stellingen

horende bij het proefschrift van Mohamad Sedighi "Inhabitable Voids: Housing Design in Iran's Period of High-Modernisation"

01. De ontwerpprincipes zoals deze zijn voorgesteld in de 'Habitat Bill of Rights' moeten worden opgenomen in het curriculum van architectuurinstituten om het inzicht van studenten in het ontwerp voor menselijke habitats te verrijken.

02. Het integreren van binnenplaatsen of tuinen, in de vorm van 'inhabitable voids', bij het ontwerpen van experimentele woningbouwprojecten zou het 'collectieve geheugen' van Iraniërs en de meeste mensen uit Islamitische gemeenschappen in combinatie met vertrouwde objecten, omgevingen en plaatsen in gang kunnen zetten.

03. Het traditionele Iraanse woningtype met een binnenplaats (*Khaneh-Bagh*) creëert een ruimtelijke conditie met tweeledige kenmerken, waardoor het gelijktijdig bestaan mogelijk is tussen het private en het openbare buitenleven, wat de kern vormt van alledaagse bewoningspatronen in de Islamitische wereld.

04. Het idee van de 'New Creation' (*Khalq-e Jadid*) die twee uitersten van traditie en moderniteit op een creatieve manier verenigt, zoals Nader Ardalan dit heeft bedacht, biedt een nieuw inzicht in het gebruik van lokale archetypen als een disciplinair ontwerpmiddel in de architectuur van de woningbouw.

05. De architectuur van het modernisme, bekeken door de lens van de volkshuisvesting in Iran, was niet gebaseerd op het elimineren van traditionele waarden, maar eerder op het kneden en interpreteren ervan naar nieuwe contextuele en programmatische omstandigheden.

06. Het ondersteunen van top-down ontwerpbenaderingen voor de woningbouw met bottom-up initiatieven maakt eerder democratische dan bureaucratische processen mogelijk voor het ontwikkelen van menselijke leefomgevingen en moedigt actieve betrokkenheid van mensen bij het creëren van hun stedelijke gemeenschappen aan.

07. Het domein van wonen is de potentiële ruimte van zowel interactie als weerstand tussen de wereld van individuen (imaginair en reëel) en die van hun medeburgers in de samenleving.

08. Om een grotere impact op de samenleving te hebben, moeten architecten werken voor private of publieke ontwikkelaars, wat hen in staat stelt om de onderhandeling tussen visies en realiteiten van belanghebbenden die betrokken zijn bij het aanbieden van huisvestingsoplossingen te stimuleren, te creëren en te leiden.

09. Wonen betekent leven in de sporen van architecten met zowel creatieve als destructieve reacties op de kwesties van plaats en klimaat.

10. Architecten die woningen ontwerpen en bouwen voor de armen luisteren meer naar hun cliënten dan dat ze over hun prestaties/ontwerpen praten.

Deze stellingen worden opponeerbaar en verdedigbaar geacht en zijn als zodanig goedgekeurd door de promotoren:

Prof.ir. D.E. van Gameren

Dr. N.J.A. Mota

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Foreword

"I am the sun, I am the mind and I am the time as well; I am the moon, too, and I increase the insanity; Chamber of sun was narrow for me, I slash the roof and I skip to the outside; I become the light and I leave my body, but stays my mould in his clay and blood; I burn myself by my inner fire and cold soul, and now, I flow like the wind among the spaces; Blasphemy tells me to keep away from love, and disappears it forever in your mind; I answer him, I am the love self, so come to me, because I join you with eternity; When I would be the light, you will be my colour, because without colour, I am not allowed to approach to the hearts; Leave alone your selfishly and put yourself in my soul, to raise yourself in the sea of perception; Break your doubt and look otherwise, and try to be pure, faithful and honest; Oh God, Hafez still prisons with his mould, so become the light to arise in the inner perception."

Khwajeh Shams-al-Din Mohamad Hafez Shirazi[1]

As the well-known 14th century Iranian poet, Hafez Shirazi, described, the light disappears the cold as well as the darkness, and arises the inner perception of human being. The process of research and undertaking this doctoral dissertation brought me to a light enabling the transcendence of my knowledge about the architecture of dwelling. I suffered a lot during this battle of light and darkness, for instance, when I was smashed multiple times by evil-like reviewers of academic journals; though, the light of achievements in this fluctuated process empowered me to survive and see myself somebody new. This light has guided me through these troubles and sadness and left me full of confidence and passion for new challenges. Of course, I was not alone in this process, but motivated by a group of people that in different capacities and various ways would not allow me to surrender. Therefore, I would love to warmly and humbly acknowledge their contribution in the formation of this research.

1. The poem is borrowed from the book of Hafez: Divan. See: Hafez, Khwajeh Shams-al-Din Mohamad. Divan of Hafez: A Bilingual Text Persian-English. Translated by Reza Saberi (Tehran: University Press Of America, 2002).

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2. See our article in press: Sam Solaimani and Mohamad Sedighi, "Toward a Holistic View on Lean Sustainable Construction: A Literature Review," *Journal of Cleaner Production* (2019).

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Summary

Focusing on the design of large-scale housing schemes, this doctoral dissertation examines the extent to which the architecture of dwelling was affected by the oil-led geopolitics of the Cold War, and influenced by the modernist logic of architectural design and urban planning in Iran's period of high-modernisation (1945-1979), as Eskandar Mokhtari termed it. This study questions the influence of the country's geopolitical position during the Cold War, and its impact on the architecture of dwelling. It shows how a series of experimental housing solutions, initiated by leading Iranian architects mostly educated in the West (Europe and North America) became a physical expression of both the state's modernisation demands and people's everyday needs. This research also demonstrates the significance of local archetypes, in particular the traditional courtyard-garden house type (*Khaneh-Bagh*), for valorising public and private spaces as well as urban communities that were shaped with the modernist logic of planning and design. Finally, it illustrates that incorporating vernacular socio-spatial and cultural patterns of inhabitations, in various ways and interpretations, into the design of housing was a strategy of Iranian architects for expressing the meaning of newly constructed works, which contributed to activating people's collective memory, in Iran's period of high-modernisation. Moreover, it shows how the design mechanisms employed by these architects enabled for a continual and constant change and transformation in their proposed housing schemes, and empowered the users of space to designate and establish a set of relations with their living environment.

While this study could be seen as a contribution to the discourse of urban modernisation in Iran, mainly by focusing on the agency of the dweller in the transformation through time of public housing districts in the country, it also aims to address some current issues related to the design and production of public housing. It seems that in the process of housing development, architects and decision-makers with different backgrounds employ two distinct approaches that mostly cannot be resulted in a convergent solution. While this gap between visions and realities of public housing policies and designs might be seen as a universal as well as a common phenomenon, this issue resulted in many critiques on the development of public housing and built environments, in Iran. Iranian architects criticised the government for its top-down housing policies overemphasising the application of industrialised methods for the production of houses, but neglect the importance of people's socio-cultural practices as well as vernacular patterns of inhabitation for housing design. On the contrary, decision-makers describe housing solutions provided by architects mostly as visionary and inefficient. Accordingly, investigating overlaps between these divergent approaches is of vital importance, as it would foster and promote a dialogue among multiple stakeholders involved in the process of housing development, and illustrate the roles that architects can perform therein.

In the aftermath of the second World War, Iran underwent a unique process of modernisation. The government disseminated a notion of 'modern' living through the construction of public housing, mostly designed and led by Western-educated Iranian

architects. Creating cross-cultural exchanges, these architects fulfilled the mediator role between modernist design principles and Iran's local architectural culture. Simultaneously, they promoted new lifestyles and living standards among the general public. In the same period that most Middle-Eastern countries experienced a form of urban transformation that was highly influenced or largely led by western urban planners or designers, Iranian architects had the opportunity to develop their own local practices. In fact, through their active engagement in the process of state-led housing development, these architects helped the government to pursue the objectives of the Strategic National Planning and Development, and they managed to incorporate some vernacular socio-spatial patterns of inhabitation into their housing proposals.

In Iran's period of high-modernisation, the architecture of dwelling was widely seen as a place to fulfil the state's ambitious goals of modernisation projects, and simultaneously to resist universalising tendencies. The Iranian Finance and Planning Organisation prepared five distinct Development Plans, where housing for middle and low-income families held a prominent place. Indeed, these Plans projected the national and international socio-political and economic condition of the time that resulted from rural-urban migrations and the demographic changes being seen in Iran. Accordingly, each Plan led to the construction of a series of large-scale housing projects in urban areas. Among these projects, Kuy-e Chaharsad-Dastgah (1946-50), Kuy-e Narmak (1951-58), Kuy-e Kan (1958-64), Kuy-e Ecbatana (1972-92), and Shushtar-Nou (1975-85) were designed and developed as experimental models by leading Iranian architects, to promote and foster a synthesis of Western living standards and Iran's vernacular patterns of inhabitation.

By investigating these models initiated in three different stages of modernisation in Iran, this dissertation, first, unfolds the processes that created/led to collaboration and negotiation among visions and realities of stakeholders (particularly architects and policy/decision-makers) involved in the production of houses and provision of housing solutions. Then, it shows how the mechanisms employed for the design of these housing schemes enabled for a continual and constant change and transformation. Finally, this study argues that each of these housing models is embedded with a form of inhabitable voids that could be seen and read as heterotopia, as Michel Foucault defined. In other words, incorporating some local archetypes, such as the 'Persian Garden', into the design process of these projects implies and creates a certain type of place that the 'other' space would flourish. Accordingly, these heterotopic voids might include a creative potential/characteristic to be perceived as an omnipresent tool from the disciplinary toolbox of architecture that would cater for providing certain forms of relationships among people and with their living environment.

Samenvatting

Dit proefschrift richt zich op het ontwerp van grootschalige woningbouwprojecten in Iran en onderzoekt in hoeverre de architectuur van de woningbouw is beïnvloed door de olie geleide geopolitiek van de Koude Oorlog, en door de modernistische ontwerplogica van de architectuur en stedenbouw op het hoogtepunt van de modernisering van Iran (1945-1979). In dit onderzoek wordt de invloed van de geopolitieke positie van het land ten tijde van de Koude Oorlog geanalyseerd, en haar weerslag op de volkshuisvestingsarchitectuur. Zo wordt getoond hoe een aantal experimentele huisvestingsoplossingen, geïnitieerd door vooraanstaande, veelal in het Westen opgeleide Iraanse architecten, een fysieke uitdrukking werd van zowel de moderniseringseisen van de staat als de dagelijkse behoeften van de bevolking. Dit onderzoek laat tevens het belang zien van lokale archetypen, in het bijzonder het traditionele woningtype met binnentuin, ter waardering van openbare en private ruimtes, en stedelijke gemeenschappen die gevormd zijn volgens de modernistische logica van planning en ontwerp. Tenslotte illustreert het onderzoek dat de toepassing van het plaatselijke architectonische vocabulaire en de leefgewoonten van bewoners, op verschillende wijzen en interpretaties daarvan, op het ontwerpen van woningbouw, een tactiek was van Iraanse architecten om de betekenis uit te drukken van pas gebouwde bouwwerken die hebben bijgedragen aan het activeren van het collectieve geheugen uit te drukken. Bovendien wordt getoond hoe de ontwerpmechanismen die door deze architecten zijn toegepast hebben gezorgd voor een constante verandering en transformatie in hun huisvestingsschema's, en de gebruikers van de ruimte in staat hebben gesteld de relatie met hun leefomgeving te duiden.

Hoewel deze studie gezien kan worden als een bijdrage aan het discours van stedelijke modernisering in Iran, richt dit onderzoek zich op het agentschap van de bewoner in de transformatie van woonwijk gebieden in Iran door de tijd heen. Daarnaast beoogt het enkele actuele kwesties met betrekking tot het ontwerp en de productie van woningen te problematiseren. Het lijkt erop dat architecten en beleidsmakers in het proces van woningbouwontwikkeling twee verschillende benaderingen gebruiken. In de meeste gevallen leidt dit niet tot convergente oplossingen. Deze kwestie heeft in Iran tot veel kritiek geleid op de ontwikkeling van volkshuisvesting. Iraanse architecten bekritiseerden de regering voor haar top-down woningbeleid waarbij de toepassing van geïndustrialiseerde methoden voor de productie van huizen te veel werd benadrukt en het belang van de sociaal-culturele praktijken van mensen voor woningontwerp werden genegeerd. Beleidsmakers en besluitvormers daarentegen beschrijven woningbouwvoorstellen, die door architecten worden aangeboden, meestal als visionair en inefficiënt. Daarom is het onderzoeken van de overlap tussen deze uiteenlopende benaderingen van vitaal belang. Het kan een dialoog creëren tussen meerdere belanghebbenden, betrokken bij het proces van woningbouwontwikkeling betrokken besluitvormers, en het zou illustreren de rollen die architecten daarin mogelijk kunnen vervullen.

In de nasleep van de Tweede Wereldoorlog onderging Iran een uniek proces van modernisering. De regering verspreidde het besef van het 'moderne' leven door de bouw

van woningbouwprojecten, meestal ontworpen en geleid door Iraanse architecten die in het Westen waren opgeleid. Door het creëren van interculturele uitwisselingen, vervulden deze architecten de rol van bemiddelaar tussen de Westerse modernistische ontwerpprincipes en de lokale architectuur van Iran. Tegelijkertijd stimuleerden zij nieuwe levensstijlen en een nieuwe levensstandaard bij het grote publiek. In dezelfde periode dat de meeste landen in het Midden-Oosten een vorm van stedelijke transformatie ondergingen die sterk werd beïnvloed door Westerse stedenbouwkundigen of ontwerpers, hadden Iraanse architecten de mogelijkheid om hun eigen lokale praktijken te ontwikkelen. Dankzij hun actieve betrokkenheid bij het proces van de door de staat geleide woningbouw hielpen deze architecten de regering om de doelstellingen van de strategische nationale planning en ontwikkeling na te streven, en slaagden zij erin om sommige sociaal-ruimtelijke en inheemse patronen van bewoning op te nemen in hun (woning)ontwerpen.

Op het hoogtepunt van de modernisering van Iran werd de architectuur van de woning beschouwd als een domein om de ambitieuze doelstellingen van de moderniseringsprojecten van de Iraanse staat te vervullen en tegelijkertijd weerstand te bieden aan universele tendensen. De Iraanse Organisatie voor Financiën en Planning stelde vijf afzonderlijke ontwikkelingsplannen op, waarbij huisvesting voor gezinnen met een laag tot middelgroot inkomen een hoofdrol kregen. Deze plannen voorspelden op juiste wijze de nationale en internationale sociaal-politieke en economische toestand van die tijd, die resulteerde uit rurale en stedelijke migraties en de demografische veranderingen in Iran. Bijgevolg heeft elk plan geleid tot de bouw van een reeks grootschalige woningbouwprojecten in stedelijke gebieden. Voorbeelden van deze projecten, Kuy-e Chaharsad-Dastgah (1946-48), Kuy-e Narmak (1951-58), Kuy-e Kan (1958-64), Ecbatana (1972-92), en Shushtar-Nou (1975-85) werden ontworpen/ontwikkeld als experimentele modellen door vooraanstaande Iraanse architecten, om een synthese van Westerse levensstandaarden en Iraanse patronen van bewoning te bevorderen.

Door het onderzoeken van deze modellen, ingezet in drie verschillende stadia van modernisering in Iran, toont dit proefschrift eerst de processen die leidden tot samenwerking en onderhandeling van visies en praktische omstandigheden van belanghebbenden, met name architecten en beleidsmakers-besluitvormers die bij de productie van huizen en levering van huisvestingsoplossingen betrokken waren. Vervolgens laat deze studie zien hoe de mechanismen die werden gebruikt voor het ontwerp van deze huisvestingsschema's een voortdurende transformatie mogelijk maakten. Ten slotte betoogt dit proefschrift dat elk van deze huisvestingsmodellen is ingebed in een vorm van bewoonbare leegten (binnenplaatsen) die kunnen worden gezien en gelezen als 'heterotopia', zoals Michel Foucault deze heeft gedefinieerd. Met andere woorden, het opnemen van enkele lokale archetypen, zoals de 'Perzische tuin', in het ontwerpproces van deze projecten impliceert en creëert een bepaald soort plaats, waar de 'andere ruimte' bloeit. Dienovereenkomstig kunnen deze 'heterotopische leegten' een creatief potentieel/creatieve eigenschap bevatten dat/die moet worden gezien als een alomtegenwoordig hulpmiddel uit de disciplinaire gereedschapskist van de architectuur, die zou kunnen voorzien in het verschaffen van bepaalde vormen van relaties tussen mensen en met hun leefomgeving.

I • Introduction

"To dwell means to live in the traces that past living has left"[1]

Ivan Illich

Theme

The theme I investigate in this doctoral dissertation is the relationship between the practice of architecture and the everyday life of ordinary people, through the lens of 'dwelling'. While dwelling widely connotes a place such as home where someone lives, the term also captures the distinctive manner of being in the world, as Martin Heidegger put it.[2] Thus, where one dwells means where one feels at home, and has a place to be. In this view, dwelling is located within a set of sense-making practices and structures with which it is familiar.[3] Rather than a specific physical space that associates with home, the concept of dwelling lays a distinct emphasis on a place that "unites a group of human beings" and "gives them a common identity and hence a basis for fellowship or society."[4] This ontological vision of dwelling, thus, describes a place for 'belonging, togetherness, and wholeness',[5] a vision that I take as the point of departure for this doctoral research; so, the notion of dwelling implies underlying pattern structures and relationships between humans and their living environment.[6] Thus, the domain of dwelling, I will argue, is the potential space of interaction between an individual's world (imaginary and real) and that of their fellow members of society. In other words, it is a place where one has the ability to designate, mirror, or reflect a set of relations to link themselves with all the others and to simulate a common experience of place, in the world.

1. Ivan Illich, *Gender* (New York: Pantheon, 1982), 119-20.

2. For more reading, see: Martin Heidegger, "Building Dwelling Thinking," in *Basic Writings*, ed. David Farrel Krell (London: Routledge, 1993), 347-63.

3. Michael Wheeler, "Martin Heidegger," in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta (https://plato.stanford.edu/archives/fall2017/entries/heidegger/2017). Accessed August 2018.

4. Christian Norberg-Schulz, *The Concept of Dwelling: On the Way to Figurative Architecture* (New York: Rizzoli, 1985), 9.

5. See: David Seamon, "Dwelling, Seeing and Designing: An Introduction," in *Dwelling, Seeing, and Designing: Towards a Phenomenological Ecology*, ed. David Seamon (Albany, New York: SUNY Press, 1993), 1-21.

6. See: David Seamon and Robert Mugerauer, *Dwelling, Place, Environment: Toward a Phenomenology of Person and World* (Dordrecht: Kluwer, 1985).

Focusing on the design of large-scale housing schemes, this dissertation examines the extent to which the architecture of dwelling was affected by oil-led geopolitics of the Cold War, and influenced by the modernist[7] logic of architectural design and urban planning in Iran's period of high-modernisation, as Eskandar Mokhtari termed it, stretching from the post-World War II (WWII) until the 1979 Islamic Revolution.[8] Thus, it questions the influence of the country's geopolitical position during the Cold War, and its impact on the architecture of dwelling. This study shows how some Iranian architects that mostly educated in the West mediated local and imported architectural models, and how their experimental housing solutions became a physical expression of both the state's modernisation demands, and people's everyday needs. Further, it shows how the design mechanisms employed by these architects enabled for a continual change and transformation in their proposed housing schemes. This ability was largely made possible by empowering the users of space to designate a set of relations with their living environment.

Further, this dissertation demonstrates how these architects employed some local architectural archetypes,[9] in particular the traditional Iranian courtyard-garden house type (*Khaneh-Bagh*), as a means of valorising public-private spaces and urban communities that have been shaped with the modernist logic of planning and design. While other scholars have studied the concept of using the traditional Iranian house as a way to create a local form of modernity in the design of mass housing, I have expanded on this concept to add the users' perspectives and spatial experiences in their traditional living environment. In other words, by investigating the Iranian courtyard-garden house, this study aims to discuss, first, how ordinary people appropriated, used, and transformed their traditional living environment, and then, to examine the extent to which housing schemes enabled their residents for appropriation and change. Thus, this dissertation unravels the roles performed by the agency of the dweller in the development and transformation through time of some key experimental housing districts, developed by some modernist Iranian architects, in Iran's period of high-modernisation. Further, it discusses how these schemes adapted themselves to new urban transformation programmes. Finally, this doctoral study illustrates how incorporating vernacular socio-spatial patterns of inhabitation, in various ways and through different (re)interpretations, into the design of housing was crucial to trigger people's collective memory in association with familiar objects, settings, and places, as Aldo Rossi put it.[10]

Coinciding with the bipolar hegemony of the Cold War, this period in Iran underwent several top-down urban modernisation projects, where state-led large-scale housing schemes, shortly public housing, played a prominent role. In fact, this was a strategy that the government employed to accelerate the urbanisation process in the country, and promote a notion of 'modern' living among ordinary people.[11] Within this framework, nevertheless, a group of young leading Iranian architects incorporated a historical, but constantly changing, reading of some local

7. In this dissertation, 'Modernism' in architecture is defined as a global design movement emerging in the 1920s in response to industrialisation and social changes (first in Europe and later all around the world). Pursuing universal principles in architecture, modernism utilised new materials and advanced technology to question the relevance of traditional and old ideas/way of living. Modernism emphasised the use of function, simplicity, and rationality as ways to create new forms of aesthetic expression. These can be seen as the founding principles of the ideology of 'Modernist' design, promoting new ways of living, through so-called 'Modern' lifestyles, among people. As Peter Rowe argued, there can be little doubt that technology, time (speed and transportation), and space (the overall city rather than a particular place) have shaped the course of modern history and the affairs of modern civilisation. In his view, to be 'modern' in the common usage of the word is "to be situated in the present, the here and now, up to date. Thus to be thoroughly modern is to be entirely of the moment. Unlike being contemporary, which has the sense of simply being parallel in time, to be modern has a sense of both immediacy and reality. Modernity, then, as we usually know of it, has a particular relationship with time and one that inextricably bound up with contemporary ways of dealing with the world, namely with technology and its purposes. Moreover, this relationship defines the space-time continuum of our actions, including our architectural production". See: Peter. G. Rowe, *Modernity and Housing* (Cambridge and London: The MIT Press, 1993), 1-19.

8. In his seminal book: *Iran's legacy of Modern Architecture*, Eskandar Mokhtari, a well-known architectural historian, described the years between 1945 and 1979 as the period of high-modernisation in Iran. According to Mokhtari, the present reality of most Iranian cities and urban regulations rooted in this period, when the government used public housing as a tool for urban transformation to disseminate a notion of 'modern' living among Iranians. See: Eskandar Mokhtari Taleghani, *Miras-E Memari-E Modern-E Iran* [Iran's legacy of Modern Architecture] (Tehran: Fekr-e Nou, 2011).

9. From its Greek origin, the term archetype means an 'original model' or 'original type'. Initially, this term referred to an omnipresent element or pattern within a community's collective unconscious. Architecturally, they are a base template that can be developed into new variations and compositions. For more information, see: Thomas Thiis-Evensen, *Archetypes in Architecture* (Oxford: Oxford University Press, 1989).

10. In his famous book, *L'Architettura della cittá* (the Architecture of the City), Aldo Rossi described the deepest structure of urban artefacts, and thus, their form as the architecture of the city, and claimed that "the soul of the city comes the city's history, the sign on the walls of the municipium, the city's distinctive and definitive character, it memory." Then, Rossi argued that "the city itself is the collective memory of its people, and like memory it is associated with objects and places. The city is the locus of the collective memory." For more information, see: Aldo Rossi, *The Architecture of the City*, Oppositions Books (Cambridge, Massachusetts, and London: MIT Press, 1984), 130.

archetypes. Through archival studies and historical analysis, I observed that these architects saw the archetypes of the *Khaneh-Bagh* (a courtyard house with small garden), *Meydan-Bagh* (an urban square/plaza with public gardens), and *Chahar-Bagh* (a pedestrian precinct with communal gardens), as the most characteristic of local architectural culture.[12] By employing an innovative approach to the interpretation and incorporation of these archetypes into their housing solutions, they established a system of relationships between inhabitants and their living environment with the aim of creating a sense of familiarity with the place. More notably, I observed that these innovative design solutions enabled residents to individualise their environments based on their ever-changing needs.

To illustrate the significance of these archetypes in activating people's engagement in shaping their living environment, and in relation to the architecture of dwelling in the process of urban transformation, this dissertation investigates five public housing schemes designed and developed in three different stages of modernisation in Iran. It also argues that while the local archetypes barely preserved their exact historical representations, they played a vital role in expressing the meaning of newly constructed housing models, and stimulating people's participation in the formation of their living environment. Investigating this process would enable architects not only to reflect on the present reality and the development of cities, but also to rethink the significance of archetypes as a main component for designing appropriate habitats, as the Greek-French architect, Georges Candilis termed it,[13] providing certain forms of relationships among people and with their living environment, especially when they are faced with the challenge of densification in existing urban areas.

Motivations

This research is motivated by my engagement in multiple architectural assignments related to the design of public housing for low-income urban communities, in Iran. Between 2010 and 2014, I was commissioned by some private developers to design large-scale housing schemes [Figure I.01]. Indeed, the assignment was part of the state-initiated housing programme, known as the Mehr Housing, by which numerous housing projects were planned to be built in remote areas, outside the municipal borders of exciting cities.[14] To provide affordable housing solutions for a large number of people, the Iranian government encapsulated the design assignment in the standardisation, prefabrication and mass production of housing units. While the housing assignment extensively addressed the spatial specifications of and what needs to be or not to be included in the design of private houses, it barely provided any recommendations or guidelines regarding the design of shared, and public spaces.[15] At the urban scale, for instance, the design prescriptions

11. Fatemeh Farnaz Arefian and Seyed Hossein Iradj Moeini, eds., *Urban Change in Iran: Stories of Rooted Histories and Ever-Accelerating Developments*, The Urban Book Series (Cham, New York, Dordrecht, London: Springer, 2016), 1-8.

12. These archetypes are three of the most prevalent archetypes of Iranian architecture derived from the concept of the Persian Garden (*Bagh*). For more reading, see: Mohamad Reza Shirazi, *Contemporary Architecture and Urbanism in Iran: Tradition, Modernity, and the Production of 'Space-in-Between'*ibid. (Cham, Switzerland2018); Nader Ardalan and Laleh Bakhtiar, *The Sense of Unity: The Sufi Tradition in Persian Architecture* (Chicago: Kazi Publications, 1973); Azadeh Shahcheraghi, *Paradaym-Haye Pardis: Daramadi Bar Bazshenasi Va Bazafarini Bagh-E Irani* [The Paradigms of Paradise: Recognition and Re-creation of the Persian Garden] (Tehran: Jahad Daneshgahi, 2010).

13. In the second Iran International Congress of Architects, held in Shiraz (1974), Georges Candilis made a distinction between building houses and developing human habitats. He claimed that constructing houses alone, isolated from everything around it, cannot endure and provide appropriate condition for living. Referring to the experiences gained in the development of PREVI housing in Lima, Peru (1967), he argued that for creating appropriate habitats, the house must be seen in its totality to provide certain forms of relationships among people, with their living environment, and to local context. See: Georges Candilis, "Appropriate Habitat," in *Towards a Quality of Life: The Role of Industrialization in the Architecture and Urban Planning of Developing Countries - Report of the Proceedings of the Second International Congress of Architects, Persepolis, Iran, 1974*, ed. Laleh Bakhtiar (Tehran: Hamdani Foundation, 1976), 237-38.

14. Implemented between 2008 and 2016, the Mehr Housing (*Maskan-e Mehr*) is a system offering private and public developers free government land to build affordable housing units for first-time owners. In this system, applicants with a small down payment (20 percent of the total construction cost) were eligible to receive a long-term state-guaranteed mortgage for 99 years, with a low-interest of 4 percent. The Housing Bank (*Bank-e Maskan*) acted as intermediaries between developers and the government. For more reading, see: The Study Group of Rahpou Sakht Sharestan Company, *Arzyabi Maskan Mehr* [The Assessment of Mehr Housing Scheme] (Tehran: Azarakhsh, 2013).

15. For instance, the average net surface area for each individual house was defined as 75 square meters, and a technical specification table was included to the assignments for the provision of heating system, interior finishing materials, etc. The assignment clearly indicated that the surface area of shared spaces in each apartment block should be minimised.

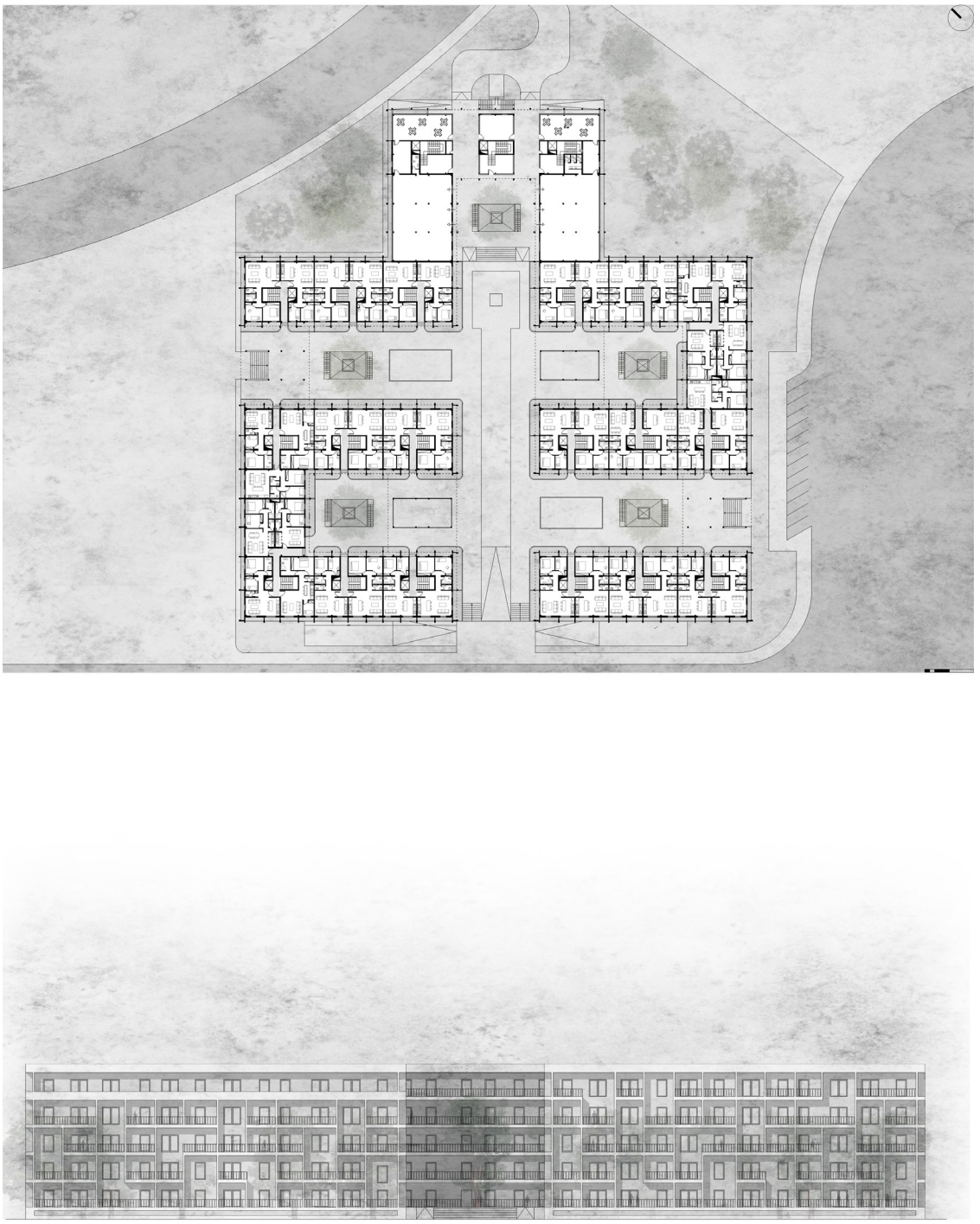


Figure I.01: design proposals for Daveh housing projects in Tehran.
Source: Mohamad Sedighi; redrawen in collaboration with Gonzalo Zylberman and Matthew Riches.

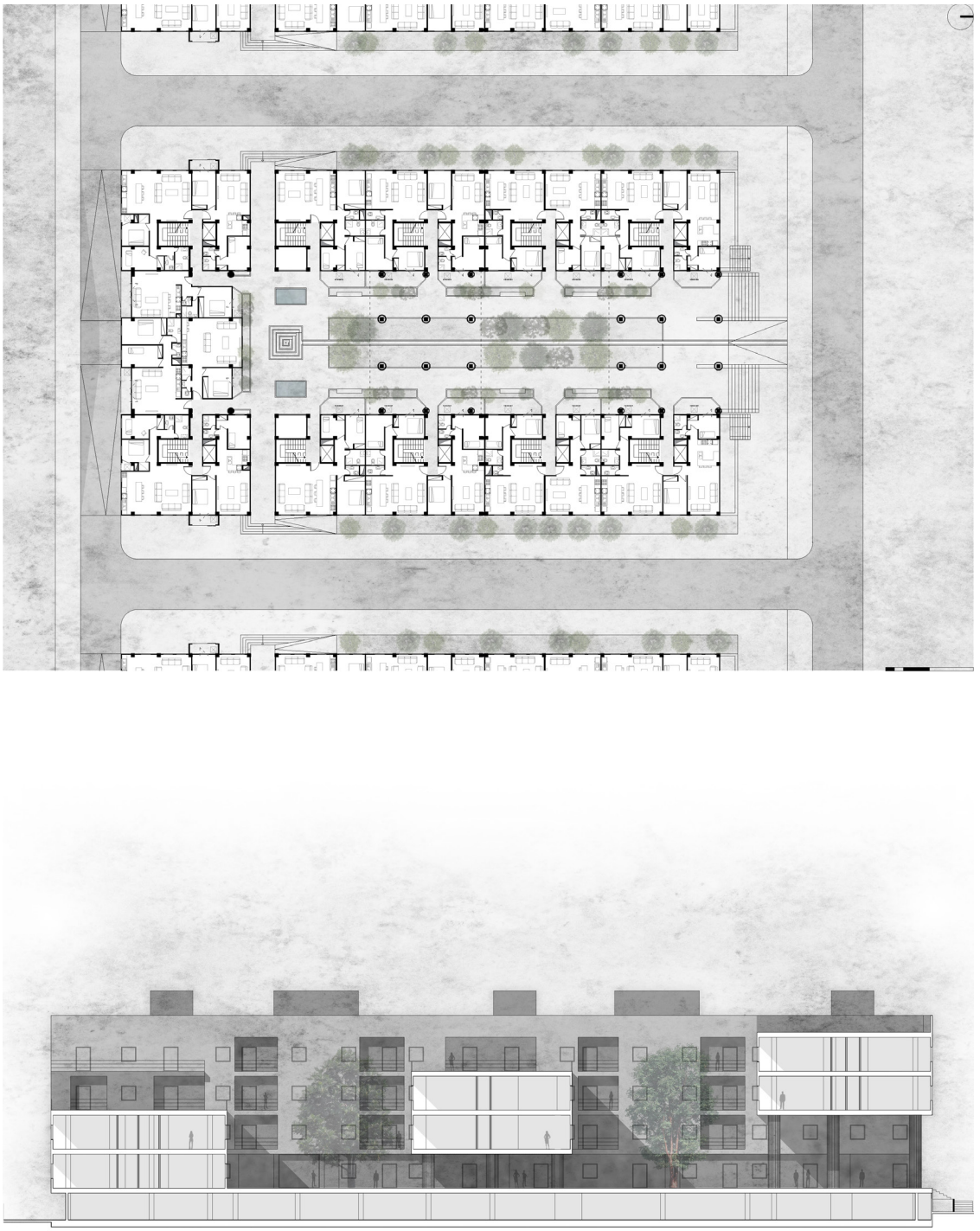


Figure I.01: design proposals for ERD housing projects in Tehran.
Source: Mohamad Sedighi; redrawen in collaboration with Gonzalo Zylberman and Matthew Riches.



Figure I.02: examples of Mehr Housing project in Iran.
Source: https://blog.jeroenapers.nl/post/175230642575/maskan-mehr-project-dit-sociale-woningbouwproject.

focused on the allowed building density and coverage based on which a series of schematic urban layouts were proposed. A rigid functional zoning formed mainly the backbone of these proposals, illustrating where housing, infrastructural, and public amenity projects should be erected. Accordingly, some two million housing units were developed, mostly in the form of freestanding towers or slabs [Figure I.02]. While these projects might be credited for their ability to provide efficient and affordable solutions, both their performance and the relation of their built form and socio-cultural features of context became a matter of concern among many architects and some scholars that study the relation of human habitats with local culture and society.[16]

This concern inspired reflection and critique on design, construction, and documentation of public housing initiatives and projects in Iran. My critiques have focused on topics such as: what socio-political and economic conditions triggered the design and construction of these projects, the ways their performance has been measured, to what extent their built form accommodated the everyday life of inhabitants by enabling growth and change over time, how people experienced and used their living environment, and to what extent local culture and society have been addressed in these projects. In addition to these efforts to understand this context, my work reveals the creative potential of local archetypes, particularly the courtyard-garden house type and its characteristics, for the design decision-making process, and as an omnipresent tool from architecture's disciplinary toolbox that would cater for architecture of appropriate habitats.

The works of some U.S-American and European scholars such as that of Peter Rowe and Sam Davis became a source of inspiration for this study. For instance, in his seminar book, *Modernity and Housing*, Peter Rowe examined the architecture of housing in 20th century Europe and North-America, aiming to address how modern housing can be made in an 'appropriate' manner, in the Western context. He also analysed a series of housing projects developed in Europe and the United States between 1920 and 1930, and between 1970 and 1980, to define conditions for 'situating' modern housing, culturally, socially, and architecturally.[17] The other comprehensive study that inspired me was the outstanding work that Sam Davis published in 'The Form of Housing', where he brought together a set of housing projects from different parts of the world, to depict a general overview of housing issues in the 20th century, and to suggest what architects can envision or design as the form of housing and dwelling.[18] Indeed, these studies motivated me to conduct a similar research on the case of Iran within the Cold War context, and through the lens of housing policies and design.

In addition, my research builds upon recent dissertations, completed at TU Delft and some other institutions. Some outstanding examples are the work of Nelson Mota, Hamed Khosravi, and Rana Habibi. In his thesis, Mota focused

16. For instance, see: Mir Saeed Moosavi, "Obstacles of Sustainable Planning in Housing Sector of Iran," *Armanshahr Architecture & Urban Development* 5, no. 10 (2013).; M. A. Kalhor, Esmailpour, H., & Ahmadi, F, " Evaluation the Performance of the Mehr Housing Project in Iran (Case Study Saqez City)," *Middle-East Journal of Scientific Research* 15, no. 5 (2013).; Roya Etminani-Ghasrodashti, Hamid Majedi, and Mohammad Paydar, "Criteria for Affordable Housing Performance Measurement: A Review " *Housing, Theory and Society* 34, no. 3 (2017).; Marziyeh Riazi and Ali Emami, "Residential Satisfaction in Affordable Housing: A Mixed Method Study," *Cities*, no. 82 (2018).

17. Peter. G. Rowe, *Modernity and Housing* (Cambridge and London: The MIT Press, 1993).

18. Sam Davis, *The Form of Housing* (New York: Van Nostrand Reinhold, 1977).

on the Portuguese architectural design from the late-1940s to the early-1990s, to discuss a condition of 'thirdness' that seeks a dialectical expression of being simultaneously modern and traditional in the architecture of dwelling.[19] Khosravi discussed some theological thoughts that formed a basis for the concepts of city making in Iran, and illustrated how 'inhabitable walls' catered for a form of spatial association, rather than separation.[20] Habibi examined the influence of international modernisation movements on developing some new housing districts in Tehran, to discuss the role of the Association of Iranian Registered Architects (ARIA) in building residential neighbourhoods between 1945 and 1979 in the capital city.[21] Indeed, these PhD dissertations also inspired me to conduct the current research.

Chronological Scope of the Research

The time-frame of this research stretches from the post-WWII until the fall of the Soviet Union in 1991, a period that is widely known as the Cold War. This time-frame is chosen for three reasons. First, investigating growth, change, transformation, and performance of space within a building lifecycle is a matter of time; thus, the projects built in recent years would be less effective or beneficial for the objectives of this study.[22] Second, the narrowed and limited amount of available literature on the architecture of dwelling within the Cold War context in Iran,[23] and on public housing related to Iran's period of high-modernisation created the necessity for conducting this research. Third, multiple public housing programmes developed under the 'Second Pahlavi' (1941-1979) make this period an interesting subject of research, since these programmes catered for developing diverse and experimental approaches to the design of housing schemes.[24]

In the Cold War context, rich-oil reservoirs in south-west Iran as well as the long boundary with the Soviet Union triggered Mohamad Reza Pahlavi (1919-1980), the anti-communist Shah of Iran, to integrate the country more strongly into the American capitalist strategy. To achieve the intended goals, the government, first, established the Finance and Planning Organisation (*Sazman-e Barnameh va Budjeh*) in 1947, and then commissioned this organisation with the preparation of strategic industrialisation plans for modernising the nation.[25] As a result, the first National Development Plan (1948-1955) was designed in collaboration with U.S-American officials over a period of seven years; however, all the other strategic plans were developed for a period of five years, similar to the soviet-like five-year industrialisation plans. In all these development plans, urban transformation and public housing policies played an instrumental role.[26]

Indeed, constructing new housing typologies became a tool that would help the Iranian government for pursuing the objectives of the National Development Plans

19. See: Nelson Mota, "An Archaeology of the Ordinary: Rethinking the Architecture of Dwelling from Ciam to Siza" (PhD Dissertation, Delft University of Technology, 2014).

20. See: Hamed Khosravi, "Camp of Faith: On Political Theology and Urban Form" (Ph.D dissertation, TU Delft, 2014).

21. See: Rana Habibi, "Modern Mass Housing in Tehran: Episodes of Urbanism 1945-1979" (KU Leuven, 2015).

22. As observed by Bernard Leupen, time has a direct impact on evaluating the performance of space for accommodating growth and change. See: Bernard Leupen, "Towards Time-Based Architecture," in *Time-Based Architecture*, ed. Bernard Leupen, René Heijne, and Jasper van Zwol (Rotterdam: 010 Publishers, 2005), 12-20.

23. As discussed by Kamran Matin, the Cold War context in Iran in relation to external political and economic influences can be divided into two major periods: before and after the early-1960s.In the first period, Iran was heavily dependent on external economic and technical aids to undertake developmental projects. In return, the Shah of Iran, Mohamad Reza Pahlavi, secured the access to oil resources for the USA and some European countries. However, in the second period, the wealth generated by oil enabled the Shah to initiate developmental projects, more independently and selectively. This can be seen especially from the involvement of both Soviet and U.S-American companies in Iran's developmental scenes from the mid-1960s throughout the 1970s. For more reading see: Kamran Matin, *Recasting Iranian Modernity: International Relations and Social Change*, Iranian Studies (London: Routledge, 2013).

24. In most scholarly materials on the modern history of Iran, the period between 1925 and 1941 is described as the 'First Pahlavi' when Reza Pahlavi, or Reza Shah, hold the office as the king. The 'Second Pahlavi' is the period between 1941 and 1979 when Mohamad Reza Pahlavi, the son of Reza Shah, hold the office as the king of Iran.

25. The Finance and Planning Organisation was established in collaboration with American officials to administer the strategic planning and supervision of the country's economic and social development. See: The Finance and Planning Organisation, "Barname-Haye Omrani Keshvar Dar Doran-E Saltanat-E Shahanshah Aryamehr," [Iran's National Development Plans during the Reign of Mohamad Reza Shah.] *Bank-e Rahni Journal* 2, no. 10 (1968): 37-62.

26. Mokhtari Taleghani, *Iran's Legacy of Modern Architecture.*

(*Barnameh Tose'eh*).[27] The government pursued a project for the modernisation of the nation, from the early-1950s through the 1970s. To this end, the Finance and Planning Organisation (FPO) prepared a series of strategic planning, in which public housing for middle- and low-income families, especially for civil servants, held a prominent place.[28] Each National Development Plan (NDP), thus, was a reflection of the national and international socio-political and economic condition of the time, and a result of rural-urban migration, of urban population density growth, and of the demographic change, being seen in Iran.[29]

Indeed, these NDPs were so divergent in their objectives, strategies, planning, and implementations that some Iranian scholars suggested various chronological ordering to deconstruct their complexity in relation to the modernisation process. For instance, in his seminal book, *A History of Modern Iran*, Ervand Abrahamian proposed a sevenfold chronological ordering.[30] Focusing on the process of socio-political modernisation in Iran, Abrahamian divided the period between 1796 and 2005 into seven categories: Royal Despots (1796-1872), Reform and the Great War (1872-1921), Iron Fist of Reza Shah (1921-1941), Nationalist Interregnum (1941-1953), State Expansion (1953-1977), Islamic Revolution (1977-1979), and Islamic Republic (1979-2005). In so doing, he aimed to examine how each period affected Iranian political culture. Kamran Matin also focused on three main socio-political instances affecting Iran's process of modernisation.[31] Matin proposed a threefold chronological ordering as follows: Constitutional Revolution (1906-11), Nationless Nationalism (1921-1953), and the Cold War and Oil (1962-79), to discuss the 1979 Iranian Revolution as a result of uneven development and historical materialism.

But, the most comprehensive chronological ordering that focused on the process of urban modernisation in Iran was proposed by Seyed Mohsen Habibi, a well-established Iranian urban and architectural historian. Indeed, this ordering comes closer to the chronological scope of this research. Habibi suggested a fourfold chronological ordering, three for a period before the 1979 Iranian Revolution, and one for Iran's post-revolutionary era. Accordingly, he divided the period between 1941 and 1979 stretching from the start of the WWII to the Iranian Revolution, into three categories, as follows: (1) from 1941 to 1953 as the 'Centralisation' period, (2) from 1953 to 1966 as the 'Urbanisation' period, and (3) from 1966 to 1979 as the 'Westernisation' period.[32] Then, Habibi provided a short explanation for each period, and described these modernisations as the transition moment influenced by Western models and largely imposed from 'above', a process that can be shortly named as 'Western-oriented top-down'. Finally, he claimed that from the 1979 Iranian Revolution, modernisation process was also triggered from 'below' and focused on promoting local models and customs, a process that can be shortly named as 'local-oriented bottom-up'. This identifies Habibi's fourth chronological ordering, paving the way for today's architectural culture, in Iran.[33]

27. See: Mohamad Ali Abdi, Sima Mehdizadegan, and Farzaneh Kordi, *Six Decades Housing Planning in Iran (1948-2008)* (Tehran: BHRC Publication, 2011).

28. Ibid.

29. For more information, see: Abrahamian, *A History of Modern Iran*.; and Seyed Mohsen Habibi and Bernard Hourcade, *Atlas of Tehran Metropolis* (Tehran: Entesharat Pardazesh va Barnamerizi Shahri, 2005).

30. See: Ervand Abrahamian, *A History of Modern Iran* (Cambridge: Cambridge University Press, 2008).

31. See: Matin, *Recasting Iranian Modernity.*

32. Habibi, *De La Cite a La Ville*, 186-228.

33. For more reading about this chronological ordering, see: *Sharh-E Jaryan-Haye Fekri Memari Va Shahrsazi Dar Iran Moaser* [Intellectual Trends in the Contemporary Iranian Architecture and Urbanism] (Tehran: Daftar-e Pajhuhesh-haye Farhangi, 2006), 35-36.

Similarly, scholars such as Abrahamian and Matin described Iran's modernisation process as a top-down and transnational-oriented project. While they credited the period between 1941 and 1953 for the active engagement of Iranian intellectuals and reformists in formulating the basis of Iranian modernity, they also identified Iran's overall process of modernisation as highly US-American oriented that ignored local initiatives.[34] In spite of their invaluable insights, I will argue that Iran's urban modernisation process through public housing development was not linear and only American-oriented, but multiple and based on a careful negotiation of Western ideals and local models, where both Iranian architects and ordinary people played an instrumental role. Accordingly, I will take Habibi's framework as the point of departure for this study to look more closely at the three main stages of urban modernisation in Iran through the lens of the Cold War oil-led geopolitics in relation to the architecture of dwelling. Adopting these time-frames will help to illustrate the tensions and collaborations between local and international actors, their consequences for the development of public housing policies in Iran's period of high-modernisation, and to depict the transformation of housing districts over time and the roles that the agency of the dweller played therein.

Problem Statement

The literature survey indicated that the design and evolution of public housing and the architecture of dwelling in Iran has been rarely investigated through the lens of oil-led geopolitics and users' involvement/participation in the development and transformation of their living environments. There is also little information about the impact of the agency of the dweller on modernisation processes in the nation's history. Accordingly, this doctoral dissertation offers an alternative reading of the process of urban modernisation in Iran, through the lens of public housing and its change and transformation over time. Focusing on public housing policies and design triggered under the auspices of the Cold War oil-led geopolitics, this study is an attempt to reveal whether the architecture of dwelling was seen as a place of resistance against societal changes, or a key vehicle to promote and take paradigm shift in terms of local customs and habits. Above all, this study aims at highlighting the contribution of ordinary people to the transformation of housing districts, in Iran's period of high-modernisation and beyond.

While this doctoral research can be seen as a contribution to the discourse of urban modernisation in Iran, mainly by focusing on the agency of the dweller in the transformation through time of public housing districts in the country, it also aims to address some current issues related to the design and production of public housing. It seems that in the process of housing development, architects and policy/decision-makers with different backgrounds employ two distinct

34. See: Abrahamian, *Iran between Two Revolutions*; Matin, *Recasting Iranian Modernity*.

approaches that mostly cannot be resulted in a convergent solution. For instance, policy-makers mostly choose for a quantitative approach to the production of housing (e.g., its cost and delivery system);[35] whereas, architects generally aim to address qualitative aspects, such as adaptability and privacy, through designs that widely focus on the desires/needs of end-users, and they usually consider the design of housing as an opportunity for creating social cohesion, a strong feeling of community, and a sense of place.[36] While the gap between visions and realities of public housing policies and designs might be seen as a universal and common phenomenon,[37] this issue also resulted in many critiques on the development of public housing and built environments, in Iran. Iranian architects criticised the government for its top-down housing policies that overemphasise the application of industrialised methods for the production of houses, but neglect the importance of people's socio-cultural practices as well as vernacular socio-spatial patterns of inhabitation for housing design.[38] On the contrary, policy- and decision-makers describe housing proposals and solutions provided by architects mostly as visionary and inefficient.[39] Accordingly, investigating overlaps between these divergent approaches is of vital importance, as it would foster and promote a dialogue among multiple stakeholders and decision-makers involved in the process of housing development, and illustrate the roles that architects can perform therein.

Research Questions

Building upon the available scholarly studies, the central and overarching question of this doctoral dissertation is as follows:

> *How did the process of (urban) modernisation in Iran (1945-1979) affect the architecture of dwelling, under the auspices of the Cold War oil-led geopolitics, and how was this process influenced by public housing development? what roles did architects and particularly end-users perform therein? and to what extent did proposed housing solutions in this period accommodate growth, change, and transformation over time?*

In addition, this research asks to what extent the development of public housing influenced and was affected by traditional socio-spatial and cultural patterns of inhabitation; and how changes in the socio-economic and political structure of Iran under the Cold War oil-led geopolitics triggered a paradigm shift in the design of public housing and the architecture of dwelling. This dissertation examines the various roles performed by local and transnational actors in Iran's public housing development. Most importantly, it questions the extent to which Iranian architects contributed to resist or promote changes in the architecture of dwelling, and how they employed (in)tangible architectural/urban archetypes as a medium for mediation and interpretation, through various stages of modernisation. It further

35. See: peter King, *The Limits of Housing Policy: A Philosophical Investigation* (London: Middlesex University Press, 1996); *The Principles of Housing* (London: Routledge, Taylor & Francis Group, 2016); David Clapham, *Remaking Housing Policy: An International Study* (London: Routledge, 2018).

36. See: Peter King, *In Dwelling: Implacability, Exclusion and Acceptance*, Design and the Built Environment (Aldershot: Ashgate, 2008); Jingmin Zhou, *Urban Housing Design* (China: China Architecture & Building Press, 2001); Graham Towers, *An Introduction to Urban Housing Design: At Home in the City* (Oxford: Architectural Press, 2005).

37. See: King, *The Limits of Housing Policy*; Jan Bredenoord, Paul van Lindert, and Peer Smets, *Affordable Housing in the Urban Global South: Seeking Sustainable Solutions*, (London, New York: Routledge, 2014).

38. See, for instance: The Study Group of Rahpou Sakht Sharestan Company, *Arzyabi Maskan Mehr*; Alireza Dehesh, "Developmental Instability in Iran:Its Impact on Housing since 1962," *Cities* 11, no. 6 (1994); Ali Asghar Salamati, "Urban Housing Design in Iran in Response to Socio-Cultural and Environmental Conditions" (University of Strathclyde, 2001).

39. See, for instance: Sarah Lloyd, *Housing the Urban Poor in Iran: A Vicious Circle*, vol. 10, Occasional Paper (London: Centre of Near & Middle Eastern Studies, University of London, 1993); World Bank, Islamic Republic of Iran: Strategies for the Housing Sector, (Washington, DC: World Bank, 2004); Arman Hashemi, "Construction Technology Transfer: An Assessment of the Relevance of Modern Methods of Construction to Housing Shortages in Iran" (Cardiff University, 2009); Abdi, Mehdizadegan, and Kordi, *Six Decades Housing Planning.*

investigates how the local archetypes, in general, and the courtyard-garden house type, in particular, were used to resolve the tensions between local and universal-based societal and culture values for developing appropriate habitats and new urban communities, in Iran; and it examines how the inhabitants of new housing districts perceived, appropriated, and transformed their living environment.

To answer these questions, each chapter of this doctoral dissertation will focus on one specific theme, addressing a synthesis of some of the questions mentioned above. The first chapter provides a historical overview on 'Iran's dwelling culture', while the second chapter addresses the relation of 'planning documents' and the change in traditional neighbourhood planning structures in the country. The third chapter addresses the theme of 'urban density and participation', highlighting the role of urban dwellers in radical transformation of the built environment. The fourth chapter focuses on the theme of 'apartment typology' to examine the impact of the Cold War oil-led geopolitics on the design of public housing in Iran. The fifth chapter addresses the relation of 'megastructure movements' and urban housing development in the country. The sixth chapter focuses on the theme of 'continuity and change', highlighting alternative approaches promoted in the 1970s Iran for the design of human habitats; and the last chapter examines the notion of 'open-endedness' in relation to the architecture of 'total habitat'.

To discuss these themes more in-depth, this research discusses the design and development of five actual housing projects initiated in Iran's period of high-modernisation to unfold processes that created collaboration and negotiation among the visions and realities of architects and decision-makers, in the production of houses and provision of housing solutions. Thus, the documentation of these housing projects, as well as the architectural analysis and deconstruction of their different typological and morphological components would contribute to unravel the complexity of decision-making in the design process, and to reveal underlying ideas that helped the performance of these projects, physically and conceptually.

Framework of the Research

Iran's history of modernisation, generally, and the process of urban development and transformation, particularly, have become a significant subject of investigation for several scholars, in recent years. Themes such as public housing and domesticity have been addressed by numerous scholars in relation to the architecture of dwelling in Iran. This doctoral research aims to build upon and expand available studies on the subject of public housing design and development, in order to discuss 1) how public housing can be seen as an instrument of modernisation, 2) the extent to which the architecture of dwelling was part of the state-initiated modernisation

programmes, 3) to what extent the oil-led geopolitics of the Cold War affected the development of public housing in Iran, and 4) how the inhabitants of new residential neighbourhoods perceived, used, appropriated, and changed their living environment, based on their real needs and habits. In this research, thus, I aim to study the influence of the Cold War oil-led geopolitics on the design and development of public housing in Iran's period of high-modernisation, and the roles performed by the agency of the dweller in the transformation through time of the new housing districts in Iran, which is a subject that has not been sufficiently explored in previous studies. I also aim to examine how experimental housing schemes built between 1945 and 1979 were adapted to new (urban) transformation plans. While the broader perspective of Iran's period of high-modernisation has already been discussed through the works of various scholars, those existing works still cannot be seen as an illustration of how the process of modernisation can unfold through housing policies and design, and through the lens of users' involvement and participation. However, a brief review of these previous scholarly studies is necessary, as it will likely reveal the importance of delving further into this field of research by establishing this study within a broader historical context.

Generally speaking, Iran's process of modernisation has been investigated from two main perspectives as follows: socio-political/economic changes, and urban transformation. The subject of socio-political changes focused on themes such as civil society and Islam, the political history of Iran, and the state's social engineering strategies. These themes have been addressed by numerous scholars who carefully examined socio-political and economic influences of the modernisation process, at both national and international level, in Iran.[40] The subject of urban transformation focused on three major themes: housing, public buildings, and urban development. The theme of housing has been investigated through the lens of, for instance, nation-building strategies, the politics of housing production, the state's housing policies, and domesticity and home culture; whereas the theme of public building has been studied with a major focus on the relation of modernity and tradition, and Iran's cultural heritage. Moreover, the theme of urban transformation has been investigated through the lens of urban laws, the state's socio-political strategies, imported models, and eclectic urbanism.[41]

The mentioned themes have been addressed from different angles, triggering a critical understanding of some important events in Iran's process of modernisation. However, the link between the theme of housing design and user's participation in the development and transformation of housing districts remained considerably blurred and unexamined. Moreover, studies that addressed the mentioned themes did not systematically investigate the role of public housing policies and design triggered by the Cold War oil-led geopolitics, and users' engagement in shaping the built environment during the period of high-modernisation in Iran. In this view, this subject deserves a more in-depth and systematic investigation.

40. For instance, see: Ervand Abrahamian, *Iran between Two Revolutions* (New Jersey: Princeton University Press, 1982); *A History of Modern Iran*; Ali Mohamad Ansari, *Modern Iran : The Pahlavis and After* (Harlow: Longman, 2007); Ramin Jahanbegloo, ed. *Iran between Tradition and Modernity* (Maryland: Lexington Books, 2004); Masoud Kamali, *Multiple Modernities, Civil Society and Islam: The Case of Iran and Turkey*, vol. 10, Studies in Social and Political Thought (Liverpool: Liverpool University Press, 2006); Matin, *Recasting Iranian Modernity*; Ali Mirsepassi, *Intellectual Discourses and the Politics of Modernization: Negotiating Modernity in Iran* (Cambridge: Cambridge University Press, 2000).

41. For instance, see: Mostafa Kiani, *Memari Dore Pahlavi Aval: Degarguni Andishe-Ha, Peydayesh Va Shekigiri Memari Doreh 20 Saleh Moaser Iran 1299-1320* [The Architecture of First Pahlavi: The Transformation of Ideas and the Formation of an Architecture for a Period of 20 years 1920-1941] (Tehran: Markaz Chap Nashr Shahr, 2013); Mokhtari Taleghani, *Iran's Legacy of Modern Architecture*; Ali Madanipour, *Tehran: The Making of a Metropolis*, World Cities Series (Chichester: John Wiley & Sons, 1998); Mina Marefat, "Building to Power: Architecture of Tehran 1921-41" (Massachusetts Institute of Technology, 1988); Talinn Grigor, *Building Iran: Modernism, Architecture, and National Heritage under the Pahlavi Monarchs* (New York: Periscope Publishing, 2009); Seyed Mohsen Habibi, *Az Shar Ta Shahr: Tahlili Tarikhi Az Mafhume Shahr Va Simaye Kalbudie an Tafakkor Va Taassor* [De la Cite a la Ville-Analyse Historique de la Conception Urbaine et Son Aspect Physique] (Tehran: University of Tehran Press, 1999); Amir Bani Masoud, *Memari Moaser Iran* [Iranian Contemporary Architecture] (Tehran: Nashr-e Honar-e Memari Gharn, 2015); Hamed Khosravi et al., *Tehran: Life within Walls: A City, Its Territory, and Forms of Dwelling* (Berlin: Hatje Cantz Verlag, 2017); Khosravi, "Camp of Faith;" Pamela Karimi, *Domesticity and Consumer Culture in Iran Interior Revolutions of the Modern Era* (London and New York: Routledge, 2013); Habibi, "Modern Mass Housing in Tehran;" Cyrous Bavar, *Negahi Be Peydayeshe Memarie Nou Dar Iran* [A Glance at the Appearance of the Iranian Modern Architecture] (Tehran: Nashr-e Faza, 2010); Shirazi, *Contemporary Architecture and Urbanism in Iran*.

Mina Marefat studied urban transformation of Tehran between 1921 and 1941, a period when Reza Pahlavi (1878-1944), the Shah of Iran, orchestrated a radical modernisation project, in the country.[42] She argued that the state imposed a gridiron urban pattern and used the construction of administrative buildings as a tool to renew the image of Tehran, from a traditional Islamic city into a quasi-European capital. She also identified how both foreign and native architects became involved in the development of new state institutions such as ministries, banks, and museums. Then, she claimed that the architectural principles employed for the design of these buildings were a strategy to disseminate the ideology of modernity based on a narrative of pre-Islamic Iranian history. In her analysis, she showed how architectural elements and models of most monuments of the pre-Islamic Achaemenid as well as Sassanid empires formed a basis for the design of many governmental buildings.[43] In this way, as Marefat argued, Reza Shah aimed to recall the grandeur and power of the ancient Persian empire for reconstructing Iranian identity and promoting nationalism and secularism. Moreover, Marefat showed that the architecture of dwelling became a tool of elite Iranians for implementing changes in their lifestyles. She observed that the elites and the privileged commissioned modernist Iranian architects, especially those who were educated in Europe, for the design of luxury villas and private residential buildings in the newly developed areas of Tehran, aiming to pursue a 'modern' lifestyle.[44]

Similarly, Mostafa Kiani addressed the period of urban development, under the 'First Pahlavi' (1925-1941). He identified three mainstream strategies employed and interwoven by the government that transformed the image of the capital: militarism, modernism, and archaism. Then, Kiani showed how the gridiron urban structure of Tehran helped the state to control socio-political tensions in the city and to mobilise military forces, when needed. He argued that modernism was a political strategy to promote a Western-oriented urban life among Iranians and reorganise the traditional structure of society. Kiani's research claimed that archaeological discoveries related to Iran's pre-Islamic history helped the state to tie the modernisation strategies to a project of archaism for constructing a new Iranian identity. Finally, Kiani referred to the architectural styles employed in this period for the erection of new governmental buildings, and argued that, in line with the state's project of nation-building, these buildings represented a mixture of European neo-classical styles and a few local architectural elements adapted from pre-Islamic Iran.[45]

Talinn Grigor took one step further to elaborate Iran's history of modernisation through the lens of architecture.[46] In her analyses, Grigor showed that the Pahlavi regime (1925-1979) used architecture as a major political tool for re-appropriating Iranian cultural heritage alongside secular reforms. She examined the role of the Association of National Heritage (*Sazman Miras Farhangi*) in promoting a distinct architectural modernity based on Iran's pre-Islamic history. Then, Grigor showed

42. Marefat, "Building to Power."

43. The Achaemenid Empire, also known as the first Persian Empire established by Cyrus the Great and later expanded by Darius the Great lasted between 522 BC and 486 BC. The Sassanid Empire was another long-lasting and powerful Persian dynasty established by Ardashir Papag and lasted between 224 AD and 651 AD. Under these dynasties, Zoroastrianism (*Mazdayasna*) became the *de facto* religion of state and most people lived in the territories of the Persian empire. In 651 AD, the Muslim conquest of Persia (or the Arab conquest of Iran) brought an end to the Persian empire and also led to the decline of the Zoroastrian religion in Iran. For more reading, see: Touraj Daryaee, ed. *The Oxford Handbook of Iranian History*, Oxford Handbooks (Oxford: Oxford University Press, 2012).

44. Marefat, "Building to Power."

45. Kiani, *The Architecture of First Pahlavi.*

46. Grigor, *Building Iran: Modernism, Architecture, and National Heritage under the Pahlavi Monarchs.*

how the Association became an instrumental organisation for embracing Iran's epic cultural history and its penchant for progressiveness by adapting pre-Islamic archetypal models to modernist principles. For instance, Grigor portrayed the Ferdowsi[47] mausoleum as a representative model, where the building functions as a booster of national pride with its pre-Islamic design and ornamentations, while the landscape designed around the building fabricated a sense of modernism by becoming a touristic place. In her inspiring book, *Building Iran: Modernism, Architecture, and National Heritage under the Pahlavi Monarchs*, Grigor also discussed the role of the empress Farah Pahlavi in revitalising both Iran's pre-Islamic and Islamic heritage, in the rapid urbanisation process taking place in the context of the 1970s.[48]

Ali Madanipour shed light on the urban transformation of Tehran.[49] In his seminal book, *Tehran: The Making of a Metropolis*, he showed how the process of modernisation turned the city from a small village outside the ancient city of Rey in north Iran into a semi-peripheral world city.[50] Madanipour also discussed the impact of political and economic development on the expansion of Tehran. He mainly analysed the relation of political changes and urban planning strategies as well as regulations, and explained how the process of globalisation advocated a rapid growth of the city and urban population density. Moreover, Madanipour argued that these new dynamics caused the growth of scatter settlements in south Tehran, bringing about segregation among different social strata. Finally, he defined the marginalisation of the urban poor as a result of uneven development, triggered by a top-down process of modernisation, in Tehran.[51]

Eskandar Mokhtari discussed the history of architecture in Iran through the lens of modernisation. By emphasising the values of modernism for architecture, he claimed that today's identity of Iranian cities is hidden within the 'modern' architecture and urban form of the cities. In his extensive analyses, Mokhtari showed how leading Iranian architects, mainly the ones educated in the West, attempted to incorporate some archetypical elements of local architecture into the universal modernist design principles to introduce a local version of architectural modernism. He mainly analysed and documented urban landmarks, elite villas, and governmental as well as other public buildings developed during the First and Second Pahlavi to identify the importance of these structures for protection and preservation. Finally, he described the documented buildings as the heritage of 'modern' architecture of Iran, a legacy that still can be re-used, re-programmed, and transformed for multiple public or private use. In addition, Mokhtari called for an in-depth study of residential neighbourhoods constructed between 1945 and 1979, a time-frame that he coined as the period of 'high-modernisation' in Iran.[52]

Mohsen Habibi extensively discussed the history of urban development in Iran and the process of urban modernisation in Tehran. In his seminal book, *Az Shar ta Shahr* (from Town to City), Habibi analysed the Iranian concept of 'city',

47. Ferdowsi was one of the most well-known Iranians who wrote the tenth-century national epic, the *Shahnameh* (book of kings) to preserve the Persian language from Arabic influences.

48. Grigor, *Building Iran: Modernism, Architecture, and National Heritage under the Pahlavi Monarchs*.

49. Madanipour, *Tehran: The Making of a Metropolis*.

50. In his 'World System' theory, Immanuel Wallerstein divides the capitalist world-economy into three areas: Core states, Semi-peripheral, and peripheral areas. In this definition, the term peripheral refers the least developed areas that "were exploited by the core for their cheap labour, raw materials, and agricultural production. The semi-peripheral are intermediate areas that were both exploited by the core and took some role in the exploitation of the peripheral areas. The Core states have the role of promoting capital accumulation, and have the political, economic, and military power to enforce unequal rates of exchange between the core and the periphery". For more information, see: Immanuel Maurice Wallerstein, *World-Systems Analysis: An Introduction* (Durham and London: Duke University Press, 2004), ix-xii.

51. Madanipour, *Tehran: The Making of a Metropolis*.

52. Mokhtari, *Iran's Legacy of Modern Architecture*.

in different time periods and multiple territories of the country.[53] He described the Iranian cities as the theological manifestation of space that can perfectly be represented in two forms of *'Isfahani'* and *'Tehrani'*. According to Habibi, the first form culminated in the 17th century Isfahan, where the Shah Abbas,[54] the fifth Safavid king, in collaboration with Islamic philosophers and theologians from Iran, such as Sheikh Bahaee, aimed to expand the city of Isfahan as the capital of Iran.[55] As Habibi argued, while this model was based on the concept of *Medina* (the Islamic Utopia conceptualised by Farabi),[56] it incorporated all urban planning and design knowledge developed and employed before and after the advent of Islam in Iran. Further, Habibi claimed that the second form was created in the 19th century Tehran, when Iran experienced a process of modernisation under Naser al-Din Shah, the fourth Qajar king. He showed how the political and economic relations with the West and neighbouring countries stimulated the Shah to introduce new urban and architectural elements such as boulevards and opera houses to his capital city, Tehran. He also argued that these initiatives and interventions resulted in an eclectic architecture and urbanism. Finally, Habibi illustrated which local archetypes remained intact and traceable in Iranian cities, and which were transformed beyond recognition in the process of urban modernisation.[57]

Amir Bani Masoud also conducted an in-depth study on the formation of 'contemporary architecture' in Iran, based on socio-political discourses led by Iranian intellectuals in the early-twentieth century.[58] He argued that modernity found its path to Iran when the prince Abas Mirza, the head of Iranian military forces, aimed to modernise the army for competing with Tsar Russia in the early-1800s. Bani Masoud claimed that Iranian students, dispatched to Europe in the late 19th century, seeded the concept of Iranian modernity.[59] Then, he showed how their travel books and experiences in confronting with the West inspired Iranian intellectuals to demand for socio-political reforms and to conceptualise a modernisation process from within that led to the 1906 constitutional revolution, in Iran. Bani Masoud defined two unique characteristics of Iranian modernity as its state of 'suspension' and the belief in the principle of 'progress'. The former, he believed, brought about the grounds for lack of cohesion between various social groups that had a root in two binary views represented by the traditionalists and modernists. In Bani Masoud's point of view, the traditionalists attempted to close the gap between imported socio-political ideas and situated cultural norms by maintaining modernity next to Islamic-Iranian traditions; however, the modernists took the principles of rationalised thinking from the West without much reflection and hesitation by idolising modernity as something that would emancipate the Iranian society from outdated traditions and from backwardness. As opposed to the state of suspension, the belief in the principles of progress, as Bani Masoud argued, set a basis for the convergence of political, social, and architectural development in Iran. Then, he concluded that the ideal

53. Habibi, *De La Cite a La Ville*.

54. While Shah Ismail (1487-1524) established the Safavid dynesty in 1501, it was Shah Abbas the Great (1571-1629), the second powerful Safavid king who unified Persia after the Arab conquest and established the third powerful Persian Empire lasting to 1722. He also made Shia Islam the official religion of Safavid Persia to distinguish Muslim Persians (Iranians) from Muslim Arabs and Turks, and to unify Persia against the Sunni Ottoman empire. More importantly, the distinction between Shi'ism and Sunnism was articulated through the promotion of the phenomenon of mysticism within Islam, a fundamental basis of Shiism that is known as Sufism or Sufi tradition, at present. For more information, see: Rula Abisaab, *Converting Persia: Shi'a Islam and the Safavid Empire* (London: I.B. Tauris, 2004).

55. During the reign of Shah Abbas, Mulla Sadra and Mir Damad also were two significant scholars who used and built upon the political philosophy, metaphysics, ethics and logic of precedent Iranian Muslim scholars such as Mohamad Al-Farabi (Alpharabius, 782-950 AD) and Shahab-al-din Sohrevardi (1154-1191) to conceptualise Sufi tradition and a way of living through unity and spatial ordering in city planning and architecture. See: Ardalan and Bakhtiar, *The Sense of Unity: The Sufi Tradition in Persian Architecture*.

56. The ideal city for Farabi was the city of *Medina*, when it was governed by the prophet Mohamad in direct communication with God. In his *Book of Opinions of the People of the Ideal City* (also translated as *Al-Farabi's the Perfect State*), Farabi argued that the word medina can be applied to "a group of people who concur with one another in holding excellent views and who live near to one another in one place", under the rule of prophet-Imam (who is knowledgeable about philosophy, theology, and mysticism). For more information, see: Mohamad Abu Nasr Al-Farabi, *Mabadi' Ara' Ahlal-Madina Al-Fadila* [The Perfect State] (Oxford: The Clarendon Press, 1985), 53.

57. Habibi, *De La Cite a La Ville*.

58. Bani-Masoud, *Iranian Contemporary Architecture*.

59. These students were dispatched to Europe to learn, mostly, military sciences and Western techniques.

principles of progress, largely through cross-cultural and knowledge exchanges, triggered Iranian architects to negotiate both the traditionalists' and modernists' approaches in their works, aiming to introduce an alternative modernisation.[60] In a similar study, Cyrus Bavar investigated the emergence of new architectural thinking in Iran, and he credited the role that Western-educated Iranian architects performed in mitigating the tensions between local and universal values for the design and development of new urban environments in the country.[61]

Some scholars such as Pamela Karimi, Hamed Khosravi, and Rana Habibi also discussed the process of urban modernisation, with an eye on large-scale housing development in Iran, which comes closer to the main theme of this research. For instance, in her seminal book, *Domesticity and Consumer*, Pamela Karimi examined the hybrid process of modernisation through the lens of domesticity and home culture what she called Iran's 'Interior Revolutions of the Modern Era'. Karimi extensively analysed the oil-town of Abadan, a city that was constructed by the British Petroleum (BP) based on Ebenezer Howard's Garden City concept, and compared Abadan's urban environment with that of some other cities in Iran. She also studied the architecture and transformation of individual houses and private apartments in Tehran; and she argued that the Iranian government used domestic space as a locus to introduce and promote Western-oriented lifestyles among Iranians. This was indeed a strategy to reorient Iran's home economics towards Western mass-market consumption, as Karimi insightfully put it. More significantly, she showed how the Iranian kitchen became the main subject of change in the state's modernisation agenda, under the auspices of the Truman's 'Point IV programme', a project that aimed to encourage socio-economic and political reforms within developing countries.[62]

Hamed Khosravi discussed the architecture of dwelling in Tehran through the lens of the state's policies. Exploring the political foundations of the city in his historical analyses, Khosravi showed in detail how the interior spaces of the Iranian houses became adapted to serve purposes beyond individual life and family matters, while urban spaces fell under constant and total state control. He illustrated that the idea of wall, boundary, and separation does not imply a form of rejection, but rather, it promotes a form of association, by forming a series of inhabitable walls for the city. Further, he claimed that the government used housing as a tool to colonise the land made available after the demolition of the old city walls, in Tehran. According to Khosravi, the aim of this state-project was to tame and neutralise the socio-political structure of old neighbourhoods in Tehran, by constructing mass housing for middle-class families and imposing new urban forms. Subsequently, Khosravi argued that the design and development of multi-story apartments was an ideal spatial apparatus to promote certain new lifestyles, as well as to control the society through mechanisms of design and planning, by the government.[63]

60. Bani Masoud, *Memari Moaser Iran.*

61. Bavar, *A Glance at the Appearance of the Iranian Modern Architecture.*

62. Karimi, *Domesticity and Consumer Culture in Iran.*.

63. Khosravi et al., *Tehran: Life within Walls.* See also: Khosravi, "Camp of Faith."

Similarly, Rana Habibi examined the impact of mass housing developments for emerging middle-class neighbourhoods on the urban structure of the Iranian capital city, Tehran.[64] In her pioneering study, Habibi claimed that these mass housing projects facilitated the state's project of nation building, and they introduced a new form of living among Iranian people. Through examining the five housing projects of Chaharsad-Dastgah, Kuy-e Narmak, Kuy-e Farah, Kuy-e Chaharom-e Aban, and Ekbatan, she illustrated how the process of adaptation and the localisation of imported models influenced the design of mass housing and of the middle-class neighbourhoods, in Tehran. Moreover, Habibi argued that the construction of these new districts was not only a strategy for responding to the housing shortage in Tehran, but also a tool for promoting 'modern' lifestyles among Iranians. To position her study within the discourse of non-Western modernisation, she first provided a historical overview of the urban modernisation of Tehran from the mid-19th century to the 1979 Iranian revolution, and then, divided the period between 1941 and 1979 into four episodes of modernism in Tehran: 1) institutionalisation of modernism through mass housing projects (1941-1953), where Habibi discussed the case of Chaharsad-Dastgah, 2) from ideal modernism to popular modernism (1953-1962), where she analysed Kuy-e Narmak, 3) the dissemination of modern taste through mass housing (1962-1971), where Habibi examined Kuy-e Farah and Kuy-e Chaharom-e Aban, and 4) the adaptation of a transnational model (1971-1979), where she studied the housing project of Ekbatan. Through her analyses, Habibi also argued that, while the newly developed areas of Tehran were erected based on the modernist design principles promoted by the CIAM,[65] they all incorporated the formal aspects and geometry of a main archetype of Iranian architecture: the *Chahar-Bagh* (four-fold garden).[66] Finally, Habibi illustrated the impact of a garden-grid structure on the urban form of new neighbourhoods, and on the configuration of urban spaces in Tehran, where this modernist grid was integrated with the new form of courtyard houses.[67]

Recently, Mohamad Reza Shirazi conducted a significant study on 'contemporary architecture and urbanism' in Iran. In his analyses, Shirazi highlighted the relation of tradition and modernity as well as its reflection on the formation of today's Iranian architectural culture. Building upon Paul Ricoeur's classic text, *Universal Civilisation and Natural Culture*, he showed how in the 1960s and 1970s, Iran faced the challenge of both becoming modern and yet simultaneously returning to its historical sources. Furthermore, Shirazi used Kenneth Frampton's notion of 'Critical Regionalism' to examine and analyse a few works of three leading Iranian architects, including Nader Ardalan, Kamran Diba, and Hossein Amanat. In his examination, he showed how their works represented a place-specific approach to the architecture of modernism. Finally, Shirazi argued that the production of a 'space-in-between' (i.e., an intermediate space between private and public spaces) played an instrumental role in the works of these architects to overcome the strict dichotomy of tradition and modernity with their architecture.[68]

64. Habibi, "Modern Mass Housing in Tehran."

65. CIAM is the abbreviation of the Congrès internationaux d'architecture modern (in French), or International Congresses of Modern Architecture, founded in 1928 to organise events related to the 'Modern Movements', particularly in the field of architecture and Urbanism. With the advent of Team 10, the CIAM was disbanded in 1959. For more reading, see: Eric Paul Mumford, *The Ciam Discourse on Urbanism, 1928-1960* (Cambridge, Massachusett and London: The MIT Press, 2000).

66. The Chahar-Bagh or literally the four-fold garden, is a typical Persian garden used in both urban and architectural scales. As an urban planning tool for the extension of the old city beyond its walls, the first application of this garden-type in an urban scale took place in the 17th century Safavid Isfahan, Iran. For more information, see: Somaiyeh Falahat and Mohamad Reza Shirazi, "New Urban Developments in Safavid Isfahan Continuity or Disjuncture?," *Planning Perspectives* 27, no. 4 (2012).

67. Habibi, "Modern Mass Housing in Tehran."

68. Shirazi, *Contemporary Architecture and Urbanism in Iran*.

Amidst a growing wealth of architectural scholarship on Iran's process of modernisation, the authors mentioned above have addressed with insightful approaches how the architecture of dwelling has been interwoven with specific social, political, and economic circumstances. Nevertheless, most of the research referenced earlier overlooked the agency of the dweller in the transformation through time of their housing environment. These studies also did not discuss how public housing schemes built in the period of high-modernisation were able to be adapted to new urban transformation programmes. In other words, there is little research discussing the dynamic process in which the planning, regulations, and urban/housing design strategies implemented in Iran after 1941 were able to accommodate growth, change, and transformation through time. Moreover, these studies have not systematically addressed the paradigm shifts that transformed the country's public housing policies between 1945 and 1979, under the Cold War oil-led geopolitics. To develop further the remit of the scholarship on Iran's process of (urban) modernisation, this doctoral dissertation expands the debate on the relation between modernist planning concepts with the transformation of Iran's domestic landscape. This study examines how the design of public housing in Iran was influenced by the structural socio-economic and political changes introduced under the oil-led geopolitics of the Cold War, and its impact in the evolution of socio-spatial and cultural patterns of inhabitation that eventually changed the domestic landscape of urban Iran in the period of high-modernisation.

Moreover, this doctoral study brings together various instances of public housing development, from the works of previous scholars and from available archives, to create a comprehensive panorama regarding the architecture of dwelling initiated in Iran's period of high-modernisation. For instance, while this dissertation benefits from the in-depth historical analysis provided by Hamed Khosravi on the Persian concept of city making, it expands the debate on the transformation of a typical Iranian courtyard house typology: *the Khaneh Bagh*. This study relies on the seminal work of Pamela Karimi unfolding the influence of Truman's 'Point IV programme' on the domestic space of Iranians, and illustrates how this programme promoted the apartment mode of living in Iran. This research is also built upon the extensive knowledge, produced by Rana Habibi through her in-depth historical analysis of Chaharsad-Dastgah, Narmak, and Ekbatan, and it expands further the discussion on the evolution of housing paradigms in Iran's period of high-modernisation. This is done not only through discussing two new case studies in addition to the existing works, but also by analysing these five housing projects through the lens of oil-led geopolitics and the users' participation. While this research benefits from the outstanding architectural analysis of Mohamad Reza Shirazi exploring the works of the three leading Iranian architects through the lens of 'Critical Regionalism', it expands the debate on the architecture of regionalism by discussing alternative approaches to the development of housing and the meaning of regional identity, as promoted in the 1970s Iran, and as documented in the Habitat Bill of Rights.[69]

69. Throughout the 1970s, a group of young Iranian architects organised a series of architectural events, among them the second Iran International Congress of Architects (IICA), held in Persepolis-Shiraz in 1974. This Congress resulted in the 'Habitat Bill of Rights', a CIAM-like charter submitted by the Iranian government to the first UN-conference on 'Human Settlements' in 1976.

Accordingly, this research offers an alternative reading of the process of urban modernisation in Iran, through the lens of public housing. This reading differs from the existing body of research, as it 1) incorporates users' perspectives and reflects on people's participation in the development of new housing districts in the process of modernisation, 2) illustrates a change of paradigms in the design of public housing under the U.S-American technical assistance and economic aid, and 3) reveals how the architectural events, organised in the 1970s Iran, played an instrumental role in shaping a new discourse on the notion of architectural regionalism and the design of dwelling and human habitats. This doctoral study shows, thus, how each stage of modernisation in Iran, as will be explained and described in the following pages, catered for a shift of paradigms in the design of housing. This can be seen in an analysis on the relations of traditional courtyard house types to low-rise row-house typologies, from (semi-)detached house types to mid-rise apartment typologies, and finally from residential buildings developed in the form of towers and slabs to hybrid and locally-inspired typologies.

Furthermore, it is notable that most studies related to the urban modernisation in Iran shed light on the significance of either local architectural models/elements or urban archetypes for practicing a form of 'vernacular modernism'.[70] Generally speaking, the initial goal of these studies was twofold: 1) illustrating the process of urban transformation in the country from the lens of city planning or architectural design; 2) demonstrating how incorporating the formal characteristics of local models and archetypes into modernist design principles formed a basis for the adaptation of imported ideas to local context. Arguably, while in the process of urban modernisation, the archetypes were often discussed as tangible elements/models of the built environment that were borrowed from Iran's local architectural culture or history, their impacts as intangible elements or concepts largely remained unexamined.[71] Moreover, local archetypes in integration with modernist design principles were often analysed as a static phenomenon aiming to create a sense of familiarity between people and their built environment; but, the ways that this integration was perceived or changed by the agency of the dweller, and activated users' participation in the design of space were not explored in earlier research.

As observed by some influential Iranian architects such as Nader Ardalan, Kamran Diba, Kamran Afshar Naderi, Laleh Bakhtiar, and Reza Daneshmir, the conceptual feature of traditional Iranian houses could be seen in its abstract manifestation as an 'empty space' that in my understanding, has served as a kind of inhabitable void.[72] In their view, the idea of emptiness refers to a condition of space that enables one to designate, reflect, and mirror a set of relations to their living environment for creating an experience of place.[73] More importantly, they saw the traditional Iranian courtyard-garden house type as a microcosm of Iranian-Islamic culture, signifying an intangible archetype of Persian architecture that mirrors the 'Paradise Garden' on the earth.[74] In their view, this house type contains a void, which is made

70. Introduced by Bernd Huppauf and Maiken Umbach, the concept of 'Vernacular Modernism' emphasises "place particularism" as a strategy for the preservation of cultural identity in spatial practices developed under the auspices of the globalisation process. In *Vernacular Modernism: Heimat, Globalization, and the Built Environment*, Huppauf and Umbach challenge the concept of homogenous time by focusing on heterogeneity and the polarity of modern experiences, as well as concrete praxis (process of practicing) in particular places. See: Maiken Umbach and Bernd Huppauf, *Vernacular Modernism* (California: Stanford University Press, 2005), 1-23.

71. The term 'concept' refers to the points of multiplicity and connections of components that share borders with other line of thoughts. As Elizabeth Grosz defined, the concept never solves problems; but it transforms or replaces them with other thoughts to motivate experimentation. For more information, see: Elizabeth Grosz, "Deleuze, Theory, and Space," *Log*, no. 1 (2003): 77-86.

72. For example, see: Ardalan and Bakhtiar, *The Sense of Unity: The Sufi Tradition in Persian Architecture*.; Kamran Diba, *Buildings and Projects* (Stuttgart: Hatje, 1981).; Kamran Afsharnaderi, *Iranian Architecture* (Tehran: Nashr-e Agah, 2003).; and Attilio Petruccioli and Khalil K. Pirani, eds., *Understanding Islamic Architecture* (London and New York: Routledge Curzon, 2002).

73. See: Ghazal Farjami, "Reinterpreting the Concept of Emptiness as Central Courtyards in Contemporary Iranian Architecture," *Space and Culture* 19, no. 3 (2016).

74. See: Nader Ardalan, "Simultaneous Perplexity: The Paradise Garden as the Quintessential Visual Paradigm of Islamic Architecture and Beyond," in *Understanding Islamic Architecture*, ed. Attilio Petruccioli and Khalil K. Pirani (London and New York: Routledge Curzon, 2002), 9-18.

inhabitable and brought to life through the inclusion of a small garden. It is, thus, of little surprise why in this study, I attempted to understand how in the process of modernisation, Iranian architects either directly employed or (re)interpreted the notion of the inhabitable void for stimulating people's participation in the transformation of space, and for activating 'collective memory' among the general public.[75] Accordingly, rather than a courtyard with a small garden, the notion of 'inhabitable void' depicts a timeless and intangible spatial feature of the traditional Iranian courtyard-garden house type.[76] This characteristic would allow the users of space to actively participate in the creation of their living environment by enabling continual growth and change, over time.

To sum-up, this section provided a literature survey indicating that while the body of knowledge on the process of urban modernisation in Iran seems substantial, the available scholarly materials are dispersed, predominantly focused on isolated topics with often a narrowed scope. Various scholars provided invaluable insights from different and distinct points of view on this process; however, they did not offer a comprehensive panorama that would tie together local and global socio-political, economic, and cultural influences, particularly in relation to the architecture of dwelling, its change, and transformation. Accordingly, the investigation of the roles performed by multiple constellations of actors in the form of public or private agencies, stakeholders, institutions, organisations and mainly end-users in Iran's modernisation process is inevitable. More importantly, it is necessary to study the timeless characteristics of Iranian courtyard house and traditional neighbourhood structures that remained intact over time. It is also crucial to investigate the growth and change of new housing districts initiated in Iran's context of the Cold War.

Research Scope

While Iran's process of urban modernisation started in the early-1800, it gained a real momentum in the aftermath of WWII. Sharing similar characteristics with the transformation of other Middle Eastern countries, the Iranian project of modernisation accelerated under the Cold War oil-led geopolitics. The period of 'post-war corporatist compact', as Kevan Harris called it, saw the U.S. hegemony infiltrating the region, sponsoring state-led development.[77] Iran first attempted to resist foreign influences under the leadership of Mohamad Mosaddeq (1882-1967), who initiated the policy of 'Negative Equilibrium' that planted the seed for the establishment of Non-Aligned Movement.[78] This move was informed by the country's socio-political and economic scene being highly influenced by Great Britain and later, the U.S-Americans. Whereas the 'Second Pahlavi', Mohamad Reza Shah, favoured a close alignment with the Western alliance system led by the United States.

75. Coined by a French philosopher and sociologist, Maurice Halbwachs, the concept of collective memory discusses how the shared remembrance of the past or our living history might affect our experiences from the present or future. In 1925, Halbwachs introduced this concept as *mémoire collective* and expanded it in his book *La Mémoire Collective collective*, in 1950. For more information on the concept of 'collective memory', see: Maurice Halbwachs, *On Collective Memory*, trans. Lewis A Coser (Chicago: University of Chicago Press, 1992).

76. In earlier studies, concepts such as inhabitable wall were discussed to draw parallels between Iran's architectural culture and the design of new built objects. These studies focused on the importance of the material and physical expression of local archetypes in the design of space. See, for instance: Khosravi, "Camp of Faith."

77. Kevan Harris, "Making and Unmaking of the Greater Middle East," *New Left Review*, no. 101 (2016): 13.

78. The Non-Aligned Movement was initially originated in Mohamad Mosaddeq's policy of 'Negative Equilibrium' introduced in 1951 that sought independency from world-powers (i.e., the Soviet Union, the Great Britain, and the United States) during Iran's oil nationalisation movement. However, Non-Aligned Movement (NAM) was established, in Belgrade, Yugoslavia in 1961, and the term NAM was used to indicate the states that were not formally aligned with or against any major power bloc. For more reading, see: Sujata Ashwarya, *India-Iran Relations: Progress, Problems and Prospects* (New York: Routlege 2017).

In the context of the Cold War period, the U.S. geopolitics in Iran was driven by a strategy of negotiating desirable agreements to secure access to oil resources, and to prevent Soviet influences spreading in the Middle East.[79] This strategy also sponsored a form of 'Socialism' paradoxically supported by a corporatist model of industrialisation, a model that in the late-1960s, some scholars described as a form of 'creative modernisation'.[80] In Iran, land reform and public housing became key policies of modernisation under the leadership of Mosaddeq, the first democratically elected prime minister of Iran (in the office from 1951 to 1953). While initiated earlier in the 1940s, these policies were further developed after Mosaddeq's overthrowing in 1953, under the anti-communist Shah of Iran, who ruled the country from 1941 until the 1979 Iranian Revolution.[81] Within this period, a series of initial modernisation stages took place that pervaded the entire country, and set the foundation of today's 'modern' Iran, as the historian Ervand Abrahamian noted.[82]

Multiple actors were also involved in the state-led modernisation projects and public housing development, in Iran. For instance, the government assigned the Association of Registered Iranian Architects (*Anjoman-e Me'maran-e Irani Diplomeh*) established in 1946 to design numerous public housing schemes, and collaborate with the Construction Bank (*Bank-e Sakhtemani*) as well as the Mortgage Bank (*Bank-e Rahni*) for the construction of the housing projects. The Association of Registered Iranian Architects (ARIA) was an organisation largely formed by Western-educated Iranian architects who intended to promote cross-cultural exchanges and to import new ideas to the country.[83] To fulfil the intermediary role between the modernist design principles and local architectural culture, leading figures of the ARIA, such as Ali Akbar Sadegh and Vartan Hoveisian, were actively involved in the early international architecture events (e.g., the CIAM congresses in the 1930s and the conferences organised by *Union Internationale des Architectes* -International Union of Architects, UIA- in the 1940s).[84] One of the well-documented instances of such fulfilment was the housing project of *Kuy-e Chaharsad-Dastgah*, a residential neighbourhood that was designed by Ali Akbar Sadegh, in 1946. Indeed, this project was the first housing scheme in the country that aimed to introduce the concept of low-cost housing to the government and accommodate over 400 low-income families, in East Tehran.[85]

As mentioned earlier, Mohsen Habibi divided the modernisation period between 1941 and 1979 into three stages of the Centralisation, Urbanisation, and Westernisation. The Centralisation period (1941-1953) started from the abdication of Reza Shah that allowed Iranian reformists for active involvements in Iran's socio-political and economic scenes. As Habibi noted, this period ended with the overthrow of Mohamad Mosaddeq and his administration through a military coup known as Operation Ajax (*Kudetay-e 28 Mordad*) engineered by the U.S. and British secret services, CIA and MI6.[86] In this period that lasted for 12 years,

79. See: Douglas Little, *American Orientalism: The United States and the Middle East since 1945* (The University of North Carolina Press: Chapel Hill, 2008).

80. For more information about 'creative modernism', see: Sami A. Hanna and George H. Gardner, *Arab Socialism* (Leiden: E. J. Brill, 1969).

81. Eric J. Hooglund, *Land and Revolution in Iran, 1960-1980*, vol. 7, Modern Middle East Series (Austin: University of Texas Press, 1982).

82. See: Abrahamian, *A History of Modern Iran*.

83. "Akhbar-E Anjoman," [The Association's News.] *Arshitekt* 1, no. 1 (1946): 39.

84. See: Bianca Devos and Christoph Werner, eds., *Culture and Cultural Politics under Reza Shah : The Pahlavi State, New Bourgeoisie and the Creation of a Modern Society in Iran*, vol. 18, Iranian Studies (London: Routledge, 2014).

85. For more information about this project, see: Rana Habibi, "The Institutionalization of Modern Middle Class Neighborhoods in 1940s Tehran - Case of Chaharsad Dastgah," *Cities* 60 (2017).

86. Habibi, *De La Cite a La Ville*, 186-90.

Iranian reformists formed four parliaments and they significantly gained political and economic self-determination to rule the country.[87] For their modernisation plan, they lay a distinct emphasis on the implementation of new legislations and political reforms, a 'modernisation from within' programme that was supported by an increase in Iran's share of oil profits from the Anglo-Iranian Oil Company (*Sherkat-e Naft-e Iran va Englis*) from 1935.[88] In this period, according to Habibi, Iranian modernist architects also played a vital role in developing urban planning documents, new urban projects and residential neighbourhoods in the cities.

Moreover, this Centralisation period witnessed the Iranian oil nationalisation movement (*Nehzat-e Melishodan San'at-e Naft*) initiated by Mohamad Mosaddeq in 1949 that led to the nationalisation of the Anglo-Iranian Oil Company in 1951. This ended British control over Iran's oil reservoirs; yet, it brought about international sanctions to the Iranian economy that were imposed by the British government, preventing Iran from exporting crude oil. In this context, to cope with the impact of the economic sanctions, the Iranian government upheld Iran's 'Economy without Oil' model, which was largely reliant on other types of local resources, rather than oil.[89] To investigate more thoroughly the extent to which the new legislations, urban planning documents, and the Iranian oil nationalisation influenced the development of public housing and the architecture of dwelling in Iran's Centralisation period, I aim to study two case studies that illustrate these influences: two district public housing schemes that were initiated/developed in the period of 1941-1951 and 1951-1953. In this period, the dual characteristics of the Iranian courtyard house type, I would contend, allowed for both incorporating imported models, and simultaneously resisting universalising tendencies towards homogenisation. Moreover, I would argue that in this period, user's involvement and participation was instrumental in the production of houses and development of new housing forms, in Iran.

The Urbanisation period (1953-1966), as Habibi defined, started from the overthrow of Mohamad Mosaddeq, and ended in 1966 when the country began to experience a new urban expansion approach, the moment that the Master Plan of Tehran was set in motion.[90] In this period, the U.S-Americans became a significant role player in Iran's political and economic scene. Overthrowing Mosaddeq was also a strategy for reconsolidating the 'modern' Iranian state, re-establishing royal authority, and re-defining the socio-economic and political position of Iran in the world system.[91] Further, through a new agreement known as 'Consortium' that focused on the access to and the distribution of Iran's oil fields and petroleum resources, the U.S. made Iran largely dependent on both American technical assistance and financial aid for developmental projects that facilitated the integration of Iran into the geography of capitalism.[92] Introducing the 'Open Gate' policy (*Siyasat Darvaze-haye Baz*) by the Iranian government in 1957, and the inauguration of the Shah's 'White Revolution' (*Enqelab-e Sefid-e Shah va Melat*) launched in 1963 also

87. As Abrahamian noted, in these years reformist formed four Majles: the thirteenth Majles between 1941 and 1943, the fourteenth Majles between 1944 and 1946, the fifteenth Majles between 1947 and 1949, and the sixteenth Majles between 1950 and 52. See: Abrahamian, *A History of Modern Iran*, 104.

88. After oil discovering in 1908 near the small city of Masjed Soleiman, d'Arcy and Burmah Oil established the Anglo-Persian Oil Company (APOC) in 1909 and the government enabled APOC to expand drilling activities in south Iran. After 1913, the British government became the main consumer of Iran's oil, and injected capital into the company for developing the oil-industry in Khuzestan. After a new agreement between the Iranian and British government that considerably increased Iran's share of oil profits, the APOC company was renamed Anglo-Iranian Oil Company (AIOC) in 1935, and it became British Petroleum (BP) in 1954, one of the antecedents of today's company. For more reading about the development of oil industry in Iran and its role in the development of cities, see: Carola Hein and Mohamad Sedighi, "Iran's Global Petroleumscape: The Role of Oil in Shaping Khuzestan and Tehran," *Architectural Theory Review* 21, no. 3 (2017).

89. For more reading about Mosaddeq's economy model, see: Anvar Khame-ie, *Eqtesad Bedune Naft: Ebtekare Bozrge Doctor Mosaddeq* [Economy without Oil: A Big Initiative of Dr. Mosaddeq] (Tehran: Nahid publication, 1996), 1-24.1996

90. Habibi, *De La Cite a La Ville*, 186-90.

91. Abrahamian, *Iran between Two Revolutions*, 419-26.

92. The new agreement, which formed a consortium of seven transnational oil companies, made Iran largely dependent on US aid. Based on the agreement, the AIOC retained a share of 40 percent in the Iranian oil industry, but more importantly, five US firms including Jersey Standard, Mobil, Socal, Texaco, and Gulf also gained a share of 40 percent, and took on the responsibility of expanding Iran's oil-industry in collaboration with Iran's Ministry of Petroleum. Furthermore, the 'Consortium' defined a share of 14 percent for Royal Dutch Shell, and a share of 6 percent for the French CFP. According to this agreement, Iran could only sell and trade its oil to the mentioned companies and these companies became responsible for finding, exploring, and extracting oil in Iran, for 25 years. Finally, the agreement guaranteed Iran for providing 50 percent interest from the oil profit. See: Little, *American Orientalism*, 57-58.

contributed not only to the expansion of consumerism, but also to urban sprawl, in Iran.[93] Within this context, the state-led modernisation project was largely instrumental in promoting U.S-American lifestyles, developing urban regulations, and designing building guidelines to re-organise traditional structures of Iranian society. To investigate the extent to which the policy of American development aid influenced the country's public housing design, I aim to study a housing project that was initiated/built in the Urbanisation period, to illustrate a shift of paradigm in the architecture of dwelling, in Iran between 1953 and 1966. In this period, the implementation of Truman's 'Point IV Programme', I would argue, became instrumental as a vehicle to transform the domestic landscape of urban Iran by promoting the apartment mode of living, among ordinary Iranians in the country.

The Westernisation period (1966-1979), as Habibi termed it, started from the implementation of a new urban development model in Iran based on the idea of 'Master Plan' for cities, and ended with the Iranian Revolution.[94] For the preparation of master plans, a scientific urban planning approach was taken based on the statistical analysis of available data such as population density; and a series of bylaws were approved by the government, such as the Act of Land Acquisition and Sale by Municipalities (*Ghanun-e Haq-e Tasarof va Forush-e Zamin tavasot-e Shahrdari-ha*), to ease the implementation of master plans in urban areas. In this process, the Shah's 'White Revolution' played a vital role.[95] This top-down modernisation project was instrumental in land reform throughout the country and as a strategy to integrate Iran more strongly into the economic system of capitalism.[96] As observed by Matin, the Cold War oil-led geopolitics of the 1960s and 1970s put Iran in the cross-fire of global influences, strongly affecting the Shah's White Revolution in all socio-political, and economic aspects.[97] This facilitated and exacerbated the involvement of transnational agencies and institutions in Iranian developments.[98] These engagements, according to Habibi, formed a main basis for the market-led approach and urbanism to the provision of housing in the country.

Moreover, this Westernisation period witnessed the 1973 global oil crisis, a moment that sent the West to a deep recession, but caused Iran's economic development to flourish.[99] In this period, as Habibi observed, the exponential oil revenues allowed the Shah to accelerate his socio-political project of reconstructing Iranian identity. The windfall oil profit of the mid-1970s empowered the Shah to reposition Iran in the world power system: from being as a passive county at the Cold War periphery to an influential role player in the global energy market.[100] Moreover, the oil wealth enabled Mohamad Reza Pahlavi to expand his ideals for producing "a way of life superior to both capitalism and communism",[101] which he termed as 'the Great Civilisation'.[102] In the field of art and architecture, it was Empress Farah Pahlavi that became a driving force behind this project. She sponsored the holding of several international architecture events in Iran, and involved many Iranian modernists and intellectuals, both secular and religious, in this socio-political

93. Habibi, *De La Cite a La Ville*, 194-96.

94. Ibid., 200-12.

95. The Shah's White Revolution had six main provisions as follows: 1) nationalisation of forests, 2) sale of public enterprises, 3) female suffrage, 4) profit-sharing schemes involving workers, 5) foundation of literacy corps, and 6) land reform. Later, under the pressure of religious leaders such and Islamic groups, the article of religious propagation units was added to the programme. However, the main aim of the White Revolution was the land reform carried out by the Minister of Agriculture: Hassan Arsanjani, and the pro-American prime-minister, Ali Amini. See: Mohsen M. Milani, *The Making of Iran's Islamic Revolution: From Monarchy to Islamic Republic* (Colorado: Westview Press, 1994), 46.

96. Ali Mohamad Ansari, "The Myth of the White Revolution: Mohammad Reza Shah, Modernization and the Consolidation of Power," *Middle Eastern Studies* 37, no. 3 (2001): 1-24.

97. Matin, *Recasting Iranian Modernity*.

98. Hein and Sedighi, "Iran's Global Petroleumscape."

99. The 1973 oil crisis began in October 1973 when the members of the Organisation of Arab Petroleum Exporting Countries proclaimed an oil embargo. The embargo was targeted at nations perceived as supporting Israel during the Yom Kippur War. In this context, Iran became a main supplier of oil for the countries such as the United States of America, England, France, and Germany, which tremendously increased Iran's oil-income in the mid-1970s. For more information, see: Elisabetta Bini, Giuliano Garavini, and Federico Romero, eds., *Oil Shock: The 1973 Crisis and Its Economic Legacy* (London, New York: I.B.TAURIS, 2016).

100. Little, *American Orientalism*, 221-26.

101. Abrahamian, *A History of Modern Iran*, 131.

102. Initiated in 1971, the 'Great Civilisation' (*Tamadon-e Bozorg*) was a complementary programme to the Shah's White Revolution, which aimed to turn Iran into a 'model' country in the world. The programme promoted that under the leadership of Mohamad Reza Pahlavi, everybody, from his birth to his death, would enjoy every kind of social insurance, and its standard of living would surpass that of Europe. For more information, see: Milani, *The Making of Iran's Islamic Revolution: From Monarchy to Islamic Republic*.

project;[103] so, they contributed to formulate a notion of 'regional identity' for developing new communities in Iran. To illustrate the extent to which the market-led urbanism and the socio-political project of reconstructing Iranian identity influenced the development of public housing and the architecture of dwelling in Iran's Westernisation period (1966-1979), I aim to investigate two housing projects that resulted from these influences. I will contend that in this period, the Shah's ideal modernisation paved a path for the 1960s ideals of the urban megastructure in the country. Further, I will argue that the architectural debates taken place in the 1970s Iran catered for fostering alternative approaches to the design of urban communities, and for promoting a hybrid form of housing based on a synthesis of socio-spatial patterns of inhabitation and non-local living ideals and Western standards, in the country.

Through this chronological ordering, this research offers an alternative reading of the process of urban modernisation in Iran, through the lens of public housing. This reading incorporates users' perspectives and people's participation in the development of new housing districts in the process of modernisation. It illustrates a change of paradigms in the design of public housing under the U.S-American technical assistance and economic aid, and it reveals an alternative approach to the notion of community making and design for human habitat in Iran. In other words, this doctoral research differs from all previous studies from a threefold point of view, as follows: 1) rather than focusing on institutionalisation of housing practices in Iran, it illustrates how the inhabitants of new residential districts became a main agent of development and transformation in the period of Centralisation; 2) while many previous studies claimed that the 1968 Master Plan of Tehran formed a basis for constructing apartment typologies in Tehran, this doctoral study shows that it was Truman's 'Point IV Programme' that paved the way for promoting the apartment mode of living, in Iran; and 3) this research demonstrates the role the Habitat Bill of Rights performed in fostering a hybrid form of housing and community making in the Westernisation period.

This doctoral dissertation consists of seven distinct chapters that study each of these periods through the lens of public housing design and development, and their impact on Iran's process of modernisation. Each chapter serves either as an autonomous writing or as part of a larger narrative. Except two chapters (Chapter 1 and 6), each chapter provides in-depth discussions on a representative housing model that reflects a novel account of the disciplinary debate in relation to each modernisation period. Furthermore, each chapter (Chapter 2, 3, 4, 5, 7) investigates a distinct housing project as a case study from its inception to the reality of its current state and performance. For each case study, thus, I aim to discuss how the architecture of dwelling accommodated growth, change, and transformation over time, and to what extent the design and development of public housing tried to resist against or to promote socio-political changes brought forth by the Iranian

103. For more reading, see: Ali Mozaffari and Nigel Westbrook, "Designing a Revolutionary Habitat: Tradition, Heritage and Housing in the Immediate Aftermath of the Iranian Revolution - Continuities and Disruptions," *Fabrications* 28, no. 2 (2018).

government and transnational interactions through new spatial arrangements. In this view, some intersection with previous studies and small overlaps between chapters were inevitable to form a coherent story throughout this research. For instance, in the first chapter, some ideas and hypotheses will be discussed that have been already addressed by some existing research, but without evaluating these ideas, the connection between the research's main hypotheses and the general picture on housing development in Iran will remain blurred. The other example could be the overlaps between the sixth and seventh chapter focusing on the last years of the 'Westernisation' period; while one addresses the architectural discussions of the 1970s that influenced the country's architecture of public housing, the other one examines these influences on a distinct case study. In other words, the sixth and seventh chapter could be seen as a continuation of one another with some overlaps, but each has its own focus to balance the length and readability of the text.

Apart from possible interactions between the content of the chapters, some overlaps might be foreseen in the ways that the case studies are analysed. Indeed, although the time-frame of each chapter includes a specific instance of urban modernisation process, it discusses both the transformation and the growth and change of each case study through time that would exceed the time-frame of each stage of Iranian modernisation. Further, a modified version of each chapter was submitted to or published in peer-reviewed academic journals such as *Housing Studies*, *International Journal of Islamic Architecture* (IJIA), *Planning Perspectives, Arena Journal of Architectural Research* (AJAR), and *the Journal of Architecture and Urbanism* for the sake of introducing the discussions and hypotheses of this research to architectural disciplinary discourses related to the process of urban modernisation. In addition, some chapters of this book were shortened into smaller pieces or rewritten to be published as part of peer-reviewed book-chapters.

Methods

In this study, I have relied on archival materials and second-hand literature on the topic of public housing, urban transformation, and socio-political modernisation during the second Pahlavi period. Subsequently, I applied these methodologies to five selected housing projects, which were initiated and developed in Iran's period of high-modernisation. Furthermore, I have analysed both the typological and morphological components of these housing projects. These results were combined with the outcomes of my site surveys in these residential districts and interviews conducted with some of the dwellers and stakeholders involved in the process of housing production and development in these neighbourhoods. This methodological approach aims at expanding current scholarship on Iran's process of urban transformation.

To rethink the architecture of appropriate habitats, this dissertation focused on the three main stages of Iran's high-modernisation period (1941-1979), triggered particularly from the oil-led geopolitics of the Cold War. To this end, I chose five public housing schemes: two projects from the first and third period, and one project from the second period. In fact, I believe that these housing projects illustrate the impact of each modernisation period on the architecture of dwelling in the second half of the twentieth century Iran; and they demonstrate how modernist Iranian architects, alone or in collaboration with their local and international counterparts experiment, promote, adapt, or resist new housing ideas through their design. In other words, these case studies are instrumental for understanding the transformation of the architecture of dwelling in Iran's three different stages of modernisation, as explained earlier, and the roles the agency of the dweller performed therein. Each case reflects early attempts of leading Iranian architects, who were mostly educated in the West, to translate, challenge, or mitigate the visions and realities of the state and the general public in the built environment.

To select the case studies in line with the objectives of this doctoral research, six main criteria were defined and employed. Accordingly, each selected case: (1) was constructed as public housing and its residents were enabled to adapt or transform their living environment, (2) designed by, or in collaboration with, Iranian architects, (3) were initiated and developed within the time-frame of this study, (4) stood out as an experiment among the housing schemes erected in each period of modernisation, meaning that the selected case would represent an early attempt of architects to introduce a new housing model or innovate with the design of dwelling, (5) illustrated the architecture of dwelling in relation to housing policies initiated by the Iranian government, and to social-political changes/influences brought about under the geopolitics of the Cold War in Iran, (6) characterised a typological shift, considering the built form in comparison with the projects realised in the former modernisation period.[104] I believe that these criteria helped me to select the projects that show how and what Iran went through in the period of high-modernisation, and illustrate what roles performed the agency of the dweller, therein.

After selecting some cases, I also conducted a literature survey to identify what has already been discussed about or written on the selected case studies. Interestingly, I found reviews that revealed dual assessments on some of the selected projects in relation to the use and performance of space. For instance, while the housing project of Shushtar-Nou was described as a failure in some analyses,[105] it was more often credited for its achievements, such as in creating a well-experienced living environment.[106] This triggered me to study and know more about this project. Furthermore, I conducted a site survey to observe and experience the reality of the selected projects, and relied on my own judgements as an architect. Accordingly, based on the defined criteria and my personal observations, I chose to investigate

104. To categorise housing projects based on their typological characteristics, I employed the three generic principles of built form, defined by Leslie Martin and Lionel March, in 1972. In their book, *Urban Space and Structures*, Martin and March categorised the built forms as freestanding 'pavilions', parallel 'streets', and inward-looking 'courts' that each in combination with land-use strategies would generate different building density, and subsequently urban forms. For more reading, see: Leslie Martin and Lionel March, eds., *Urban Space and Structures*, Cambridge Urban and Architectural Studies (Cambridge: Cambridge University, 1972). Later, this concept was further elaborated by Meta Berghauser Pont and Per Haupt as 'Spacemate', where they studied the impact of building height and urban density in relation to building typologies. They also identified low-, mid-, and high-rise freestanding pavilions as villas, apartment blocks, and towers, respectively. In their analyses, while low-rise parallel streets represented row-type housing, mid-, and high-rise parallel streets characterised slab-typologies. Further, low- and mid-rise inward-looking courts represented courtyard-type buildings; and high-rise inward-looking courts symbolised a (semi-)closed urban block. See: Meta Berghauser Pont and Per Haupt, *Spacemate: The Spatial Logic of Urban Density* (Delft: Delft University Press, 2004).; and *Spacematrix: Space, Density and Urban Form* (Rotterdam: NAi Uitgevers, 2010). These definitions, hence, helped to describe typological figures, representing the mainstream of housing schemes that were developed in each period of modernisation.

105. See, for instance: Mohammad Reza Shirazi, "From Utopia to Dystopia: Shushtare-No, Endeavours Towards a Paradigmatic Shift," in *Urban Change in Iran: Stories of Rooted Histories and Ever-Accelerating Developments*, ed. Fatemeh Farnaz Arefian and Seyed Hossein Iradj Moeini (London: Springer, 2016), 120-36.; and Ali Mozaffari and Nigel Westbrook, "Shushtar No'w: Urban Image and Fabrication of Place in an Iranian New Town, and Its Relation to the International Discourse on Regionalism," *Fusion*, no. 6 (2015).

106. Just to mention a few, see: Golnoosh Mozafari, "Shahr-E Harf-Haye Magoo: Shushtar-Nou," [The City of Untold Stories: Shushtar-Nou.] *Shahret: Nashriye-ie Darbareye Shahr* 6, no. Shahr va Jorm [City and Crime] (2016): 20-23.; and John Morris Dixon, "Traditional Weave. Housing, Shushtar New Town, Iran," *Progressive Architecture* 60, no. 10 (1979): 68-71.

and analyse five housing projects to pursue the objectives of this dissertation. The selected case studies are as follows: Kuy-e Chaharsad-Dastgah (1946-1950), Kuy-e Narmak (1952-1958), Kuy-e Kan (1958-68), Ecbatana (known as Shahrak Ekbatan) (1972-2006), and Shushtar-Nou (Shushtar New Town) (1975-85).[107]

Further, the typological portion of this research was based on the 'Plan Analysis' tradition, an analytical approach to architecture, urban design as well as landscape architecture that grew out of pedagogical experiences gained over the years at Delft University of Technology (TU Delft).[108] By employing this analytical method (i.e., 'redrawing', 'reduction', 'addition', and 'démontage' also known as 'exploded views'), the case studies were deconstructed and analysed in different typological and morphological components. In so doing, I aimed to unravel the complexity of decision-making in the design process, and to unfold underlying ideas that contributed to the performance of the projects, both physically and conceptually.

To investigate under which socio-political and economic conditions these projects came about, and to examine how these conditions influenced the design decision making process, an in-depth and systematic literature review was conducted on the both available English and Persian-written scholarly materials such as books and architectural journals, related to the history of modernisation and process of urban transformation in Iran. The documentation on the case studies, however, was not limited to reviewing secondary sources. To collect data related to the design/development of each case study, multiple personal and institutional archives were visited. Among the latter, the most important were Iran's National Archive, the archive of Iran's National Library, the archive of the Municipality of Tehran, the archive of Iran's Islamic Centre, the archive of Iran's Finance and Planning Organisation, the archive of the Ministry of Road and Urban Development, the archive of Iran's Housing Foundation, the archive of Ekbatan Redevelopment Company, the archive of some Iranian universities such as Tehran University, Iran University of Science and Technology, and Shahid Beheshti University, all located in Tehran, the archive of BP company in London, and the Archive of Jaap Bakema Study Centre in Het Nieuwe Instituut, Rotterdam.

Moreover, this dissertation benefited from drawing materials (e.g., urban layouts, floor plans, sections), reports, and design documents collected, by myself or in collaboration with my friends, from personal archives of architects or agencies, such as Research and Design Institute for Dwellings in Moscow, Ardalan Associates in Boston, Doxiadis Associates in Athens, and Kamran Diba in Paris, that were involved in the development of selected cases or in projects related to the urban transformation of Tehran.[109] Further, a series of interviews were conducted with leading Iranian architects such as Kamran Diba and Iraj Etesamand who were (in) directly engaged in designing some of the case studies, and with a few residents of the selected projects. Finally, collecting visual materials, such as old pictures from

107. In the Persian language, both Kuy and Shahrak means a large neighbourhood or a city district. Sometimes, Shahrak also connotates a small town. Shushtar-Nou also the new Shushtar, or more precisely, the new town of Shushtar.

108. For more reading, see: Bernard Leupen et al., *Design and Analysis* (Rotterdam: 010 Publishers, 1997).

109. In most cases, I contacted archives/insitutions/organisations outside the Netherlands by email. But, in a few cases, access to archival materials was only possible through an exclusive network. Thanks to my dear friend, Mohamad Reza Askari, who lives in Boston, U.S.A. and his contacts and networks, I was able to receive some notable archival materials from the U.S. Further, Phoebus Panigyrakis, his mother and friends eased my access to Doxiadis archive in Athenes; and Nikolay Erofeev helped me to access the archive of Research and Design Institute for Dwellings (RDID) in Moscow.

the family albums of these residents, movies from the online archive of Manoto TV, of BBC Persian Television, and of Islamic Republic of Iran Broadcasting (IRIB), were the other types of primary sources used to reinforce this dissertation. These archival materials were used by me to analyse the typological and morphological components of each project, and I combined the results of these analyses with the outcome of a site survey in the selected housing districts and with interviews conducted with some of the (current) dwellers of these projects.

Relying on direct/indirect observation and interpretation, the research method employed for this doctoral dissertation, thus, can be described as qualitative, empirical or inductive, since it involved "the search for pattern from observation and the development of explanations -theories- for those patterns through series of hypotheses."[110] This anthropological approach helped me to identify a series of patterns created by ordinary people through the appropriation and use of space, as well as change and modification in their living environment. Thus, this approach became instrumental to understand the role of the agency of the dweller in the transformation through time of their residential districts. In addition, this research benefited from the method of a 'design and typological study', which has been developed at TU Delft, a method that not only focuses on the description of the object, but also analyses and discusses the context under which a building type was initiated, developed, or transformed.[111] Thus, in order to sufficiently trace these typological transformations, this doctoral dissertation follows a historical sequence that goes beyond a mere chronological survey by explaining the emergence of new strategies, as well as their socio-political influences and repercussions that are reflected in Iran's architecture of dwelling.

Relevance

The geographical scope of this dissertation contributes to expanding the scholarly debate on the notions of 'non-Western' and 'Middle Eastern' Modernisation.[112] In the specific case of Iran, this study questions the influence of the country's geopolitical position during the Cold War, and its impact on the architecture of dwelling. This research examines the role that public housing performed in translating the visions and realities of multiple local-international actors of the built environment, addresses the contribution of Iranian architects for fostering an alternative way of adapting modernism to the design of urban communities in the second half of the twentieth century, and discusses the role that the agency of the dweller performed in the development and transformation through time of their housing districts. Building upon and connecting to current scholarly debates on the non-Western modernisation process, this doctoral study aims to offer a new insight in this process through the lens of public housing design and user engagement.

110. Harvey Russell Bernard, *Research Methods in Anthropology: Qualitative and Quantitative Approaches* (Lanham, New York, Toronto, Oxford: AltaMira Press, 2006), 7.

111. For more reading, see: Taeke de Jong and Theo van der Voordt, eds., *Ways to Study and Research Urban, Architectural and Technical Design* (Delft: DUP Science, 2002).

112. See, for instance: William Siew Wai Lim and Jiat-Hwee Chang, eds., *Non West Modernist Past: On Architecture & Modernities* (Singapore: World Scientific Pub, 2012).; Duanfang Lu, ed. *Third World Modernism: Architecture, Development and Identity* (New York: Routledge, 2011).; and Sandy Isenstadt and Kishwar Rizvi, eds., *Modernism and the Middle Eas: Architecture and Politics in the Twentieth Century* (Seattle: University of Washington Press, 2008).

As observed by scholars such as Nezar Al-Sayyad and Mark Crinson, public housing development was a political strategy employed by the governments of most non-Western countries for nation-building, urbanisation, and promoting the notion of 'modern' living among the general public.[113] Similarly, Hasan-Uddin Khan also defined public housing projects as a tool for nation-building and a response to housing crisis in the context of the Middle East, although he put more emphasis on the matter of housing as a framework that provided an ideological justification for the leaders in this region to position their country in the network of 'modern' states and 'civilised' world.[114] However, this process followed a distinct path in Iran, since this country has never experienced a postcolonial development period, especially under the supervision of Western urban planners and designers.[115] In Iran, for instance, constructing affordable housing was not only a strategy to respond to the rapid growth of urban population, but also an architectural tool to negotiate the modernisation ideals and the vernacular patters of inhabitation. This study, therefore, shows how leading Iranian architects mediated local and imported architectural models; and how their housing solutions became a physical expression of both the state's modernisation demands and people's everyday needs, which eventually enabled the users of space for engagement and participation. It demonstrates the extent to which they contributed to facilitating, promoting, or resisting changes to the architecture of dwelling in Iran; and their housing models accommodated continual growth and constant change over time.

This dissertation not only sheds light on the transformation of housing schemes and the stakeholders involved in this process; but it also contributes to bring forth awareness of an urgent need for access to affordable and decent living environments through the design of housing, particularly in the so-called 'Urban Global South', to the public debate.[116] Connecting to the fascinating work of Jan Bredenoord, Paul van Lindert, and Peer Smets, in *Affordable Housing in the Urban Global South: Seeking Sustainable Solutions*,[117] this research highlights some attempts and achievements of architects in designing 'inclusive cities for all', including the urban poor, through different housing policies in Iran. Similar to themes investigated in earlier works such as 'housing policy for human well-being' and 'the impact of housing policy on plurality of provision',[118] this study examines the role multiple actors performed in shaping housing policies, and how these policies influenced both the architecture of affordable housing and the domestic landscape of ordinary Iranians.[119] This dissertation aims to expand public knowledge on the ways housing policies and designs shaped the identity of Iranians and caused rapid urbanisation, and on the role of both architects and end-users therein.

Lastly, in a time where the production of affordable housing is a responsibility delegated to the profit driven entities, such as semi-governmental institutions and private developers, this research advocates for a shift back to focusing on the users' needs and involvement in the design/development of urban communities.

113. For more reading, see: Nezar Alsayad, "From Modernisation to Globalisation: The Middle East Context," in *Modernism and the Middle East: Architecture and Politics in the Twentieth Century*, ed. Sandy Isenstadt and Kishwar Rizvi, Studies in Modernity and National Identity (Seattle: University of Washington Pres, 2008).; and Mark Crinson, *Modern Architecture and the End of Empire*, British Art and Visual Culture since 1750, New Readings (Aldershot, Hants, England: Ashgate, 2003).

114. Hassan-Uddin Khan, "Introductory Essay - Expressing Identities through Architecture, from Colonialism to Pluralism," in *World Architecture 1900-2000: A Critical Mosaic*, ed. Kenneth Frampton and Hassan-Uddin Khan (Wien, New York: Springer-Verlag, 2000), XVII-XLI.

115. Iran and Turkey were the only Middle Eastern countries that have never experienced colonialization. For more information, see: Abrahamian, *A History of Modern Iran*.

116. For some scholars and many non-governmental organisations (NGOs), the term global South generally "refers to countries classified by the World Bank as low or middle income that are located in Africa, Asia, Oceania, Latin America and the Caribbean. This definition uses the term in a descriptive manner and is simply the most recent in a long list of catch-all concepts used to identify, define, and cluster the 'poorer parts of the world'. Therefore, like its predecessors (periphery; less-developed, developing, underdeveloped; third world) it lumps together very diverse economic, social and political experiences and positions into one overarching category." For more reading, see the article, "Global South: what does it mean and why use the term", written by Marlea Clarke in: https://onlineacademiccommunity.uvic.ca/globalsouthpolitics/2018/08/08/

117. See: Bredenoord, Lindert, and Smets, *Affordable Housing in the Urban Global South: Seeking Sustainable Solutions*.

118. For more information, see: Ramin Keivani and Edmundo Werna, "Refocusing the Housing Debate in Developing Countries from a Pluralist Perspective," *Habitat International* 25 (2001).; and Ivan Turok, "Housing and the Urban Premium," ibid.54 (2016).

119. In recent years, a few studies have been conducted to reveal the impact of housing policies on the quality of living in affordable housing schemes, from social and environmental perspectives, in Iran. For instance, see: Ayyoob Sharifi and Akito Murayama, "Changes in the Traditional Urban Form and the Social Sustainability of Contemporary Cities: A Case Study of Iranian Cities," ibid.38 (2013).; Vahid Moghimi, Mahmud Bin Mohd Jusan, and Payam Izadpanahi, "Iranian Household Values and Perception with Respect to Housing Attributes," ibid.56 (2016).; and Sebastian Seelig, "A Master Plan for Low Carbon and Resilient Housing: The 35 Ha Area in Hashtgerd New Town, Iran," *Cities* 28, no. 6 (2011). However, these studies unexamined how public housing policies influenced the architecture of dwelling and the domestic landscape of ordinary people, in Iran.

Rather than considering affordable housing as a commodity with a minimum and basic standard, this research would rely on sources that highlight the importance of resident's cultural and psychological needs such as 'togetherness, belonging, and wholeness', as Sam Davis suggested.[120] This research, thus, takes an approach that promotes the necessity of dwelling designs preserving both the dignity and humanity of those who inhabit the built environment.

Summary of Contents

The first chapter of this doctoral research, "Iranian Dwelling Culture: Identifying Vernacular Socio-Spatial Patterns of Inhabitation, from Past to Present", provides a short review on how the local archetype of the 'courtyard-garden' contributed to shaping an ideal form of living: the Iranian courtyard house type (*Khaneh-Bagh*). Through archival research and based on the critical reading of the works of scholars, who conducted in-depth studies on traditional Iranian house typologies, this chapter sketches a comprehensive historical backdrop for this research. This review is instrumental to understand how this ideal house type has been discussed and addressed in architectural scholarly materials, and what characteristics have made this type as intangible archetype. Reflection on these debates would help me to gain a deeper insight on the development process of this house type, on some socio-spatial patterns of inhabitation that it inspired and shaped, and on the ways this house type and its related patterns were perceived/used by its inhabitants, and accommodated growth and change over time. Finally, I will briefly discuss how the 1908 oil discovery in Khuzestan, a region in south-west Iran, set a basis for introducing new urban landscapes, in the country. In spite of the fact that these new urban projects partly inspired many Iranian modernist architects to rethink local dwelling models, it was a set of municipal planning documents that triggered change in Iranians' everyday life, which will be discussed in the next chapter.

The second chapter, "Planning Documents & Design Tools: Deconstructing Iranian Courtyard House, the Formation and Evolution of Kuy-e Chaharsad-Dastgah (1946-1950)", focuses on the early years of the 'Centralisation' period. It discusses the transformation of the traditional Iranian courtyard house type and neighbourhood structure, and the design of public housing in the 1940s Iran. This chapter explores how (urban) legislations enacted by Iranian reformists and urban planning documents contributed to change the image of urban areas and people's everyday life, particularly in Tehran. It discusses how urban planning documents were used by Iranian urbanist/architects as a tool for transforming local lifestyles and the courtyard-garden house (*Khaneh-Bagh*). Further, this chapter shows how the transformation of this house type became an instrument of both accommodating change and resistance in terms of local habits and customs, in

120. Sam Davis, *The Architecture of Affordable Housing* (Berkeley: University of California Press, 1995), 1-9.

Kuy-e Chaharsad-Dastgah, built between 1946 and 1950 in Tehran. Indeed, this housing neighbourhood has been extensively studied with a major focus on its early conception and formation that created a local form of modernity. However, since its realisation, this project has dynamically changed by its inhabitants, and it adapted itself to new urban development and transformation programmes. In this chapter, I would argues that the dual characteristic of the Iranian courtyard house was instrumental to accommodate constant growth and changes in this project, in the past 70 years. Investigating the evolution of Chaharsad-Dastgah unravels the extent to which incorporating both private and collective courtyards in the design of large-scale housing schemes would cater for a strong sense of belonging to the place among the dwellers, after such transformations. In the next chapter, I will discuss how this form of transformation was triggered by a particular land-ownership system, and how the land-owners contributed to increasing the urban density of their residential neighbourhood.

The third chapter, "Urban Density & Participation: The Growth and Change of an Inclusive Urban Community in Tehran, Kuy-e Narmak (1952-58)", sheds light on the last three years of the 'Centralisation' period. This chapter discusses the socio-political conditions, triggered by the oil-led geopolitics of the early Cold War, under which the pilot project of Narmak came about. This chapter examines the extent to which the 'vernacularisation' of Narmak resulted from an entwined relation of three factors: design decisions, a financial model, and a particular system of land-ownership, and how it allowed for continual growth and change over time, in this project. Initiated under the auspices of Mosaddeq's Modernisation programme, Narmak was designed by a group of European-educated Iranian architects that collaborated with the government to develop affordable housing solutions in the early-1950s Tehran. They were partly inspired by the modernist ideology of the functional city, which they mingled with references from vernacular architecture to design this project. Over the last six decades, the number of households living in Narmak increased dramatically, from the initial goal of accommodating 7,500 families, to the actual 90,000 families, at present. This chapter, therefore, discusses how the initial design decisions were instrumental to cope with this extraordinary increase in the district's building and population density. In short, it argues that the plan's rigid urban form has become instrumental in defining a neutral background to accommodate the ever-changing social and spatial practices of its inhabitants, resulting in a high-density and socially inclusive urban community.

The fourth chapter, "Point IV & Apartment Typology: Redesigning the Iranian Domestic Landscape under American Development-Aid Policy, Kuy-e Kan (1985-1968)", focuses on the period of 'Urbanisation', in Iran. It examines how Kuy-e Kan was developed under the U.S-American influence, and discusses how foreign living standards and housing ideals pervaded Iran's architectural discipline and bureaucratic apparatus from the 1950s through the early-1970s. This chapter

shows how from the mid-1950s through the 1960s, the Iranian government, in collaboration with local architects, developed one of the most extensive public housing programmes in the Middle East. In fact, the programme was increasingly influenced by the U.S. development aid agenda that supported the rule of the royalists loyal to Mohamad Reza Shah, after the military coup against Mohamad Mosaddeq. This housing programme was included in Iran's 'Second Development Plan' (1955-62), and designed to re-organise traditional family structures of the working class. On the one hand, the plan aimed at changing the everyday life of ordinary people and their domestic space, re-educating women, and changing Iran's traditional home economy. On the other, it intended to counter the spreading Soviet influences in that region. This chapter discusses how, under the auspices of Truman's Point IV programme, the FPO and the Construction Bank developed Kuy-e Kan as a pilot project for a new housing paradigm; and it contends that the housing scheme of Kan illustrates the change of paradigm that transformed the Iranian domestic landscape and the country's public housing policies in the early-1960s. Finally, this chapter concludes that while the housing model of Kuy-e Kan was largely shaped by the triumph of global and American-based consumer culture, it illustrated the pervasive attempts of some leading Iranian architects to both accept the phenomenon of universalisation in the design of public housing schemes, and simultaneously safeguard Iran's local heritage in the 1960s.

The fifth chapter, "Megastructure Reloaded: Examining a New Technocratic Approach to the Development of Public Housing in Iran, Shahrak Ekbatan (1968-1992)", explores the 'Westernisation' period. This chapter discusses how the Cold War geopolitics and the Shah's 'White Revolution' paved a path for the 1960s ideals of the urban megastructures in Iran. It argues that the utopian architecture of megastructure movements, along with cutting-edge technologies, profoundly influenced public housing policies and the architecture of dwelling, in Iran, and discusses how the ideas of megastructure movements were institutionalised in the country through the implementation of Tehran's masterplan designed by Victor Gruen and Abdolaziz Farmanfarmaian. This chapter examines how, under the U.S-American free-market foreign policy from the mid-1960s to the early-1970s, the Tehran Redevelopment Company (TRC) collaborated with a New York-based firm, Starrett Housing Corporation, to undertake one of the most extensive and innovative Middle Eastern public housing projects: Shahrak Ekbatan. As part of Tehran's masterplan, the Ekbatan scheme accommodated 15,500 low- and middle-income families, especially those of civil servants. Indeed, the development aimed to change the everyday life of middle-class people, as promoted by Tehran's masterplan. To achieve the intended goals, the TRC assigned two Iranian architects, Rahman Golzar and Fereydoun Azari, and asked Gruzen and Partners (U.S.A.) as well as Space Group (South Korea) to create a prototypical model, which resulted in the selection of the strongly collective urban form of a gigantic Brutalist concrete megastructure. While illustrating how Ekbatan was shaped by the 1960s ideals of

megastructure movements, this chapter examines the extent to which this housing scheme accommodated change in its urban layout. It argues that rather than local architectural references, it was a sense of 'otherness' that eventually enabled a type of space that empowered residents of Ekbatan to create their own sense of familiarity with this new built form.

The sixth chapter, "Continuity & Change: Framing a New Discourse on the Architecture of Regionalism in the 1970s", focuses on the last years of the 'Westernisation' period. It discusses how a number of emerging architects from the developing world in general, and from Iran in particular, contributed to fostering and promoting an alternative way of adapting modernism to the architecture of housing and to the formation of urban communities in transforming societies. This chapter shows why and how a group of young-leading Iranian architects such as Nader Ardalan and Kamran Diba organised a series of architectural events in the 1970s Iran to discuss a notion of continuity and change in the design of urban communities, and to address issues pertaining to the relationship between local culture and industrialisation. Among these events, the second Iran International Congress of Architects, IICA, held in Persepolis-Shiraz in 1974, attracted many leading and international architects of that time, such as Josep Lluis Sert, Kenzo Tange, and Jacob Bakema; and it became a turning point. This congress resulted in the provision of the 'Habitat Bill of Rights', a CIAM-like charter submitted by the Iranian government to the first UN conference on 'Human Settlements', in 1976. This chapter argues that the 1974 IICA and the 1976 habitat document played an instrumental role in shaping a discourse on the notion of architectural regionalism in the design for human habitats. Finally, it is shown how the ideas presented in the Habitat Bill of Rights and its only appendix that focused on the case of Iran, became a catalyst for changing the design of housing in the country. This will be discussed more in-depth in the next chapter.

The seventh chapter, "Open-ended Total Habitat: A Forgotten Episode of Architectural Regionalism in the 1970s Iran, Shushtar-Nou (1975-1985)", might be seen as a continuation of the previous chapter, focusing on the last years of the 'Westernisation' period. This chapter reflects on the 1974 IICA debates and discusses how these discussions influenced the works of the IICA organisers, in particular those of Kamran Diba, who had a great interest in designing non-profit public works. To illustrate these influences, this chapter discusses the community model of Kamran Diba for Shushtar-Nou, designed as a company town in south-west Iran. It analyses the urban form and development of this project by examining how Diba incorporated the ideas discussed in the 1974 IICA and illustrated in the Habitat Bill of Rights into his design proposal for Shushtar-Nou. This chapter illustrates how Diba's Habitat model is formed through a novel synthesis of two architectural approaches. The first approach was a critical reinterpretation of archetypal elements, similar to the cases of *Khaneh-Bagh, Meydan-Bagh,* and *Chahar-*

Bagh that formed a locus for activating people's collective memory. The second was developing a collective open-ended urban form, as discussed by the Team X participants of the 1974 IICA, to accommodate growth and change over time. Finally, this chapter demonstrates the extent to which Diba's community model contributed to the emergence of a regionalist discourse for the architecture of dwelling and triggered a shift of paradigm in the design of public housing, in Iran.

In the epilogue, "The Architecture of Appropriate Habitats", it is emphasised that Iran's process of modernisation, through public housing development, was not linear and top-down, but multiple and based on a careful negotiation of the state's political motivations and some local socio-spatial patterns of inhabitation. It is shown that the design mechanism, incorporated into the investigated case studies in this doctoral dissertation, enabled for a continual growth, change, and transformation over time, and empowered the users of space to designate a set of relations with all the others and to create a common experience of place. It is highlighted that a driving force behind the works of most leading Iranian architects was to fulfil the goals of the state's ambitious modernisation projects, and to simultaneously resist universalising tendencies in the architecture of dwelling, through the involvement of people in developing their neighbourhoods. Indeed, this resulted in a harmonious co-existence between heterogeneous practices and homogeneous structures (i.e. individually modified and collectively standardised) in one project, particularly through (re)interpretation and mediation. Finally, I argue that from my own point of view, each housing project studied in this doctoral dissertation is embedded with a form of inhabitable voids that could be seen or read as heterotopia, as Michel Foucault put it.[121] In these projects, incorporating some intangible local archetypes, such as the 'Persian Garden', contributed to create a place that the 'other' space would flourish, encouraging participation, joy, and engagement. These heterotopic voids might have a creative potential to be perceived as an omnipresent tool from the disciplinary toolbox of architecture that would cater for the design of appropriate human habitats.

121. The word, 'hetero-topias', means literally 'other places', a term that Michel Foucault coined in his 1967 lecture for architects: 'Of Other Spaces: Utopias and Heterotopias'. "Pointing to various institutions and places that interrupt the apparent continuity and normality of ordinary everyday space", Foucault defined heterotopia as a mirror or physical representation of a utopia, a parallel space that makes a real utopian space possible. For more information, see: Michel Foucault, "Of Other Spaces: Utopias and Heterotopias," in *Rethinking Architecture: A Reader in Cultural Theory*, ed. Neil Leach (New York: Routledge, 1997), 330-36.

01 • Iranian Dwelling Culture

Identifying Vernacular Socio-Spatial Patterns of Inhabitation: From Past to Present

Introduction

To investigate what roles the courtyard-garden and its related urban-architectural models played in activating people's participation and their collective memory in Iran's period of high-modernisation,[1] I conduct a short review on how historically, this local archetype contributed to shape an ideal form of living: the Iranian courtyard house type, mostly known as the *Khaneh-Bagh*. This review is largely based on the critical reading of the works of architectural scholars including Mohamad Karim Pirnia, Masoud Kheirabadi, Hamed Khosravi, Gholamhossein Memarian, and Fatemeh Kateb, who conducted in-depth study on traditional Iranian (courtyard) house typologies and neighbourhood structures.[2] Indeed, while expanding the existing body of knowledge, this review is also instrumental to understand how this ideal house type has been discussed and addressed in architectural scholarly materials, and what characteristics have made this type as an intangible archetype. Further, reflection on these scholarly debates would help me to gain a deeper insight on the development process of the Iranian courtyard house type, on the ways it was perceived, used and changed by its inhabitants, and on some vernacular socio-spatial patterns of inhabitation that it inspired and shaped. In this chapter, thus, I aim to reflect on the discussions related to the

1. Iran's period of High-modernisation, as defined by Eskandar Mokhtari, is a period stretching from the post-World War II (WWII) until the 1979 Islamic Revolution. See: Eskandar Mokhtari Taleghani, *Miras-E Memari-E Modern-E Iran* [Iran's legacy of Modern Architecture] (Tehran: Fekr-e Nou, 2011).

2. See, for instance: Hamed Khosravi, "Camp of Faith: On Political Theology and Urban Form" (Ph.D dissertation, TU Delft, 2014); Fatemeh Kateb, *Memari Khane-Haye Irani* [The Architecture of Iranian Houses] (Tehran: Sazman Chap va Entesharat, 2012); Golamhossein Memarian, *Ashnaee Ba Memari Maskuni Irani: Gunehshenasi Darungara* [Understanding the Architecture of Housing in Iran: The Introverted Typology] (Tehran: Iran University of Science and Technology, 1994); Mohamad Karim Pirnia and Golamhossein Memarian, *Ashnaee Ba Memari Eslami Iran* [Understanding the Islamic Architecture of Iran] (Tehran: Soroush Danesh, 2006); and Masoud Kheirabadi, *Iranian Cities, Formation and Development* (New York: Syracuse University Press, 2000). The latter book was originally published in 1991, by The University of Texas Press.



Figure 1.01: Early Paradise by Athanasius Kircher.
Source: Arc Noe, accessable in Division of Rare and Manuscript Collections, Cornell University Library (ID Number: RMC2007_1029). The image is also available in: https://digital.library.cornell.edu/catalog/ss:549980

traditional courtyard-garden house that would provide a comprehensive historical backdrop for this doctoral study. Finally, this chapter will briefly mention how the 1908 oil discovery in the region of Khuzestan, a province in south-west Iran, set a basis for introducing a new urban landscape and expanding new urban lives and housing models in Iran, which was in contract with traditional local lifestyles.

Historical Background

The courtyard house type is widely described as an "introverted form defined by an open court shielded from the outside by the built spaces that surround it."[3] It was argued that privacy is a vital characteristic of this type, where high walls form an enclosed and intimate private garden that is accessible from any room of the house.[4] Yet, in addition to these characteristics, it seems that this walled domain also created a condition to make any form of life possible, rather than being only a space of exclusion or privacy. In fact, the walls created an inhabitable void as a locus of everyday life and practices, mainly in the barren areas of the Iranian Plateau.[5]

Historically, the courtyard-garden house type has manifested an ideal place for living: the terrestrial Paradise (*Pardis*).[6] As Patrick Healy wrote in the notes on the 52nd International Art Exhibition of the Venice Biennale, paradise "signifies and has the sense of a dwelling place, earthen enclosure, of those intimately associated with death."[7] Similarly, Bruce Lincoln, a well-known scholar in religion studies, defines paradise as "a space of re-creation in the most precise and most profound sense."[8] In both interpretations, interestingly, the concept of paradise represents an exceptional place that would make life a unique experience in the world. Etymologically, the very root of the word, paradise, can be traced in the old Persian term *pairi-daêzã*.[9] It is combined of two parts: 'pairi', which literally means 'around', and 'daêzã' or 'diza', which stands for 'fort' or more precisely 'enclosure'. These words together define a walled domain with certain spatial relation with its surrounding, an inhabitable void that represents a place of exceptional happiness, and mirrors the sacred heaven on the earth to dwell Adam and Eva.

The image of this inhabitable void is perfectly demonstrated by Athanasius Kircher's *Arca Noë*: Early Paradise [Figure 1.01]. As observed by Hamed Khosravi, Kircher illustrated paradise as an enclosed void, where the walls arrange space.[10] In this drawing, the exterior is unmanaged and uninhabitable, while the interior is organised by a garden and set of trees, and therefore, habitable. Interestingly, the void is represented in a diverse and constant state of flux with outside, where the boundary of the void and its relation to the exterior is mediated, negotiated, and articulated through static and dynamic thresholds: open gates protected by guardian angels, and the body of river. In this model, the void shapes and is

3. Nasser Rabbat, *The Courtyard House: From Cultural Reference to Universal Relevance* (Burlington, USA and Surrey, England: Asligate Publishing Limited, 2010), xxi.

4. Macintosh Duncan, *The Modern Courtyard House: A History* (London: Lund Humphries for the Architectural Association, 1973), 7.

5. The Iranian plateau is a "vast part of central and southwest Asia. It is bound by Amu Darya River on the east, Cora River on the northwest, Sind River on the southeast, and Euphrates on the southwest. Pamirs and Hindu Kush mountains on the east, the Central Asia plains, the Caucasus mountains on the northwest, the Zagros mountains and Mesopotamia on the west, and the Persian Gulf and Sea of Oman on the south. Iran, with an area of about 1.648 million square kilometers, is just part of the plateau. Therefore, the great Iranian plateau is a triangle with its main vortex located in the Caucasus and its base being a hypothetical line connecting Jeihoun river to estuary of Indus in the Sea of Oman. This vast area has been a crossroads where various peoples have met and this has had great impact on evolution of a common history and culture among peoples living in this region." This area used to be the living ground for early Indo-European tribes. See: http://www.iranreview.org/content/Documents/The_Union_of_Iranian_Plateau.htm

6. See also: Khosravi, "Camp of Faith."

7. Patrick Healy, "La Difesa Della Natura." Also available in: http://www.fiuamsterdam.com/html/patrick_healy_-_la_difesa_dell.html, accessed 16 June 2014.

8. Bruce Lincoln, "À La Recherche Du Paradis Perdu," *History of Religions* 43 (2003): 153.

9. The word, Pairidaêzã, is an Avestan term (the Iranian language of Zoroastrian). The word entered to Greek as parádeisos (παράδεισος), then to Latin as paradisus, to French as paradis, and to English as paradise. In today's Persian language, this word is usually used as pardis.

10. This illustration is also extensively discussed in Hamed Khosravi's research. See: Khosravi, "Camp of Faith," 74-78.



Figure 1.02: typical traditional settlement in Central Iran depicting small cities and villages in the form of voids and habitable spaces.
Source: Photograph by Dmitri Kessel, in *Life Magazine*, available at: http://images.google.com/hosted/life/845e6351e24778de.html (top); and photograph by Georg Gerster in 23 Sep 1977, and published in *Paradise Lost: Persia from Above* (London/ New York: Phaidon Press, 2008): 60-61 (bottom).

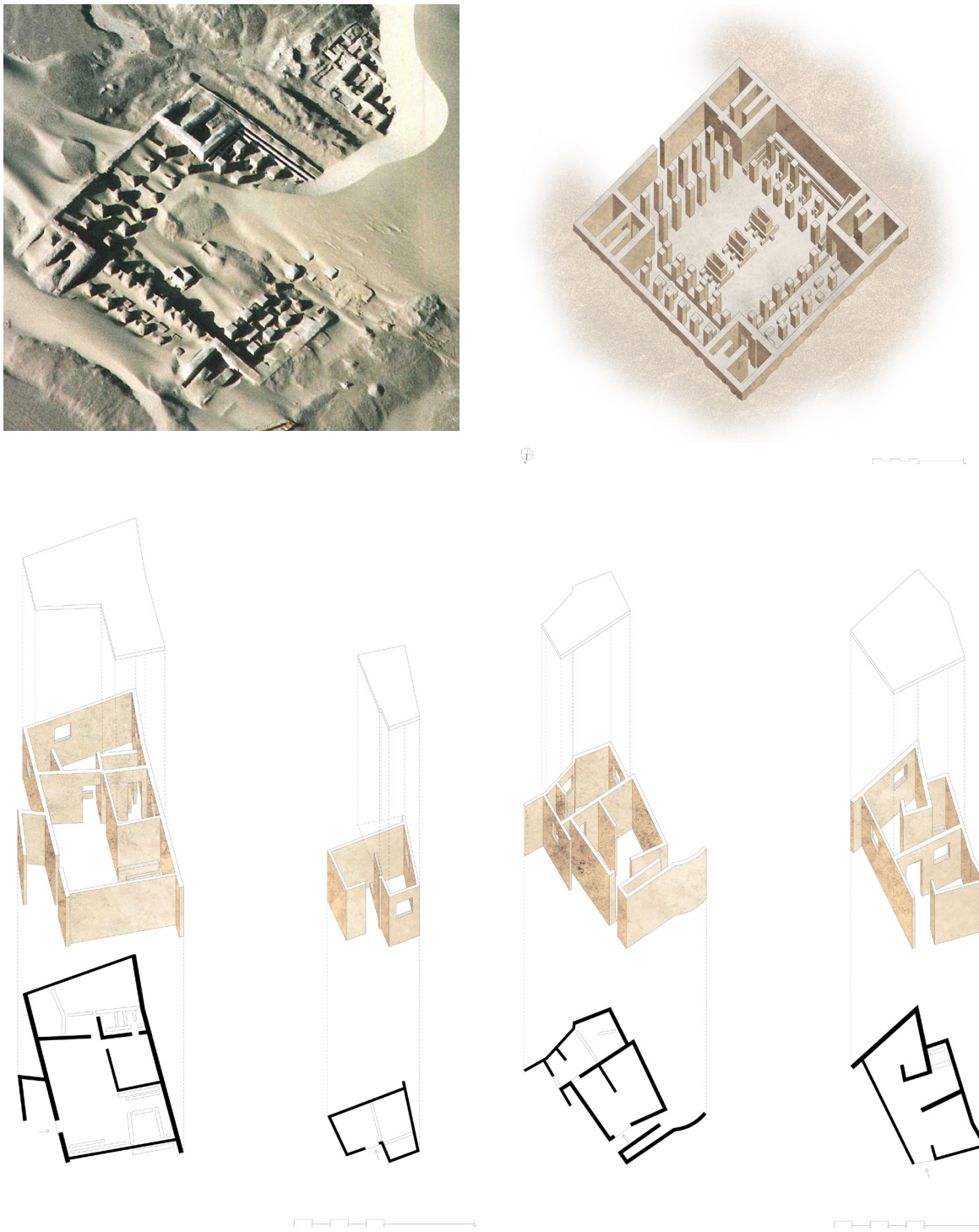


Figure 1.03: the images on the top illustrate Building No.3, and the illustrations on the bottom depict 4 excavated houses in Tapeh Zagheh (east Iran). Source: photograph by Georg Gerster and published in *Ancient Iran from the Air* (Mainz: Verlag Philipp von Zabern, 2012) (top-left), 71; and the illustrations by Mohamad Sedighi in collaboration with Federico Pellegrini.

shaped by its boundary; thus, the void and its enclosure, inseparably, become the dwelling. While the void together with the wall running around its perimeter became the habitable space, the dwelling, it is the closure, specificity and identity of the void, the courtyard with garden, as Azadeh Shahcheraghi put it,[11] that permits the freedom of the perimeter for adaptation and differentiation of this type to various programmatic and contextual circumstances.[12] In this courtyard-garden type, as observed by Hamed Khosravi, the wall and void inseparably shaped the corpus of the dwelling, an actual model of living that is still traceable in traditional settlements of Iran [Figure 1.02].[13]

The courtyard-garden house might also be considered as a resilient and adaptable regional type. For instance, in the vast geographical domain of the Iranian plateau, widely characterised by semi-arid landscape and harsh climatic conditions, this courtyard house was defined as the best architectural solution for the provision of housing.[14] High walls cut off the sun and overshadowed large areas of the inner surfaces and the courtyard floor during the day. Indeed, the walls created a protected and pleasant outdoor space, mostly in the form of private gardens where people were able to conduct small agricultural activities. This might, thus, explain why numerous studies on courtyard housing addressed environmental adaptability and thermal comfort as two main features of this typology.[15]

This adaptability of the courtyard provides an outdoor space for everyday life and socio-cultural practices. For instance, the inhabitants habitually used courtyards as a place for outdoor living, cooking, or performing their religious rituals, particularly related to Zoroastrianism or Islam. It is this adaption to everyday living practices that has caused a great amount of scholarly material describing the typology as a microcosm of its surrounding society.[16] Moreover, the introverted spatial organisation of this type is often associated with ideological specificities of Islam.[17] These spatial features were compatible with the requirements provided by the Islamic laws (*Sharia*) for segregating the genders and providing veiled spaces. This inward focused nature of the courtyard has allowed the preservation of religious doctrine and traditional lifestyles in the region.[18]

This being said, the existence of the inward-oriented courtyard-garden house type can be traced back in the settlements constructed long before the advent of Islam or even Zoroastrianism. One of the early examples of such a type was found in the historic site of *Tapeh Zagheh*, an area in central Iran dated back to the fifth millennium BC.[19] In this settlement, individual dwellings were constructed as a walled-off domain, within which a few rooms were arranged around a central void: the courtyard.[20] Another primary, but outstanding, sample of this house type with a well-defined courtyard can be found in Building No.3 (*Sakhteman Shomareh 3*), located at the archaeological site of Dahaneh-e Gholaman, in south-east Iran [Figure 1.03].[21]

11. In her analysis, Azadeh Shahcheraghi, a well-known Iranian landscape scholar and designer, defined the garden embedded in a courtyard as the identity of Iranian courtyard house, and the courtyard-garden type as the representative of Iranian architecture. See: Shahcheraghi, *Paradaym-Haye Pardis: Daramadi Bar Bazshenasi Va Bazafarini Bagh-E Irani*, 84.

12. As observed by Michael Dennis in a comparison between the spatial layout of Hotel Beauvais in Paris and Jam-e Mosque in Isfahan, "the regular symmetrical shape of the courtyard conceals the varied rooms disposed around it and also, therefore, the irregularities of the site. This kind of organisation, platonic and controlled on the inside and irregular and accommodating on the perimeter, is extremely evocative and is reminiscent of freestanding composite buildings, such as the typical monastic plan, and of urban 'field' buildings, such as the Friday Mosque at Isfahan." For more reading, see: Michael Dennis, *Court & Garden: From the French Hotel to the City of Modern Architecture* (Cambridge, Massachusetts: The MIT Press, 1986), 75.

13. See also: Khosravi, "Camp of Faith."

14. Golamhossein Memarian, *Ashnaee Ba Memari Maskuni Irani: Gunehshenasi Darungara* [Understanding the Architecture of Housing in Iran: The Introverted Typology] (Tehran: Iran University of Science and Technology, 1994), 1-21.

15. Just to name some: Brian Edwards et al., eds., *Courtyard Housing: Past, Present and Future* (Abingdon England: Taylor & Francis, 2006). Craig Hinrichs, *The Courtyard as Dwelling*, vol. 6, Traditional Dwellings and Settlements Working Paper Series (Berkeley: Center for Environmental Design Research, University of California at Berkeley, 1989). And Vahid Ghobadian, *Barresi Eghlimi Abnieh Sonati-E Iran* [Climatic Assessment of Traditional Iranian Building Types] (Tehran: Tehran University, 2007).

16. For instance, see: Mary Boyce, *History of Zoroastrianism*, vol. Volume II (Leiden and Koln: E. J. Brill, 1982), 128-31. And Ardalan and Bakhtiar, *The Sense of Unity: The Sufi Tradition in Persian Architecture*.

17. See: Mohamad Karim Pirnia and Golamhossein Memarian, *Ashnaee Ba Memari Eslami Iran* [Understanding the Islamic Architecture of Iran] (Tehran: Soroush Danesh, 2006).

18. In the context of Middle-Eastern countries, common association of courtyard house type to the Islamic architecture seems to have been subject to serious doubts. For more information, see: Hamed Khosravi, "Geopolitics of Tabula Rasa: Persian Garden and the Idea of City," *Journal of Architecture and Urbanism* 38, no. 1 (2014).

19. For more reading, see: Sadegh Shahmirzadi, "Shahrneshini Va Shahrsazi Dar Hezare Panjom Ghabl Az Milad," in *Nazari Ejmali Bar Shahrneshini Va Shahrsazi Dar Iran [a General Study on Urbanism and Urbanisation in Iran]*, ed. Mohamad Yusef Kiani (Tehran: Homa, 1986), 5-12.

20. Memarian, *Knowing Iranian Housing*, 13-19.

21. See: Boyce, *History of Zoroastrianism*, Volume II, 128-31.

Traditional Iranian Courtyard-House: Khaneh-Bagh

Etymologically, the word, *Khaneh*, is derived from the old Persian term: *Ahana*, meaning a bounded area or a specific place.[22] It is used in the form of *Xanag* or *Xanak*, and later as *Khan*, indicating a place that is created by digging the ground or shaping a form on a surface with clear boundaries. Conspicuously, it is employed by people to refer to a particular place such as their house (*Khaneh*) or Mecca (*Khaneh Khoda*), and it becomes suffix in shaping many words in the Persian language such as *Ashpaz-Khaneh* (Kitchen), Darou-Khaneh (pharmacy), and *Timar-Khaneh* (hospital). Moreover, the word, *Bagh*, is derived from the Indo-European term: *Bhag* that literally means 'to enjoy'. This word has been using by Iranians to indicate an enclosed private or public outdoor space that included a garden. Accordingly, the combination of *Khaneh* and *Bagh* illustrates a place that creates joy and happiness within a bounded area. It is, thus, not surprising that Iranian scholars such as Mohamad Karim Pirnia and Golamhossein Memarian defined the courtyard-garden house (*Khaneh-Bagh*), as the perfect manifestation of an ideal living place, a home or a dwelling, for ordinary Iranians. In this model of dwelling, the courtyard embeds a small garden in it and accommodates activities for everyday life and enjoyment, while it is also surrounded with a set of rooms, or a combination of high-walls and alcoves.[23] When erected with multiple courtyards or bigger gardens, this dwelling type creates a distinct architectural type, *Serai,* that mostly accommodated large extended families or wealthy Iranians.[24]

The architectural layout of the *Khaneh-Bagh* and *Serai* can be identified by similar characteristics in terms of internal arrangement and spatial organisation. In most traditional houses with an extraordinary size, a large portico with an exceptional height or domed roof (*Iwan/Pesgam*) was located at the centre of each courtyard side. As observed by Khosravi, in all small and big houses, the chambers were raised some steps above the ground level, and mostly connected to the courtyard through narrow and barrel-vaulted galleries.[25] Simultaneously, this access system connected various stories together, separated the chambers from one another, and linked the courtyard though the entrance area (*hashti*) or corridor (*dalan*) to the streets. In this system of access, while some habitable rooms were also connected internally, it was the courtyard-garden that provided direct access to almost all spaces of the Serai typology. Indeed, this system, as argued by Fatemeh Kateb and Khosravi, provided different layers of privacy and publicity associated with each space;[26] and for daily activities, each group of rooms on each side of the courtyard-garden had regularly their internal access without intersecting the others [Figure 1.04].

This ideal type was adapted to different contextual circumstances in Iran. For instance, in the hot-humid region of Bushehr, close to the Persian Gulf, the *Khaneh-Baghs* were constructed mostly with a set of openings such as loggias and windows on the street facades, providing cross-ventilation between the inner-courtyard and

22. Hossein Soltanzadeh, *House in Iranian Culture: Concept and Some Applications* (Tehran: Cultural Research Bureau, 2017).

23. See: Khosravi, "Camp of Faith", 121.

24. See: Ibid..

25. See: Ibid.

26. See: Fatemeh Kateb, *Memari Khane-Haye Irani* [The Architecture of Iranian Houses] (Tehran: Sazman Chap va Entesharat, 2012); and Khosravi, "Camp of Faith," 127-54..

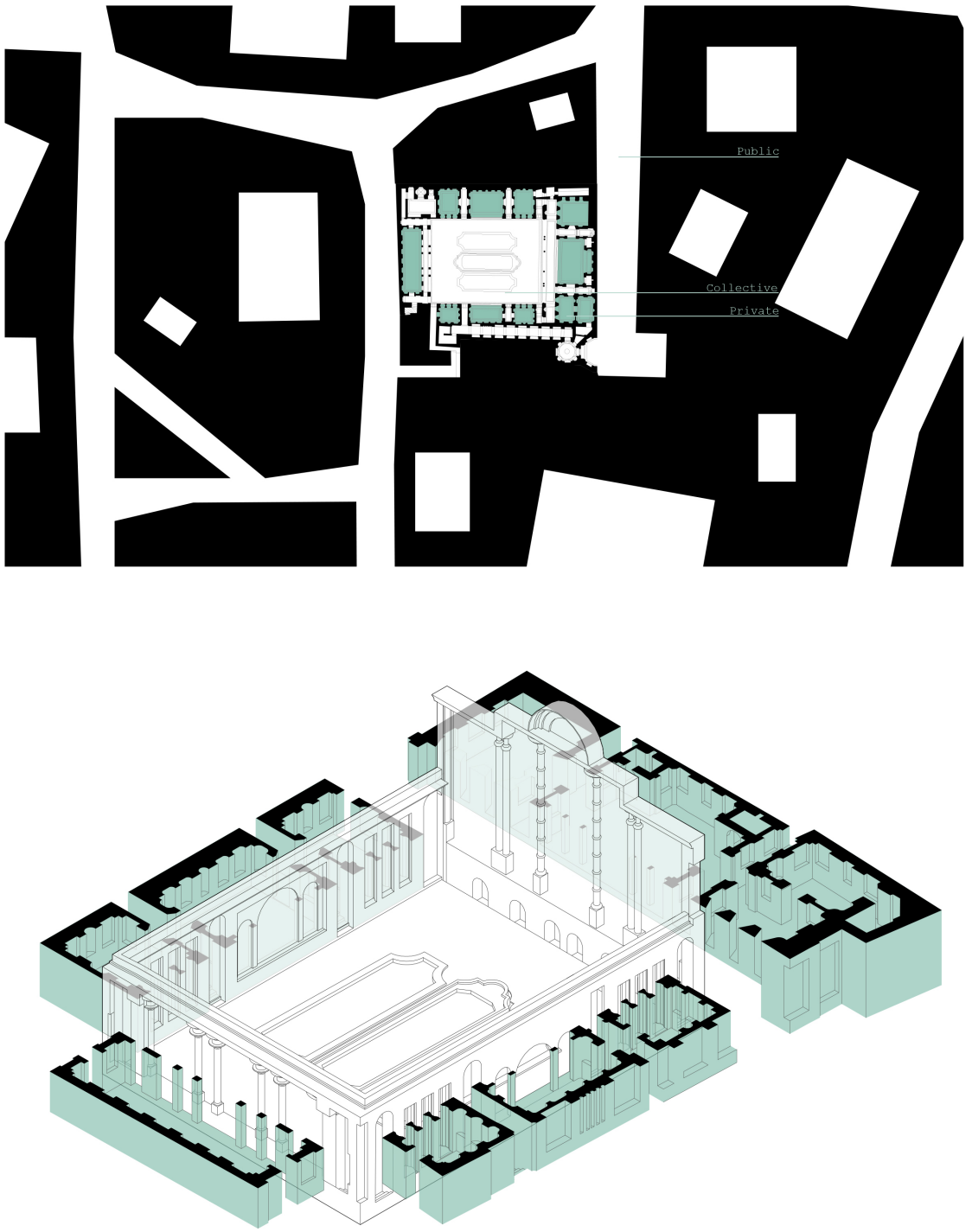


Figure 1.04: Alam House, built in the early-19th century Isfahan. As shown in the drawing, the inhabitable void forms an intermediate space between public and private realm. This drawing also shows the organisation of habitable spaces around the courtyard and in relation to the urban structure of the neighbourhood. Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

streets.[27] In some cases, the residents chose to add a balcony (*Shanashil*) to the openings, aiming to extend their living areas towards public outdoor spaces, which eventually would create visual connections with pedestrians on the streets. On the contrary, in the hot-arid region of Kashan, a city in central Iran, *Khaneh-Baghs* were built typically into the ground, with almost no visual connection to outdoor public spaces, a strategy that aimed to increase shade and keep humidity in the house.[28]

However, the adaptation of this courtyard type was not only based on different microclimates of the Iranian Plateau. Local materials and construction techniques also played a crucial role in defining the shape of the *Khaneh-Bagh*. For instance, where access to timber materials such as wooden beam or plank was possible, the house was erected with either a flat or pitched roof, depending on the region [Figure 1.05]. This principle can be seen especially in the houses erected in the regions near the mountain range of Alborz and Zagros, in north and west Iran.[29] On the contrary, the same house type was built with mud-brick and domed roof in central Iran and in the desert-like areas (east and south-east), where clay was practically the only available material for construction [Figure 1.06].[30] Interestingly, while *Khaneh-Baghs* were materialised or adapted based on climate and material condition of each region, their orientation to any given context, urban or rural, was aligned to the topography of the ground.

Generally speaking, the cardinal direction or orientation of *Qibla*[31] is stated as the point of departure for positioning *Khaneh-Baghs* or *Serais* in any urban fabric, in the Islamic World.[32] Yet, as observed by Masoud Kheirabadi,[33] the distribution of settlements in Iran and their compact and interwoven urban form is closely related to the distribution pattern of the underground water channels (*qanat*).[34] This can be seen especially from the ways individual houses were connected to the underground water structures. In a survey conducted by Khosravi, dozen courtyard houses from different regions of the Iranian Plateau were compared. Interestingly, this study shows that these houses were carefully aligned to the topography of the ground, to ease the access to the qanats.[35] The importance of aligning the courtyard houses to local topographical conditions is reflected in the frequent integration of water storage in the form of small pools in the courtyard space. When possible, *Khaneh-Baghs* were placed to make use of natural water flows for the use of daily activities in the household. This was achieved by erecting the house directly above qanats and adjacent to a *madi*, *nahr*, or *juy* (various kinds of open ditches).

The spatial layout of the private outdoor space, the courtyard-garden, was the most important element in the design of traditional homes. Configuring the geometry, size, and location of the courtyard was typically the first step of construction, while the interior rooms were later built around this space. This might be seen from some remaining historical drawings where the house layout was designed based on a gridded board of cubit module.[36] This method, described by the renowned

27. See: Memarian, *Knowing Iranian Housing*, 55-75.

28. Mahmoud Tavassoli, *Urban Structure in Hot Arid Environments : Strategies for Sustainable Development*, The Urban Book Series (Cham: Springer International Publishing, 2016), 59-100.

29. The rich underground water reservoirs in the foothills of Alborz and Zagros created a condition in which over the past millenniums, the most natural forests have grown in Iran.

30. See: Memarian, *Knowing Iranian Housing*, 269-74.

31. Qibla is the direction to the Kaaba in the city of Mecca, a direction that should be faced when a Muslim prays during the day.

32. For instance, see: Pirnia and Memarian, *Ashnaee Ba Memari Eslami Iran*, 150-60.

33. Masoud Kheirabadi is a well-known Iranian-American scholar in geography and political science, who extensively studies the formation of traditional settlements, in Iran.

34. For more reading about the development of traditional settlement in Iran, see: Masoud Kheirabadi, *Iranian Cities, Formation and Development* (New York: Syracuse University Press, 2000). The book was originally published in 1991, by The University of Texas Press.

35. Khosravi, "Camp of Faith," 129-48.

36. This module corresponded to the ancient cubits. For more information, see: Ronald Lewcock, "Architects, Craftsmen and Builders: Materials and Techniques," in *Architecture of the Islamic World: Its History and Social Meaning*, ed. George Michell (London: Thames and Hudson, 1995), 114.

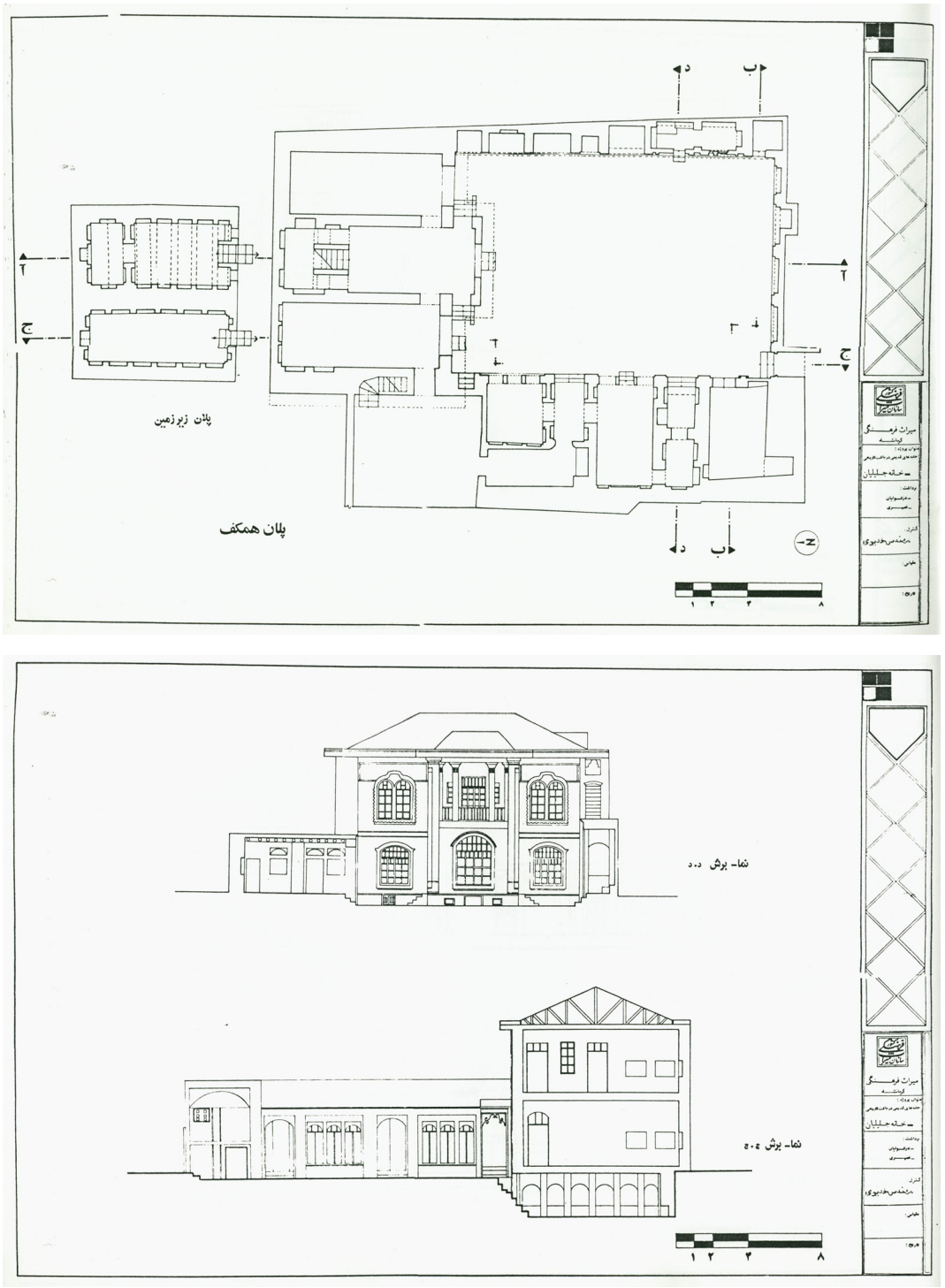


Figure 1.05: Khaneh Jalilian in Kermanshah (north-west Iran).
Source: Archive of Iran's National Heritage Institute, accessed March 2015.

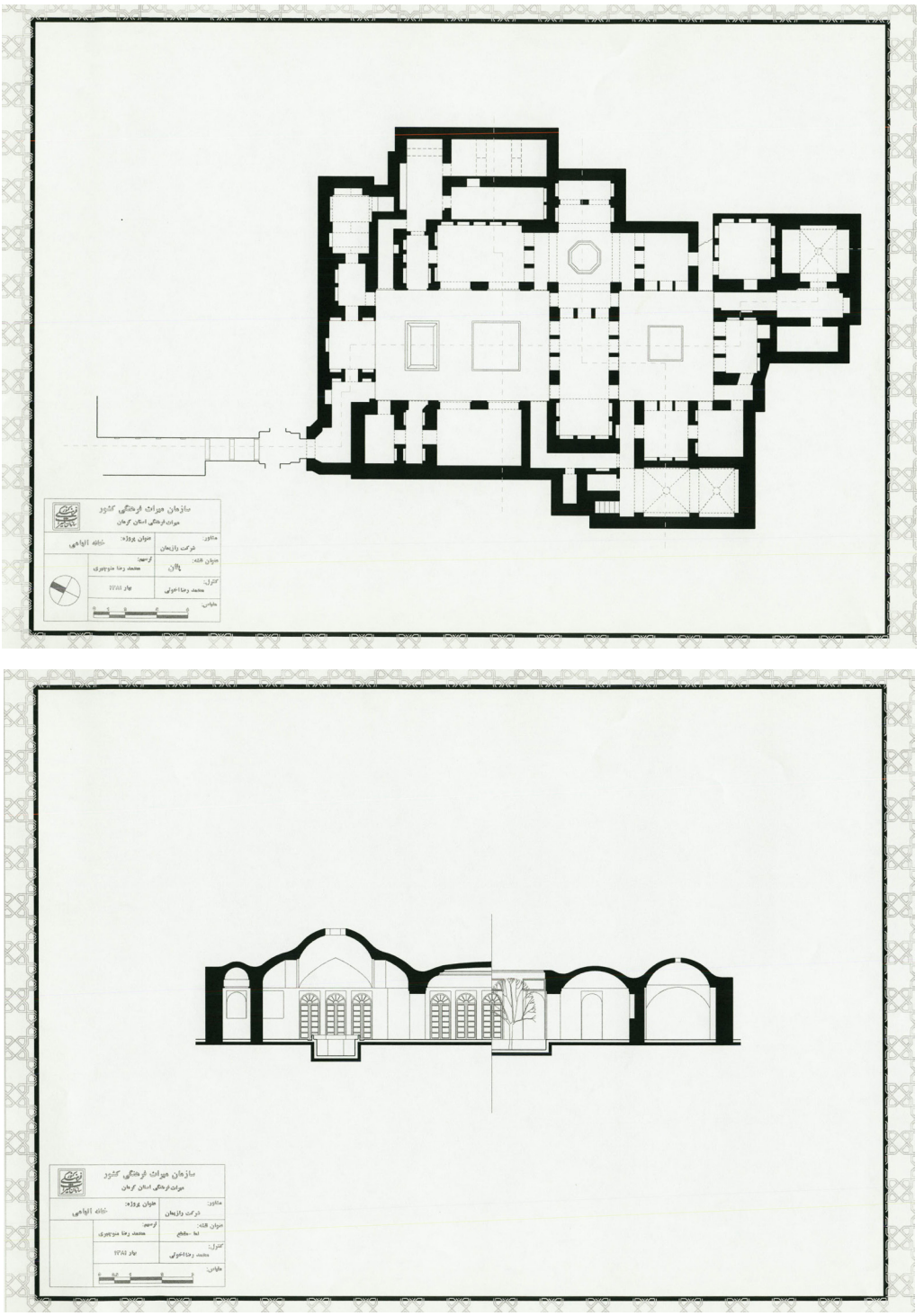


Figure 1.06: Khaneh Jalilian in Kerman (south-east Iran).
Source: Archive of Iran's National Heritage Institute, accessed March 2015.

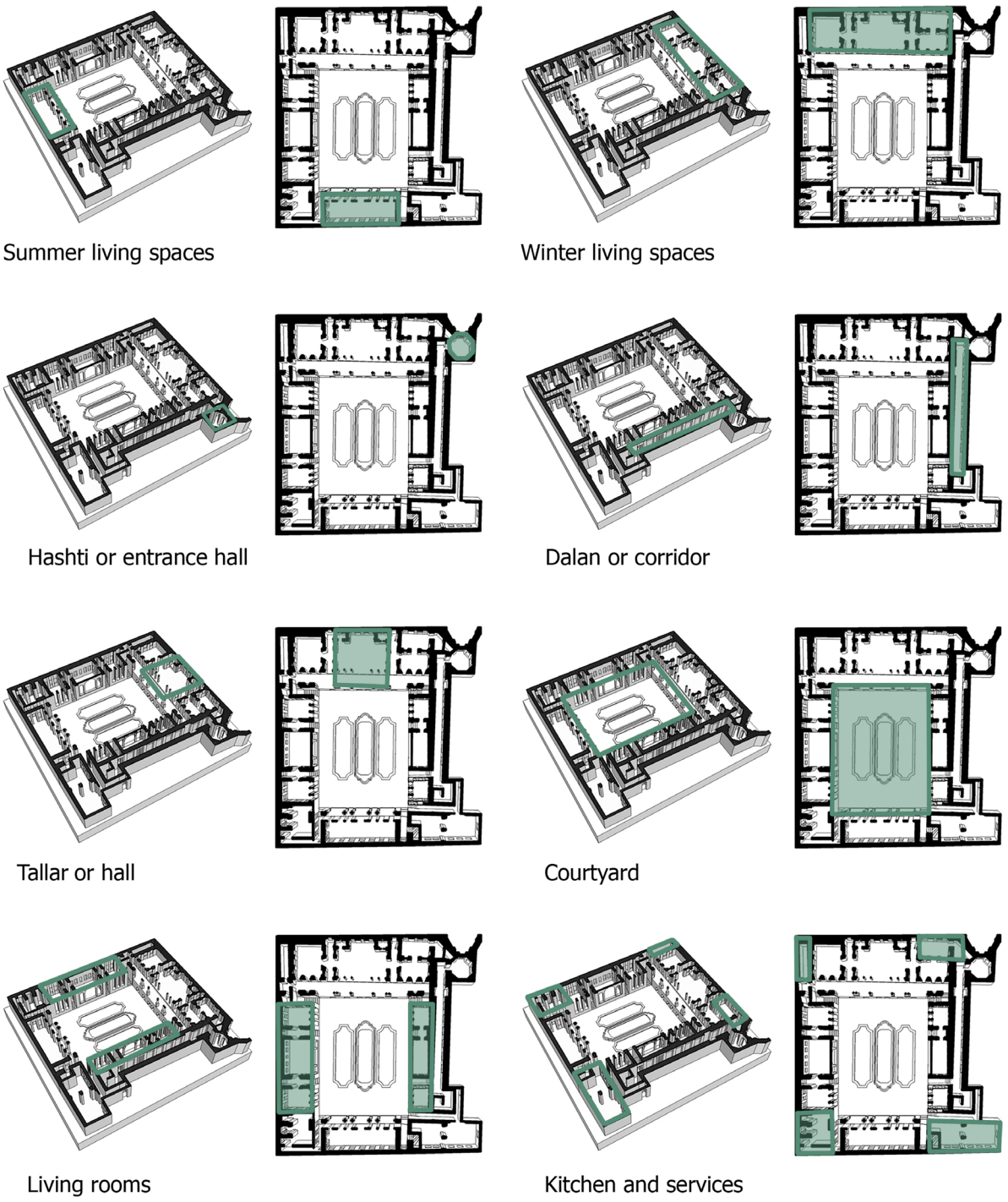


Figure 1.07: spatial organisation of a typical traditional Iranian house. It is worth mentioning that in 1996, Alam House, was registered in the list of Iran's Heritage Organisation (No. 1752), and it was restorated between 1997 and 1999.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

traditional builder Hossein Lourzadeh, started with drawing the boundary of the courtyard on the ground, indicating a space that should not be encroached upon. Subsequently, habitable spaces, a series of chambers, were to be organised in two, three, or four sides of the courtyard periphery, with a kitchen (and other service spaces such as a lavatory, storage, or small bath) in the remaining corner area of this layout that had minimal or limited visual exposure.[37] The kitchen, which was a main realm of the female members of the household, needed to be protected from the eyes of male strangers and guests (*Na-Mahram*). In the larger *Khaneh-Baghs*, and in *Serais*, however, the kitchen was placed in the private or the inner part of the house, called '*Andarouni*' (seraglio).[38] Typically, Andarouni was meant for female activities such as babysitting and cooking, and it was located far away from the main entrance and the public part of the house that was generally the area of the male members of the family for hosting guests and working, called '*Birouni*'. Furthermore, Andarouni was accessible only for the male members of an extended family (*Maharem*); but, the female members of the household might entre Birouni, if they wore *Chador* (veil).

The spatial layout of *Khaneh-Bagh* mostly implied a form of life, based on the division of spaces for everyday activities. However, it simultaneously accommodated different lifestyles. As opposed to a common belief that the use of space followed a seasonal pattern or was based on the division of genders,[39] the rooms were used interchangeably in the Khaneh-Bagh typology to host various daily activities (e.g., sleeping, living, and dining). Undoubtedly, wealthier families would afford to build bigger houses with *Andarouni* and *Birouni*, and with multiple rooms (general and specific) on all sides of courtyard-gardens. In these houses, the largest rooms known as *panjdari* were typically located in the northern or southern part of the courtyard, and mainly close to the main entrance.[40] These rooms, actually, functioned as a reception hall for guests. However, in ordinary houses where people only afford to build their habitable rooms on one or two sides of the courtyard, the polyvalent use of space was the ultimate solution to their changing everyday activities.[41] Moreover, people usually expanded their habitable spaces and homes by erecting additional rooms around the courtyard or on top of the existing structure [Figure 1.07].[42]

Traditional Iranian Neighbourhood Structures: Mahalleh

Generally, the *Khaneh-Bagh* performed as an enclosed compound within the larger body of the neighbourhood. However, as shown by Khosravi and Memarian, the extensive network of access to habitable rooms exceeds the boundary of this house type.[43] In the spatial organisation of *Khaneh-Baghs*, the courtyard-garden almost always remained independently accessible from all surrounding spaces. Moreover, a web of corridors and galleries from public outdoor to each private and individual indoor space and through the courtyard enabled the autonomy

37. Hossein Bahrololumi, *Karnameh Anjoman Asar Meli Iran: Az Aghaz Ta 2535* [The Resume of Iran's Association of National Artifacts: From the Beginning to 1976] (Tehran: Anjoman Asar Meli, 1976), 473-75.

38. See: Gholamhossein Memarian and Frank Brown, "The Shared Characteristics of Iranian and Arab Courtyard Houses," in *Courtyard Housing: Past, Present & Future*, ed. Brian Edwards, et al. (Taylor & Francis, 2006), 21-30.

39. Most scholarly texts on the everyday life of people in pre-modern Iran or the other Middle Eastern countries describe the spatial configuration of traditional houses and the use of spaces based a seasonal pattern and gender segregation. For instance, these texts mostly argue that during the summertime, rooms on the south or west sides were used as sleeping-rooms, while in winter was the opposite. To name just some examples: ibid.; E. M. Ishteeaque and F. A. AlSaid, "The Story of the Courtyard House Middle Eastern-Arab Case Study," *International Journal for Housing Science and Its Applications* 27, no. 3 (2003); Rabbat, *The Courtyard House: From Cultural Reference to Universal Relevance*; F. Soflaei, M. Shokouhian, and S. M. Mofidi Shemirani, "Traditional Iranian Courtyards as Microclimate Modifiers by Considering Orientation, Dimensions, and Proportions," *Frontiers of Architectural Research* 5, no. 2 (2016); Ahmadreza Foruzanmehr, "Thermal Comfort and Practicality: Separate Winter and Summer Rooms in Iranian Traditional Houses," *Architectural Science Review* 59, no. 1 (2016).

40. In the Persian language, the term *Panjdari* literally means a room with five sash windows in one row towards the courtyard.

41. Herman Hertzberger, a well-known Dutch architect, defines a form or space polyvalent when "it possesses a 'hidden' suitability for appropriation to be discovered by its users. In this way the polyvalent form is added to, without undergoing essential change, and given another content, thereby illustrating its suitability for multiple ends." See: Herman Hertzberger, *Architecture and Structuralism: The Ordening of Space* (Rotterdam: NAI 010 Publishers, 2015), 143.

42. For instance, when a member of nuclear family, usually the oldest son, would get married, the family mostly chose to extend their domestic space by constructing new habitable rooms around the courtyard. See: Kateb, *The Architecture of Iranian Houses*.

43. Khosravi, "Camp of Faith," 129-48.

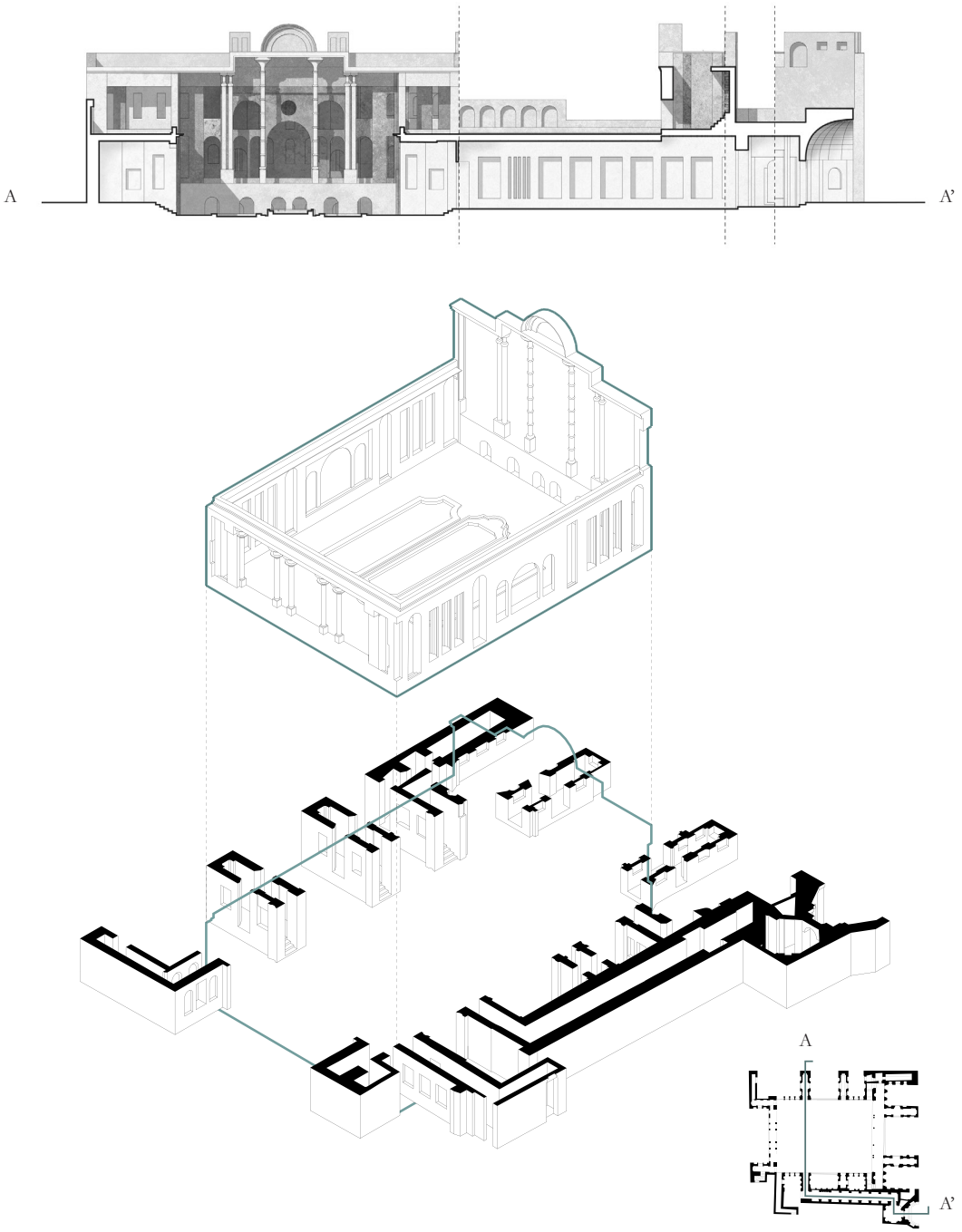


Figure 1.08: the position of a courtyard house in Alam House and its system of access in the larger body of a traditional neighbourhood.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

of use and independence of each habitable room. Accordingly, the courtyard-garden became an intermediate space between private interior and public exterior, an inhabitable void that juxtaposes different spaces in a single place; and the gradation of public-private separation and transition was defined by the access network, rather than by walls and gates. While preserving its core attributes (e.g., privacy and enclosure), the courtyard connected the spatial structure of *Khaneh-Baghs* and *Serais* to its surrounding neighbourhood (*mahalleh*) [Figure 1.08].[44]

Originally derived from the Arabic word, *Mahall* (place), Mahalleh literally means 'neighbourhood', and simultaneously, indicates a sense of place in an urban area. It describes a relationship between the inhabitants and the city, and accommodates collective socio-cultural practices and political activities, in an urban community.[45] While in most urban studies, *mahalleh* is widely portrayed as encompassing the socio-cultural components of a city, it rather represents spatial units within the structure of traditional cities. As observed by Edward Brown, the city of Kerman was formed from a set of neighbourhoods that were distinguished by walls from one another, and connected together only through specific gates or by *Rasteh-Bazaar*.[46] Moreover, each traditional neighbourhood mostly represented a distinct identity. Indeed, the members of each sub-culture or newcomers to cities mostly built their houses in neighbourhoods where "members of their own clan, extended families, community, or ethnic group" lived.[47] In so doing, while appreciably increasing the urban density, they contributed to form spatial units with a distinct characteristic within the structure of traditional cities. While being partly isolated, these neighbourhoods were not divided based on social status of the residents, and each formed a microcosm where rich and poor lived together.

Traditionally, a local *Rishsefied* (elder man), or a council (*Shora*) formed by the elders of a particular area, governed each neighbourhood as an autonomous and administrative spatial entity. Though, the elder's or council's responsibility was not limited to tax collection, on behalf of the state authorities. The neighbourhood headman mostly settled disputes among the residents, and gathered donations from the rich merchants or families to distribute it among the poor as well as to construct communal amenities, such as bath-houses (*hammams*), schools (*madreseh*), and mosques (*masjeds*), in the neighbourhood.[48] Furthermore, social security was provided by some strong local residents (*pahlavans*) supported by the religious leaders in the neighbourhood. They were trusties and role-models of the community, who at day and night, voluntarily patrolled the streets. Spontaneously, they undertook the preservation of their neighbourhood's public morality, and ran local riots and impulsive demonstrations against social injustice and political inequity.[49]

Commonly, the spatial structure of *Mahallehs* is described as a realm of man, to protect women from the eyes of strangers. The introverted architecture of courtyard houses and the layout of urban landscape such as high-walls and narrow

44. Ibid.

45. Pirnia and Memarian, *Anderstanding the Islamic Architecture of Iran*.

46. For more information, see: Edward Granville Browne, *A Year Amongst the Persians: Impressions as to the Life, Character, & Thought of the People of Persia, Received During Twelve Months' Residence in That Country in the Years 1887-1888*. (London: Adam and Charles Black, 1893) Moreover, Edward Brown was a British orientalist and traveler in the nineteenth century.

47. Manu P. Sobti, "Migration, Urban Form and Courtyard House: Socio-Cultural Reflections on the Pathan Mohallas in Bhopal, India," in *The Courtyard House, from Cultural Reference to Universal Relevance*, ed. Nasser O. Rabbat (Burlington: Ashgate, 2010), 66.

48. For more information about the socio-political structure of neighbourhoods in traditional societies of the Middle-Eastern countries and the role of neighbourhood headman, see: Farah Al-Nakib, *Kuwait Transformed: A History of Oil and Urban Life* (Stanford, California: Stanford University Press, 2016), 21-91.

49. William Floor, "The Political Role of the Luti's in Iran," in *Modern Iran: The Dialectics of Continuity and Change*, ed. Michael Bonine and Nikki Keddie (Albany: Suny Press, 1981), 83-95.







Figure 1.09: the images on the top show traditional women involved in public outdoor activities. The image on the bottom depicts the interaction of neighbouring women with one another in a courtyard for their daily activities.
Source: *The Old Pictures of Kerman* (Kerman: Kermanlogy Center, 2011), 204-205 (top); and the Library of Congress in Washington, LOT 14192, no. 53 (bottom).

streets seemed to reinforce this image. This might also explain why the notion of privacy for shaping neighbourhoods is widely overemphasised, in most scholarly studies on traditional settlement in Muslim societies.[50] While one may argue that the features such as privacy attributed to the restrictions imposed by Islamic social mores, in particular those related to sexual propriety and gender segregation constraints, contributed to shape the urban structure of neighbourhoods in Islamic cities, one cannot overlook the important role women performed within this structure. Therefore, the notion of *Mahalleh* as a collective realm for both men and women would provide new insights into its socio-spatial organisation.

Household activities such as shopping and cooking were a duty mostly fulfilled by the female members of families. Accordingly, practical needs at the level of everyday experiences required women to step outside the realm of home. Indeed, the anonymity offered by the traditional black or white veil (chador) that women wore outside the house allowed for some freedom in public spaces. Moreover, it seems that women often treated the narrow corridors between houses (*kucheh*) and small squares (*meydan*) in close proximity to their houses as semi-public spaces for various uses: they usually let their children play in these outdoor spaces, and used these spaces to conduct a little chat with their neighbours, and sell snacks or their handmade crafts to local families and pedestrians from mats on the ground. As observed by Brown, women also collectively swept kuchehs and meydans in front of their homes, and collaborated with one another to maintain public spaces, in their neighbourhood [Figure 1.09].[51]

Arguably, the socio-spatial structure of traditional neighbourhoods blurred the line between public and private spaces. Most people in the neighbourhoods used their roof as a secondary sleeping place, particularly in the hottest summer months; so, the inhabitants of houses with shared walls were able to hear their neighbours, and look into the private courtyards of one another. The roofs of houses were mostly interconnected, which allowed children to walk over them for collecting candies from the neighbours during national festivals such as *Chaharshanbehsouri* (the eve of the last Tuesday before the Iranian new year, *Nowrouz*). This interconnectivity also enabled women to use the roof as a platform for watching man-lead ceremonies in the private courtyards of their neighbours and in the public streets and squares during religious rituals such as *Ashura* (a Shi'ite mourning ceremony).

The overlap between the domain of public and private is not limited to the roofs. On the ground level, part of the network of streets is coupled with the internal circulation of courtyard houses, forming a collective space at the neighbourhood level. This might be seen from the internal layout of houses located at the end of dead-end alleys, and especially from the access system of bigger houses to more than one kucheh. The bigger houses mostly contained multiple courtyards and entrance areas, where usually one of the courtyards was directly connected to

50. For instance, see: Amira K Bennison and Alison L Gascoigne., *Cities in the Pre-Modern Islamic World : The Urban Impact of Religion, State and Society*, vol. 6, Soas/Routledge Studies on the Middle East (Abingdon: Routledge, 2007). And Salma Khadra Jayyusi et al., *The City in the Islamic World*, vol. 94, Handbook of Oriental Studies: Section 1, the near and Middle East (Leiden, Boston: Brill, 2008).

51. See: Browne, *A Year Amongst the Persians*..

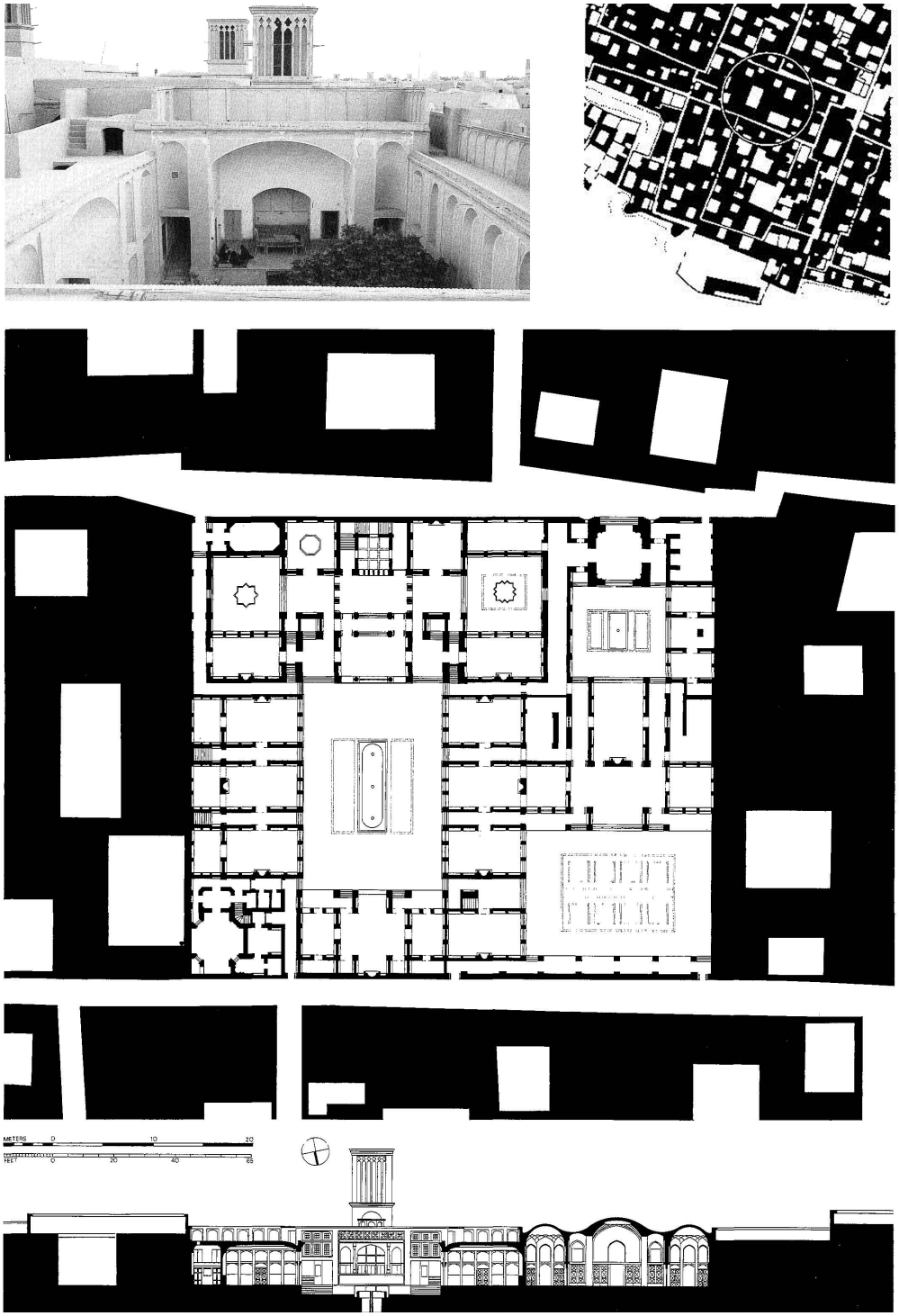


Figure 1.10: the courtyard as a small collective square within the neighbourhood fabric.
Source: *Formal Structure in Islamic Architecture of Iran and Turkistan* (New York: Rizzoli, 1990), 43.

the adjacent streets.[52] While opened to receive guests over days, these courtyards were also often used by neighbouring women and children as a shortcut access. Accordingly, it was not uncommon for men to be present in the house when female neighbours passed by, or for the female members of households to be seen by their neighbours. It comes, thus, as no surprise to see that these courtyards served as a small collective square within the neighbourhood fabric. As reported by Klaus Herdeg, this characteristic can be traced, for instance, in the Razvian Khaneh-Bagh, a 19th century traditional house in Yazd, where the courtyard located at the edge of the street was used by the neighbours as a small plaza for gathering and as a shortcut to connect two parallel streets [Figure 1.10].[53]

Generally speaking, *mahallehs* were planned and constructed as self-contained urban entities. Each neighbourhood contained a set of communal amenities, such as mosque, bath-house, school, and water reservoir (*abanbar*). Furthermore, neighbourhoods were usually connected to one another either through *rasteh Bazaar,*[54] where most commercial activities of urban dwellers took place in a city, or through the city plazas where regularly the royal palace, governmental buildings and the Friday Mosque were located.[55] This might be seen, especially from the urban layout of Safavid Isfahan in the 17th century, where the city square and Bazaar formed a web that interconnected neighbourhoods, together.[56]

The spatial structure of *mahalleh*, as examined by Khosravi and Kateb, cannot be read as being limited to an agglomeration of courtyard-garden houses.[57] As indicated previously, it included all immediate public amenities, interconnected through a web of indoor-outdoor private-public spaces. Indeed, the architecture of *mahalleh* might be assumed as a collective work developed by the inhabitants of the neighbourhoods that accommodated growth and change over time. It can also be understood as a collective form where its enclosure housed not only interior spaces, but created distinct and definite outdoor spaces, at various scales, as well.[58] Moreover, the space among the enclosures formed a complex network of access that both connects and separates public and private domains, in multiple layers.

The architectural form of *Khaneh-Bagh* and *Mahalleh* underwent a series of changes and transformations, throughout the nineteenth century in Iran. In this period, as insightfully observed by Pamela Karimi, they evolved gradually and smoothly at the scale of individual houses and domestic space.[59] However, the first radical and large-scale transformation of the aforementioned local dwelling models and vernacular patterns of inhabitation took place in the region of Khuzestan, a province in south-west Iran. This happen after the 1901 oil discovery in Masjed Soleiman, where oil and governmental interests under British influence built a complete support landscape in the first half of the twentieth century, with infrastructure and towns based on the British garden city model.

52. For more reading, see: Klaus Herdeg, *Formal Structure in Islamic Architecture of Iran and Turkistan* (New York: Rizzoli, 1990), 41-48.

53. The Razvian Serai was originally documented by Mohamad Karim Pirnia (1923-1998). For more information about the Razvian Serai, see: Herdeg, *Formal Structure in Islamic Architecture of Iran and Turkistan*, 42. Mohamad Karim Pirnia (1923-1998) was a well-known, prominent, and influential Iranian architectural historian, who dedicated his life to the histography of traditional Iranian architecture.

54. Rasteh Bazaar is a term mostly used to explain the main covered public route within the spatial structure of the Bazaar, in Iran.

55. Herdeg, *Formal Structure in Islamic Architecture of Iran and Turkistan*, 30-38.

56. Nader Ardalan and Laleh Bakhtiar, *The Sense of Unity: The Sufi Tradition in Persian Architecture* (Chicago: University of Chicago Press, 1973); and Habibi, *De La Cite a La Ville.*

57. See: Khosravi, "Camp of Faith;" and Kateb, *The Architecture of Iranian Houses.*

58. Khosravi, "Camp of Faith," 129-48.

59. Pamela Karimi, *Domesticity and Consumer Culture in Iran Interior Revolutions of the Modern Era* (London and New York: Routledge, 2013).

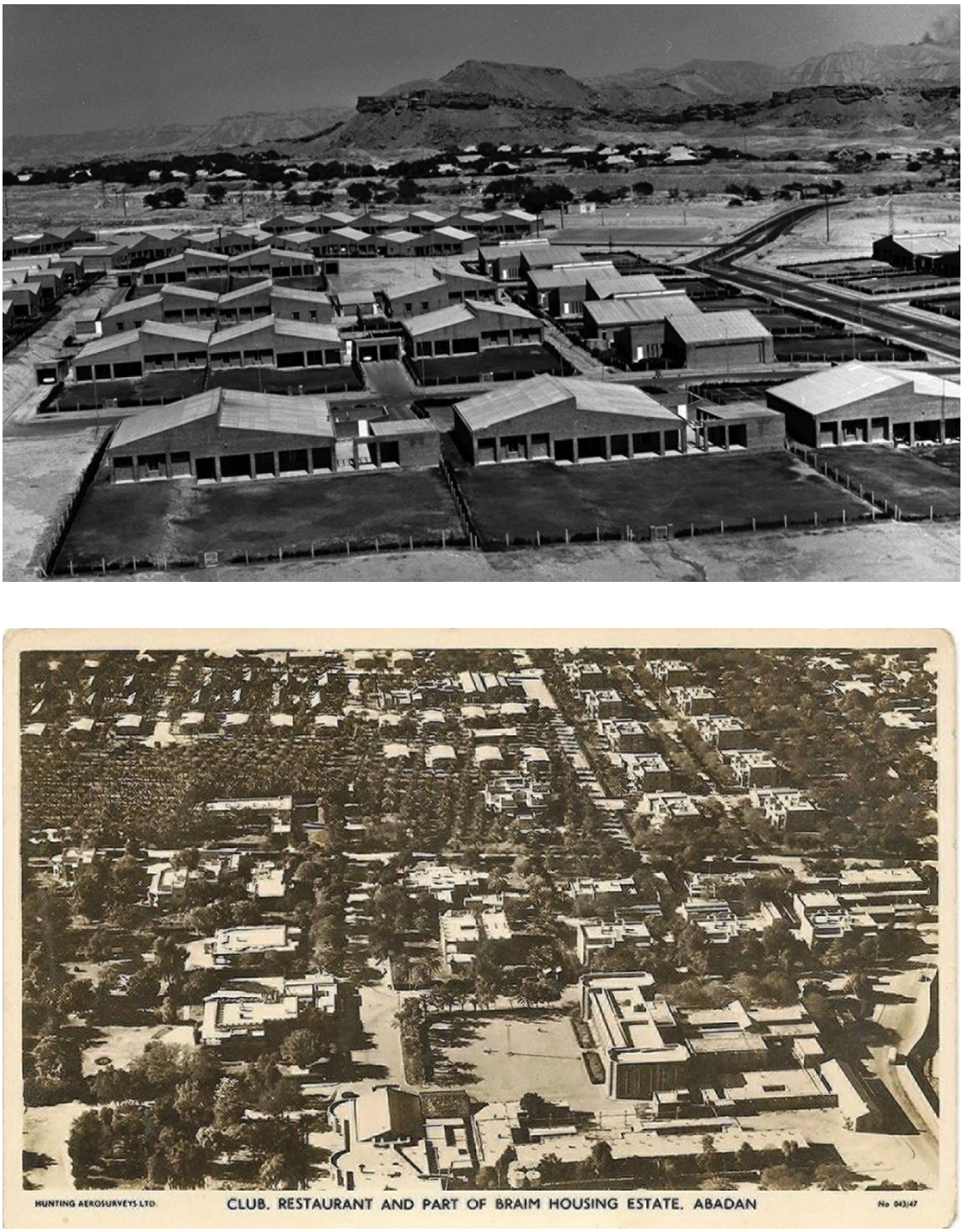


Figure 1.11: a series of bungalows in Aghajari constructed by AIOC in the 1940s (top); and some examples of free-standing and row-house typologies in Abadan built by AIOC between 1930s and 1940s (bottom).
Source: Archive of Iran Petroleum Museum.

In the artcile, I*ran's Global Petroleumscape: The Role of Oil in Shaping Khuzestan and Tehran*, authored by Carola Hein and Mohamad Sedighi, it is shown how multiple corporate, public, as well as professional actors contributed to the emergence of a new form of living in Khuzestan: a multifaceted fabric of cities, infrastructures, refineries, ports, mass housing, leisure sites, universities, and even movie theatres related to oil.[60] To made Khuzestan an attractive place to live, the Anglo-Iranian Oil Company invested in a series of housing projects such as free-standing bungalows for British expatriates in Haftgel and Aghajari, and constructed housing for their Iranian employees in Abadan, Khorramshahr, and Masjed Soleiman [Figure 1.11].[61] These housing models inspired many Iranian modernist architects to rethink local dwelling models and to develop similar urban structures outside Khuzestan, such as the *Chaharsad-Dastgah* housing project in Tehran, which will be discussed in the next chapter.[62]

Conclusion

From the 1940s onward and under the Iranian modernisation programme, which was largely triggered by the oil-led geopolitics of the Cold War, new models of living were introduced, tested, and disseminated throughout the whole country. Indeed, this resulted in a radical change in the domestic life of Iranians at the scale of the individual house and neighbourhood, during Iran's period of high-modernisation (1945-1979).[63] While oil and its related by-products largely shaped the landscape of new urban areas and housing neighbourhoods in Khuzestan, it was, the oil-led geopolitics of the Cold War period, as I will argue and show in this dissertation, that largely influenced the domestic space and everyday life of Iranians, beyond the region of Khuzestan and across the whole country.

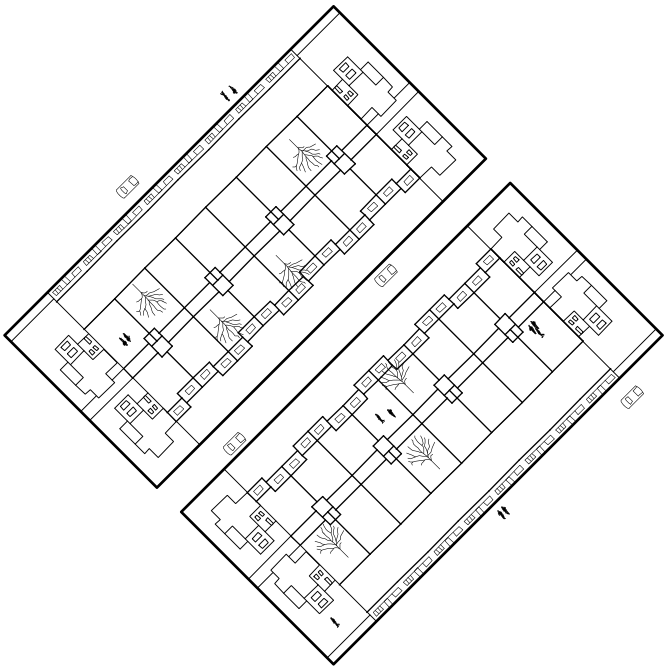
This happened, in particular through the construction of public housing projects in new residential neighbourhoods for the urban poor, low-income families, and civil servants. Investigating Iran's period of high-modernisation through the lens of public housing policies and design, with a particular focus on the roles that the agency of the dweller performed therein, therefore, will shape the main body of this doctoral dissertation. In the next chapter, I will illustrate how modern urban planning tools, in the form of descriptive municipal documents, altered and transformed traditional neighbourhood structures, the local ideal form of living, and some vernacular socio-spatial patterns of inhabitation, as presented in this chapter. Afterwards, from the third chapter onwards, I will demonstrate how the Cold War oil-led geopolitics affected the everyday life of ordinary Iranians and transformed the landscape of urban Iran, in the period of high-modernisation.

60. Carola Hein and Mohamad Sedighi, "Iran's Global Petroleumscape: The Role of Oil in Shaping Khuzestan and Tehran," *Architectural Theory Review* 21, no. 3 (2017):349-74.

61. For more information about public amenities constructed by AIOC in Khuzestan, see: Ibid., 56-109.

62. Karimi, *Domesticity and Consumer Culture in Iran*, 74-75..

63. See: Mokhtari Taleghani, *Iran's Legacy of Modern Architecture.*



2 • Planning Documents & Design Tools

Deconstructing Iranian Courtyard House: The Formation and Evolution of Kuy-e Chaharsad-Dastgah (1946-1950)[1]

Introduction

The courtyard house is widely described as an enclosed compound and introverted form that is defined by "an open court shielded from the outside by the built spaces that surround it."[2] Privacy is also described as its vital characteristic, where high walls form an intimate private garden that is accessible from any room of the house.[3] This traditional house type, however, underwent a series of radical changes in the twentieth century Iran, under the state's projects of modernisation. These projects started from 1925, when the parliament (*Majles*) declared the end of Qajar monarchy, and appointed Reza Khan (1878-1944) as the new ruler, the Shah of Iran.[4] After the 1906 Iranian Constitutional Revolution (*Enghelab-e Mashrouteh*), a power struggle between the Qajar monarch and parliament, and grassroots movements against political scandals and social injustice created a situation that plunged the country into a civil war.[5]

Reza Shah brought an end to this situation and formed a central government, at the time that radical Iranian reformists pushed for a modern society.[6] He launched a socio-political and urban reform programme to reduce the influence of religion

1. A modified version of this chapter is submitted to the peer-reviewed *Journal of Architecture and Urbanism*. Further, part of this chapter will be disseminated in the book: *'The History of Modern Planning Manuals'*, edited by Herman van Bergeijk and Mohamad Sedighi.

2. Nasser Rabbat, *The Courtyard House: From Cultural Reference to Universal Relevance* (Burlington, USA and Surrey, England: Asligate Publishing Limited, 2010), xxi.

3. Macintosh Duncan, *The Modern Courtyard House: A History* (London: Lund Humphries for the Architectural Association, 1973), 7.

4. See: Ervand Abrahamian, *A History of Modern Iran* (Cambridge: Cambridge University Press, 2008).

5. See: Amin Banani, *The Modernization of Iran, 1921-1941* (Stanford: Stanford University Press, 1961).

6. Supported by British embassy in Tehran, Reza Khan led a coup by the Persian Cossack Brigade against the central government, in February 1921. After his success, Reza Khan first became the Minister of War, and then the prime-minster in 1924. See: Ervand Abrahamian, *Iran between Two Revolutions* (New Jersey: Princeton University Press, 1982).



Figure 2.01: Kuy-e Chaharsad-Dastgah after its completion in 1950.
Source: Ali Akbar Sadegh's Family Archive, Courtesy of Le Groupe d'Architectes de l'Ere de Revolution en Iran.

and Islamic thoughts in the everyday life of Iranians.[7] He initiated a project of nation building by reorganising traditional urban structure of Iranian cities.[8] This modernisation plan had a large impact on the transformation of street patterns (e.g., widening of narrow roads and small alleys), and led to the expansion of administrative buildings and luxury residential apartments for the elites.[9]

The urban transformation of the capital city, Tehran, gained a new momentum in the 'Centralisation' period (1941-1953), as Mohsen Habibi defined, when Iranian reformists dominated the four parliaments.[10] They gained political self-determination to rule the country, and forced the government to undertake a project of modernisation that would involve utilising modern laws and rules, as well as the increase of urbanisation.[11] During this period of time, shifts in the everyday life of Iranians came from the construction of new residential neighbourhoods, in particular for the urban poor and low-income civil servants. The two major motivations for emphasising the development of housing were to improve hygienic conditions and to accommodate a growing population.[12]

In this chapter, I aim at expanding the debate on the evolution of housing paradigms in the early years of the Centralisation period between 1941 and 1951, Iran. I will look into a particular case of public housing, Kuy-e Chaharsad-Dastgah [Figure 2.01], to investigate the resonances between the modernisation of Iran in the 1940s and the transformation of some vernacular patterns of inhabitation, triggered by implementing the so-called urban planning documents. I will discuss the extent to which Chaharsad-Dastgah was used as an instrument to influence daily life practices through transforming the traditional courtyard housing typology and traditional neighbourhood planning structures. I will use iconography as a representational tool to identify and deconstruct symbolic and conceptual meanings associated with both urban and architectural components that accommodated many people's everyday activities in Chaharsad-Dastgah. I will combine the results of this analysis with the outcome of a site survey and interviews in the housing district, to expand current scholarship on Iran's process of urban transformation, in general, and on the theme of state's initiated planning concepts dissiminated through urabn planning documents, in particular.[13]

Iran's process of urban transformation in the 1930s and 1940s has been studied from various perspectives. These studies addressed themes such as renewing the nation's interiors through modernisation, politics of control and planning for city development, re-appropriating Iranian cultural heritage by secular reforms, the role of the Association of Registered Iranian Architects (ARIA) in developing mass housing in Tehran, the relation of architectural projects and unveiling the socio-spatial structure of traditional neighbourhoods in Tehran, and the influence of the state's nation-building projects on the transformation of cities in Iran.[14] Among these scholarly materials, some focused on the specific case of Chaharsad-Dastgah.

7. Camron Michael Amin, *The Making of the Modern Iranian Woman: Gender, State Policy, and Popular Culture, 1865-1946* (Gainesville: University Press of Florida, 2002), 48. Furthermore, for his socio-political reform programme, Reza Shah took inspiration from his counterpart in Turkey, Mustafa Kemal Atatürk who established the Republic of Turkey in 1923. See: Touraj Atabaki and Erik Jan Zuurcher, *Men of Order: Authoritarian Modernisation under Ataturk and Reza Shah* (London and New York: I.B. Tauris, 2004).

8. Talinn Grigor, *Building Iran: Modernism, Architecture, and National Heritage under the Pahlavi Monarchs* (New York: Periscope Publishing, 2009).

9. Mina Marefat, "Building to Power: Architecture of Tehran 1921-41" (Massachusetts Institute of Technology, 1988).

10. The Centralisation period started from the abdication of Reza Shah in 1941, and ended with the overthrowing of the prime-minister , Mohamad Mosaddeq, in 1953, by the US and British secret services. See: Seyed Mohsen Habibi, *Az Shar Ta Shahr: Tahlili Tarikhi Az Mafhume Shahr Va Simaye Kalbudie an Tafakkor Va Taassor* [De la Cite a la Ville-Analyse Historique de la Conception Urbaine et Son Aspect Physique] (Tehran: University of Tehran Press, 1999), 186-90.

11. Mostafa Kiani, *Memari Dore Pahlavi Aval: Degarguni Andishe-Ha, Peydayesh Va Sheklgiri Memari Doreh 20 Saleh Moaser Iran 1299-1320* [The Architecture of First Pahlavi: The Transformation of Ideas and the Formation of an Architecture for a Period of 20 years 1920-1941] (Tehran: Markaz Chap Nashr Shahr, 2013).

12. See: Abbas Adjdari, "Sakhteman-E Khaneh-Haye Arzan Dar Iran," [Building Low-Cost Housing in Iran.] *Arshitekt* 1, no. 4 (1946): 125-33.

13. The interviews were conducted in July 2017 and April 2019; and seven families have been interviewed who live/used to live for a long period, in Chaharsad-Dastgah. The interviewees, who for the sake of privacy, their names are anonymised, were as follows: Mr. M.M, a former employee of Iranian army living in this neighbourhood between 1954 and 2008; Mr. A.J, a former employee of Bank-e Rahni living since 1961 in Chaharsad-Dastgah; Mr. A.H, a former lecturer at IUST living since 1973 in this neighbourhood; Ms. N.A, a former high-school teacher living since 1988 in Chaharsad-Dastgah; Mr. M.Z, an employee of the Municipality of Tehran living since 1996 in this neighbourhood; Ms. G.E, a housewife living since 2006 in Chaharsad-Dastgah; and Mr. A.Y, a freelancer living since 2009 in this neighbourhood. During the site surveys, many people were also randomly asked about their living experiences in Chaharsad-Dastgah..

14. See: Kiani, *The Architecture of First Pahlavi*; Marefat, "Building to Power;" Grigor, *Building Iran: Modernism, Architecture, and National Heritage;* Hamed Khosravi et al., *Tehran: Life within Walls: A City, Its Territory, and Forms of Dwelling* (Berlin: Hatje Cantz Verlag, 2017); Hamed Khosravi, "Camp of Faith: On Political Theology and Urban Form" (Ph.D dissertation, TU Delft, 2014); Pamela Karimi, *Domesticity and Consumer Culture in Iran Interior Revolutions of the Modern Era* (London and New York: Routledge, 2013); Rana Habibi, "Modern Mass Housing in Tehran. Episodes of Urbanism 1945-1979" (KU Leuven, 2015).

They described this residential district as a primary attempt of Iranian architects to promote Western lifestyles among ordinary people, and to institutionalise change in the tradition of housing design and production.

Pamela Karimi discussed the socio-urban transformation of the capital city in the 1930s and its impact on creating a new urban landscape in Chaharsad-Dastgah.[15] Hamed Khosravi highlighted the importance of this urban transformation for neutralising the socio-political life of an emerging middle-class in Tehran.[16] Further, he showed how the creation of this residential neighbourhood formed a basis for promoting domestic reform and institutionalising new urbanity, in Iran In a more recent study, Rana Habibi discussed the institutionalisation of 'modern' middle-class districts in Tehran by analysing Chaharsad-Dastgah.[17] Habibi's study provided insight on how the compulsory unveiling law influenced this project and traditional concepts of 'private-public, inside-outside, and hidden-manifest'. She also claimed that Abadan was a 'reference' for Iranian architects to design this project and promote new lifestyles among middle-class Iranians of Tehran.

Despite a growing wealth of architectural scholarship on Iran's modernisation process in the 1930s and 1940s, in particular on the case of Chaharsad-Dastgah, the themes mentioned above have addressed the architecture of dwelling as a static phenomenon, mainly attached to a specific social, political and economic circumstance. While providing insightful approaches, the studies referenced earlier overlooked the influence of the so-called 'modern' urban planning documents on creating a well-organised urban environment, on the urban image of Tehran, and on the development of Chaharsad-Dastgah. In these studies, the relation of urban planning policies, the domestic space of ordinary people, and the relation to urban lifestyles have not been fully investigated. Moreover, the role of a group of modernist Iranian architects in revising and developing urban planning documents has not been discussed. Further, the roles that municipal agencies and urban dwellers performed in the transformation of Chaharsad-Dastgah remained largely unexamined. While adding on the current users' perspectives and their everyday life, this chapter will also discuss how ordinary Iranians appropriated, used, and transformed their traditional living environments. It will then examine to what extent the design of Chaharsad-Dastgah enabled its residents for appropriation and change. It will demonstrate the extent to which the 1942 planning document of Tehran was used as a tool for transforming courtyard housing typology and traditional neighbourhood planning structures in Chaharsad-Dastgah. Finally, in this chapter, I will argue that dual characteristics of the Iranian courtyard house played a crucial role in accommodating growth and change over time in this public housing project. To create a clear backdrop to the context where this case study was developed, it is necessary to understand the development policies, first, undertaken by Reza Shah between 1925 and 1941, and then, by reformist Iranians after his abdication in 1941.[18]

15. See: Pamela Karimi, *Domesticity and Consumer Culture*.

16. See: Khosravi et al., *Tehran: Life within Walls*; Khosravi, "Camp of Faith;" and see also: Hamed Khosravi, "Planning a Revolution; Labour Movements and Housing Projects in Tehran, 1943-1963," in *International Planning History Society Proceedings (Vol. 17, No. 2)*, ed. Carola Hein (Delft, The Netherlands: TU Delft, 2016), 43-52.

17. See: Rana Habibi, "The Institutionalization of Modern Middle Class Neighborhoods in 1940s Tehran: Case of Chaharsad Dastgah," *Cities* 60 (2017): 37-49.

18. In 1941, England, the USSR, and the United States forced Reza Shah (1878-1944) to abdicate in favour of his twenty-two-year-old son, Mohamad Reza Pahlavi, ending the supreme monarch's control of the army, bureaucracy, and court patronage. For more information, see: Ervand Abrahamian, *A History of Modern Iran* (Cambridge: Cambridge University Press, 2008).

Spaces of Socio-Political Transition

The reign of Reza Shah can be seen as a transitional phase tying the modernisation of Iran to the everyday life of ordinary people.[19] Reza Shah's modernisation plan was largely based on implementing a radical reform in both the areas of urban design and social policy. Reza Shah's social reform took place in the form of a secularisation project, aiming to reduce the influence of religion on the everyday life of Iranians.[20] As the first step, an educational reform was undertaken under the newly established Ministry of Education. By introducing a new educational system based on the French model, this ministry marginalised traditional schools (*Maktab*) that educated children based on Islamic thoughts (*Sharia*).[21]

Shah's secularisation project focused on women's status in society. His visit to Atatürk in Turkey in 1935 deeply influenced the Shah, in particular regarding the role of women beyond the realm of home.[22] Upon his return, Reza Shah claimed that for making progress and developing this country, the significance of women's participation in societal activities cannot be overlooked. Under what he called 'Awakening' for Iranian women, Reza Shah launched a reform project in 1936, where the expansion of women's work, education, and civic presence held a dominant place. In line with the Shah's intention for secularising the nation, changing the appearance of Iranian women became a core of his reform project. Reza Shah saw veil (*Hejab*) as a sign of 'backwardness' and a restriction for women's involvement in public activities.[23] As a result, a compulsory unveiling was implemented to redefine the image of 'modern' Iranian women in society, and female members of households were forced to appear in public spaces, unveiled.[24]

Refining the image of 'modern' Iran was not limited to unveiling women. All adult men, with the exception of state-registered clergymen, were required to wear Western-style trousers, coats, and Pahlavi hat, a strategy that aimed to "standardise and Europeanise the appearance of its people" by providing prescriptive dress codes for the general public in urban spaces.[25] This change of appearance can easily be traced from family portraits and pictures, where the male members of households tried to emulated their new lifestyle [Figure 2.02]. Finally, a civil legislation act was approved that required the registration of all marriages and divorces, and only allowed girls to get married after the age of fifteen.[26] Arguably, these changes, particularly in literacy level and women's freedom, facilitated the engagement of non-elite Iranians in state-led socio-political and economic activities. This also formed a basis for the emergence of the Iranian middle-class, in the late-1930s,[27] where teachers, government employees, and non-bazaar merchants largely formed the body of this new urban class.[28]

Changes in urban lives were promoted through an urban modernisation project, and Tehran served as a pilot model. The Shah also appointed General Karim

19. Ali Mohamad Ansari, *Modern Iran since 1921: The Pahlavis and After* (London: Pearson Education, 2003).

20. Marefat, "Building to Power."

21. In the traditional education system, *Maktabkhaneh* (primary school) was a place where children learned reading well-known Persian literature such as *Divan* written by Hafez or *Golestan* written by Sa'adi, and basic writing, grammar, and Islamic studies. The teaching was mostly conducted by the religious leader of or the most literate person in the neighbourhood. For more information see: Christl Catanzaro, "Policy or Puzzle? The Foundation of the University of Tehran between Ideal Conception and Pragmatic Realisation," in *Culture and Cultural Politics under Reza Shah: The Pahlavi State, New Bourgeoisie and the Creation of a Modern Society in Iran*, ed. Bianca Devos and Christoph Werner, Iranian Studies (London: Routledge, 2014), 37-54.

22. Reza Shah's only travel to a foreign country took place in 1935, and he visited Turkey upon the official invitation of Mustafa Kemal Atatürk, who ruled Turkey between 1923 and 1938. The modernisation of Turkey and the involvement of women in societal activities deeply influenced Reza Shah, which inspired him to undertake a comparable modernisation project in Iran. See: Stephanie Cronin, *The Making of Modern Iran: State and Society under Riza Shah 1921-1941* (London: Routledge Curzon, 2003).

23. Jasamin Rostan-Kolayi and Afshin Matin-Asgari, "Unveiling Ambiguities: Revisiting 1930s Iran's Kashf-I Hijab Campaign," in *Anti-Veiling Campaigns in the Muslim World: Gender, Modernism and the Politics of Dress*, ed. Stephanie Cronin, Durham Modern Middle East and Islamic World Series (London: Routledge, 2014), 121-48.

24. Amin, *The Making of the Modern Iranian Woman: Gender, State Policy, and Popular Culture, 1865-1946*, 48.

25. See: Houchang E. Chehabi, "Staging the Emperor's New Clothes: Dress Codes and Nation-Building under Reza Shah," *Iranian Studies* 26, no. 3/4 (1993): 209.

26. See: Homa Hoodfar, "Iranian Women at the Intersection of Citizenship and the Family Code, the Perils of 'Islamic Criteria'," in *Gender and Citizenship in the Middle East*, ed. Suad Joseph (Syracuse, NY: Syracuse University Press, 2000), 294.

27. See: Raymond Gastil, "Middle Class Impediment to Iranian Modernisation," *Public Opinion Quarterly* 22, no. 3 (1958): 325-29.

28. See: Chehabi, "Staging the Emperor's New Clothes: Dress Codes and Nation-Building under Reza Shah."



Figure 2.02: a portrait family picture taken after the implementation of the new dressing code for Iranian men.
Source: Institute for Iranian Contemporary Historical Studies (M256-538-1).



Figure 2.03: demolishing the walls of Tehran for giving room to the expansion of the city and constructing new administrative buildings such as the Iranian Ministry of Economic Affairs shown in this picture.
Source: Photograph by Ali Khadem 1937, archive of the Institute for Iranian Contemporary Historical Studies (A1-03862-01).

دوره ۹ تقنینیه

مجلس شورای ملی

مورخه ۲۷ آبان ماه ۱۳۱۲

شماره ۱۳۵۱

ضمیمه سراسله

قانون راجع به احداث و توسعه معابر و خیابانها

ماده اول - هر وقت بلدیه توسعه یا احداث سمبر یا خیابان یا میدانی را برای تسهیل عبور و مرور یا زیبائی شهر لازم دانست بطریق مواد ذیل رفتار خواهد نمود.

ماده دوم - ادارهٔ بلدیه مکلف است نقشهٔ مشروح سمبر یا خیابان و یا میدان منظوره را با صورتی که از هر خانه یا مستغل یا زمین بایر و یا مزروع و یا باغی جزو شارع یا میدان خواهد شد ترتیب دهد و پس از تصویب انجمن بلدیه و کلوکت محل در وزارت داخله باتعیین موقع اجرای نقشه که لااقل سه ماه پس از انتشار اعلان یا اخطار کتبی خواهد بود بوسیله اعلان بحضار ساکنین و یا متولیان و متصدیان و ذیحقوقات اطلاع دهد - در مواردی که ضرورت و فوریت اقتضا کند انجمن بلدیه میتواند با تصویب وزارت داخله مدت فوق را بانقضای موقع تقلیل دهد.

از تاریخ انتشار اعلان فوق در ظرف یکماه ساکنین خط توسعه خیابان یا احداث میدان میتوانند بنقشه بلدیه چه از حیث لزوم و چه از حیث ترتیب نقشه اعتراض و دلائل اعتراض را بانجمن بلدیه محل تسلیم نمایند.

انجمن بلدیه مکلف است بدلائل اعتراض رسیدگی کرده نظر خود را در رد یا قبول اعتراض ضمیمهٔ نقشه نموده و بسیه را بوزارت داخله ارسال دارد و رأی وزارت داخله قطعی است.

ماده سوم - بلدیه مکلف است بهر صاحب املاکی که بموجب نقشه برای توسعه یا احداث شارع یا میدان لازم است بقیمت عادله از املاک خود اراضی بدهد و مالک نیز باید آنرا واگذار نماید و در صورتیکه بلدیه بقیمت راضی نشود از مکلف است قیمت مزبور را در موعد یا باقساط داده و لی در هر حال موعد باقساط نباید از

Figure 2.04: the 1933 document of Developing, Building, and Widening Streets and Alleys (the first page).
Source: Research Centre of Iran's Islamic Parliament.



Figure 2.05: Shah-Reza (Ferdouwsi) street in 1940s Tehran accommodating new building typologies such as multi-story residential buildings and offices and shop-stores.
Source: Photos by Dmitri Kessel (1950's), *Life Magazine* Photo Archive, available online: [http://images.google.com/hosted/life/].

Bozarjomehri, his closest friend in the army, as the head of the Municipality (*Baladiyeh*): the mayor of Tehran.[29] In the early years of its establishment, the Municipality was only responsible for cleaning and paving the streets.[30] Under the leadership of Bozarjomehri, however, the Municipality of Tehran became a main agent of urban governance and development from the 1930s. To expand the urban structure of the city and to give more room to new urban projects, the Municipality demolished Tehran's city walls [Figure 2.03].[31] Then, the Municipality published a planning document in 1933 including a set of urban regulations, which might be seen as the first 'modern' urban planning tool in the country. Known as the Act of Developing, Building, and Widening Streets and Alleys (*Ghanun-e Ehdas va Tose-e Ma'aber va Khiaban-ha)*, this planning document mainly focused on the transformation of street-profiles, which gave birth to a Haussmannian urbanism over traditional neighbourhoods in Iran, under the reign of Reza Shah.[32]

Deconstructing the Traditional Urban Structure of Tehran

The planning document for Tehran was largely designed by a young modernist architect, Gabriel Guevrekian.[33] To prepare a plan for the transformation of the city fabric, the mayor Bozarjomehri sought for Western urban planners and architects. In his visit to Europe, he met Guevrekian, who studied architecture in the Vienna's Academy of Applied Arts, under the supervision of Josef Hoffmann and Oskar Strnad. Bozarjomehri asked Guevrekian to become the chief architect and city planner of the municipality of Tehran, an opportunity for the young architect to implement his ideas, in a large scale.[34] In the beginning of his career, Guevrekian was actively involved in the early stages of the CIAM congresses where he served as the general secretary between 1928 and 1933.[35] Indeed, his association with the European circle of avant-garde architects such as Henri Sauvage and Le Corbusier made him the representative of the modern international movement in Iran. This happened when he arrived the country in 1933 on the government invitation to develop an urban plan for Tehran.[36]

The execution of the planning document and new street layout radically changed the structure of traditional neighbourhoods. The document was a descriptive text, in three pages consisting of ten articles and five notes [Figure 2.04]. It extensively focused on the improvement of street-profiles, and the reconstruction and reorganisation of façades alongside streets. Arguably, the emphasis on the design of façades might be seen as an attempt to create a dress code for the appearance of urban areas based on a set of standards, and to regulate the image of streets and promote change in the relationships between public and private spaces in the new urban plan for Tehran. The document provided a juridical and financial mechanism to allow the Municipality for implementing changes within the existing

29. In 1907, the Iranian parliament approved the Act of *Baladiyeh*, a legislation which set a basis for the construction of modern municipalities in Iran. Accordingly, Iran's Ministry of Interior Affairs (*Vezarat-e Dakheleh*) established the Baladiyeh of Tehran in 1910, an institution that might be considered as the antecedents of the today's municipality of Tehran. For more reading, see: Madanipour, *Tehran: The Making of a Metropolis*.

30. See: Maryam Nilghaz, "Vazayef Baladiyeh Tehran," [The Duties of the Municipality of Tehran.] *Payam Baharestan* 1, no. 4 (2009).

31. See: Talinn Grigor, "The King's White Walls: Modernism and Bourgeois Architecture," in *Culture and Cultural Politics under Reza Shah: The Pahlavi State, New Bourgeoisie and the Creation of a Modern Society in Iran*, ed. Bianca Devos and Christoph Werner, Iranian Studies (London: Routledge, 2014), 95-118.

32. Kiani, *The Architecture of First Pahlavi*, 173-210.

33. Born in an Armenian family in Istanbul, Gabriel Guevrekian grew up in Tehran, and left Iran to Austria, when he was 14 years old.

34. In early 1921 Guevrekian moved to Paris, and after a short collaboration with Henri Sauvage, he joined Robert Mallet-Stevens' atelier from 1922 to 1924. Here, he became the project leader (chef d'atelier), working on large residential and urban projects. See: Hamed Khosravi, "Discreet Austerity: Notes on Grabriel Guevrekian's Gardens," *Cloud-Cuckoo International Journal of Architectural Theory* 20, no. 34 (2015).

35. Taken in 1928, the picture shows Gabriel Guevrekian who stands in the front row of a group photograph commemorating the founding of CIAM at La Sarraz. He is recognisable by his bald head. For more reading about CIAM congresses, see: Eric Paul Mumford, *The Ciam Discourse on Urbanism, 1928-1960* (Cambridge: MIT Press, 2000).

36. For more information, see: Grigor, "The King's White Walls," 95-118.



Figure 2.06: the National Bank of Iran (Bank-e Meli Iran), designed by Mohsen Foroughi, with a mixture of pre-Islamic Persian and European neo-classical style.
Source: *Arshitekt* no 6 (1946): cover-page.



Figure 2.07: an example of luxury villas designed by modernist Iranian architects for their rich clients, in the 1930s (Tehran).
Source: *Arshitekt* no5 (1946): 170.

urban fabric.[37] It also highlighted the importance of preparing a municipal street layout for the urban areas where the new legislation should be implemented. In fact, this planning document became a political apparatus for local municipalities to shape and influence the everyday life of Iranians in public spaces.

In 1937, the Municipality proposed a new urban layout for Tehran that was influenced by the modernist design principles discussed in the early CIAM congresses, traceable from its gridded system of streets and rigid zoning.[38] In this plan, traditional neighbourhoods were divided in smaller segments and bounded with a set of streets, forming new residential sectors in Tehran. Further, the set of regulations provided by the planning document led to the development of some new building typologies, such as residential blocks, offices and commercial buildings, alongside the newly established streets [Figure 2.05]. Introducing these new typologies can be seen in line with the Shah's secularisation programme, aiming to change urban lives of Iranians. Moreover, the street facades, expectedly, were designed based on the planning documents, which specified large openings (windows, balconies, loggias), strict façade materialisation, and well-maintained plinths around roundabouts and squares. In so doing, interior private spaces were largely exposed towards public spaces, forming an extroverted urban image for the city; and the facades of new buildings created an organised and well-dressed appearance for public spaces.

Reza Shah's urban and architectural projects became a tool to unveil, extrovert, and control the socio-spatial structure of traditional neighbourhoods, as observed by Mostafa Kiani and Rana Habibi.[39] At the same time, these projects formed a basis for establishing a nationalist and bureaucratic bourgeoisie political system, mainly through the expansion of new administrative, financial, and governmental buildings, such as new ministry buildings, municipal/post offices, and banks. This might explain why most state's financial resources were devoted to the urban development of Tehran, and many European-educated Iranian architects became involved in designing state-funded buildings, based on a new approach to the pre-Islamic Persian architectural styles.[40] This approach can be seen from Mohsen Foroughi's design for Iran's National Bank (*Bank-e Meli Iran*), showcasing a mixture of pre-Islamic Persian and European neo-classical style [Figure 2.06].

This modernisation plan also impacted the life of privileged Iranians. In most non-governmental projects, such as luxurious residences and lavish villas, avant-garde architects employed modernist design principles such as abstract forms and minimalistic aesthetic [Figure 2.07].[41] They received these private commissions by rich clients who have already been in contact with the West (Europe and north America), and aware of some new architectural movements in Europe.[42] On the contrary, the new middle-class groups and ordinary people continued building their houses based on traditional techniques and principles. Nevertheless, this

37. See: Shahrdari Tehran, "Ghanun-E Ehdas Va Tose-E Ma'aber Va Khiaban-Ha ", ed. The Central Research Bureau of Iran's Islamic Parlement (Tehran: the Municipality of Tehran, 1933).

38. See: Habibi, *De La Cite a La Ville*, 160-74.

39. See: Kiani, *The Architecture of First Pahlavi*, 233-56; and Rana Habibi, "Modern Mass Housing in Tehran: Episodes of Urbanism 1945-1979" (KU Leuven, 2015)..

40. See: ibid., 47-91.

41. See: Amir Bani Masoud, *Memari Moaser Iran* [Iranian Contemporary Architecture] (Tehran: Nashr-e Honar-e Memari Gharn, 2015), 238-63.

42. Cyrous Bavar, *Negahi Be Peydayeshe Memarie Nou Dar Iran* [A Glance at the Appearance of the Iranian Modern Architecture] (Tehran: Nashr-e Faza, 2010), 80-86.

situation began to change with the establishment of the Mortgage Bank (*Bank-e Rahni*) by the government in 1939.[43] This state-led institution became responsible for financing the building of state-initiated housing projects and providing long-term loans with low interest for low-income families.[44] But, in the absence of any planning for housing development, the Bank was not able to carry out construction projects.

Planning Documents: A Design Tool for Housing Development

In the early-1940s, the government was comprised of a group of Iranian reformists and modernist, who appointed Ahmad Qavam as the primer-minister of Iran. Indeed, Qavam was an influential reformist that played an instrumental role in drafting the first constitutional law, after the 1906 Constitutional Revolution.[45] While his administration sustained Reza Shah's reform programme and his bureaucratic apparatus as essential tools for modernising the nation, it sought to implement an array of welfare benefits for the emerging middle-class.[46] Qavam's administration also put a distinct emphasis on the involvement of women in both economic and social activities. [47] It comes, thus, as no surprise to see that the compulsory unveiling law lasted until the end of Qavam's first administration in 1943, and his government supported the bills regarding women's rights and involvement in the Iranian society. Qavam's administration also encouraged municipal institutions to play an active role in developing urban spaces. Indeed, it was, during Qavam's prime-ministership that city councils gained autonomy and took initiative to draft/enhance planning documents for the construction of new residential neighbourhoods in the country. Moreover, his administration approved the provision of pensions for government employees and interest-free loans for housing low-income civil servants. This might explain why building affordable housing gained a prominent place in Qavam's social modernisation programme. Accordingly, the Mortgage Bank was assigned to deliver needed financial means for constructing new houses, and to plan for housing development, with the Municipality of Tehran.

Planning for public housing development followed two distinct strategies in the municipal agenda. In the first place, modernist architects began to discuss the notion of constructing low-cost housing for promoting new forms of living among Iranians.[48] For instance, Noureddin Kianouri reported on the mass housing constructions in East Bloc and Soviet-Russia, whereas Iraj Moshiri discussed the development of large-scale housing schemes, mainly with industrialised methods, in West Europe.[49] In their analyses, three conditions were defined as the driving force for the development of a 'modern' and 'well-organised' housing projects: the planning and design of the entire neighbourhood, the emphasis on the notion

43. See also: Habibi, "The Institutionalization of Modern Middle Class Neighborhoods."

44. "Koli'at," [The Overview.] *Bank-e Rahni* 2: 22, no. 10 (1946): 63-70.

45. See: Abrahamian, *Iran between Two Revolutions.*

46. Ahmad Qavam formed his first cabinet in August 1942 lasting until February 1943; and his second cabinet was formed in January 1946 which lasted until December 1947. See: *A History of Modern Iran.*

47. Valentine M Moghadam, "Materialist Policies Versus Women's Economic Citizenship? Gendered Social Policy in Iran," in *Gender and Social Policy in a Global Context: Uncovering the Gendered Structure of 'the Social'*, ed. Shahra Razavi and Shireen Hassim (New York: Palgrave Macmillan, 2006), 87-109.

48. See also: Habibi, "The Institutionalization of Modern Middle Class Neighborhoods."

49. For instance, see: Noureddin Kianouri, "Tajdid Sakhteman-Haye Kharab Shode Dar Etehad Jamahid Shoravi," [Reconstruction of Buildings in Soviet-Union.] *Arshitekt* 1, no. 2 (1946): 58-63.

of collectivism in land-ownership and societal relations, and the importance of urban regulations for developing new neighbourhoods with well-defined street-profiles, and housing orientations.[50] In addition, Mohamad Ali Sheibani, an influential state's architect, drew the attention of decision-makers towards the importance of developing healthy houses not only for the elites, but also for the whole society.[51] Sheibani urged the government to fund 'collective' housing for low-income Iranians, a housing model that in Sheibani's view, could simply be provided by clustering individual houses based on modernist urban regulations.[52]

This model of housing was further conceptualised by Abbas Adjdari who later became an influential figure in the development of housing in Tehran and other Iranian cities.[53] In his article, '*The Problem of Housing in Tehran and the Other Iranian Cities*', Adjdari defined the notion of collective housing as building houses in the form of row-house typology.[54] This housing model, in Adjdari's view, would reduce the cost of both plumbing and installations, decrease the use of building materials in the construction process, provide compact but sufficient access layout (i.e., corridors, stairs, and entrance areas) to individual houses, and enable the creation of shared outdoor spaces on the ground level. More importantly, this housing form would stimulate social encounters among the residents of newly constructed neighbourhoods, and allow them for participation and negotiation in developing their living environment.[55] This housing model is proved to be instrumental in the transformation of Kuy-e Chaharsad-Dastgah, which will be discussed in the last section of this chapter.

Employing planning documents for designing and regulating the image of new residential neighbourhoods also held a prominent place in the municipal agenda. As insightfully observed by Karimi and Habibi, the urban transformation of Tehran, initiated by Reza Shah, led to a dramatic increase in urban population density and the expansion of many scattered settlements in the capital city.[56] As described in the pages of the first and only Iranian architecture journal in the 1940s, *Arshitekt*, overcrowding and over-population, and insufficient access to public amenities such as schools and hospitals, and to sanitation and clean water at household level exacerbated poor living conditions of many Iranians in the cities.[57] In fact, it was within this context that Naser Badie, the Head of Urbanism and Urban Planning of the Municipality of Tehran criticised the urban condition of Tehran, and he argued that the absence of a comprehensive urban planning document, proper building codes, and a guiding street layout for the city of Tehran caused the formation of scattered housing, and the ad-hoc development of public spaces.[58]

Modernist architects, to make Tehran a better place to live, had already put these conditions into practice. As mentioned earlier, the 1933 planning document mainly focused on the transformation of street-profiles and the erection of multi-

50. See: Manouchehr Khorsand, "Tarikhcheh Sakhteman Khanehaye Arzan Gheyamt Dar Europa," [A History of Low-cost Housing Development in Europe.] *Arshitekt* 1, no. 4: 120-25.

51. See also: Habibi, "The Institutionalization of Modern Middle Class Neighborhoods."

52. Mohamad Ali Sheibani, "Peidayesh Fekr-E Tahiyeh Sakhteman-Haye Daste-Jami Arzan Baha Dar Iran," [The Idea of Developing Low-cost Housing in Iran.] *Arshitekt* 1, no. 1 (1946): 28. See also: Sheibani, "Khaneh-Ye Khub," [A Good Home.] *Arshitekt* 1, no. 4 (1946).

53. About the role of Abbas Adjdari in the development of housing in Tehran, see: Khosravi, "Camp of Faith;" and Habibi, "Modern Mass Housing in Tehran."

54. Abbas Adjdari, "Masale-Ye Tahiy-E Maskan Dar Tehran Va Shahrestan-Ha," [The Problem of Housing in Tehran and the Other Iranian Cities.] *Arshitekt* 1, no. 2: 51-52.

55. Ibid.

56. See also: Karimi, *Domesticity and Consumer Culture*; and Habibi, "The Institutionalization of Modern Middle Class Neighborhoods."

57. See: Abbas Adjdari, "Masa'ele Tahiyeh Maskan Dar Tehran Va Shahrestanha," [Problems of Housing in Tehran and Other Iranian Cities.] *Arshitekt* 1, no. 1 (1946): 15-16.

58. Naser Badie, "Naghshebardari Va Tarh-E Eslahi Shahr-E Tehran," [Mapping and Redesigning the City of Tehran.] *Arshitekt* 1, no. 1 (1946): 18-19.



Figure 2.08: an example of general housing condition in Iran after the second World War, showing the devastated houses and dramatic hygiene condition of living areas, in Tehran.
Source: *Honar va Memari* 3, no. 10-11 (1978): 48 (top); and Photos by Dmitri Kessel (1950's), *Life Magazine* Photo Archive, available online: [http://images.google.com/hosted/life/].

story buildings. However, since the document did not provide design guidelines and building codes that were enforced by the authorities, people mostly built their houses with less attention to the provision of natural light and fresh air, leading to the construction of scattered settlements in Tehran.[59] In the absence of Guevrekian who left the country in 1937, a group of young-leading European-educated Iranian architects, such as Abbas Adjdari and Naser Badie, took initiative for improving the planning document, under the leadership of Ali Akbar Sadegh. They collaborated with Iraj Shams, the general director of architecture department from the Municipality of Tehran, to prepare a set of design guidelines and building codes for the construction of residential houses and neighbourhoods, in Tehran.

These Iranian architects studied architecture or urban planning/design, mostly at European universities. One of the influential figures of this group was Ali Akbar Sadegh, who studied civil engineering at Ghent University,[60] and architecture at École des Beaux-Arts of Brussels between 1929 and 1937. He took inspiration from the works of a group of Dutch modernist architects,[61] *De Stijl*, who advocated pure abstraction and universality by a reduction to the essentials of form.[62] This architectural approach can be seen in most Sadegh's constructed works depicted in the pages of the *Arshitekt*. After his return in 1937, he became an instrumental figure in further developing the 1933 planning document of Tehran with the help of his European educated colleagues. Sadegh became a board member of Tehran's City Council in 1939; and for many years, he acted as the head of the High Council of Architecture and Urban Planning in Tehran, an opportunity that helped him to improve living condition of citizens.[63]

As a first step, these architects revised and expanded the planning document of Tehran. In collaboration with the Municipality of Tehran, they drafted the 'Act of Modifying and Developing Streets and Urban Spaces' (*Ghanun-e Eslah-e Ghanun-e Tose-e Ma'aber*), with 18 articles and 12 notes, which was approved by the parliament in 1941.[64] They also used this governmental act as a basis for preparing a municipal planning document (*Aeen-nameh Sakhteman-ha va Gozar-ha*) providing a set of design guidelines in detail for developing residential buildings and urban spaces in Tehran.[65] For instance, this document described the ways by which building volumes had to be constructed in harmony with their neighbours, and specified the condition of issuing building permits. As indicated in this document, the building permit would only be issued, if the municipality approved the design documents; thus, a supervisory role was defined for the municipality during the construction process. The document was approved by Tehran's City Council in 1942, and formed a basis for arranging the internal organisation of houses, especially regarding the access of all habitable rooms to natural light and fresh air. This situation was very critical in the existing settlements in Tehran [Figure 2.08]. Indeed, one of the aims of this document was to assure a minimum hygiene condition for developing residential neighbourhoods and living environments.

59. For more information, see: Pamela Karimi, *Domesticity and Consumer Culture*.

60. See: Amir Bani Masoud, *Memari Moaser Iran* [Iranian Contemporary Architecture] (Tehran: Nashr-e Honar-e Memari Gharn, 2015).

61. See: Marefat, "Building to Power," 192.

62. During the Second World War (1914-1918) many Belgian artists and architects stayed in exile in the neutral Netherlands. As a result, a strong cross-cultural exchange took place between artists and architects in both countries. De Stijl was one of the platforms that catered for exchange of ideas and inspiration.

63. For more reading, see: "Arshitekt-Haye Mara Beshnasid: Ali Sadegh," [Know our Architects: Ali Sadegh.] *Arshitekt* 1, no. 4 (1946): 149.

64. The Parliament of Iran, "Ghanun-E Eslah-E Ghanun-E Tose-E Ma'aber," in *3737*, ed. The Central Research Bureau of Iran's Islamic Parlement (Tehran: The Central Research Bureau of Iran's Islamic Parliament, 1941). Also available in: http://rc.majlis.ir/fa/law/show/90504

65. See: Ali Omranipour and Mehdi Afshar Asl, "Ta'amoli Bar Avalin Mogharart-E Sakhtemani Shahr-E Tehran," Abadi 18, no. 58 (2008): 90-95.

The revised planning document also put a distinct emphasis on the importance of preparing street layouts and designing an organised building façade towards public spaces. While Sadegh focused on improving urban and building regulations, Badie pushed for developing an infrastructural plan and a street layout for Tehran. Naser Badie studied town planning in the Institute d'Urbanism de l'Université de Paris; and since his return to Iran in 1940, he served as the head of urbanism and urban planning of the Municipality of Tehran.[66] In his serial publications in the *Arshitekt*, Badie addressed the importance of mapping the existing urban environments and land-use patterns, especially for preparing a water supply system and sewage network in Tehran.[67] In this view, a detailed map of the city of Tehran was essential for making such improvements, which eventually inspired the founding of Iran's Cartographic Centre. After the preparation of this plan, the municipality asked the London-based engineering company, Alexander Gibb and Partners, already involved in Abadan, to prepare a plan for the water supply and sewage system of the city in the mid-1940s.[68] This sanitation plan later became a point of departure for future development of urban areas in Tehran.

The revised planning document was more than just a set of guidelines for designing urban spaces. It also aimed to promote a certain lifestyle by highlighting the importance of separating public-private urban lives. For developing a well-organised neighbourhood structure, the document recommended the centralisation of public facilities at the centre of each community, linked to residential sectors and individual houses through a series of streets. Further, the document promoted a notion of collective ownership for public urban spaces. It emphasised guidelines such as: all front-doors placed alongside public spaces should open inwards, people are not allowed to occupy the side-walks in front of their shops and houses, and residents have to maintain and clean public spaces attached to their entrance area. Indeed, by prioritising public interests over individual preferences, the document promoted a collective sense of responsibility and ownership among the residents, and it created a well-organised image for public spaces.

Both, the models of collective housing promoted by modernist Iranian architects, and urban planning documents became a source of inspiration for state-led urban development projects. Promoted housing models formed a basis for the standardisation and mass production of houses, while planning documents created a design tool for transforming traditional forms of living among Iranians. In 1945, the newly formed cabinet of Prime Minister, Ahmad Qavam, took initiative to draw a seven-year urban reconstruction plan for the major Iranian cities, where the capital city,[69] Tehran, became a pilot model.[70] Sheibani, from the Ministry of Interior (*Vezaratkhaneh Dakheleh*), took the leadership to develop this urban plan. The National and Mortgage Bank, together with the Municipality of Tehran, became responsible for the preparation of a housing project within the existing borders of Tehran that would accommodate 1,000 civil servants.

66. For more information, see: "Akhbar," [News.] *Arshitekt* 1, no. 4 (1946): 153.

67. See: Naser Badie, "Naghshebardari Va Tarh-E Eslahi Shahr-E Tehran," [Mapping and Redesigning the City of Tehran.] ibid., no. 1: 18-19.

68. The British company, Alexander Gibb and Partners, was already involved in developing various water supply, sewerage and drainage schemes in the oil cities of Abadan, Ahwaz, and Khorramshahr, all located in south-west Iran. For more reading, see: Gwilym Roberts, *Chelsea to Cairo : 'Taylor-Made' Water through Eleven Reigns and in Six Continents : A History of John Taylor & Sons and Their Predecessors* (London: Thomas Telford, 2006), 377.

69. See: Karimi, *Domesticity and Consumer Culture*; Khosravi et al., *Tehran: Life within Walls;* and Habibi, "The Institutionalization of Modern Middle Class Neighborhoods."

70. For more reading, see: "Barname Haft-Saleh Eslahat Sakhtemani Shahrha," [Seven-Year Plan for Reconstructing Cities in Iran.] ibid.: 40.

The National Bank and Mortgage Bank took responsibility to provide needed financial means for purchasing land and constructing houses. The Mortgage Bank also became responsible for the construction and supervision of projects. The Municipality had to deliver urban and architectural plans, as well as to provide basic infrastructural facilities, such as asphalted roads and plumbing for drinking water. The municipal architect, Ali Akbar Sadegh, was appointed by the Mortgage Bank as the head of the design team. Sadegh collaborated with a group of young European-educated Iranian architects including Manouchehr Khoursand, Hossein Sadegh, and Abbas Adjdari, to develop the project. They co-founded the Association of Registered Iranian Architects (*Anjoman-e Arshitekt-haye Irani Dimplomeh*) in 1946;[71] and they used this opportunity for introducing their ideas into the construction of new residential neighbourhoods, in Tehran.[72]

Kuy-e Chaharsad-Dastgah

As part of Tehran's housing programme, the design team proposed a residential neighbourhood in south-east Tehran, an area that later became known as Kuy-e Chaharsad-Dastgah. The location of the project was just outside the municipal borders of the city. The choice of this location was a strategy to reduce the impact of urban land-use and land-price on the development of this low-cost housing project. The first location proposed by the Municipality for this project was an old ditch, 4-meter deep, at the east border of Tehran.[73] As both filling the ditch and buying land in the city would considerably increase the cost of construction, the Mortgage Bank chose to realise this housing project outside Tehran.[74]

The design team selected an area of approximately 19 hectares that was situated in the south of the *Doshan-Tappeh* road and close to a weapon-factory [Figure 2.09]. This location was part of a larger development plan prepared by the government for constructing a hospital and water storage for Tehran. The existing plans to construct service facilities in this area made this site a favourable option for the reducing the cost of extending the infrastructure to Chaharsad-Dastgah. The Municipality approved the selected construction plot, and the National Bank dedicated a budget for constructing 400 houses, for the first phase of development. The Mortgage Bank took responsibility to build the project between 1946 and 1950, and to provide needed building materials such as bricks for load-bearing walls, steel I-beams for slabs, and in-situ concrete for foundations.[75] For brick production, the Bank also established a 'Hoffmann kiln' in south Tehran, which would enable the Bank to accelerate the production of houses and ease the impact of material cost on the development of the project. Thus, Chaharsad-Dastgah became the first state-sponsored low-cost, large-scale housing model in Iran to be designed by a group of European-educated Iranian architects and fully constructed with local materials.[76]

71. In February 1946, Ali Sadegh, Keyghobad Zafar, Manouchehr Khoursand, Mohsen Foroughi, Vartan Hovanesian, Abbas Adjdari, Naser Badie, and Iraj Moshiri established this Association of Registered Iranian Architects to help municipalities for providing urban planning, design, and building regulations for the construction. Zafar and Sadegh were selected as the president and vice-president of the Association, respectively; and Moshiri and Hovanesian served as the editors of *Arshitekt*. See: "Akhbar-E Anjoman," [The Association's News.] *Arshitekt* 1, no. 1 (1946): 39.

72. Marefat, "Building to Power.". See also: Habibi, "Modern Mass Housing in Tehran."

73. See also: Habibi, "The Institutionalization of Modern Middle Class Neighborhoods."

74. For more reading, see: Manouchehr Khoursand, "Khane-Haye Arzan-E Kuy-E Chaharsad-Khaneh," [The Low-cost Housing of Chaharsad-Dastgah.] *Arshitekt* 1, no. 4 (1946): 133-35.

75. For more reading, see: Ali Mohamad Mohamad Abadi, "Mozu Tahiyeh Masaleh," [The Issue of Building Materials.] ibid.: 136.

76. As published in the pages of the journal of *Bank-e Rahni*, Kuy-e Chaharsad-Dastgah was the first attempt of the government to develop affordable housing for low-income civil servants, in Iran. It was also the first involvement of Iranian architects in the design of large-scale housing, in Iran. See: "The Overview," 70.

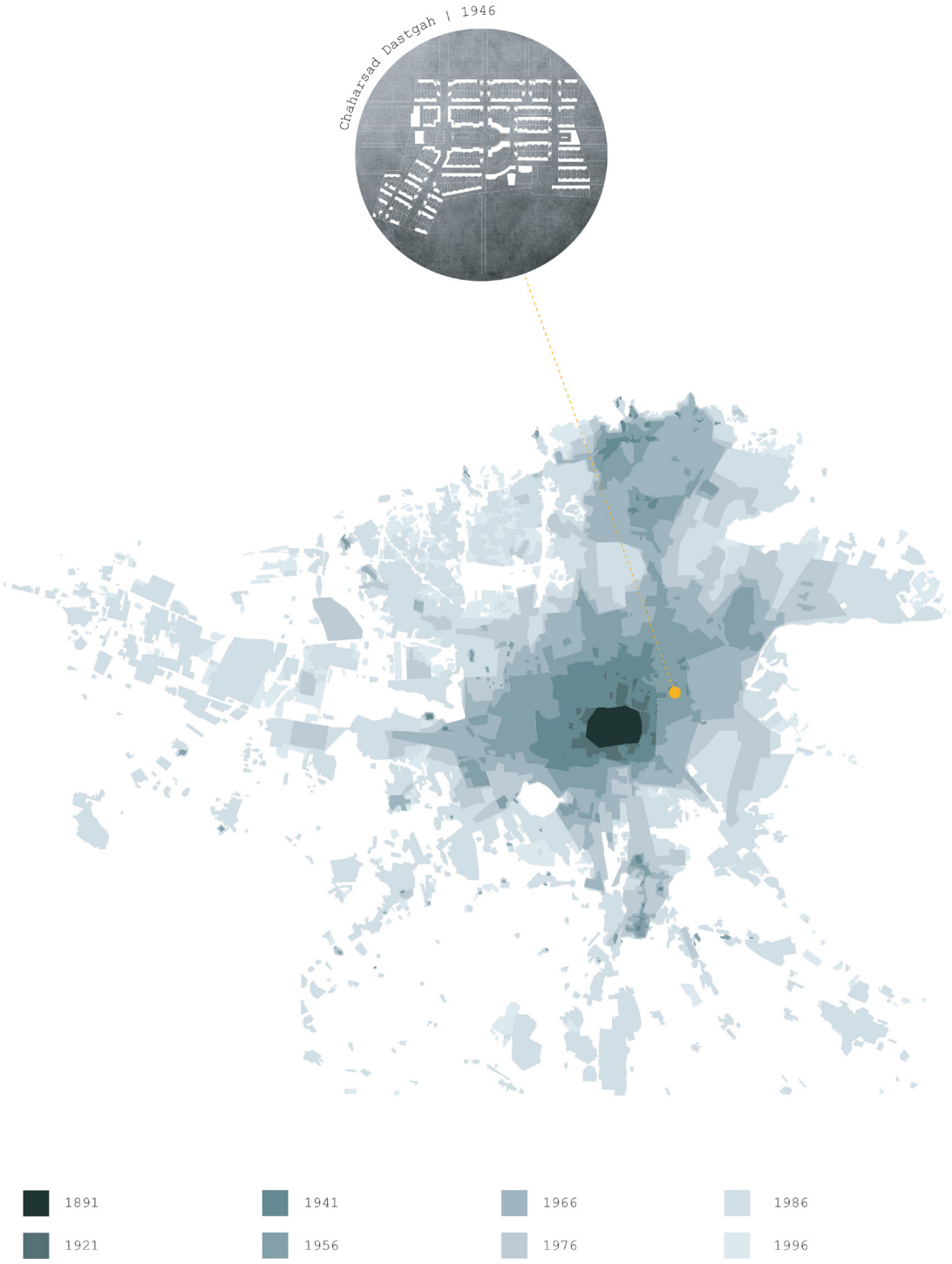


Figure 2.09: the location of Kuy-e Chaharsad-Dastgah, in Tehran (1948).
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

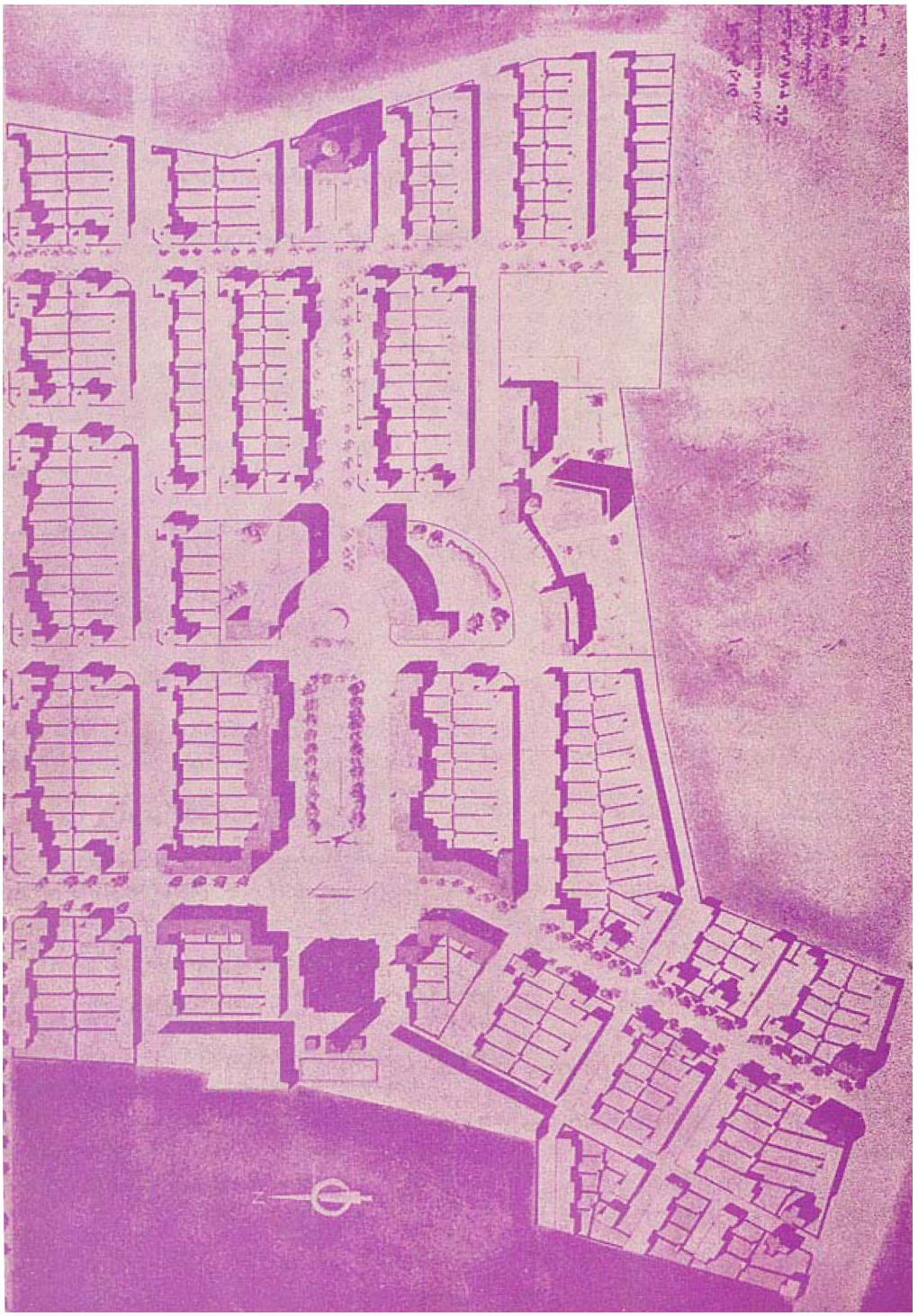


Figure 2.10: the urban layout of Kuy-e Chaharsad-Dastgah, designed and constructed between 1946 and 1950.
Source: *Arshitekt* no4 (1946): Cover page.

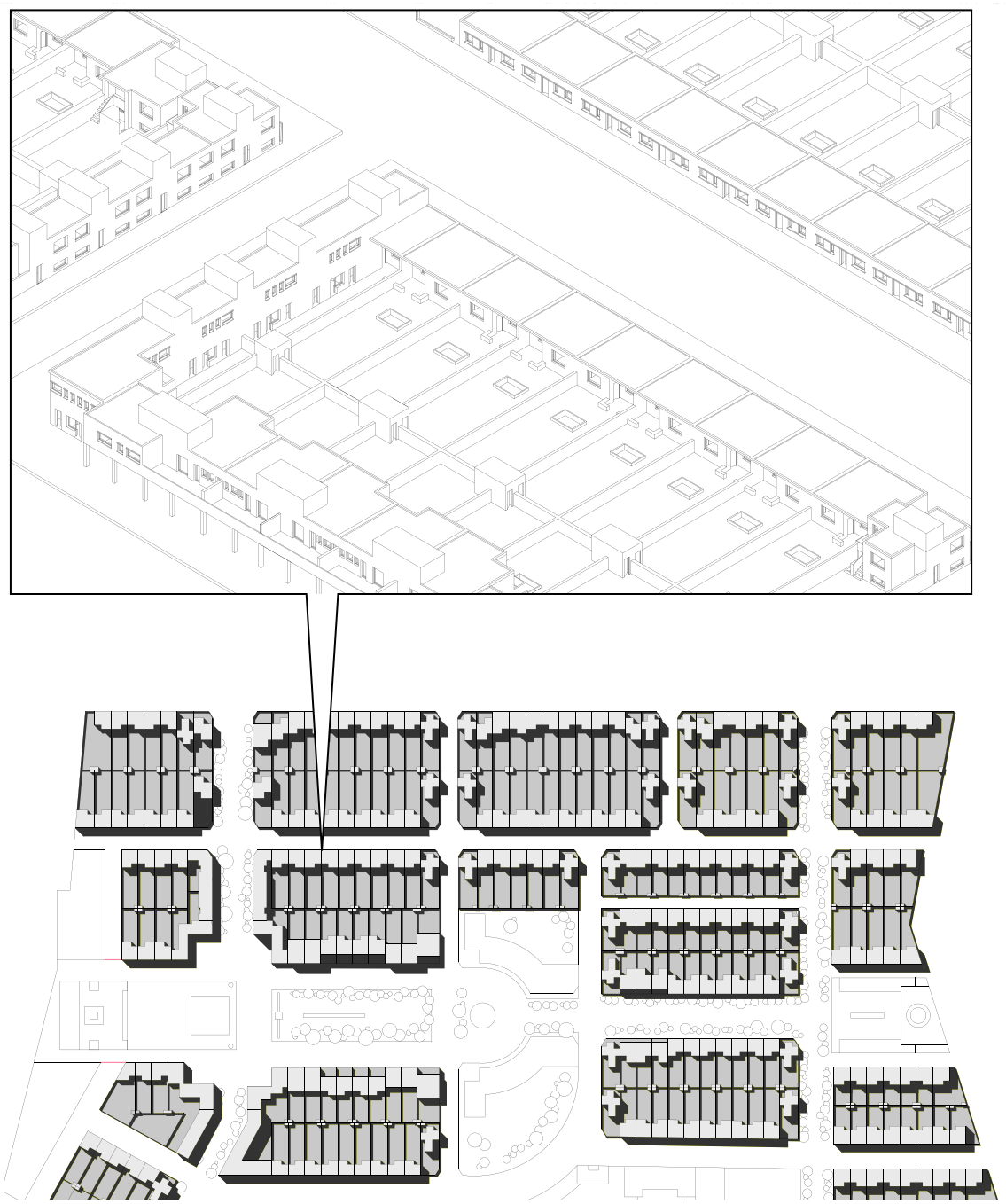


Figure 2.11: in Chaharsad-Dastgah, each semi-enclosed urban block was created through a combination of row-house and various corner-house typologies.
(with following page)
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

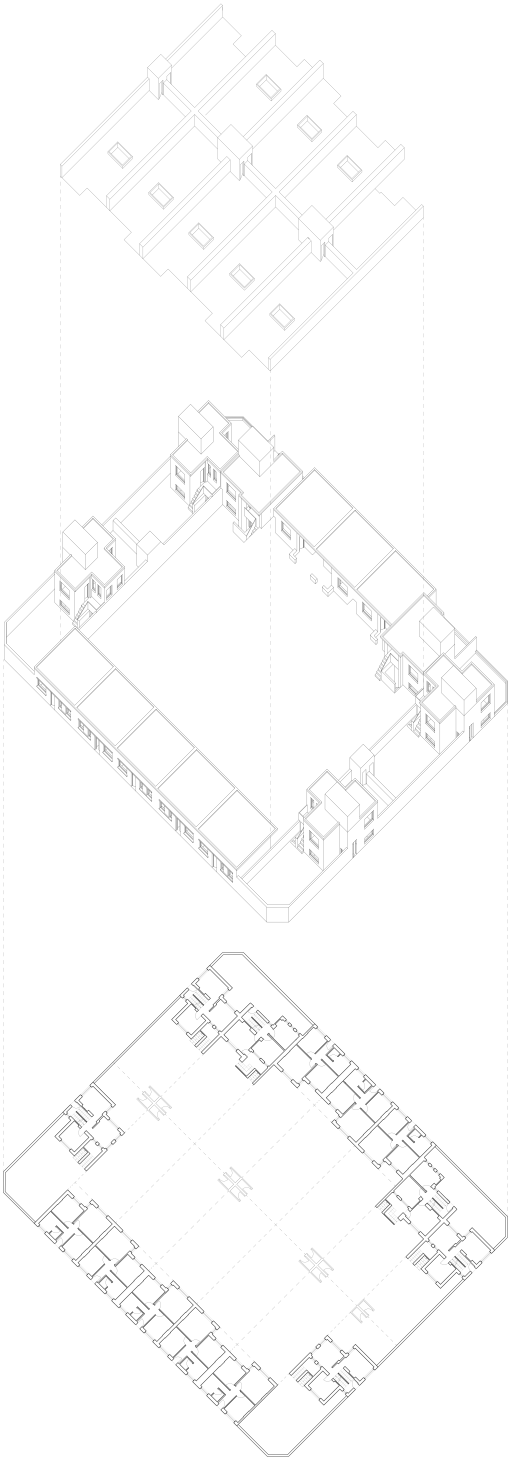


Figure 2.11: in Chaharsad-Dastgah, each semi-enclosed urban block was created through a combination of row-house and various corner-house typologies. (with previous page)
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

For designing the urban layout of Kuy-e Caharsad-Dastgah, the design team employed a system of intersecting streets that combined with an existing diagonal road to divide the construction plot into 25 blocks.[77] The spatial structure of each block was defined by a central void and an enclosure. The void was formed at the heart of each block through the back-to-back aggregation of the individual courtyards. The enclosure was made with dwelling units; and these units were grouped as a set of one- and two-story houses, placed at the periphery of each urban block [Figure 2.10]. This grouping resembled a row typology from the placement of dwellings alongside the streets, a form of housing development that was promoted by Abbas Adjdari. This housing form in Chaharsad-Dastgah also included a series of L-shaped two-story residential buildings on the corners to form a perimeter semi-closed urban block typology [Figure 2.11]. In fact, this typology created a continuous facade for the streets, and provided some degree of privacy for the back-to-back organised courtyards.

The courtyards played a vital role in shaping both the urban and dwelling layout. To create a standard dwelling layout and building system for the mass production of houses, the architects of Chaharsad-Dastgah proposed dwelling units in two main types: one- and two-storey houses. Each house included necessary service spaces (i.e., kitchen, storage, bathroom, and toilet), and was designed with small variations in size, from 64 to 96 square meters, or in number of habitable rooms, forming in total 6 dwelling types to be replicated/placed in semi-closed blocks [Figure 2.12].[78] The one-storey houses were designed with either three habitable rooms on the ground level, or with two additional rooms in the semi-basement.[79] The two-storey houses were made up of either three habitable rooms with balconies, placed on top of shop-stores, or a combination of the latter with two additional rooms on the ground level. Known as the corner type, a distinct two-story house was also designed in a L-shape configuration with five habitable rooms as well as with a front and back yard. Moreover, a minimum surface of 80 square meters was provided for each dwelling type as its outdoor room: the courtyard.

These courtyards, as observed by Karimi, Khosravi et al., and Habibi, shared some characteristics with that of the traditional Iranian courtyard-garden house type (*Khaneh-Bagh*) [Figure 2.13].[80] In this traditional type, the courtyard included a small garden and it was surrounded with high-walls or habitable rooms. Further, the courtyard was mostly used as a locus of everyday life and practices such as cooking and family gathering, while also providing direct access to most interior spaces of the house.[81] The courtyard was connected to the larger body of the neighbourhood through a web of galleries and corridors, an access network that created the gradation of public-private separation and transition in this traditional type, as shown in the previous chapter. Arguably, these characteristics can partly be traced in the houses of Chaharsad-Dastgah, where each courtyard was enclosed with a set of walls and habitable rooms. In this project, while all

77. See also: Habibi, "The Institutionalization of Modern Middle Class Neighborhoods."

78. In this chapter, habitable rooms are spaces that accommodate everyday activities such as sleeping, living, and dining.

79. The semi-basement was constructed one metre lower than ground level, and therefore received light from both the courtyard and streets.

80. See: Karimi, *Domesticity and Consumer Culture*; Khosravi et al., *Tehran: Life within Walls;* and Habibi, "The Institutionalization of Modern Middle Class Neighborhoods."

81. For more reading about the traditional Iranian courtyard house, see: Golamhossein Memarian, *Ashnaee Ba Memari Maskuni Irani: Gunehshenasi Darungara* [Understanding the Architetcure of Housing in Iran: The Introverted Typology] (Tehran: Iran University of Science and Technology, 1994).

living areas in this project were placed on one side of the courtyard that faced the streets, some service spaces were designed on the opposite side, which were only accessible through the courtyard. In so doing, the courtyard would be more frequently used by the residents; and therefore, it would become more actively integrated with their everyday practices. Moreover, each courtyard was connected directly to most interior rooms, and to the public space through a web of corridors [Figure 2.14].

Aside from the streets, the designers of Chaharsad-Dastgah (Ali Akbar Sadegh, Manouchehr Khoursand, Hossein Sadegh, and Abbas Adjdari) proposed a central spine as the main public space of their project that accommodated needed public amenities for future inhabitants.[86] This neighbourhood centre included a plaza, a roundabout, and a communal garden with a small pool that resembles a form of *Meydan-Bagh*; and it was connected to the surrounding urban blocks through two parallel boulevards that perpendicularly crossed the central spine. Offices and administrative buildings such as the police station and municipal buildings were grouped in and around the plaza. The garden was surrounded with shops; and some public buildings such as a school, clinic, bank and post-office, that were placed around the roundabout to frame a playground for children. Most workshop spaces were designed alongside the boulevards, while water-storage and a small mosque were placed to anchor the two ends of this central spine [Figure 2.15]. Indeed, the inclusion of these public amenities could be seen as a result of Naser Badie's call for developing new residential neighbourhoods that embeds needed communal facilities and urban service in it.

Some similarities have been observed by scholars between the spatial layout of Abadan and that of Chaharsad-Dastgah.[83] However, Abadan, I would argue, did not determine the urban layout of Chaharsad-Dastgah which was informed by its own set of ideas. In his research, '*Abadan: planning and architecture under the Anglo-Iranian Oil Company'*, Mark Crinson showed that this company town was designed based on the idea of dividing people into multiple social classes, mainly based on their cultural backgrounds, income levels, and nationalities.[84] Crinson claimed that the families of high-income Iranian workers and of British expats had only access to certain public facilities. He argued that each social class was accommodated in a gated community and through a distinct housing typology [Figure 2.16]. This design approach can also be seen in most company towns developed for the workers of oil industry around the Persian Gulf, such as Al-Ahmadi in Kuwait.[85]

In contrast to Abadan that was designed as a company town, Chaharsad-Dastgah was a small district. In fact, this residential neighbourhood provided housing for an emerging middle-class in Tehran from different ethnic and cultural backgrounds as well as income levels. The differences between Chaharsad-Dastgah and Abadan could also be observed from their urban typologies. For instance, in line with

83. For more reading about the similarities of Abadan and Chaharsad-Dastgah, for instance, see: Karimi, *Domesticity and Consumer Culture*, 59-83. And Rana Habibi, "The Institutionalization of Modern Middle Class Neighborhoods," 42-44.

84. See: Crinson, "Abadan: Planning and Achitecture," 341-59.

85. For more reading, see: Nelida Fuccaro, *Histories of Oil and Urban Modernity in the Middle East*, vol. 33, Comparative Studies of South Asia, Africa and the Middle East (Durham, NC: Duke University Press, 2013).

82. See also: Habibi, "The Institutionalization of Modern Middle Class Neighborhoods."

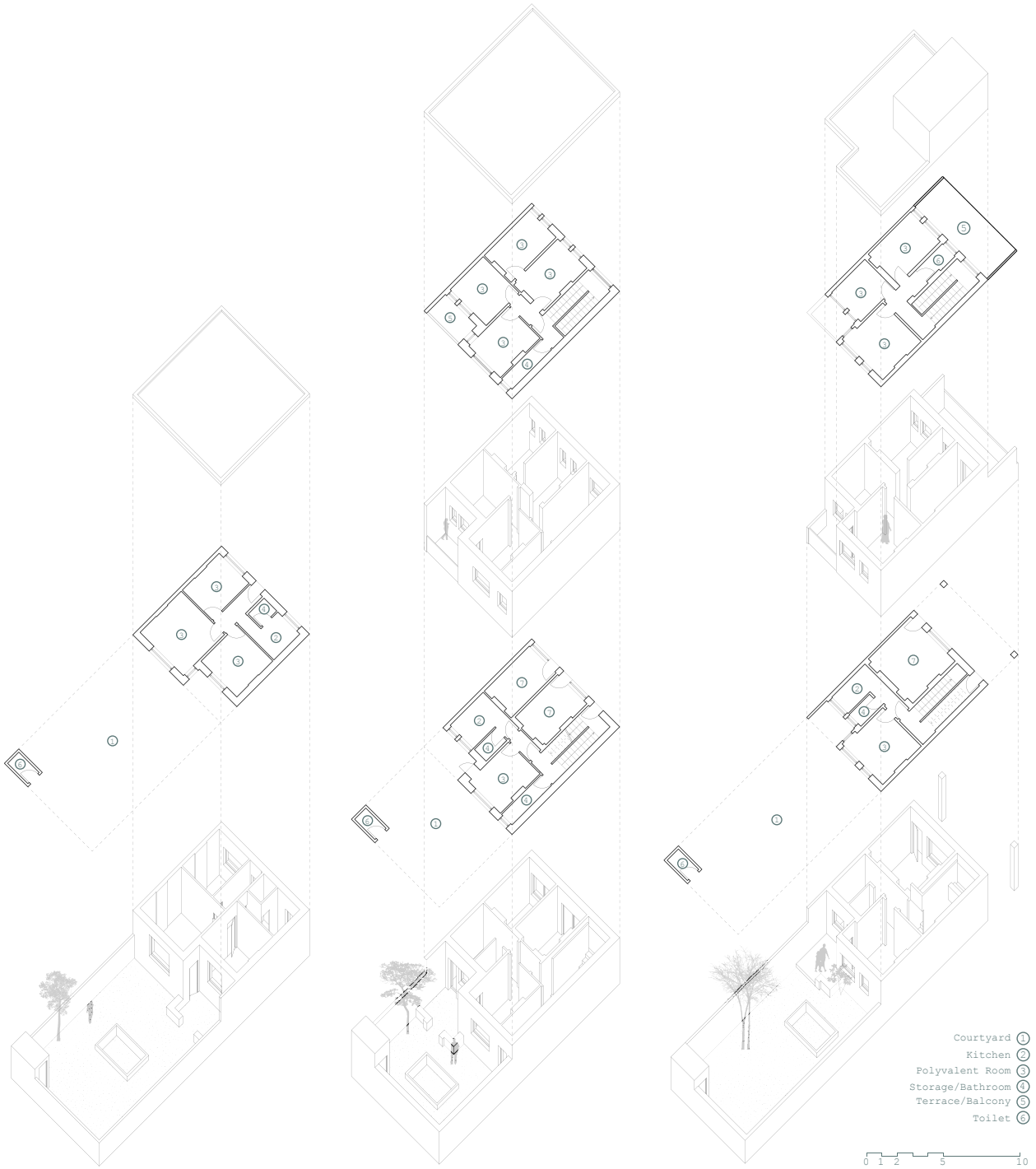
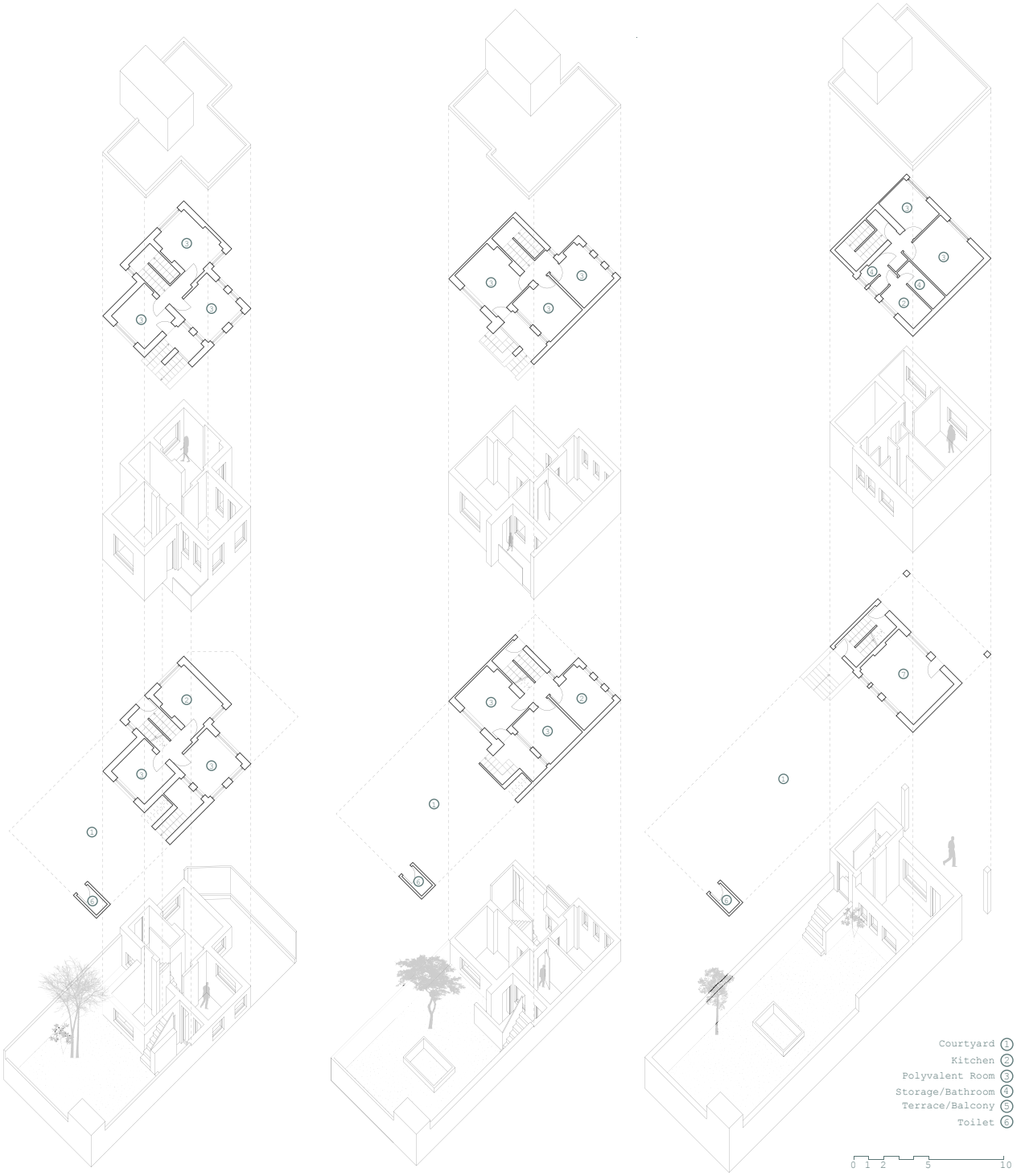


Figure 2.12: six main dwelling types were designed for the construction of houses in Chaharsad-Dastgah. (with following page)
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.


Courtyard 1
Kitchen 2
Polyvalent Room 3
Storage/Bathroom 4
Terrace/Balcony 5
Toilet 6
0 1 2 5 10

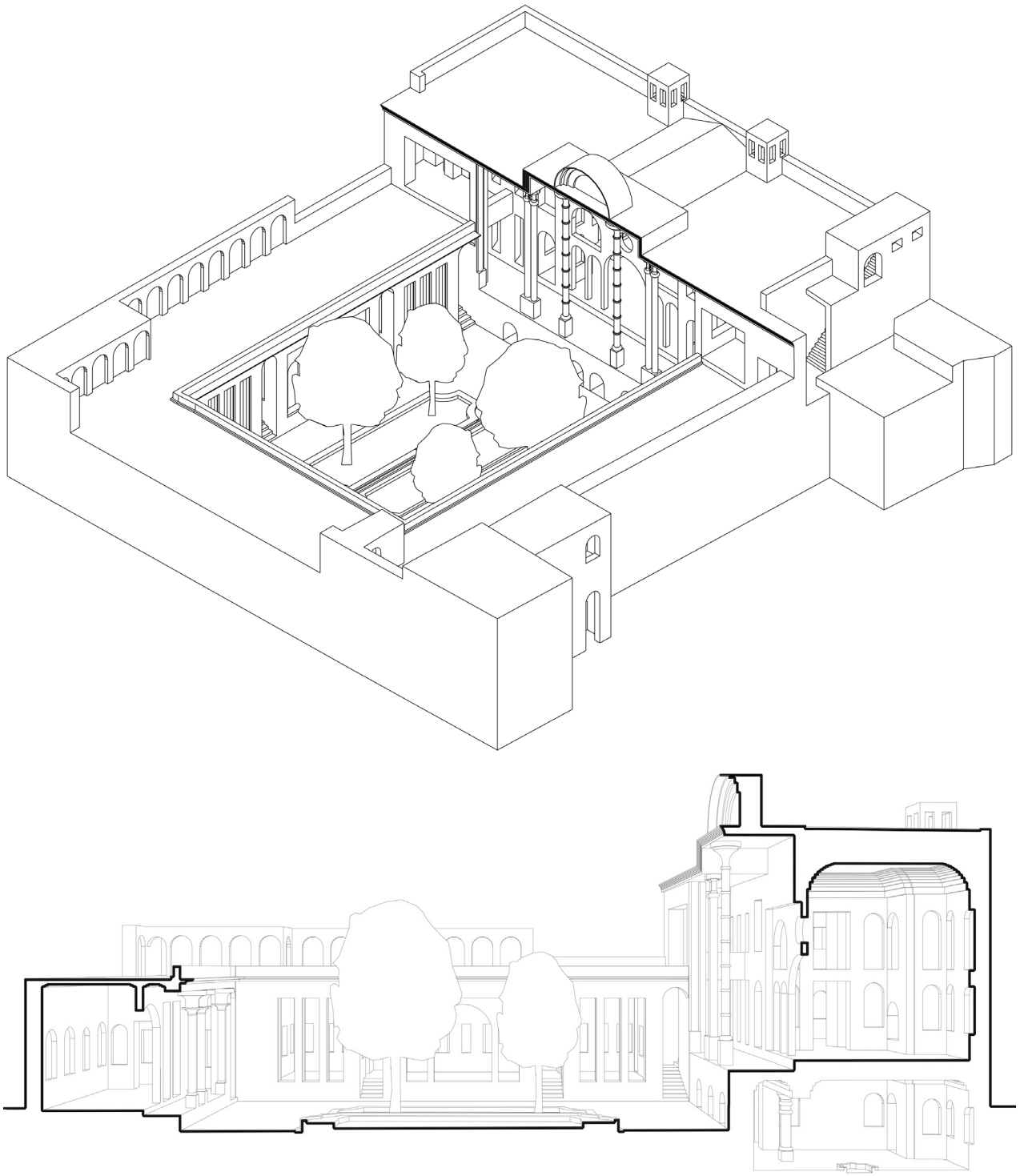


Figure 2.13: a typical traditional Iranian courtyard-garden house (Khaneh-Bagh).
Source: the House of Qavam in Isfahan, drawn by Mohamad Sedighi.

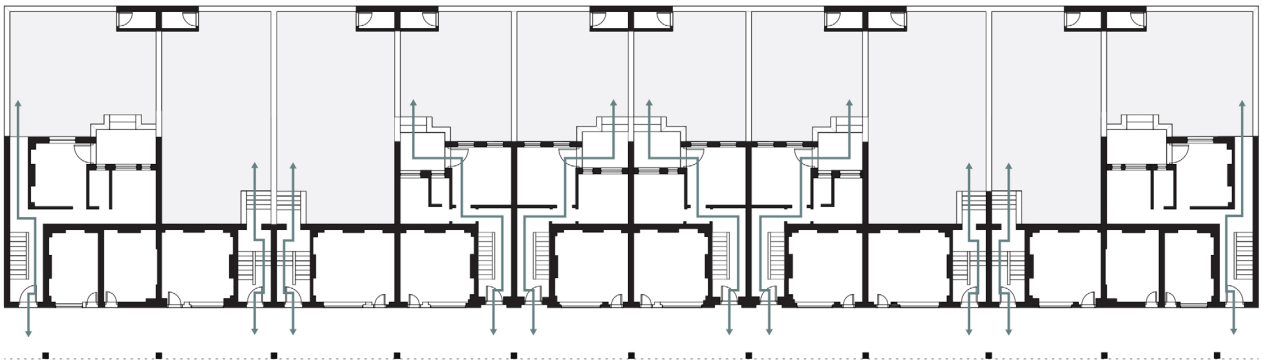


Figure 2.14: the connection of courtyards (gray) with the large body of the neighbourhood through a web of corridors (green).
Source: Mohamad Sedighi.

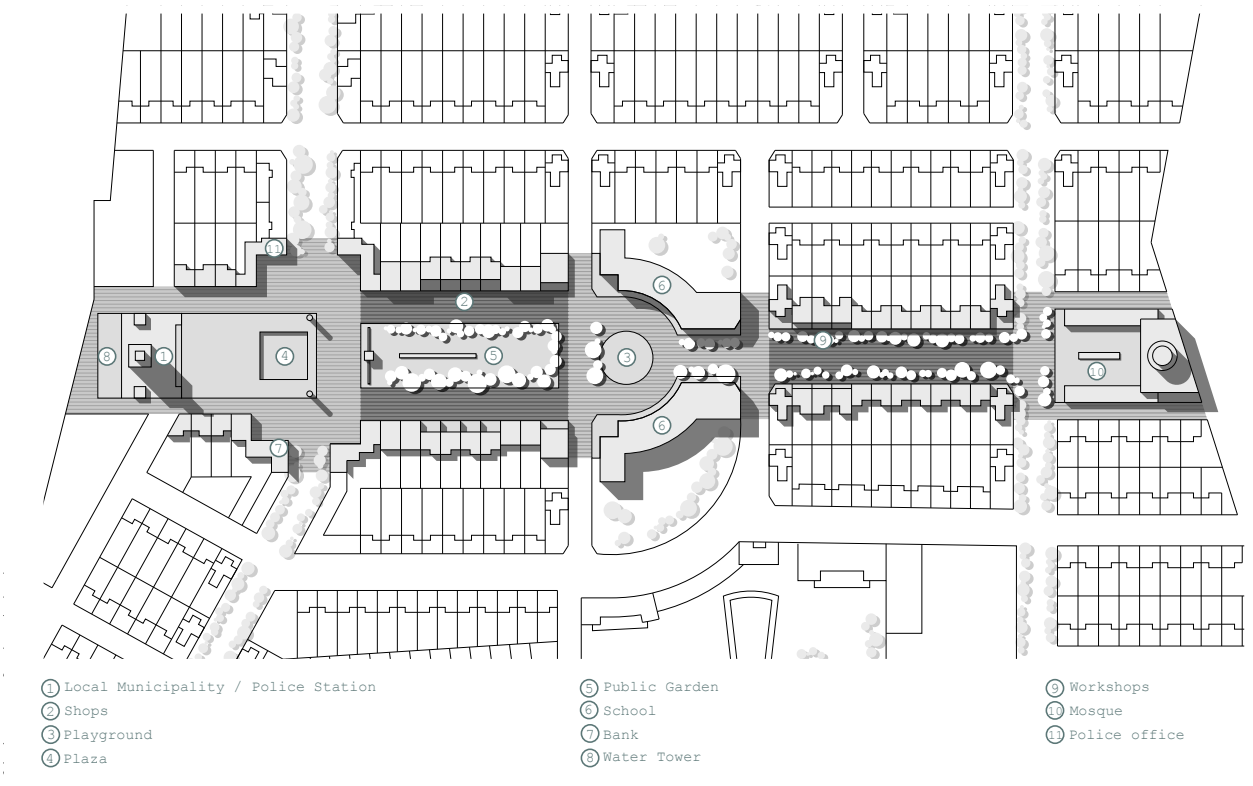


Figure 2.15: the central spine as the main public space of Chaharsad-Dastgah including all needed communal amenities.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.



Figure 2.16: various housing typologies for different working-class groups in Abadan.
Source: BP Archive, adopted from "Abadan: Planning and Architecture under the Anglo-Iranian Oil Company." *Planning Perspectives* 12, no. 3 (1997) (top); and the Archive of Iran's National Oil Company (bottom).

Howard's Garden City concept, all house-types in Abadan were provided with a front and back-yard; and they were placed as free-standing objects in a vast green area. But, in Chaharsad-Dastgah, a semi-closed block typology formed a boundary between public streets and private courtyards. Thus, rather than promoting a hierarchical division, careful attention was paid to the integration of public spaces with the residential areas in Chaharsad-Dastgah.

Noticeably, some strong similarities might be found between both the housing typology, and the spatial layout of Chaharsad-Dastgah and those of some West-European housing experimental models. In an interview with Siavoush Teymouri, a well-known Iranian modernist architect, Teymouri described Dutch housing models developed in the interwar period (1918-1939), as the main source of inspiration for the designers of Chaharsad-Dastgah.[86] Teymouri argued that their familirity with these models enabaled them to make their design decisions more quickliy and effectlively, in a short period of time. The similarities might be seen in the projects such as the Cité Moderne of Berchem-Sainte-Agathe in Brussels (Belgium) by Victor Bourgeois (1922-1925), the Papaverhof in The Hague (The Netherlands) by Jan Wils (1919-1921), and the Justus van Effen complex in Rotterdam (The Netherlands) designed by Michiel Brinkman in 1922.

In these housing models, a continuous façade with a monumental appearance formed the image of streets. These (semi) closed urban blocks were shaped with a row-house typology and they included gardens and greenery at the centre of each block, in the form of either back-to-back private yards or communal courtyards as playgrounds and gathering places. Indeed, these resemblances might also be understood as a result of cross-cultural exchanges that took place during the interwar period between Iran and west Europe. As discussed earlier, the municipal architect, Ali Akbar Sadegh was appointed by the Mortgage Bank as the head of the design team in Chaharsad-Dastgah. Sadegh was educated in Belgium between 1929 and 1937, a time period that enabled Sadegh to study the works of and collaborate with a group of Dutch and Belgian modernist architects.[87] In spite of similarities between the works of Sadegh and Western architects mentioned above, the design and development of Chaharsad-Dastgah, I will argue, might be seen as a result of implementing an urban planning document that focused on modernising everyday life of Iranians, in Tehran.

86. This interview was conducted by Mohamad Sedighi in July 2019.

87. For more reading about Ali Akbar Sadegh, also see: Marefat, "Building to Power."

88. Steven Harris, "Everyday Architecture," in *Architecture of the Everyday*, ed. Steven Harris and Deborah Berke (New York: Princeton Architectural Press, 1997), 1-8.

89. Jane M Jacobs, "Tradition Is (Not) Modern: Deterritorializing Globalization " in *The End of Tradition?*, ed. N Alsayyad (London and New York: Routledge, 2003), 29-45.

Modernising the Everyday Life

Everyday life might be understood as a cultural way of engaging with the world, an elusive object, which is immediately present, but in flux.[88] Thus, this cultural practice has root in traditions, and is ever-changing.[89] As Charles Baudelaire, a

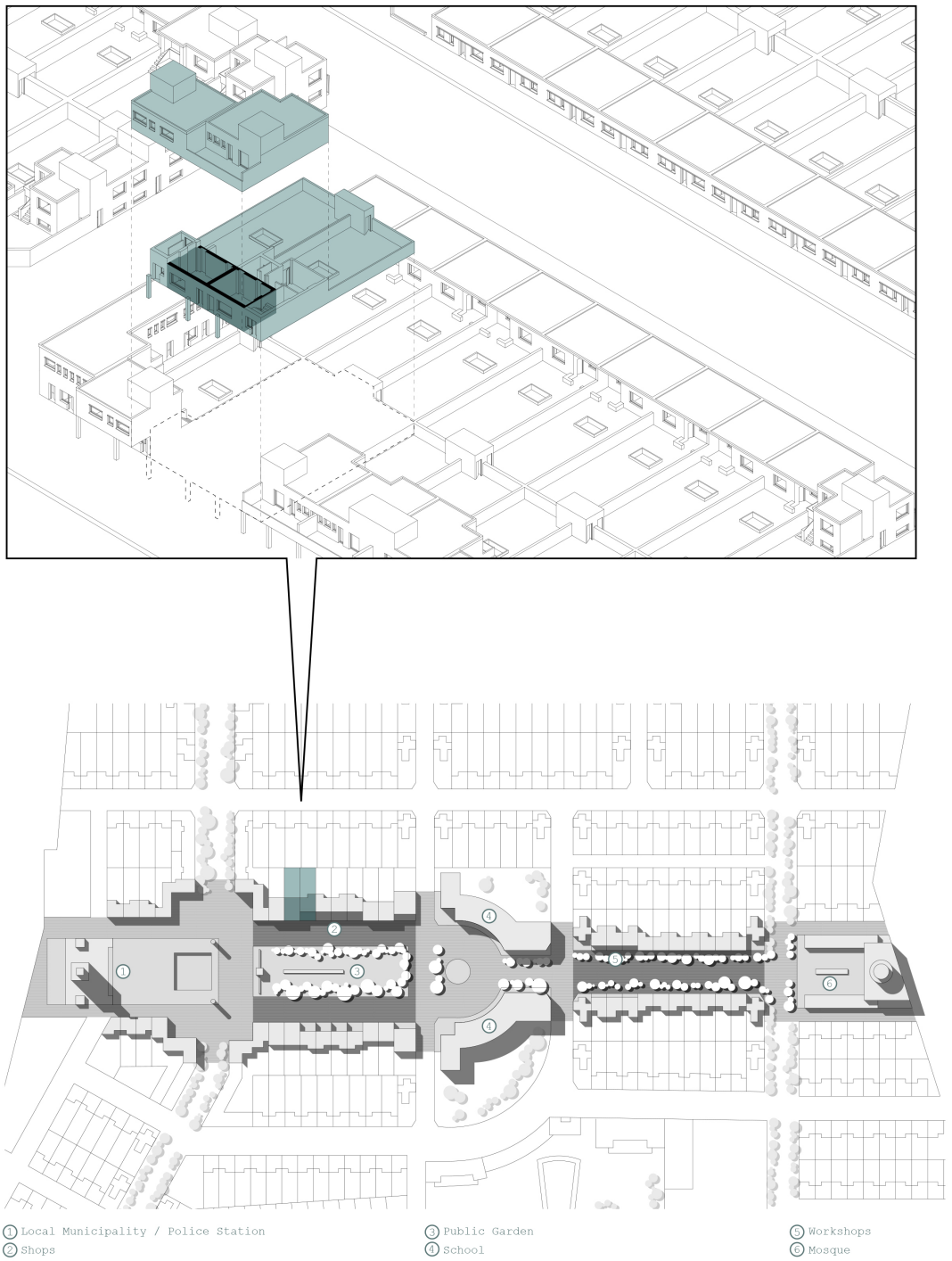


Figure 2.17: the shops on the ground level shaped the edge of the central plaza in Chaharsad-Dastgah. The dark-green indicates an example of the shop-house typology including a courtyard (light-green) behind and a dwelling unit (light-green) on top of the ground-bound shop.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

French poet and philosopher, observed, modernising the concerns of everyday life with the immediate present is where the notion of modernity connotes "the paradoxical possibility of going beyond the flow of history through the consciousness of historicity in its most concrete immediacy".[90] Thus, modernity can be seen as imaginative creation, drama or adventure separated from tradition which is defined by a body of works and procedures to be imitated.[91] In this view, modernising cultural practices is a way of creating self-consciousness and self-realisation of what is new and unknown, and re-creating or reimagining particularities of what is old and familiar. This process of re-creation is traceable from the design and development of Kuy-e Chaharsad-Dastgah.

The urban layout of this housing project was designed based on the municipality's planning document, which was revised under the leadership of Ali Akbar Sadegh. As mentioned earlier, this document aimed to improve living conditions in urban areas, and to modernise many aspects of private and public life among the people of Tehran. This happened by prescribing guidelines that focused on the design and development of urban spaces such as public squares and roundabouts, as well as of the facades facing the streets.[92] For instance, the document proposed that the vacant lands adjacent to urban spaces have to be walled-off, and the façades of buildings facing streets needed to be materialised in harmony with adjacent buildings to form a well-organised street image for the city. Based on these new regulations, public squares and roundabouts should be surrounded with (work) shops and public buildings. It comes, thus, as no surprise to see that a series of shops and a group of public buildings such as school, post office, and bank shaped the edges of the central plaza, in Chaharsad-Dastgah [Figure 2.17].

Based on the revised planning document, the preparation of a street layout with boulevards and wide lanes and the centralisation of public amenities were the first step for developing new neighbourhoods in Tehran. As shown in figure 2.17, a central spine was created in Chaharsad-Dastgah to house all needed communal facilities such as shops and schools. Further, two north-south boulevards and a series of wide east-west lanes were designed for this neighbourhood. This rigid street layout, not only formed the backbone of public spaces in this project, but also shaped the vacant areas where residential buildings had to be realised. In so doing, urban blocks and individual houses would be directly connected to the (main and secondary) streets, forming a new public-private relationship between the residents and urban spaces. Further, a detailed plumbing layout was prepared for the project, to connect the central drink-water reservoir to individual houses, as requested by the planning document.

The planning document set a basis for promoting a sense of social responsibility and collective ownership in Chaharsad-Dastgah. As described in the pages of the document, private outdoor spaces should either be realised in the form of a walled

90. Matei Calinescu, *Five Faces of Modernity* (Durham: Duke University Press, 1987), 50.

91. See: ibid., 50-51.

92. For more reading, see: The Parliament of Iran, "Ghanun-E Eslah-E Ghanun-E Tose-E Ma'aber."

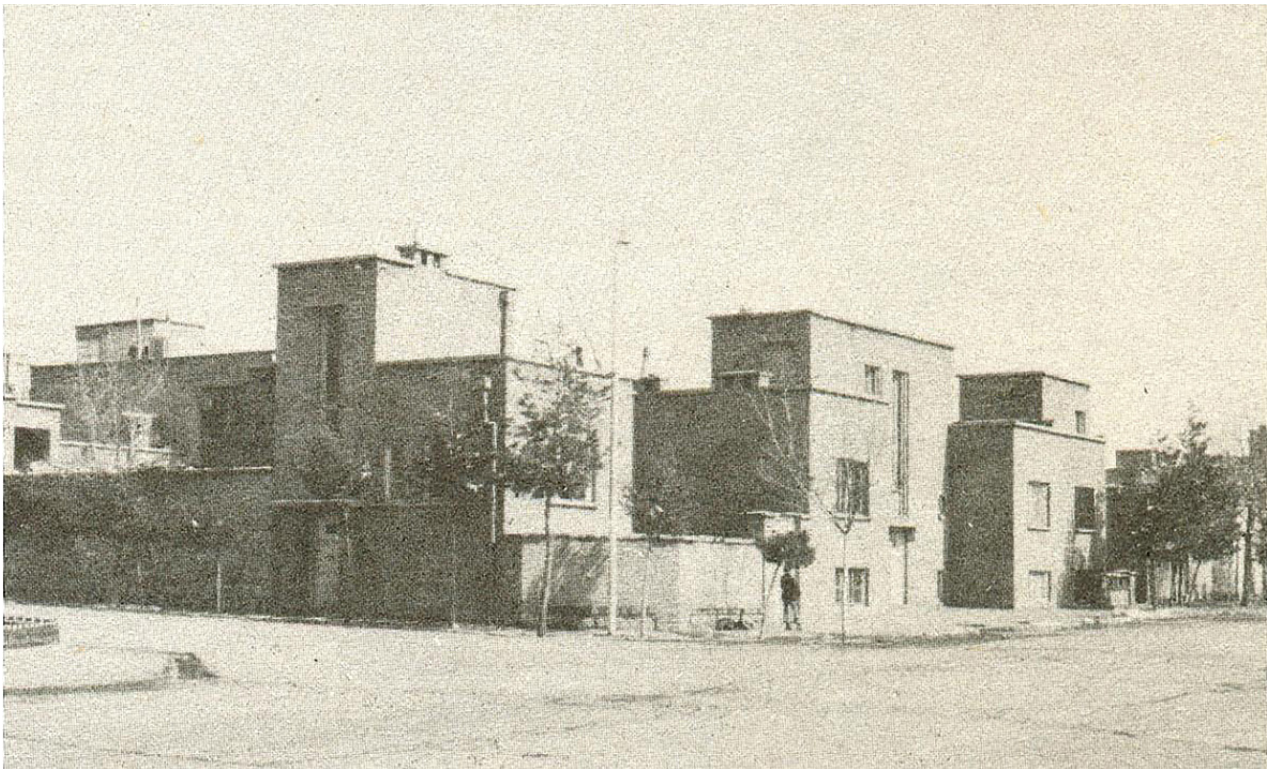


Figure 2.18: articulated volume including a staircase, front door and a set of corridors.
Source: *Honar va Memari* 3, no. 10-11 (1978): 125.

domain when located alongside the streets, or be erected behind buildings with their main facades towards public spaces. As the architects of Chaharsad-Dastgah chose to select a row-house typology, they designed private outdoor spaces on the back-side of each dwelling. Only, the L-shape house type included a walled front-yard, at the corner of each urban block. In so doing, the facade of buildings shaped the boundary between private and public spaces, rather than blind walls. Simultaneously, this decision catered for the placement of private outdoor spaces, back-to-back, that created an open urban courtyard at the centre of each block. As envisioned by the architects, these courtyards were mostly divided into smaller back-yards. the residents were also asked to maintain the shared walls between their individual lots, collectively. But, in my interview with some inhabitants of this project, it was argued that the early dwellers had the opportunity to choose the desirable length of their private outdoor space in negotiation with their neighbours and based on their budget to buy a dwelling. It comes, thus, as no surprise to see that in the images disseminated by the *Journal of Bank-e Sakhtemani* about this project, some urban blocks included wide and collective courtyards where no walled back-yards were yet defined.[93] Further, aerial pictures taken from this project, a few years after its realisation, illustrated two models of urban bocks in its urban layout: one with rigid and well-defined individual courtyards, and one with a set of irregular courtyards that differed from one another, in size.[94]

The designers' use of individual courtyards created a space with dual characteristics. Abbas Adjdari, one of the designers of Kuy-e Chaharsad-Dastgah, defined the land and house ownership as a core aspect of traditional housing systems in Iran;[95] but, he put a distinct emphasis on the ways people individually experienced and collectively used or maintained these private outdoor spaces. This creative interpretation would cater for both private and collective encounters in the same enclosure, a characteristic that could also be found in the case of Chaharsad-Dastgah. While the placement of back-to-back yards in this project was seen as a form of recreating *Hayat-poshti* (a private outdoor space in traditional Iranian houses hidden from public view),[96] the courtyards became more visible to neighbouring households in Chaharsad-Dastgah, encouraging a new form of living among the residents. Contrary to traditional houses where the courtyard was protected with high-walls (mostly up to 3-meter high) from the eyes of strangers, in this housing project, the courtyards were bounded with low-walls, almost 1.5 meter high, as shown in figure 2.01. While this design strategy would secure some extent of privacy and indicate the private domain of each individual dwelling, it would enable the inhabitants to choose for either closing-off or opening-up their courtyards to and from their neighbours.

Equal consideration was given to the design of private buildings. As the face of buildings towards public spaces, all street-oriented façades were materialised with bricks; and the windows, openings, and sky-lines of each house were erected

93. See: *ournal of Bank-e Sakhtemani* 1, no. 6 (1957).

94. These images are available at Iran's Cartographic Centre, in Tehran.

95. See: Adjdari, "Low-Cost Housing," 125-33.

96. See: Habibi, "The Institutionalization of Modern Middle Class Neighborhoods."

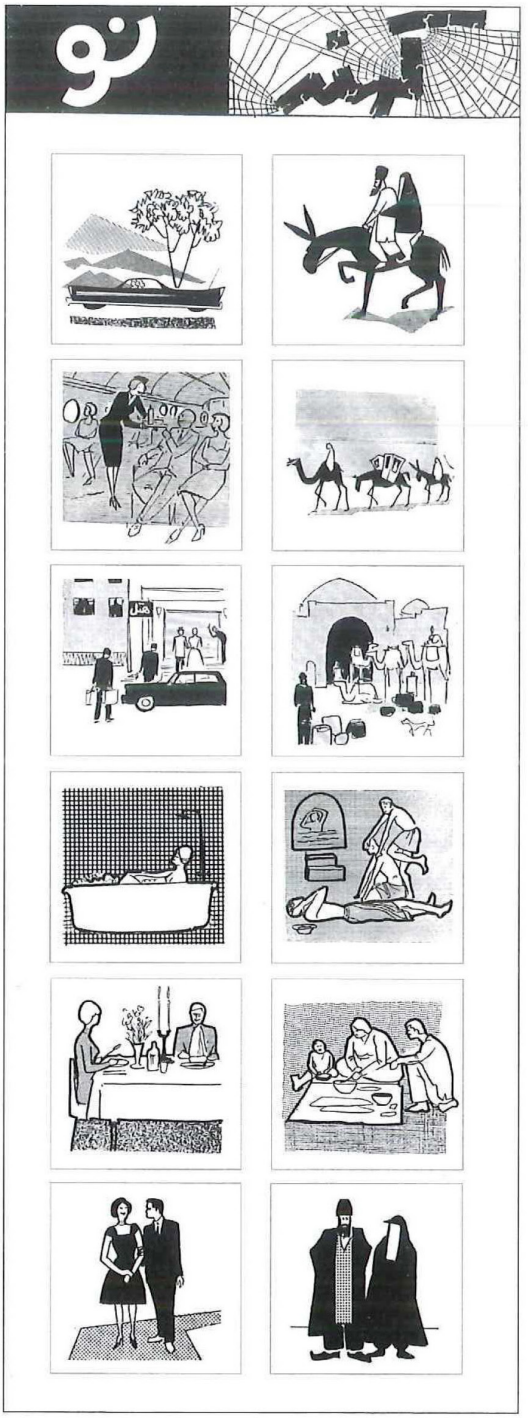


Figure 2.19: a comparison between old and new lifestyles depicted by the municipal journal of Tehran Mosavar.
Source: *Memari Moaser Iran* (Tehran: Nashr-e Honar-e Memari Gharn, 2015), 182.

in harmony with the neighbouring buildings. Moreover, each dwelling type was constructed with an articulated building volume that included the entrance area, staircase, and front door [Figure 2.18]. While this volume was set back from the streets, it maintained direct connection to public spaces. The street facades were further designed with large windows to create visual interactions between interior and exterior spaces. As requested in the planning document, these design decisions formed the basis for creating a monumental appearance as well as an organised image for streets. These decisions also became instrumental for exposing some private indoor spaces, such as kitchens and living areas, to the public streets.

As mentioned previously, unveiling was a state-strategy to modernise the image of Iranian society. This strategy became a source of inspiration for many European-educated architects to change the appearance of public spaces, largely seen as veiled, obscure, or enclosed, in Iran. Evidence of this movement might be found from several articles disseminated by the board members of the Association of Registered Iranian Architects (ARIA). These articles mostly praised the value of the compulsory unveiling as a necessary condition for implementing socio-spatial changes in cities. As discussed by Amir Bani-Masoud and Habibi,[97] Vartan Hovanesian, an influential figure of the ARIA, saw the unveiling act as the most progressive social reform in the country, which changed old-fashioned Iranian society and the everyday life of people in public spaces.[98] These transformations were illustrated in many Iranian popular journals, such as *Tehran Mosavar*, to make comparison between new lifestyles and old ways of living, in Iran [Figure 2.19].

Exposing kitchens and balconies facing the public plaza might be seen as an attempt to unveil private interiors in Chaharsad-Dastgah.[99] But, this strategy also pursued a social agenda. In this project, the kitchens were placed adjacent to the public streets; so, the position of kitchen in the house layouts allowed housewives for visual interaction with public spaces, while cooking and performing indoor household activities [Figure 2.20]. Moreover, the orientation of balconies in two-storey houses facing public spaces would bring women in a direct contact with the public life [Figure 2.21]. These exposures would be helpful to persuade women to go outside the realm of home and become involved in societal activities. Indeed, this design strategy testifies to the architects' drive to contribute for a movement of women's emancipation, as promoted by the Qavam administration.

Unveiling some interior spaces might also be seen as an attempt to ensure a minimum standard of hygiene for the residents. To enable natural lighting and ventilation, the architects of Chaharsad-Dastgah designed not only the kitchens in a direct contact with outdoor spaces, but also service spaces including storage areas, bathrooms and toilets. In all dwelling types, the toilets and storage areas were placed in the courtyards; the bathrooms were either positioned in the courtyard or side-by-side with kitchens and they gained a small opening towards the streets.

97. See: Amir Bani Masoud, *Memari Moaser Iran* [Iranian Contemporary Architecture] (Tehran: Nashr-e Honar-e Memari Gharn, 2015); and Habibi, "The Institutionalization of Modern Middle Class Neighborhoods."

98. See: Vartan Hovanesian, "Reza Shah Mazhar Abadani Va Omran," [Reza Shah as the Symbol of Progress.] *Memari Novin* 1, no. 1 (1940): 4-9. Furthermore, it is worth mentioning that the idea of unveiling in relation to Iranian architecture was also discussed by some Iranian scholars such as Amir Bani-Masoud, Pamela Karimi and Rana Habibi. See, for instance: Karimi, *Domesticity and Consumer Culture*, 59-72; Amir Bani Masoud, *Memari Moaser Iran* [Iranian Contemporary Architecture] (Tehran: Nashr-e Honar-e Memari Gharn, 2015), 186-187; And Rana Habibi, "The Institutionalization of Modern Middle Class Neighborhoods in 1940s Tehran - Case of Chaharsad Dastgah," *Cities* 60 (2017): 43.

99. For more reading about the relation of the act of unveiling and the urban layout of Chaharsad-Dastgah, see: Habibi, "The Institutionalization of Modern Middle Class Neighborhoods."



Figure 2.20: a comparison between the arrangement of traditional Iranian kitchen in the house layout and that of Chaharsad-Dastgah.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.



Figure 2.21: two story houses were designed with balconies and terraces towards the public space.
Source: Photograph by Mohamad Sedighi.

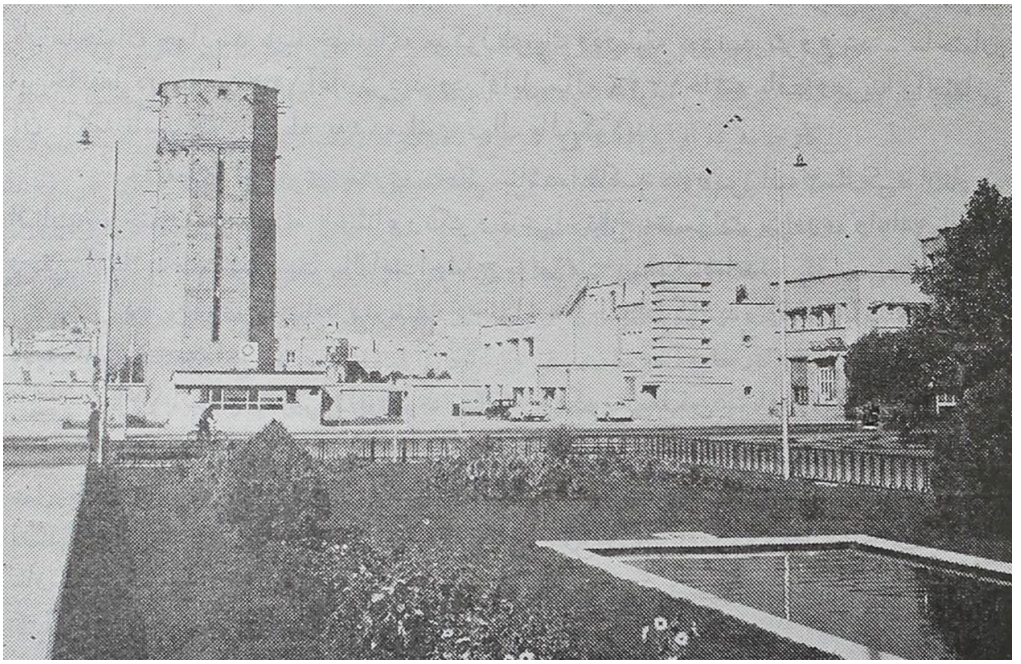


Figure 2.22: the water storage of Chaharsad-Dastgah in the form of a monumental tower, placed adjacent to the central plaza.
Source: *Journal of Bank-e Rahni* 10, no. 2-22 (1967): 71.

Aside from service spaces, all habitable rooms were designed with large windows to secure suitable access to natural light and fresh air, from the outside. As argued by the designers of the project, the orientation of houses was also chosen to optimise the sun-light penetration to interior spaces, and therefore, to ensure healthy living conditions in this project.[100] Undoubtedly, these design endeavours could be seen as the result of urban and building regulations reinforced by the modern planning documents of Tehran.

Providing a minimum standard of hygiene was not limited to merely providing exposure to natural ventilation of spaces, but also focused on the securing of all basic services and spacious interiors. All house types were designed with a minimum amount of 3 habitable rooms, aiming to reduce overcrowding at the household level. Moreover, plumbing and electricity was supplied for each unit, separately; and in the absence of a sewage system in Tehran, a septic tank was provided for each dwelling type.[101] A water storage in the form of a tower was also placed adjacent to the central plaza [Figure 2.22]. This outstanding structure and its position in the urban layout might be seen as celebrating the access of future inhabitants to pure drinking water in this neighbourhood. Furthermore, a public bath-house was designed in the centre to ease the access of residents to warm water for bathing. Accordingly, this housing project illustrated a perfect example of implementing modern planning manuals as a basis for designing new residential districts in Iran. Indeed, these manuals contributed to improve the living condition, sanitation, and health of non-elite Iranians; and it aimed to promote a notion of modern living among a group of low-income civil servants, in Tehran.[102]

Introducing new institutional buildings and transforming traditional administrative structure of neighbourhoods also played a pivotal role in shaping and promoting a new public life, in Chaharsad-Dastgah. Traditionally, neighbourhoods (*Mahalleh*) were ruled by elder men (*Rishsefieds*) or religious leaders, in Iran. While they were responsible to collect tax on behalf of the state authorities, they also settled disputes among the neighbours and gathered donations from the rich merchants and families to build communal amenities, such as bath-houses (*hammams*), local schools (*madresehs*), and mosques (*masjeds*), in the neighbourhood.[103] For providing social security, they authorised a group of notable local residents (*pahlavans* or *lutis*) who at day and night, voluntarily patrolled the streets. But, in Chaharsad-Dastgah, this traditional administrative structure was radically changed; and the design of administrative buildings catered for a new form of urban governance.

In this neighbourhood, the local municipality and post office, constructed around the central plaza, replaced the role of traditional councils and elders; and the police station (*Kalantari*) hosted semi-armed military forces to take responsibility for providing security and controlling any form of social unrest or tension within

100. See: Khoursand, "Khane-Haye Arzan-E Kuy-E Chaharsad-Khaneh," 135.

101. Abbas Adjdari, "Sakhteman-E Khaneh-Haye Arzan Dar Iran," [Building Low-Cost Housing in Iran.] *Arshitekt* 1, no. 4 (1946): 125-33.

102. See: Karimi, *Domesticity and Consumer Culture*; Khosravi et al., *Tehran: Life within Walls;* and Habibi, "The Institutionalization of Modern Middle Class Neighborhoods."

103. For reading on the socio-political structure of neighbourhoods in traditional societies of Middle-Eastern countries, see: Farah Al-Nakib, *Kuwait Transformed: A History of Oil and Urban Life* (Stanford, California: Stanford University Press, 2016), 21-91.

the neighbourhood. Moreover, two distinct structures were proposed for the construction of a primary school and small clinic. Perhaps, these public buildings were meant to promote the newly established pedagogical methods and healthcare system among the residents, as promoted by the Qavam administration. Designing these urban elements in innovative building shapes and typologies might also be perceived as an attempt of the architects of Chaharsad-Dastgah, to symbolise the 'modern' elements of a new urban life in Tehran.

The modernisation/secularisation of everyday life was not limited to incorporating new architectural elements in the urban layout. Arguably, the design of this housing project was also an attempt to neutralise the socio-political lives of inhabitants in Tehran. In traditional urban fabrics of most Iranian cities, the Friday Mosque (*Masjed Jomeh*) and religious buildings, such as Tekiyeh and Hosseyniyeh, were placed at the heart of the neighbourhood structure, used as a place for public gatherings.[104] As opposed to this pattern, the only religious building in Chaharsad-Dastgah was a small mosque designed at the edge of the district, far from the central plaza and most communal amenities that would form the backbone of urban life in the neighbourhood. Further, an amphitheatre was constructed around the central roundabout to accommodate public gatherings. Arguably, this strategy might be seen as an attempt of the architects to secularise the social order, public spaces, and urban life of the inhabitants, as initiated by Reza Shah and promoted by the Qavam's administration, while using local references for the design.

The housing typology of Chaharsad-Dastgah also promoted a notion of collective living among the residents, as promoted by Iranian architects, in particular by Abbas Adjdari. The designers carefully divided each urban block into smaller lots, enabling the Mortgage Bank to provide loans for future inhabitants based on the size of the individual plots. However, rather than proposing (semi)detached single-family houses on the private properties, the architects designed a set of low-rise row-house typologies, juxtaposed in variety of combinations, to form the urban blocks. This allowed the architects to design load-bearing walls that were shared by multiple dwelling units, and construct the buildings with minimum exterior surface. While provision of party walls, shared facades, and communal staircases in two-story house types were strategies to reduce the cost of construction,[105] they also formed a basis for collaboration among the residents. In my interview with some current dwellers of Chaharsad-Dastgah, it was argued that individual families should have worked together 'out of necessity' to reorganise and manage their living environment. Thus, it comes as no surprise to see that the residents of each group of row-houses or urban block discussed and negotiated possibilities for individually using or collectively maintaining the communal areas of staircases, and for implementing any modifications in the structure or street façades of buildings, with their neighbours [Figure 2.23].[106]

104. For more reading, see: Klaus Herdeg, *Formal Structure in Islamic Architecture of Iran and Turkistan* (New York: Rizzoli, 1990), 30-38.

105. For more reading, see: Manouchehr Khoursand, "Khane-Haye Arzan-E Kuy-E Chaharsad-Khaneh," [The Low-cost Housing of Chaharsad-Dastgah.] ibid., no. 4: 133-35.

106. In their research about the parameters of sustainable architecture, Jalaledin Rafifar and Shohreh Shokri highlighted the importance of 'negotiations' for shaping the living environment among the members of a society. They referred to Kuy-e Chaharsad-Dastgah as a successful case in point, where most changes to the façades or the layout of houses were implemented through a series of discussions and negotiations among the inhabitants of certain buildings. For more information, see: Jalaledin Rafifar and Shohreh Shokri, "Memari Paydar Va Salamat-E Ejtemaee: Moured-E Pajhouhesh, Mahalleh Chaharsad-Dastgah Dar Tehran," [Sustainable Architecture and Social Health: A Study on Chaharsad-Dastgah in Tehran.] *Motaleaat Jame'e Shenakhti* 21, no. 2 (2014).



Figure 2.23: a few examples of changes implemented in the façade and structure of buildings. Noticeably, the new openings and windows were placed in the same height and comparable proportions, in relation to the neighbouring houses.
Source: Photograph by Mohamad Sedighi.

Growth and Change in Chaharsad-Dastgah

Multiple forms of collaboration among the neighbours brought about changes in the urban layout of this project. This can be observed, in particular from the modification of the courtyards. For instance, neighbours with a family relationship or strong friendship bound chose to demolish the walls between their private courtyards.[107] In so doing, they not only enlarged the size of their courtyards for some gathering or collective activities, but also repositioned them in the larger body of the neighbourhood. On the contrary, some neighbours opted to completely fence-off their courtyards with higher walls [Figure 2.24]. Accordingly, they aimed to increase the visual privacy from their neighbouring houses, and to expand their living areas towards the courtyard.

The design of access system as an autonomous entity in the spatial layout of dwellings enabled the inhabitants to use each habitable room, interchangeably [Figure 2.25]. As mentioned earlier, the entrance area, staircase, corridors, and front door were grouped together in a distinct building volume, which was placed as a filter between the habitable spaces, the courtyard, and the street. In so doing, not only every dwelling unit gained an independent access to the public space, but also each habitable room and the courtyards. This provided different layers of privacy and publicity for each space, enabling the inhabitants to rent or share some rooms, when needed, as well as to use each room without intersecting the others, for their daily activities. To accommodate different lifestyles, these rooms were also designed with similar spatial proportions that would allow people to use the interior spaces in multiple ways and interchangeably. In fact, these spatial features resonate with what one of the old residents of Chaharsad-Dastgah (Mr. M.M) described as 'the faithfulness' of his house.[108] In 1954, as Mr. M.M explained, he got a low-interest loan from Iranian army, and bought one of the two-storey houses of Chaharsad-Dastgah. After a few months, he moved with his family to this new district. Nevertheless, he could not afford to pay off his monthly loan debt; and, he had to either sell or rent part of his house. As every room was independently linked to the street, Mr. MM was able to rent two rooms of his house to a friend, while preserving his privacy.

The placement of individual courtyards on the back side of houses, and the autonomy of access to the courtyard as well as to all interior spaces enabled the expansion of houses, incrementally. Between the mid-1950s and mid-1960s, urban population density in Tehran gradually increased leading to the expansion of many scattered settlements around the capital city.[109] In the case of Chaharsad-Dastgah, however, this increase resulted in an urban growth from within. As shown earlier, each dwelling type included a minimum amount of three habitable rooms with a courtyard, to be built on different plot size. These building lots were designed with 7.5-meter width and 20 to 30-meter depth, ranging from 140 to 200 square

107. From a site survey and vis-à-vis conversation with some residents of Kuy-e Chaharsad-Dastgah, it turned out that the enlarged courtyards belong to the neighbours that have either a family relationship with one another, or a strong social bond such as friendship.

108. As mentioned earlier, to to achieve the objectives of this research, i conducted interviews with some of the dwellers of kuy-e chaharsad-dastgah. The interviews were conducted in July 2017 and April 2019; and seven families have been interviewed who live/used to live for a long period, in Chaharsad-Dastgah. The interviewees, who for the sake of privacy, their names are anonymised, were as follows: Mr. M.M, a former employee of Iranian army living in this neighbourhood between 1954 and 2008; Mr. A.J, a former employee of Bank-e Rahni living since 1961 in Chaharsad-Dastgah; Mr. A.H, a former lecturer at IUST living since 1973 in this neighbourhood; Ms. N.A, a former high-school teacher living since 1988 in Chaharsad-Dastgah; Mr. M.Z, an employee of the Municipality of Tehran living since 1996 in this neighbourhood; Ms. G.E, a housewife living since 2006 in Chaharsad-Dastgah; and Mr. A.Y, a freelancer living since 2009 in this neighbourhood. During the site surveys, many people were also randomly asked about their living experiences in Chaharsad-Dastgah..

109. See: Ali Madanipour, *Tehran: The Making of a Metropolis*, World Cities Series (Chichester: John Wiley & Sons, 1998).



Figure 2.24: an example of changes made in the layout and size of the private courtyards where some neighbours chose to completely fenced-off their private outdoor spaces (top), and some chose to demolish the walls between their outdoor spaces, to create a collective courtyard (bottom).
Source: Photograph by Mohamad Sedighi (top); and the archive of Moeen's family (bottom).

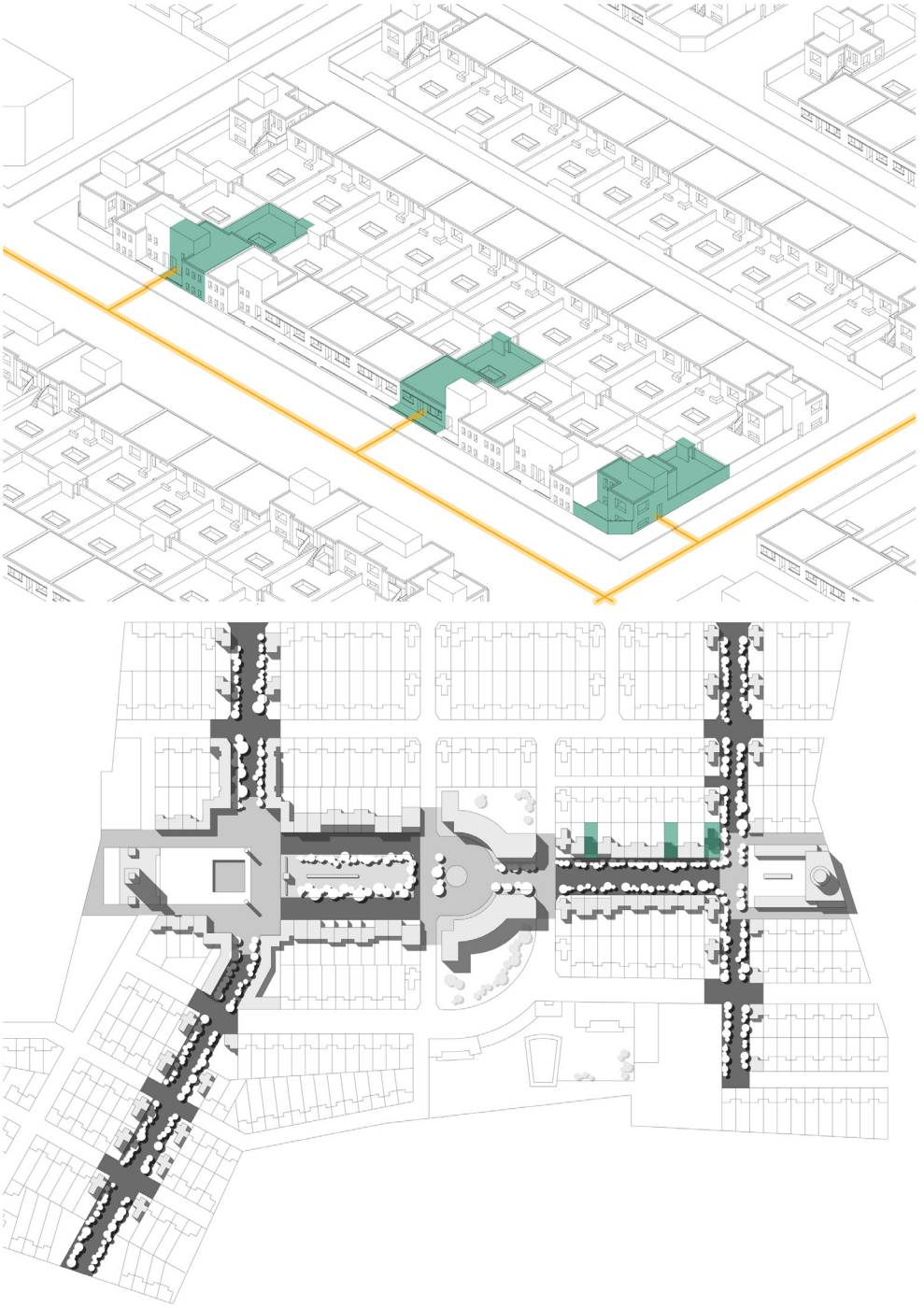


Figure 2.25: the access system of houses from public space to individual units in Chaharsad-Dastgah provided some extent of autonomy for the courtyards and all habitable spaces within the house layout. (with following page)
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

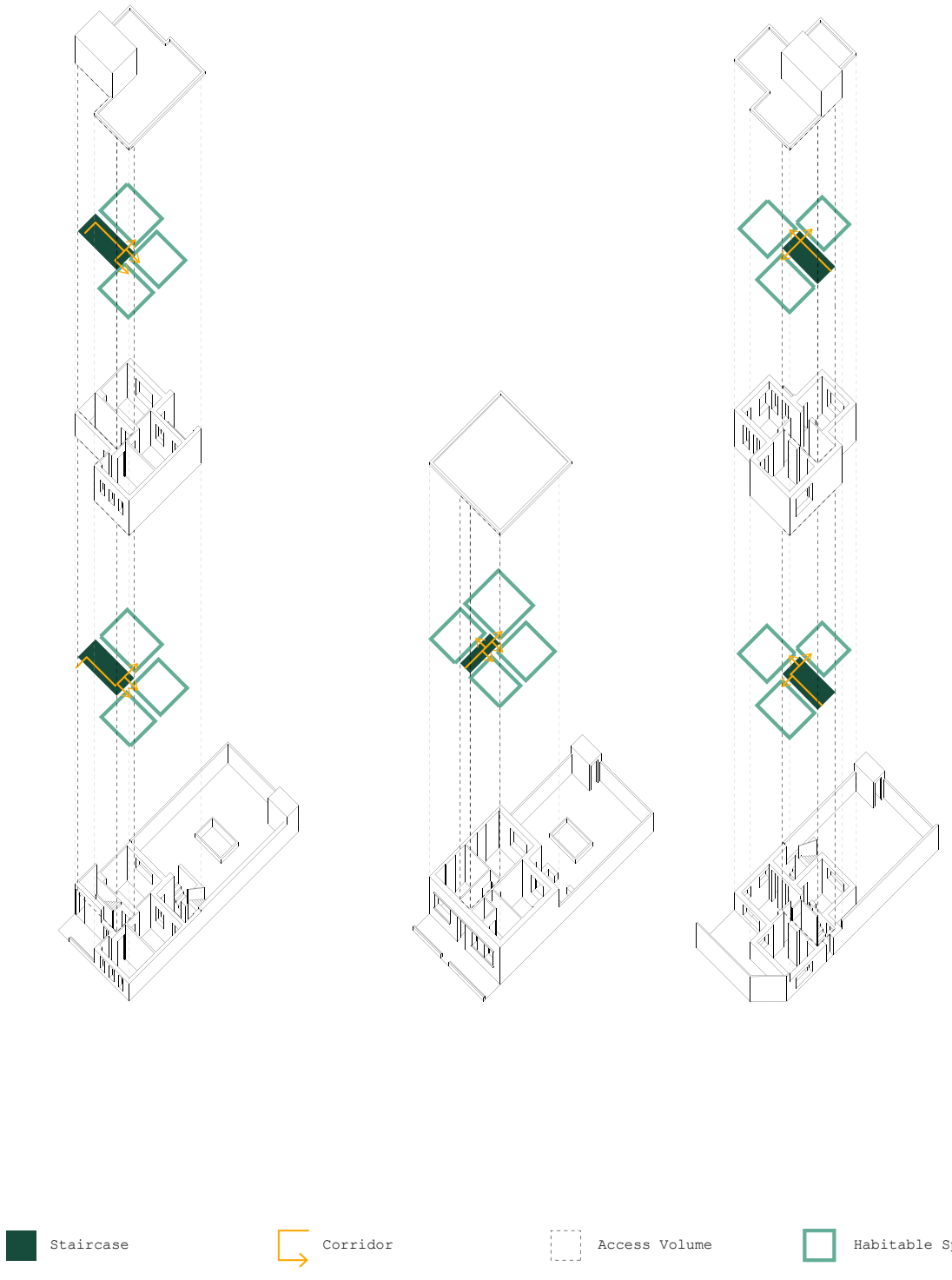


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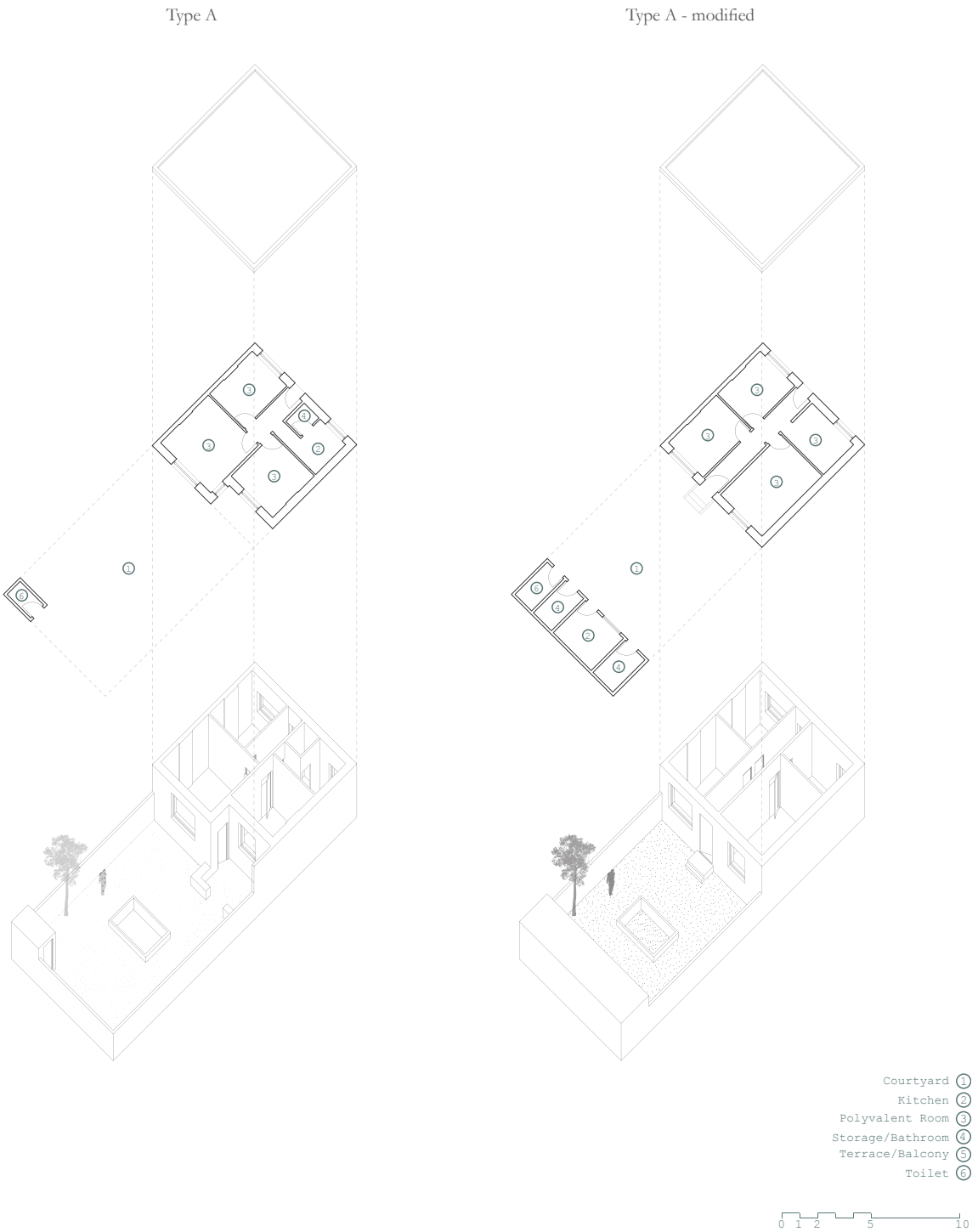


Figure 2.26: a typical one-story house of Chaharsad-Dastgah, after the adaptation of the house layout and courtyard.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini. The documentation of some changes in the houses of Chaharsad-Dastgah was initially gathered in an unpublished report of Iran's Ministry of Housing and Urban Development, prepared by Khadijeh Kia Kajouri, in 1972.



Figure 2.27: the aerial picture of Kuy-e Chaharsad-Dastgah showing while the houses underwent a series of gradual changes, the courtyards still largely formed the heart of each individual house.
Source: Iran's Cartographic Centre.

meters. The built mass of each type was to occupy at most 50% of the smallest construction lot, a strategy that kept the rest of the property intact as the courtyard. Based on the space needs of the family, extra rooms were erected, little by little over time, on one or two sides of the courtyard [Figure 2.26]. While the courtyard played a crucial role as an unbuilt private outdoor space in accommodating growth and change in the spatial layout of individual houses, a big part of the courtyard in the majority of cases remained intact and was cultivated as a small garden.

The sense of collective ownership related to the courtyards played an important role in the transformation of Chaharsad-Dastgah. In 1957, the *Journal of Bank-e Sakhtemani* published a short review on this housing scheme and described the project as incomplete, mainly due to the lack of needed financial resources for the construction process.[110] Despite the fact that most public spaces of Chaharsad-Dastgah (except the streets) remained unfinished for a long period, collective urban blocks and their courtyards accommodated a lively environment [Figure 2.27]. This contrast might be seen as a result of the Mortgage Bank's financial strategy to make individual dwellings more available and affordable for a larger low-income group in this housing project. As discussed earlier, the Mortgage Bank allowed people to define the size, and therefore, the border of their private outdoor domain, the individual courtyards, and enabled people to materialise the internal layout of their urban blocks in negotiation and collaboration with their neighbours. This created a sense of collective ownership and social responsibility, based on which residents could have participated with their own spatial agency in the development and transformation of Chaharsad-Dastgah.[111]

The courtyards of Chaharsad-Dastgah became a place for absorbing the radical densification of buildings without disturbing the urban layout of the project. This happened, particularly, between the late-1960s and throughout the 1970s, when Tehran's Municipality set the Master Plan of Tehran (MPT) in motion, which will be discussed in the fifth chapter of this dissertation. Prepared by Victor Gruen and Abdolaziz Farmanfarmaian (1965-1968), the MPT offered a new urban image for the capital city based on an agglomeration of satellite towns. For each town, the master plan provided a detailed programme for the development of housing. Highlighting the urgency for increasing both the population and building density in residential neighbourhoods, the MPT drew a clear correlation between housing types and their related social classes.[112] For low-income families, for instance, a building density of up to 3-storey was defined in the form of row-house typology with a small courtyard on the southern part of each dwelling plot. Moreover, the MPT provided a detailed analysis of existing neighbourhoods to propose a development plan for the city. Accordingly, it identified 21 areas that needed to be radically transformed by the municipality, proposed new locations for building housing projects by private-public developers, and illustrated areas with a need for densification. The latter included Chaharsad-Dastagh, as the project

110. E Moeenfar, "Az Chaharsad-Dastgah Che Khabar?," [What Is the News about Chaharsad-Dastgah?] *Journal of Bank-e Sakhtemani* 1, no. 6 (1957).

111. Indeed, this characteristic resonates with the notion of 'people as infrastructure,' as AbdouMaliq Simone observed in the case of Johannesburg. See: AbdouMaliqalim Simone, "People as Infrastructure: Intersecting Fragments in Johannesburg," *Public Culture* 16, no. 3 (2004).

112. See: Victor Gruen and Abdolaziz Fa6manfarmaian, "The Comprehensive Plan of Tehran: Review and Evaluation," ed. Supervising the Growth of the City of Tehran (Tehran: The Finance and Planning Organisation, 1970).

was built with a row-house typology. Based on the MPT's densification plan, the courtyards erected on the northern part of each urban block in this project would remain intact; yet, the ones placed on the southern parts should give room to the construction of new residential blocks.[113] This strategy could be seen in many building permits issued by the municipality in the 1970s. Most issued permissions for the land-owners who had a house on the northern part of urban blocks for an additional construction of one or two-storey. Houses on the southern parts needed to be demolished, and the courtyards had to be replaced with new buildings including a walled front-yard that would be placed adjacent to the streets.

Introducing front-yards as an intermediate domain between public-private spaces also became instrumental to accommodate new changes in Chaharsad-Dastgah. In the newly constructed two- or three-storey houses, people mostly chose to use part of the front-yards as private parking space. Further, the front-yards became the point of departure for further modifications to the layout of houses. This happen after the 1979 Iranian Revolution, and during the Iran-Iraq war period (1980-1988), when the Municipality of Tehran halted most pre-revolutionary city's development plans and construction strategies.[114] As observed by Habibollah Zanjani, numerous scattered settlements were developed during this period in Iran and many houses were built in Tehran without municipal permission.[115] This spontaneous expansion of individual houses can be traced in Chaharsad-Dastgah. In my interview with some dwellers of the project, they referred to the ideal situation of the 1980s, when they were able to expand their habitable spaces towards the front-yard based on their new needs without any bureaucratic obstacles and processes. Some also explained that they built a small shop in their front-yards that was directly accessible from the street or erected a series of small workshop rooms in the yards for their own business. These modifications/changes created new internal organisation and layout for the existing houses in relation to their private outdoor spaces. It is, thus, not surprising that the aerial pictures of the early-1990s from Chaharsad-Dastgah, taken by Iran's Cartographic Centre, depicted its urban layout with multiple forms of back-, central-, and front-yards.

The approval of the new Tehran's Master Plan in 1992 brought the transformation of Chaharsad-Dastgah into a new phase. The master plan largely focused on the issues related to deteriorated neighbourhoods in Tehran. It introduced an urban renewal programme that aimed to improve public and private transportation systems, and to develop large-scale housing schemes in old districts of Tehran.[116] To finance this modernisation programme, the municipality relied on the financial resources that would be gained from the densification of many existing residential districts.[117] Based on this densification plan, each construction plot was divided into two pieces: an enclosed private outdoor space with a 40 percent unbuilt land coverage, and a 60 percent built area where the building volume could be erected. This plan defined the average floor space index (FSI - expressing the built intensity

113. Ibid.

114. Azadeh Mashayekhi, "The 1968 Tehran Master Plan and the Politics of Planning Development in Iran (1945–1979)," *Planning Perspectives* 34, no. 5 (2019).

115. Habibollah Zanjani, "Housing in Iran," in *Encyclopedia Iranica*, ed. Ehsan Yarshater (Winona Lake: Eisenbrauns Inc., 2004).

116. See: H. Bahrainy and B. Aminzadeh, "Evaluation of Navab Regeneration Project in Central Tehran, Iran," *International Journal of Environmental Research* 1, no. 2 (2007).

117. Giti Etemad, *Tarh-E Navab Va Payamad-Haye An* [Navab Project and its Consequences] (Tehran: Daftar-e Nashr-e Ma'ani, 2013).

of an area) as 1.2 (a building with 2-storey); however, it allowed the option to double the FSI (2.4) with payment for the lots with a minimum surface of 100 square-meters. By selling density against a reasonable price, the Municipality of Tehran encouraged landowners to build one or two additional floors and issued permits for the construction of residential buildings up to 4-storey.[118] While this strategy largely provided needed financial means for infrastructural and housing projects introduced by the master plan, it dramatically increased the building density of most neighbourhoods in Tehran. In the case of Chaharsad-Dastgah, many landowners transformed their single-family houses into three- or four-storey apartments. They kept one or two apartment units for themselves and sell or rent out the rest.

The employed construction system played an instrumental role in the densification of individual houses in Chaharsad-Dastgah. Essential to this logic was the use of cavity party walls that provided some extent of autonomy for structural and spatial changes in each house. This can be seen from different forms of mid-rise residential buildings that were erected to replace one- and two-story individual houses, in the past 20 years [Figure 2.28]. This move radically transformed the well-organised image of public spaces (i.e., the façade as the edge of public-private space) in this project; however, it also embodied the idea of the experimental housing model to become responsive to ever-changing needs of their inhabitants and the desire to form a strong feeling of belonging to the place.[119]

The built-unbuilt ratio and the densification strategy diminished the value of private front-yards to a place that would only provide access for private cars to the parking area, placed on the ground level or beneath the buildings. Yet, this strategy created a new source of income for the residents, and enabled local municipalities to invest in developing public spaces. In Chaharsad-Dastgah, some vacant lands that were meant for the construction of public amenities, such as a school and a cultural centre, were transformed into lively outdoor spaces for communal activities. In my interview with some current dwellers of Chaharsad-Dastgah, they explained that in the early-2000s, the local municipality created a playground at the centre of the neighbourhood. The space enabled children to play outside, while trees were planted in many unbuilt areas of public spaces to form small parks. These interventions have not only changed the urban image of public spaces, but have also formed joyful places for leisure and social activities among the residents of Chaharsad-Dastgah.

The final changes in the urban structure of Chaharsad-Dastgah took place from 2011. This happened when the Municipality of Tehran introduced a comprehensive detailed development programme (*Tarh-e Tafzili*) in 2008. This municipal programme largely focused on easing public-private mobility in the city and on improving accessibility to public services in the case of emergency, i.e.,

118. Ali Madanipour, "Urban Planning and Development in Tehran," Cities 23, no. 6 (2006).

119. See: Jalaleddin Rafi-far and Shohreh Shokri, "Memari Paydar Va Salamat Ejtemaee: Morede Pajhuhesh Mahaleh Chaharsad-Dastgah," [Sustainable Architecture and Social Health: The Case of Chaharsad-Dastgah.] *Motaleat-e Jame-e Shenasi* 21, no. 2 (2014).



Figure 2.28: some examples of apartment buildings constructed by the house owners in Chaharsad-Dastgah.
Source: Photograph by Mohamad Sedighi.



Figure 2.29: these aerial pictures depicts changes in the urban layout of of Chaharsad-Dastgah in 2000 (top), 2009 (middle), and 2018 (bottom).
Source: Google earth, accessed October 2019.

earthquakes or fires;[120] Accordingly, a minimum width was defined for alleys and streets, and a distinct emphasis was given to the expansion of excising highways in the city. One of the early projects developed based on this new plan was Imam-Ali expressway that aimed to connect north-east and south regions of Tehran. To achieve the intended goals, many residential districts, including Chaharsad-Dastgah, had to be fully or partly demolished in order to enable the expansion of this expressway. As a result, the eastern boulevard and a group of houses in Chaharsad-Dastgah were replaced with a wide high-way that eventually divided this residential neighbourhood into two disconnected pieces [Figure 2.29].

Moreover, municipal authorities issued building permits for constructing new houses with a specific condition: landowners have to allocate part of their land to public space. This was done so that the dedicated private land could be used by the municipality for widening the street profiles. For compensation, landowners were permitted to use part of their unbuilt areas (40 percent of total dwelling plot), as defined by the master plan, for constructing residential buildings. In this view, the coverage of buildings on the ground level would always remain as 60 percent of the dwelling lot. The surface of unbuilt areas, the courtyards, would become a variable to trade-off public and private lands for the state's initiated transformation programme, and more importantly, to accommodate growth and change in the urban layout of this housing project. While the size and position of unbuilt lands created a dynamic image for public spaces in Chaharsad-Dastgah, these private and collective outdoor spaces remained enclosed for some social activities.

Finally, the growth and change of individual houses and private courtyards radically transformed the urban structure and image of public spaces in this housing district. Changes in the street profiles and the urban density of Chaharsad-Dastgah are so pervasive in the whole neighbourhood that its initial urban layout and housing typology are difficult to be recognised. From the site survey that I conducted in early 2019, it was observed that only a few houses, built by the Mortgage Bank between 1946 and 1950 remained intact. However, the central square remained largely unchanged in this housing project. Despite these radical transformations, the private and public courtyards of Chaharsad-Dastgah became an important part of people's collective memory, especially when its dwellers aimed to make a distinction between their living environment and other districts in the city.

Conclusion

In this chapter, I contended that the experimental housing model of Chaharsad-Dastgah catered for secularising many socio-cultural aspects of private and public life, and recreating certain vernacular patterns of inhabitation, such as

120. See: The Municipality of Tehran, "Zavabet Va Mogharart-E Tarh-E Tafzili Jadid Shahr-E Tehran," ed. the Municipality of Tehran: the Department of Architecture and Urbanism (Tehran: the Municipality of Tehran, 2012).

the traditional Iranian house, in their most concrete immediacy. In this process of re-creating, the project of 'Awakening' Iranian women, and in particular the compulsory unveiling became instrumental for 'inventing traditions', as Eric Hobsbawm and Terence Ranger put it,[121] enabling a group of modernist Iranian architects to reconceptualise the ideal form of living, the courtyard house, for large-scale housing production.

Moreover, the urban planning document, revised and enhanced by modernist Iranian architects in 1941-42, played a vital role in modernising and secularising the everyday life of people Incorporating institutional buildings, such as a police station and local municipality, in the urban layout of Chaharsad-Dastgah changed traditional socio-spatial relations within this neighbourhood. In addition, introducing public spaces such as streets and squares in new forms and functions contributed to stimulating outdoor public activities among the residents. Designing a row or block typology was also a strategy to create an organised image towards public spaces, as required by the planning document. The built masses were placed on the edge of the streets, creating a strong distinction between public and private outdoor spaces. This distinction enabled the residents to develop and modify the unbuilt/vacant land behind their individual houses, the courtyards, based on their new needs, without changing the image of public spaces.

The process of promoting architectural modernity in Chaharsad-Dastgah was based on a careful deconstruction of traditional values. Indeed, this results from the adaptability inherent in the core conception of the courtyard house type. As the architectural historian, Michael Dennis, observed, the exact function, location and treatment of the courtyard in this house type have been adapted over time to respond to specific contextual circumstances, but regardless of its particular spatial and formal features.[122]

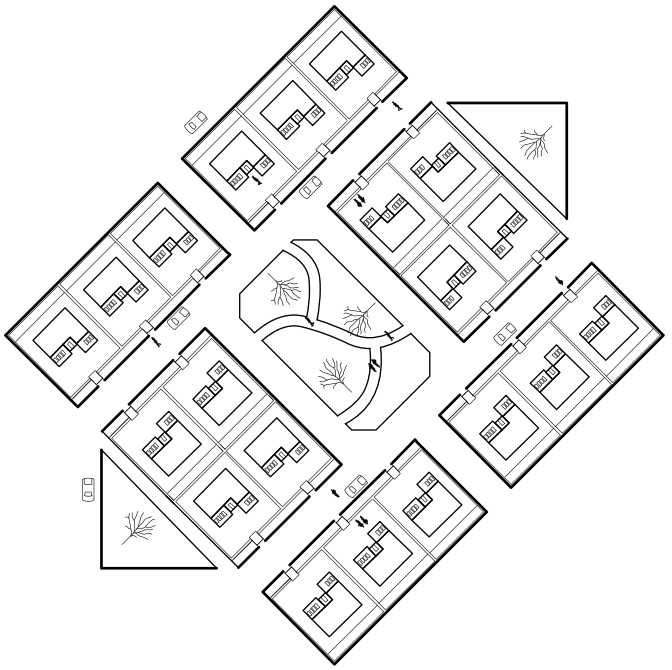
This form of adaptation can be seen in the case of Chaharsad-Dastgah which underwent a series of changes in the past 70 years. Indeed, the public spaces and urban layout of this neighbourhood were transformed by municipal authorities and related agencies. In this process, the residents of Chaharsad-Dastgah also largely contributed to change building density in and the skyline of this project. Despite these radical transformations, there is a strong collective identity among the residents of Chaharsad-Dastgah. This sense of attachment was observed from my site survey, and understood from a set of interviews that I conducted with some of the current dwellers of this project who lived there for a long period of time. In these interviews, most people referred to their private and collective courtyards as a place that brought peace for them in today's noisy urban environment of Tehran, and accommodated a piece of greenery with a sense of ownership. These characteristics highlighted the importance of private and collective courtyard-gardens in the urban structure to absorb change and transformation, over time.

121. Coined by British Marxist historians, Eric Hobsbawm and Terence Ranger, the 'Invention of Tradition' focuses on a process of formalisation and ritualization characterised by reference to the past. Hobsbawm and Ranger argued that some traditions needed to be invented, not because they are old and no longer available or viable, but because they are "deliberately not used or adapted", and gradually lost their importance; so, they can be used for radical innovation. For more reading, see: Eric Hobsbawm and Terence Ranger, eds., *The Invention of Tradition* (New York: Cambridge University Press, 2012), 1-14.

122. See: Michael Dennis, *Court & Garden: From the French Hotel to the City of Modern Architecture* (Cambridge, Massachusetts: The MIT Press, 1986), 75.

In Chaharsad-Dastgah, the courtyard also created a space with dual characteristics. While the internal layouts of houses were exposed to the public, the courtyards remained invisible from the streets. These individual courtyards were surrounded with walls. However, by positioning these courtyards together, back-to-back at the heart of the urban blocks, they became more open and visible to the surrounding neighbours, yet another act of deconstructing traditional values. The low-walls enabled the inhabitants to gain visual access to their neighbours' courtyards. In some cases, they were afforded the opportunity to cluster the courtyards together with collective access to one another, or to use them for the expansion of their habitable spaces. This transformation of the traditional courtyard introduced a careful balance in the project between traditional premises of everyday life and the process of modernisation. In later residential projects in Iran, however, this balance seems to be lost, most of the time by not recognising the significance of the courtyard type in creating a co-existence between private and public outdoor urban life that is at the core of everyday patterns of inhabitation, in Iran. Perhaps, by reusing the courtyard type and reinterpreting its characteristics for the design of new dwellings and residential neighbourhoods, architects can once more achieve Ivan Illich's ideal model of dwelling that entails the importance of living in the traces that past living has left.[123]

123. Ivan Illich, *Gender* (New York: Pantheon, 1982), 119-20.



3 • Urban Density & Participation

The Growth and Change of an Inclusive Urban Community, in Tehran: Kuy-e Narmak (1952–1958)[1]

Introduction

Iran's process of urban modernisation brought forth a change of paradigm in the design and provision of housing, in the period of 'Centralisation' (1941-1953), as defined by Mohsen Habibi.[2] This change was largely initiated and promoted by modernist Iranians in the 1940s, as shown in the previous chapter. However, it was the Cold War oil-led geopolitics that considerably accelerated this process of change in Iran, since the early-1950s. In fact, this period of 'post-war corporatist compact', as Kevan Harris termed it, saw the U.S. hegemony infiltrating the region, sponsoring state-led development.[3] In the context of the early Cold War period, the U.S. geopolitics in Iran was driven by a strategy of negotiating favourable alliances to secure access to oil resources.[4] This strategy sponsored a form of 'Socialism', paradoxically supported by a corporatist model of industrialisation, a model that in the late-1960s, some scholars described as a form of 'creative modernisation'.[5]

1. A modified version of this chapter is published in the peer-reviewed journal of *Planning Perspectives*. Further, part of this chapter is dissiminated in *PROMETHEUS*.

2. Seyed Mohsen Habibi, *Az Shar Ta Shahr: Tahlili Tarikhi Az Mafhume Shahr Va Simaye Kalbudie an Tafakkor Va Taassor* [De la Cite a la Ville-Analyse Historique de la Conception Urbaine et Son Aspect Physique] (Tehran: University of Tehran Press, 1999), 186-90.

3. Kevan Harris, "Making and Unmaking of the Greater Middle East," *New Left Review*, no. 101 (2016): 13.

4. See: Douglas Little, *American Orientalism: The United States and the Middle East since 1945* (The University of North Carolina Press: Chapel Hill, 2008).

5. For more reading, see: Sami A. Hanna and George H. Gardner, *Arab Socialism* (Leiden: E. J. Brill, 1969).

Focusing on the last two years of the 'Centralisation' period (1951-1953), in this chapter, I will argue that land reform and public housing became key policies for Mohamad Mosaddeq (1882-1967), who became Iran's first democratically elected prime minister in 1951. While started earlier in the 1940s, these policies were further developed, after Mosaddeq's overthrowing in 1953, under the second Pahlavi monarch, Mohamad Reza Shah (1919-1980), who ruled the country until the 1979 Iranian Revolution.[6] The land-use as well as housing policies initiated by Mosaddeq played an important role to bring forth a creative urban transformation, first in Tehran, and then in most Iranian cities. This became a creative process, as it allowed the involvement of ordinary people, actively, in the process of housing production.

This chapter aims to contribute to the discussion about the evolution of housing paradigms in early-1950s Iran; and it focuses on the theme of urban density and people's participation in the development of public housing. To this end, a particular project that is emblematic to the discussion of public housing, Kuy-e Narmak will be investigated. This investigation depicts the resonances between Iran's process of (urban) modernisation and the transformation of some vernacular socio-spatial patterns of inhabitation that triggered participation of ordinary Iranians in the process of housing production. To achieve the intended goals, I will use archival materials and iconography as a tool to illustrate Narmak's transformation through time, and rely on available scholarly studies that provide a critical understanding of some of the most important events in Iran's process of modernisation in the 1950s. These studies insightfully addressed themes such as the politics of mass housing production, notions of class and culture in housing development, and the influence of the Cold War on the economies of desire and domesticity in Iran.[7]

Some studies specifically focused on the case of Narmak, discussing this residential district in relation to local labour movements, international modernism, and universal values. Morteza Mirgholami and Sidh Sintusingha illustrated Narmak as a synthesis between local and international values that stimulated social activities in this housing project.[8] Hamed Khosravi drew parallels between Iranian labour movements (1943-1963) and development of housing in Tehran, and claimed that housing projects such as Narmak became an instrument of political mobilisation, enabling the working class's socio-spatial autonomy, by action and resistance.[9] Rana Habibi and Bruno De Meulder also analysed Narmak through the lens of the state's nation building strategy, and illustrated how the adaptation of imported models based on local architectural culture influenced the design of this project, triggering some unexpected social consequences such as ad-hoc land division.[10]

While existing literature seems substantial on the process of urban transformation in the 1950s Iran, generally, and on the specific case of Narmak, particularly, most of the research referenced earlier overlooks the role that the agency of the dweller

6. Eric J. Hooglund, *Land and Revolution in Iran, 1960-1980*, vol. 7, Modern Middle East Series (Austin: University of Texas Press, 1982).

7. For instance, see: Jaleh Jalili and Farshid Emami, "Notions of Class and Culture in Housing Projects in Tehran, 1945–1960," in *Social Housing in the Middle East: Architecture, Urban Development, and Transnational Modernity*, ed. Kıvanç Kılınç and Mohammad Gharipour (Bloomington, Indiana: Indiana University Press, 2019); Hamed Khosravi, "Camp of Faith: On Political Theology and Urban Form" (Ph.D dissertation, TU Delft, 2014); Pamela Karimi, *Domesticity and Consumer Culture in Iran Interior Revolutions of the Modern Era* (London and New York: Routledge, 2013); Rana Habibi, "Modern Mass Housing in Tehran. Episodes of Urbanism 1945-1979" (KU Leuven, 2015).

8. Morteza Mirgholami and Sidh Sintusingha, "From Traditional Mahallehs to Modern Neighborhoods: The Case of Narmak, Tehran," *Comparative Studies of South Asia, Africa and the Middle East* 32, no. 1 (2012): 214-37.

9. Hamed Khosravi, "Planning a Revolution; Labour Movements and Housing Projects in Tehran, 1943-1963," in *International Planning History Society Proceedings (Vol. 17, No. 2)*, ed. Carola Hein (Delft, The Netherlands: TU Delft, 2016), 43-52. Also see: Hamed Khosravi et al., *Tehran: Life within Walls: A City, Its Territory, and Forms of Dwelling* (Berlin: Hatje Cantz Verlag, 2017).

10. Rana Habibi and Bruno De Meulder, "Architects and Architecture without Architects: Modernization of Iranian Housing and the Birth of a New Urban Form Narmak (Tehran, 1952)," *Cities* 45 (2015): 29-40.

performed in the transformation through time of their housing environment. In other words, there is little research discussing the dynamic process in which the planning and urban design strategies implemented in the early-1950s Iran were able to accommodate growth and change through time. Accordingly, this chapter will expand the debate on the relation between modernist planning concepts and the transformation of Iran's domestic landscape. It will examine how the design of housing was influenced by the structural socio-economic changes introduced in Iran under the oil-led geopolitics of the early Cold War and their impact on the evolution of local patterns of inhabitation in Iran's major cities. I will analyse the typological and morphological components of Narmak and combine the results of this study with the outcome of a site survey in the housing district and interviews conducted with some of its current dwellers. Through this analysis, I will argue that the plan's rigid urban form has become instrumental in defining a neutral background to accommodate the ever-changing social and spatial practices of its inhabitants, resulting in a highly dense and socially inclusive urban community. In short, this chapter will examine how Narmak accommodated growth and change over time, and demonstrate the extent to which vernacularising the housing model of Narmak resulted from the entwined relation of three factors: design decisions, a financial model and a particular system of land-ownership. I will argue that these factors enable the residents of Narmak for self-organisation and self-expression. To create a clear backdrop to the context in which this case study was developed, we need to understand the development policies that were in place in the period when Iran suffered two external political offensives, one in 1941 and the other in 1953.

Policies in Troubled Political Times

In 1941, England, the USSR, and the United States forced Reza Shah (1878-1944) to abdicate in favour of his twenty-two-year-old son, Mohamad Reza, ending the supreme monarch's control of the army, bureaucracy, and court patronage.[11] While the Anglo-Soviet invasion toppled down Reza Shah, it also triggered an active involvement of highly educated Iranians in the country's political and economic scenes.[12] The power relations in Iran's political system were heavily shaken in this period, especially between the withdrawal of the Allied forces from Iran in 1945 and the CIA-MI6 engineered coupe of 1953 against the Mosaddeq administration, which restored Mohamad Reza Shah to his full executive power.[13] This political instability resulted in a negotiated balance of power between the royal family, the governmental cabinet, and the parliament (*Majles*), a system of governance that was already envisioned by the 1906 constitutionalist movement.[14] This also led to the engagement of Iranian intellectuals, former political prisoners, and urban masses in socio-political activities.[15] One particular moment of such activities and involvements was captured by the lens of *Life Magazine* [Figure 3.01]. As observed

11. To control access to Iran's oil reserves and to the Trans-Iranian Railway from the Persian Gulf to the Caspian Sea, the Allies realised that the bureaucratic system established by Reza Shah could be very useful for their geopolitical agenda. Replacing the pro-German Shah (Reza Pahlavi) with his young son (Mohamad Reza Pahlavi), they would influence Iran's internal affairs and achieve their goals. For more information, see: Ervand Abrahamian, *A History of Modern Iran* (Cambridge: Cambridge University Press, 2008), 97.

12. Ibid., 97-101.

13. Since the 1906 Constitutional Revolution in Iran, the king (Shah) played just a ceremonial role. The government's executive power was the prime minister, meant to be chosen by the Parliament. Since the early-1910s, the charismatic Mohamad Mosaddeq became a prominent figure in Iranian politics. One of his defining positions was the desire to nationalise the oil industry in Iran through means of strict constitutionalism at home and 'negative equilibrium' abroad. He strongly opposed the different deals made between the government and foreign actors, and sought to ensure Iran's independence from other nations. One way he suggested to do this was to have the government take charge of the Anglo-Iranian Oil Company. For more reading, see: ibid., 97-122.

14. The Iranian constitutional revolution of 1906 aimed to limit the political power of the royal family and to establish an electoral system for the Parliament and the Senate, based on the Belgian constitution. Between 1911 and 1921, the country was ruled by the constitutionalists. However, Reza Shah brought an end to this system, when he established the Pahlavi monarchy in 1925. For more reading, see: *Iran between Two Revolutions* (New Jersey: Princeton University Press, 1982), 50-102.

15. See: Ali Mirsepassi, *Intellectual Discourses and the Politics of Modernization: Negotiating Modernity in Iran* (Cambridge: Cambridge University Press, 2000), 1-14.

16. Hamed Khosravi, "Camp of Faith: On Political Theology and Urban Form" (Ph.D dissertation, TU Delft, 2014), 215-18. Further, Noureddin Kia-Nourin was an architect graduated from Technical University of Aachen (Germany). He was a leftist activist who served as one of the main editors of the Tudeh newspaper, *Rahbar*, and later *Bashar*. His wife, Maryam Firouz was a co-founder of the Association of Iranian Women (*Anjoman Zanan Iran*), the women branch of the Tudeh party. For more reading, see: Abbas Milani, *Eminent Persians: The Men and Women Who Made Modern Iran, 1941-1979* (Syracuse: Syracuse University Press, 2008), 143-51.



Figure 3.01: public political meeting and demonstration in the late-1940s.
Source: Photograph by Dmitri Kessel (1950's), *Life Magazine* Photo Archive.
The image is also available online at: http://images.google.com/hosted/life/5507080b6e14c7b0.html

by Hamed Khosravi, in one of these meetings, Noureddin Kia-Nourin, one of the founding members of the Party of the Masses (*Hezb-e Tudeh,* Iran's communist party) also spoke publicly at a political meeting for his supporters, in Tehran.[16] By mobilising different social strata, the members of the Tudeh Party, as well as the National Front (*Jebh-e Meli,* Iran's nationalist party), formed the majority of members of the parliament in 1949.[17] They initiated wide sweeping socio-political reforms, and aimed at abolishing the British control on Iran's oil industry.[18]

This socio-nationalist movement led to the formation of a new government in 1951, led by the prime-minster Mohamad Mosaddeq (a founding member of the National Front) who very soon after, nationalised the Anglo-Iranian Oil Company (*Sherkat Naft-e Iran va Englis*).[19] The Iranian oil nationalisation process became a centre of attention around the world under the charismatic leadership of Mosaddeq, who was chosen as 'Man of the Year' by *Time Magazine*, in 1952 [Figure 3.02]. The Iranian oil nationalisation was seen by the British government as a threat to its political and economic interests in the Middle East. In May 1951, the British minister of defence claimed that "if Persia was allowed to get away with it, Egypt and other Middle East countries would be encouraged to think they could try things on: the next thing there might be an attempt to nationalise the Suez Canal."[20] To prevent the influence of the Iranian oil nationalisation spreading in the region, the British government campaigned for international sanctions to be imposed on the Iranian economy.[21] The British-led sanctions targeted the Iranian oil industry. As a consequence, the Mosaddeq administration was not able to export the crude oil; thus, to cope with the impact of the economic sanctions, the government launched the 'Economy without Oil' model, between 1951 and 1953.[22] To achieve the intended goals of this campaign, the government commissioned the Ministry of Agriculture with the preparation of a national development project. This project was aligned with the country's first economic and social development plan drafted by the Finance and Planning Organisation (*Sazman-e Barnameh va Budjeh*), in 1948.[23]

Similar to the soviet-like five-year industrialisation plans, the first development plan (1948-1955) pursued a project for the modernisation of the nation.[24] To support the implementation of Mosaddeq's modernising agenda, the government's economic policy was focused particularly on the development and modernisation of agricultural activities and production, in order to relieve a reliance on oil extraction and exports. Moreover, land reform received a great deal of attention, as part of a programme to develop state-initiated large-scale housing schemes, the so-called public housing, a key policy in Mosaddeq's socio-political agenda.[25] The provision of affordable housing for both the middle- and low-income families was one of the main promises that the Nationalist party made during the 1950 election campaign. To fulfil this promise, the government assigned land located on the periphery of Iran's major cities to the development of public housing.[26] In this scheme, Tehran served as a pilot place of implementing new housing models.

17. In 1941, Hezbeh Tudeh was established by a group of European-educated Iranian socialists such as Iraj Eskandari and Noureddin Kianouri. In 1949, Mohamad Mosaddeq, Hossein Fatemi, and Karim Sanjabi founded Jebh-e Meli, aiming to establish a republic in Iran. See: Abrahamian, *Iran between Two Revolutions*, 281-325.

18. Ibid., 107-18.

19. After oil discovering in 1908 near the small city of Masjed Soleiman (in the Khuzestan province located in south-west Iran), "d'Arcy and Burmah Oil established the Anglo-Persian Oil Company (APOC) in 1909 and the Iranian government enabled the APOC to expand drilling activities in south Iran. After 1913, the British government became the main consumer of Iran's oil and injected capital into the company so as to develop the oil industry in Khuzestan. After a new agreement was signed between the Iranian and British governments increasing Iran's share of oil profits, the company was renamed Anglo-Iranian Oil Company (AIOC) in 1935, and became British Petroleum (BP) in 1954, one of the antecedents of today's company of that name". For more reading, see: Carola Hein and Mohamad Sedighi, "Iran's Global Petroleumscape: The Role of Oil in Shaping Khuzestan and Tehran," *Architectural Theory Review* 21, no. 3 (2017): 354.

20. See: PRO: DEFE 4/43, COS(51)86th meeting, 23 May 1951, in Ian Speller, "A Splutter of Musketry? The British Military Response to the Anglo-Iranian Oil Dispute, 1951," *Contemporary British History* 17, no. 1 (2003): 48.

21. See: Abrahamian, *A History of Modern Iran*, 97-122.

22. For more information, see: Anvar Khame-ie, *Eqtesad Bedune Naft: Ebtekare Bozrge Doctor Mosaddeq* [Economy without Oil: A Big Initiative of Dr. Mosaddeq] (Tehran: Nahid publication, 1996), 1-24.1996

23. The Finance and Planning Organisation was a governmental institution established in 1947, in collaboration with American officials to administer the strategic planning and supervision of the country's economic and social development. See: The Finance and Planning Organisation, "Barname-Haye Omrani Keshvar Dar Doran-E Saltanat-E Shahanshah Aryamehr," [Iran's National Development Plans during the Reign of Mohamad Reza Shah.] *Bank-e Rahni Journal* 2, no. 10 (1968): 37-62.

24. Except the first development plan which was designed under American supervision and for a period of seven years, all the other plans were developed for a period of five years. For more reading on Iran's development plans, see: ibid.

25. For more information, see: Mohamad Ali Abdi, Sima Mehdizadegan, and Farzaneh Kordi, *Six Decades Housing Planning in Iran (1948-2008)* (Tehran: BHRC Publication, 2011).

26. The major city, here, means the capital city of each province or big cities in Iran, such as Tehran, Tabriz, Isfahan, Shiraz, Ahvaz, Kerman, Mash'had, Yazd, Kermanshah, Oroumiyeh, Hamedan, Ilam, and Sanandaj, among others.

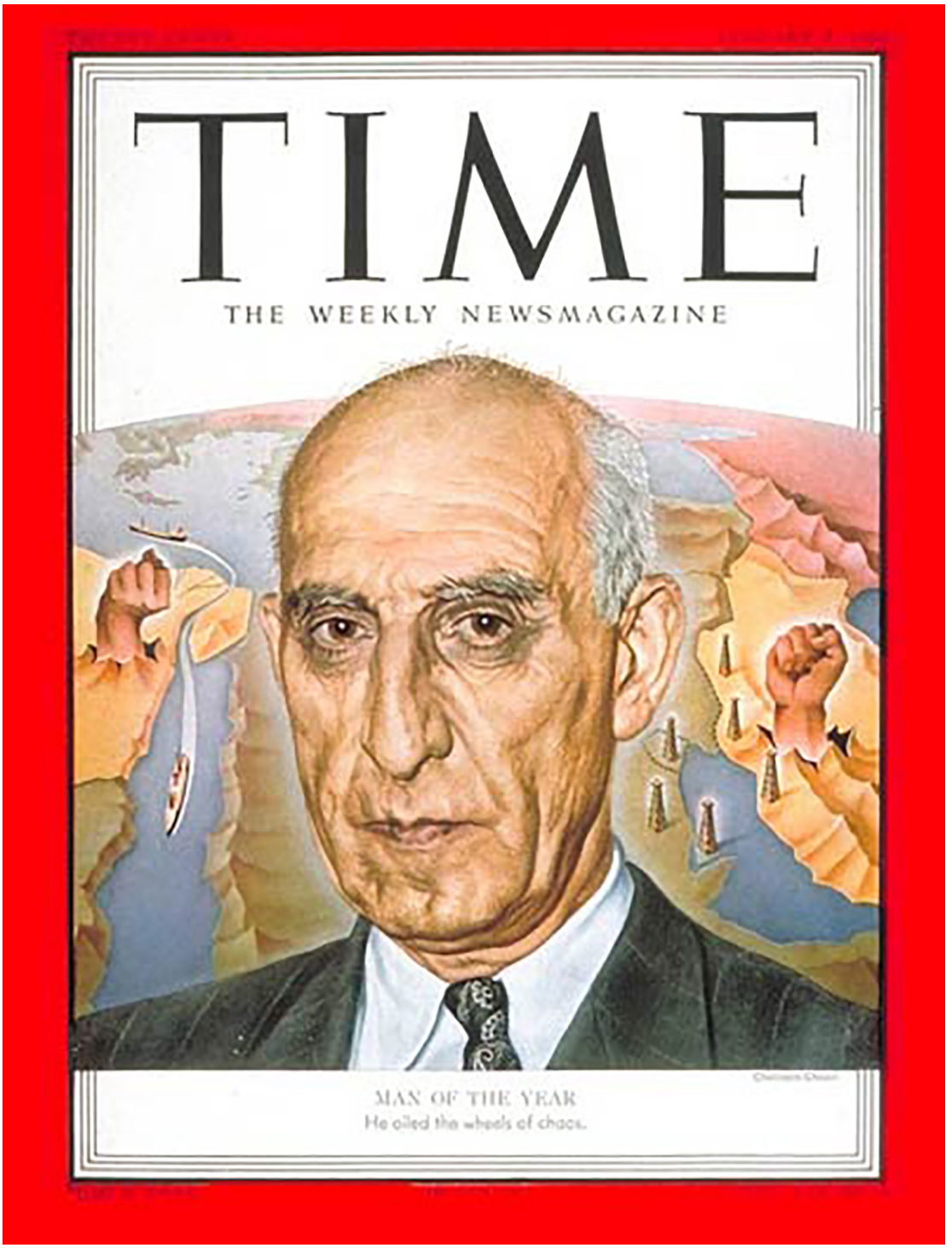


Figure 3.02: Mohamad Mosaddeq, Man of the Year by Time magazine.
Source: *Time*, 7 January 1952, cover page, adopted from http://content.time.com/time/covers/0,16641,19520107,00.html.

Housing Politics in Post-War Iran

Shortly after the Second World War (WWII), the immediate need for massive reconstruction and modernisation of the country became a main topic for public debates and architectural discussions in Tehran. In the public debates led by the Tudeh party and some of its affiliated media, such as the popular bi-monthly journal of *Bidari-e Ma* or the bi-weekly newspaper of *Taraqqi*, the path to modernisation was mostly depicted as through 'going local' rather than employing imported products and ideas.[27] Moreover, these debates highlighted the importance of public involvement by both men and women in collective discussions and political activities.[28] In architectural discussions led by the first Iranian architecture magazine, *Arshitekt*,[29] however, this path was imagined as taking place through the application of modernist design principles for developing both urban areas and new residential neighbourhoods, mainly in Tehran.[30] For instance, in the first two pages of the first volume of *Arshitekt*, the manifest of the Association of Registered Iranian Architects (*Anjoman-e Me'maran-e Irani Diplomeh*) was published.[31] This manifest referred to the relevance of the modern movement to local architecture, and clearly defined the intention of the Association as "to critically review the achievements of Iranian architecture and transcended them through the 'modern' approach to architecture".[32]

During this period, the Association of Registered Iranian Architects (ARIA) and the government's role in constructing affordable housing projects gained momentum.[33] Generally speaking, the design and development of low-cost housing schemes were not attractive to many highly educated Iranian architects and private developers; therefore, housing the urban poor became a central concern for the Iranian government.[34] This situation was so dramatic that Vartan Hovanesian,[35] an influential member of the ARIA, described the housing condition of Iran as a crime, and urged the government to build 'modern' residential neighbourhoods, similar to the models developed by European modernist architects all around the world.[36] Similalry, Iraj Moshiri criticised the quality of newly constructed houses in urban areas, in terms of materialisation and comfort; and he drew parallels between implementing modern urban and building regulations by architects, and improving housing production in the country.[37]

Both Hovanesian's and Moshiri's praise of modernity were directly pointed at the members of the ARIA, whose expertise in design and realisation of mass housing projects would help the Iranian government to pursue their goal of modernising Iran. Some of the Association's board members, such as Ali Akbar Sadegh, had been actively involved in initiatives promoted by CIAM.[38] Moreover, this new generation of Iranian architects, who mostly studied in European universities, was particularly well equipped to promote cross-cultural exchanges between the local architectural culture and the Western models of modernisation.

27. For more information about the role of these publications in shaping post-war public discourse on the theme of modernity and modernisation, see: Pamela Karimi, *Domesticity and Consumer Culture in Iran Interior Revolutions of the Modern Era* (London and New York: Routledge, 2013), 84-88.

28. These publications encouraged women to work outside the realm of home. For instance, in an article entitled: "Home and Its Limits in the Modern Age", Farah Laqa Alavi, one of the co-founders of the Tudeh's women's branch, claimed that the duties that were traditionally assigned to women in the home should now be shared with society as a whole. In so doing, she believed that Iranian women would be able to contribute to the reconstruction of their country. See: Farah Laqa Alavi, "Home and Family, and Its Limits in the Modern Age." *Bidari-e Ma* 3, no. 1 (1944): 13.

29. *Arshitekt* was published by Iraj Moshiri, to discuss, the relevance of the modern movement to the local architecture.

30. See: *Arshitekt* 1, no. 1 (1946). Also see: Habibi, "Modern Mass Housing in Tehran."

31. In 1946, the Association of Registered Iranian Architects was established by a young group of European-educated architects, such as Ali Akbar Sadegh, Iraj Moshiri, and Keyqobad Zafar, to discuss the incorporation of modernist ideas to local Iranian architecture, bringing a distinction between traditional builders and graduating students of universities. For more reading, see: "Akhbar-E Anjoman," [The Association's News.] *Arshitekt* 1, no. 1 (1946): 39.

32. For more information on these debates, see: Iraj Moshiri, "Hadafe Ma," [Our Intention.] *Architect* 1, no. 1 (1946): 1.

33. See: Pamela Karimi, *Domesticity and Consumer Culture in Iran Interior Revolutions of the Modern Era* (London and New York: Routledge, 2013); Khosravi et al., *Tehran: Life within Walls;* and Habibi, "Modern Mass Housing in Tehran."

34. See: Abbas Adjdari, "Sakhteman-E Khaneh-Haye Arzan Dar Iran," [Building Low-Cost Housing in Iran.] *Arshitekt* 1, no. 4 (1946): 125-33.

35. Vartan Hovanesian studied architecture in École des Beaux-Arts of Paris, in the early-1920s. After returning to Iran, he designed various urban projects based on modernist design principle, which later made him known as the father of Iran's modern architecture. Vartan Hovanesian, "Masa'el-E Memari Dar Iran," [Architeccural Issues in Iran.] *Arshitekt* 1, no. 4 (1946): 4-9.

36. Vartan Hovanesian, "Masa'el-E Memari Dar Iran," [Architeccural Issues in Iran.] *Arshitekt* 1, no. 4 (1946): 4-9.

37. Iraj Moshiri, "Mozue Khaneh Va Maskan," [The Subject of House and Housing.] *Arshitekt* 1, no. 4 (1946): 117-18.

38. Ali Akbar Sadegh was one of the co-founders of the ARIA, who acted as the vice-president of the Association between 1946 and 1947 and became its president in 1948. Sadegh was involved in the early stages of the Congrés Intenationaux d'Architecture Moderne (CIAM) where his friend, Guverkian served as its general secretary. See: Mina Marefat, "Building to Power: Architecture of Tehran 1921-41" (Massachusetts Institute of Technology, 1988), 192.

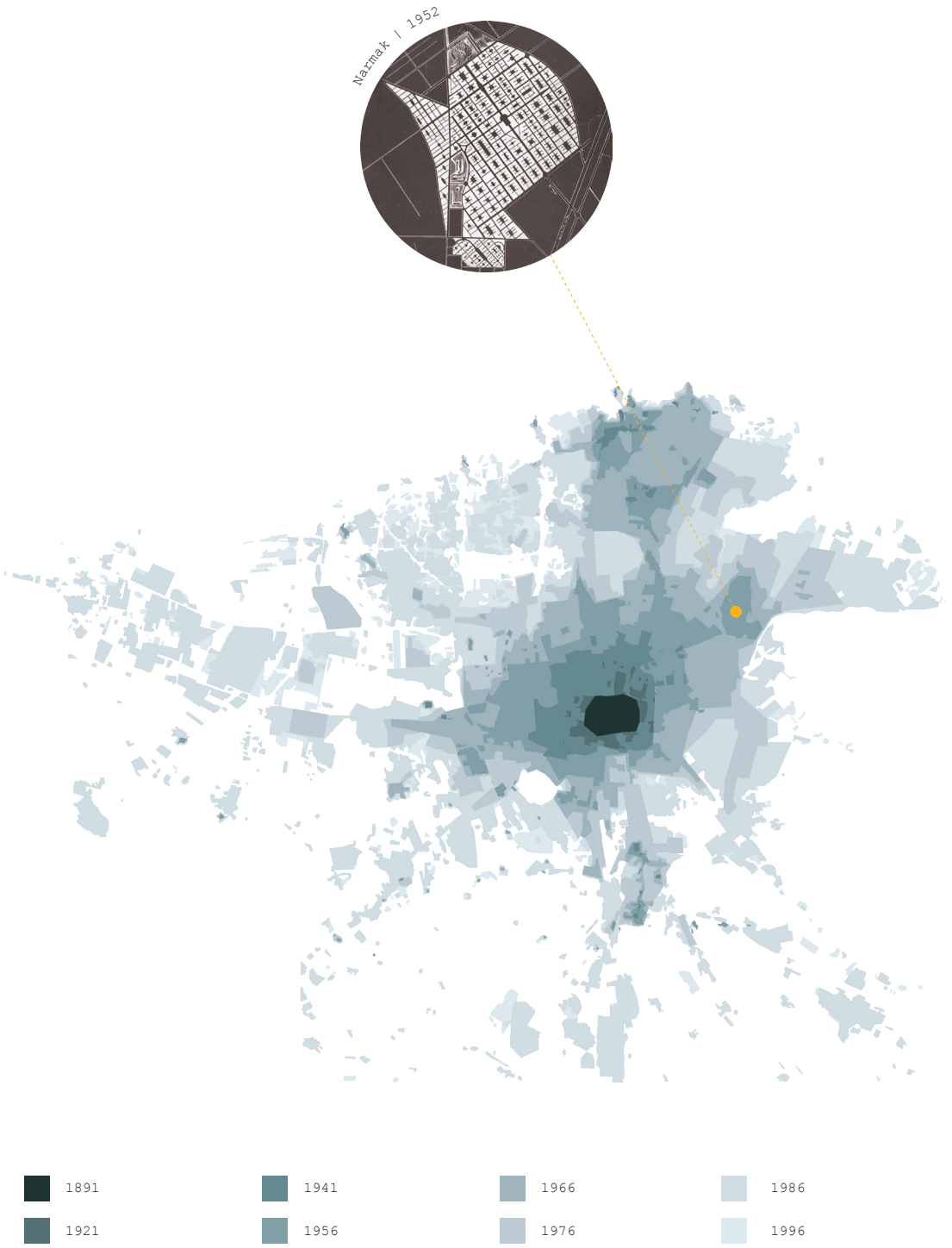


Figure 3.03: the location of Narmak in 1952 Tehran.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

At the turn of the 1950s, the development of public housing in Iran was threatened by land speculation, and by the lack of institutions capable of taking the responsibility for funding and leading the development of public housing in the country. It was in this context that the Iranian Ministry of Agriculture, in collaboration with Iran's Insurance Company (*Bime-ye Iran*), established a new organisation in 1952, known as the Construction Bank (*Bank-e Sakhtemani*).[39] Beside its role in operating as the technical office for the Mortgage Bank (*Bank-e Rahni*) and in developing new urban projects, this organisation also became responsible for providing mortgage loans with low interest-rates for the construction of housing in Iran.

Due to land-price/land-speculation in urban areas, the Construction Bank asked the government to allow the construction of new houses in undeveloped land, outside the cities. This model was already tested in the case of Kuy-e Chaharsad-Dastgah, and gained the support of both the Mortgage Bank and Municipality of Tehran.[40] However, in the absence of administrative rules that would regulate the land-use outside the cities, the Construction Bank was not able to prepare a long-term housing development plan. In 1952, the parliament approved a law, named the 'Bill of the Vacant Lands Registration' (*Layehe-ye Sabt-e Arazi-e Mavat*), through which the Construction Bank was allowed to acquire unused land, located more than three kilometres beyond the borders of exiting cities.[41] In line with a desire for active participation of the general public (both men and women) in the reconstruction process, and with Mosaddeq's agenda for self-determination, this bill became instrumental for the rapid development of large-scale residential neighbourhoods in the periphery of Iran's major cities, and especially on the outskirts of the capital city, Tehran.

The Construction Bank appointed the ARIA to design a series of housing schemes in Iran.[42] To be sure, many residential neighbourhoods built in Tehran during the 1950s and 1960s were a result of this collaboration. Some of the most notable cases were Kuy-e Narmak (1952-58) and Kuy-e Nazi-Abad (1953-58). The Construction Bank planned the first of these schemes, Kuy-e Narmak, in the North-Eastern part of Tehran, near the former airport, as a pilot project to provide affordable housing for ordinary Iranians [Figure 3.03].[43] For its scale and innovative character, Kuy-e Narmak played a fundamental role in Iran as a catalyst for the emergence of new patterns of urban life and housing practices among the general public.

39. Editorial, "Ta'sis Bank-E Sakhtemani," [The Establishment of the Construction Bank.] *Journal of Bank-e Sakhtemani* 1, no. 1 (1955): 10.

40. For more reading, see: E Moeenfar, "Az Chaharsad-Dastgah Che Khabar?," [What Is the News about Chaharsad-Dastgah?] ibid., no. 6 (1957): 30.

41. Naser Badie, "Layehe Sabt-E Arazi-E Mavat," [The Bill of the Barren Lands Registration.] ibid., no. 4 (1956): 19-20.

42. In the first post-war planning initiatives the rural-urban migration and the demographic change in Iran were key factors for the design of housing policies. For more information, see: Ali Madanipour, *Tehran: The Making of a Metropolis*, World Cities Series (Chichester: John Wiley & Sons, 1998), 1-27.

43. For a coeval account on the creation of Narmak, see Amir Masoud Khodayar, "Cheguneh Kuy-E Narmak Bevojud Amad," [How Kuy-e Narmak Was Created.] *Journal of Bank-e Sakhtemani* 1, no. 1 (1955): 6-10.

Kuy-e Narmak

The project for the new residential neighbourhood was realised close to the village of Narmak, a place known for its fertile pomegranate gardens, situated

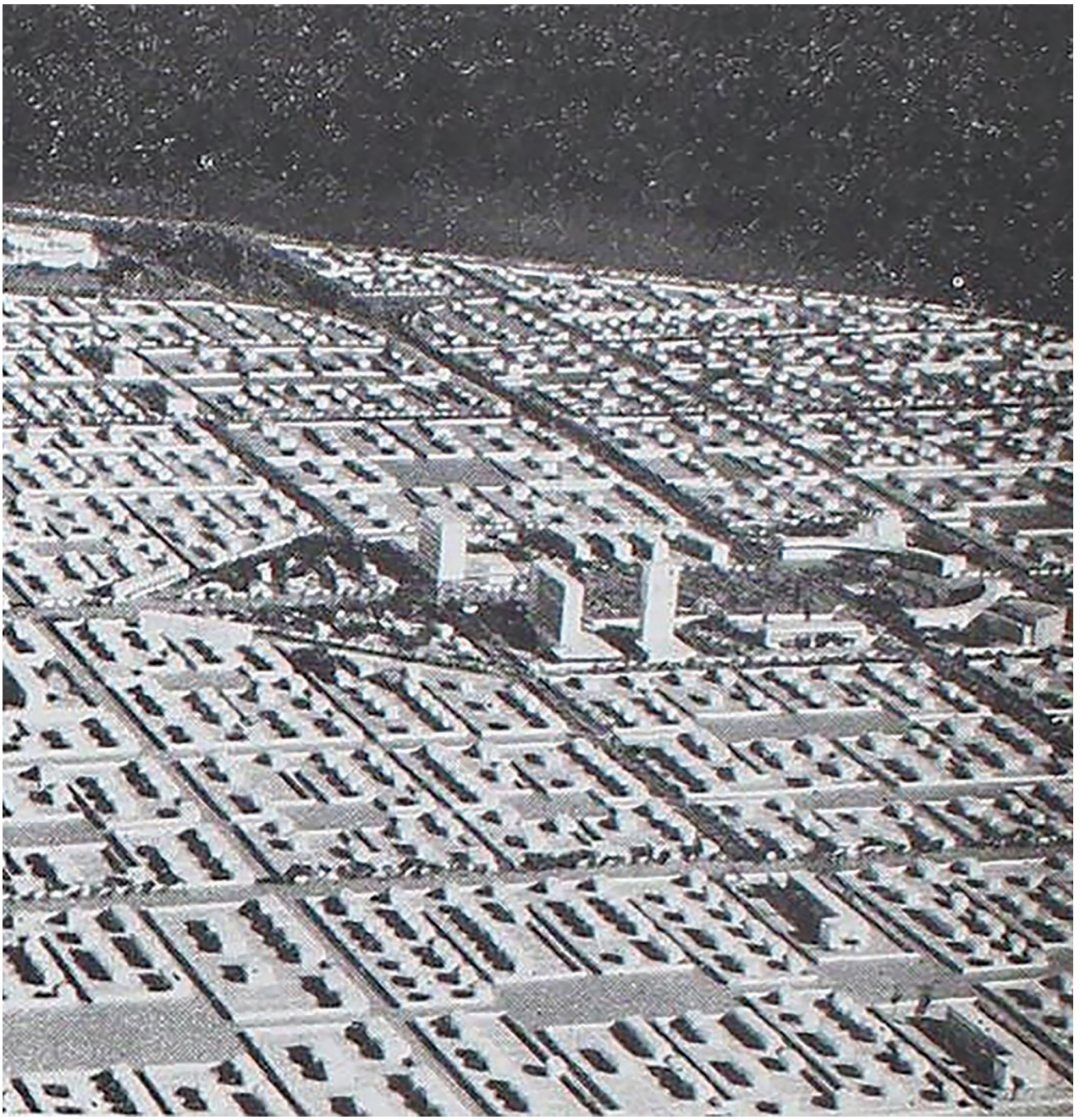


Figure 3.04: the physical model of Narmak showing a segment of zoning principle in this project.
Source: *Journal of Bank-e Sakhtemani* 1, no. 2 (1955): 30.

in the foothills between the *Lavizan* and *Sorkh-e Hesar* forest.[44] Containing rich underground water reservoirs, this location was an ideal place to develop new housing schemes, due to the absence of proper water supply systems in the city.[45] The location was 3.5 kilometres away from the old city centre, as required by the bill of the vacant lands. The Construction Bank dedicated an area of 506 hectares for the implementation of the urban plan, aiming to provide housing units for approximately 25,000 inhabitants.[46] The site was also divided into three main zones: 184 hectares for designing public spaces, 97 hectares for developing public amenities/facilities, and 225 hectares for dwelling plots.

Kuy-e Narmak was the first attempt of the ARIA to design a large-scale housing project in Iran.[47] In 1952, ARIA was asked by the Construction Bank to design an urban plan for Narmak. This plan was designed by a team coordinated by two key figures in Iran's architecture and planning scene in the 1950s: Naser Badie and Abbas Adjdari.[48] Collaborating in the development of public housing projects was, in fact, for Badie and Adjdari an opportunity to implement the modern ideology cherished by many of its fellow colleagues at ARIA, and to disseminate the notion of 'modern' living among the general public. To do so, they took advantage of this opportunity to design, in their words: "a modern city outside the borders of Tehran that would follow the latest planning principles and modern regulations of urbanism."[49] Their work for Narmak integrated some of the ideas presented and discussed in international venues such as the UIA congresses and the CIAM.[50] It is, thus, not surprising why the ARIA's proposal for Narmak incorporated some design principles promoted by the modernist movement, such as the layout of residential sectors bounded by motorways and the separation of working-living areas in the urban plan.[51] These design characteristics could be seen from the physical model of Kuy-e Narmak, where residential sectors used central public spaces and high-rise office/administrative buildings were placed in the centre of Narmak to form the backbone of this urban project [Figure 3.04].

Comparable with the master plan of Chandigarh designed in 1951-52 by Le Corbusier in India, the urban layout of Narmak was also designed based on an agglomeration of residential urban blocks linked through a set of public facilities.[52] The initial plan of Narmak was based on a grid of streets defining a functional zoning, organised in neighbourhood units. The plan for Narmak defined 110 urban blocks organised around a central core at the intersection of the central north-south and west-east boulevards, where the designers placed a large plaza surrounded by the main public buildings of the neighbourhood. These were three administrative towers, a municipal building, a hospital, and several commercial and office buildings. Additionally, along the other main streets, there were a set of small public facilities such as shops, schools, bars, and restaurants.[53] As an exceptional element in the plan's rigid urban layout, they designed a large park located on the west side of Narmak, where iconic buildings such as the

44. For more historical reading on Narmak, see: Hossein Nariman, *Tehran Dar Gozashteh Va Hal* [Tehran in the Past and Future] (Tehran: Iran's National University Press, 1976), 12-35.

45. Ibid.

46. This area was equal to one seventh of Tehran's area in that period. See: Khosravi et al., *Tehran: Life within Walls;* and Habibi and De Meulder, "Architects and Architecture without Architects."

47. Naser Badie, "Elaal-E Peydayesh-E Kuyhay-E Tazeh: Yousef-Abad, Narmak, Nazi-Abad," in *Barresie Masaele Ejtemaeee Shahre Tehran [Investigating Social Problems of Tehran]*, ed. M Motmaeni and M Hakemi (Tehran: Tehran University Press, 1962), 210-18.

48. Naser Badie educated town planning in the Institute d'Urbanism de l'Université de Paris; and for many years, he served as the technical general director of the Municipality of Tehran. In 1952, he became the head of planning in the Construction Bank, and from 1956, he acted as the deputy general manager of the same organisation. Abbas Adjdari was an influential member of the ARIA, who in the early-1940s, became a board member of the Mortgage Bank. From 1958 on, he served as the general technical director of this organisation. For more reading, see: chapter one.

49. Khodayar, "How Kuy-E Narmak Was Created," 3-5.

50. UIA is the acronym for *Union Internationale des Architectes* (International Union of Architects). Held in Lausanne in 1948, the first UIA congress was dedicated to the theme "Architecture Faced with its New Tasks". In this conference, Ali Akbar Sadeghi and Iraj Moshiri participated on behalf of the Association of Registered Iranian Architects. For more information about their contribution, see: Moshiri, "Our Intention," 1-2.

51. See also: Habibi and De Meulder, "Architects and Architecture without Architects."

52. About the influence of modernist movement on the layout of Narmak, see also: Ibid.

53. As one of the most prominent applications of CIAM's urban principles, the Le Corbusier's master plan for Chandigarh was developed in 1952. This project became a source of inspiration for many architects all over the world, and also in the Middle East. Actually, before designing the master plan of Narmak, some board members of the ARIA visited India in 1952. Their goal was to study modern housing experiences similar in scale and context to Narmak's. Eventually, this influence is visible in the morphological and typological qualities of Narmak's urban layout. For more reading, see: Abbas Adjdari, "Nokati Ke Dar Tarh-Haye Kuy-E Narmak Va Nazi-Abad Ra'yat Shodeh Ast," [The Points Taken into Consideration in Narmak and Nazi-Abad Proposal.] *Journal of Bank-e Sakhtemani* 1, no. 4 (1956).



Figure 3.05: multiple layers of Narmak's urban layout. (with following page)
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

WORKING



RECREATION



LIVING



CIRCULATION



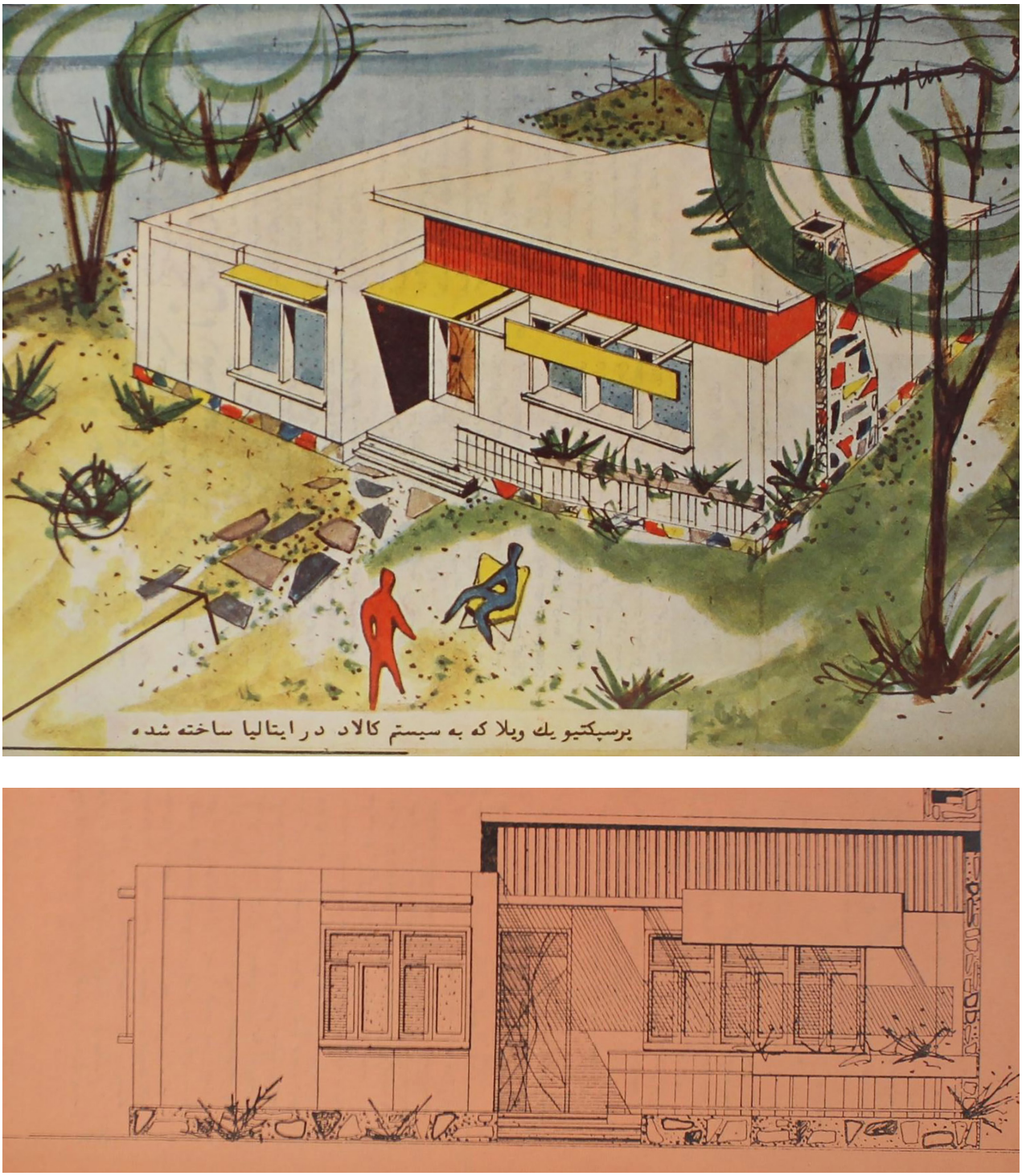


Figure 3.06: the proposed house-type with KALAD system in Bari, Italy.
Source: *Journal of Bank-e Sakhtemani* 1, no. 6 (1956): 57.

Museum of Modern Art, a cinema, and a sports hall were placed. Noticeably, the spatial ordering of Narmak implies a comparable feature as represented by the four components of the functional city: living, working, recreation and circulation [Figure 3.05].

Similar to the general urban layout, each neighbourhood of Kuy-e Narmak was designed based on a zoning principle. In the middle of each block, a public square was included. From each square, some cul-de-sacs, following an east-west direction, were created with the aim of dividing the urban blocks into smaller fragments, to form the housing sectors. These sectors were divided into lots, with an area varying from 200 to 650 square meters. The majority of the lots were designed with a similar and definite depth; but the diversity in the size was created through various widths of the lots alongside the cul-de-sacs/streets. Further a large number of the lots were planned with the size of between 200 and 350 square meters, where at least 50 percent of the plot should be kept empty as a private outdoor space for future development of the house by its inhabitants or the Bank, when needed.[54] These plots were meant for constructing individual houses that would accommodate the families of low-income civil servants. The larger plots, ranging between 400 and 650 square meters, were planned either at the end of the cul-de-sacs, around the neighbourhood squares, or at the periphery of the blocks towards the main streets. A total number of 7,500 single-family detached houses were expected to be built in Narmak between 1952 and 1958.

Next to the integration of modernist urban models, the designers of Narmak were also interested in introducing modern building techniques and materials imported from the industrialised West. To do so, the architects proposed a French prefabricated building system named *KALAD*, for the construction of individual houses in Narmak.[55] In fact, Abbas Adjdari might be seen as a driving force behind this decision. Adjdari studied architecture at École des Beaux-Arts Paris, where he became familiar with the design of large-scale housing with prefabricated systems. Adjdari was an influential figure of the ARIA who published numerous articles in favour of employing pre-fabrication methods for the construction of houses, in Iran.[56] In the early-1940s, Adjdari became a board member of the Mortgage Bank, a position that helped him to focus on promoting the application of prefabricated building methods for public housing development in the country. For the construction of houses in Narmak, Adjdari hired a group of French technical designers. They acted as the advisors of the Technical Bureau of the Construction Bank, and recommended the application of the KALAD system for the construction process. It is, thus, not surprising why most technical drawings of houses in Narmak with the KALAD system, as depicted in the *Journal of Bank-e Sakhtemani*, were signed with a French name: Basile, the head of the technical advisory group.

54. For more reading, see: "Aval Sale Ayande Shahr-E Zibaee Dar Nazdiki Shahr-E Tehran," [Early Next Year, a Beautiful City Near Tehran.] ibid., no. 2 (1955): 36.

55. The single-family houses were designed to be built with 1.10 x 4.40 m prefabricated concrete panels, and the overall aim of the project was to construct approximately 7700 dwelling units in the whole operation. For more reading, see: Amir Masoud Khodayar, "Avalin Sakhteman Khaneh Panj-Otaghi Be System Kalad Dar Kuy-E Narmak " [The Constrcution of the Fisrt Kalad House with Five Habitable Rooms in Narmak.] ibid., no. 6 (1957): 28-33. See also: Habibi and De Meulder, "Architects and Architecture without Architects."

56. For instance, see: Abbas Adjdari, "Masale-Ye Tahiy-E Maskan Dar Tehran Va Shahrestan-Ha," [The Problem of Housing in Tehran and the Other Iranian Cities.] *Arshitekt* 1, no. 1 (1946): 15-17.

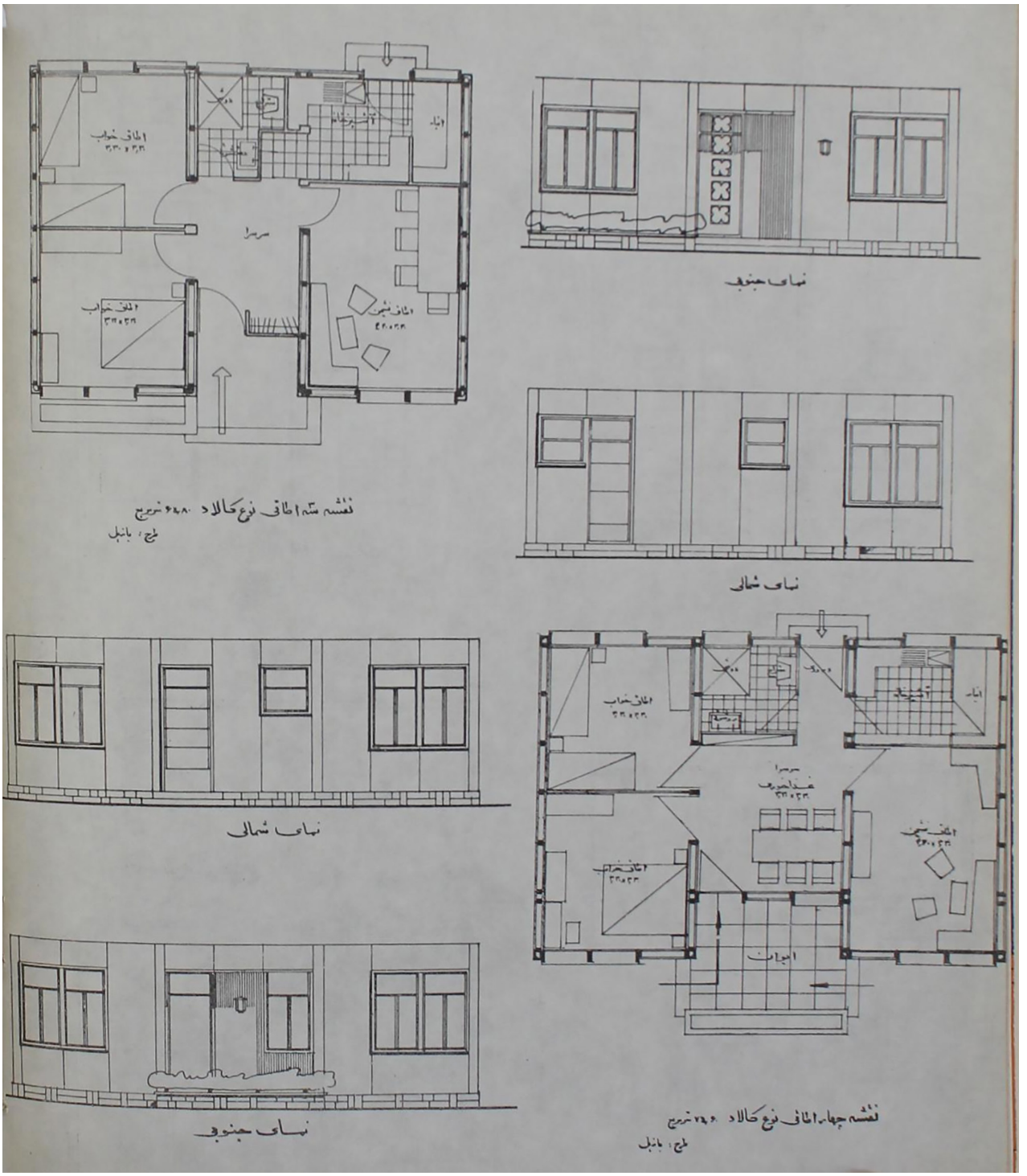


Figure 3.07: some of the KALAD house typologies, proposed by the Construction Bank.
Source: *Journal of Bank-e Sakhtemani* 1, no. 6 (1956).

The first application of the KALAD prefabrication system took place in the port city of Bari, in Italy, where the city dealt with seismic hazards, similar to Tehran [Figure 3.06].[57] Curiously enough, despite the noticeable climate differences between Bari, with a humid Mediterranean climate, and Tehran, with a dry and semi-arid climate, the designers of Narmak initially planned to use the original KALAD system without modifications. In fact, this system had the capacity to produce one house per day. However, due to Iran's limited access to advanced construction materials, in particular steel bars for producing reinforced concrete panels, the load bearing structure of the KALAD system could only be used to build one-story houses.[58] Considering this limitation, the ARIA members of the design team in consultation with their French advisors proposed one-story homes with a private yard in Narmak, comprising dwelling units with two, three, and four rooms [Figure 3.07].

Narmak was thus a vast expanse of low-rise single-family houses, with relatively low density. While the initial plan incorporated some principles of modernist architecture/urbanism,[59] this typological approach suggests that it was more geared to cater for Iran's traditional family structures, rather than for a new form of social and spatial organisation. But, through time, this would change; and Narmak would become a perfect illustration of how the ideology of modernist architecture and urban planning can accommodate specific qualities of Iranian social and spatial practices. In the following section, this chapter examines some details of this integration and how it led to a unique process of 'vernacularisation'.

57. Khodayar, "Cheguneh Kuy-E Narmak," 3-5.

58. Up to the end of 1965 when the USSR helped the Iranian government to build a steel plant near Isfahan, there was almost no steel industry in Iran, capable of producing building materials in a large scale for mass housing development. Steel was mostly used for the railway construction, and only a small factory, which was established near the city of Karaj in 1939, manufactured steel-beams and Iron-bars allowing people to build two-story houses in combination with the load boarding brick walls. For more reading, see: Naser Badie, "Khaneh Sazi Omumi Dar Iran," [Public Housing in Iran.] *Journal of Bank-e Sakhtemani* 1, no. 8 & 9 (1957): 11-16.

59. For more reading about the relationship between the theme of Functional City and the urban layout of Narmak, see also: Habibi and De Meulder, "Architects and Architecture without Architects."

60. Namey-e Farangestan (A Letter from the West) was a popular journal, among the general public, publishing articles about new socio-political ideas and cultural practices in Europe and Iran. The Bank-e Rahni (Mortgage Bank) was a professional journal discussing new economic models for housing development, and the ways through which local architectural practices can be modernised.

61. For more information on this discussion, see Houshang Seyhoun, "Maskan Va Sabk-Haye Meli-E Memari," [Housing and the National Architectural Styles.] *Bank-e Rahni Journal* 2, no. 6 (1967): 6-12.

62. Behzad's text was republished many times in various Iranian journals and in different time periods. Shortly after his death in 1968, the journal of Bank-e Rahni republished this text in his memorial, aiming to remind Iranian architects about the importance of local vernacular culture and society for the design and construction of buildings, in Iran. For more information, see: Hossein Behzad, "Ma Hame Chiz Darim," [We Have Everything.] *Journal of Bank-e Rahni* 3, no. 5 (1968): 9-13.

Negotiating Modernity with Tradition

Since the mid-1940s, many leading Iranian architects and intellectuals published articles in popular and professional journals, such as the *Namey-e Farangestan, Arshitekt,* and *Bank-e Rahni* aiming to discuss new ideas regarding urbanism and architecture.[60] In these articles, they acknowledged the relevance of modernism for the urban development of Iranian cities and for the emergence of new architectural projects. More significantly, they emphasised that through this process, architects should address the local culture and critically integrate the qualities of vernacular architecture into their works.[61] In one of those influential texts, Hossein Behzad, a well-known Iranian miniature-painter and philosopher, criticised the replication of modernist and international architectural models in Iran, and he urged Iranian architects to construct a local image of modernity embedded with elements of Iranian vernacular culture.[62] In his well-known article, Behzad argued:

> "Why are not we able to find the newness [architectural modernity] from our own novel vernacular culture? Why should we renew our architecture

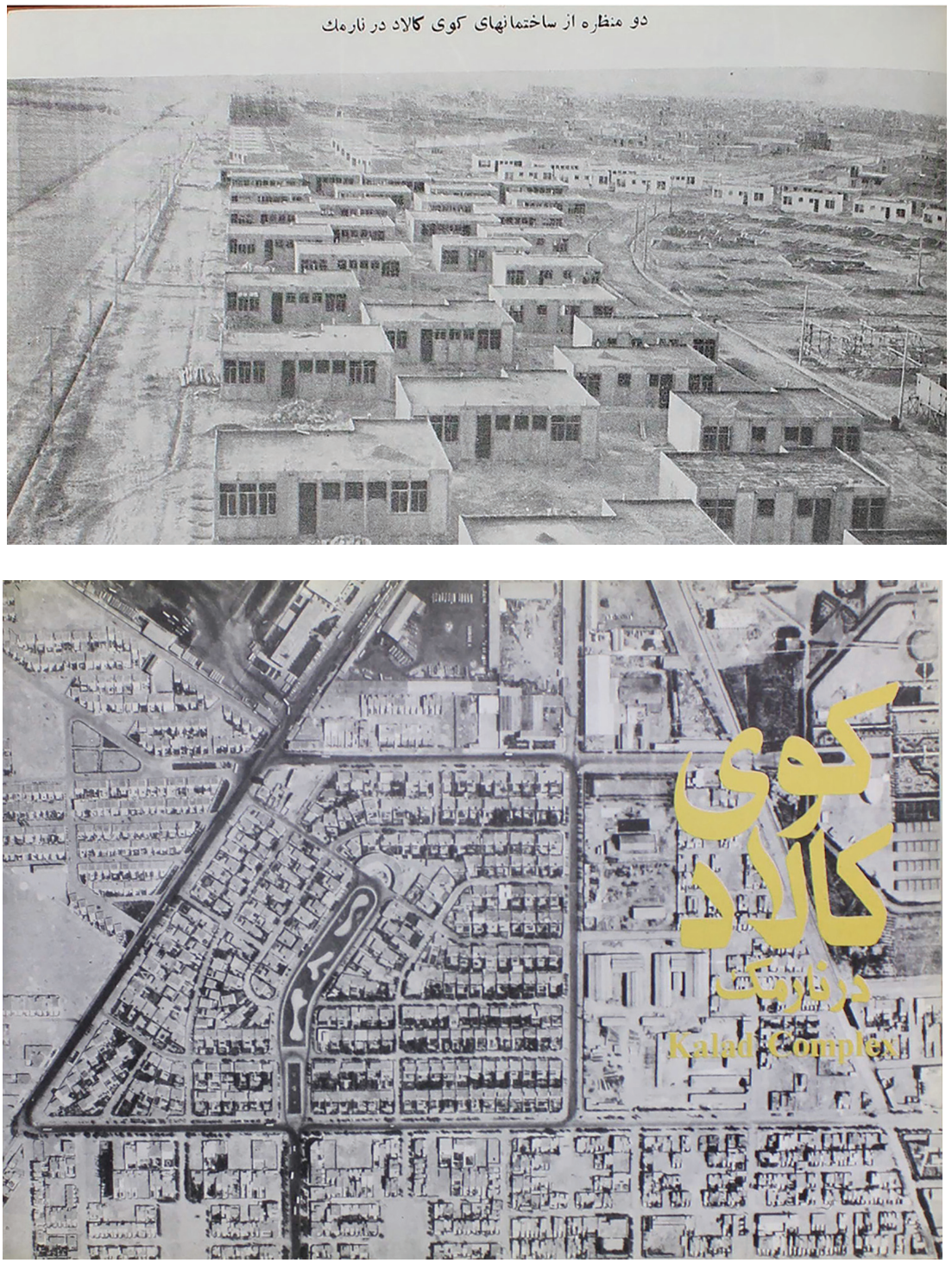


Figure 3.08: a sub-neighbourhood of Narmak constructed with houses with KALAD system.
Source: *Journal of Bank-e Sakhtemani* 1, no. 6 (1956): 57 (top); and *Iran Housing Organisation Report*. (Tehran: Offset Press, 1972), 126 (bottom).

based on the other [Western] architectural styles? We need to study and learn from the cultural progress and architectural evolutions taking place in Europe and the U.S. But simultaneously, we have to modernise ourselves through the understanding of how our predecessors renewed our architectural culture and timeless vernacular elements, over time. We ought to rely on our assets, and on what we have."[63]

Behzad's call for a negotiation between modernity and the local tradition took a distinctive path in Narmak, particularly when the architects' agenda was challenged by the limitations of the KALAD system, which was projected to be used in mass housing production. In fact, due to the high construction costs and lack of access to the materials and techniques for mass production, only 310 houses were constructed in Narmak using this system [Figure 3.08]. Eventually, to replace the KALAD system, the architects resorted to the use of local materials and building techniques. The technological shortcomings in the application of the KALAD system in Narmak, thus, triggered a redefinition of the basic dwelling type. While the material constraints were the key reason for the emergence of an alternative architectural approach, some other changes to the initial plan were prompted by a deliberate drive to adapt the formal and typological qualities of the KALAD prototype to the Iranian context.

This process illustrates how the architects of Narmak used their design expertise to move with apparent ease from modernist ideas such as mass production to the integration of the qualities of local architecture. In doing so, the designers of Narmak implemented an eclectic process, which, as Peter Rowe put, would allow "a sense of orchestrating from among a suite of alternatives, or of rearranging well-known [local] architectural elements to convey a new sense of meaning and of place."[64] While this conscious rearrenging and adaptation is very visible in the transformation of the KALAD house prototype, it is also noticeable in the urban composition of the whole district. For example, the gridiron system of streets was perfectly blended with the integration of archetypal elements of Iran's urban culture, such as the *Chahar-Bagh,* one of the typical models of the Persian Garden.[65] This type of garden was traditionally designed as a pedestrian precinct with communal gardens, where two broad spines of open spaces divide the gardens into four pieces.[66] In fact, in Narmak, the negotiation and integration of references with such different cultural kinships gave rise to what Rana Habibi and Bruno De Meulder called a new urban form.[67]

In fact, the use of the Chahar-Bagh model as a key urban and cultural reference for the elaboration of Narmak's urban plan is meaningful and deserves further contextualisation. The first large-scale application of the Chahar-Bagh took place in the 17th century Safavid Isfahan, Iran.[68] While initially employed to create a liveable private enclosed domain, this archetype was used as an element for the

63. Ibid., 12.

64. Peter. G. Rowe, *Modernity and Housing* (Cambridge and London: The MIT Press, 1993), 275.

65. See: Habibi and De Meulder, "Architects and Architecture without Architects."

66. 'Chaharbagh' means literally a fourfold garden. It is a typical Persian garden where two broad spines of open spaces divide the garden into four pieces. In addition, a small pool or a pavilion is placed where these spines intersect. For more information, see: Ralph Pinder-Wilson, "The Persian Garden: Bagh and Chahar Bagh," in *The Islamic Garden*, ed. Mac Dougall, Blair Elisabeth, and Richard Ettinghausen (Washington, DC: Dumbarton Oaks, 1976), 71-85.

67. Habibi and De Meulder, "Architects and Architecture without Architects."

68. Somaiyeh Falahat and Mohamad Reza Shirazi, "New Urban Developments in Safavid Isfahan Continuity or Disjuncture?," *Planning Perspectives* 27, no. 4 (2012): 611-24.

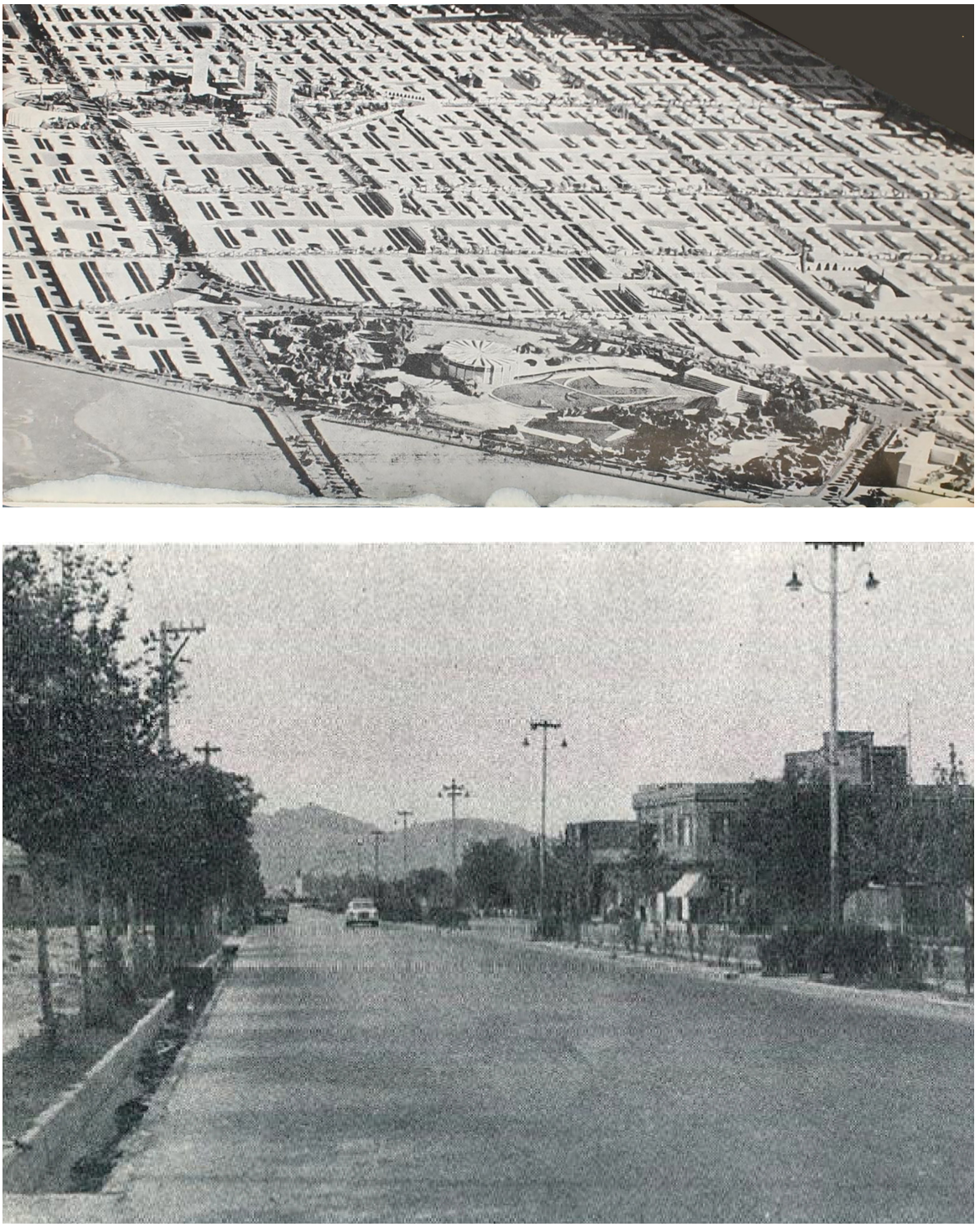


Figure 3.09: the physical model of Narmak (top) and a typical street realised in this project (bottom), showing how rows of trees formed a basis for defining the edges of streets in Narmak, rather than façades of buildings.
Source: *Journal of Bank-e Sakhtemani* 1, no. 2 (1955): cover page (top); and National Archive of Iran (bottom).

extension of the old city beyond its walls. In this plan, the Chahar-Bagh was transformed from its traditional rectangular and enclosed shape into a linear garden where palaces, rows of trees, and water channels flanked an urban garden, accessible to the public, forming an avenue.[69] This was a new interpretation of a typical Persian garden where the Chahar-Bagh acted as the main street connecting together the old and new residential districts. Interestingly enough, this process of reinterpreting and sublimating resonates with what also Behzad urged for, and it became a source of inspiration for the design and development of Narmak, as shown by Habibi and De Meulder. This can be seen from both the physical model and street layout of Narmak, where rows of trees formed a basis for defining the edges of streets, rather than façades of buildings [Figure 3.09].

The Chahar-Bagh was not the only vernacular urban reference integrated in the plan for Narmak. The designers also placed a small square in the middle of each urban block embedding a garden within it. This combination might be seen as a clear reference to the archetype of the *Meydan-Bagh*. Traditionally, Meydan-Baghs served as a place for leisure activities such as playing and gathering in neighbourhoods.[70] In Narmak, while the Meydan-Baghs were firstly used as a place for storing the drinkable water in each urban block, they became, later, a place where children could safely play outside and people could gather [Figure 3.10].[71] This happened after supplying water through urban plumbing; so, the Construction Bank in collaboration with the inhabitants planted seeds in the Meydans, enhancing the liveability of the gardens. This emphasis on gardens as a key feature for the design of the plan was strongly connected with their status as a symbol of Iran's urban and domestic culture, where the boundaries between the public space and private realm are key elements. As Mohamad Beheshti, a well-known Iranian philosopher and landscape designer, put it, the life inside the garden was the most representative characteristic of the Persian garden, since it creates a place for joy, happiness, and encounter among its dwellers.[72]

For the designers of Narmak, integrating the cultural heritage of the Persian garden in the project's urban fabric, and thus, in the everyday life of its inhabitants was a clear attempt to accommodate aspects of the local culture and society. For them, the initial goal of designing the single-family houses with the KALAD prefabrication system shows that catering for the preservation of local identity was compatible with the use of modern techniques as well as building systems. This ambiguity pervaded the whole project, and was part and parcel of the whole construction process. In this process, the building contractors of the Construction Bank, local-traditional builders, known as *Mi'mars*, as well as the general public were actively involved. The role played by both Mi'mars and ordinary Iranians in the process of housing production, I would argue, is central to understand how Narmak could be seen as a reference for the emergence of a new domestic landscape in Tehran, and subsequently the whole country.

69. Pinder-Wilson, "The Persian Garden," 71-85.

70. For more reading about the archetype of the *Meydan-Bagh*, see: Azadeh Shahcheraghi, *Paradaym-Haye Pardis: Daramadi Bar Bazshenasi Va Bazafarini Bagh-E Irani* [The Paradigms of Paradise: Recognition and Re-creation of the Persian Garden] (Tehran: Jahad Daneshgahi, 2010), 41-64.

71. Khodayar, "How Kuy-E Narmak Was Created," 7.

72. For more reading, see: Seyed Mohamad Beheshti, "Jahan Baghe Irani," [The Myth of the Persian Garden.] *Golestan-e Honar* 11 (2008): 7-15.



Figure 3.10: a typical Meydan (no.100) in Narmak in 1986 (top), and 2017 (bottom).
Source: National Archive of Iran (top); and photograph by Mohamad Sedighi (bottom).



Figure 3.11: introverted houses with a courtyard as the DNA of most Iranian cities.
Source: The Comprehensive Plan of Tehran: The General Ideas and Schemes (Tehran: The Planning and Finance Organisation, 1968), cover page.

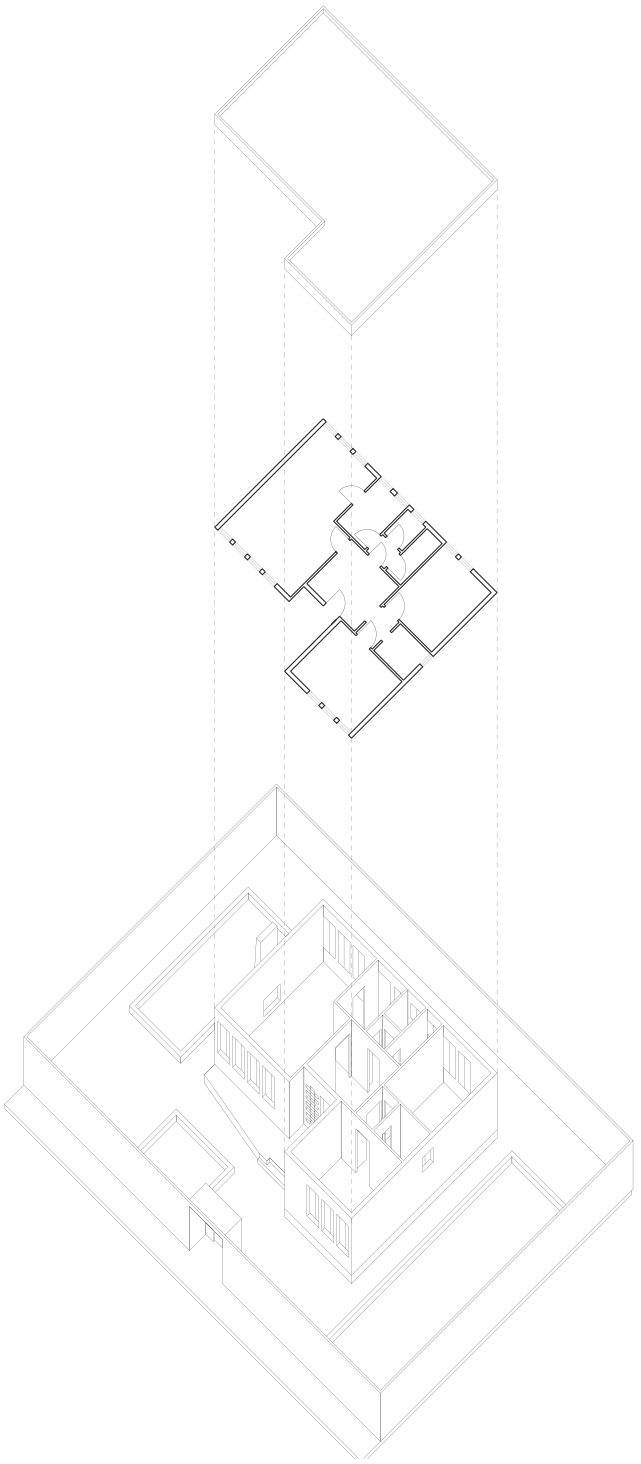


Figure 3.12: a typical house types with KALAD system in Narmak, proposed by the Bank.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

The Emergence of a New Culture of Domesticity in Tehran

Before the early-1950s, most ordinary people in Iran built their homes in the form of introverted courtyard typologies [Figure 3.11].[73] They either gradually built their houses by themselves or they hired traditional-local builders (*Mi'mars*).[74] As discussed in the first chapter of this dissertation, Mi'mars used local materials and techniques for constructing houses, usually through a combination of load-bearing brick walls with wooden beams. While from the mid-1940s, modernist Iranian architects began to employ new house types and advanced construction techniques to introduce a new domestic culture among Iranians.[75] Their attempts paved the way for the transformation of the everyday life of upper-class families.[76] In Narmak, therefore, the use of a detached house type with a prefabricated construction technique was more than a strategy to build houses quicker or more affordably/efficiently. Indeed, it was also part of the designers' modernising ambitions, which had clear social and political overtones. The detached house was meant to be "representative of the beautiful and affordable modern house", as the architects themselves put it.[77] However, limited access to vital building materials, techniques and components changed considerably the process of housing production, in Narmak.

The production of houses in Narmak underwent a process of development with two main steps. In the first step, as mentioned above, the architects of the ARIA used a prototype constructed with the KALAD prefabrication system to build the one-story detached houses. Eventually, considering the technological limitations but also the climate conditions of Tehran, the architects of Narmak eliminated the pitched roof from the imported model, and proposed a new house type with five variations [Figure 3.12]. To guarantee some degree of privacy for the dwellers of these houses, the designers of Narmak proposed a two-meter high wall around each lot, forming an enclosed private outdoor space with small garden which was comparable with a traditional Iranian courtyard type: *Hayat*.[78] All houses were to be placed on the northern part of the plot, and preserve a minimum distance of 3 meters from the limits of the property.[79] Moreover, all openings should only be provided on the north and south facades of each house [Figure 3.13].

The second step of the typological modifications coincided with the application of local materials for the structure of the houses. To speed up the process of construction, the architects realised test samples of these houses with a mix of load-bearing brick walls and steel skeleton. These pilot projects helped the architects to fine-tune the adaptation of the KALAD prototype to the local conditions. While the KALAD prefabrication system allowed the construction of rooms with large spans, the adaptation to a system of I-shaped steel beams with the barrel vault as infill limited the span to 6 meters. For this reason, a few load-bearing walls were added to the house layout, dividing large spaces into smaller rooms [Figure 3.14].

73. For more reading about the development of Iranian houses, see: Fatemeh Kateb, *Memari Khane-Haye Irani* [The Architecture of Iranian Houses] (Tehran: Sazman Chap va Entesharat, 2012); Karimi, *Domesticity and Consumer Culture*.

74. For more information about traditional Iranian houses and the ways local/traditional builders built these houses, see: Golamhossein Memarian, *Ashnaee Ba Memari Maskuni Irani: Gunehshenasi Darungara* [Understanding the Architetcure of Housing in Iran: The Introverted Typology] (Tehran: Iran University of Science and Technology, 1994). And *Ashnaee Ba Memari Maskuni Irani: Gunehshenasi Borungara* [Understanding the Architetcure of Housing in Iran: The Extroverted Typology] (Tehran: Iran University of Science and Technology, 1990).

75. They introduced new house types such as freestanding villas, and advanced construction techniques such as concrete/steel-skeleton.

76. The only application of a new construction technique in the process of affordable housing production took place in Chaharsad-Dastgah in 1946, where Ali Akbar Sadegh employed a combination of steel-beams with load-bearing brick walls to widen the construction span and introduce a row-house/block typology. For more reading, see chapter one.

77. Ma'arefi, "Az Tarh-E Ashpazkhaneh Che Midanid," [What Do You Know about the Design of Kitchen.] *Journal of Bank-e Sakhtemani* 1, no. 6 (1957): 12.

78. As argued by Habibi and De Meulder, *Hayat* was used in Narmak as an instrument to contextualised the idea of international modernism in this project. See: Habibi and De Meulder, "Architects and Architecture without Architects."

79. For more reading about the regulations and characteristics of houses in Narmak, see: Moeenfar, "Janjal-E Khane-Ha!?," [Controversy of Houses.] *Journal of Bank-e Sakhtemani* 1, no. 2 (1955): 31-34.

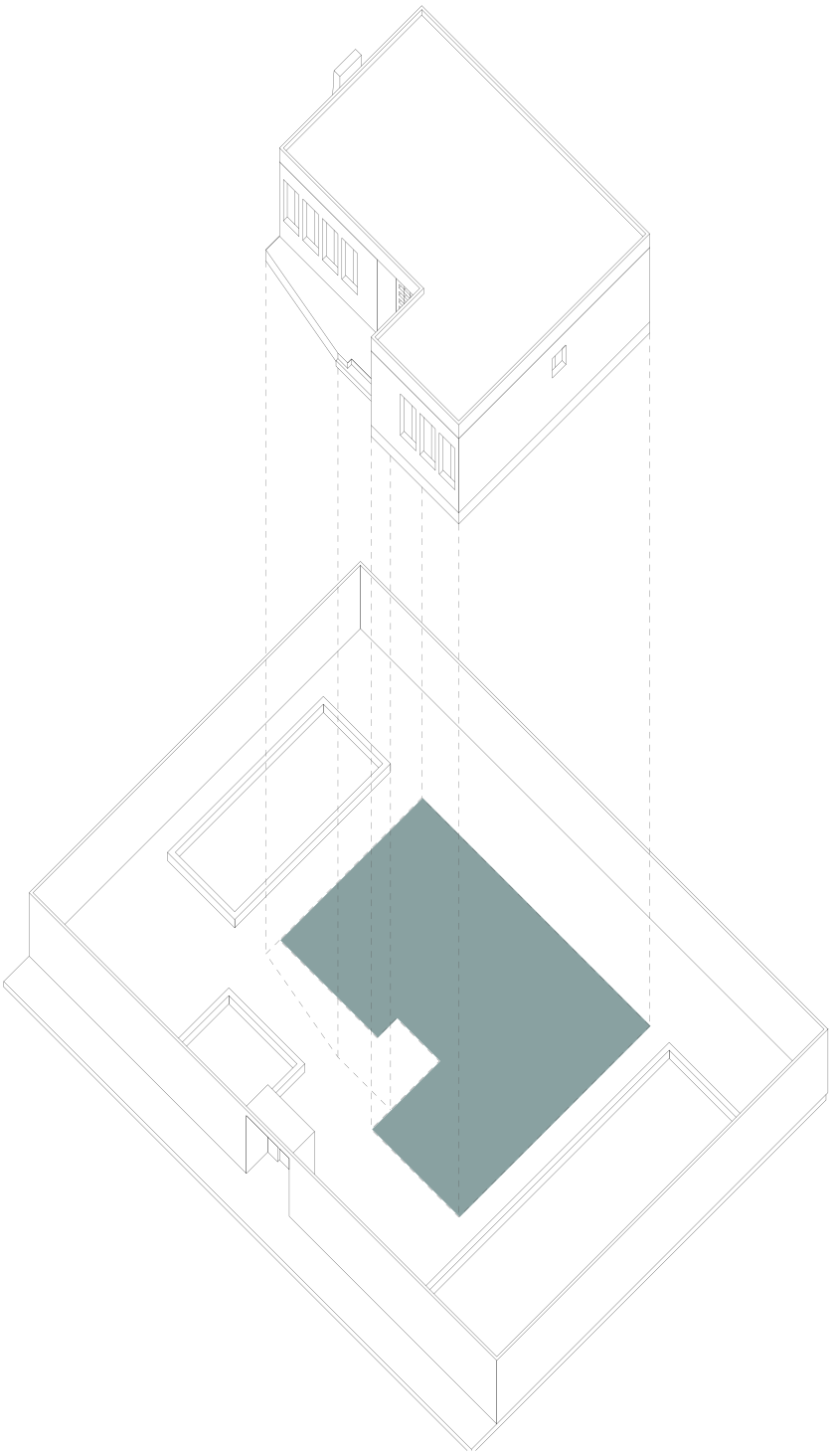
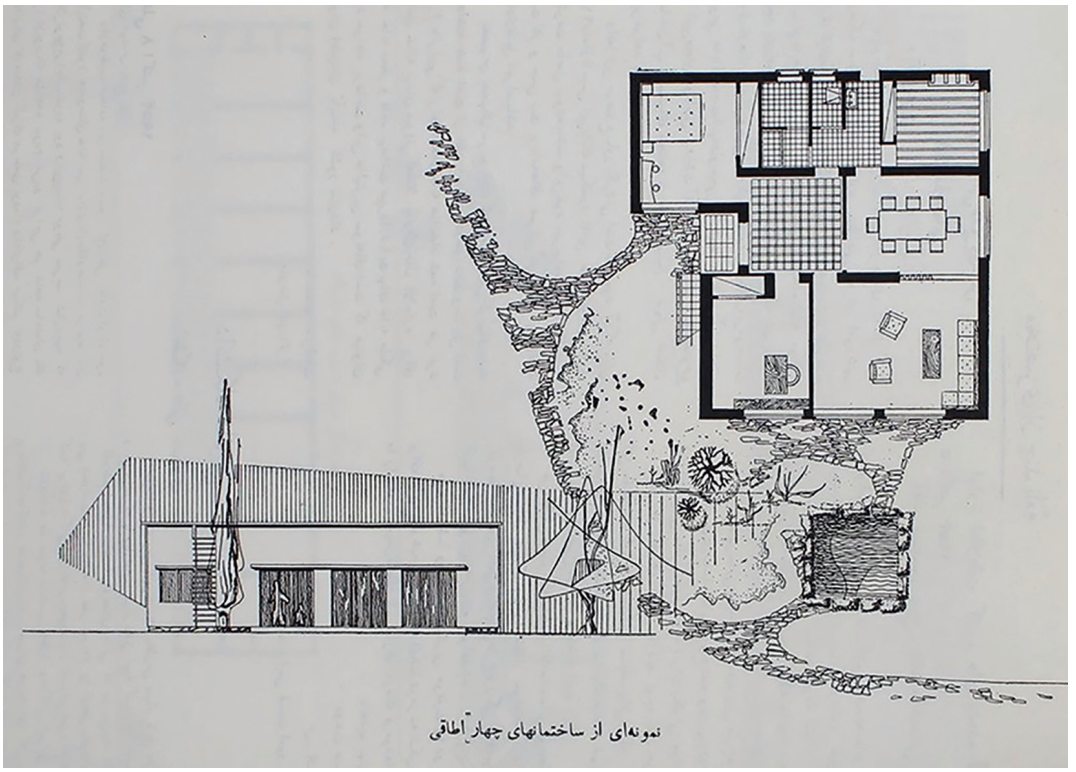


Figure 3.13: the position of the house in a typical dwelling plot.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.



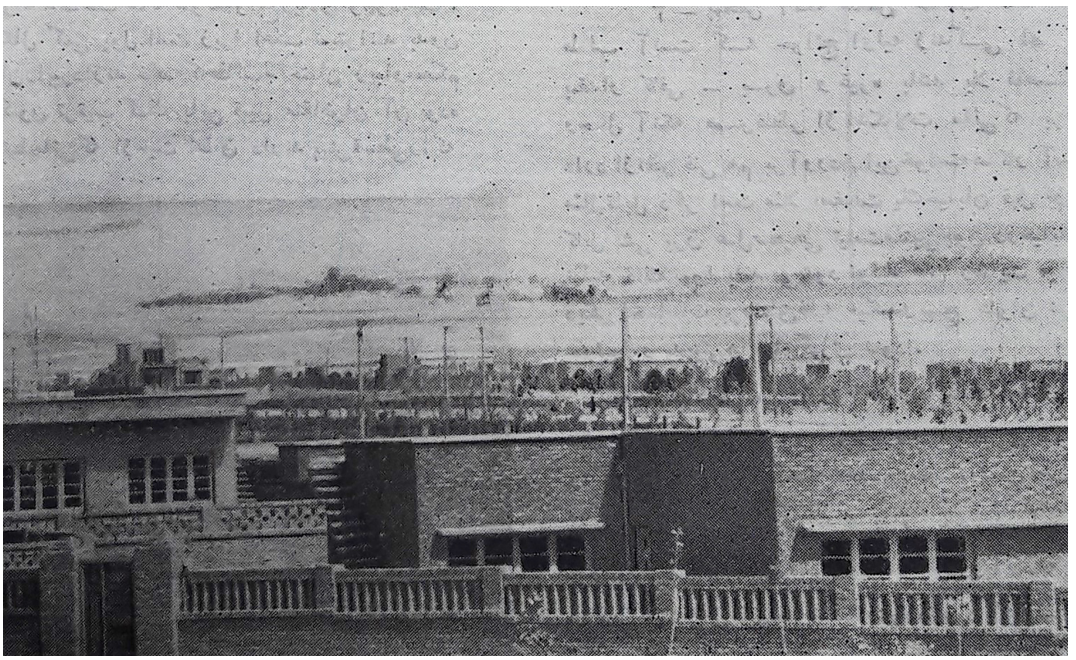


Figure 3.14: the modification of KALAD-house layout based on available local materials.
Source: *Journal of Bank-e Sakhtemani* 1, no. 2 (1955): 33-34.

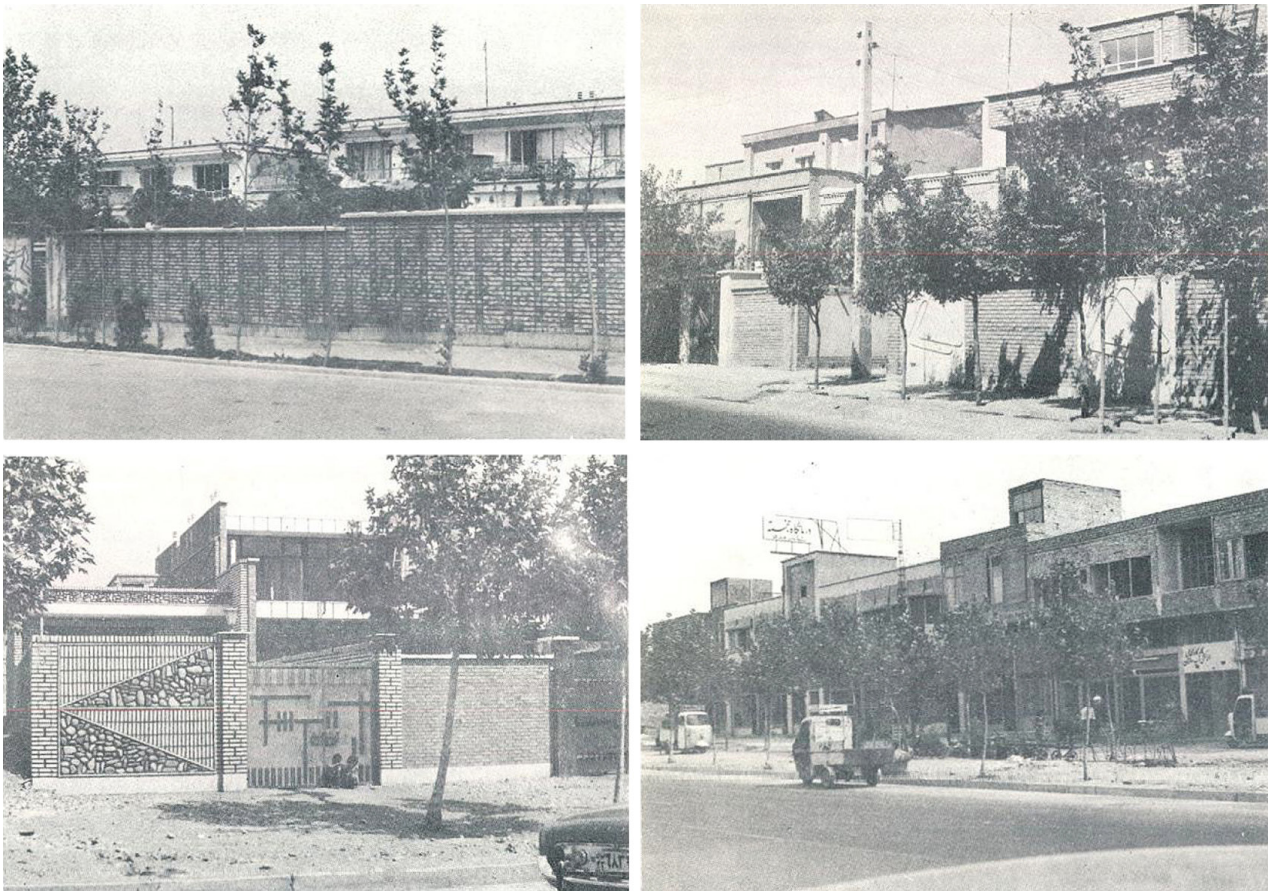


Figure 3.15: different house types constructed by the inhabitants of Narmak.
Source: The Comprehensive Plan of Tehran: Review and Evaluation (Tehran: The Planning and Finance Organisation, 1970), 3.15-3.16.

In the new proposal, the front door of the houses was placed on the west façade, allowing more sunlight to penetrate in the main rooms from the south-facing windows. Some elements of the traditional courtyard houses such as a small pool and garden were also added to the general layout of the houses.[80]

Eventually, the adapted version of the KALAD system became one of the two options with which the future inhabitants could chose to build their houses.[81] They could either order one of the five variations of the new basic type from the Construction Bank, or build their own house with the Bank's technical supervision.[82] While some selected the first option, the majority of the people preferred building their own houses. However, the majority of inhabitants needed to hire Mi'mars for assistance due to a lack of skills and expertise in self-built construction. To build single-family houses, Mi'mars typically adapted the principles of the traditional courtyard house-type to the new plot shapes and sizes of the masterplan.

The construction of a new house was thus a slow process, based on the use of traditional building techniques and contingent to the availability of building materials and expertise. In Narmak, however, for the first time, the Mi'mars had to cope with the challenge of building many houses in a short period by altering their traditional organisation system. To deal with the unusual demand and time pressure, Mi'mars initiated informal agencies together with the immigrants who came to Tehran to work in the construction sector.[83] After visiting the sample models as well as having consultations with landowners, they offered one or two-story houses with a small front and backyard, within the walled plot. There was also an important change in the design of houses proposed by the Mi'mars. While the houses designed by the architects labelled each room in the house, assigning each space with specific functions such as living room and sleeping room, the Mi'mars neutralised these specific functions by constructing generic rooms that embodied Iran's traditional multi-functional use of spaces.[84] While these adaptations were made, the Mi'mars kept largely mostly the white-plastered facade, wide and repetitive openings, rectangular outlines, as well as the flat roofs as it was proposed by the original design [Figure 3.15].

The process of 'vernacularisation' and the adaptation of initial house types in Narmak, combining modern techniques, local materials, traditional crafts, and local and migrant labour, formed a basis for the involvement of local residents in the process of housing production. Yet, it created perplexity in some foreign visitors. Upon completion of the project, some Western experts such as Edward Welz, the chief of the Social Affairs Section in the U.S. Intelligence Service, Marcel de Buer, a French architect, and Jop Benou, a French professor at Hanoi University, visited Narmak. They provided remarkable comments and comparisons.[85] Jop Benou, for example, visited this project as early as 1955 and compared Narmak with Chandigarh and with a worker-housing project in Karachi. Benou recognised in the

80. See also: Habibi and De Meulder, "Architects and Architecture without Architects."

81. Naser Badie, "Taghsim-E Zamin Alaj-E Bikhanemani Nist," [land distribution is not the solution of homelessness.] ibid.: 21-23.

82. To avoid construction of houses with improper materials and building techniques, the Construction Bank provides a material mortgage for those who wanted to build their own houses. The technical supervision was instrumental to control the basic quality standards for sanitation, tap/drink water, and drainage/insulation. For more reading, see: ibid., 31-34.

83. Habibi and De Meulder, "Architects and Architecture," 29-40.

84. As mentioned in the previous chapter, one may described it as polyvalent use of space.

85. Edward Welz wrote a personal letter to Naser Badie (the president of the Construction Bank, the Tehran Branch) in 5 October 1954. Marcel de Buer visited Narmak, 21 months after the establishment of the Construction Bank, and he wrote a personal letter to Hamid Elahi (the general manager of the Construction Bank). Jop Benou wrote a personal letter to Naser Badie on 8 October 1954. For more reading, see: Naser Badie, "Mokhtasari Az Chand Nameh," [Summary of Some Letters.] *Journal of Bank-e Sakhtemani* 1, no. 1 (1955): 37.

design of Narmak a considerable attempt to meet new needs of urban life, while accommodating the Iranian lifestyles.[86] Another review came from Rossanne who visited Narmak in 1956 and he published his impressions in the *Journal of Bank-e Sakhtemani*. Rossanne's expectations were noticeably frustrated. "Unfortunately", he argued, "this new town was not completely constructed based on the proposed master plan, and the building permit was granted to people without supervision."[87] Rossanne further contended that this lack of control and supervision could destroy the beauty of the project, and lead to a terrible disaster in the future.[88]

Notwithstanding Rosanne's prophecy, Kuy-e Narmak evolved in such a way that it can be hardly considered a 'disaster'. Instead, the neighbourhood is described by many observers and scholars as a 'success' project. For instance, recent studies conducted by Mohamad Mehdi Azizi, a well-known Iranian scholar, as well as by Morteza Mirgholami and Sidh Sintusingha, considered Narmak a 'sustainable neighbourhood' and an 'urban community with a strong social-bond', respectively.[89] Undoubtedly, the morpho-typological qualities of Narmak's urban plan should be credited for this success; yet, some key factors that underpin the vernacularisation of Narmak, arguably, might be found as a result of the oil-independent developmental model introduced by the Mosaddeq's administration. In this model, the new laws considering land-use, and land-ownership, coupled with the role performed by the Construction Bank were essential to successfully implement the housing scheme of Narmak. Equally important was the active engagement of the general public in the construction process, which should not be neglected.

In the next section, I will illustrate how the process of design decision-making was coupled with a particular system of land-ownership, initiated by the Mossaddeq government, as well as with the financial model of the Construction Bank for the production of houses and urban spaces. Arguably, this entwined relation formed a basis for creating an inclusive urban community, in Narmak.

The Formation of an Inclusive Community

Since the 1909 discovery of oil in Iran, the government has been largely dependent on oil revenues to fund various urban modernisation projects.[90] In 1951, however, international sanctions on Iran's oil industry forced the government to rely on other kind of resources such as agricultural activities to generate income. In this context, land policies became a key issue for the government, who initiated a land reform programme and changed the traditional land ownership system, in Iran. One of the most important land reforms in this sector was the so-called 'bill of the vacant lands'. Until the early-1950s, the person who occupied and revitalised 'barren lands' (*Arazi-e Mavat*) could claim the ownership of the land. However,

86. Ibid.

87. Adjdari, "The Points Taken into Consideration," 22.

88. Ibid.

89. Mohamad Mehdi Azizi is a professor of urban planning, at the faculty of Fine Arts, University of Tehran. In 2006, he conducted an extensive research about the liveability and the collective community of Narmak. For more information about his research, see: Mohamad Mehdi Azizi, "Mahaleh-Ye Maskouni Paydar: Motale-E Moredi Narmak," *Honar-haye Ziba*2006, 38-46. Morteza Mirgholami is also an Iranian scholar who in 2012 led a site-survey and an in-depth study on the structure of urban spaces in Narmak. For more information, see: Morteza Mirgholami and Sidh Sintusingha, "From Traditional Mahallehs to Modern Neighborhoods: The Case of Narmak, Tehran," *Comparative Studies of South Asia, Africa and the Middle East* 32, no. 1 (2012): 214-37.

90. As mentioned earlier, the first oil well in Iran was discovered in 1909 by William Knox D'Arcy closed to Masjed Soleyman. Since then, the wealth gained by the export of the crude oil became the main financial mean for supporting the governmental modernisation projects and funding ambitious developmental plans in Iran. For more information about the role of oil in shaping Iranian cities, see: Hein and Sedighi, "Iran's Global Petroleumscape," 349-74.

in 1952, the bill of the vacant lands' registration brought an end to this regime. The new law, thus, became a powerful instrument for Mosaddeq's government to control the real-estate sector in general, and the housing sector in particular. It enabled the government to regulate issues related to land use, urban planning, determination, and adjustment of the land price. The law secured a wider and more controlled utilisation of land for the provision of affordable housing, mainly for both middle and low-income civil servants, in Tehran.

While the new land policy was a key factor to enable the expansion of cities to the outskirts and develop affordable new neighbourhoods, the access to soft loan was instrumental to enable the middle-class access to housing. The creation of the Construction Bank under the auspices of the government's modernisation project played a central role in this process, as it was instrumental to provide mortgage loans for the erection of new houses. The Bank used a simple formula: the loans for land purchases were only granted to those who could afford the down payment. As the government was the owner of the land, the cost of the plots was relatively low. The value of each plot was calculated by the Bank to support the development costs of Narmak's infrastructure, without adding any other exchange value. Hence, based on the size of each plot, the Bank could define the land value. Accordingly, the financial contribution of future owners to Narmak's infrastructural development became highly dependent on the plot sizes and their variety, available for applicants with different financial capabilities. Furthermore, based on the proposed house types (typologies of two, three, four, and five rooms), the Construction Bank was able to estimate the construction costs. These were the two crucial factors used by the Bank to calculate the mortgage loan and the amount of down payment for each applicant. This amount, for Narmak, was usually one fourth of the land value and the construction costs.

With the amount gathered through the down payments, the Construction Bank was able to carry out the infrastructural development in Narmak, and grant mortgage loans with low interest in 10 years reimbursement.[91] This financial model gave the Bank independence to develop the project without the interference of other external investors, as aimed by Mosaddeq's 'Economy without Oil' model. The policy of the Construction Bank was based on giving loans to individuals and lower income families to buy plots and to build their houses.[92] However, for some families the financial burden was still quite heavy. Many land-owners sought further financial support to realise their houses. The most common strategy to generate extra income was subdividing their land into two, three, or four lots, keeping one for them and selling the rest, which considerably changed the urban morphology of residential sectors in Narmak. Such a transformation is visible in a shift from detached houses to the denser urban typologies of the residential block and row-house. This process would eventually enable a social mix, bringing together families belonging to different income brackets.

91. For more reading, see: Moeenfar, "Controversy of Houses," 31-34.

92. See: Amir Masoud Khodayar, "Taghsim-E Zamin Alaj-E Bikhanemani Nist," [The Division of the Land Is Not the Cure for Homelessness.] *Journal of Bank-e Sakhtemani* 1, no. 1 (1955): 21-23.

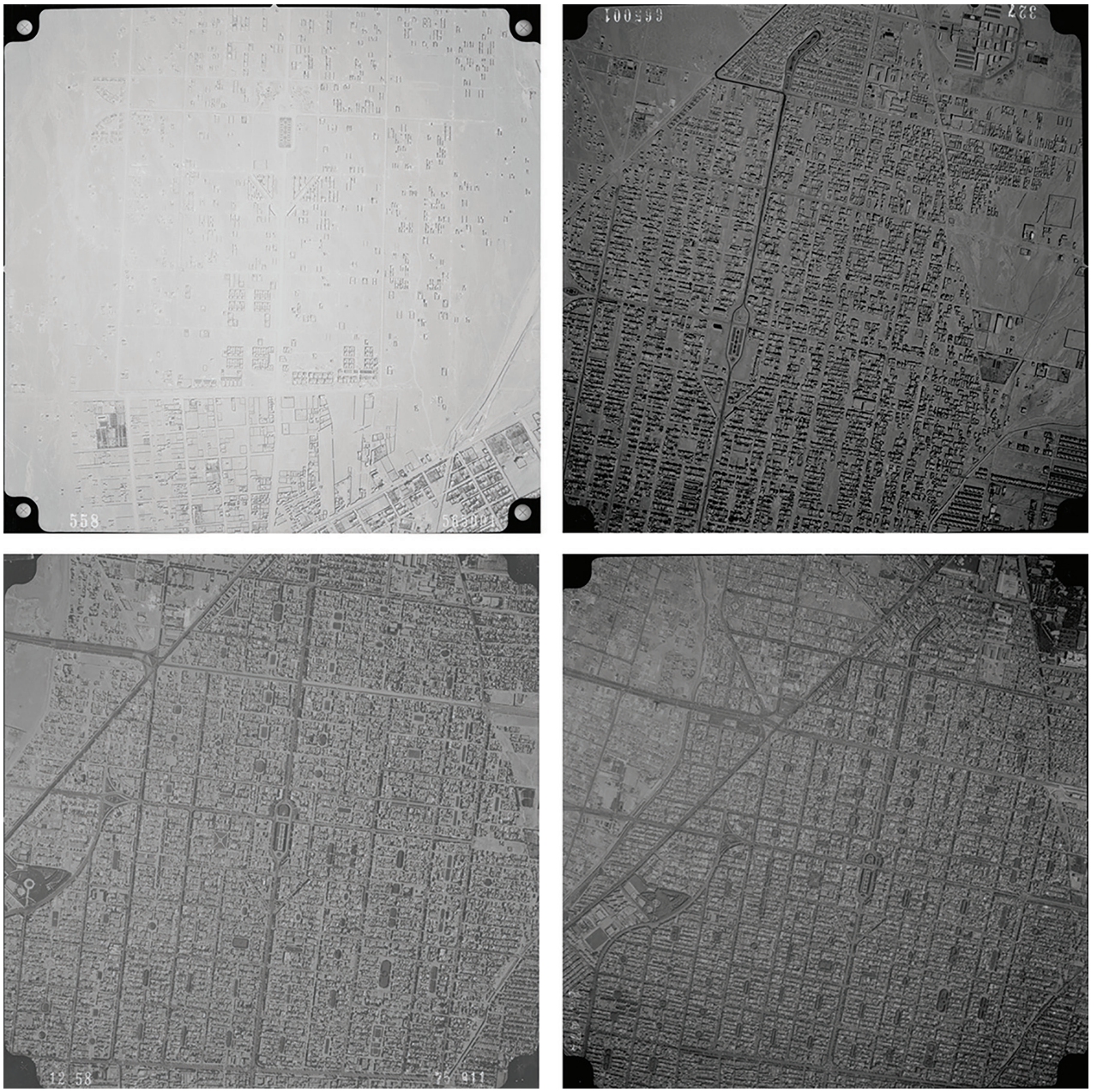


Figure 3.16: the evaluation of Narmak during the last 60 years: The left-up image shows Narmak in 1956. The right-up image shows Narmak in 1965. The left-bottom image shows Narmak in 1979. And the right-bottom image shows Narmak in 1988.
Source: National Cartographic Centre, Tehran, accessed December 2015.

The subdivision of lands, firstly, was seen by the Bank as a challenge to the development of Narmak. However, the Construction Bank allowed, eventually, the subdivision, under a few circumstances.[93] First, it was argued that the subdivided plots could not be less than 100 square meters in size, with at least 6-meter width alongside the streets and cul-de-sacs. In fact, this proportion was needed to secure the placement of the smallest house-type proposed by the Bank in the sub-divided plot. Second, the applicants or the land-owners should build a wall around their plot within a year after receiving the mortgage, and then they should construct their house within the walled plot in the next four years; otherwise, the Bank had the right to negate the deal and regain the possession of the land.[94] In this way, the Bank aimed to accelerate the process of housing construction, and to prevent land-speculation, in Kuy-e Narmak. Only under these conditions, the Bank declared that the applicant/land-owner would receive the proof of the land ownership (title to property).

In effect, the sub-division of the original housing plots, varying from 200 to 650 square meters, into smaller segments provided a variety of possible options and attracted different social groups. This variety enabled a wide range of middle-income governmental employees and low-income families to afford a dwelling plot in Narmak.[95] Legally, this subdivision was possible under the private ownership law, established in 1906 during the Iranian Constitutional Revolution.[96] While enabling the expansion of the family's financial resources, the private ownership law provided the legal shelter under which people had the opportunity to organise, control, adapt and change their living environment by themselves. In Narmak, the self-organisation encouraged by this law played a fundamental role, promoting a relentless process of plot subdivision and densification that might be seen from the evolution of the urban plan over time [Figure 3.16]. This process was instrumental in the creation of communities with a strong identity and sense of belonging to the place.

The sense of community that surfaced in Narmak preserved some of the Iranian traditions, but also introduced some new aspects of urban life. In the early twentieth century Iran, the residential neighbourhoods were somewhat socially uniform, constructed as autonomous districts based on ethnic, cultural, or religious segregation, where juridical regulations defined their pattern.[97] On the contrary, in Narmak, the social tissue included a mixture of groups, such as government officials and teachers, small landowners, and non-bazaar merchants with various religious and ethnic backgrounds, representing a socially inclusive middle-class neighbourhood.[98] The main responsible body for the development of Narmak, the Construction Bank, clearly defined the limits where the control over the transformation of the neighbourhood should be exerted. While the Bank, itself, focused on the realisation of public spaces such as the *Chahar-Bagh* like avenues, *Meydan-Baghs*, and small streets (i.e., alleys and cul-de-sacs), the

93. See: Mehdi Maleki, "Amar Amaliat Sakhtemani Va Omrani Bank-E Sakhtemani Dar Do-Sale Akhir," [An Overview of the Bank's Building Activities in the Recent Two Years.] ibid.: 25-28.

94. See: Amir Masoud Khodayar, "Taghsim-E Zamin Alaj-E Bikhanemani Nist," [The Division of the Land Is Not the Cure for Homelessness.] ibid.: 21-23.

95. See: Iraj Sarrafian, "Seyr-E Ejmali Maskan," [An Overview of Housing Process.] ibid.2, no. 3 (1961): 16-33.

96. The goal of the law was to counter the real estate monopoly of the landlord class that prevailed during the nineteenth century. See: Habibi, *De La Cite a La Ville*.

97. Falahat and Shirazi, "New Urban Developments," 611-24.

98. This phenomenon contrasts with what Ervand Abrahamian observed in the new developments developed under the banner of modernisation: "the old neighbourhood structure, based on sect identities, had withered away; the new districts were, instead, based on class, income, and occupation". For more information, see: Abrahamian, *A History of Modern Iran*, 120.

responsibility of building the houses was largely left to the inhabitants.[99] This triggered the emergence of an urban landscape where the houses were built according to each family's own needs, desires, as well as material possibilities. This customisation expanded to the public space surrounding the house, where residents appropriated the sidewalks in front of their houses. In this way, they negotiated limits and boundaries with their neighbours, creating new ways of civic participation in the neighbourhood.

The land-ownership system in Narmak triggered the emergence of a particular social identity based on the construction of the image of private property.[100] This created a sense of freedom to build, as John Turner would put it, in which the inhabitants participated with their own spatial agency in the transformation of the state-initiated development programme.[101] In addition, the land-ownership system in Narmak stimulated subjective transformations and adaptations of the neighbourhood, triggered by self-organisation, while the urban structure of the neighbourhood remained intact and absorbed those changes. In other words, the typo-morphological characteristics of Narmak were instrumental to enable the emergence of an inclusive urban community where top-down design decisions, inspired by modernist planning approaches, co-existed with bottom-up initiatives that developed the private houses incrementally through time. This incremental growth and change will be further discussed and illustrated in the next section.

In fact, the co-existence of top-down design decisions and bottom-up local initiatives can be seen particularly from the transformation of Narmak's urban atmosphere. In this dynamic process of incremental densification, while the entwined relation of the design-decisions, the Bank's financial model and the implemented land-ownership system was crucial, two initial models of housing production played an instrumental role: the houses, built after the design proposed by the ARIA and the typical houses constructed by ordinary Iranians, mostly in collaboration with the Mi'mars. In order to understand the implications of the initial design decisions in Narmak's constant and continuous growth and change, the following section will examine the transformation of a typical plot of Narmak throughout its life span, over the last 60 years. In this part, I will focus on the role performed by landowners in the development of this housing project; and I will shortly illustrate the modification of the dwelling models designed and erected by the Construction Bank, with KALAD system and local techniques, over time.

99. Khodayar, "How Kuy-E Narmak Was Created," 5.

100. This resonates with what Robbie Goh observed in the case of Singapore. For more reading, see: Robbie B. H. Goh, *Contours of Culture: Space and Social Difference in Singapore* (Hong Kong University Press, 2005), 151.

101. For more reading, see: John F. C. Turner and Robert Fichter, *Freedom to Build: Dweller Control of the Housing Process* (New York: Macmillan, 1972).

Narmak's Growth and Change

The vernacularisation of Narmak formed a basis for the active involvement of the general public in the construction process. In Narmak, this is testified by the

informal building agencies as well as the initiatives formed by ordinary people in collaboration with Mi'mars to construct their houses. Although contributing individually or in small groups to the construction of single-family houses, overall, they created a great impact on Narmak's built landscape. To illustrate and document the transformation of Narmak, I have interviewed in the fall of 2017 some of the owners of a typical construction lot (24 by 17 meters), in Narmak. The interviewees (Mr. M.N, Mr. R.Z, Mr. M.T, and Mr. Gh.K) were asked to reconstruct their experiences as residents of Narmak over the last sixty years, as to explain the factors that underpinned the transformations they have made to their living environment over this period.[102]

After the completion of land division and main roads in 1958, the Construction Bank announced the realisation of Kuy-e Narmak, in the Iranian press, *Ettela'at*. The announcement also opened a call for registration, by which the general public was able to purchase divided lands and build their houses, under the supervision of the Bank. This was the moment when the friendship between Mr. M.N (a former employee of the Mortgage Bank), Mr. R.Z (a former employee of the Ministry of Finance and Economy), Mr. M.T (a retired technician who worked for an Iranian construction company known as SET), and Mr. Gh.K (a former employee of the Iranian Army) started; the year was 1961. Since they could not afford to buy a plot individually, they were put on a waiting list for future projects or possible smaller plots in Narmak. Upon their return to a branch of the Bank that operated as the sales office for the Narmak project, they coincidently met one another, and shortly after this, they decided to buy a plot together. In 1961, immediately after securing the allocation of the plot and the bank loan, they challenged the rules imposed by the Bank and divided the land into four equal pieces of 6 by 17 meters.[103]

Soon each one began to construct their individual houses. One year later, four distinctive houses were constructed, noticeably different from the initial house type proposed by the Bank [Figure 3.17]. Mr. M.T and Mr. Gh.K chose to build a one-story house with a basement, Mr. M.N built a two-story house to use the upper-floor for himself and rent the lower-floor, and Mr. R.Z, constructed a duplex house. While each house was unique, there were common characteristics to all of them. The two main examples are the placement of a wide loggia in the south façade, similar to traditional Iranian houses, and the construction of a small back yard for providing daylight in the north façade.[104] Furthermore, with the exception for R.Z's house, the position of bedrooms and service areas followed a conventional layout [Figure 3.18].[105]

Excluding small modifications (e.g., painting, replacement of finishing materials, or decoration elements), the internal organisation of these houses remained intact for several years.[106] Nevertheless, major changes started to occur in the

102. For the sake of privacy, I anonymised the names of interviewees. It is worth mentioning that the connection with the selected interviewees was established through a group of friends of mine who have been serving as building contractors in Narmak, since the early-1990s.

103. In the first three years of the down-payment, land-owners in Narmak were not allowed to divide or sell their lots. In addition, they had to start the construction of their houses in three years after purchasing the land, otherwise the Construction Bank had the right to unilaterally cancel the contact between the Bank and the buyer(s). For more reading, see: Khodayar, "The Division of the Land," 21-33.

104. According to Gholam-Hossein Memarian, a common characteristic of traditional Iranian houses is the placement of Iwan (a wide and deep loggia) between the biggest living area of the house and courtyard. For more information, see: Gholamhossein Memarian and Frank Brown, "The Shared Characteristics of Iranian and Arab Courtyard Houses," in *Courtyard Housing: Past, Present & Future*, ed. Brian Edwards, et al. (Taylor & Francis, 2006), 21-30.

105. In all cases, the toilet was also placed in the corner of the front yard. In contrast to two-story houses where the bathroom was placed between habitable spaces, in one-story houses, the bathroom was constructed in the basement.

106. Only Mr. R.Z modified the layout of his front-yard to provide space for his new car.

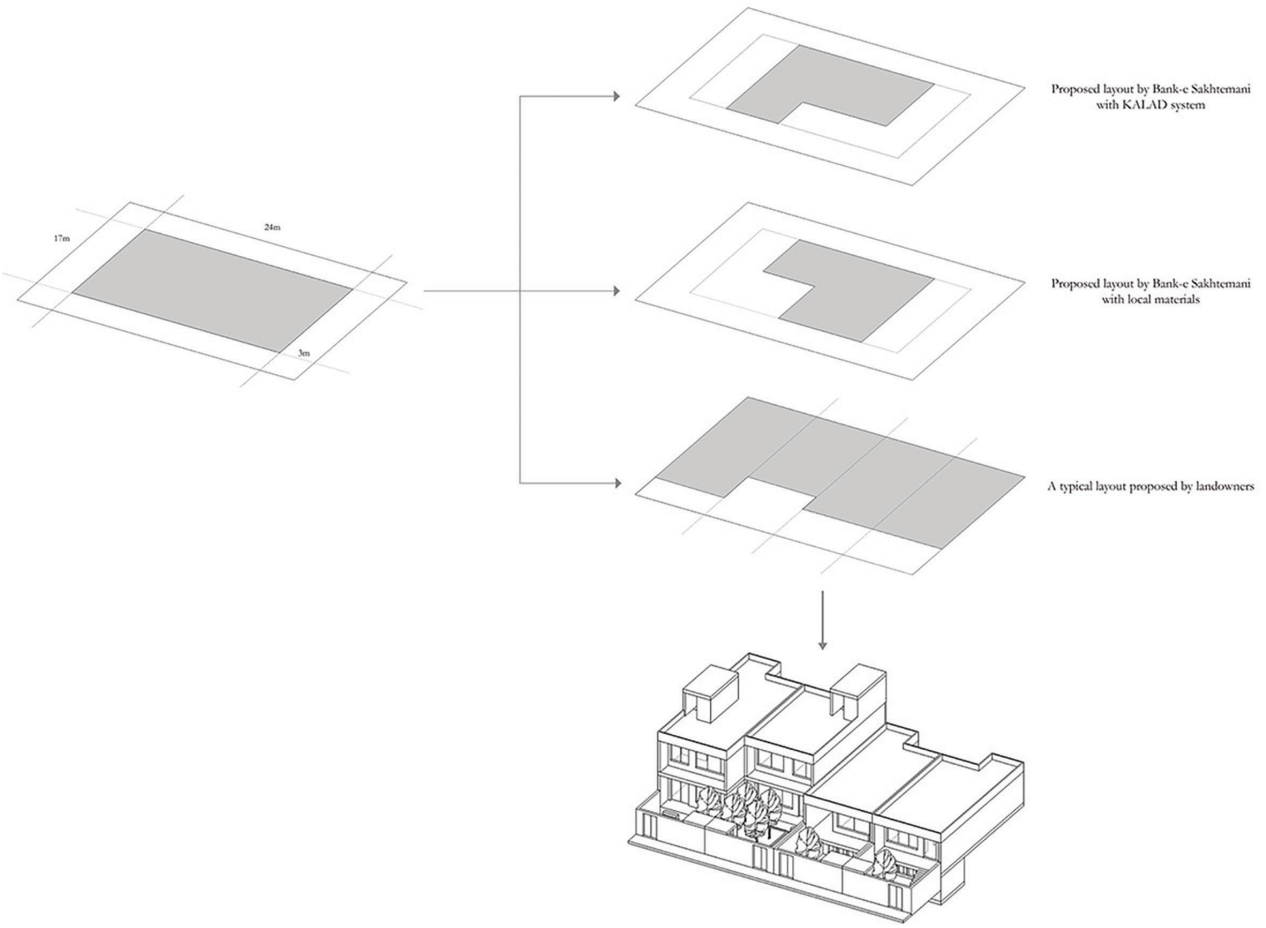


Figure 3.17: different types of land-division in Narmak and the construction of a typical plot.
Source: Mohamad Sedighi.

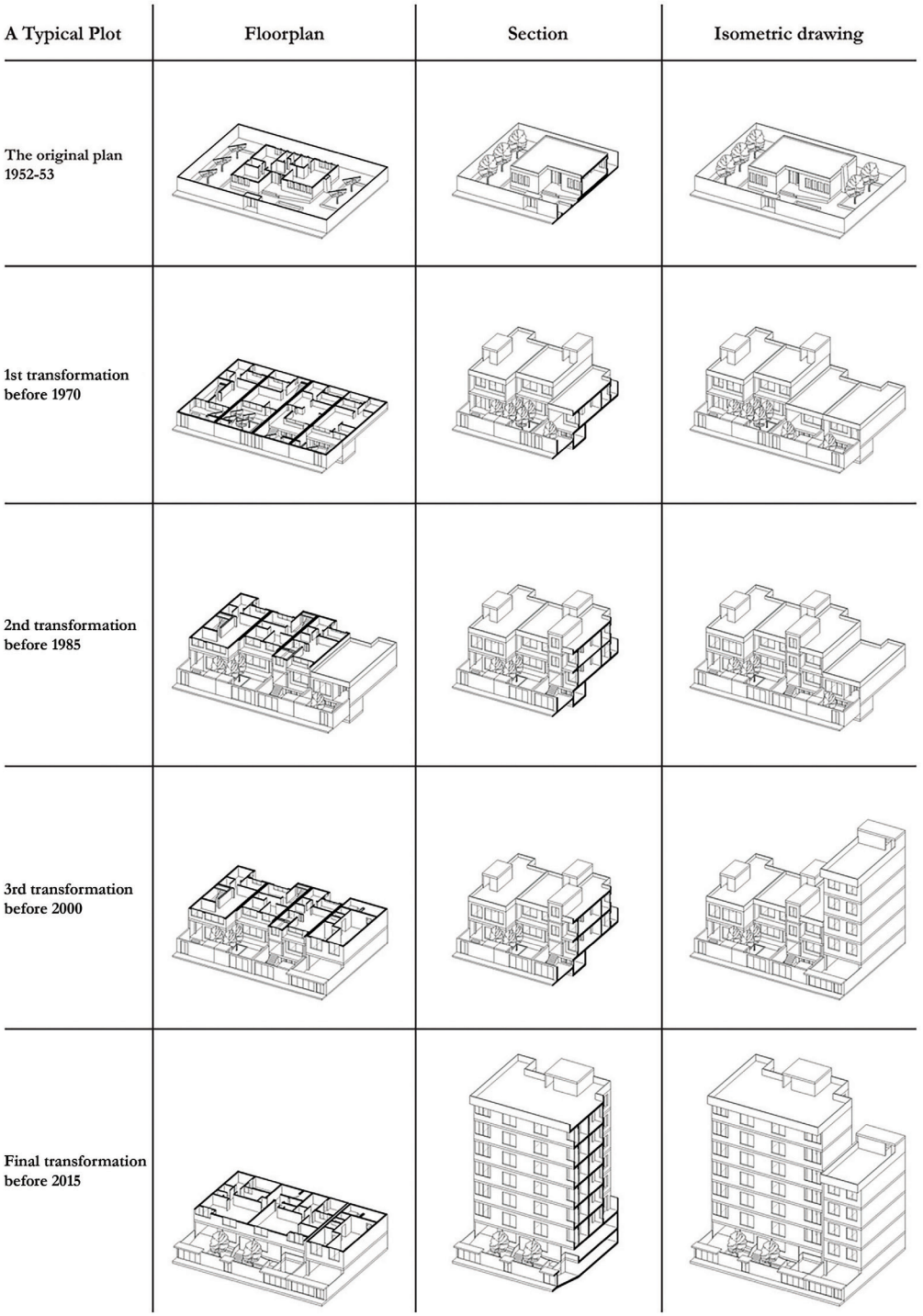


Figure 3.18: the evolution of an identical construction plot through time in Narmak.
Source: Mohamad Sedighi.

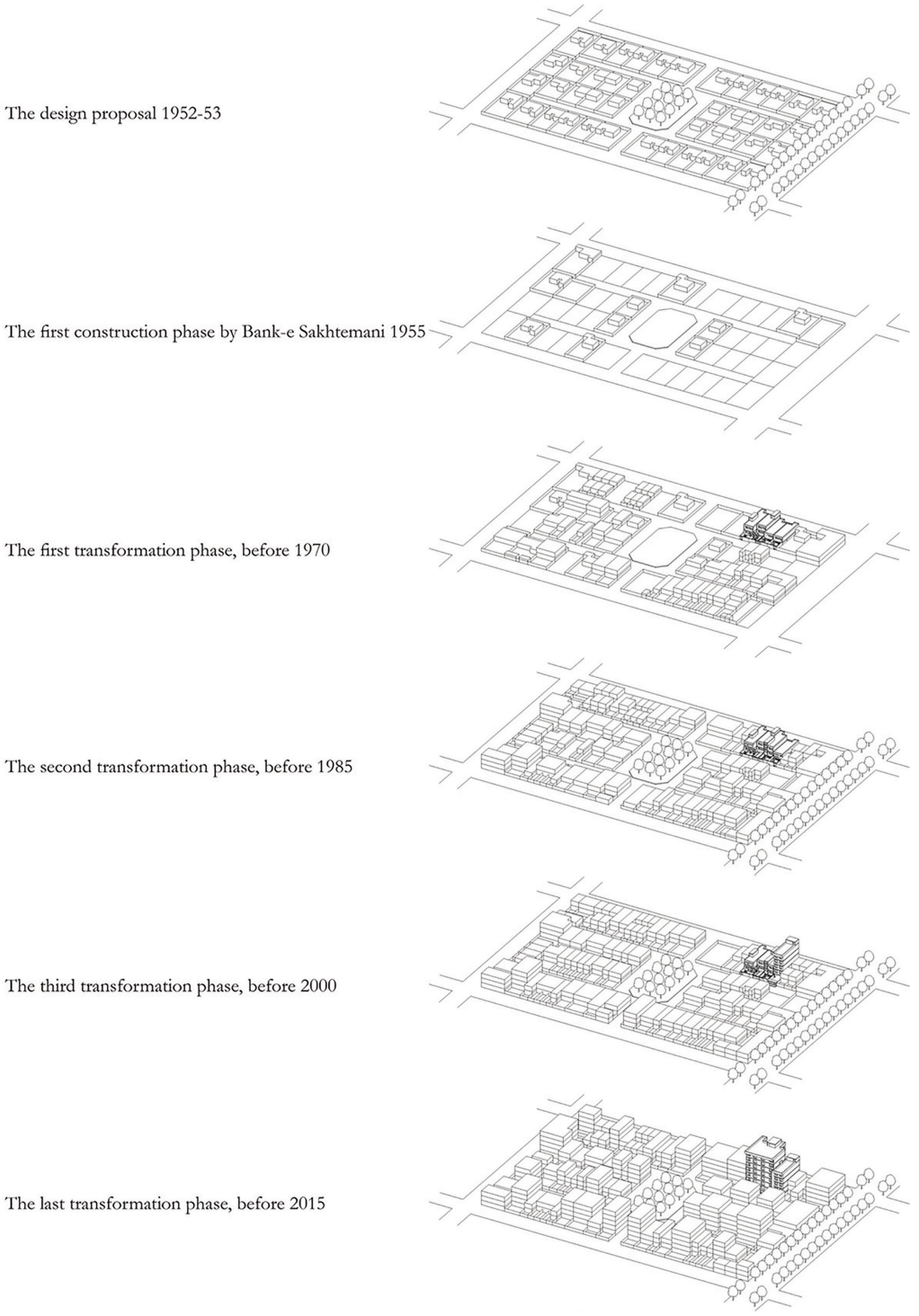


Figure 3.19: transformation of low-rise individual houses to mid-rise multi-family apartments and its implication on the neighbourhood structure. Source: Mohamad Sedighi.

configuration of these houses, such as when Mr. M.T's youngest son decided to get married. In 1988, he constructed a new story above his house, and few months later, Mr. M.N and Mr. Gh.K added loggias to their houses. Then, in 2006, Mr. Gh.K, who had moved to another sub-neighbourhood of Narmak five years before, sold his house to a local developer. Two years, after, in 2008, a new four-story apartment building replaced the old single-family house. The whole division of property ownership in the original cluster of four houses changed further when Mr. M.N bought Mr. R.Z's house to expand his house and cater for the needs of his growing family.

The last changes, observed in the survey of this typical plot in Narmak, took place when Mr. M.N and Mr. M.T combined their plots, replacing their old single-family houses with a new residential block. This decision was chiefly influenced by the opportunity to generate a significant profit from the operation. Indeed, Iran's rapid economic growth in the first decade of the twenty-first century, as well as a sharp increase in the urban population density, made the real-estate sector a safe market for investment.[107] Furthermore, there was an additional advantage in the aggregation of the individual plots owned by Mr. M.N and Mr. M.T. According to the Act of Property Aggregation, they could now build an extra floor on the top of the initial permitted building volume.[108] In 2014, they hired a local developer, and in two years-time, they built a residential building, 6 stories high and with 12 apartment units.[109]

This is at the same time a particular story, but also a typical one. As shown in figure 3.18, multiple transformations happened to the initial constructions built in 1958 on this plot. This phenomenon was pervasive throughout all of Narmak. Similar to this typical plot, over time, the original houses placed in Narmak's rigid gridiron layout were completely replaced by new constructions with noticeably different typological and morphological characteristics [Figure 3.19]. For instance, the KALAD house types were mostly replaced with three or four-story residential complex, whereas the modified types, proposed by the Bank with local materials, were extended by their inhabitants or reconstructed as multi-story apartment buildings [Figure 3.20]. While the initial plan was designed to house 7,500 families, currently this number increased more than tenfold. This is illustrated in the recent census, published by the Municipality of Tehran, indicating that there are over 90,000 families currently living in Narmak.[110]

The evolution of Kuy-e Narmak through time, in fact, testifies to a dynamic process where the fundamental components of the plan such as the Meydan-Baghs and urban layout of residential sectors remained, but the buildings conspicuously changed. The ability to accommodate the transformations that happened at the scale of the individual plot, as described above, demonstrates how the plan for Narmak was able to facilitate growth and cope with changes.

107. Alireza Ramezani, "Why Iran's Property Market Is Unlikely to Boom Anytime Soon," ALMONITOR.

108. According to the Act of Property Aggregation approved in 1975, land-owners may combine their construction lots to construct higher buildings (more stories). However, few constrains were defined by the municipality of Tehran for constructing residential buildings in the city. According to the Construction Manual of the City of Tehran, revised in 2007 and approved in 2011, the owners of construction lots with a surface of 100 m^2 to 300 m^2 (hereafter: the first case) can develop buildings with 4 stories (on a piloti as parking area or entrance hall), and the owners of construction lots with a surface of 300 m2 to 500 m2 (hereafter: the second case) can develop buildings with 5 stories (on a piloti as parking area or entrance hall). However, if the land-owners combine their lots in a way that the sum of their lots exceeds 200 m2 in the first case and 300 m^2 in the second case, they may build an extra story, as the bonus for their aggregation, aside from the number of stories that they are allowed to build based on the surface of (new) construction lot, after the aggregation. For more reading, see: The Municipality of Tehran, "Zavabet Va Mogharart-E Tarh-E Tafzili Jadid Shahr-E Tehran," ed. the Municipality of Tehran: the Department of Architecture and Urbanism (Tehran: the Municipality of Tehran, 2012). Also available in: *http://shahrsazi.tehran.ir/portals/0/final.pdf*. After combining the lands, Mr. M.N and Mr. M.T reached a surface of 306 m2, an area that according to the new regulation was eligible for the construction of a 5-story residential building on a piloti, plus an additional story (floor) as a bonus provided by the act of aggregation (so 6 stories in total on a piloti).

109. Each new apartment unit was constructed with two bedrooms and a surface of 87 m^2, a dwelling which was almost 12 m^2 bigger than the house that they lived in for more than 50 years. The share of the developer from his investment was 5 apartment units. Mr. M.N received 4 apartment units and a share of two-third from a fifth unit. Mr. M.T received 2 apartment units and a share of one-third from a third unit. For each apartment unit, a parking area was provided in the ground floor or the basement of the building. While a big part of the front-yard was dedicated to the ramp of automobiles and the access system to the apartment units, a very small garden was constructed in the yard.

110. See the result of recent census in: Seyed Mohsen Habibi and Bernard Hourcade, *Atlas of Tehran Metropolis* (Tehran: Entesharat Pardazesh va Barnamerizi Shahri, 2005).

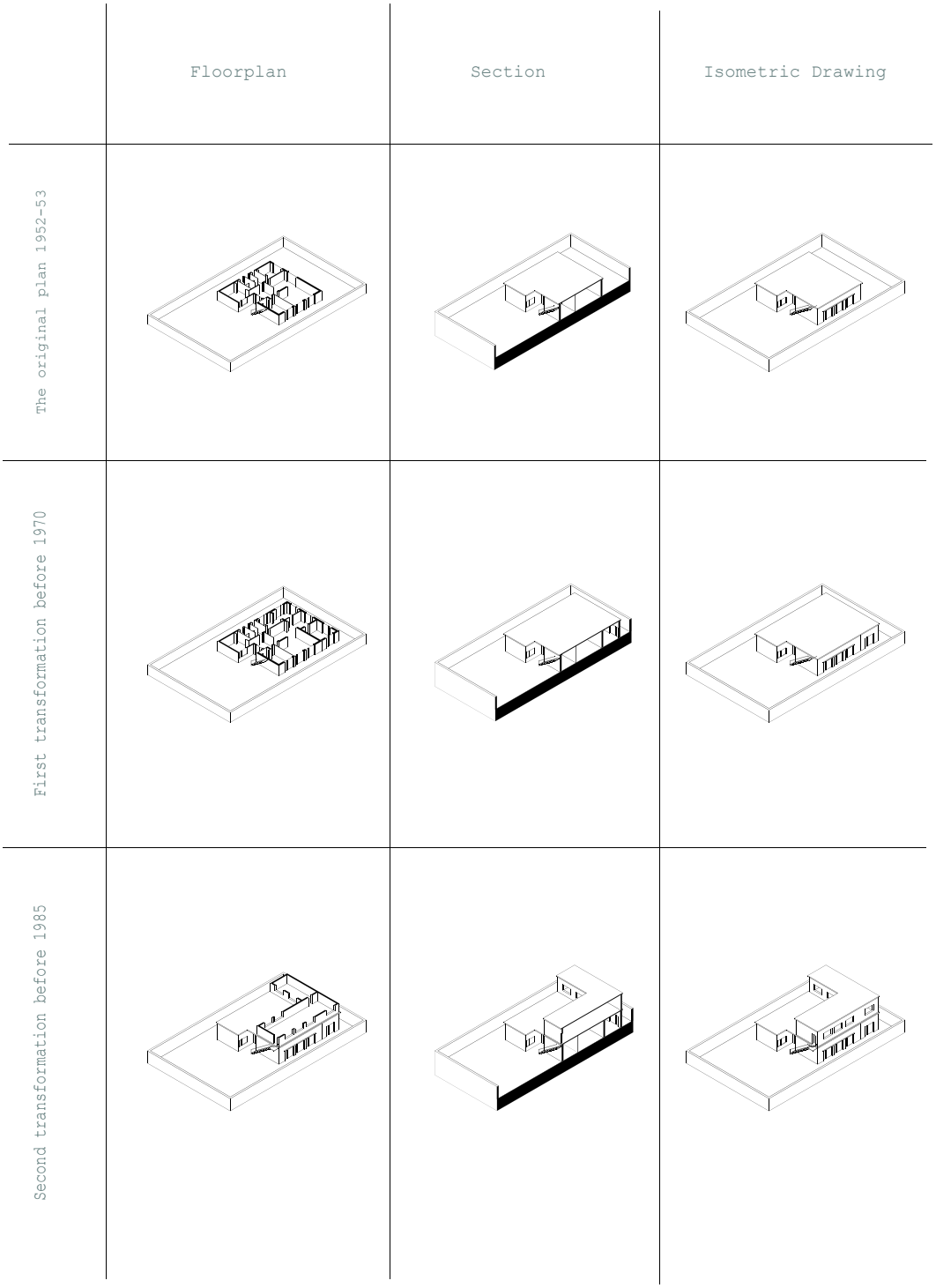


Figure 3.20: transformation of a typical house proposed by the Bank with local materials in Narmak.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini..



Figure 3.21: densification and development of urban structure in Narmak. The picture in the top was taken in 1968 and on the bottom in 2014. Source: *Iran Housing Organization Report* (Tehran: Offset Press, 1972), 127 (top); and Archive of the Municipality of Tehran, accessed July 2017 (bottom).



Figure 3.22: the current situation of Narmak in 2016, containing a dynamic skyline and representing a high-density built environment.
Source: Photograph by Mohamad Sedighi.

Over the last six decades, this project has progressively gained a reputation as one of the best and well-observed residential neighbourhoods in Tehran.[111] The residents' level of satisfaction is high and there is a strong sense of local identity and belonging among its inhabitants.[112]

Consequently, the spatial characteristics of the original plan of Narmak characterised by a relatively low, dense, and monotonous sequence of similar constructions gave way to lively and dense alleys, streets, boulevards, plazas, and squares [Figure 3.21]. The urban expression associated with the modernistic qualities of the neighbourhood, which could be observed in the late-1950s and early-1960s, underwent a process of vernacularisation. Arguably, this process was instrumental for the development of Narmak and it formed a basis for the expansion of a new urban lifestyle and the development of new dwelling practices among ordinary Iranians.

The design principles of Narmak's plan, in particular the predominance of the detached house type on large plots and the hierarchy of public spaces such as squares, soon became a reference for the development of new residential neighbourhoods, in Tehran. Based on these principles, for instance, the housing projects of Kuy-e Nazi-Abad (1953-58), Tehran-Pars (1960-64), and Kuy-e Farah (1962-1966) were erected by the Construction Bank. Kuy-e Nazi-Abad was built to accommodate low-income families in the southern area of Tehran; whereas, Kuy-e Tehran-Pars and Farah were developed to house a group of mid-tier civil servant in east Tehran. In all these projects, interestingly, the Construction Bank employed the same financial model to fund the development of projects and also allowed people to form informal agencies for constructing their individual houses.

Conclusion

The development of Narmak shows that its urban form could absorb and accommodate changes while preserving its core attributes through its capacity to integrate self-organisation in the system, and its capability for constant learning and adaptation through time. Over the last six decades, this urban form, as a system, was able to absorb and cope with multiple changes, despite the unstable political and economic conditions in Iran, the rapid demographic growth in Tehran, the considerable increase in both building and population density, and the radical transformation of Narmak's skyline [Figure 3.22].[113] Noticeably, this ability for change, growth, and self-organisation also resonates with what Ayda Eraydin and Tuna Taşan-Kok termed as a 'resilient' urban form.[114]

This chapter demonstrated the extent to which the 'vernacularisation' of Narmak resulted from the entwined relation of three factors: design decisions, a financial

111. Azizi, "A Sustainable Neighborhood," 38-46.

112. For more reading, see the documentary movie: Saleh Deldam, "Mahaleh-Ye Narmak," in *A documentary on Tehran's neighbourhoods*, ed. Saleh Deldam (Tehran: IRIB 5, 2011).

113. While initially designed for 7,500 families, over 90,000 families currently live in Narmak. See: ibid.

114. In the past two decades, with the growing hegemony of neoliberalism, urban land-use and development became increasingly detached from the control of the State, especially in metropolitan regions. As a consequence, urban planning has become an entry point for resilient thinking. The editors of *Resilient Thinking in Urban Planning*, Ayda Eraydin and Tuna Taşan-Kok, have discussed the inadequacy of the current planning systems and policies to prepare cities for the future in an increasingly neoliberal world. For more reading, see: Ayda Eraydin and Tuna Tasan-Kok, eds., *Resilience Thinking in Urban Planning*, vol. 106 (Dordrecht, Heidelberg, New York, London: Springer, 2013), 1-17.

model and a particular system of land-ownership. From an architectural point of view, the designers of the master plan created an eclectic combination of modernist features with vernacular references, which allowed the integration of archetypical elements such as the *Meydan-Bagh* in a gridiron urban structure. In combination, these elements constituted a framework within which change could be accommodated, while the urban layout of residential sectors as well as newly introduced urban elements such as Boulevards, central public spaces and high-rise office/administrative buildings largely remained intact. In the absence of strict by-laws or regulations, the residents of Narmak, mostly supported by the expertise of the traditional-local builders, known as *Mi'mars,* built their houses based on the *habitus,* as Pierre Bourdieu would put it.[115]

Next to the plan's morphological characteristics, Narmak's transformation over time was triggered by the support of self-organisation processes. While spontaneous subdivision of construction plots by their owners played a crucial role in this process, the ability for self-organisation was particularly stimulated by the financial model initiated by the Construction Bank. In this model, the mortgage was calculated and provided based on the size of the plots and of the proposed house types, enabling the Construction Bank to define a variety of ranges for the down payment. In so doing, not only middle-income government employees were able to purchase a house in Narmak, but also low-income families could afford a dwelling plot, in groups or individually.

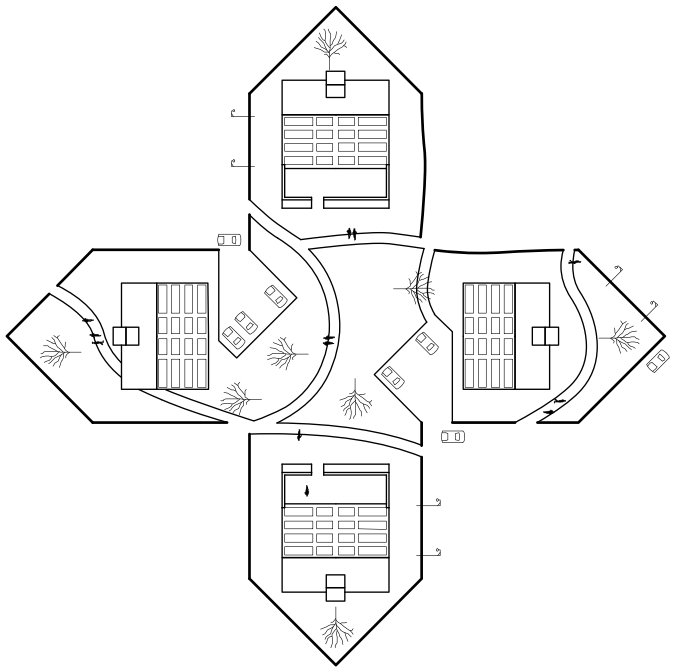
This financial model became more meaningful in combination with the new system of land-ownership regulated by the State. The legalisation of private property and individual land-use empowered people to organise, control, adapt and change their living environment by themselves. Accordingly, the top-down development of Narmak was underpinned by bottom-up initiatives where the participation of the inhabitants was essential for the construction of the new houses and neighbourhoods. Rather than marginalising the unprivileged, the system of land-ownership in Narmak involved people from different social backgrounds and income groups in the co-creation of space, a model that contributed to secure the right of everyone to the city, as Henri Lefebvre termed it.[116]

Using local materials and building traditions, the houses were transformed through time in response to the new needs of the inhabitants and the evolution of their lifestyles. In Narmak, the passive role of the city dweller was challenged, and the new role of the active agent of social and economic change emerged. Indeed, the residents of Narmak became key references to understand the urban transformation of Tehran over the last half-century. On the one hand, the pervasive transformation of individual houses into multi-story residential apartments in Narmak illustrates how self-reliance played an important role to cope with Tehran's rapid demographic changes and resulted in increasing the

115. Pierre Bourdieu, who was inspired by the work of the art historian Erwin Panofsky, defined habitus as a "system of durable, transposable dispositions, structured structures predisposed to function as structuring structures, that is, as principles which generate and organise practises and representations that can be objectively adapted to their outcomes without presupposing a conscious aiming at ends or an express mastery of the operations necessary in order to attain them." See: Pierre Bourdieu, *The Logic of Practice* (Stanford, California: Stanford University Press 1990), 53.

116. See: Henri Lefebvre, "Right to the City," in *Writings on Cities*, ed. Eleonore Kofman and Elizabeth Lebas (Oxford: Blackwell, 1996).

affordable housing backlog. On the other hand, Kuy-e Narmak's capacity to accommodate a dramatic increase in its both population and building density without jeopardising the liveability of the housing complex demonstrates the importance of the design decisions that established the structure of public space as a combination of modernist features with references from the local vernacular tradition.



4 • Point IV & Apartment Typology

Redesigning the Iranian Domestic Landscape under American Development-Aid Policy: Kuy-e Kan (1985-1968)[1]

Introduction

The administration of the Iranian prime-minister Mohamad Mosaddeq (1882-1967) nationalised the Anglo-Iranian Oil Company (*Sherkat-e Naft-e Iran va Englis*), in 1951. The oil nationalisation created the conditions to increase dramatically the political and economic self-determination of his government.[2] Although Mosaddeq's governmental office was formed by members of the National Front (*Jebh-e Melli*), their foreign, economic, and public policies were shared with those of the Party of the Masses (*Hezb-e Tudeh*), the Iranian communist party.[3] In the context of the emerging Cold War geopolitics, the collaboration between Mosaddeq and the Iranian communists was seen by the United States as a threat to their political and economic interests. The governments of the United States and England were mutually concerned that a collaboration between the nationalist and communist parties might lead to a communist-inspired takeover of the country. This alliance raised an alert in the secret services of both countries (CIA and MI6), who kept the Iranian political situation under close surveillance.

1. A modified version of this chapter is submitted to the peer-reviewed journal of *Housing Studies*. Further, two distinct parts of this chapter will be disseminated in two upcoming books, as follows: *The History of Modern Planning Manuals*, ed. Herman van Bergeijk and Mohamad Sedighi. And *The Global Petroleumscape: Multidisciplinary Perspectives on the Spaces and Imaginaries of Oil and Ways to Overcome It*, ed. Carola Hein.

2. Ervand Abrahamian, *A History of Modern Iran* (Cambridge: Cambridge University Press, 2008), 97-122.

3. Tudeh saw this situation as an opportunity to organise protests against the Shah and to promote communism among Iranian people. For more information, see: Mazdak Daneshvar, "Hezbe Tudeh Va Mosaddeq Dar Kodeta: Ghosour Ya Khianat," BBC Persian.



Figure 4.01: Kuy-e Kan, just after its completion in 1964.
Source: National Archive of Iran, accessed August 2016.

In 1952 and 1953, internal and external agents challenged the political stability of Iran. In the summer of 1953, Mosaddeq's rule was gaining momentum. As the historian Ervand Abrahamian noted, at that time "Iran, like many other Asian countries, appeared to be taking the road of republicanism, neutralism, and middle-class radicalism."[4] However, in mid-August 1953, things would swiftly change. A group of royalist officers supported by the CIA and MI6 moved to overthrow Mosaddeq.[5] Eventually, the military coup known as *Kudetay-e 28 Mordad* (the Coup d'état of 19 August, Operation Ajax) successfully removed Mosaddeq and his allies from government and installed Mohamad Reza Pahlavi (1919-1980), the Shah of Iran, as the executive power in the country.[6] Under the Shah, American involvement in Iran's political and economic scene increased significantly and would eventually transform the domestic landscape of urban Iran from the mid-1950s through the early-1970s.

This chapter will focus on Iran's 'Urbanisation' period (1953-1966), as Mohsen Habibi defined,[7] when technical assistance in the definition of housing policies and regulations became instrumental as a main vehicle to transform the country's socio-spatial vernacular patterns of inhabitation, and to adapt those to Western standards and ideals. To illustrate the evolution of the paradigms of domesticity in Iran since mid-1950, I will look into a particular case of public housing, Kuy-e Kan (1958-64), one of the key residential districts developed during this period in Tehran [Figure 4.01]. By conducting archival studies, I will investigate the socio-political influences that triggered the development of Kuy-e Kan, and analyse the typological and morphological components of the project. I will combine the results of this study with the outcome of a site survey in the residential district, and with my interviews with some stakeholders involved in the development/ evolution of Kuy-e Kan. This methodological approach aims at expanding current scholarship on Iran's process of urban transformation from the mid-1950s to mid-1960s that has been recently addressed by a significant number of scholars.[8]

These scholars discussed themes such as domesticity and Iranian home culture, the state's housing policies, and the relation of imported images with housing design, triggering a critical understanding of some important events in the process of Iranian modernisation. Pamela Karimi studied the transformation of private houses and apartments in Tehran, and argued that the Iranian government used domestic space to reorient Iran's home economics towards Western mass-market consumption. Karimi showed how the Iranian kitchen became the main subject of change in the state's modernisation agenda, under the auspices of the Truman's 'Point IV programme', a project that aimed to encourage socio-economic and political reforms within developing countries.[9] Hamed Khosravi illustrated how the government used housing as a tool to colonise lands, and to neutralise the socio-political structure of old neighbourhoods in Tehran. Moreover, he examined the impact of the 'Point IV' on the transformation of interior spaces, and argued

4. See: Ervand Abrahamian, *Iran between Two Revolutions* (New Jersey: Princeton University Press, 1982), 274.

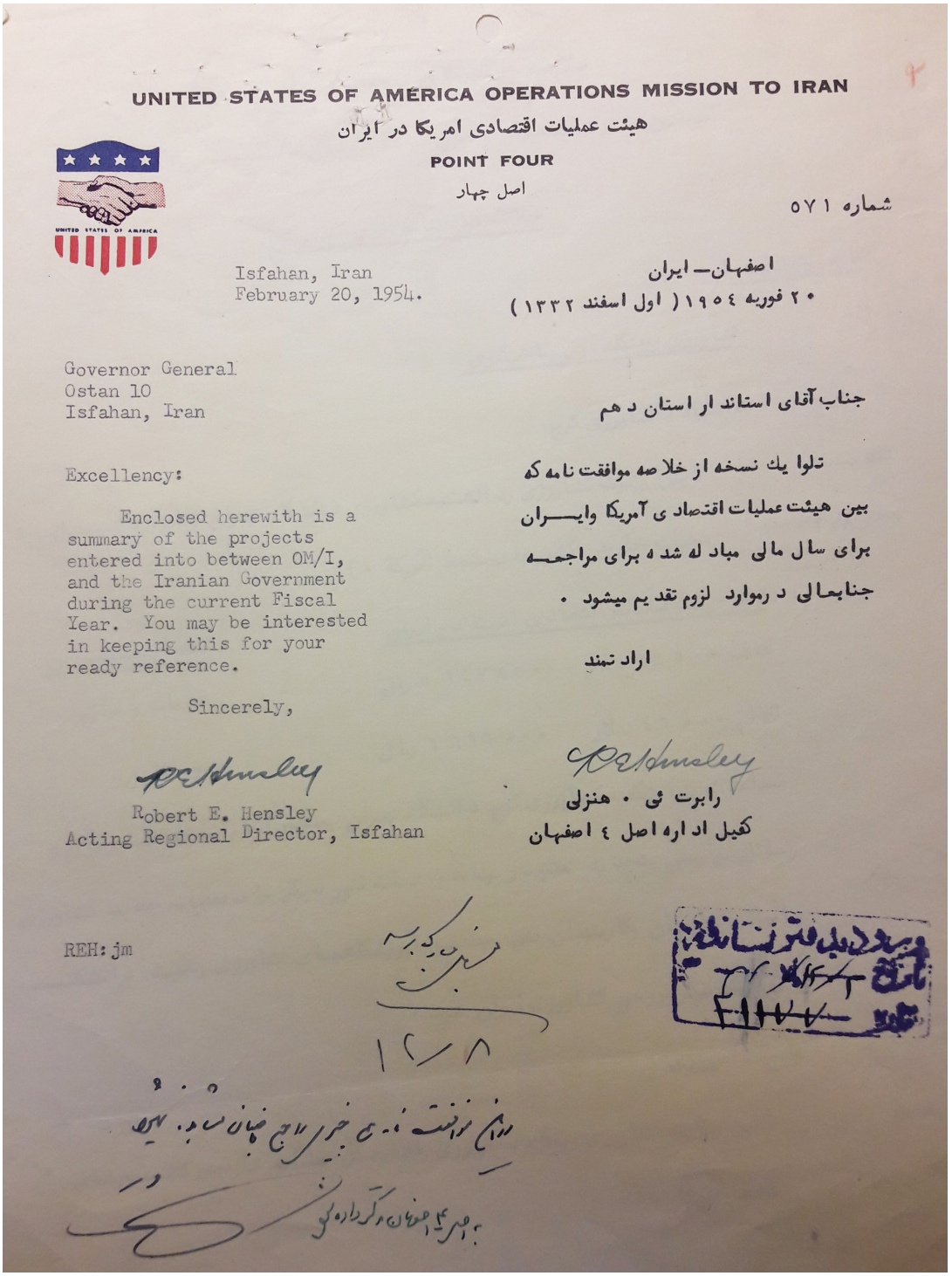
5. Stephen Kinzer, *All the Shah's Men: An American Coup and the Roots of Middle East Terror* (Hoboken, New Jersey: John Wiley & Sons, 2003).

6. Abrahamian, *Iran between Two Revolutions*, 278-80.

7. The period of 'Urbanisation' in Iran started from the overthrow of Mohamad Mosaddeq in 1953, and ended in 1966 when the country began to experience a new urban expansion approach, the moment that the Master Plan of Tehran was set in motion. For more reading, see: Seyed Mohsen Habibi, *Az Shar Ta Shahr: Tahlili Tarikhi Az Mafhume Shahr Va Simaye Kalbudie an Tafakkor Va Taassor* [De la Cite a la Ville-Analyse Historique de la Conception Urbaine et Son Aspect Physique] (Tehran: University of Tehran Press, 1999), 186-90.

8. For instance, see: Jaleh Jalili and Farshid Emami, "Notions of Class and Culture in Housing Projects in Tehran, 1945–1960," in *Social Housing in the Middle East: Architecture, Urban Development, and Transnational Modernity*, ed. Kıvanç Kılınç and Mohammad Gharipour (Bloomington, Indiana: Indiana University Press, 2019); Hamed Khosravi, "Camp of Faith: On Political Theology and Urban Form" (Ph.D dissertation, TU Delft, 2014); Pamela Karimi, *Domesticity and Consumer Culture in Iran Interior Revolutions of the Modern Era* (London and New York: Routledge, 2013); Rana Habibi, "Modern Mass Housing in Tehran. Episodes of Urbanism 1945-1979" (KU Leuven, 2015).

9. Karimi, *Domesticity and Consumer Culture in Iran.*



UNITED STATES OF AMERICA OPERATIONS MISSION TO IRAN

هیئت عملیات اقتصادی امریکا در ایران

POINT FOUR

اصل چهار

شماره ۵۷۱

Isfahan, Iran
February 20, 1954.

اصفهان — ایران
۲۰ فوریه ۱۹۵٤ (اول اسفند ۱۳۳۲)

Governor General
Ostan 10
Isfahan, Iran

جناب آقای استاندار استان دهم

Excellency:

Enclosed herewith is a summary of the projects entered into between OM/I, and the Iranian Government during the current Fiscal Year. You may be interested in keeping this for your ready reference.

تقدیم یک نسخه از خلاصه موافقت نامه که بین هیئت عملیات اقتصادی آمریکا و ایران برای سال مالی مبادله شده برای مراجعه جنابعالی در موارد لزوم تقدیم میشود .

Sincerely,

ارادتمند

Robert E. Hensley
Acting Regional Director, Isfahan

رابرت ئی . هنزلی
کفیل اداره اصل ٤ اصفهان

REH: jm

Figure 4.02: a letter of the Point IV agreements with the Iranian government.
Source: National Archive of Iran

that this U.S-led modernisation aimed to tame the so-called Communist model of living, promoted by leftist parties in the country.[10] Rana Habibi discussed the influence of imported images, under the auspices of the Kennedy doctrine, on the development of housing in the 1960s Iran, and she argued that disseminating these images, in the form of comprehensive plans or advertisements, through Iranian architectural journals affected the design of housing in Iran.[11]

While the mentioned scholarly materials provided invaluable insights on Iran's process of modernisation, most of these studies have not addressed the paradigm shift that transformed the country's public housing policies in the 1950s and 1960s. In other words, there is little research that discusses how after the overthrow of Mossadeq, planning and urban design strategies changed the domestic landscape and promoted an apartment mode of living among ordinary Iranians in most public housing districts, particularly in Tehran. This chapter, therefore, aims to expand the discussion on the relationship between transnational influences brought about by the Cold-War oil-led geopolitics and its impact on the evolution of local patterns of inhabitation in Iran. To this end, I will analyse the Kuy-e Kan's housing project, its design, development, and evolution over time, and discuss the extent to which this project embodies the pervasive influence in Iran's urban life of one of the most important development aid programmes implemented by the U.S-American government during the Cold War period: Truman's 'Point IV Programme'.

The Point IV Programme

From the early-1950s throughout the 1960s, the U.S. provided technical assistance and economic aid to Iran, under the auspices of President Harry S. Truman's 'Point IV Programme'. As Douglas Little, former American ambassador in Tehran, noted, Truman's Point IV Programme was triggered by the 1946 Azerbaijan Crisis, a conflict that shifted the foreign policy of the United States to a Cold War mind-set.[12] The crisis started from a Soviet refusal to relinquish the north-west territories of Iran, which was interpreted by the Truman administration as a "probing action that presaged a more general Russian offensive in the Middle East," threatening the liberal, free, and capitalist world.[13] To prevent the Soviet influence spreading in the developing world, Truman announced a development-aid policy known as 'Point IV,' in his 1949 inaugural speech.

The Point IV programme was a technical cooperation and capital investment strategy aiming at promoting socio-economic and political reforms in the developing world.[14] To do so, the Point IV focused on encouraging private sector initiative, financing infrastructural projects, and providing self-help programmes as well as technical assistance to the host countries.[15] In other words, as Jonathan

10. See: Hamed Khosravi et al., *Tehran: Life within Walls: A City, Its Territory, and Forms of Dwelling* (Berlin: Hatje Cantz Verlag, 2017). See also: Hamed Khosravi, "Camp of Faith: On Political Theology and Urban Form" (Ph.D dissertation, TU Delft, 2014).

11. Rana Habibi, "Modern Mass Housing in Tehran. Episodes of Urbanism 1945-1979" (KU Leuven, 2015), 127-165.

12. Douglas Little, *American Orientalism: The United States and the Middle East since 1945* (Chapel Hill: The University of North Carolina Press, 2008).

13. Ibid., 121.

14. Deborah Kisatsky, "Voice of America and Iran, 1949-1953: U.S Liberal Developmentalism, Propaganda and the Cold War," *Intelligence and National Security* 14, no. 3 (1999): 160-85.no. 3.

15. For more reading, see: Jonathan Brewster Bingham, *Shirt-Sleeve Diplomacy : Point 4 in Action* (New York: John Day Company, 1954).

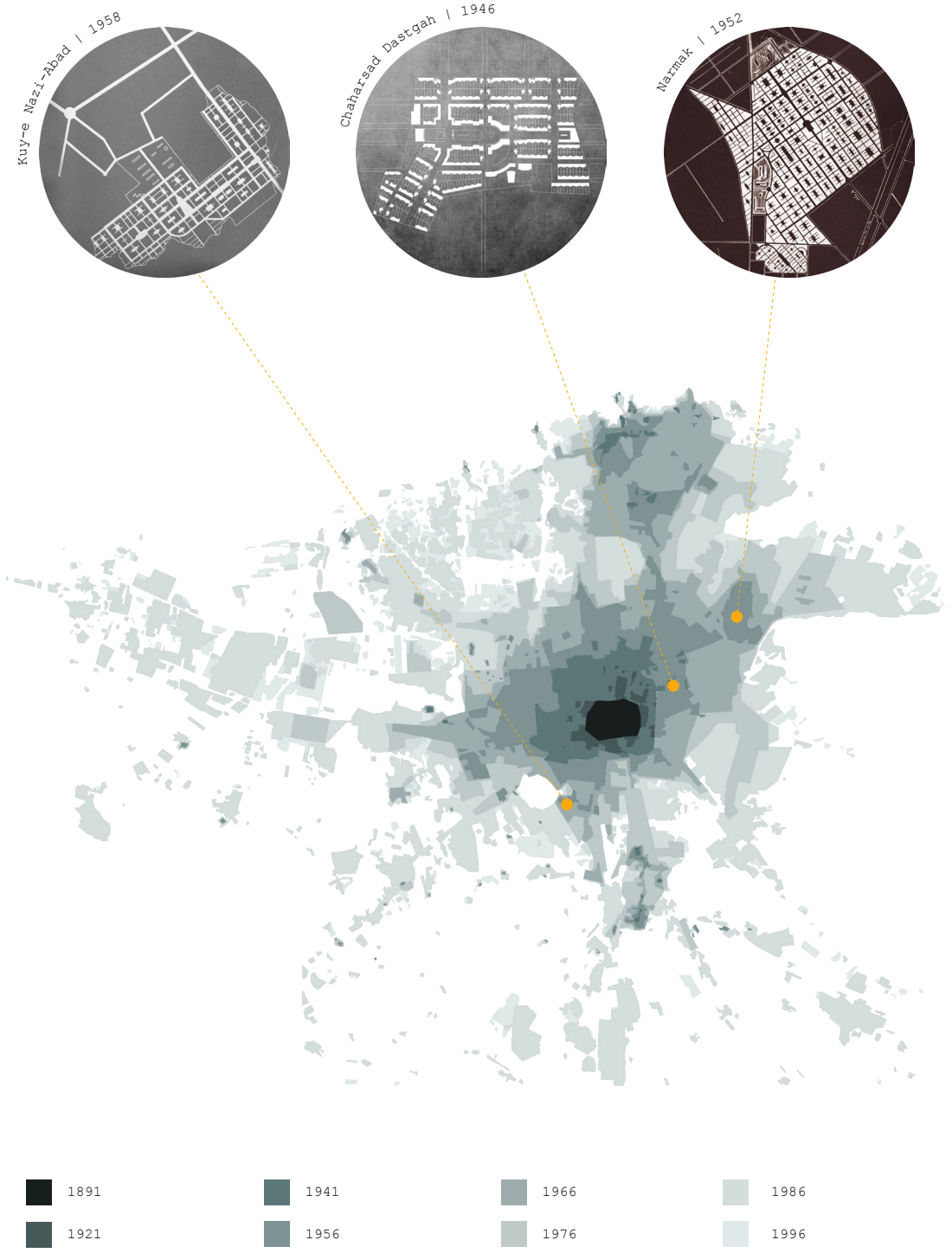


Figure 4.03: large-scale housing projects developed by the Iranian government in Tehran before 1958.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

Bingham put it, Point IV's 'shirt sleeve diplomacy' was an attempt to counter the menace of communism spreading quickly all over the developing world, "the only positive answer to communism" as one could read in the cover flap of his account of Point IV, published in 1954.[16]

Iran occupied a key position in this diplomatic operation.[17] In fact, the first agreement signed by the U.S.'s Department of State under the auspices of Point IV was made in October 19, 1950 with the cabinet of General Ali Razmara, the prime minister appointed by the Shah in June 26, 1950. As William E. Warne, Country Director of Point IV in Iran from 1952 until 1955, put it, this agreement "was really the beginning of our trial at making humane and neighbourly arts serve the interests of international harmony."[18] Yet, Razmara was assassinated on March 7, 1951, an episode that eventually led to the appointment of Mosaddeq as the new prime minister, on April 21, 1951 by the Iranian House of Parliament (*Majles-e Shoraye Meli*). Despite the new government's resistance to foreign economic domination, in 1952 new agreements were made between the U.S. and Iran under the auspices of Point IV programme. The agreement for the creation of a 'Joint Commission for Social and Economic Development', signed in December 1952, is arguably one of the most important diplomatic achievements of the Point IV programme in this period [Figure 4.02]. After Mosaddeq's ousting in August 1953, his successor, General Fazlollah Zahedi revalidated all previous agreements, and the U.S. investments in development aid in Iran grew rapidly.[19]

After the 1953 coup (the Operation Ajax), the implementation of the Point IV Programme in Iran actively pursued strategies to open the country's economy to the capitalist mode of production, and its society to Western patterns of everyday life. The Point IV focused on promoting 'liberal developmentalism', which would become a key influence in Iran's political, social and economic transformations from the mid-1950s through the 1960s. The political agenda of the American aid to Iran was designed to stimulate governmental policies to facilitate and improve industry, communication, transportation, general services, labour, and the housing stock.[20] Among these infrastructural projects, housing would be arguably one of the sectors with greater influence in the everyday life of the urban population.

Curiously enough, despite the American influence, the implementation of the structural reforms in Iran would follow the soviet-model of the five-year plans. From the mid-1950s on, housing would occupy an important position in Iran's plans for social and economic development. The Second and Third National Strategic Planning (1955-62 / 1962-67), known as Development Plans, extensively addressed the need for constructing public housing, an objective that intended to accommodate low-income families, and to improve the living conditions of government employees in urban areas.[21] Under American influence, the government's housing programme was designed to re-organise traditional

16. Ibid.

17. The Cold War situation highlighted the importance of Middle-East oil for U.S. national security and foreigner policy. One the one hand, Persian Gulf petroleum would generate gasoline for millions of automobile consumers in the U.S.; on the other hand, it would fuel the Marshall Plan for the recovery of Western Europe. Therefore, controlling and having access to Iran's Oil-reserves was crucial to the U.S. national security and foreigner policy. For more information see: Little, *American Orientalism*, 126.

18. William E. Warne, *Mission for Peace: Point 4 in Iran* (Indianapolis and New York: The Bobbs-Merrill Company, Inc., 1956), 47.

19. Ibid., 30-47.

20. Ibid.

21. Mohamad Ali Abdi, Sima Mehdizadegan, and Farzaneh Kordi, *Six Decades Housing Planning in Iran (1948-2008)* (Tehran: BHRC Publication, 2011).

family and economic structures, especially for civil servants and the working class.[22] In so doing, the plan aimed at changing the every-day life of people and their domestic space, re-educating women, and defining a new societal role for them. Furthermore, by expanding the capitalist mode of production through a continuous investment of capital in the built environment, the programme aimed to prevent Soviet influence spreading in the Middle East.[23]

New Housing and Land Policies

In the interwar period, during the rule of Reza Shah, the first Pahlavi monarch, housing was used as a vehicle to shape the political agency of Iranians. The new masterplan of Tehran, announced in 1937, is a case in point. Housing was used to colonise the land made available after the demolition of the old city walls. The aim of this project, as Hamed Khosravi noted, was "to neutralise the old *Mahalleh's* [neighbourhoods'] socio-political structure by imposing a new urban form."[24] In the aftermath of the Second World War, the agenda to disenfranchise the political agency of Tehran's middle class continued, displacing them to new housing districts built on the city's periphery [Figure 4.03]. This process created new forms of dwelling that would rapidly change in the 1950s, under the influence of western-educated Iranian bureaucrats and architects as well as foreign agents.

Through the economic aid and technical assistance provided by Point IV, many dams, roads, hospitals and factories were built around the country, and advanced agricultural equipment was provided for Iran's Ministry of Agriculture.[25] In collaboration with Iran's Ministry of Culture, new cultivating methods were taught to Iranian farmers, and an educational programme on hygiene was prepared for the people living in the rural countryside.[26] Aside from this, as Pamela Karimi insightfully examined in her *Domesticity and Consumer Culture in Iran,* the Point IV specialists developed a home-economy programme to help Iranian women to: "refine their domestic skills, improve the quality of their food and cooking methods, consider their family's health and hygiene, and develop 'good taste' in decorating and furnishing their homes".[27] To open Iran's market to the U.S-made products, a few American representatives, such as Max Thornburg, an American petroleum executive and government economic adviser, were assigned to promote free enterprise in Iran.[28] For conveying the new knowledge about planning and resource distribution, a group of American experts were also dispatched to Iran, to collaborate with their counterparts in the Finance and Planning Organisation (*Sazman-e Barnameh va Budjeh*) as well as in the Municipality of Tehran.[29]

These collaborations gained a new thrust in the mid-1950s, when the U.S. increased its financial aid. After the CIA-MI6 engineered coupe of 1953 against

22. Karimi, *Domesticity and Consumer Culture.*

23. According to Neil Smith, a logic of capitalism is to continually invest capital in the built environment "in order to produce surplus value and expand the basis of capital itself." For more reading, see: Neil Smith, *Uneven Development: Nature, Capital and the Production of Space* (Oxford and New York: Basil Blackwell, 1984), xiii.

24. Hamed Khosravi, "Dwelling. Contested Spaces: Toward New Frontiers for the City," in *Tehran. Life within Walls: A City, Its Territory, and Forms of Dwelling*, ed. Hamed Khosravi, Amir Djalali, and Francesco Marullo (Berlin: Hatje Cantz, 2017), 120.

25. For more reading, see: "The Point Four Program in Iran Report," (Tehran: Agriculture College of the University of Tehran, 1952). Also see: Khosravi, Camp of Faith.

26. Warne, *Mission for Peace: Point 4 in Iran.*

27. Karimi, *Domesticity and Consumer Culture*, 92.

28. Kisatsky, "Voice of America and Iran," 160-85.

29. Warne, *Mission for Peace: Point 4 in Iran*, 277-92.

Mosaddeq, the financial support brought forth by the Point IV programme grew rapidly, from 1.3 million dollars in 1951 to 73 million dollars in 1956.[30] With this financial stimulus, the Iranian government obtained the funds needed for a vast investment in the built environment. To do so, between 1955 and 1962, the Point IV officials such as Leslie Lane and Silvino da Silva in collaboration with Abdol-Hassan Ebtehaj, the U.S-educated head of the Finance and Planning Organisation (FPO), prepared Iran's Second Development Plan.[31] This national planning strategy mainly focused on the development of public housing, and the FPO dedicated a large part of its budget to the construction of housing for civil servants, in Tehran. Moreover, the FPO authorised the Construction Bank (*Bank-e Sakhtemani*), a state-led development agency, to define a mechanism by which both private and public developers and investors could be involved in the process of housing production in Iran.[32]

The need for developing such a mechanism might be seen as part of the state's strategy to make the built environment responsive to capital investment.[33] In the early-1950s, the Point IV officials largely distributed their available capital resources to the improvement of public health and education in Iran, and they had no interest in developing large-scale urban projects such as public housing, due to the high risk of investment.[34] As Rachel Weber argued, investment in such projects experiences uncomfortable friction since the capital is materialised in steel and concrete, restricting the capitalist demand for liquidity and the return of capital.[35] Therefore, employing mechanisms such as land and building regulations, as John Braithwaite contended, is instrumental to minimise the chances of failure in long-term investment, reducing the risk of development for capitalist investment.[36] In this view, it comes as no surprise that Golam-Hossein Ebtehaj, the pro-American mayor of Tehran, became involved in 1954 with Point IV experts in preparing a development plan for the city, where placing water supply systems and regulating land-use received a great deal of attention.[37] From the mid-1950s on, the revision of the existent planning instruments and regulations would be instrumental to stimulate new housing policies, control investment in urban development and real estate, and change Iran's home economic paradigms.

Regulating Iran's Home Economics

In the interwar period, Iranian officials and planners took inspiration mostly from European modernist models, particularly those used in France and Belgium, for urban governance, the development of municipal regulations, and urban design.[38] For example, Tehran's 1937 urban plan was based on a gridiron street pattern, prepared by the Municipality and Gabriel Guevrekian, a modernist architect who served as the secretary general of the CIAM group between 1928 and 1933.[39]

30. Howard Cincotta, "Mountain in Iran Named for American Nurse: Helen Bakhtiar Served in Bakhtiari Region as Nurse in 1950s," (23 March 2009).

31. Warne, *Mission for Peace: Point 4 in Iran*.

32. M Sarrafian, "Seyr-E Ejmali Maskan: Az Khanehay-E Arzangheymate Narmak Ta Aparteman-Haye Kan," [A Glossary on Housing: Form Low-cast Housing of Narmak to the Apartment Units of Kan.] *Journal of Bank-e Sakhtemani* 1, no. 5 (1961): 16-33.

33. According to Neil Smith, a primary function of the capitalist state is to provide legal frameworks that are conductive to the accumulation of capital, in order to produce surplus value and expand the basis of capital itself. For more reading, see: Smith, *Uneven Development*, xiii.

34. Warne, *Mission for Peace: Point 4 in Iran*.

35. Rachel Weber, "Extracting Value from the City: Neoliberalism and Urban Redevelopment," *Antipode, a Radical Journal of Geography* 34, no. 3 (2002): 519-40.

36. John Braithwaite, *Regulatory Capitalism: How It Works, Ideas for Making It Work Better* (Massachusetts and Glos: Edward Elgar Publishing Limited, 2008).

37. Alireza Aroozi, ed. *Khaterat-E Abol-Hassan Ebtehaj* (Tehran: Entesharat-e Elmi, 1992).

38. Kian Tajbakhsh, "Planning Culture in Iran: Centralisation and Decentralisation and Local Governance in the Twentieth Century (the Case for Urban Management and Planning)," in *Comparative Planning Cultures*, ed. Bishwapriya Sanyal (Oxon and New York: Routledge, 2005).

39. Mostafa Kiani, *Memari Dore Pahlavi Aval: Degarguni Andishe-Ha, Peydayesh Va Sheklgiri Memari Doreh 20 Saleh Moaser Iran 1299-1320* [The Architecture of First Pahlavi: The Transformation of Ideas and the Formation of an Architecture for a Period of 20 years 1920-1941] (Tehran: Markaz Chap Nashr Shahr, 2013).

The foreign influence in Iran's spatial planning can be found again in the 1941 urban regulation of Tehran.[40] Based on the principles of the Functional City, the regulation plan divided the city into three main functional zones: commercial and administrative quarter, residential district, and industrial area. The influence of modernist principles in Tehran's planning and urban regulations slipped over to the aftermath of the Second World War. Indeed, they formed a basis for drafting the Construction Manual of the City of Tehran (*Aeen Nameh Sakhtemani Shahr-e Tehran*) in 1952, a planning document that was created by the Municipality of Tehran in collaboration with the Construction Bank.[41]

The regulations drafted in the Construction Manual of the City of Tehran (CMCT) were mostly taken for granted as a set of rules for developing urban areas in Tehran.[42] Yet, they became a key instrument for regulating the significant increase of capital investment in Iran's capital city. In this view, it comes as no surprise to see that the CMCT would be further developed through the 1950s, and become one of the key tools used for developing multi-story residential buildings, in Iran.[43] From 1955 on, architects and planners from the Construction Bank and the Association of Registered Iranian Architects (*Anjoman-e Arshitekt-haye Irani-e Diplomeh*), such as Naser Badie and Abbas Adjdari who were later involved in the design of Kuy-e Kan, were in charge of revising the CMCT. The revision was almost completed in 1958 and it would become a main reference for a comprehensive regulation for building design and construction in Tehran that would become national law in 1960.

This law was called Tehran's Building Regulations (TBR). The TBR extensively addressed the spatial codes and guidelines that a private firm or an individual would have to follow to get building permission.[44] Described in 12 full pages without any illustrations, it outlined the building regulations in seven main categories including: issuing building permits, technical specifications, building heights, internal organisation of the buildings, design of exterior (street) façades, layout of roads and public open spaces, as well as programmatic zoning. In each category, a few articles were included, to leave no ambiguity for the implementation. Overall, the TBR included 7 main categories, 13 sub-categories, and a total number of 115 articles.

The first TBR category with 15 articles focused on the needed documents such as floorplans, sections, and technical drawings. This category addressed guidelines for applying and issuing permits regarding the construction, modification, and renovation of buildings, on the period of permission validity, and on the condition of providing using permission. This category also defined registered/graduated architects in the Association of Registered Iranian Architects and certified traditional builders from Iran's Ministry of Culture (*Vezarat-e Farhang*) as qualified agents for the design, construction, and supervision of buildings. The second

40. As mentioned in chapter 2, the first regulation regarding city construction was prepared in 1933. This act meant to implement a gridded street system on the traditional and interwoven urban fabric of Tehran. This regulation particularly focused on the expansion of streets and easing transportation by automobiles. In 1941, to regulate the construction of new buildings and streets, this act was divided into the law of correcting and expanding streets, and the law of issuing building permission. For more reading, see: Ali Madanipour, *Tehran: The Making of a Metropolis*, World Cities Series (Chichester: John Wiley & Sons, 1998).

41. In fact, the Construction Manual of the City of Tehran was a planning document drafted as a set of regulations only meant for designing houses and residential buildings, and not for public and industrial buildings.

42. Rather than addressing/analysing how the CMCT was drafted or further developed, most scholarly texts reflecting on the CMCT provided brief descriptions on how each category affected the building volume or the shape of facades. For instance, see: Ali Omranipour and Mehdi Afshar Asl, "Ta'amoli Bar Avalin Mogharrarat-E Sakhtemani Shahr-E Tehran," *Abadi* 18, no. 58 (2008). And Seyed Mohsen Habibi, Zahra Ahari, and Farshid Emami, "Az Forurikhtan Bavarha Ta Andisheye Shahrah-Ha: Pishineye Tarh-Haye Shahri Va Engare-Haye Shahr-E Tehran Az 1309 Ta 1345," [From Demolishing Fortifications toTthoughts of Highways: History of Urban Design in Tehran from 1930 till 1966.] *Soffeh Journal* 50, no. 20 (2009).

43. For more reading, see: Naser Badie, "Khaneh Va Maskan," [House and Housing.] *Journal of Bank-e Sakhtemani* 2, no. 1 (1958): 34-35. See also: Khosravi, Camp of Faith.

44. The Municipality of Tehran, "Aeen Nameh Sakhtemani Shahr-E Tehran," [The Constrcution Manual of the City of Tehran.] *Journal of Attorneys' Association* 5-6, no. 74 (1960): 109-21. See also: Khosravi, Camp of Faith.

category with 7 articles explained the technical specifications needed for building materials, structural stability, construction safety, and building installation system such as water piping and sewage. The third category including 19 articles described building codes regarding height and volume in relation to adjacent streets.[45] It also defined the depth of balconies and cantilevers toward public spaces.

The fourth category with 28 articles extensively focused on the hygienic condition of houses/residential units by addressing the needed surface area and openings for each activity, as well as the required natural lighting and ventilation for each space.[46] The fifth category with 11 articles described guidelines for designing façade plinths and stores' facades, and for materialising facades oriented towards public spaces. The sixth category with 19 articles particularly focused on mobility and transportation by explaining, in detail, the size and profiles of streets.[47] It also provided a few recommendations regarding the design of public spaces such as commercial centres. Ironically, this category gave no guidelines for organising outdoor communal spaces such as parks or public squares.[48] Finally, the last category with 13 articles paid attention to the functional zoning of urban areas, by which city was divided into three zones of commercial and administrative quarters, residential districts, and industrial areas.

As outlined above, most of the changes to the CMCT implemented in the TBR addressed issues related to regulations of land use and value, and the involvement of private agencies in the housing sector. This aspect, I would argue, testifies to the influence of the economic agenda embedded in the 'Point IV Programme' on Iran's spatial politics.

As mentioned earlier, to make Iran an integral part of the economic system of capitalism, the Point IV programme focused on liberal developmentalism and the role of private sectors in this process. To make real estate attractive to a wide range of private investors (small and big ones), one of the main contributions of the TBR was regulating the height of the new housing blocks. This category introduced a correlation between the building's morphological characteristics and the size of the streets, reinforcing the investment in both the transportation and real-estate sectors. Although the TBR defined the maximum building coverage as 40% of each plot, the category of 'building height' noticeably allowed property-owners alongside wider streets to erect higher residential buildings.[49] This bylaw testifies to the drive to use real-estate value and the extraction of surplus value from the land to stimulate private sector investment in the built environment. This would eventually happen, as, during the 1960s, more than 95% of the production and supply of urban housing was undertaken by the private sector in Iran.[50]

The building regulations were used to trade-off private ownership with the expansion of the public realm. In fact, the agenda behind this strategy was not

45. For instance, the height of residential buildings along the streets with a width of less than 8 meters was defined as 10 meters. When situated along the streets with a width of between 8 and 15 meters, the height was defined as the five fourth of the streets width. Furthermore, along the streets with a width of more than 15 meters, the building height was defined as unlimited. For more reading, see: "Aeen Nameh Sakhtemani Shahr-E Tehran," [the constrcution manual of the city of tehran.] ibid.: 112-14.

46. For instance, the TBR defined a minimum surface and volume of 7.5 square meters and 22.5 cubic meters for each habitable space (when the net height of the habitable space is 3 meters). The net height of habitable spaces was defined as between 2.7 and 3 meters, but for staircases and service spaces, this height was defined as 2.2 meters. Furthermore, one eighth of the surface of each habitable space was defined as the minimum size of total openings on the facade for the matter of natural lighting and ventilation. For more reading about this category, see: ibid., 114-16.

47. For instance, the planning document categorised streets in 5 types of main streets (with a profile more than 15 meters), streets (with a profile between 8 and 15 meters), alleys (with a profile less than 8 meters), Cul-de-sac, and corridors (cul-de-sacs with doors). Furthermore, the document defined the minimum width of cul-de-sacs driven from the streets with a length of less than 50 meters, between 50 and 100 meters, between 100 and 150 meters, between 150 and 200 meters, and more than 200 meters as 4, 6, 8, 10, and 12 meters, respectively. For more information about this category, see: ibid., 117-20.

48. This category briefly described public open spaces in three types of roundabouts, parks, and squares (collective gardens). For more reading, see: ibid.

49. In other words, by implementing this rule, the land-owners would be able to create more floor area from their land (square meters) to sell. The planning document also emphasised that the municipalities have the right to compel small landowners to combine their plots together for constructing multi-story residential buildings, by which developers might extract more surplus value from their investment in the land. For more information, see: ibid.

50. See: Habibollah Zanjani, "Housing in Iran," in *Encyclopedia Iranica*, ed. Ehsan Yarshater (Winona Lake: Eisenbrauns Inc., 2004).

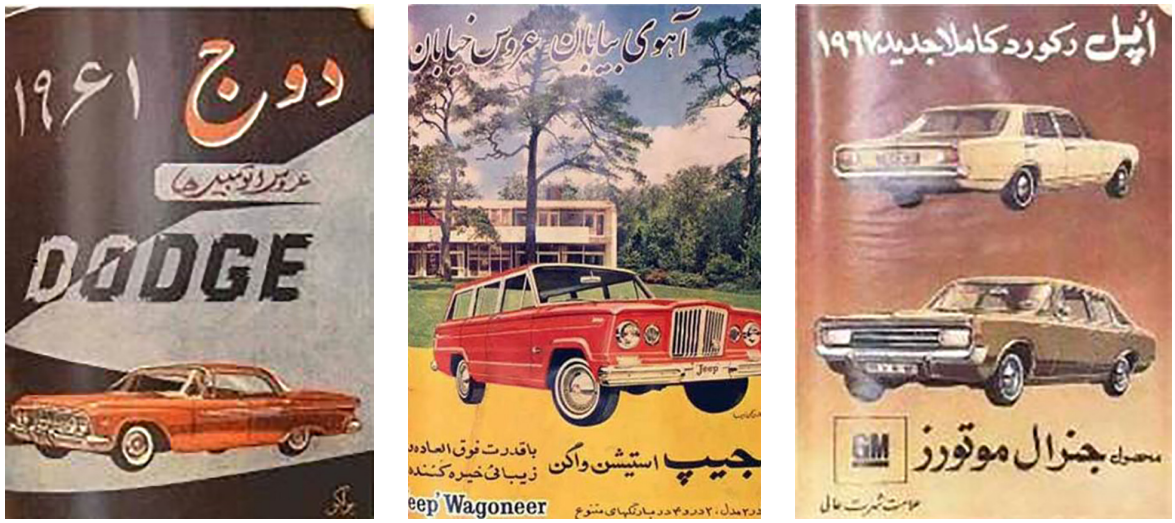


Figure 4.04: advertising American cars in Iranian popular journals.
Source: National Archive of Iran.



Figure 4.05: the Pelasco building, one of the first commercial centre in Iran, built in the late-1950s.
Source: photograph by Dmitri Kessel (1960's), *Life Magazine* Photo Archive, available at: http://images.google.com/hosted/life/f80951 a1e63d4975.html

necessarily to increase social spaces, quite the opposite. The TBR indirectly encouraged land-owners to allocate part of their land to public space; in so doing, the dedicated private land could be used for widening the street profiles, and the land-owners would gain permission, as their bonus, for erecting higher residential buildings. In other words, while the landlords would make more profits from constructing additional floor area, they would also contribute to promote private car consumption in urban areas. Following up the objectives of the Point IV programme, from the mid-1950s onwards, the export of American cars to Iran such as Jeeps, Cadillacs, and Chevrolets increased systematically. This can also be observed from numerous car advertisements published in popular Iranian magazines [Figure 4.04]. In the late 1950s, the fast growth of car ownership caused a variety of urban issues such as traffic jams and lack of parking spots alongside the roads.[51] Considering this context, TBR's title 'roads and public open spaces' extensively addressed the proportions and size of street profiles, deliberately promoting conditions for the circulation of private cars. For example, the TBR defined that in each street, the sum of the width of the sidewalks should not exceed one third of the street profile.

The TBR briefly described the main types of urban public spaces such as parks, squares, and roundabouts. Nevertheless, it addressed more emphatically the spatial codes needed for the construction of commercial centres such as the Bazaar.[52] This particular attention to the design of commercial centres might be seen as a result of a sharp rise in the export of American household commodities to Iran during the 1950s.[53] This also led to the construction of several commercial buildings in Tehran, such as Pelasco centre [Figure 4.05]. By opening Iran's market to U.S. products, the tendency towards consuming furniture and appliances, such as washing machines, dining tables, and cooler chests, increased dramatically among Iranians, and many people began to adjust, remodel, and furnish their homes based on recently available products.[54]

Considering the desire for using new household appliances and furniture, the Association of Registered Iranian Architects (ARIA) in collaboration with the Municipality of Tehran published a series of texts and illustrations in popular magazines and professional journals to help people re-organise their domestic environment.[55] For instance, in an article published in the *Journal of Bank-e Sakhtemani* and entitled 'the Internal House Arrangement' (*Arayesh-e Daroun Khaneh*), some interior models inspired by American references were featured to show the readers how to arrange and use their domestic interior.[56] The article also described the minimum surface area needed for each habitable space with a certain furniture arrangement. This growing concern with the organisation of the domestic environment influenced the regulations included in TBR's title 'internal organisation', which would contribute to change the domestic landscape of urban Iran.

51. M Schuur, "Marahel-E Seganeh Shahrsazi Shahr-E Tehran," in *Barresi-E Masael-E Ejtemaee Shahr-E Tehran [Investigating Social Problems of Tehran]*, ed. M Motmaeni, M Haghsheno, and M Hekami (Tehran: Tehran University Press, 1962). ed. M Motmaeni, M Haghsheno, and M Hekami (Tehran: Tehran University Press, 1962.

52. Since Bazaar is traditionally known as a place for commercial activities in Iranian cities, the TBR used this term to specifically address regulations regarding the construction of commercial public spaces such as new commercial centres, stores, shopping streets, and Bazaars. In the category of roads and public open spaces, parks, squares, public gardens, roundabouts, streets and Bazaars were defined as the main types of urban public spaces.

53. Pamela Karimi, "Dwelling, Dispute, and the Space of Modern Iran," in *Governing by Design: Architecture, Economy, and Politics in the Twentieth Century*, ed. Dianne Harris (Pittsburgh: Aggregate, 2012), 130-33.

54. Ibid., 128-29.

55. For more reading about the influence of Iranian architectural journals on the design of housing in Iran, see: Habibi, "Modern Mass Housing in Tehran," 127-165.

56. Souresrafil, "Arayesh Darun-E Khaneh," [The Internal House Arrangement.] *Journal of Bank-e Sakhtemani* 2, no. 1 (1958): 13-15.



Figure 4.06: the location of Kan in relation to the city of Tehran, in 1958 and 2016.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

Aside from determining minimum surfaces, the title 'internal organisation' gave a particular attention to the design of service spaces (i.e., kitchen, bathroom and lavatory), as well as their location in the layout of the house. For example, these spaces were required to be placed in direct relation to outdoor spaces.[57] Furthermore, the TBR proposed some new equipment, such as a mechanical ventilator for the oven, and water and sewage piping for the washing machine, which should be included in the kitchen's infrastructural layout.

Developing these guidelines for organising the domestic service spaces came hand in hand with a growing interest observed throughout the 1950s among Iranians for replacing traditional kitchens that were mostly constructed as a separate entity away from living activities, as discussed earlier in the first chapter, and integrating them into the house layout.[58] The Point IV would contribute to accelerate these social changes in general, and influence the home economics of Iranian families, in particular the education of high school girls. According to Karimi, the Point IV home-economics programme used model houses to teach Iranian women how to improve the quality of their cooking methods with new kitchen appliances, and how to decorate their homes based on the lifestyle of American nuclear family.[59] The home economic programme became so influential among Iranians that some men claimed that they would not marry any girl who had not received some of the training offered by the programme.[60] For these reasons, it was common for most Iranian women to follow the programme, and demanded new kitchens at home with American appliances such as refrigerator, oven, and washing machine.[61]

The pervasive changes that aimed to transform the domestic practices of Iranian families in urban areas, introduced in the late-1950s and early-1960s, would be tested in, and eventually disseminated by, a new housing neighbourhood developed on the outskirts of Tehran: Kuy-e Kan. This residential neighbourhood has been described as a fundamental example of large-scale housing development with multi-story apartment buildings in Iran.[62] On the other hand, as Pamela Karimi pointed out, Kuy-e Kan represents an early attempt of the Point IV programme to influence Iran's public housing development.[63] In the following section, I will examine the context from which Kuy-e Kan emerged.

Kuy-e Kan

During the 1950s, the expansion of industrial activities in the capital city, Tehran, led to a sharp increase in rural-urban migration. In response to this sharp increase in urban population, the Finance and Planning Organisation (FPO) worked in collaboration with the Iranian Ministry of Development and Housing, and Iran's High Council of Economy to establish the Housing Organisation (*Sazman-e*

57. The TBR also described that the service spaces can be placed along a patio, when its surface area is not less than 12 m^2 (3m by 4m). In case the service space only includes bath and water closet, the patio might be designed 6 m^2 (2m by 3m). For more information about this category and proposed regulations, see: "The Construction Manual," 115-16.

58. In traditional houses of ordinary Iranians, the kitchen was mostly constructed as a separate entity, away from living activities (i.e., eating, and sleeping), and adjacent to a courtyard. For more reading, see: Houchang Esfandiar Chehabi, "The Westernization of Iranian Culinary Culture," *International Society of Iranian Studies* 36, no. 1 (2003): 43-61.

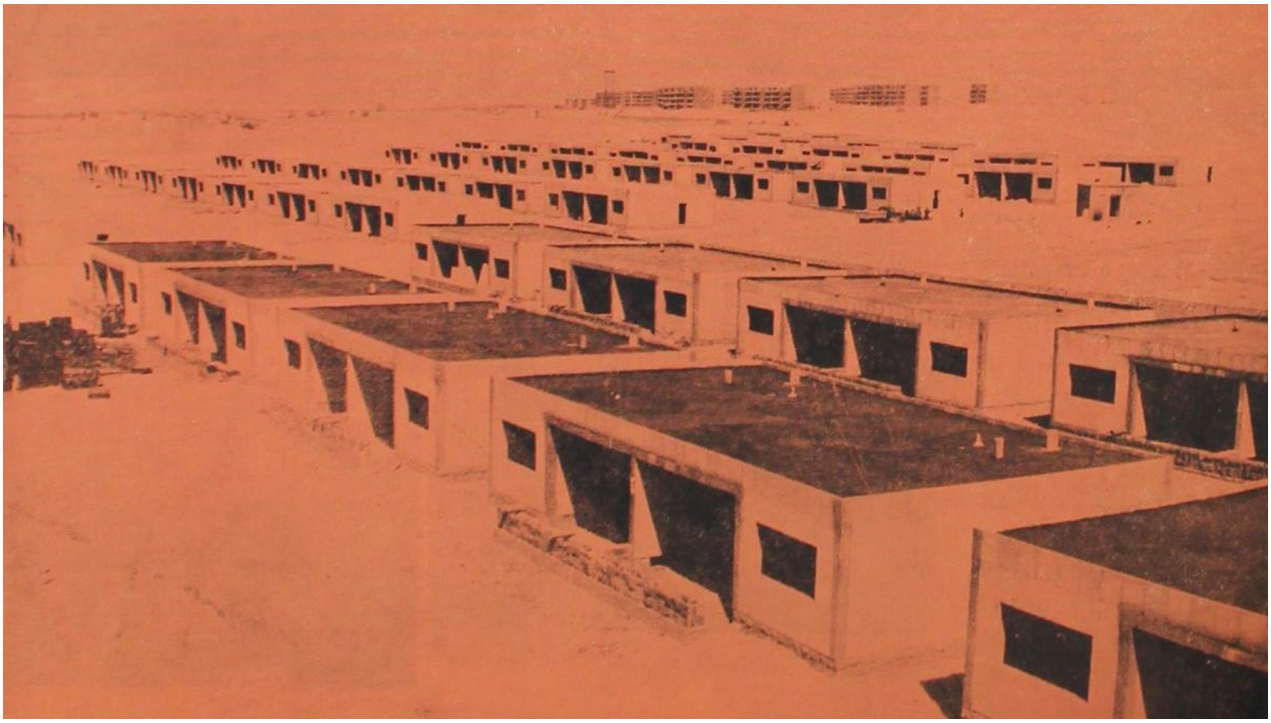
59. According to Karimi, the Point IV Programme used domestic space to introduce a new lifestyle, and it aimed to rationalise mindless routines of Iranian housewives and to reorient Iran's home economy toward Western mass-market consumption. For more information, see: *Domesticity and Consumer Culture*, 89-95.

60. Karimi, "Dwelling, Dispute, and the Space of Modern Iran."

61. See: *Domesticity and Consumer Culture.*

62. See: Hamed Khosravi et al., *Tehran: Life within Walls: A City, Its Territory, and Forms of Dwelling* (Berlin: Hatje Cantz Verlag, 2017); Hamed Talebi, Eesa Hojat, and Mohamad Farzian, "Kuy-Haye Maskuni Kutah Martabeh Tehran Dar Dore-Ye Pahlavi Dovom," [The residential Low-rise Neighbourhoods of Tehran Constructed during the Second Pahlavi.] *Honar-haye Ziba* 19, no. 1 (2013).

63. Karimi, *Domesticity and Consumer Culture*, 117.



FFigure 4.07: the semi-detached single-family houses (in the foreground) and the apartments of Kan (in the background).
Source: *Journal of Bank-e Sakhtemani* 2, no. 1 (1958): 19.



Figure 4.08: Kan under construction with Reema system.
Source: *Keyhan Newspaper*, 1960. 23/222.

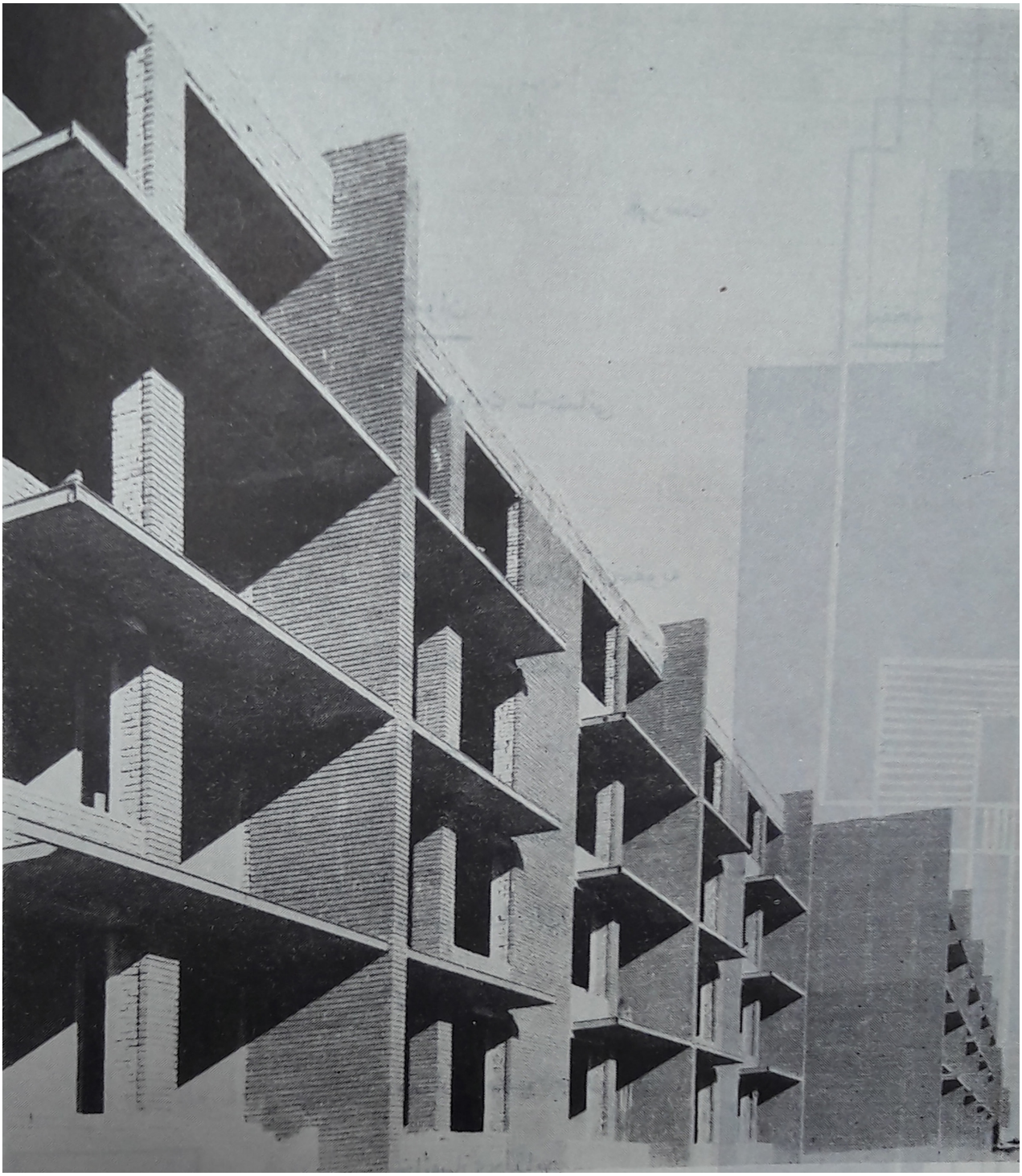


Figure 4.09: Kan under construction with SET construction system.
Source: *Journal of Bank-e Sakhtemani* 2, no. 5 (1961): 17.

Maskan) in 1958.[64] The new organisation assigned the Mortgage Bank (*Bank-e Rahni*), for the provision of funds to finance urban and rural housing projects. Additionally, the Housing Organisation made the Construction Bank responsible for the building and supervision of these projects. The collaboration with the private sector and professional corporations became an important component of the new housing policy. The Housing Organisation also authorised the Construction Bank to involve the private sector in the construction process, and to collaborate with the Association of Registered Iranian Architects (ARIA) in the design of public housing.[65]

In 1958, the Housing Organisation planned a pilot project for a new housing neighbourhood in the western-part of Tehran close to the village of Kan. This project was initiated for the sake of accommodating 40,000 people from working class families of new state-established industries and low-income government employees (civil servants). The Point IV section in Tehran provided the main financial means needed for the development of the project that later became known as Kuy-e Kan.[66] Situated in a peripheral area located six kilometres from the north-west border of Tehran, the project was planned on a site of 300 hectares, meant to be built in three phases: 1958-1964, 1964-1968, and 1968-1972 [Figure 4.06].

The first phase of Kuy-e Kan was developed in a part of the site with 120 hectares. In this area, water and sewage treatment plants had to be constructed, and a minimum number of 5,000 houses with a total floor area of two million square meters should be built.[67] To start the project, the Mortgage Bank assigned a budget to the Construction Bank for developing 200 single-family houses for the mid-tier employees of the Iranian Ministry of Finance and Economy, and 1,000 apartment units for low-income civil servants. Furthermore, the ARIA was commissioned to prepare the urban layout under the supervision of Naser Badie and Abbas Adjdari.

These two members of the ARIA played a crucial role in the design of Kan. As mentioned in the previous chapter, during the 1930s, Naser Badie studied town planning in the Institute d'Urbanism de l'Université de Paris, where he became familiar with the CIAM group and the principles of the Athens Charter.[68] Upon his return to Iran in 1940, Badie acted as the general technical director of the Municipality of Tehran, and became the deputy general manager of the Construction Bank, from 1956. The second member, Abbas Adjdari, also a founding member of the ARIA, studied architecture at École des Beaux-Arts Paris, and had a great interest in the design of large-scale housing with prefabricated systems. Adjdari's fascination with pre-fabrication can be seen, mainly from numerous articles that he published on this issue in the Iranian Journal of Architecture: *Arshitekt*.[69] In the early-1940s, Adjdari became a board

64. Editorial, "Majma-E Omumi-E Saheban-E Saham-E Bank-E Sakhtemani," [general assembly of Bank-e Sakhtemani stakeholders.] *Journal of Bank-e Sakhtemani* 1, no. 8-9 (1957): 48.

65. Abbas Adjdari, "Ehdase Mojtama-Hay-E Maskuni Dar Arazi-E Kan, Tehran," ed. The Ministry of Housing and Urban Development (Tehran: Markaz-e Asnad-e Iran, 1962).

66. "Marahel-E Amali-E Projhe-Ye Azim-E Khanesazi-E Tehran [the Main Operational Stages of Tehran's Mass Hosuing Project]," *Tehran Post*, 1 May 1960.

67. "Shahr-E Jadid-E Kan Ba Panj-Hezar Aparteman [the New City of Kan with 5,000 Apartments Units]," *Iran-e Ma*, 26 June 1960, 2.

68. See: "Akhbar," [News.] *Arshitekt* 1, no. 4 (1946): 153.

69. For instance, see: "Masale-Ye Tahiy-E Maskan Dar Tehran Va Shahrestan-Ha," [The Problem of Housing in Tehran and the Other Iranian Cities.] ibid., no. 1: 15-17.

member of the Mortgage Bank, and from 1958 on, he served as the general technical director of this governmental organisation, a position that helped him to focus on promoting the application of industrialised and prefabricated building methods for public housing development in Iran.

For the design of the single-family houses in Kuy-e Kan, the ARIA proposed a semi-detached house type with two dwelling units, to be repeated 100 times; and for the construction of apartment units, the ARIA designed four-story walk-up housing blocks [Figure 4.07].[70] Both the layout of the single-family houses and apartments were designed based on the spatial requirements included in the revised version of the CMCT that would eventually become rule of law in Tehran's Building Regulations (TBR) published in 1960.[71] In fact, as mentioned above, Naser Badie and Abbas Adjdari, the two key figures in the design of Kuy-e Kan, had been actively involved in the revision of the Construction Manual of the City of Tehran, which would become a main reference for drafting the rules and regulations included in the TBR.

Two building fabrication systems were tested in Kuy-e Kan. For the construction of the individual semi-detached houses, the designers suggested a prefabrication method with concrete panels, while for the apartment blocks, they combined this system with a steel skeleton. [Figure 4.08].[72] Through a tender procedure, the Construction Bank chose a British-Iranian construction company, Reema-Iran (a company that was also active in the oil town of Abadan) to supply the prefabricated reinforced concrete panels. The Construction Bank also chose a newly established local company called SET (a company employing American and French engineers in its technical bureau) to produce the structural system based on a steel skeleton filled with in-situ concrete slabs [Figure 4.09].[73] The design of the project was completed in the end of 1958, and the construction process started officially in 1959. The housing typology of Kan was considerably different, at all scales, from housing projects developed earlier by the government.[74] From the outset, Kuy-e Kan became a pilot project for a new domestic landscape in Tehran.

Kuy-e Kan's Urban Layout

Arguably, the design of the master plan for Kuy-e Kan was strongly influenced by the ideological framework of the functional city. This is clearly illustrated by the morphological and typological characteristics of the urban layout where zoning and division of living-leisure activities formed the backbone of the project [Figure 4.10]. The importance given to motorised circulation is noticeable from the layout of the whole neighbourhood. The 120-hectare site of Kan was divided into four zones of about 55, 30, 20, and 15 hectares, each one enclosed by a wide

70. Each story has a surface of 180 m2, where 14 m2 and 166 m2 (2 x 83 m2 - gross area) were dedicated to the staircase and the two living units, respectively. Furthermore, each house has a living room with 20 m2, a big bedroom with 16 m2, a small bedroom with 12 m2, a kitchen with 6 m2, a service space (bathroom and toilet) with 5 m2, a balcony with 8 m2, and a central corridor with 5 m2 connecting these spaces together.

71. Iran's Plan and Budget Organisation, "Briefing Report," ed. Housing Development (Tehran: Iran's Housing Organisation, 1959).

72. "Seyr-E Ejmali Maskan," [An Overview on Houing Production.] *Journal of Bank-e Sakhtemani* 2, no. 1 (1959): 32-33.

73. Sherkat-e Sahami Sakhtemani Reema, "Sakhteman-Haye Kan," ed. Housing Department (Tehran: Iran's Housing Organisation, 1962).

74. Talebi, Hojat, and Farzian, "Kuy-Haye Maskuni."

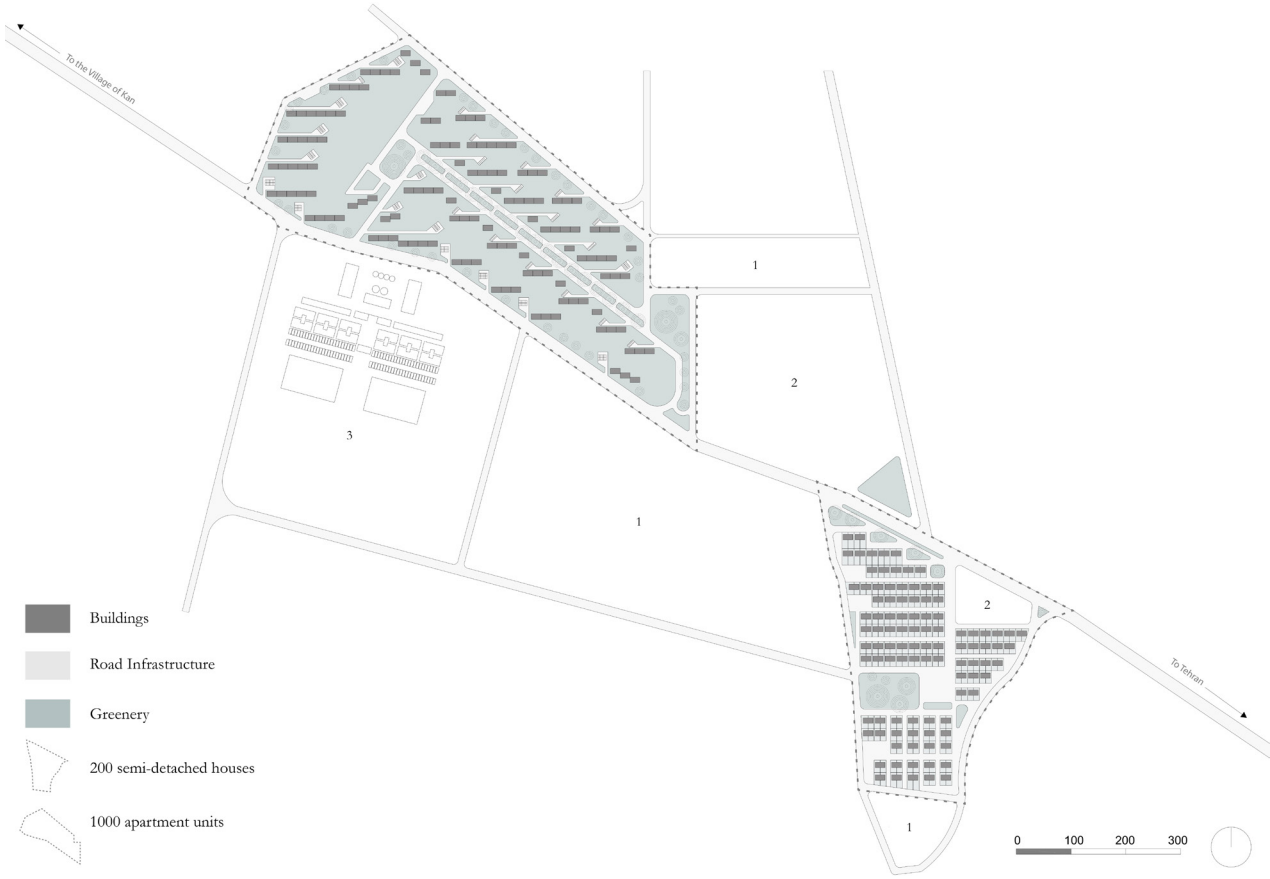


Figure 4.10: the urban layout of Kuy-e Kan. The area reserved for future housing development is indicated with no1; the area, reserved for the construction of public amenities is shown with no2; and the site of water and sewage plant is indicated with no3.
Source: Redrawn by Mohamad Sedighi and Federico Pellegrini, based on the documents available in the National Archive of Iran, accessed August 2016.

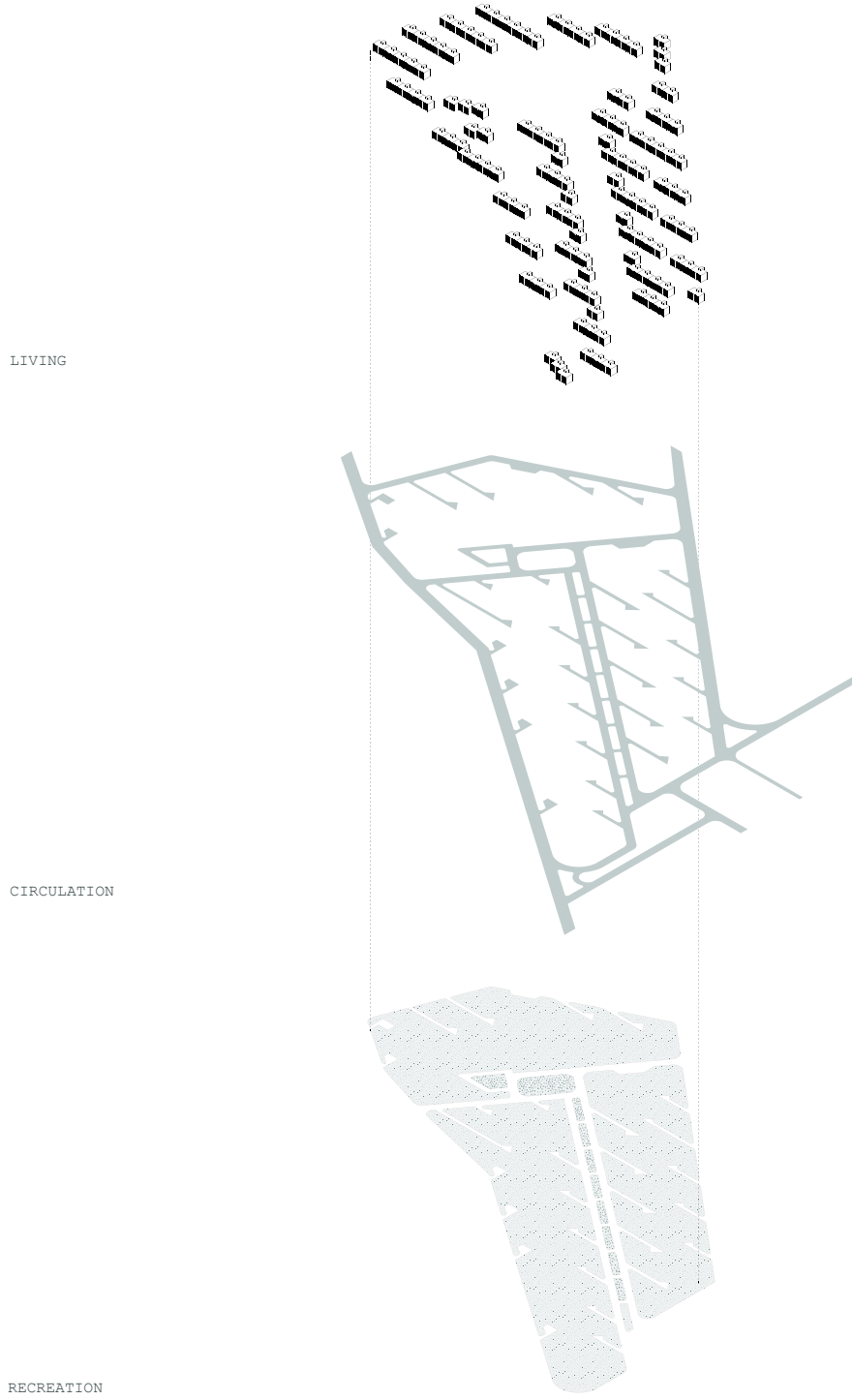


Figure 4.11: zoning principles and multiple layers of Kan's urban layout.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

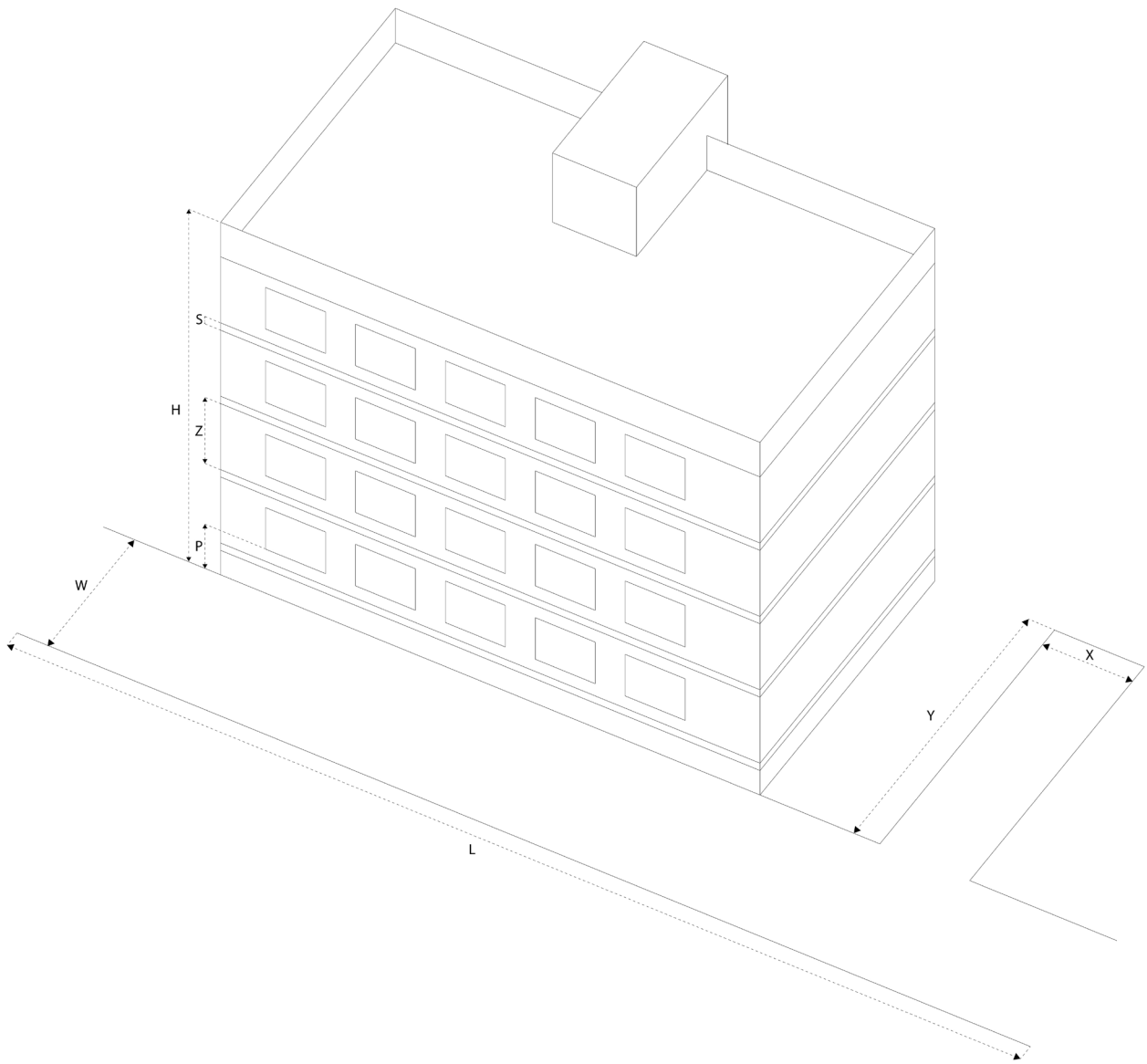


Figure 4.12: the modified version of the CMCT as a point of departure for designing Kuy-e Kan. The diagram shows the synthesis of building regulations and the design of Kan as follows:
CMCT: 8m < W < 15m, but if L > 500m then W > 10m; in Kan: W = 12m
CMCT: X = 4m, if Y < 50m & L > 250m; in Kan: X = 4m
CMCT: H = 5/4 W, if 8m < W < 15m; in Kan: H = 12m
CMCT: 2.7m < Z < 3.2 m, P > 1.8m, & 0.25m < S < 0.5m; in Kan: Z = 2.9m, P = 1.8m, & S = 0.3m
Source: Mohamad Sedighi.

road for vehicular circulation.[75] This zoning strategy also helped the Construction Bank to involve private and public developers in the construction process, at various scales. As the local newspaper *Journal of Tehran Economist* reported, the division and distribution of land among multiple developers enabled the Bank to carefully supervise the execution of this large-scale project.[76] Nevertheless, this strategy might also be seen as an attempt by the government for controlling the land-use value and investment in Kan's built environment.

The functional separation of the neighbourhoods followed the principles of the Athens Charter, and even further stressed with a careful zoning of the different housing typologies [Figure 4.11]. The semi-detached houses were constructed in groups around a central communal square. The apartment units were realised in 125 identical residential blocks, juxtaposed in groups of one to six blocks, forming a variety of slab combinations. These slabs were located on either side of a central boulevard, placed in such a way as to provide a north-south orientation to the dwelling units. Two roundabouts were designed at the two ends of the boulevard, and a ring road was provided to run around this area. Through a series of cul-de-sacs, the residential blocks were connected to the main roads; parking space was provided alongside the roads and in the open space between the blocks.

As in many other examples of modernist urban design, Kuy-e Kan emphasised the infrastructure for motorised traffic in general, and in particular for private car circulation and parking. For instance, all the apartments were placed adjacent to the main roads to provide a direct access from the streets to the buildings, as shown in figure 4.10. The street profiles were designed according to their position in the hierarchical sequence of traffic load, from the main roads connecting with the city, to the cul-de-sacs. The standard profile for the main roads was 12 meters, while the width for the cul-de-sacs was 4 meters.

The correlation between the street profile and the height of buildings in Kuy-e Kan was designed in accordance with the revised version of the CMCT, presented in 1958, and with the TBR regulations that were being drafted in the late-1950s to be published in 1960. For example, the height of Kan's apartment blocks located alongside a 12-meter ring-road, did not exceed a five-fourths proportion of the street profile (i.e., 15 meters) as the building regulations prescribed [Figure 4.12]. The new paradigm of domestic space introduced by the western references and proposed by the ARIA would influence the technical detailing and specifications of the buildings, as well.[77] In the documentation submitted to request the building permit, the mechanical and electrical drawings suggested an interior arrangement prepared to accommodate new home appliances. For instance, the power plugs layout indicated the areas that new electrical appliances such as refrigerator, television, and stand lamps should be placed in the homes. This layout alone implied already a certain lifestyle inspired by western references [Figure 4.13].

75. Considering the topography of the site, approximately one thirtieth of the biggest zone, situated in the south-west of Kan, was dedicated to the development of a water and sewage treatment plants, and the rest was kept for developing future housing projects. The smallest zone, located in the north-east of Kan, was reserved for the development of public services and amenities such as a Fire-Station and commercial buildings. Finally, the south-west part of the site with 20 hectares and the north-west area with 30 hectares were allocated to the construction of 200 and 1,000 houses, respectively.

76. "1,200 Khaneh Baraye Karmandan Doulat Dar 15 Mah," [1,200 houses for the government employees in 15 months.] *Journal of Tehran Economist* 4, no. 34 (1961).

77. The category of issuing building permission described the documents needed to issue the building permission. It also stated that the construction drawings should be provided by the registered architects. Interestingly, in the upgraded version of the TBR, traditional builders, certified from the Ministry of Culture (MC) were also permitted to do so. In 1953, an agreement was signed between the U.S. Point IV and the MC, by which the Point IV undertook the responsibility of proving a curriculum for training and instructing uneducated/unskilled labourers in the construction fields. As a result, in 1955, the Point IV provided a curriculum to do so. For more information, see: Iran's Point IV Section, "The Extention of Point Iv Operational Agreement ", ed. United States of America Operations Mission To Iran and Iran's Ministry of Culture (Tehran: The Mutual fund Iran-America Administration, 1953), 3.

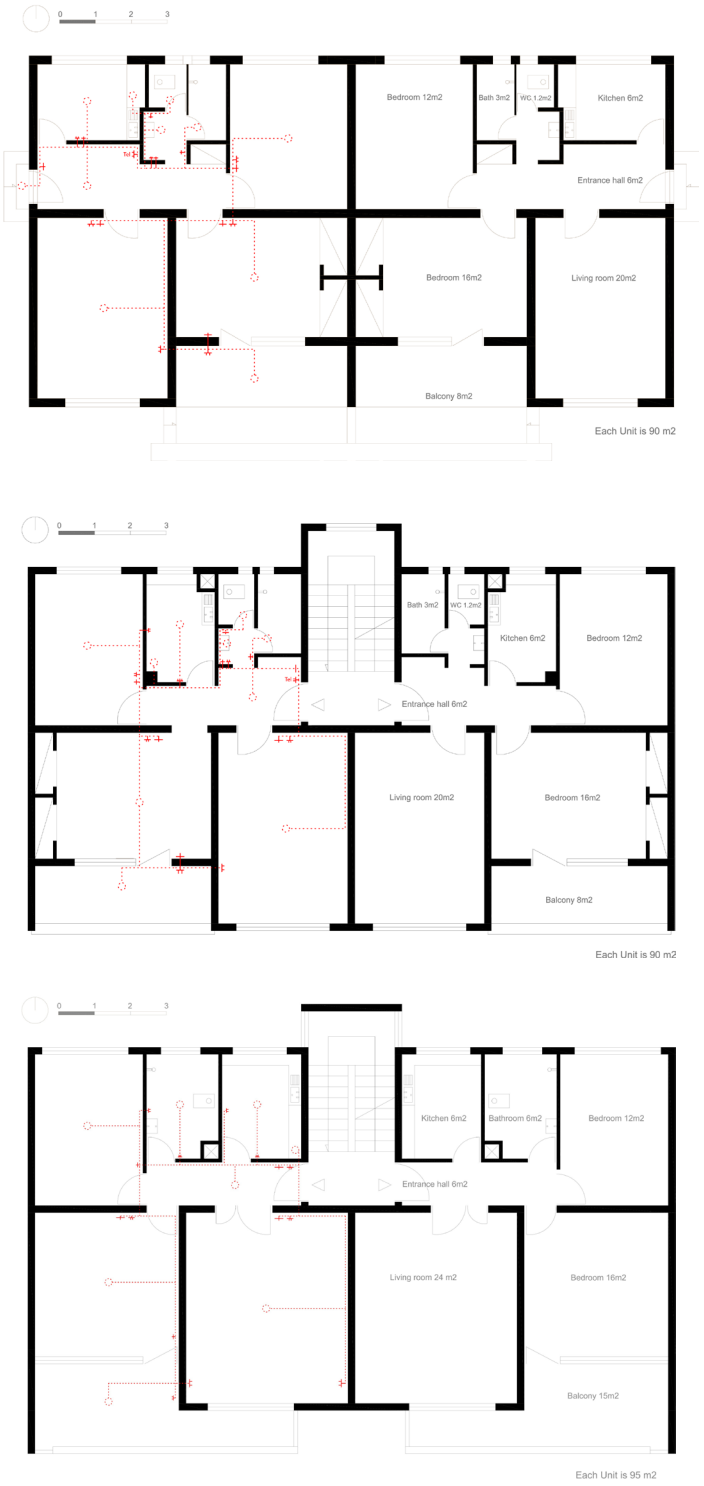
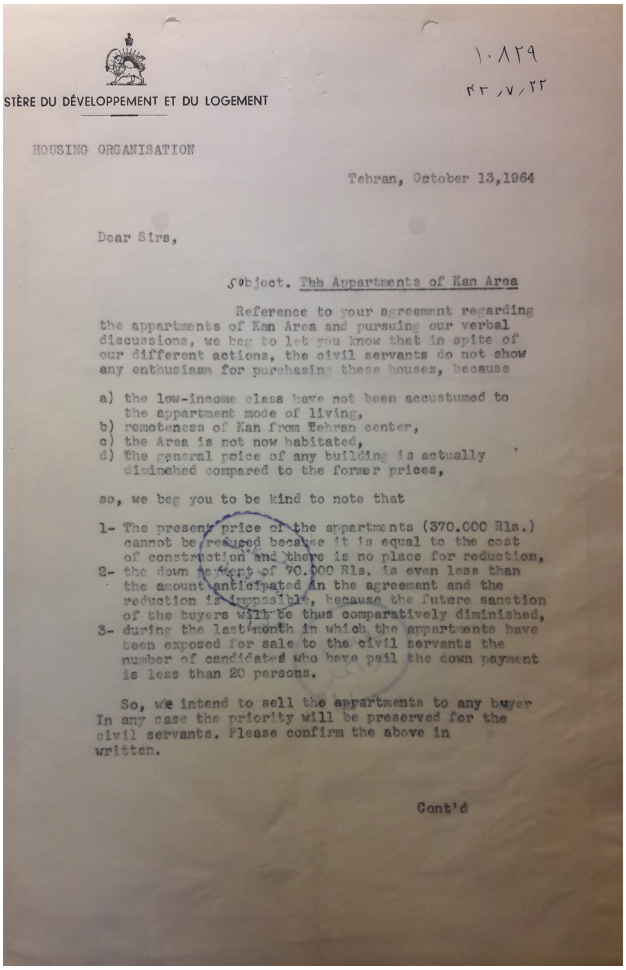


Figure 4.13: identical floorplans of Kan's apartments and semi-detached houses with Reema-Iran and SET system, showing the power plugs layout. Source: Mohamad Sedighi.



STÈRE DU DÉVELOPPEMENT ET DU LOGEMENT

HOUSING ORGANISATION

Tehran, October 13,1964

Dear Sirs,

Subject. The Appartments of Kan Area

Reference to your agreement regarding the appartments of Kan Area and pursuing our verbal discussions, we beg to let you know that in spite of our different actions, the civil servants do not show any enthusiasm for purchasing these houses, because

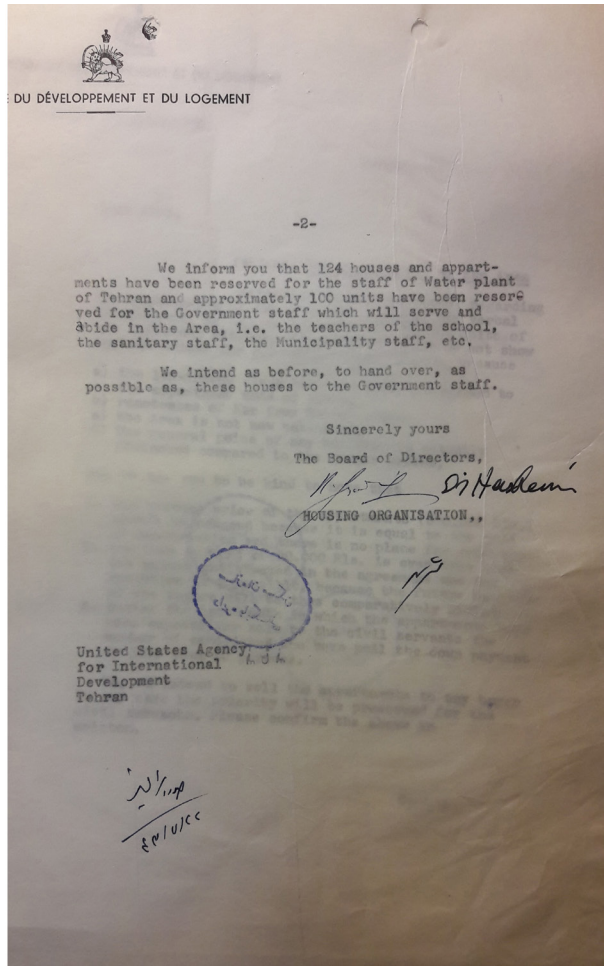
a) the low-income class have not been accustumed to the appartment mode of living,
b) remoteness of Kan from Tehran center,
c) the Area is not now habitated,
d) the general price of any building is actually diminished compared to the former prices,

so, we beg you to be kind to note that

1- The present price of the appartments (370.000 Rls.) cannot be reduced because it is equal to the cost of construction and there is no place for reduction,
2- the down payment of 70.000 Rls. is even less than the amount anticipated in the agreement and the reduction is impossible, because the future sanction of the buyers will be thus comparatively diminished,
3- during the last month in which the appartments have been exposed for sale to the civil servants the number of candidates who have paid the down payment is less than 20 persons.

So, we intend to sell the appartments to any buyer In any case the priority will be preserved for the civil servants. Please confirm the above in written.

Cont'd



DU DÉVELOPPEMENT ET DU LOGEMENT

-2-

We inform you that 124 houses and appartments have been reserved for the staff of Water plant of Tehran and approximately 100 units have been reserved for the Government staff which will serve and abide in the Area, i.e. the teachers of the school, the sanitary staff, the Municipality staff, etc.

We intend as before, to hand over, as possible as, these houses to the Government staff.

Sincerely yours

The Board of Directors,

HOUSING ORGANISATION,,

United States Agency
for International
Development
Tehran

Figure 4.14: the letter exchanged between Iran's Housing Organisation and the U.S. Point IV Section in Tehran about the project of Kan.
Source: National Archive of Iran, accessed July 2016.



Figure 4.15: the use of steel structure for the construction Kan's apartments.
Source: National Archive of Iran, accessed August 2016.

Aside from the layout of the interior, the domestic spaces were also designed based on guidelines that would eventually be described in the TBR. For instance, a surface of 1.0x1.2 meter and of 2.0x1.5 meter was allocated to the lavatory and bathroom, respectively; and the service spaces (i.e., kitchen, bathroom, and toilet) were placed adjacent to the façade. The habitable spaces were allocated an area larger than 7.5 square meters, and the window area in each room was bigger than one-eighth of the room surface.[78]

Kuy-e Kan was designed as a pilot project where the spatial codes and regulations that would become part of the TBR were tested. This initiative testifies to Iran's governmental authorities' deliberate attempt to promote new dwelling practices among ordinary urban Iranians. However, the influence of the U.S-American geopolitics of development aid under the auspices of the Point IV programme played an influential role.

Importing Western Housing Standards and Ideals

During the 1950s, the design of most public housing schemes in Iran was based on the development of single-family houses in suburban areas, a typology which was comparable with the models used in the U.S. for affordable housing development.[79] While the suburban sprawl of detached houses was seen as the most obvious reference of the American domestic ideal, in Iran the Point IV programme explored a different model. From the late-1950s and throughout the 1960s, the Point IV section in Iran provided funding and technical assistance mainly for the construction of mid-rise residential apartments that housed lower-tier civil servants in Tehran.[80] However, in a letter sent by the Iranian Housing Organisation to the U.S. Agency for International Development in Tehran, some Iranian officials complained about the use of this housing type [Figure 4.14].

Aside from financial considerations, this letter clearly expressed two significant issues related to the design of Kuy-e Kan: the remoteness of Kan from the centre of Tehran, and the unfamiliarity of the low-income class with the apartment mode of living.

Kuy-e Kan was designed strategically close to the valley of Kan, which is known for its rich underground water resources for drinking. In a city that continuously suffers from water scarcity due to its absence of proper water supply systems, this location was an ideal place for developing new urban projects and housing schemes.[81] This area was also an ideal tabula rasa for the designers of Kan who aimed to promote new living standards and lifestyles, such as collective living (apartments mode of living), as some of the members of the ARIA observed in post-war Europe. Further, the remoteness of the new location was nevertheless

78. The modified version of the CMCT defined 22.5 cubic meters and 7.5 square meters as the minimum volume and area needed for a habitable space.

79. Habibi, *De La Cite a La Ville*.

80. Iran's Housing Organisation, *Kholase-Ie Az Faaliyat-Haye Sazman Maskan Dar Amr-E Khanehsazi Dar Gozashteh, Hal, Ayandeh* [An overview of Iran's Housing Organisation Activities in Housing Development in the Past, Now, and Future] (Tehran: Iran's Housing Organisation, 1976).

81. Hushang Bahrambeygui, "Tehran: An Urban Analysis" (Durham University, 1972).



Figure 4.16: residential slabs in Narmak (top) and Nazi-Abad (bottom).
Source: National Archive of Iran, accessed April 2016.

mitigated by the belief that the dissemination of personal cars as the primary type of transportation would make it accessible for all. This was, of course, in tune with the American planning approach, and with the ideal of the suburban garden city. The Point IV officials in Tehran sponsored this choice, which would inevitably promote the use of (American) cars among ordinary people. In fact, the newly established the Workers' Welfare Bank (*Bank-e Refah-e Kargaran*) provided the residents of Kuy-e Kan loans to purchase household appliances and a private car.[82]

The influence of the American business corporations went beyond these commodities. As mentioned earlier, Kuy-e Kan's housing blocks were built with a combination of steel skeleton and concrete prefabricated panels that were not based on available building materials local resources [Figure 4.15]. In fact, up until 1965, when the U.S.S.R. helped the Iranian government to build a steel plant near Isfahan, there was almost no steel industry in Iran capable of producing steel-frames in a large scale for mass housing development.[83] Steel was mostly used for railway construction, and only a small factory established near the city of Karaj in 1939 manufactured steel-beams. These were mainly used to build two-story houses in combination with the load bearing brick walls, as shown in previous chapters.[84] However, the structural stability of this low-tech construction system was always a matter of concern for the Construction Bank and the Municipality of Tehran, since it was not able to resist seismic activities.[85] Accordingly, since 1958 the Construction Bank promoted the use of a hybrid steel-frame and reinforced-concrete structure for the construction of residential buildings, in Tehran.[86]

However, lacking a well-established steel industry and sound technical knowledge related with its production, Iran was largely dependent on the American technical assistance and on the import of structural steel from the U.S. Between the early-1950s and the mid-1960s, the U.S. was the leading steel producer in the world, focusing on international markets to sell its products.[87] The market for American steel was heavily sponsored by the Point IV agenda, by which the construction industry of the developing world became a main host for the U.S. steel industry.[88] This happened especially through the export of U.S-made building materials such as steel-bars and frames.[89] In the case of Iran, it seems that an increase in the import of these materials took place in 1954, when the Iranian government signed an agreement with the Eisenhower administration. The deal stipulated that in exchange with raw materials, such as ironstone, the U.S. would provide structural steel and expertise for Iran's construction industry.[90] Subsequently, since the late-1950s, the use and application of steel skeleton increased significantly, in Tehran; and this structural system became common in the development of new housing types (i.e., towers and slabs), that surfaced all over Iran [Figure 4.16].

82. Soleyman Zaker, "Khane-Haye Kan Be Bank-E Rahni Vagozarshod [the Houses of Kan Were Assigned to the Bank-E Rahni]," *Keyhan*, 9 January 1964, 28.

83. Willem Floor, "Steel Industry in Iran," XIII (2005), http://www.iranicaonline.org/articles/steel-industry-in-iran.

84. Naser Badie, "Khaneh Sazi Omumi Dar Iran," [Public Housing in Iran.] *Journal of Bank-e Sakhtemani* 1, no. 8 & 9 (1957): 11-16.

85. E Moeenfar, "Sakhteman-Haye Ajori-E Tehran Va Khatar-E Zelzeleh," [The Brick-made Buildings of Tehran and the Danger of Earthquake.] *Bank-e Sakhtemani* 2, no. 2 (1958): 20-21.

86. For more information, see the pages of the journal of *Bank-e Sakhtemani*, since 1958 (no: 4, 5, and 6).

87. The Steel Panel Committee on Technology and International Economic and Trade Issues, *The Competitive Status of the U.S. Steel Industry: A Study of the Influences of Technology in Determining International Industrial Competetive Advantage* (Washington: National Academy Press, 1985).

88. Jeffrey W. Cody, *Exporting American Architecture 1870-2000*, ed. Dennis Hardy, Planning, History and Environment Series (London and New York: Routledge, 2003), 136-50.ed. Dennis Hardy, Planning, History and Environment Series (London and New York: Routledge, 2003

89. Ibid.

90. The Joint Commission of Iran and America, "A Summary of Agreements," (Tehran: The Joint Commission of Iran and America, 1954).

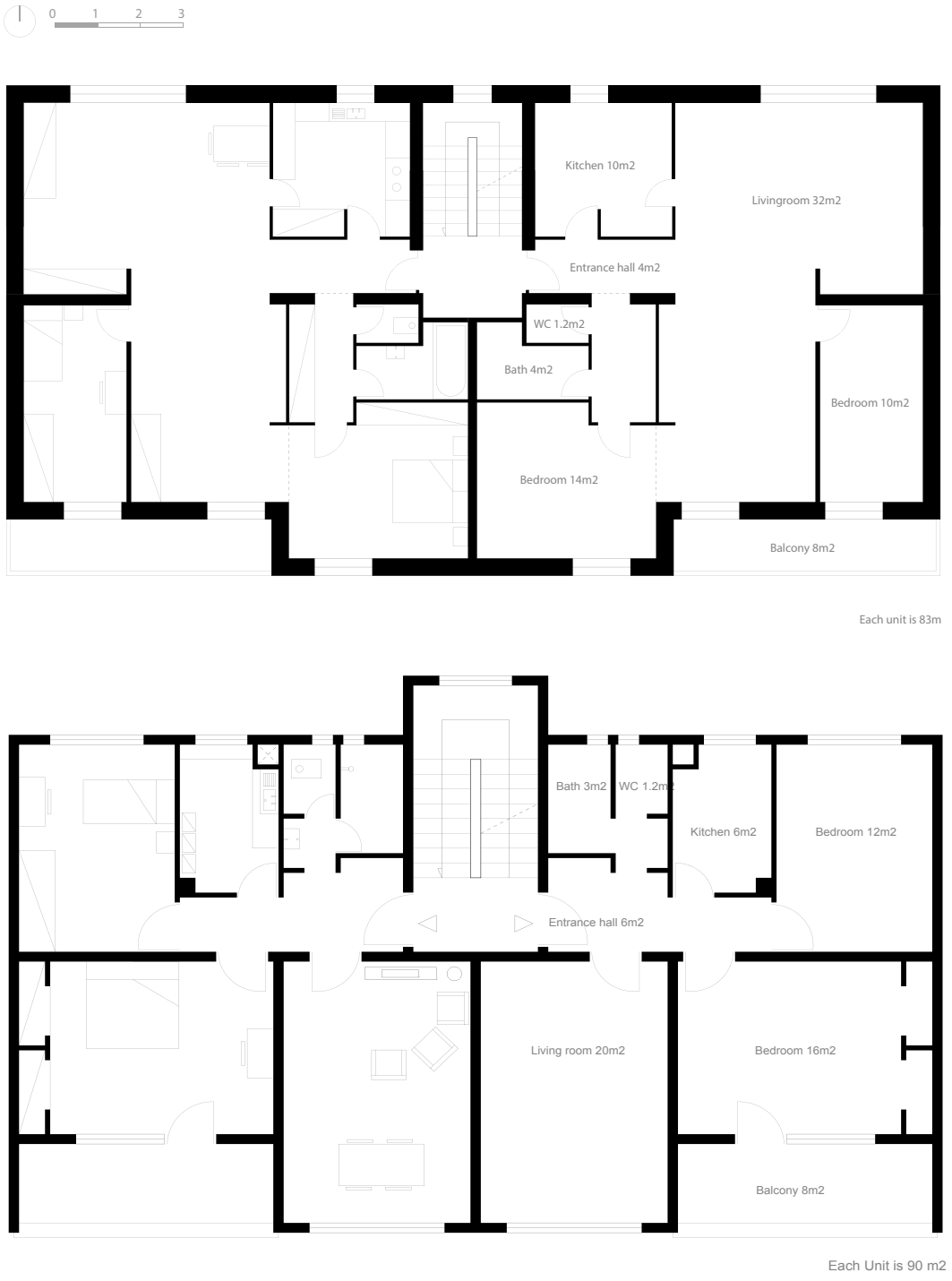


Figure 4.17: the layout of a typical apartment block in Cité Rotterdam designed by Eugène Beaudouin, in 1952 (top), and the layout of a typical apartment block in Kan (bottom).
Source: drawn by Mohamad Sedighi in collaboration with Federico Pellegrini.

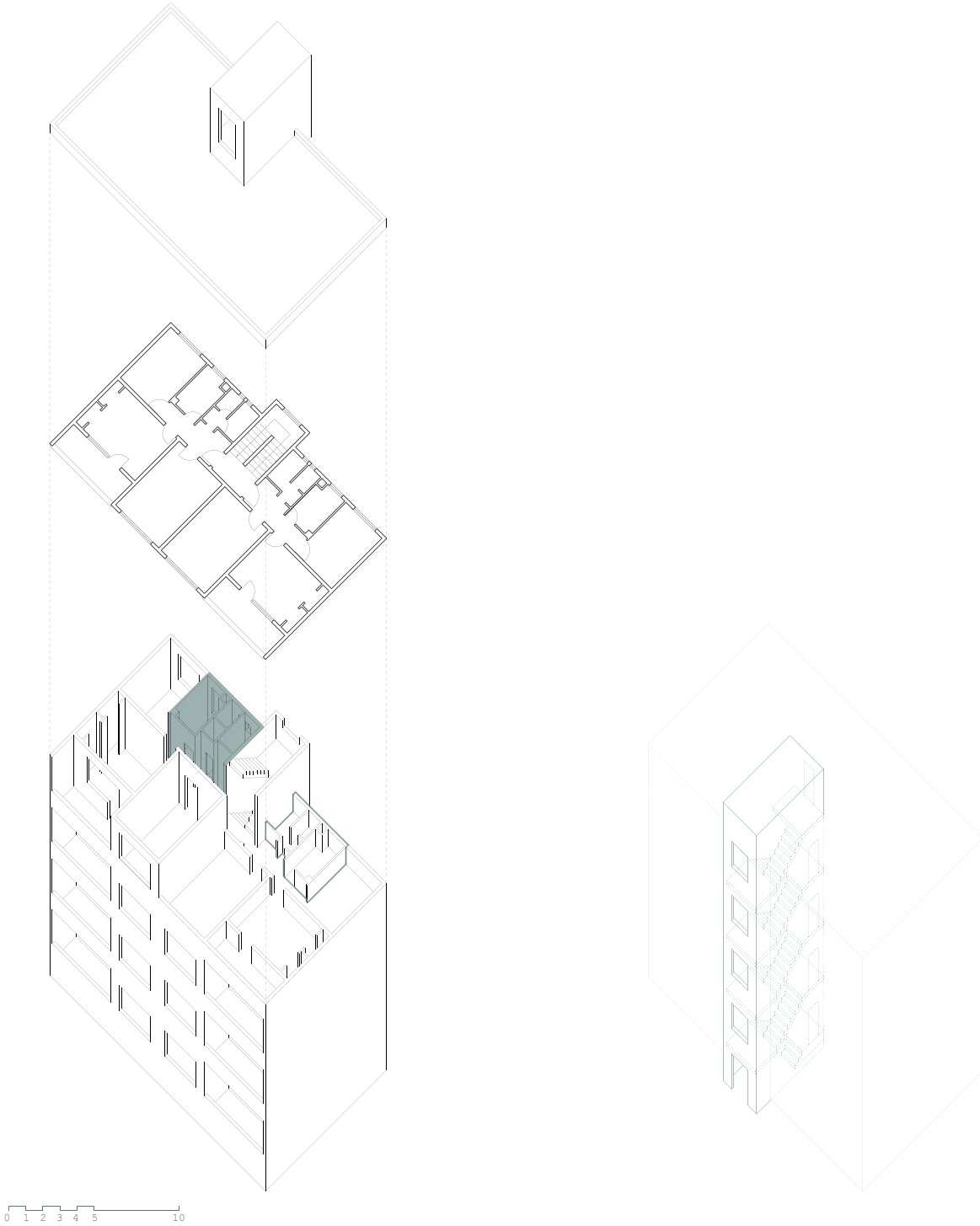


Figure 4.18: the internal organisation of dwelling units in Kan's apartments, and the articulation of the entrance area with the staircase.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

The board members of the ARIA, whose educational experiences in Europe happened during the inter-war and the aftermath of the Second World War, provided the architectural justification for this paradigm change in the design of public housing. In the later period, these housing types were widely disseminated to cope with the housing shortage in the war-ravaged countries. They saw the design of Kuy-e Kan as an opportunity to promote apartment mode of living among the working class, in Iran; and they elaborated this aspiration through their media, where usually Kuy-e Kan was illustrated as a showcase.

For instance, to highlight the importance of building condominium housing as a solution for accommodating low-income families, a new generation of Iranian architects began to publish a series of articles about the models of housing development in different parts of the world, such as in France, Japan and the U.S. Aside from discussing how these schemes used advanced structural techniques, these articles also emphasised the notion of collective living as a main characteristic of advanced societies.[91] To draw parallels with the situation in Iran, they illustrated Kuy-e Kan as Iran's symbol of 'progress' for achieving these living ideals.[92] More importantly, some influential members of this generation of Iranian architects participated in architectural venues where they promoted the collective mode of living among the general public. One of their particular attempts took place in the seminar 'Investigating Social Problems of Tehran' (ISPT), an event co-organised by the board members of the ARIA and the Municipality of Tehran, in 1961. The seminar notably focused on the theme of affordable housing development in Iran, and some keynote speakers, such as Amir Masoud Khodayar from the Construction Bank, Abbas Adjdari from the Mortgage Bank, and Mehdi Motameni from Tehran University, extensively addressed the new paradigms for public housing.

Among these lectures, a far-reaching talk was delivered by Iraj Etesam,[93] an influential figure of ARIA. Etesam gave a detailed analysis on various housing typologies, and proposed constructing five-story walk-up apartments as a solution to housing low-income urban residents. He drew an in-depth analysis and comparison between Frank Lloyd Wright's Broadacre City model and the Interbau housing scheme, in particular that of Walter Gropius.[94] He described their differences in the cost of expanding urban infrastructure, in land-use development, in the use of public and private transportation, addressing these issues in the context of Iran's current sanitary problems and ethical challenges of urbanisation.[95] Then, Etesam concluded "where the land has a higher value, such as in the big cities, Gropius' collective living scheme would be the most effective answer to the urban population growth."[96] Stressing the limited resources for the development of public housing, he claimed that the elimination of lifts from the building process and the standardisation of the dwelling layout for mass production would reduce the construction costs.[97]

91. "Khaneh Sazi Dar Japon," [Housing Construction in Japan.] *Journal of Bank-e Sakhtemani* 2, no. 1 (1958): 35.

92. See, for instance: Ali Akbar Gerakoee, "Zanboor-E Asal: Memar Baldar," [The Bee: A Flying Architect.] ibid., no. 2 (1959): 17-19.

93. Iraj Etesam, who is known as the father of Iran's contemporary architecture, studied architecture in Italy and he was one of the board members of the ARIA and Iran's Housing Organisation.

94. Iraj Etesam, "Maskan Dar Gozashteh, Hal, Ayandeh," in *Barresi-E Masael-E Ejtemaee Shahr-E Tehran [Investigating Social Problems of Tehran]*, ed. M Motmaeni, M Haghsheno, and M Hekami (Tehran: Tehran University Press, 1962).

95. Ibid.

96. Ibid., 251.

97. Etesam also warned the audience that the standardisation and the replication of an identical house type should not lead to the development of a passive and isolated living environment, and he highlighted the role of architect in this process for creating a liveable and loveable environment. For more information, see: ibid., 246-55.

In his talk, Etesam addressed the standards developed in Europe for accelerating housing production.[98] However, rather than elaborating on the spatial conditions that resulted from the application of these standards, he focused essentially in quantitative matters, highlighting aspects such as the typical surface area of each space in the dwelling units of public housing. In the ISPT seminar, Etesam argued that the mass development of mid-rise apartment blocks would solve the problem of housing low-income families in Iran, and the collective mode of living would create new social practices among them.[99] Despite recognising the potential dangers of standardising people's lifestyle, he referred to the experiences gained from post-war housing in Europe as a point of departure for the development of new projects. Similarly, Masoud Khodayar reflected on post-war housing experiences in Europe as a solution to the provision of affordable housing in Iran.[100] Moreover, he described Kuy-e Kan as an early example of the Construction Bank's attempts to address this issue for the working class and to improve their living standards.

The design of Kuy-e Kan also became a pilot project for a translation of housing standards from Western Europe into Iran. In fact, in a recent interview, Iraj Etesam stated that before designing Kuy-e Kan, the board members of the ARIA had visited some public housing projects in Western Europe.[101] Etesam mentioned projects such as Bruchfeldsstrasse Siedlung designed by Ernst May (1926-27) and Siedlung Westhausen designed by Ferdinand Kramer (1929-31) both in Frankfurt am Main, West-Germany. In France, he mentioned Cité de la Muette designed by Eugène Beaudouin and Marcel Lods (1931-34) built in Drancy, and 'Cite Rotterdam' designed by Eugène Beaudouin (1951-53) in Strasbourg. However, among the visited projects, the housing complexes designed by Beaudouin appear to be the most influential reference. Between the mid-1930s and 1940s, many members of the ARIA graduated from the Schools of Beaux-Arts in Brussels and Paris, where Eugène Beaudouin taught as a design professor.

The influence of Beaudouin's projects, particularly that of the Cite Rotterdam, is noticeable in Kuy-e Kan in many aspects, from the structural details, to the proportion of the housing blocks, and to the structure of the apartment layout [Figure 4.17].[102] A comparable prefabricated system was proposed with concrete infill panels, and the staircase was similarly positioned in the heart of the plan to provide access to two identical apartments, with service spaces placed close to the entrance. Other similarities can be seen in the way that every dwelling was designed with two bedrooms, a living area, and a small south-oriented balcony that was accessible from two habitable rooms. Furthermore, all the apartments were constructed with a north-south orientation, and were placed with a free composition on a vast public space.

Despite the similarities, the typical floor-plan layout used in Cite Rotterdam was modified in Kuy-e Kan with conspicuous changes made to adapt it to Iranian

98. In the seminar, Etesam described the role of architect in Iran's public housing development as to deal with the standards that were set to define a minimum quality for large-scale housing projects, but to develop housing models that ensure diversity and social practices in the living environment.

99. Etesam, "Investigating Social Problems of Tehran."

100. Masoud Khodayar, "Shiveh-Ye Estefadeh Az Faza-Ye Maskan," ibid., 300-15.

101. Iraj Etesam, interview by Yahya Sepehri, 04 January, 2018.

102. The Cite Rotterdam was a project initiated by France's Ministry of Reconstruction and Urbanism to house 800 families in suburban Strasbourg. In 1950, the French ministry held a competition for the design of the project where Eugene Beaudouin won the proposal. In addition, in Cite Rotterdam a central heating system and a prefabricated system with reinforced concrete panel for construction were used. These technical specifications also were used for the construction of Kan houses and apartments.



Figure 4.19: noticeable resemblance between the layout of kitchen in Kan (left) and the functional layout of kitchens promoted by the Frankfurt model and that of Americans (right).
Source: photograph by Mohamad Sedighi (left); and *Architekt* 1, no. 6 (1948): 205 (right).



Figure 4.20: Kuy-e Kan and the promotion of a new urban life among its residents.
Source: Photograph by Dmitri Kessel (1960's), *Life Magazine* Photo Archive, available online: http://images.google.com/hosted/life/f80951 a1e63d4975.html



آپارتمانهای کوی کن

مورد بازدید اعلیحضرت بودوئن پادشاه وعلیاحضرت فابیولاملکه بلژیك قرار گرفت



خبرنگاران باتفاق آقای دکترفیروزیان معاون وزارت آبادانی و مسکن هنگام بازدید ازکوی‌کن

از وزارت آبادانی ومسکن اطلاع رسیده‌بودکه روز دوشنبه پیش ازظهر میهمان عالیقدر شاهنشاه اعلیحضرت بودوئن پادشاه‌بلژیك وعلیا-

دوست من میگفت والله این دیگر اعصاب فولادین میخواهد چرا که در اغلب این‌کشورها همیشه مردم مرکز استراحت را از محیط کار

Figure 4.21: visit of highly-ranked Iranian and foreign officials from the project of Kan.
Source: National Archive of Iran, accessed August 2016 (top); and *Bours Mahaneh* 1, no. 17 (1964): 83 (bottom).

culture, patterns of inhabitation, and regulations. For instance, in Kuy-e Kan the service spaces were placed adjacent to the façade to fulfil the local building regulations. They were also used to create a clear division between the living and sleeping areas, thus making a distinction between the domestic social and private spaces [Figure 4.18]. Through a corridor, every habitable room was independently connected to the front door to enable some degree of autonomy for each room by preventing intersecting circulation routes and reinforcing the division between the domestic social and private spaces. This separation, according to Gholam-Hossein Memarian and Frank Brown, plays a vital role in the spatial organisation of traditional Iranian houses for the matter of privacy.[103] Further, the dimensions of the interior spaces and the position of the staircase were modified from the layout of Cité Rotterdam to comply with local customs and regulations.[104]

Aside from these modifications, the design of Kan also introduced some changes to the customary layout of Iranian houses. As described earlier, under the Point IV home-economics programme, kitchens became a key matter of concern. They were part of an agenda to promote the acquisition of imported (mostly from the U.S.) home appliances to ensure that Iranians modified the internal layout of their houses.[105] In Kan, the interior layout of the kitchens (a surface of approximately 3.0x2.0 meter) was designed based on appliances that were just recently made available to Iranian consumers. In fact, the kitchens of Kan followed a similar functionalist layout to that of American models and the famous 'Frankfurt Kitchen', as the board members of the ARIA promoted in the pages of *Arshitekt* [Figure 4.19].[106] By designing a basic labour-saving kitchen, the architects of Kan attempted to encourage Iranian women to go outside the realm of the home, and become more involved in the social life of the neighbourhood, rather than only in housekeeping.[107]

Encouraging outdoor activities might be seen as the critical position of the designers of Kuy-e Kan, regarding the traditional role of Iranian women in society. As shown in the case of Chaharsad-Dastgah, ARIA's board members saw the black veil (*Chador*) and the introverted spatial layout of traditional Iranian houses to be a result of a fanatical insistence on feminine concealment from the eyes of strangers.[108] Vartan Hovanesian, an influential member of the ARIA, has noted that this form of planning limited the social participation of women by overemphasising the notions of protection and privacy.[109] As discussed in the second chapter of this dissertation, Hovanesian referred to the act of compulsory unveiling, implemented by Reza Shah since 1936, as a historical turning point that enabled the engagement of women in societal activities. This shift, as observed by Rana Habibi, enabled architects the liberty to design windows and balconies that visually connected living rooms to public spaces.[110] The wide balconies in the layout of each dwelling in Kan, and the project's wide street with greenery for communal outdoor activities, such as gathering or picnicking, testify to the

103. For more information about the spatial layout and organisation of traditional Iranian houses, see: Gholamhossein Memarian and Frank Brown, "The Shared Characteristics of Iranian and Arab Courtyard Houses," in *Courtyard Housing: Past, Present & Future*, ed. Brian Edwards, et al. (Taylor & Francis, 2006).

104. Articulating the place of entrance in the urban streets is one of the main characteristics of traditional Iranian houses. For more reading, see: ibid.

105. See: Karimi, "Dwelling, Dispute, and the Space of Modern Iran.

106. In Kan, the kitchens were designed approximately 3 by 2 meters, and their internal organisation largely followed the layout of the Frankfurt Kitchen, but with some modifications. These changes might be seen as a result of the ARIA attempts to provide guidelines for the design of kitchen based on recently available appliances, in the late 1950s. For instance, in 1958, the ARIA published an article entitled 'What Do You Know about the Design of Kitchen', to define guidelines for remodelling traditional kitchens. The article provided five main rules for the design of kitchen defining its place in the spatial layout of house, its relation to outside, its internal organisation, its size and proportion, and its function. Although the article addressed in details the commodities needed for a kitchen by showing a few samples of open American kitchens, without naming the Frankfurt Kitchen, it also provided few diagrams of Grete Lihotzky's work to illustrate kitchen in a dwelling unit as the 'professional workspace' of women. Relying on her design, the article described the internal organisation of kitchen and illustrated the minimal surfaces required for each activity such as cooking and washing. For more reading, see: M Ma'arefi, "Az Tarh-E Ashpazkhaneh Che Midanid," [What Do You Know about the Design of Kitchen.] *Bank-e Sakhtemani Journal* 1, no. 6 (1957).

107. During the late-1940s, the Tudeh party encouraged Iranian women to play an active role in the society by working along men outside the realm of the house. For instance, in an article published in their bi-monthly journal of 'Bidari-e Ma' (Our Awakening), the authors proposed that most of women's traditional responsibilities such as housekeeping, food preparation, and babysitting should be assumed by the society at large, beyond the confines of the home to involve Iranian women in societal activities. For more reading about this proposition, see: Farah Laqa Alavi, "Khaneh Va Khanevadeh, Va Mahdudiyat-Haye Aan Dar Asr-E Jadid," [Home and Family, and Its Limits in the Modern Age.] *Bidari-e Ma* 3, no. 1 (1944): 13. See also: Khosravi, Camp of Faith.

108. Vartan Hovanesian, "Reza Shah Mazhar Abadani Va Omran," [Reza Shah as the Symbol of Progress.] *Memari Novin* 1, no. 1 (1940): 4-9.

109. Ibid., 7.

110. See: Rana Habibi, "The Institutionalization of Modern Middle Class Neighborhoods in 1940s Tehran - Case of Chaharsad Dastgah," *Cities* 60 (2017).

A city planner reviews Tehran dormitory town

KAN

by Dariush Borbor

ONE of the biggest enemies of proper and sound planning is the age old parasite of speculation. Many of the so-called new towns built around Tehran in recent years, such as Narmak, Tehran-Pars and others have succumbed to this deadly disease.

Planning in general and city planning in particular is the outcome of logical, scientific, efficient enactment of certain principles in order to improve the standards and conditions of the masses.

The constant agglomeration of people into cities is a relatively new move in this country and the sooner the problem is tackled from the root the better. Otherwise it will lead to the extreme social and technical ills, from which many of the world's big cities are suffering.

The new dormitory town of Kan is a brave attempt to solve the existing housing problem for civil servants. Situated to the west of Tehran it is connected to the Mehrabad Crossing by an excellent dual carriageway. It consists of a number of five-storey blocks, housing a thousand three-roomed flats. Two hundred one-storey, three-room houses have also been provided. Schools, children's playground, and a supermarket are among the public utilities provided.

Siting

In a city such as Tehran, where large areas of undeveloped land still exist, it is a great mistake to take residential neighbourhoods outside the city boundaries.

It is true that the cost of land within the city boundaries is higher, but the lower cost of providing the services, such as water, electricity, connecting roads, telephones, buses, shops, recreation centres etc. easily compensates for the higher cost of land.

What is needed in Tehran is neighbourhood planning. This principle is necessary, in order to 'fill up' the city, thus cutting down the cost of providing all necessary basic services, and also the cost of upkeep. Dormitory towns are useful in areas where the city is fully developed and there is insufficient space left to cope with the housing demand.

Layout and landscaping

The buildings at Kan are placed to either side of a central boulevard which connects two ornamental squares. A ring road is provided to run round the site. A cul-de-sac connects each block of flats to one of the roads, and a certain amount of parking space has been provided on each of these roads. The layout of the buildings could have been made more interesting and brought closer together: the central boulevard rather tends to cut the community in two.

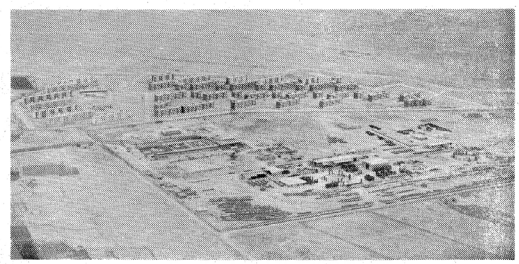
The buildings, which have been prefabricated, are painted in different colours, and some are faced with red bricks. It is surprising that no trees whatsoever have been planted despite the fact that building operations started some five years ago. This should be done as soon as possible.

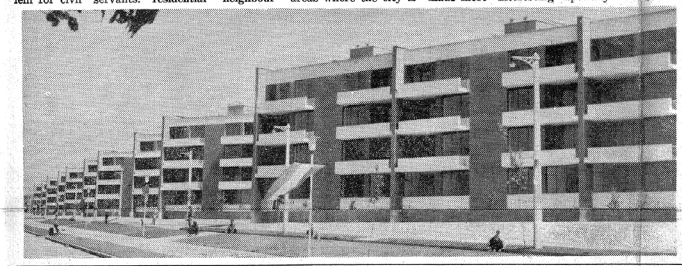
If the landscaping around the buildings had started concurrently with the building, the new town would now have had a much more livable appearance. Landscaping, specially in this country, should be given much more attention. In Switzerland for instance, three per cent of the total cost of any building must be spent on the landscaping of the surrounding areas. In some other European countries the percentage is even more.

Playgrounds

It is a great pity that the vehicular and pedestrian traffic has not been separated in any way. In fact the central boulevard may become a source of danger and discomfort to the inhabitants, as far as noise and other factors are concerned. The amount of playground space provided around the schools is







opment is once and for all replaced by sound, well thought out, and up to date principles.

The idea of building high must be encouraged, and the idea of a 'Green Belt', a line beyond which the town cannot expand, must be strictly inforced. Even when building low, a sense of community must be sought.

On Tuesday, June 2,
AT 9:15 P.M.
Cinema Charlie
will present
The original English version of
COME FLY WITH ME
CINEMASCOPE AND COLOUR
starring:
DOLORES HART — KARL MALDEN
PAMELA TIFFIN

Radio & T.V.

GERMAN RADIO

Near East programme of the German Broadcasting Service (Deutsche Welle) on wavelengths of 19.47 metres (15,405 kilocycles) and 25.43 metres (11,795 kilocycles).

MONDAY, June 1, 1964.

1930 Nachrichten (News)
1940 Kommentar (Comment)
1945 Kummer mit Klavierlehren. - Probleme der privaten Musikpaedagogen.

CROSSWORD PUZZLE

ACROSS
1. Size of coal
4. Flow back
7. Crustacean
11. Pit for roast Maori
33. Nigerian negro
34. Singing voice
35. Default
38. Swab

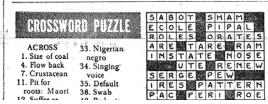


Figure 4.22: criticising the ineffectiveness of communal spaces in Kan.
Source: Kayhan newspaper International 1964, 6.

architects' drive to support a movement of women's emancipation. In fact, some pictures staged and released in the 1960s show women socialising on the streets of Kan, in groups or in family circles [Figure 4.20]. These pictures seem to validate both the ideas promoted by the ARIA architects and the Point IV officials of developing mid-rise and uniform residential buildings to promote collective living as a new lifestyle among the working class in Tehran.[111]

Urban Change in Kuy-e Kan

After its completion in 1964, the Iranian government showcased Kuy-e Kan as a symbol of Iran's progress and modernity. Upon their visits to Tehran, highly-ranked foreign officials and Western diplomats were brought to this housing district [Figure 4.21]. Furthermore, the images of the project were disseminated in many national newspapers, and the housing project of Kan was described as an ideal place for living, in Tehran.[112] In spite of the government's efforts for depicting this project as a great success, Kan appeared unattractive to many low-income families. More importantly, the urban layout of Kan was criticised for its lack of well-defined communal outdoor spaces, which resulted in the appropriation of sidewalks as gathering places. Dariush Borbor, a well-known Iranian urban planner, described the project of Kan as a 'dormitory town' and blamed the project for providing ineffective communal spaces such as undefined outdoor spaces instead of enclosed gardens, and for creating a sharp separation between green areas (i.e., the grass fields and trees) and the everyday life of the inhabitants [Figure 4.22].[113]

Aside from the quality of public spaces, the housing typology of Kan was a main concern of the Housing Organisation, particularly in the return of capital. As shown in figure 4.14, this organisation believed that the apartment mode of living and ambiguity in the ownership of houses would cause difficulties for selling. To diminish these barriers, the Housing Organisation collaborated with the Construction Bank to prepare a juridical instruction regarding the ownership of multi-story residential buildings and apartment. This instruction was approved by the Iranian Parliament and it became national law in the end of 1964, a bylaw that later became known as the Apartments Ownership Act (*Qanoun-e Tamallok-e Aparteman-ha*), in Iran.[114]

This administrative reform stimulated economic modernisation, and was also part of the U.S. strategy for the closer integration of the so-called Third World countries, such as Iran, into the capitalist world economy.[115] Considering the communist-inspired revolutions that had taken place in countries such as China, Cuba, and Iraq, the Kennedy administration convinced the Shah to undertake a land reform in Iran, by which he would gain the peasantry's and labour's support

111. Gerakoee, "Zanboor-E Asal: Memar Baldar," 17-19.

112. For instance, the 'Journal of Tehran Economist' published a series of pictures and articles about the apartments of Kan to describe the economic features of living in the apartments (e.g., the small amount of down-payment for purchasing the apartments and low loan-interest). For more information, see: "1,200 Khaneh Baraye Karmandan Doulat Dar 15 Mah." Similarly, the Iranian journal of Economy, *Bours Mahaneh*, described the housing model of Kuy-e Kan as solution to the problem of accommodating low-income families in Tehran, and defined the project as an ideal place for living in the capital city, for civil servants. For more reading, see: "Aparteman-Haye Kuy-E Kan Morede Bazdid Alahazart Baudouin, Padeshah, Va Oliahazrat Fabiola, Malakeh, Gharar Gereft," [The Apartments of Kan were Visited by the Majesty Baudouin, the King of Belgium, and the Queen Fabiola.] *Bours Mahaneh* 1, no. 17 (1964).

113. Dariush Borbor, "A City Planner Reviews: Tehran Dormitory Town, Kan," *Kayhan International* 1964.

114. For more reading on the impact of this by-law on urban Iran, see: Khosravi et al., *Tehran: Life within Walls;* and Habibi, "Modern Mass Housing in Tehran."

115. Kamran Matin, *Recasting Iranian Modernity: International Relations and Social Change*, Iranian Studies (London: Routledge, 2013).

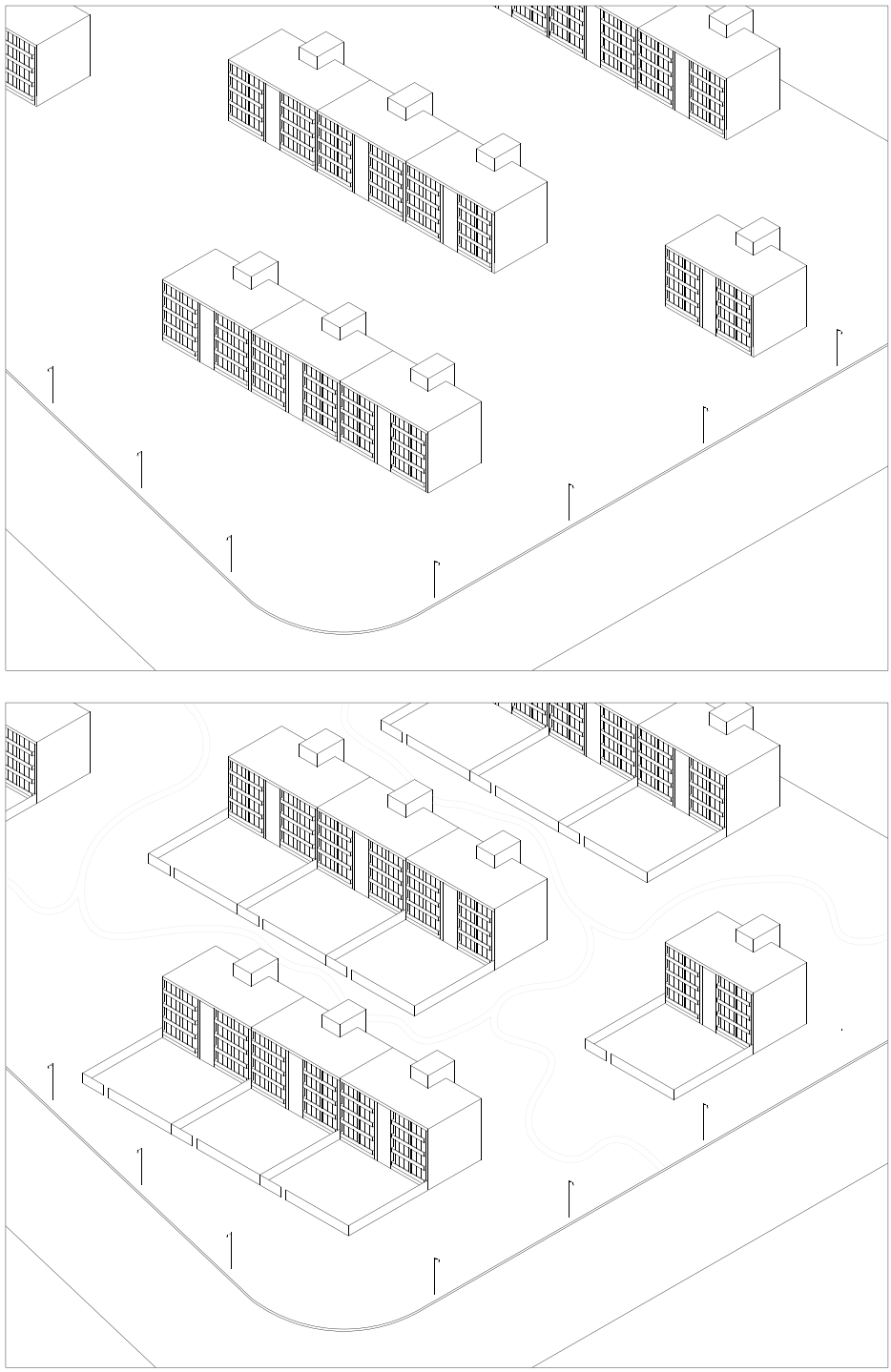


Figure 4.23: modification of public spaces around Kan's apartment blocks.
Source: Mohamad Sedighi and Federico Pellegrini



Figure 4.23: modification of public spaces around Kan's apartment blocks.
Source: National Archive of Iran (top); and photograph by Mohamad Sedighi (bottom).



Figure 4.24: the collective courtyards as a new place for gardening and leisure activities.
Source: Photograph by Elmira Jafari & Erfan Farahmand.

against the opposition.[116] As a result of this reform programme, agricultural lands were divided among the peasants. In urban areas, this reform programme provided the administrative support for approving the Apartments Ownership Act (AOA) to make each apartment unit a heritable and transferable property and to protect its residents against the landlords.[117] In fact, the AOA was a main step to secure the return of the invested capital in Kuy-e Kan and to stimulate people to live in the apartments.[118] This bylaw enabled the inhabitants to claim full ownership of their houses, and thus implement changes in the internal layout of the apartments more easily. It also defined the communal property of all shared spaces and areas of a multi-story residential building, such as staircases and façades.[119]

Before the approval of this bylaw, the apartment owners should have paid a yearly fee to the landlord as land-rent. It was also defined that the landlord would obtain all the rights for the change, use, and development of the property on which the building was constructed. The AOA acknowledged the right for the dwellers of residential buildings to use, develop, and profit collectively from their building property. In so doing, the apartment owners would also partly become the owners of the land, based on a ratio between the size of their dwelling and the construction plot.[120] Surprisingly, this new mechanism would result in a sudden increase in the apartment mode of living in urban areas, especially among the low-income families, since the mid-1960s in Tehran.[121]

The new ownership status associated with apartment buildings, would be key for the development of Kan. Additionally, there was another important factor: the organisation of the open spaces. in 1965, the Construction Bank asked the ARIA to revise the landscape design of the open areas of Kan. Accordingly, the ARIA implemented a set of changes to the plan that eventually contributed to make the project an attractive living environment that met the aspirations of both middle-class groups and low-income families, in Tehran. The Apartment Ownership Act and the redesign of Kuy-e Kan's structure of open space were instrumental in the project's development through time.

Since the apartment blocks of Kuy-e Kan were freely designed in a vast region of public land, and no specific construction lot was determined for the development of each block, the Housing Organisation permitted the Construction Bank to reclaim part of the public space for the condominium of each apartment block. Using the TBR as the point of departure for creating a 40% building coverage, 1.5 times the surface of the building footprint was added from the land located among the residential buildings to the plot where each residential block was constructed [Figure 4.23].[122] Subsequently, the residents of the blocks were asked by the Bank to wall-off their shared property. This resulted in forming a new collaboration among the inhabitants of each block to materialise and use the semi-private yard on the ground level, and in redefining the relationship between the inhabitants of

116. Kennedy's Doctrine, *Alliance for Progress*, was founded on preventing the collapse of the US allies and encountering the threats from national and communist movements to undertake controlled socio-political reforms and emphasise on such themes as: reforms, democracy, freedom, Human Rights and human dignity. Using modernisation as an ideology, the Kennedy administration focused on the land reform and private ownership strategy to prevent the Soviet influences in the Middle-East. In addition, Western educated Iranians, Jebhe Meli and Tudeh deeply ashamed of their country's backwardness, epitomised by Iran's archaic agricultural and big landlord structure. Together with Islamic and religious groups, they formed a strong opposition against the Shah of Iran. For more information see: Abrahamian, *Iran between Two Revolutions*.

117. See: Azadeh Mashayekhi, "The 1968 Tehran Master Plan and the Politics of Planning Development in Iran (1945–1979)," *Planning Perspectives* (2018): 5.

118. To encourage the apartment mode of living to sell the apartments of Kuy-e Kan, the parliament approved the bill of apartment ownership, in 1964. Before the approval of this law, the landowner was the only one who has the right of land use and development. For instance, people who bought a dwelling unit in an apartment should pay a certain amount of money (land-rent) to the owner of the land where the building was constructed, while they remained as the owner of the apartment unit. Yet, the apartment ownership act defined that the total area of a land (territory) where a building is constructed, and communal spaces of a building such as staircases, skeleton, façade, and basement as the shared properties among the residents of a multi-story building. Accordingly, the owner of a dwelling unit in an apartment partly became the owner of the construction plot. For more reading, see: Ebrahim Esmaeeli Harisi, *Hoquq-E Malekin-E Aparteman-Ha* [The Right of Apartment Owners] (Tehran: Nashr-e Dadgostar, 2004), 25-27.

119. For more information about the Apartment Ownership Act, see: ibid.

120. The amount of share from the total construction lot for each individual apartment unit was also indicated in the ownership document of each house.

121. See: Zanjani, "Housing in Iran."

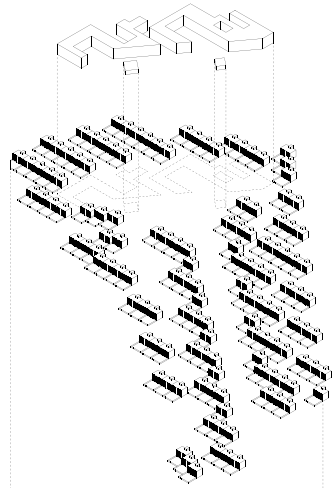
122. For more information, see: "1,200 Khaneh Baraye Karmandan Doulat Dar 15 Mah."





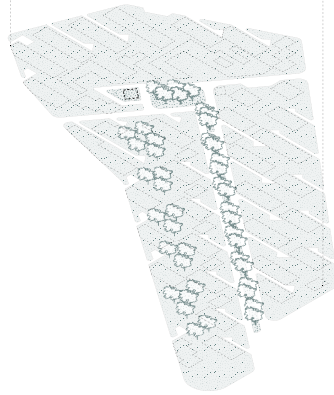
Figure 4.25: the modification of Kan's urban layout for creating new public spaces such as schools, as shown in the image (no:1), sopping/office buildings (no:2), parks (no:3), and playgrounds/gardens (no:4). (with following page)
Source: *Iran Housing Organisation Report* (Tehran: Offset Press, 1972), 113 (top); Mohamad Sedighi in collaboration with Federico Pellegrini (bottom and right)

EDUCATION / Shoping



LIVING

CIRCULATION



RECREATION

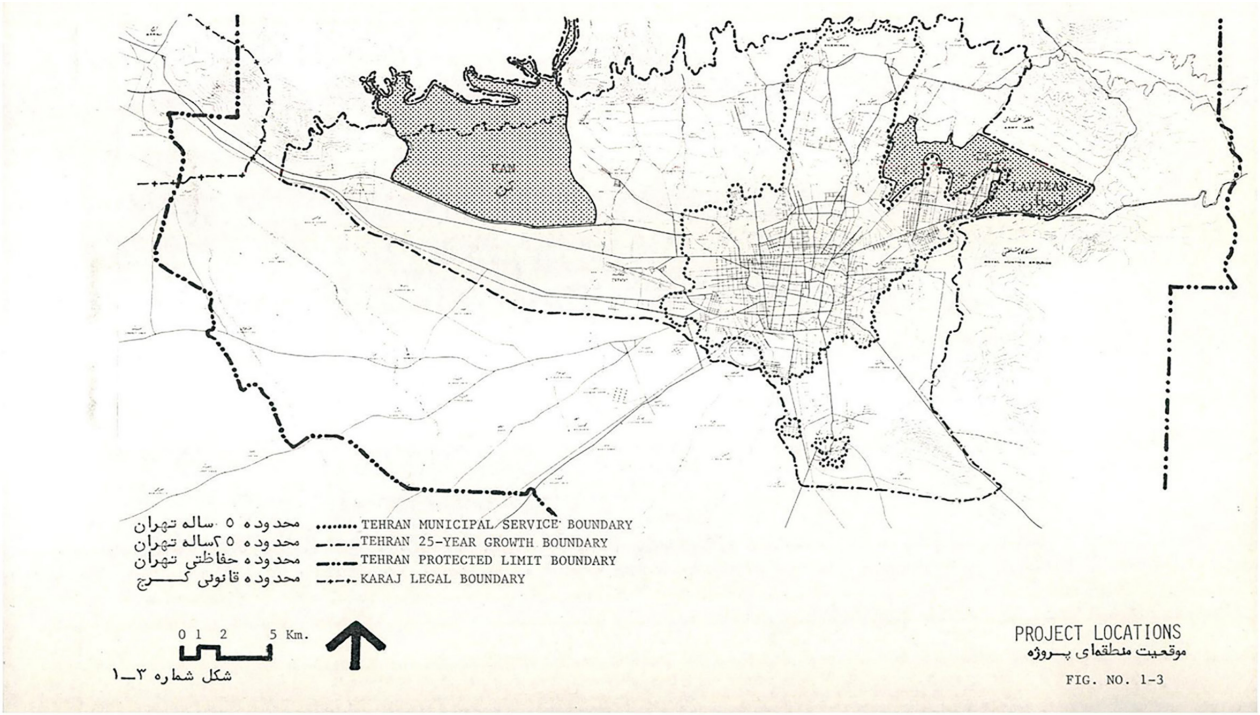




Figure 4.26: Kuy-e Kan and its location as a key reference for the construction of new residential neighbourhoods in 1968 and 1974 Tehran.
Source: "The New City of Lavizan: Phase One," ed. Housing and Urban Development (Tehran: Iran Ministry of Housing and Urban Development, 1976), 1-3 (top); and *Honar va Memari* 6, no. 22-24 (1974): 69-70 (bottom).

the stacked dwelling units. Further, a direct access from the public space to each collective courtyard was created, making these enclosed outdoor spaces accessible to all inhabitants of the block, regardless of the floor on which they lived. These courtyards were used by the dwellers for collective gardening and other leisure activities [Figure 4.24].

In addition to the land division, the ARIA modified and further developed the urban layout of Kan to create amenities for outdoor activities. For instance, around the roundabouts, a few public facilities such as schools and a pool were constructed, while some land was kept empty to be partially enclosed as playgrounds for children [Figure 4.25]. The roundabouts were redesigned as public parks where people would gather and meet, and the left-over spaces between the residential blocks were partly reshaped with a clear boarder as collective gardens for leisure and communal activities, such as pick-nicking and neighbourhood gathering. Four rows of trees were planted in the central boulevard, and through the placement of benches alongside the streets, a few distinct public sitting places were articulated. These modifications turned the central boulevard into a synchronic public space, as Richard Sennett would put it, by being a place for multiple everyday activities that would take place, simultaneously and unpredictably.[123] These changes also made the project so attractive that the residential neighbourhood of Kuy-e Kan became known as *Ziba Shahr* (the beautiful city) among local people.[124]

Kuy-e Kan also became a key reference for the construction of new residential neighbourhoods included in the development strategy proposed by 1968 Tehran's Master Plan.[125] Victor Gruen's Comprehensive Plan for Tehran (1966-68), which will be discussed further in the next chapter, defined the area of Kan as a new urban centre of the city that needed to be developed in the first phase of the masterplan [Figure 4.26].[126] Gruen also proposed the area of Kan as the host for developing the Aryamehr Sport Complex, for the 1974 Asian Olympic Games, in Tehran. He also planned the Olympic Games Village, located next to Kuy-e Kan, with a similar urban typology, as shown in figure 4.26.[127] A set of highways were designed to ease the access of private cars to the area of Kan from different parts of the city; and a new residential district was planned to accommodate 48,000 people, mostly low-income civil servants, in the west side of Kuy-e Kan.

Expectedly, not only the location, but also the urban layout and building typology of Kan became a reference for designing many parts of this new urban centre and other parts of the expanded city. The Housing Organisation used the design principles of Kan as an example for developing new public housing projects in Tehran, such as Nohom Aban (1964-1966), Chaharom Aban (1967-1969), and Peykan Shahr (1968-1972).[128] Situated in the south-west of Tehran, Nohom Aban was constructed with 8 apartment blocks to house 280 low-income government employees. Chaharom Aban was situated in the south of Tehran and built with

123. For more reading about the idea of synchronic space, see: Richard Sennett, *Building and Dwelling: Ethics for the City* (London: Allen Lane, 2018), 200-10.

124. According to an interview conducted by the neighbourhood council of *Ziba Shahr*, since the late-1960s, people used to refer to Kuy-e Kan as Shahr-e Ziba, because of the uniqueness of its urban spaces. In 1966, the Municipality of Tehran renamed the project Ziba Shahr, and later to Shahr-e Ziba, both meaning the beautiful city. For more information about the project, see: The Municipality of Tehran, "Tarikhche-Ye Mahaleh-Ye Ma: Shahr-E Ziba," The Municipality of Tehran.

125. For more reading about the influance of Tehran's Master Pln on the expansion of apartment typology, see: Habibi, "Modern Mass Housing in Tehran," 127-165.

126. As will be discussed in the next chapter, Gruen proposed a linear model of development for Tehran, with 10 urban centres, to decentralise population density and urban facilities in the city. For more reading, see: Victor Gruen and Abdolaziz Farmanfarmaian, "The Comprehensive Plan of Tehran: The General Ideas and Schemes," ed. Supervising the Growth of the City of Tehran, The Comprehensive Plan of Tehran (Tehran: The Planning and Finance Organisation, 1968).

127. For more reading about the expansion of the area of Kan, see: Abdolaziz Farmanfarmaian and Victor Gruen, "Kan Housing Project: A Feasibility Study," ed. Housing and Urban Development (Tehran: The Finance and Planning Organisation, 1975).

128. For more information, see: Abdolhamid Eshragh, "Sakhteman-Haye Bank-E Rahni Iran," [Housing Construction by Bank-e Rahni.] *Joural of Honar va Memari* 3, no. 10-11 (1969).

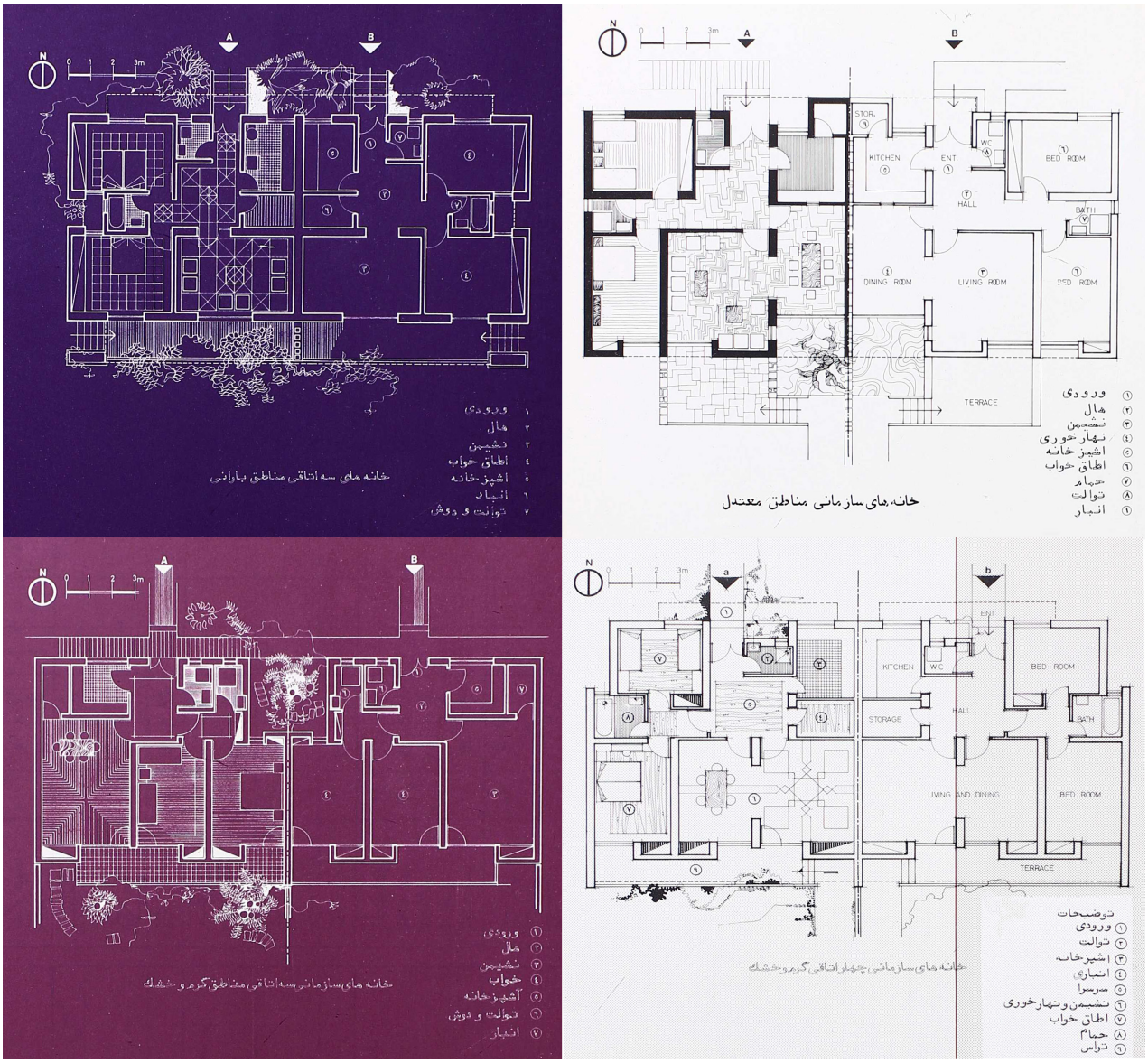


Figure 4.27: a few examples of semi-detached row-housing prototypes provided by the housing manual based on the main climate zones in Iran.
Source: *Iran Housing Organisation Report* (Tehran: Offset Press, 1972).

15 apartment blocks, to accommodate 510 workers' families of Iran's Rail-way industry.[129] In west Tehran, Peykan Shahr was erected with 57 apartment blocks, to house 2,000 low-income families of the National Car Factory.[130] Noticeably, all these projects were designed with a similar urban layout to Kan, where a central boulevard with some communal plazas formed the backbone of their urban plan.

Conclusion

The influence of the Point IV programme in the transformation of the building rules and urban regulations, as well as in the home-economy of Iranian families, testifies to the drive of U.S-American development aid policy of altering domestic practices in urban Iran, from the mid-1950s throughout the 1960s. This transformation shows a clear rupture in the country's housing policies after the overthrowing of Mosaddeq, a political event that shifted the paradigm of domesticity from low-rise and individually owned ground-bond houses to multi-story condominium residential buildings. The Point IV opened Iran's market to U.S. products through proposing dwelling designs that triggered many Iranians to adjust and remodel homes based on recently available (American) furniture and household appliances. The Point IV also encouraged targeted countries such as Iran to import American steel products, as well as the related expertise needed for these new construction systems for the development of multi-story buildings.

Eventually, the socio-political agenda implemented after the overthrowing of Mosaddeq's administration would set the foundations for developing a new housing programme in Iran. In line with the objectives of Iran's third National Development Plan, in 1968 the Finance and Planning Organisation asked the Iranian Housing Organisation to prepare a housing programme for the development of public housing in Iran.[131] An important part of the programme was the production and dissemination of a housing manual for the design and construction of public and cooperative housing.[132] Announced by Manuchehr Behroon in the Seminar of Housing Development, organised by the Mortgage Bank in January 1968, there was a planned focus on the construction of condominium housing, not bigger than five-story walk-up apartments, built with advanced structural systems and prefabrication methods such as steel-frames and prefab concrete panels.[133]

Noticeably, some of the new dwelling practices introduced in Kuy-e Kan became the basis for preparing this manual, which was eventually published in 1972.[134] Drafted in collaboration with the Construction Bank, the manual of cooperative housing typologies was a small booklet where a few identical house types were illustrated based on Iran's five main climate zones and on the number of habitable rooms in each unit [Figure 4.27]. The housing types included in the manual were

129. For more reading about Kuy-e Chaharom-e Aban, see: Habibi, "Modern Mass Housing in Tehran."

130. For more reading about Peykan Shahr, see: Azadeh Mashayekhi, "The 1968 Tehran Master Plan and the Politics of Planning Development in Iran (1945–1979)," *Planning Perspectives* 34, no. 5 (2019)

131. See: Abdi, Mehdizadegan, and Kordi, *Six Decades Housing Planning*.

132. See also: Khosravi, "Camp of Faith."

133. Manuchehr Behroon, "Siyasat-E Jadid-E Apartemansazi Dolat," [The Government's New Policy for the Constrcution of Apartment Blocks.] *Journal of Bank-e Rahni* 12, no. 36 (1968): 81-88.

134. Iran's Housing Organisation, *An Overview of Iran's Housing Organisation Activities*.

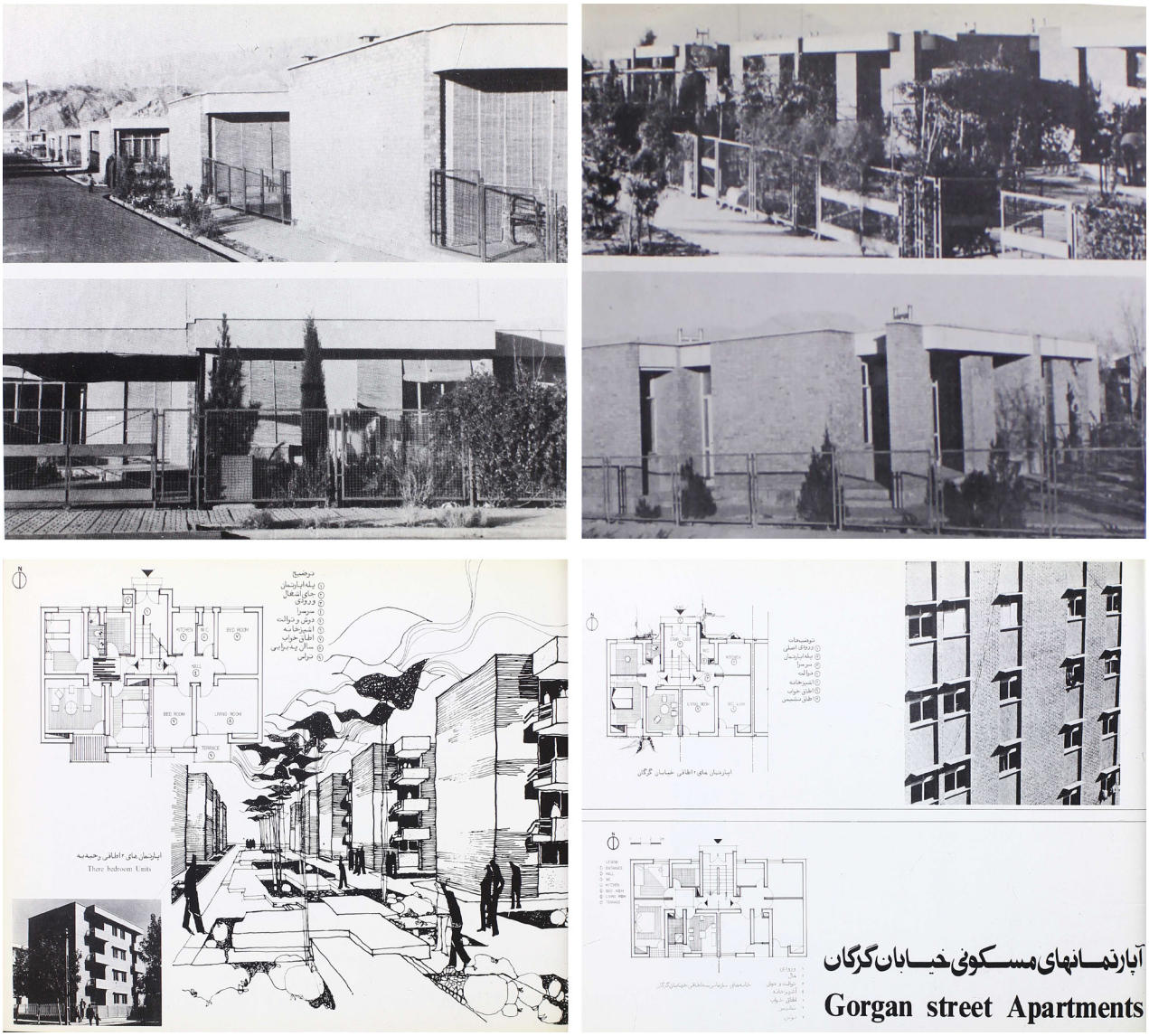


Figure 4.28: a few examples of constructed semi-detached row-housing and free-standing apartment slabs in the housing manual.
Source: *Iran Housing Organisation Report* (Tehran: Offset Press, 1972).



Figure 4.29: examples of a paradigm shift in the Iranian domestic landscape.
Source: *Iran Housing Organisation Report* (Tehran: Offset Press, 1972); and *An overview of Iran's Housing Organisation Activities in Housing Development in the Past, Now, and Future* (Tehran: Iran's Housing Organisation, 1976).

clearly inspired in the post-war suburban ideal developed for the American middle class. The manual depicted series of housing clusters constructed in two main typologies of semi-detached row-housing (up to two storeys) and medium-rise free-standing apartment slabs (up to four storeys) [Figure 4.28]. The floor plan of these housing types noticeably follows the apartment layout designed by the ARIA for Kuy-e Kan. To be sure, the manual illustrated Kan as the first model where these housing models were successfully implemented by the Housing Organisation and the Construction Bank, in Iran.[135]

Although published in the early-1970s, the manual for cooperative housing shows the reach of the shockwaves produced by the transformations in Iran's housing practices implemented from the 1950s on. The Point IV programme in Iran triggered a paradigm shift in the Iranian domestic landscape, which has influenced the country's production of public housing in the 1960s and 1970s [Figure 4.29]. While the programme's announced goals were largely focused on improving people's living standards and upgrading the sanitary conditions in urban and rural areas, there was also a hidden agenda. The Point IV programme in Iran promoted new socio-economic models based on liberal developmentalism (i.e., privatisation of the economy and the expansion of private property) aiming to incorporate Iran into the capitalist world economy. The new building standards and regulations that were successively produced and revised from the 1950s through the early-1970s were instrumental to implement this agenda. They were vehicles to expand consumerism and promote new lifestyles among the general public in Iran. In this process, Kuy-e Kan occupies a key position. Designed and developed at the turn of the 1960s, this project embodies the challenges of negotiating vernacular socio-spatial patterns of inhabitation and foreign influences.

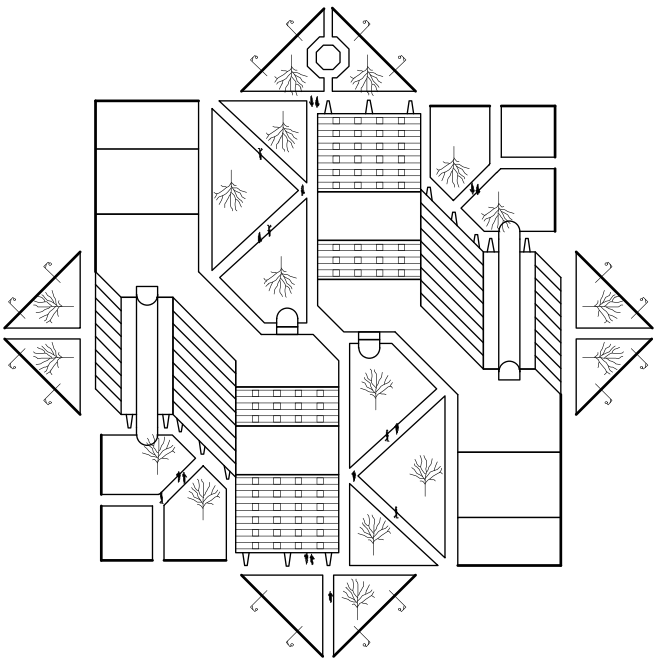
Finally, in my article, co-authored with Nelson Mota and submitted to the journal of *Housing Studies*, we argued that Kuy-e Kan is a good illustration of the challenges that once threatened the creative nucleus of great civilisations and great cultures, as the French philosopher Paul Ricoeur described masterly in his essay 'Universal Civilisation and National Cultures', originally published in 1961 in the pages of the French magazine *Esprit*.[136] The challenge, as Ricoeur put it, was to resist "the triumph of the consumer culture, universally identical and wholly anonymous, [which] would represent the lowest degree of creative culture."[137] The initial creation of the housing project of Kuy-e Kan represents the pervasive attempt, in many developing societies in the 1960s, to accept the phenomenon of universalisation. However, the urban transformation of this project set a basis for safeguarding the local heritage and vernacular patterns of inhabitation in Kan. While the new domestic landscape that surfaced in Tehran in the 1960s was strongly influenced by foreign references and models, it was nevertheless open to be appropriated and lived-in by several generations to come. While the pictures taken in the mid-1960s show an austere landscape of roads and buildings with

135. See: Ministry of Development and Housing, *Iran Housing Organization Report* (Tehran: Offset Press, 1972).

136. Paul Ricoeur, "Universal Civilization and National Cultures," in *History and Truth*, ed. Charles A. Kelbey (Evanston, Illinois: Northwestern University Press, 1965).

137. Ibid., 278.

very little life in them, the scenario today is a radically different one. As shown previously, Kan developed through time as an inclusive neighbourhood, where the physical setting developed in the late-1960s represents today the background against which the social and spatial practices of people's everyday life can unfold, naturally.



5 • Megastructure Reloaded

Examining a New Technocratic Approach to the Development of Public Housing in Iran: Shahrak Ekbatan (1968-1992)[1]

Introduction

The process of modernisation in Iran, as shown in previous chapters, accelerated under the oil-led geopolitics of the Cold War, particularly in the context of the Middle East. Introducing the 'Open Gate' policy (*Siyasat Darvaze-haye Baz*) by the Iranian government in 1957 also contributed to the expansion of both the U.S-American and Soviet influences in Iran, largely through technical assistance and economic aid. As the Cold War intensified in the early-1960s, the administration of President John Fitzgerald (Jack) Kennedy (1917-1963) opted for a foreign policy to defeat Communist aggression in the 'emerging nations'.[2] Kennedy halted developmental aids initiated by President Truman and Eisenhower in the 1950s, and his administration introduced a new doctrine. The primary focus of Kennedy's doctrine was based on adopting a free market-oriented economic policy and land reform strategies.[3] It aimed to stimulate community development within underdeveloped countries, mainly by providing cutting-edge U.S-American technologies and scientific knowledge.[4] As Kennedy declared, this new U.S. policy

1. The title of this chapter is inspired from the book, Structuralism Reloaded: Rule-Based Design in Architecture, edited by Tomás Valena, Tom Avermaete, Georg Vrachliotis. This book discusses historical and contemporary digital structural thinking in architecture and urban planning. Further, a modified version of this chapter is published in the peer-reviewed *ARENA Journal of Architectural Research*.

2. On 22 March 1961, President John F. Kennedy declared that "we live in a very special moment of history. The whole southern half of the world - Latin America, Africa, the Middle East and Asia are caught up in the adventures of asserting their independence and modernising their old ways of life. Communist pressure threatened to subvert progressive efforts, but American aid would repel Marxist advances and make a historical demonstration." See: John F. Kennedy, "Special Message to the Congress on Foreign Aid," *Public Papers* 1, no. 203 (1961): 205-06.

3. For more reading, see: Andrew Hoberek, ed. *The Cambridge Companion to John F. Kennedy* (New York: Cambridge University Press, 2015), 89-102.

4. Louise Fitz Simons, *The Kennedy Doctrine* (New York: Random House, 1972).

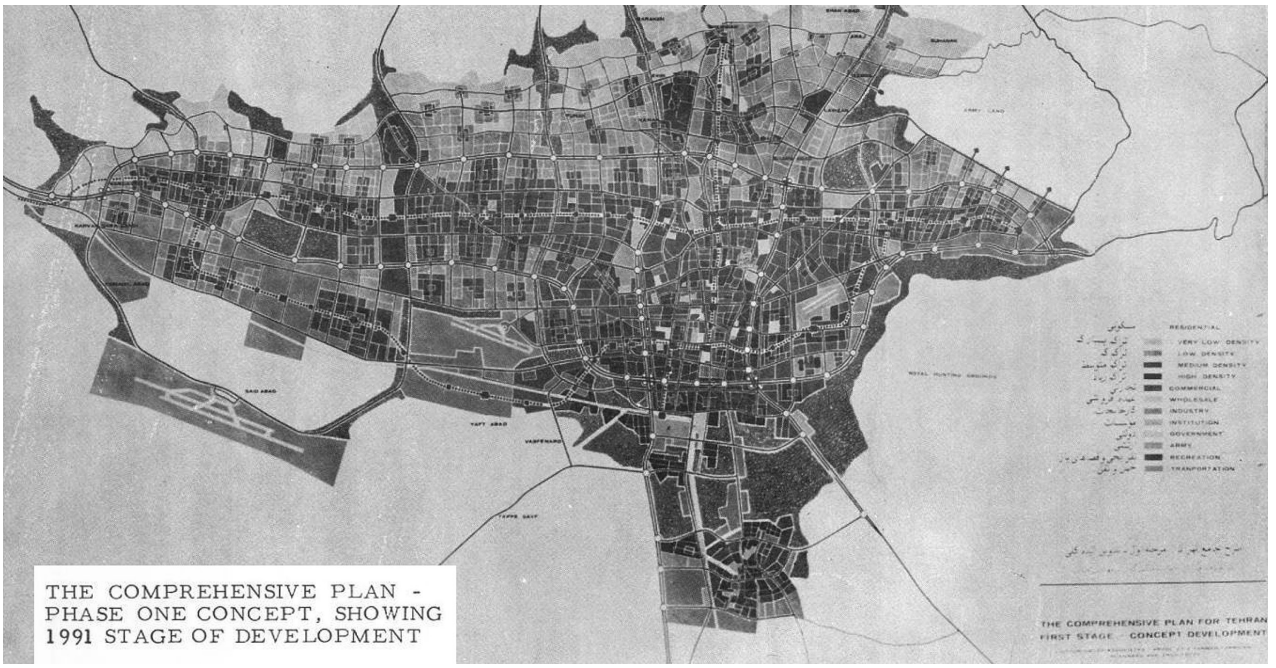


Figure 5.01: the comprehensive plan of Tehran designed for 5.5 million inhabitants.
Source: "The Comprehensive Plan of Tehran: The General Ideas and Schemes," 2-02.



Figure 5.02: Ekbatan after its completion.
Source: The former archive of Ekbatan Redevelopment Company.

would be capable of giving "these new nations a hand in building a society, and a glimpse of the best that is in our country."[5] Indeed, this U.S-led modernisation project intended to create a more integrated platform where "economic, social, and political change could be simultaneously addressed."[6]

Iran's large oil reserves and its long border with the Soviet Union, put the country at the intersection of American and Soviet spheres of political influence. Within this political context, Iran, first, sought a neutral position by incorporating both U.S-American and Soviet models of modernisation in the country's developmental scenes. For instance, while the Iranian government increased the export of steel products from the U.S.A. in the early-1960s, simultaneously, signed an agreement with the Soviet-Union (U.S.R.R) to develop the Iranian steel industry in Isfahan. However, the anti-Communist figure of Mohamad Reza Pahlavi (1919-1980), the Shah of Iran, wished to integrate the country more strongly into the American capitalist strategy.[7] Under the auspices of Kennedy's doctrine, the Shah launched a reform programme in 1962 which became known as the 'White Revolution of the Shah and People' (*Enghelab-e Sefid-e Shah va Melat*). This modernisation plan aimed to abolish the quasi-feudal landlord class, mainly in rural Iran, and promote privatisation and the inculcation of a Capitalist economy with a clear bias toward rapid industrialisation.[8] Supported by the exponential growth of oil revenues, the Shah's modernisation policy seeded the basis of the 'Westernisation' period (1966-1979) in Iran, as Mohsen Habibi termed it.[9] This policy made high-speed urbanisation possible from the mid-1960s and throughout the 1970s, leading to a massive rural-urban migration to Tehran with corresponding urban sprawl. This resulted in the preparation of Tehran's masterplan (1965-68), offering a futuristic urban image for the capital city with an agglomeration of satellite towns and megastructures that highly influenced the domestic landscape of urban Tehran from the 1970s through the early-1990s [Figure 5.01].

This chapter will focus on the early years of the 'Westernisation' period between 1966 and 1973, and discuss how the Cold War geopolitics and the Shah's 'White Revolution' paved a path for the 1960s ideals of the urban megastructure in Iran, and argue that the utopian architecture of megastructure movements, along with cutting-edge technologies, profoundly influenced public housing policies and the architecture of dwelling, in Iran. This chapter will examine Shahrak Ekbatan, one the key housing districts designed and developed during this period based on the ideals of the Tehran masterplan [Figure 5.02]. It will demonstrate how the ideals of megastructure movements were disseminated throughout the whole country, and contextualised to accommodate change and transformation, at the urban scale.

To achieve the intended objectives, I will use archival materials and iconography as a tool to discuss the urban transformation of Tehran, and its megastructural housing projects, with a particular focus on Ekbatan. Further, there are some

5. The Office of the Federal Register, "Public Papers of the Presidents of the United States: John F. Kennedy, 1962," ed. General Services Administration National Archives and Records Service (Washington D.C: United States Government Printing Office, 1962), 12.

6. Michael E. Latham, *Modernization as Ideology: American Social Science and 'Nation Building' in the Kennedy Era* (Chapel Hill: University of North Carolina Press, 2000), 78.

7. Kamran Matin, *Recasting Iranian Modernity: International Relations and Social Change*, Iranian Studies (London: Routledge, 2013), 99-121.

8. See: Ali Mohamad Ansari, "The Myth of the White Revolution: Mohammad Reza Shah, Modernization and the Consolidation of Power," *Middle Eastern Studies* 37, no. 3 (2001): 1-24.

9. The Westernisation period started from 1966 when the state's modernisation agenda focused on implementing new urban development models in Iran based on the idea of 'Master Plan' for cities to modernise the country. This period ended with the Iranian Revolution in 1979. See: Seyed Mohsen Habibi, *Az Shar Ta Shahr: Tahlili Tarikhi Az Mafhume Shahr Va Simaye Kalbudie an Tafakkor Va Taassor* [De la Cite a la Ville-Analyse Historique de la Conception Urbaine et Son Aspect Physique] (Tehran: University of Tehran Press, 1999), 200-12.

important scholarly studies that have become important references for the ideas discussed in this chapter. These studies have provided invaluable knowledge on the urban transformation of Tehran in the late-1960s and early-1970s, by addressing themes such as the city's urban form and transformation, top-down and scientific urban planning concepts, urban policies and regulations, public life and consumer culture, urban governance and municipal politics, social movements and urban spaces, and urban economy and the state's modernisation.[10] Among these studies, some also focused on the case of Ekbatan. They discussed how this housing scheme can be seen as a result of imported urbanism and conflicting identities, while also incorporating some references to local architectural culture of Iran.

Alexandra Staub examined the typology of private and public outdoor spaces in Ekbatan, and claimed that the inhabitants of this project used public spaces as the extension of their private realm.[11] Staub argued that the bazaar-like structure of public spaces catered for an active public life and a strong collective identity among the residents of Ekbatan. Similarly, Ali Javan Forouzandeh and Ghasem Motallebi discussed the role of public outdoor spaces in creating a feeling of place attachment in Ekbatan.[12] They showed how existing urban facilities such as the bazaar-like shopping street, schools, parks, gardens and sport facilities contributed to make Ekbatan a self-reliant district in Tehran. From a historical perspective, Rana Habibi analysed the development of Ekbatan, and examined the influence of transnational models and imported ideas on the formation of this project.[13] Habibi showed how a housing model introduced by Marcel Breuer in New York was used by the architects of Ekbatan to develop this housing project. She argued that the ideology of the shopping mall introduced by Tehran's masterplan formed the backbone of public spaces, and illustrated how some elements of Iran's local architectural culture such as bazaar and gardens were incorporated into the design of Ekbatan. In a more recent study, Behrooz Marbaghi edited a hand-book about Ekbatan, where he brought together a set of interviews with some of Iranian stakeholders involved in the development of this housing project.[14]

Despite a growing wealth of architectural scholarship on the urban transformation of Tehran in the 1960s and 1970s, and on the specific case of Ekbatan, most of the research referenced above overlooks the role of the Shah's modernisation programme as an imposing state apparatus for institutionalising the ideas of megastructure movements through Tehran's masterplan. Indeed, these ideals were represented in the capital city as a set of self-contained urban projects of gigantic size, constructed out of modular units, and capable of unlimited extension.[15] In this chapter, I will discuss the housing policies introduced by Tehran's masterplan, and examine how these policies affected both the design and development of Ekbatan. Finally, I will argue that more than local architectural references, it was a welcoming of 'otherness' in Ekbatan's housing scheme that enabled a strong feeling of belonging amongst its residents.

10. For instance, see: Azadeh Mashayekhi, "The 1968 Tehran Master Plan and the Politics of Planning Development in Iran (1945–1979)," *Planning Perspectives* 34, no. 5 (2019); Azam Khatam, "Tehran Urban Reforms between Two Revolutions Developmentalism, Worlding Urbanism and Neoliberalism" (Ph.D dissertation, York University, 2015); Ali Madanipour, "The Limits of Scientific Planning: Doxiadis and the Tehran Action Plan," *Planning perspectives* 25, no. 4 (2010); *Tehran: The Making of a Metropolis*, World Cities Series (Chichester: John Wiley & Sons, 1998); Hamed Khosravi, "Camp of Faith: On Political Theology and Urban Form" (Ph.D dissertation, TU Delft, 2014); Pamela Karimi, *Domesticity and Consumer Culture in Iran Interior Revolutions of the Modern Era* (London and New York: Routledge, 2013); Wouter van Stiphout, "The Saddest City in the World: Tehran and the Legacy of an American Dream of Modern Town Planning," https://www.crimsonweb.org/spip.php?article178; Seyed Mohsen Habibi, *Az Shar Ta Shahr: Tahlili Tarikhi Az Mafhume Shahr Va Simaye Kalbudie an Tafakkor Va Taassor* [De la Cite a la Ville-Analyse Historique de la Conception Urbaine et Son Aspect Physique] (Tehran: University of Tehran Press, 1999).

11. Alexandra Staub, "*Conflicted Identities: Housing and the Politics of Cultural Representation*," (Basingstoke: Taylor & Francis Ltd, 2015).

12. Ali Javan Forouzandeh and Ghasem Motallebi, "The Role of Open Spaces in Neighborhood Attachment , Case Study: Ekbatan Town in Tehran Metropolis," *International Journal of Architecture and Urban Development* 1, no. 3 (2012): 11-20.

13. Rana Habibi, "Modern Mass Housing in Tehran. Episodes of Urbanism 1945-1979" (KU Leuven, 2015).

14. Behrooz Marbaghi, *Shahrak-E Ekbatan: Madaniyat Moaser Memari Iran* [Ekbatan Town: Modern Civility of Iranian Architecture] (Tehran: Payam, 2017.

15. For more reading about the difinition of megastructure, see: Ralph Wilcoxen, *A Short Bibliography on Megastructures*, vol. 66 (Monticello: Council of Planning Librarians, 1968).

16. For more reading, see: April R. Summitt, "For a White Revolution: John F. Kennedy and the Shah of Iran," *The Middle East Journal* 58, no. 4 (2004).

State Imposing Apparatus for Change: The White Revolution

While the 'White Revolution' facilitated the absorption of U.S-led Modernism into Iran's political and social scene, it was in fact the fear of Soviet military domination that made Mohamad Reza Shah heavily dependent on American military support and financial aid.[16] To protect Iran and to make the country a regional superpower, the Shah asked the U.S.A for advanced military weapons, equipment and facilities. The Kennedy administration was willing to do so under one condition: "the Shah has to begin internal reform".[17]

The Iranian reform programme (the White Revolution) was duly launched in 1962.[18] On one hand, it was a modernisation project aimed at abolishing the quasi-feudal landlord class in rural areas.[19] On the other, it was "a bloodless revolution from above aimed at fulfilling the expectations of an increasing politically aware general public as well as an ambitious and growing professional socio-economic group, and as such, anticipating and preventing what many considered to be the danger of a bloody revolution from below," as Ali Mohamad Ansari observed.[20] To militate against the spread of Soviet influence in the Middle East, in light of Communist-inspired revolutions in China, Cuba and Iraq, the Kennedy administration convinced the Shah to undertake land reform to win support from the peasantry and labour organisations, in favour of the Pahlavi monarchy.[21] Accordingly, large agricultural lands were subdivided among the peasants, thereby extending state authority into rural areas.

This so-called 'White Revolution' was a medium to industrialise Iran and advocate the Shah's utopian vision. To finance his modernisation programme, Mohamad Reza Pahlavi allowed global oil companies, in particular U.S-American Exxon and British-Dutch Shell, to expand their petroleum-related facilities for oil extraction and export, thus multiplying Iran's national income.[22] This tremendous increase in oil revenues attracted many international developers, construction firms and architectural companies to become involved in Iran.[23] From the mid-1960s and throughout the 1970s, American enterprises and agencies, such as the Ford Foundation, General Motors, and the Starrett Housing Corporation, actively collaborated with the Iranian government to develop new industrial and infrastructural projects.

The Shah's modernisation programme represented more than just an attempt to become an integral part of the Capitalist world system. Arguably, Mohamad Reza Pahlavi intended to turn Iran into a 'model' country that, under his leadership, would become a symbol for what he called the 'Great Civilisation' (*Tamadon-e Bozorg*). Under this utopian vision, "everybody, from his birth to his death, would enjoy every kind of social insurances".[24] Moreover, the Shah described Iran as a country that "its future would be more glorious than its [ancient] past…; [and] its standard of living

17. Ibid., 564.

18. The White Revolution had six main provisions, as follows: 1) nationalisation of forests, 2) sale of public enterprises, 3) female suffrage, 4) profit-sharing schemes involving workers, 5) foundation of literacy corps, and 6) land reform. Later, under the pressure of religious leaders, the article of religious propagation units was added to the programme. Yet, the main aim of the White Revolution remained as land reform that eventually carried out by the charismatic Iranian Minister of Agriculture, Hassan Arsanjani together with the pro-American prime-minister, Ali Amini. They both believed in land-reform as a fundamental basis of socio-political and economic modernisation. See: Mohsen M. Milani, *The Making of Iran's Islamic Revolution: From Monarchy to Islamic Republic* (Colorado: Westview Press, 1994), 46.

19. According to Kamran Matin, the core capitalist states and international financial institutions saw land reforms as the stimulators of the economic modernisation that was necessary for the closer integration of Third World countries into the capitalist world economy. See: Matin, *Recasting Iranian Modernity*, 99-121.

20. See: Ansari, "The Myth of the White Revolution," 2.

21. Kennedy's Doctrine, *Alliance for Progress*, was founded on preventing the collapse of the U.S allies and encountering the threats from national and communist movements to undertake controlled socio-political reforms and emphasise on such themes as reforms, democracy, freedom, Human Rights and human dignity. The Kennedy administration focused on land reform and private ownership strategy as two main mediums to prevent the Soviet influences in the Middle-East. Moreover, the new American foreign policy was based on the ideology of modernisation as a socio-political tool to promote reform within developing countries. Indeed, American social scientists, who substantiated the Kennedy doctrine, believed in modernisation as a way to define the nation's historic accomplishments, and identify the deficiencies of an 'emerging world'. For more reading, see: Latham, *Modernization as Ideology: American Social Science and 'Nation Building' in the Kennedy Era*.

22. From around 24,000 in 1956, Iran's export of crude oil reached 280,000 tons in 1974. During the 1970s, the petro-dollar income formed more than 88 per cent of Iran's national budget, and a considerable amount of this money was dedicated to developmental/civil projects. For more reading, see: Matin, *Recasting Iranian Modernity*, 114.

23. For more reading, see: Carola Hein and Mohamad Sedighi, "Iran's Global Petroleumscape: The Role of Oil in Shaping Khuzestan and Tehran," *Architectural Theory Review* 21, no. 3 (2017).

24. The interview with Mohamad Reza Shah about his idea of the 'Great Civilisation' is available online at the archive of Manoto TV. See: Andrew Keep, "Mostanade Enghelab-E 57," in *Mostanade Enghelab-e 57*, ed. Michael Brownsey (https://www.youtube.com/watch?v=Cbor9KpXZk8: Manoto TV, 2014).

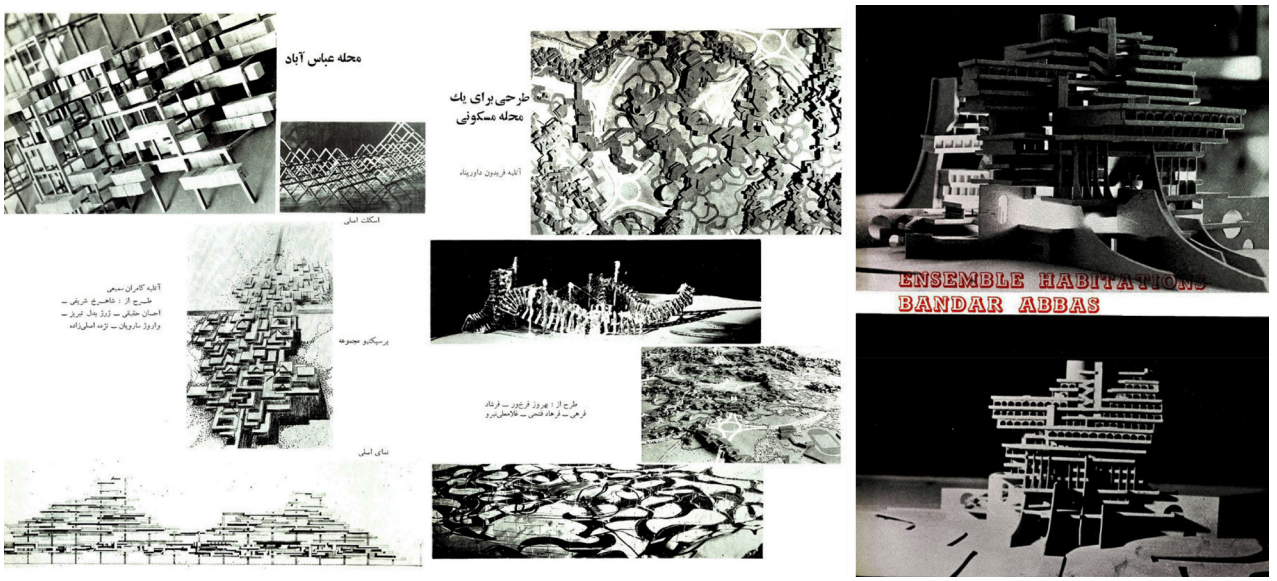


Figure 5.03: examples of students' projects as published by the Iranian Journal of Art and Architecture.
Source: *Honar va Memari* 1, no. 2 (1969): 63-64.

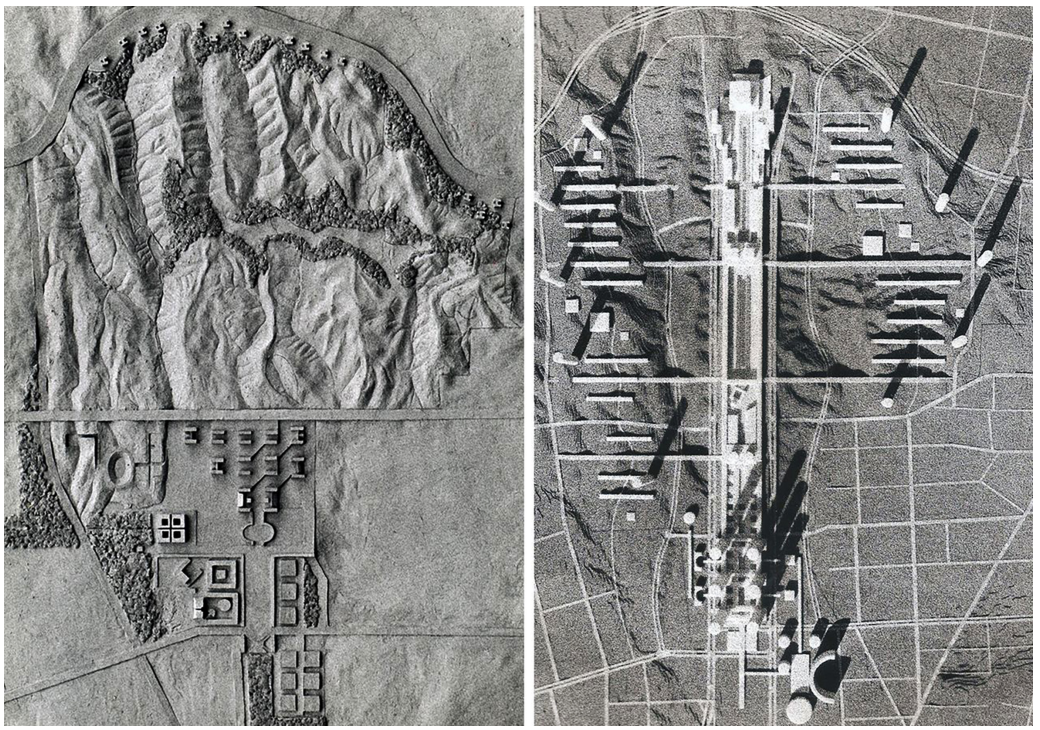


Figure 5.04: initial urban proposals for Shahestan Pahlavi by Louis Kahn (left) & Kenzo Tange (right), 1972.
Source: photograph by George Pohl, Louis I. Kahn Collection, University of Pennsylvania and the Pennsylvania Historical and Museum Commission (left); and photograph by Osamu Murai (right). These pictures were adopted from: "Louis Kahn's Silent Space of Critique in Tehran, 1973–74," *Journal of the Society of Architectural Historians* 74, no.4 (2015).

would soon surpass that of Europe; it would produce a way of life superior to both capitalism and communism."[25] This might explain why the Shah was very eager to allocate a large portion of Iran's budget to the construction of new urban projects, mostly in Tehran, and to engage the services of internationally leading architects and urban planners and designers such as Victor Gruen, Richard Llewellyn Davies, Louis Kahn, Constantinos Doxiadis, Kenzo Tange, and many others.[26]

The Shah's idea of the 'Great Civilisation' was also an attempt to legitimise Iranian tradition, and therefore his monarchy, though a particular conception of modernity.[27] This can be seen, especially from the way that he contextualised the need for development and progress within the narrative of Iranian history. Accordingly, Mohamad Reza Pahlavi defined the only way to archive the ideals of the 'Great Civilisation' as through "a synthesis of the best parts of our Iranian culture and ideology, and those of universal civilisation". Therefore, he referred to the need to employ "the technologies and knowledge of developed countries;" and finally, he concluded that by so doing, we would be able to "enrich our authentic values, to upgrade our socio-cultural traditions, and to improve our ways of living".[28]

Indeed, juxtaposing Iranian cultural traditions with Western industrial technologies was not only a political ideology to institutionalise the Pahlavi monarchy. The concept also became a source of inspiration for introducing new legislation, and for urban design and architectural discourse in the country. For instance, while promoting free-market policies, the Iranian Finance and Planning Organisation (*Sazman-e Barnameh va Budjeh*) implemented from 1964 an initiative by which Iran's consulting and engineering firms were asked to engage an international partner when they were designing large-scale urban and architectural projects.[29] Likewise, global construction companies had to establish a joint-venture with a local company to be eligible to build in Iran.[30]

More importantly, the intertwining of tradition and technology entered the realm of architectural discourse, in Iran. Published from 1968 to 1980, one of the main platforms for such debates was the Iranian Journal of Art and Architecture, *Honar va Memari*, initiated by Abdolhamid Eshragh, an influential modernist architect in the country. Each issue introduced readers to archetypal elements of traditional Iranian architecture, but also greatly discussed their relevance for developing new architecture. Moreover, the journal depicted a series of student projects, in the form of megastructures, that were developed along those lines [Figure 5.03]. It also published innovative architectural projects of the twentieth century around the world, discussing how advanced construction technologies and techniques had made these projects possible.[31] Interestingly, the journal of *Honar va Memari* was printed in a tri-lingual format -Persian, French, and English- and published in Tehran, Paris, and London, expressly to address a wide international audience.

25. Ervand Abrahamian, *A History of Modern Iran* (Cambridge: Cambridge University Press, 2008), 131.

26. By the late-1970s, petro-dollar provided nearly 88 per cent of the Iranian government budget, which enabled the government to invest in a variety of developmental projects in Iran. See: Matin, *Recasting Iranian Modernity*, 114-17.

27. For more reading, see: Ansari, "The Myth of the White Revolution," 1-24.

28. See: Mohamad Reza Pahlavi, *Toward the Great Civilization* (Tehran: The Centre for Disseminating Political Culture in Pahlavi's Era in Collaboration with Pahlavi's Library, 1976), 248-58.

29. Cyrous Bavar, *Negahi Be Peydayeshe Memarie Nou Dar Iran* [A Glance at the Appearance of the Iranian Modern Architecture] (Tehran: Nashr-e Faza, 2010). See also: Habibi, "Modern Mass Housing", 166-200.

30. Bavar, *A Glance at the Appearance of the Iranian Modern Architecture*.

31. Abdolhamid Eshragh, interview by Arash Tabibzadeh, 25 November, 2012.

As Niegel Westbrook and Rana Habibi observed, another platform to expand debate on the relation of tradition and technology was the first Iran International Congress of Architects (IICA), held in Isfahan in 1970.[32] Organised by the Association of Registered Iranian Architects in collaboration with Iran's Ministry of Housing and Development, and the Ministry of Culture, this event, indeed, brought together a small group of Iranian and international architects, and urban planners.[33] Among the overseas participants, Louis Kahn, Paul Rudolph, and Georges Candilis played influential roles.[34] In the IICA, Kahn described tradition as a result of inspiration, where its essence is fixed, yet its style is subject to change.[35] Rudolph defined regionalism as an individual creative response to the matter of both place and climate,[36] while Candilis urged Iranian architects to use tradition with a critical approach and as a reforming force.[37] By referring to the structure of medieval villages in Europe and traditional cities in Iran, these foreign architects were urging the relevance of developing quasi-urban architectural megastructures with new technologies as part of the process of development.[38]

The international participants of the 1970 IICA also took the opportunity to conceptualise their vison on the architecture of megastructure for the Iranian context.[39] In this light, Louis Kahn and Kenzo Tange were commissioned by the Municipality of Tehran in 1972, to design a mega-project for a new urban centre in the Abbas-Abad district, Tehran [Figure 5.04]. The idea of developing Tehran as a megacity, composed of megastructures, was introduced to Iran by one of the movement's pioneers, Victor Gruen, who was commissioned by the Finance and Planning Organisation (FPO) to prepare Tehran's masterplan in the late-1960s. According to the Iranian scholar, Ali Madanipor, the need to construct a megacity was a direct result of the Shah's 'White Revolution', which had caused a massive rural-urban migration to Tehran, thereby forcing the Tehran Municipality to find way to envision the city's growth in future.[40]

The Birth of a New Megacity: The Master Plan of Tehran[41]

The megastructure became a prevalent topic of innovative design, in the 1960s. As argued by Rosemary Wakeman in her seminal book, *Practicing Utopia*, the avant-garde architects of the 1950s and 1960s in Western nations "shared an unwavering belief that the physical structure of cities could transfer society".[42] They aimed to replace static space and architecture by "mobility, flows of people, transportation, communication, and adaptability to change".[43] The outcome was a series of designs for multi-level cities and cybernetic modules, with computers being asked to play a crucial role in solving complex planning challenges.[44] These architects also tended to design and erect numerous massive reinforced-concrete megastructures that were mostly raised up on platforms.

32. Nigel Westbrook, "The Regionalist Debate in the Context of the 1970s Architectural Forums in Iran," in *Proceedings of the Society of Architectural Historians, Australia and New Zealand: 31, Translation*, ed. Christoph Schnoor (New Zealand: SAHANZ and Unitec ePress, 2014), 385–96; and Habibi, "Modern Mass Housing in Tehran," 166-200.

33. The event took place in the historic former Safavid capital of Isfahan –in Chehelsotun Palace-, from Monday 14 September to Friday 18 September. The theme of the conference was 'The Interaction between Tradition and Technology'. For more reading, see: Laleh Bakhtiar and Leila Farhad, eds., *The Interaction between Tradition and Technology: Report of the Proceedings of the First International Congress of Architects, Isfahan, 1970* (Tehran: Shahrivar Press, 1970).

34. See: Bakhtiar and Farhad, *The Interaction between Tradition and Technology*.

35. See: ibid., 97-99.

36. Ibid., 88.

37. Ibid., 65.

38. In the conference, most of discussions focused on the concept of urban-architecture by which an architectural object should be in an appropriate relation with its surrounding, but not as an isolated entity. To achieve these ideas, most of debates focused on the idea of the total environment, by which a structure (a building or part of a city) can be built as a self-contained urban-structure, and advanced technologies can be used as a medium for the construction. For more reading, see: Abdolhamid Eshragh, "International Congress of Architects, Isfahan Sepember.1970," *Honar va Memari* 3, no. 6-7 (1971): 1-34.

39. See: Farshid Emami, "Urbanism of Grandiosity: Planning a New Urban Centre for Tehran (1973-76)," *International Journal of Islamic Architecture* 3, no. 1 (2014). Many international architects such as I.M. Pei, Jorn Utzon, Oswald Ungers, Buckminster Fuller, and Moshe Safdie were appointed to design urban projects in Tehran.

40. As a result of the White Revolution, many peasants, no longer capable of effective production in their allocated lands, began leaving their villages to seek a better life opportunity in urban areas, leading to a massive rural-urban migration. Most migration took place in Tehran, since most industries were located in this city. Accordingly, the urban population of Tehran grew from 1.5 million in 1956 to 2.7 million in 1966. For more reading, see: Ali Madanipour, *Tehran: The Making of a Metropolis*, World Cities Series (Chichester: John Wiley & Sons, 1998).

41. The term 'Megacity' or more precisely 'Megalopolis' was coined by a French geographer, Jean Gottmann in his 1957 article. He provided a general description of this concept, noting that the exceptionally dense urban agglomeration of discrete but interconnected cities along the northeast coastline of the United States formed a bigger ensemble, that of a megacity. For more reading, see: Jean Gottmann, "Megalopolis or the Urbanization of the Northeastern Seaboard," *Economic Geography* 33, no. 3 (1957).

42. Rosemary Wakeman, *Practising Utopia: An Intellectual History of the New Town Movement* (Chicago and London: The University of Chicago Press, 2016), 254.

These design principles became so pervasive that Reyner Banham, the fame British architectural historian and critic, labelled these megastructures as the 'Dinosaurs of the Modern Movement'.[45] He defined Megastructuralism as an international movement rooted in the works of Le Corbusier, the Italian Futurists, the Russian Constructivists, and contemporary avant-garde Japanese architects. Banham argued that Le Corbusier's 1930s project for Fort l'Empereur Algeries, often called the 'Plan Obus', was a key reference for and driving force behind the megastructure movement. In his view, the 1960s megastructural schemes shared a common characteristic whereby the urban realm was reconfigured in totality.[46]

The concept of totality and collective urban life were mostly visualised through a form of monumental architecture.[47] Arguably, the gap between reality and vision in these futuristic models led the pioneers of the megastructure movement to consider the design of megacity as a tool to develop the idea of 'the whole human environment'.[48] As Wakeman observes, New Brutalism bridged this gap in that it "built up colossal structures that joined the functions of urban society into a unified whole."[49] This concept, according to the U.S. architect, Paul Rudolph, was rooted in an older historical model of town-building, whereby growth and change could take place in a collective urban infrastructure.[50] In this view, a distinct emphasis was given to technological innovations, while implementing this concept in the realm of architecture. Aiming to expand the concept to fit urban planning, the hierarchical development of space and its open-endedness were greatly underlined by the pioneers of this movement.[51] Indeed, this explains why Banham defined Victor Gruen's theory of the 'cellular metropolis', that will be further discussed in this chapter, as a combination of Ebenezer Howard's Garden City concept with the technological innovations that provided a profitable proposition in the hard-nosed 1960s Capitalist economy.[52]

Despite the fact that megastructural ideas influenced the design and construction of many projects in Europe and North America, it seems that those non-Western countries with the most imposing state apparatuses were able to implement the most complete versions at the urban and architecture scale. Arguably, Tehran is one of those few examples in the world of a realised 'megacity' whereby, according to Wouter van Stiphout, the whole urban structure and its related architectural projects are "tamed by a single idealistic planning vision".[53] This megacity today is largely a result of the Tehran masterplan designed by Victor Gruen Associates, a Los Angeles-based architectural firm. In 1965, Gruen was assigned to prepare a comprehensive urban development plan for the city of Tehran. He formed a joint-venture with Abdolaziz Farmanfarmaian, an Iranian Modernist involved in numerous large-scale governmental projects.[54] In three years-time, they prepared their proposal and submitted it to Iran's Supreme Council of Planning; and in 1968, they received the approval from the Municipality of Tehran.[55]

43. Ibid., 255.

44. For more reading, see: Anthony Vidler, *Histories of the Immediate Present: Inventing Architectural Modernism* (Cambridge, MA: MIT Press, 2008), 128-33.

45. Reyner Banham, *Megastructure: Urban Futures of the Recent Past* (London: Thames and Hudson, 1976), 8.

46. Ibid.

47. For more reading, see: Jan Maruhn, "Le Corbusier and His Revolutionary Childeren: From the Ville Radieuse to New Babylon," in *Megastructure Reloaded: VisionäRe StadtentwüRfe Der Sechzigerjahre Reflektiert Von ZeitgenöSsischen KüNstlern*, ed. Sabrina van der Ley and Markus Richter (Ostfildern: Hatje Cantz, 2008).

48. Banham, *Megastructure*.

49. Wakeman, *Practising Utopia*.

50. For instance, Paul Rudolph described the Ponte Vecchio Bridge in Florence as one of the best historical examples of such megastructure, and believed that the bridge, as a single entity, had functioned as a city. Banham, *Megastructure*, 13-14.

51. See: Wakeman, *Practising Utopia*.

52. Banham, *Megastructure*, 72-73.

53. Wouter van Stiphout, "The Saddest City in the World: Tehran and the Legacy of an American Dream of Modern Town Planning," https://www.crimsonweb.org/spip.php?article178.

54. For instance, Farmanfarmaian designed the building of the Ministry of Roads in 1958, and the headquarters of the National Iranian Oil Company in 1964. Another Iranian actor who fulfilled the role of interlocutor between Gruen's office and the Iranian government was Fereydoun Ghaffari, a state-employed urban planner.

55. The agencies involved in developing the MPT were: the Municipality of Tehran, the FPO, Iran's Supreme Council of Planning, the joint-venture of Gruen-Farmanfarmaian Associates, the Central Statistics of Iran, Iran's Cartographic Centre, Iran's Institution of Social Studies, a Dutch Economic Institution, and the American infrastructural firm of Amman and Whitney Engineers. For more reading, see: Victor Gruen and Abdolaziz Farmanfarmaian, "The Comprehensive Plan of Tehran: The General Ideas and Schemes," ed. Supervising the Growth of the City of Tehran, The Comprehensive Plan of Tehran (Tehran: The Planning and Finance Organisation, 1968).

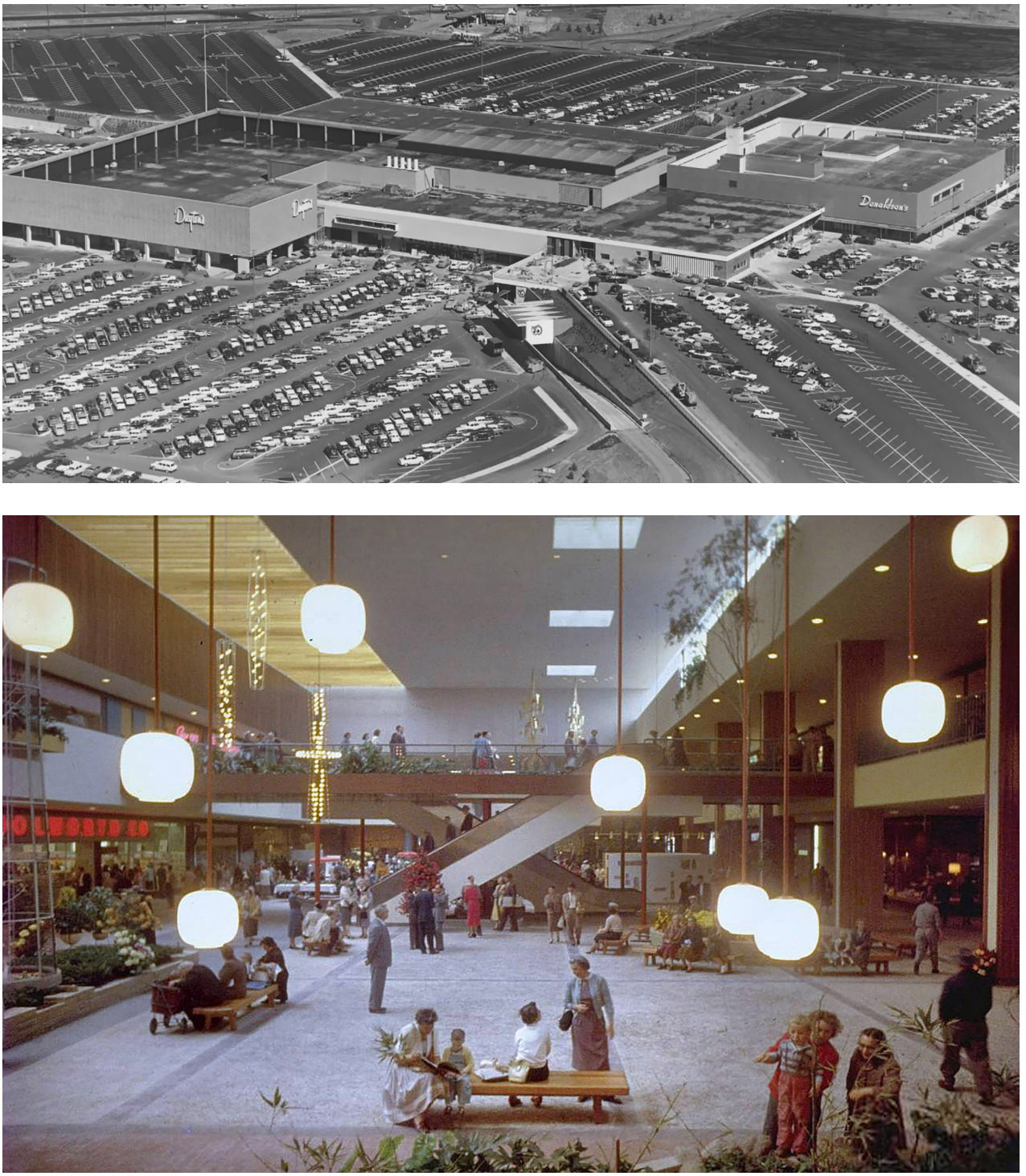


Figure 5.05: Northland Shopping Centre, outside Detroit, Michigan.
Source: Victor Gruen Online Collection, American Heritage Centre, University of Wyoming (top); and *Life magazine* Photo Archive (bottom).

The Master Plan of Tehran (MPT) proposed a comprehensive planning for the city over the next twenty-five years.[56] It was designed based upon Gruen's theory of the 'cellular metropolis', an urban idea first mentioned in his 1964 book on *The Heart of Our Cities: The Urban Crisis, Diagnosis and Cure*. Victor Gruen believed that Modernist architecture and planning using modern technologies could cure nearly all urban problems.[57] Building upon the concept of 'the city with a heart' that had been discussed in the CIAM's eighth congress in 1951,[58] Gruen invented the American shopping mall as a remedy for the absence of a socio-commercial heart for its suburbs.[59] In his imagination, the mall was an ideal community space, "derived from the tradition of the market squares of Europe or the main streets of American cities", which could play the role of the Greek agora for twentieth century urban design.[60]

Gruen defined urban sprawl as the major problem of contemporary cities. As a cure, he proposed that by developing a series of self-contained and interconnected satellite towns, urban planners and designers might resolve this problem.[61] Influenced by Ebenezer Howard, Lewis Mumford and Jane Jacobs, his hierarchical order of neighbourhoods, districts, community towns, cities as well as metropolitan cores was an attempt to restore a sense of community belonging.[62] In this model, each metropolitan core was a 'mega-city' itself, consisting of ten cities; each of these cities was in turn formed by ten towns around the city centre; each town consisted of four districts around the community centre; and each district was constructed out of four or five neighbourhood units around the district centre.

In Gruen's vision, the shopping mall became the space of modern public life. Gruen defined the shopping mall as the core of each urban centre around which public facilities could be erected. To reinforce his claim, he pointed to the town centre of Cumbernauld, a concrete megastructure near to Glasgow, as the best example. In an early attempt, Gruen designed the Southdale Mall at the Northland Centre, outside Detroit, as a self-contained and controlled urban environment [Figure 5.05]. This megastructure, according to *Architectural Forum*, conveyed "the feeling of a metropolitan downtown".[63] Gruen's ideas became so influential that Paul Rudolph described his megastructural approach as one of the most important architectonic innovations of the twentieth century, after Ludwig Mies van der Rohe.[64] Although in the 1950s and 1960s, Gruen did partly implement new communities such as New York's Roosevelt Island, Downtown Fort Worth in Texas, and Valencia town centre in California, his ideal metropolis was mostly realised in fragments, especially through commercial shopping centres.[65] Thus, when Iranian technocrats asked Gruen to design the masterplan for Tehran, he grabbed this offer as an opportunity to implement his vision at a full urban scale.

As might have been expected, Gruen relied upon his concept of the 'cellular metropolis', adapting this scheme to Tehran's geographical and socio-economic

56. See: Mashayekhi, "The 1968 Tehran Master Plan;" Khatam, "Tehran Urban Reforms;" Madanipour, "The Limits of Scientific Planning;" *Tehran: The Making of a Metropolis*; Khosravi, "Camp of Faith;" Karimi, *Domesticity and Consumer Culture*; van Stiphout, "The Saddest City in the World;" Habibi, *De la Cite a la Ville*.

57. Victor Gruen, *The Heart of Our Cities: The Urban Crisis: Diagnosis and Cure* (New York: Simon and Schuster, 1964).

58. The rapid post-war expansion of European and North American cities concerned many architects about the disappearance of civic values from the cities. In the 8th CIAM congress, held in Hoddesdon, England, from July the 7th to the 14th, 1951, the theme of the 'Heart of the City' formed the main body of discussions, to address the importance of reinforcing urban cores in rapidly sprawling cities. The 8th CIAM congress became a reference point for developing "new forms of public spaces, including shopping malls, renewed downtowns, and theme park that came to characterise urbanism in the rapidly decentralising cities of the 1950s and later." See: Eric Paul Mumford, *The Ciam Discourse on Urbanism, 1928-1960* (Cambridge, Massachusett and London: The MIT Press, 2000), 215.

59. See: M. Jeffrey Hardwick and Victor Gruen, *Mall Maker : Victor Gruen, Architect of an American Dream* (Philadelphia: University of Pennsylvania Press, 2004).

60. Wakeman, *Practising Utopia*, 279.

61. Gruen, *The Heart of Our Cities: The Urban Crisis: Diagnosis and Cure*.

62. Wakeman, *Practising Utopia*, 279.

63. See: "A Break-through for Two-Level Shopping Centers," *Architectural Forum* 105 (December 1956): 117.

64. John Wesley Cook, Heinrich Klotz, and Philip Johnson, *Conversations with Architects: Philip Johnson, Kevin Roche, Paul Rudolph, Bertrand Goldberg, Morris Lapidus, Louis Kahn, Charles Moore, Robert Venturi & Denise Scott Brown* (London: Lund Humphries, 1973), 109.

65. Banham, *Megastructure*.

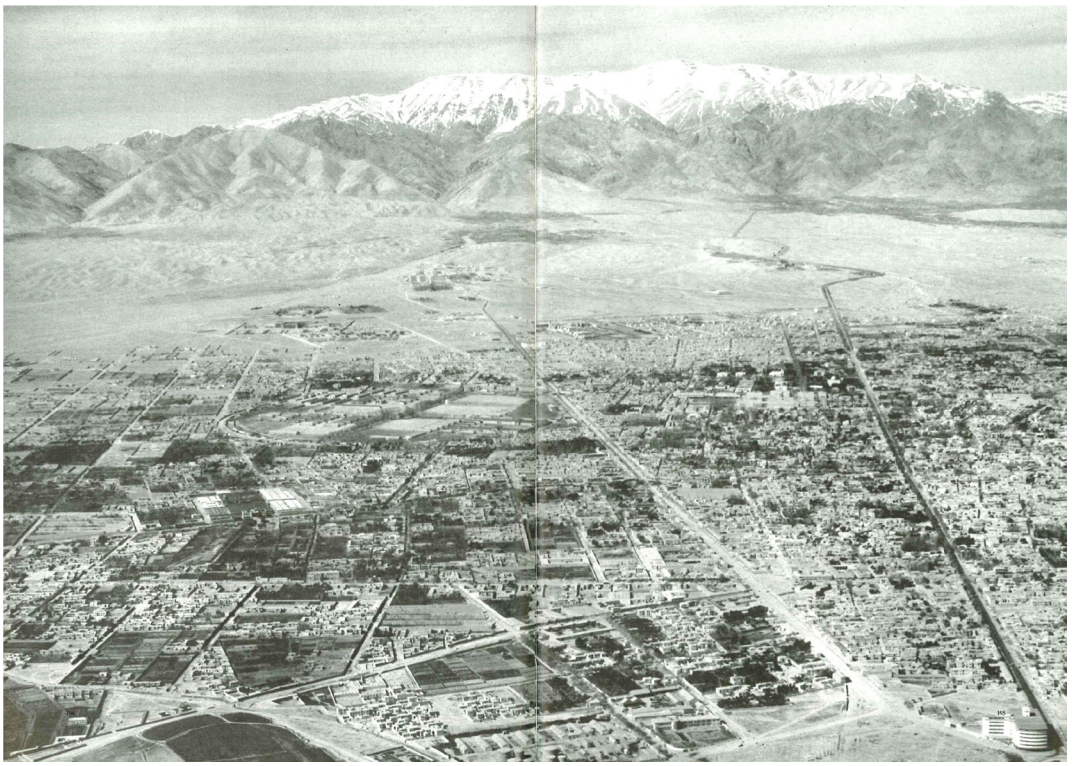


Figure 5.06: Tehran in 1965.
Source: photography by Shannon Cresson, R., in *National Geographic Magazine*, Vol. CIV, No. 5; Washington, D.C. November (1953), 714-15.

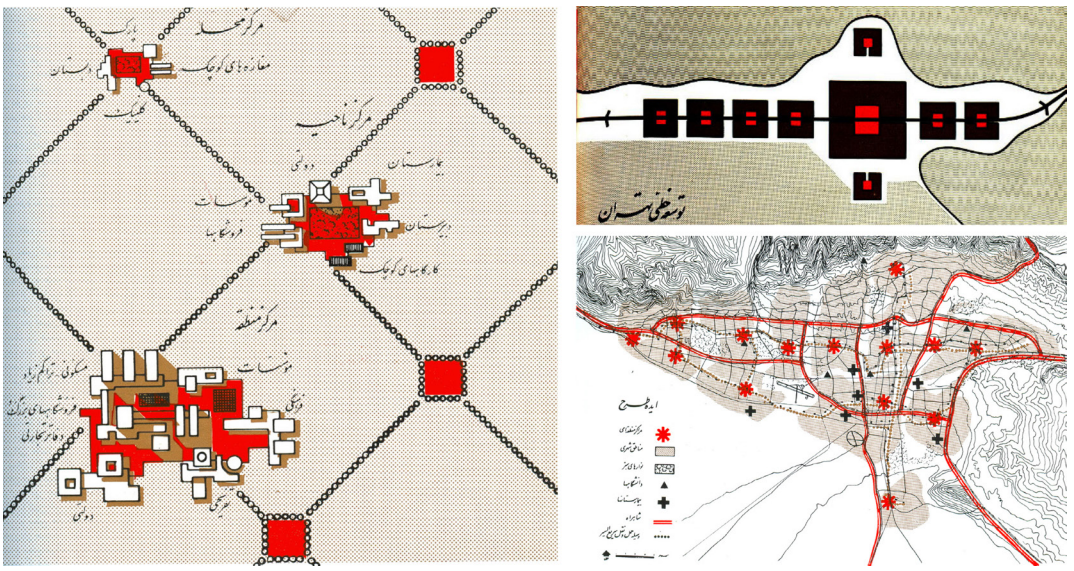


Figure 5.07: Victor Gruen and Abdolaziz Farmanfarmaian's 1968 urban proposal for Tehran.
Source: *Honar va Memari* 2, no. 5 (1970): 57-61.

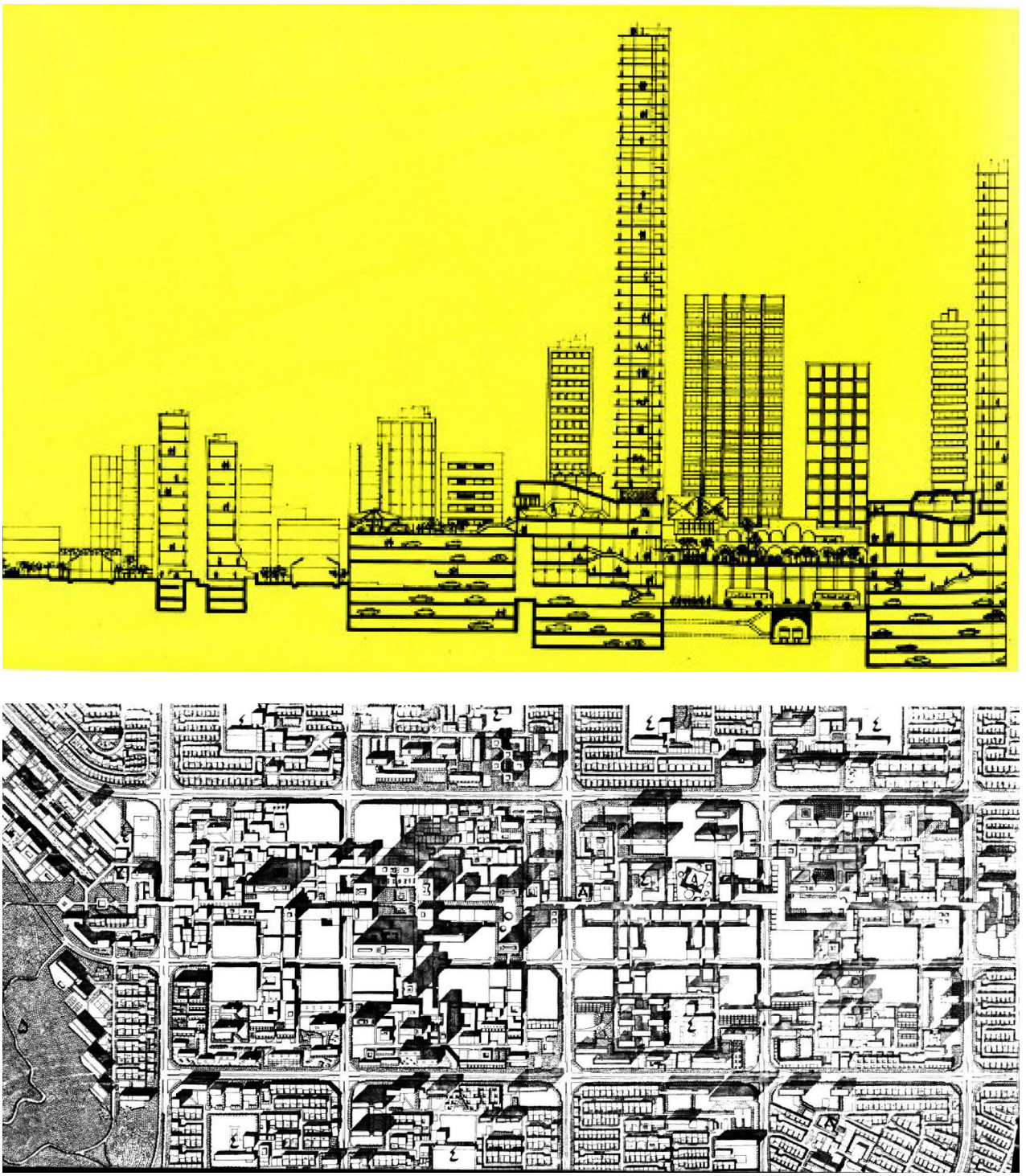


Figure 5.08: examples of Gruen's visionary sketches (plans and sections) for the urban centres of Tehran.
Source: *Honar va Memari* 3, no. 5 (1970): 51, 67.

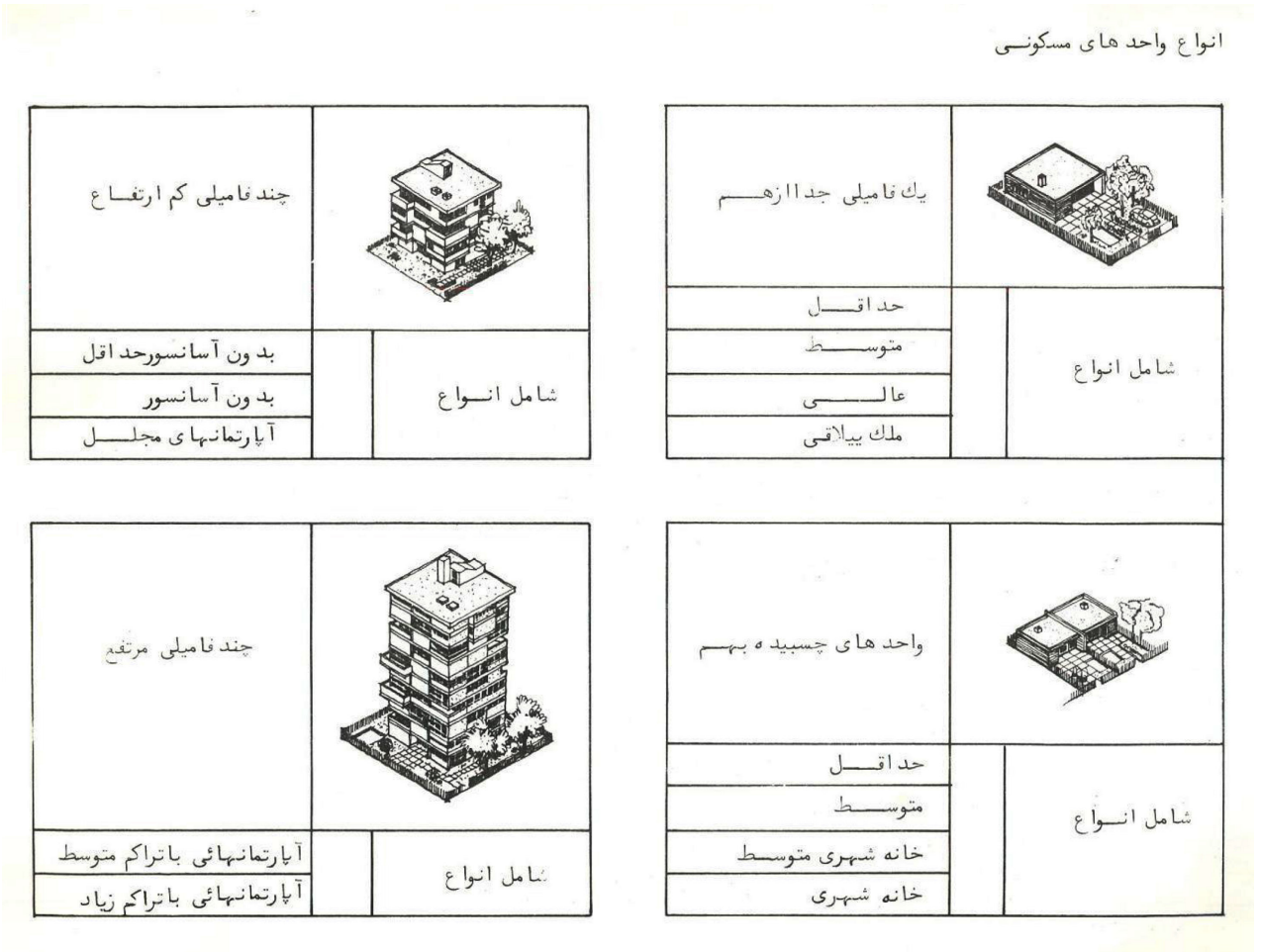


Figure 5.09: proposed housing typologies in the Tehran masterplan.
Source: The Comprehensive Plan of Tehran: The General Ideas and Schemes. Tehran: The Planning and Finance Organisation, 1968, 69.

structure.[66] The city is situated on the foothills of the Alborz Mountains that had long limited the expansion of the city to the northeast. Moreover, Tehran had already grown strongly in a northern and southern direction [Figure 5.06]. Its northern zone, full of large gardens, was a place where mostly upper-class families lived, while the city's southern district was a dense urban fabric where low-income families and the urban poor could find affordable accommodation close to their workplaces. Interestingly, Gruen proposed his scheme as a linear growth of the central part of the city, where the majority of middle-income groups resided. This might explain why his proposal aimed to make Tehran a utopia for middle-class families, in his words.[67] Gruen stretched out his idealised diagram for a metropolis over Tehran, pulling it in a westerly direction, thus forming a cross-shaped linear form that intersected in the city's centre [Figure 5.07].[68]

Population size and density were two particularly influential parameters in Gruen's proposal. In his diagram, Tehran was divided into 10 satellite towns, held together through a chain of gigantic highways and a high-speed public transportation network that were embedded in a flowing of parks and green landscapes. Intended to limit the city's population to 5.5 million people, each of these satellite towns was designed for a maximum population of 500,000 persons, and subdivided into the districts of 15,000 to 30,000 residents; furthermore, each district was designed as a series of neighbourhoods with 5,000 inhabitants.[69] The MPT defined a density of up to 150 persons per hectare for areas in northern Tehran, yet of up to 500 persons per hectare for central and southern districts.

Gruen also proposed a hierarchical order for urban facilities within each satellite town. According to the MPT, the neighbourhood centre was to be defined as a place where a small park, primary school, medical clinic and a precinct of small shops should be located. At a larger scale, the district centre was designated to be the location of the local hospital, high school, workspaces, small shopping malls, as well as a few governmental institutions. The various town centres were, then, to have a minimum area of 150 hectares, so as to accommodate larger commercial centres, major shopping malls, recreation centres, governmental institutions, larger workspaces and offices, and clusters of high-rise residential buildings [Figure 5.08]. Gruen's masterplan also highlighted the fact that the town centres needed to be established as identifiable areas within Tehran's urban structure, with high-density environments, mostly in the form of high-rise residential towers and slab blocks.[70]

Gruen's proposal included a detailed programme for residential buildings and large-scale housing schemes. Gruen suggested five stages of 5-yearly development for Tehran, giving high priority to providing housing for middle-income groups. In his view, the existing middle-class housing stock would thus be released to improve the living conditions of lower income groups, while upper-class families could continue to afford building their own homes.[71] Accordingly, his masterplan

66. See: "Special Issue on the Master Plan of Tehran," *Honar va Memari* 3, no. 5 (1970): 15-25.

67. For more reading, see: Madanipour, *Tehran: The Making of a Metropolis*.

68. According to the Gruen's masterplan, the Municipality of Tehran should encourage the development of the city toward the west direction where the city has the most potential of growth in the future. For more information see: Gruen and Farmanfarmaian, "The Comprehensive Plan of Tehran: The General Ideas and Schemes," 7-03.

69. The MPT estimated that in 1991 almost 16,000,000 people would live in Tehran. To control growth of the city, the Iranian government aimed to keep the urban population of Tehran in a period of 25 years up to 5,500,000 persons. Accordingly, this formed a basis for the Gruen and Farmanfarmaian's proposal to define the population of each town, district and neighbourhood, in Tehran. For more reading, see: ibid., 1-10.

70. See: ibid., 3-06.

71. The MPT estimated an amount of 7,000 and 18,300 residential units needed to be constructed by the government, for the low- and upper-income families, respectively. See: ibid., 7.05-7.12.

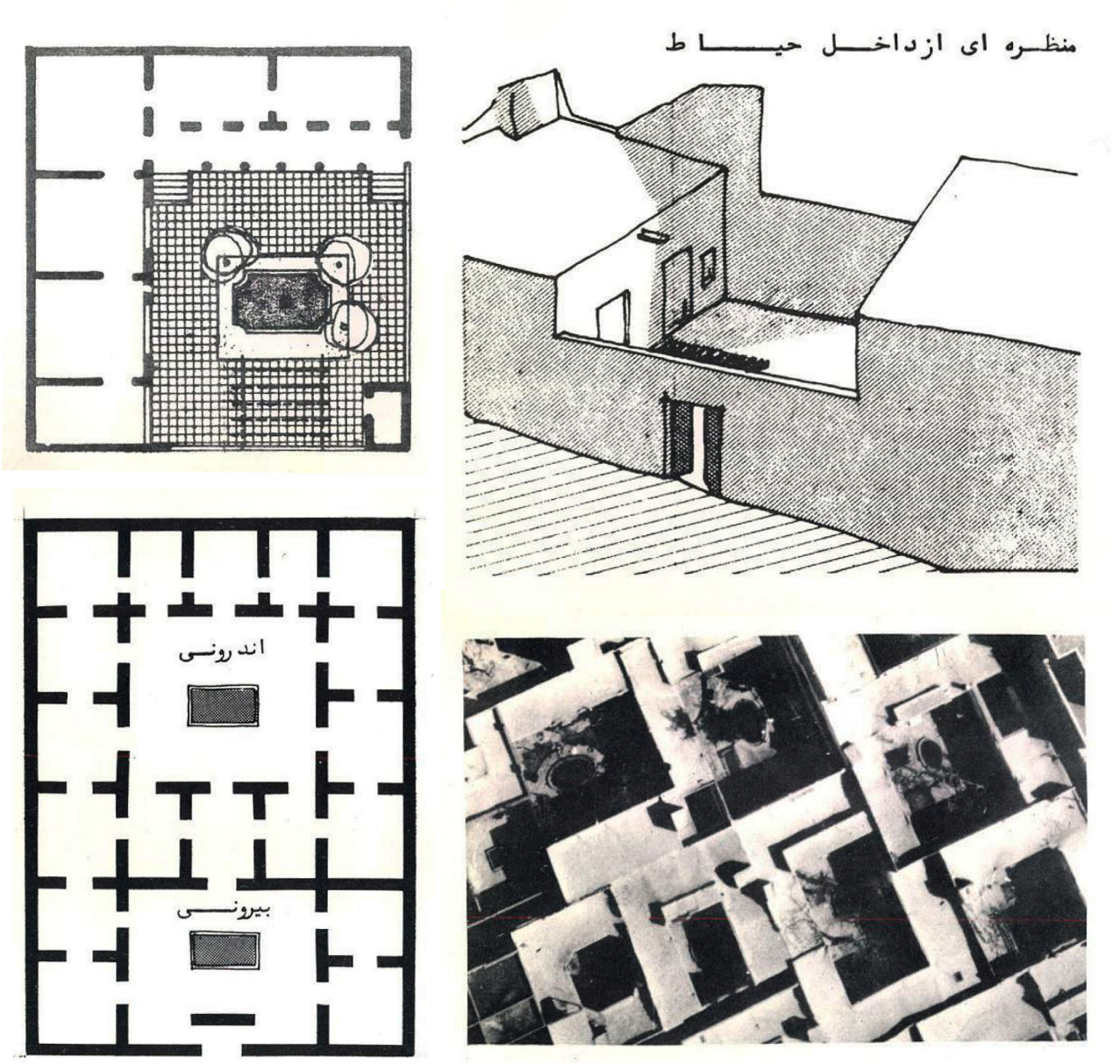


Figure 5.10: two typical traditional houses, as depicted and analysed in Gruen's housing proposal.
Source: The Comprehensive Plan of Tehran: Review and Evaluation. Tehran: The Planning and Finance Organisation, 1970, 3.01-3.06.

estimated that in the first development phase, the government needed to erect 283,500 dwellings for middle-income civilians, particularly civil servants.[72] To achieve this goal, Gruen suggested that 40 percent of the total investment in Iran's construction sector, which was equal to 16 percent of the government's Gross Domestic Product, should be dedicated to the housing programme for Tehran.[73]

Victor Gruen's Housing Proposal for Tehran

To respond to the rapid growth of population in its main cities, Iran's 'Fourth National Strategic Planning' (1967-72) known as the Fourth Development Plan recognised the need for constructing large-scale housing projects. Highlighting the importance of involving both private and public sectors in this process, this initiative focussed either on providing accommodation for blue-collar workers in new industries, or for white-collar civil servants, especially in Tehran.[74] In line with the objectives of Iran's Fourth Development Plan, a large part of Gruen's proposal was dedicated to the issues related to the development of housing in Tehran.

Arguably, Gruen's housing proposal aimed to imply a certain lifestyle among Iran's middle classes, provided through state sponsorship. To facilitate the initiative, the MPT described an affordable dwelling as an apartment of between a wide range of 36 and 112 square metres in size.[75] The rationale for this dwelling size was to make at least some of these newly constructed houses also affordable for lower income families who would eventually become part of the middle class.[76] Hence, the masterplan grouped together different households based upon their yearly income, with a series of incrementally larger dwelling types for each group. It also set out the sizes of outdoor spaces for each of the housing types. Gruen's proposal usefully included a series of illustrations depicting how these affordable housing schemes might be constructed [Figure 5.09].

Conspicuously, Gruen's housing design was based on the promotion of apartment mode of living among Iranians. In the second volume out of five books about Tehran's masterplan, Gruen and Farmanfarmaian extensively analysed the typologies and living conditions of both traditional and newly-built residential neighbourhoods in the city, arguing for the construction of multi-storey, prefabricated residential blocks as a solution to affordable housing.[77] They described the physical form of older Iranian houses as being commonly based on three factors: socio-cultural traditions, local climate, and available construction materials and techniques. Then, they noted that Islamic traditions, which imposed certain social rules on women, were a crucial parameter in the layout of traditional dwellings, restricting the everyday life of inhabitants to an inward-orientated type surrounded by high-walls, with almost no visual relationship to the streets or

72. The MPT categorised civil servants into two groups of lower- and upper-income middle class, and defined an amount of 175,200 affordable dwellings needed to be constructed for the first group and an amount of 83,000 houses for the second group. See: ibid.

73. Ibid., 7.05-7.12.

74. Mohamad Ali Abdi, Sima Mehdizadegan, and Farzaneh Kordi, *Six Decades Housing Planning in Iran (1948-2008)* (Tehran: BHRC Publication, 2011).

75. The 1968 masterplan of Tehran also encouraged the construction of apartments where its surface ranges between 135 and 270 square-meters, to make the new housing stock also alterative to high-income families for the investment. See: Gruen and Farmanfarmaian, "The Comprehensive Plan of Tehran: The General Ideas and Schemes."

76. For more reading, see: ibid.

77. See: "The Comprehensive Plan of Tehran: Review and Evaluation," ed. Supervising the Growth of the City of Tehran (Tehran: The Finance and Planning Organisation, 1970), 3.01-3.53.



Figure 5.11: urban layouts of Kuy-e Kan (left) and Kuy-e Nohom-e Aban (right).
Source: The Comprehensive Plan of Tehran: Review and Evaluation (Tehran: The Planning and Finance Organisation, 1970), 3.15-3.16 (top); and National Archive of Iran (bottom).

other public spaces [Figure 5.10]. Now, they argued, the involvement of Iranian women in contemporary social life emancipated architects from these cultural constrains, allowing them to design more outward-orientated dwellings.[78]

Gruen and Farmanfarmaian also regarded the application of advanced building techniques and materials as a way to improve urban living conditions through affordable housing schemes.[79] They defined the low-tech constructional system of mud-brick loadbearing walls and wooden beams as a major limitation for traditional houses, since it made building structures vulnerable to seismic activity and variable weather. Moreover, they claimed that while these older, thick loadbearing walls insulated internal spaces against heat and cold, the thickness of these walls greatly reduced the net habitable space inside the dwelling. Traditional construction techniques were described as time-consuming and labour-intensive, and thus costly. Private courtyards were labelled as overly large outdoor spaces for the storing of clean water for everyday practices. Then, they argued that the provision of piped water supply in Tehran now enabled architects to design not only dwellings with smaller courtyards, but also to stack them up on top of one another in apartment blocks. Moreover, they contended that prefabricated building systems could reduce construction costs, increase the lifespan of structures, and provide more greenery at ground level by concentrating housing units into taller residential blocks.

Arguably, Gruen and Farmanfarmaian's proposal was also an attempt to promote a new urban life among ordinary Iranians. This could be seen from the selection of a set of public housing projects as their case studies, and from the reflection and discussion on these cases. Noticeably, two housing schemes that were implemented by the Iranian government attracted their attention to prove their points: Kuy-e Kan designed in the late-1950s for a group of mid-income civil servant in West Tehran, and Nohom-e Aban from the early-1960s for a group of low-income workers in South Tehran [Figure 5.11]. In their proposal, these housing schemes were described as successful, since "their urban forms were based on a proper set of urban standards and design regulations".[80] In fact, they focussed more extensively on the Kuy-e Kan scheme.[81] Indeed, from their point of view, the Kuy-e Kan scheme provided an ideal living environment for middle-class families, since the distances between its residential blocks enabled adequate sunlight into dwellings and sufficient access to greenery and other public outdoor spaces at ground level. Further, Kuy-e Kan created facilities such as schools and water-sewage treatment plants, along with parking areas to encourage private car ownership and facilitate higher speed transportation, as discussed in chapter 4.[82]

Aside from indicating the importance of urban mobility, Victor Gruen's intention was to set a basis for self-contained megastructures in Tehran. While Gruen credited Kuy-e Kan for its wealth of outdoor spaces, he believed that its urban

78. Ibid., 3.09.

79. Ibid., 3.09-3.12.

80. Ibid., 3.16.

81. The one- and two-story houses of Nohom-e Aban with small courtyards created a compact living environment for low-income families, where a community centre accommodated a few communal amenities in the neighbourhood. For more reading, see: ibid., 3.12-3.19. For more reading about Kuy-e Kan, see Chapter 4

82. Ibid., 3.24.

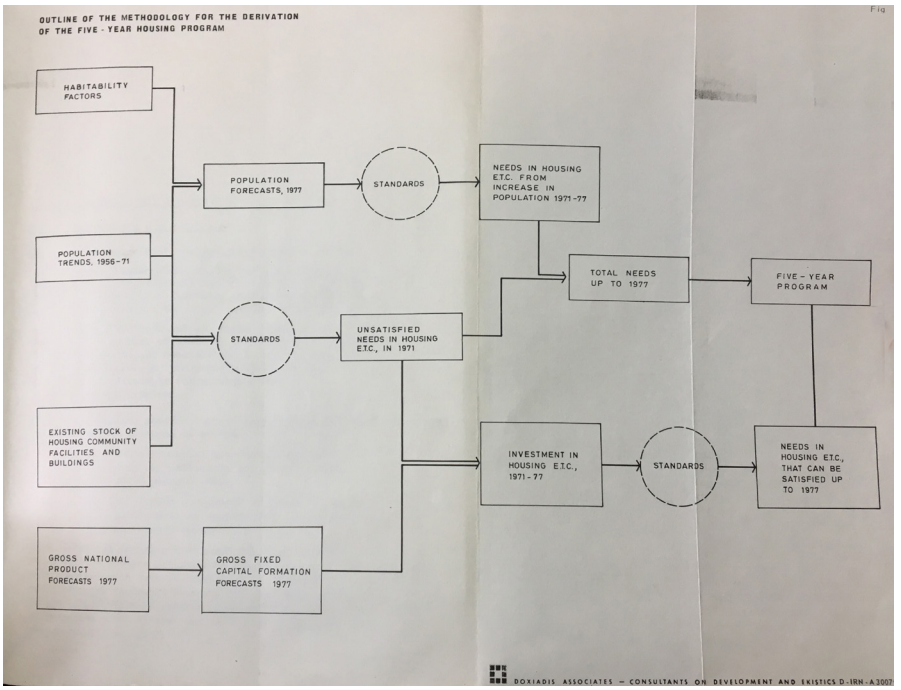


Figure 5.12: outline of the methodology for Doxiadis's 5-year housing programme, Iran.
Source: "Five-Year National Development Programme for Housing and Related Facilities," in Report for the Imerial Government of Iran, ed. Housing and Urban Development (Tehran: Finance and Planning Organisation, 1972), 5.

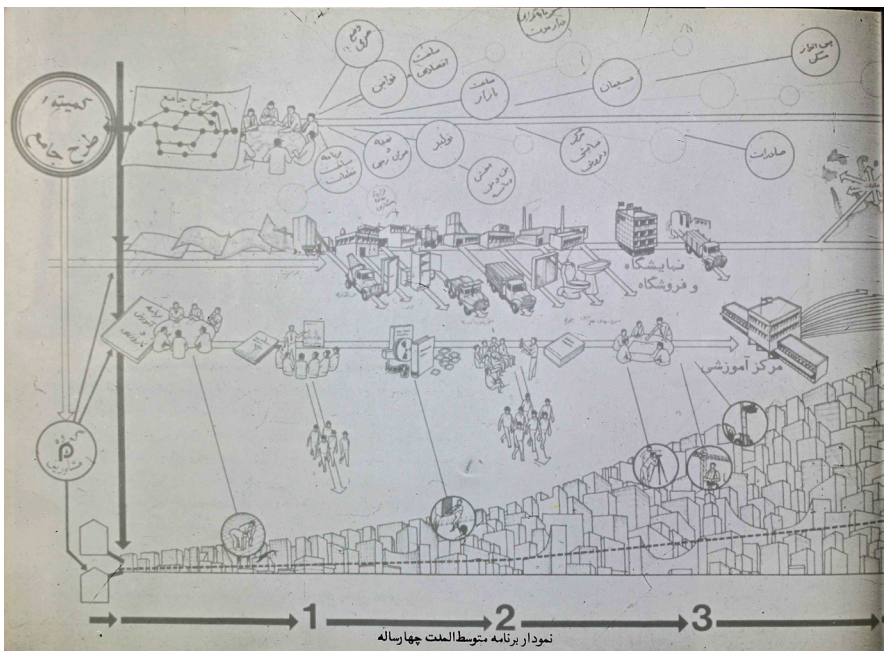


Figure 5.13: outlines of housing programme prepared by Iran's Housing Organisation based on Doxiadis' proposal.
Source: An overview of Iran's Housing Organisation Activities in Housing Development in the Past, Now, and Future (Tehran: Iran's Housing Organisation, 1976).

environment and housing scheme had the ability to accommodate a higher urban density. He argued that it could have been scheme with blocks of 5-10 storeys, with lifts providing access to the upper floors, as part of a multifunctional structure containing all everyday urban activities, such as shopping, work, and leisure.[83] While constructing residential areas around shopping malls was a means to promote a consumer society, as Pamela Karimi observes,[84] it was also a strategy that would encourage architects to design self-contained urban environments for Tehran. It is little surprise, therefore, that the masterplan by Gruen and Farmanfarmaian suggested the construction of urban centres as the first stage of implementation, with large-scale, high-rise housing developments following afterwards.

The MPT and related housing proposal formed different constellations of local and international actors. Tehran Municipality established the Tehran Redevelopment Company (*Sherkat-e Nosazi va Omran Shahr-e Tehran*) to involve private and public developers, and investors, in constructing the new urban centres and in supervising the process. Accordingly, the FPO made the Export Bank (*Bank-e Saderat*), the Development Bank (*Bank-e Omran*), and the Mortgage Bank (*Bank-e Rahni*), responsible for financing these Tehran mega-projects. Expectedly, the MPT was undertaken with the direct guidance of American institutions, such as the Ford Foundation, and partly funded by massive loans from the World Bank and the U.S. Development Fund. In fact, the Gruen's housing proposal opened the door to a flood of international architects, engineers and construction firms; and it formed a basis for the preparation of a comprehensive national housing programme by the famed Greek architect and planner of Constantinos Doxiadis [Figure 5.12],[85] whose contribution to the development of Tehran and its related housing production deserves further elaboration [Figure 5.13].[86]

The Municipality of Tehran in collaboration with the FPO assigned Doxiadis Associates in 1971 to design a development plan for low-income communities in Tehran. Prepared in two volumes, this plan presented the result of a survey from 13 sites in Tehran [Figure 5.14].[87] Furthermore, it provided recommendation regarding the following aspects: Organisation of the typical community, the basis of customs, habits, and necessities of social life; Distribution of various social groups within the typical community, and the necessary community buildings and facilities for creating an integrated community; social activities for the typical community and programme of buildings and facilities serving these activities; And finally, administration, management, and maintenance of the typical community.[88] While conducting in-depth studies and morpho-typological analyses, Doxiadis proposed a series of model communities in the form of urban plans and diagrams to provide guidelines for the development of low-income settlements, in Tehran [Figure 5.15]. Noticeably, the proposed models had a strong resemblance with the community models developed by Doxiadis for Baghdad's master plan in 1955.

83. Ibid., 3.31.

84. As architectural historian Pamela Karimi pointed out, the MPT "was designed to accommodate commercial markets and facilitate the movement of automobiles," promoting a consumer society. See: Karimi, *Domesticity and Consumer Culture*, 99.

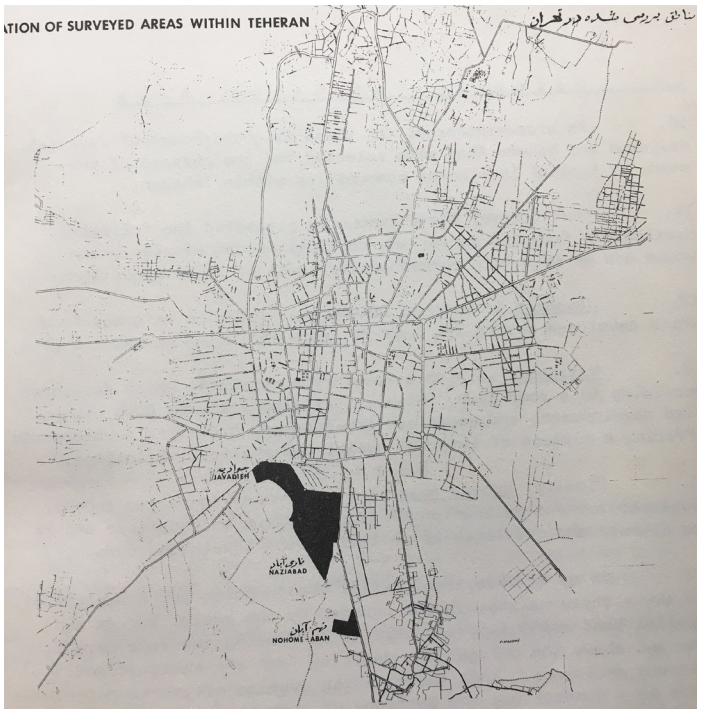
85. See: Habibi, "Modern Mass Housing in Tehran," 166-200.

86. Doxiadis had his first visit to Iran in 1957, to work with the Khuzestan Development Service, a regional development agency which was set up to develop the oil-rich region of Khuzestan. Since the mid-1960s, he became involved in the preparation of regional planning and master plans for the cities in Khuzestan, mainly in collaboration with D.A.Z. consultants and EMCO. Since the early-1970s, Doxiadis was invited to take part in planning multiple governmental projects. The following documents were prepared by Doxiadis Associates in the 1970s, related to the housing development in Tehran and other Iranian cities: DOX-IRN-A19, Feb.1972 about Low Income Communities in Tehran: Managerial and Administrative Aspects. DOX-IRN-A20, Feb.1972 about Low Income Communities in Tehran: Physical Planning Aspects. DOX-IRN-A21, Feb.1972 about Iran's National Programme for Housing and Related Facilities – Trends and Projections of Some Basic Aggregates (Report No.1). DOX-IRN-A22, Feb. 1972 about Iran's National Housing Programme – The Ideal Method for Selecting among Alternatives (Report No.2). DOX-IRN-A23, April 1972 about Iran's Five-Year National Development Programme for Housing and Related Facilities (Report No.3). DOX-IRN-A24, Jun 1972 about Iran National Programme for Housing and Related Facilities – Trends and Projections of Some Basic Aggregates (Report No.4). DOX-IRN-A25, Aug. 1972 about Tehran Action Programme (Report No.5). DOX-IRN-A26, Aug. 1972 about Iran Five-Year National Development Programme for Housing and Related Facilities – Programme Breakdown and its Financial, Administrative and Managerial Aspects (Report No.6). DOX-IRN-A27, Oct. 1972 about Tehran Development Authority (Report No.7). It is also worth mentioning that Doxiadis prepared two extensive report volumes about the revision of Master Plan for Abadan, in 1977. All reports are accessible in the Archive of Iran's Finance and Planning Organisation, in Tehran. The archive was accessed by author in April 2017.

87. All the sites where located in South Tehran. Moreover, the sites of Javadieh, Naziabad, Nohom-e Aban received a great deal of attention in Doxiadis' reports.

88. See: Doxiadis Associates, "Low Income Communities in Tehran," ed. Housing and Urban Development (Tehran: Iran's Finance and Planning Organisation, 1972), 2.





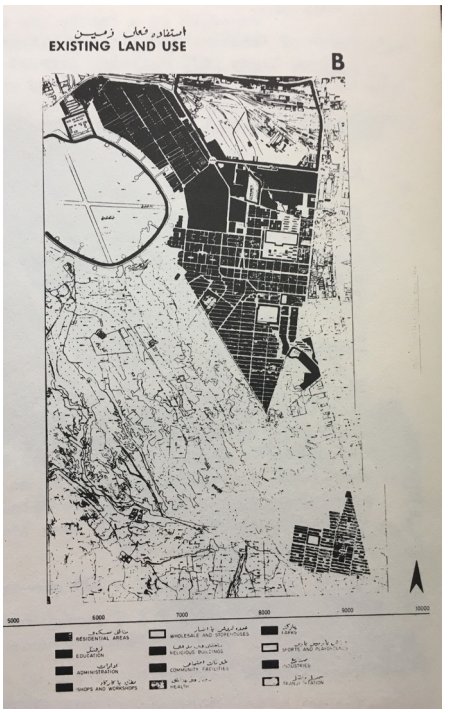


Figure 5.14: low-income communities in Tehran.
Source: Mohamad Sedighi based on Doxiadis' survey for Iran's Ministry of Housing and Urban Development (top); and Doxiadis' survey for Iran's Ministry of Housing and Urban Development (bottom).

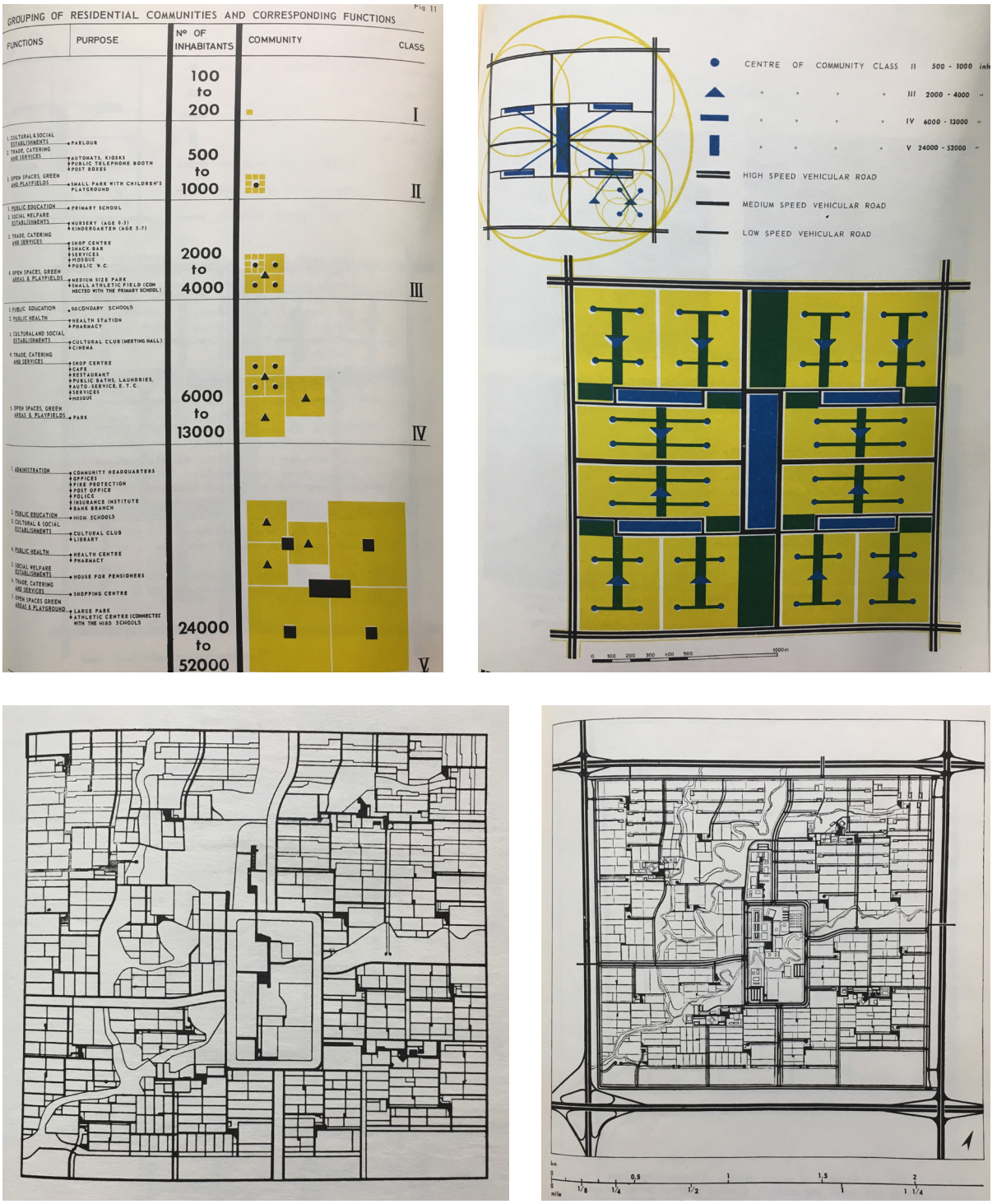


Figure 5.15: examples of Doxiadis' model communities for the development of low-income settlements, in Tehran.
Source: "Low Income Communities in Tehran," ed. Housing and Urban Development (Tehran: Iran's Finance and Planning Organisation, 1972).

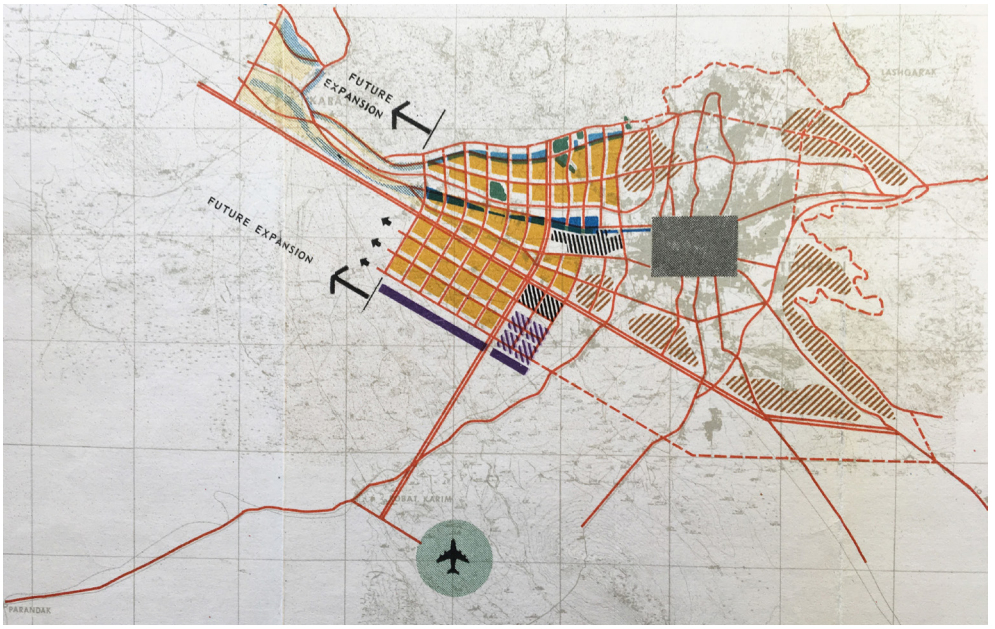


Figure 5.16: Doxiadis' proposal for the expansion of Tehran towards west.
Source: "Tehran Action Plan," ed. Housing and Urban Development (Tehran: Iran's Finance and Planning Organisation, 1972).



Figure 5.17: Doxiadis' Action Plan for west Tehran.
Source: "Tehran Action Plan," ed. Housing and Urban Development (Tehran: Iran's Finance and Planning Organisation, 1972).

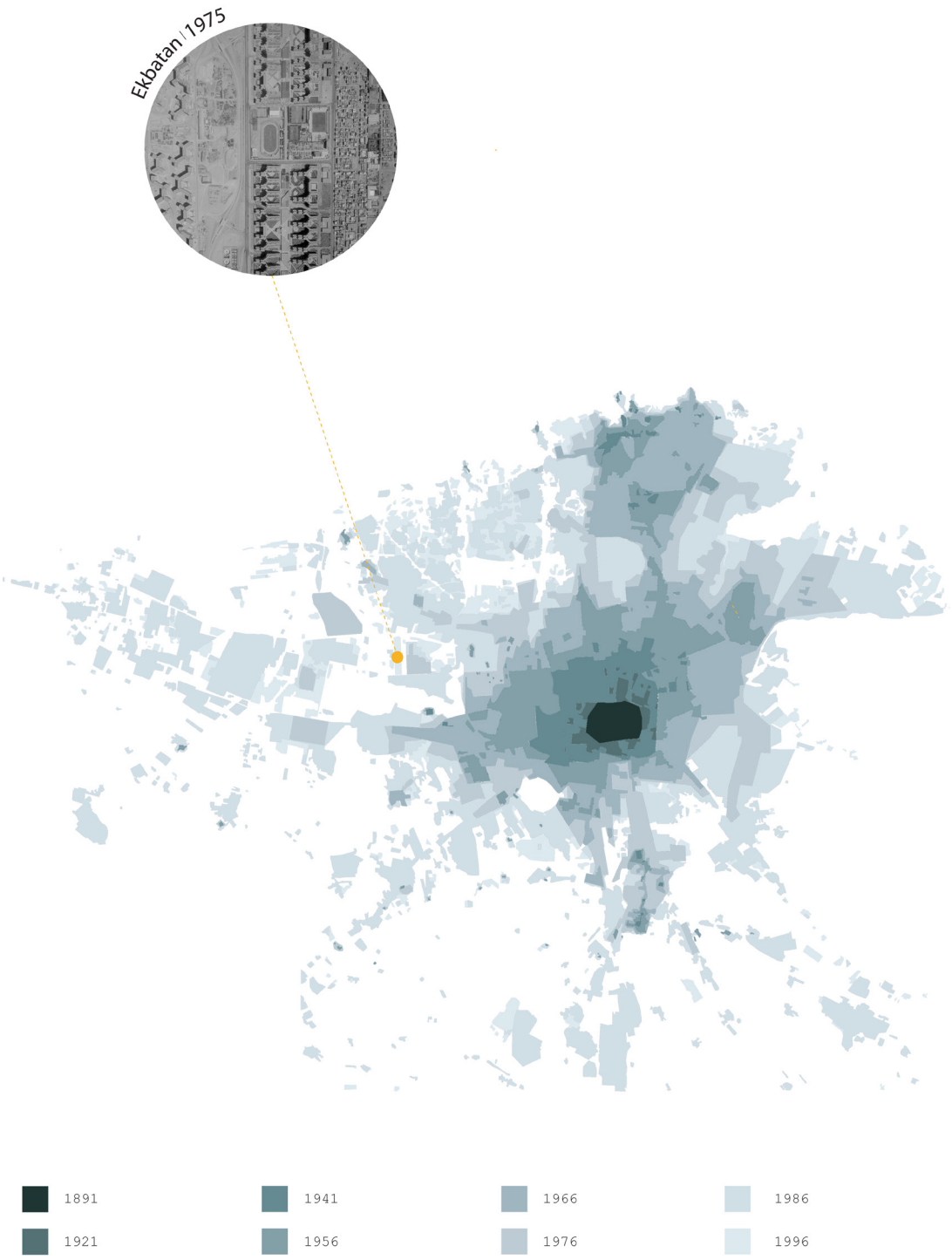


Figure 5.18: location of Shahrak-e Ekbatan in West-Tehran, 1972.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

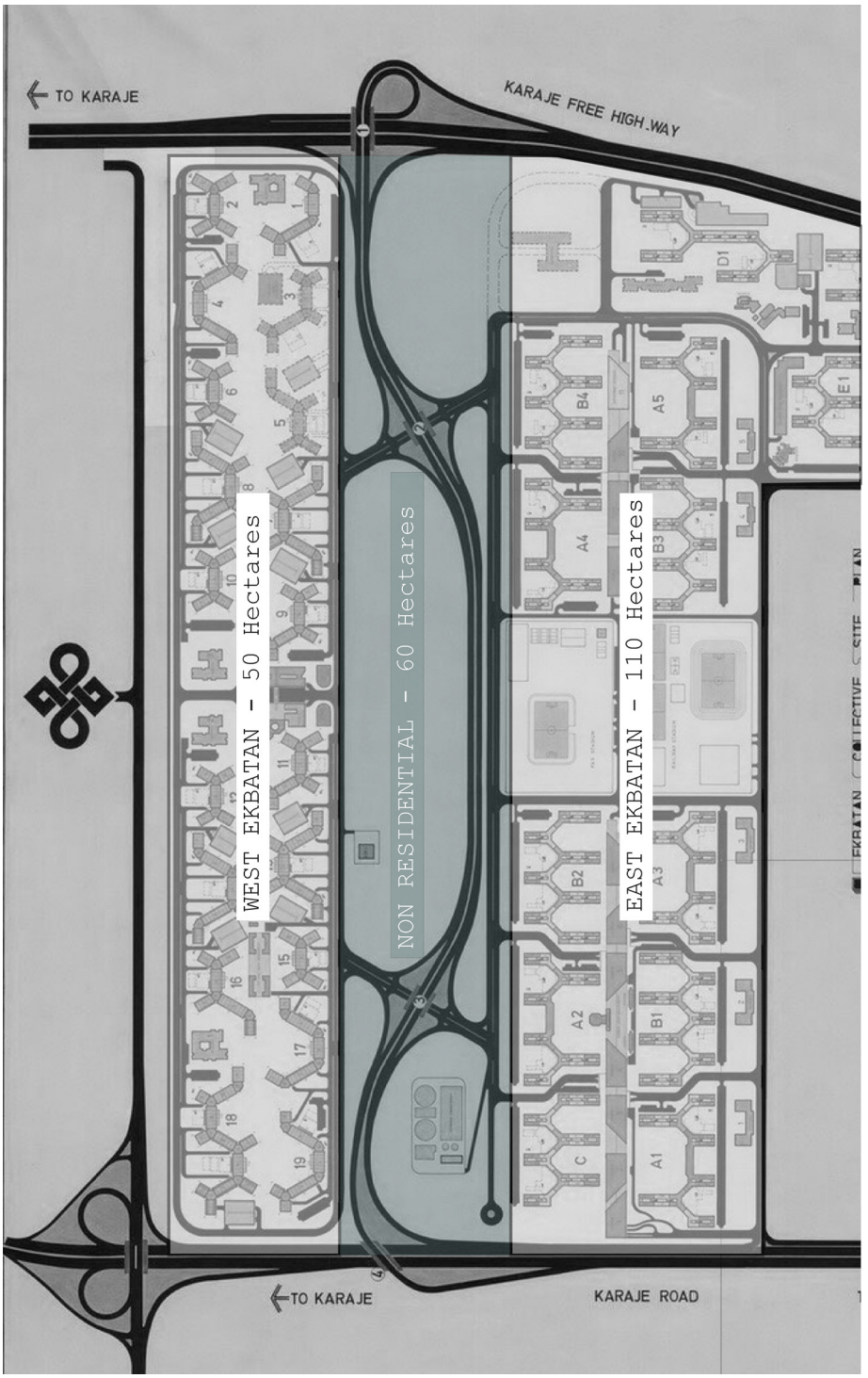


Figure 5.19: zoning and construction phasing in Ekbatan.
Source: Mohamad Sedighi in collaboration with Robby Stubbs, based on the available materials in the former archive of Ekbatan Redevelopment Company.

The Municipality of Tehran invited Doxiadis Associates to prepare a 'Programme of Action' for guiding the future public/private investment in the capital city, based on the MPT.[89] Indeed, this programme was considered as a short-term counterpart to the long-term Gruen's Master Plan for Tehran, aiming to manage the rapid growth of the city within five years. In his analyses, Doxiadis described the newly developed areas as "not fit for the purpose of dealing with the speed of change", and he urged for "a synthesis of people, buildings, nature, and all kinds of machines" to create a proper human settlement.[90] Employing his concept of 'Dynopolis',[91] Doxiadis proposed the western-part of the city as the departure point for achieving this synthesis, which included areas that also played a vital role in Gruen's first-stage decentralisation plan for Tehran [Figure 5.16 & 5.17]. In fact, this might explain why the Municipality of Tehran focused on developing West Tehran in the early-1970s, where a series of mega-structural and pilot projects, such as *Shahrak Ekbatan* (Ekbatan Town), Pardisan Environmental Park, Shahyad Tower, and Aryamehr Sport Complex, were initiated to control the population density and flourish urban life in West Tehran.

In the next sections, I will examine the context from which Shahrak Ekbatan emerged. I will show the extent to which the ideals of megastructure movements, encouraged by the masterplan of Tehran and international multi-stakeholder collaborations initiated by Iranian officials, led to the development of this collective urban community. Finally, I will argue that the architecture of the New Burutalism movement,[92] in conjunction with some Iran's vernacular patterns of inhabitation, formed a basis for creating a notion of 'otherness' among the residents of Ekbatan.

Shahrak Ekbatan

As part of the initiative, the Tehran Municipality authorised the Tehran Redevelopment Company (TRC) to implement the first masterplan stage. Hence, the TRC granted land to private developers to provide affordable middle-class housing. One of the first districts allocated was a vast piece of vacant land in west Tehran, a location that later became known as Shahrak Ekbatan [Figure 5.18]. Under the leadership of Rahman Golzar Shabestani, the Managing Director of the TRC, the pilot project for Ekbatan was planned in 1972. Golzar was a young architect, who studied at the Faculty of Fine Arts, University of Tehran, in the early-1950s;[93] and his relation with the Pahlavi Foundation (*Bonyad Pahlavi*) made him an influential player in Tehran's development scene.[94] The selection of the location for constructing Ekbatan, in fact, was made by Golzar, where he and his uncle were in possession of a 20-hecrate private land.[95] Thus, his personal interest for developing this barren area was tied with the objectives of the MPT that prioritised the expansion of the city towards west Tehran.

89. For more reading, see: Ali Madanipour, "The Limits of Scientific Planning: Doxiadis and the Tehran Action Plan," *Planning perspectives* 25, no. 4 (2010): 485-504.

90. See: Doxiadis Associates, "Tehran Action Plan," ed. Housing and Urban Development (Tehran: Iran's Finance and Planning Organisation, 1972). Document number: DOX-IRN-A25; Accessed April 2017. See also: "The Need for a Realistic Tehran Action Programme," ed. Housing and Urban Development (Tehran: Iran's Finance and Planning Organisation, 1972). Document number: DOX-IRN-A28; Accessed April 2017.

91. The concept of 'Dynopolis' refers to a city formation determined by dynamic forces, as Doxiadis noted. See: Colin McFarlane, *Learning the City: Knowledge and Translocal Assemblage* (Malden: Wiley-Blackwell, 2011).

92. The idea of open-ended self-reliant megastructures, as singular buildings that could function as a city, in combination with the use of reinforced concrete, gave birth to the New Brutalist architecture as outlined by Reyner Banham. For more reading, see: Banham, *Megastructure*, 120-25.

93. See: Habibi, "Modern Mass Housing in Tehran," 166-200.

94. In 1958, the Shah established the Pahlavi Foundation, a non-profit organisation with the goal of promoting and expanding developmental projects on the public land belonging to the Foundation. According to Neta Feniger and Rachel Kallus, the Foundation would "soon became the Shah's Family investment fund, focusing on property development, especially in Tehran, and Pushing Iran's economy toward capitalism and westernisation." For more reading, see: Neta Feniger and Rachel Kallus, "Israeli Planning in the Shah's Iran: A Forgotten Episode," *Planning Perspectives* 30, no. 2 (2015): 240.

95. Marbaghi, *Ekbatan Town: Modern Civility of Iranian Architecture*, 29-36.



Figure 5.20: Zomorrod housing projects in Tehran.
Source: https://www.asemooni.com/298065/shahrak-e-gharb/

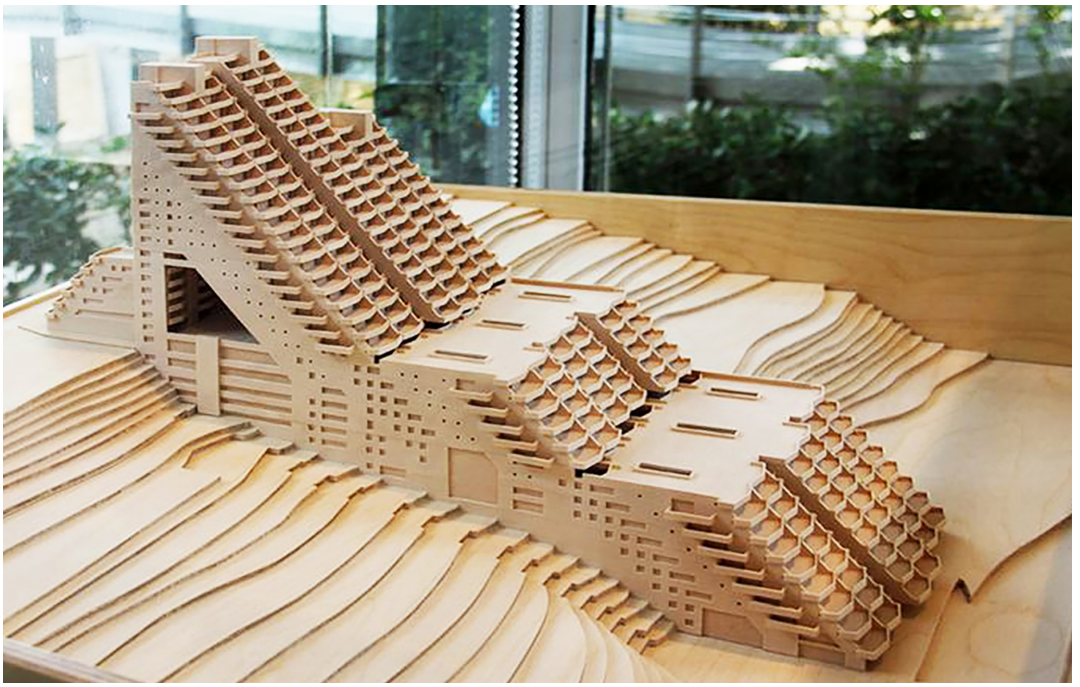


Figure 5.21: physical model of Alborz housing scheme for Tehran.
Source: Photograph by Minsuk Cho, designboom; available at: https://www.designboom.com/architecture/korean-pavilion-venice-architecture-biennale-minsuk-cho-06-10-2014/

Situated approximately 5 kilometres from the city borders, Ekbatan was planned in three phases aiming to accommodate 15,500 middle-class families, with around 80,000 inhabitants, in an area of 220 hectares.[96] Two residential zones were envisaged by the TRC: one of 110 hectares to the east, zoned for 7,500 dwellings, and another of 50 hectares to the west for 8,000 units -each with its own communal amenities, schools, administrative buildings and commercial centre. A 60-hectare non-residential zone forming the urban centre, with facilities such as water and sewage treatment plants, transportation networks, hospital, major shopping mall and recreation centre was used to divide the two sections [Figure 5.19]. Then, for the first phase of development in the eastern part of the project, known as east Ekbatan, 5,000 apartments were planned to be constructed between 1974 and 1976. For the first phase of development in the western part, known as west Ekbatan, 8,000 apartment units were planned to be realised between 1976 and 1978.[97] For the third phase of development in the northern part of east Ekbatan, the other 2,500 units were planned to be developed between 1976 and 1978.

To implement these objectives, Rahman Golzar asked his close friend, Fereydoun Azari, to help with preparing the preliminarily sketches of west Ekbatan and forming a design team. Azari was a modernist architect educated in Italy, France, and the U.S., who after his return to Iran in the late-1960s, became a high-rank adviser of the IMDH. Azari gathered a group of Iranian architects and experts such as Ali Akbar Nasrabadi and Davood Shahin for the design team of Ekbatan. But, as the 1964 bylaw of 'joint-venture' requested, all Iranian consulting and engineering firms needed to engage an international partner when designing large-scale urban projects. Accordingly, Rahman Golzar in collaboration with Hossein Daneshvar, a founding member of the Pahlavi Foundation, established a partnership between local and international companies. In 1974, an agreement was signed between the TRC and a New York developer called Starrett Housing Corporation, directed by Henry Benach. Starrett Corporation agreed to finance and construct 7,500 apartment units, in west Ekbatan; and Starrett appointed the American architecture firm Gruzen and Partners, directed by Jordan Gruzen and Peter Samton, as the company's design partner in Ekbatan.[98]

Prior to being appointed for the Ekbatan project, Starrett Housing Corporation had been involved in prestigious architectural projects funded by the Pahlavi Foundation. Indeed, the foundation was commissioning many U.S-American developers and international architects during the 1970s to create luxurious housing projects for privileged Iranians, mostly in Tehran.[99] For instance, the residential towers of Eskan designed by an Israeli architect, Moshe Bashan, as well as the Zomorrod housing complex developed by Starrett clearly represents this type of an elitist approach to Iran's housing market [Figure 5.20].[100]

96. The initial project intended to house 12,500 middle-income families (from both groups of lower and upper income middle-class) in Ekbatan. However, to provide affordable housing for a wide group of lower and upper income government employees, mostly employed in the Iranian Army, the TRC added 3,000 extra dwellings to the scheme. In total, 15,675 apartment units were constructed, and around 70,000 people live in Ekbatan, at present.

97. In the western part, out of 8,000 apartment units, 5,000 were constructed between 1976 and 1978, and an amount of 2,000 units were realised between 1980 and 1992. The other 1,000 units were constructed between 2001 and 2004.

98. See: Habibi, "Modern Mass Housing in Tehran," 166-200; Staub, "*Conflicted Identities.*" Furthermore, Gruzen and Samton studied at MIT School of Architecture, in the 1950s, a period that John de Monchaux was the dean of the school and his focus was one the architecture of housing with prefabricated construction systems. Moreover, the influential figures whose architecture deeply affected the work of Gruzen and Samton were Walter Gropius and Marcel Breuer. See: Jordan Gruzen and Peter Samton, interview by Stephanie Hatch, 2009, interview 78. Accessed 24 April 2015.

99. For more information, see: James Barron, "American Architects in Iran Saw Gigantic Projects Fade Away," *The New York Times*, 9 September 1979, 1. Also available in: http://www.nytimes.com/1979/09/09/archives/american-architects-in-iran-saw-gigantic-projects-fade-away-in-iran.html, Accessed 12 July 2016.

100. Starrett Housing Corporation had a long experience in designing prestigious projects such as Citicorp Centre and Empire State Building in the U.S. In 1974, the Pahlavi Foundation asked Starrett Company, to develop 6,000 luxury dwelling units as high-rise condominium housing scheme in north-west Tehran. The project called Zomorod and was sponsored by the Development Bank (*Bank-e Omran*), a financial institution that was owned by the Pahlavi Foundation. Accordingly, Starrett established the joint-venture of Shah Goli Company with Pahlavi Foundation, and asked Gruzen Partnership to design the project under the leadership of the TRC. For more reading, see: Wayne Mapp, *The Iran-United States Claims Tribunal: The First Ten Years (1981-1991), an Assessment of the Tribunal's Jurisprudence and Its Contribution to International Arbitration*, The Melland Schill Monographs in International Law (Manchester and New York: Manchester University Press, 1993), 92-98.



Figure 5.22: the urban layout of Ekbatan.
Source: Mohamad Sedighi, based on his contribution to Global Housing: Affordable Dwellings for Growing Cities. *DASH*, [12-13]. Rotterdam: NAI010 Uitgevers, 2015

Arguably, the Zomorrod scheme created the model of development for Ekbatan, being one of the first results of the Starrett Housing Corporation's collaboration with the Pahlavi Foundation.[101] It was built between 1974 and 1976, and was designed by Gruzen and Partners. In fact, the Starrett-Gruzen link had already gained a good reputation for large-scale joint-venture housing projects in New York, such as Northtown II on Roosevelt Island.[102] When the Pahlavi Foundation brought this to the notice of the TRC, both Gruzen and Benach grabbed this opportunity to expand into Iran through schemes like Zomorrod and later Ekbatan.[103] Based on the contracts signed between the TRC and Starrett, more than 80 percent of building materials and equipment had to be imported from the USA, and construction works had to be completed within two years.[104] This might well explain why Ekbatan was developed with almost the same design and construction principles that the Gruzen-Starrett joint-venture used previously for the Zomorrod project.

Moreover, the diplomatic relationship between Iran and South-Korea was flourishing in the early-1970s. For reinforcing this political bond, several economic and technical agreements were signed between the two countries. For instance, the Pahlavi Foundation was appointed by the Iranian government to invest in South-Korea's developmental projects; and in return, this Foundation would receive the needed technical assistance of South-Korean engineers and experts for developing large-scale urban projects, in Iran.[105] Thus, it is not surprising why in 1976, a South Korean architecture firm, Space Group, founded by Kim Swoo Geun, was assigned by the Pahlavi Foundation to design the Alborz housing complex, in north Tehran [Figure 5.21].[106] It was these political and economic agreements between Iran and South Korea that also triggered the design and development of Ekbatan. Hossein Daneshvar, whose role was crucial in establishing the the Starrett-Gruzen-TRC partnership, formed another joint-venture between the TRC and Kim Swoo Geun. Further, Daneshvar assured Golzar that the Pahlavi Foundation would provide needed financial means for the construction of west Ekbatan.

However, Ekbatan was not only developed by foreign actors. While the TRC relied heavily on importing U.S-American architectural models and construction technology for east Ekbatan, it chose to employ Iranian experts and use locally produced building materials such as pre-cast concrete façade panels, for west Ekbatan. To achieve this goal, the TRC asked some Iranian engineering companies to obtain licenses from European building material suppliers, in particular French double-glazing, German cement, Italian tiles, among others.[107] In the long term, as the TRC's director Rahman Golzar was to argue, the Iranian construction industry used this inflow to make itself more independent from foreign technical aids, enabling it to contribute directly to constructing Ekbatan.

101. See: Barron, "American Architects in Iran," 1.

102. Since the 1930s, Gruzen Partnership was involved in federal housing projects in the U.S. When Jordan Gruzen joined the company in the early 1960s, the firm established a close tie with private developers in New York such as Donald Trump Organisation and Starrett Housing Corporation. The new collaboration resulted in the development of new projects and made Gruzen's firm an influential partner of real-estate agencies in New York. For more reading see: Gwenda Blair, *The Trumps: Three Generations of Builders and a Presidential Candidate*, First Simon & Schuster paperback edition. ed. (New York: Simon & Schuster Paperbacks, 2015).

103. Mapp, *The Iran-United States Claims Tribunal*, 92-98.

104. See: Ruth Pogany, *Iran-U.S. Claims Tribunal Reports*, vol. 28 (Cambridge: Cambridge University Press, 1996).

105. See: Marbaghi, *Ekbatan Town: Modern Civility of Iranian Architecture*.

106. Studied architecture at Tokyo University, Kim Swoo Geun graduated in 1959, under the supervision of Kenzo Tange. While Guen took inspiration from some works of Le Corbusier such asUnité d'Habitation in Marseille in his projects, his main source of inspiration was Tange's Metabolist ideas. Indeed, Tange's architectural projects formed Geun's concept of 'Dense Modernities', by which he intended to connect whole and parts for designing a total environment. For more reading, see: Kim Swoo Geun and Pai Hyungmin, *Dense Modernities: Kim Swoo Geun Korea's Architect for the Twentieth Century* (Berlin: Aedes, 2011), 1-13.

107. See: Habibi, "Modern Mass Housing in Tehran," 166-200.

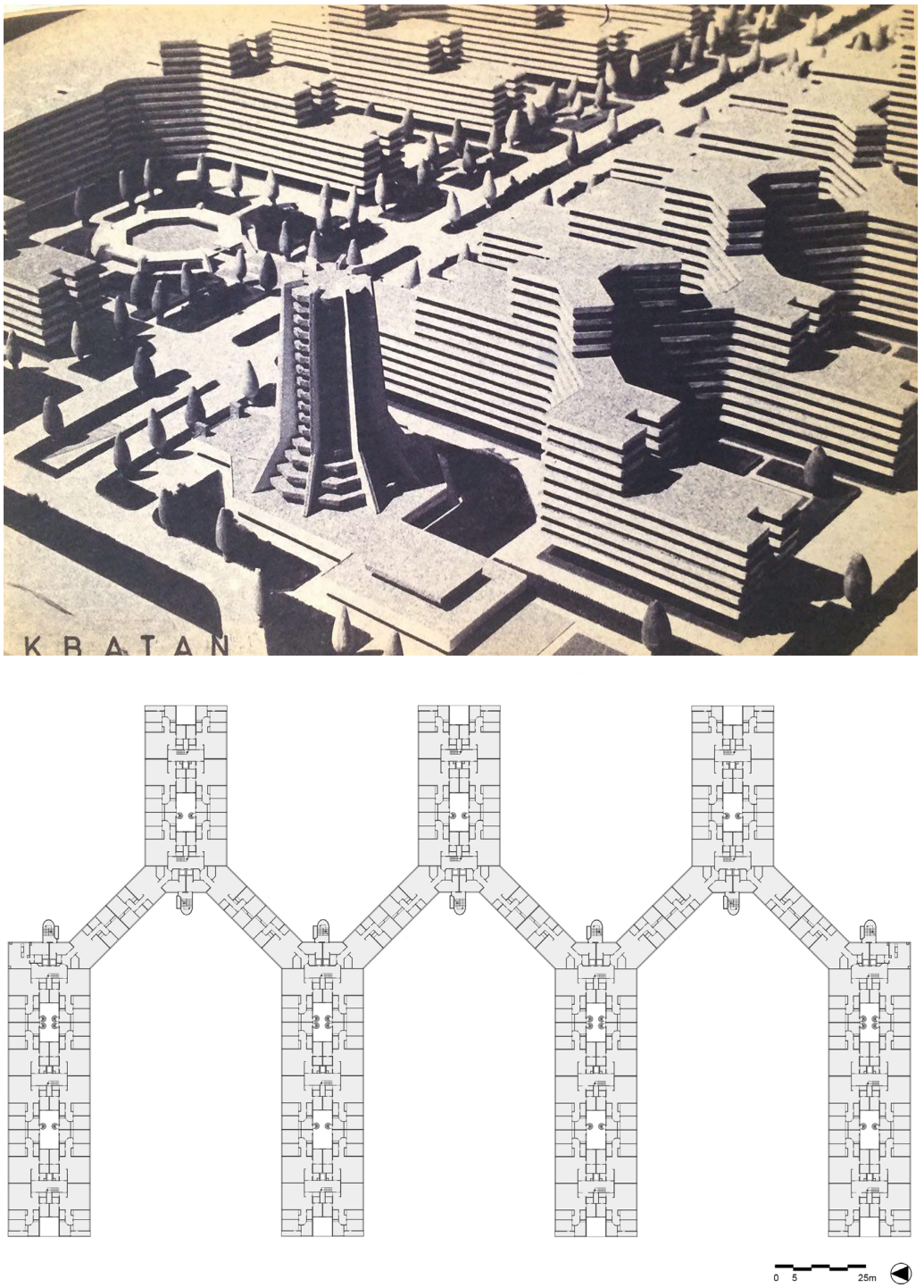


Figure 5.23: the physical model of east Ekbatan indicating its initial housing proposal with a series of residential slabs and a mixed-use tower that included a shopping mall, a hotel and a set of luxury apartments (top); and a typical residential mega-slab in east Ekbatab (bottom).
Source: The former archive of Ekbatan Redevelopment Company (top); and Mohamad Sedighi (bottom).

The localisation of construction process was not limited to materials production. Rahman Golzar asked the Starrett Housing Corporation to train its engineers, such Parviz Mirzakhani and Davood Shahin, to help build east Ekbatan. In the case of west Ekbatan, the TRC hired Kim Swoo Geun in 1976.[108] Geun had a long reputation for designing large-scale urban projects using prefabricated consecution systems, such as the Sewoon Complex in Seoul, and was already in charge of designing the Alborz housing.[109] The TRC asked Geun to collaborate with the Development Organisation of Ekbatan (*Sherkat-e Omran-e Ekbatan*), an organisation that was responsible for approving architectural plans and supervising the construction process, under the leadership of Golzar and Azari.

Ektaban's Layout and Design

The housing programme of Ekbatan was largely based on the recommendations provided by the MPT. This can be seen from the perspective of the general planning of the project, where the need for developing communal facilities at both neighbourhood and district scale was indicated.[110] The central part of Ekbatan, with an area of 60-hectare, was dedicated to the development of an urban centre where main urban facilities including water and sewage treatment plants, transportation networks, a big shopping mall, a hotel, a hospital, and a recreation centre would be placed.[111] The programme defined the east and west residential zone of Ekbatan as two independent districts, where each contained needed communal amenities, such as administrative buildings, schools, and a commercial centre [Figure 5.22].

As noted above, Ekbatan was divided into three zones with an interconnecting motorway. Each of the two housing zones was surrounded by a ring road, and then split into two districts of a few neighbourhoods containing a total of 33 reinforced-concrete residential slabs. These modular blocks, as initially envisioned by Azari, each consisted of 5-, 9- and 12-storey towers, with a triple-stepped profile.

In east Ekbatan, Starrett-Gruzen and Azari designed 14 huge Y-plan slabs along a central boulevard, in combination with another four super-slabs alongside the northern ring-road to achieve the required dwelling density [Figure 5.23].[112] Each of these mega-slabs included a series of gardens and pools, and sat upon a double row of V-shaped concrete columns to provide a continuous ground level landscape. Noticeably, this design principle echoed that of Le Corbusier's 1952 Unité d'Habitation in Marseilles.[113] For the construction of the Y-plan slabs with their three modular towers, the Starrett-Gruzen joint-venture used the same construction principle as they employed for the Zomorrod scheme, where prefabricated concrete panels formed the main appearance of the buildings.[114]

108. See also: Marbaghi, *Ekbatan Town*; and Habibi, "Modern Mass Housing in Tehran.".

109. Due to the political situation of the late-1970s in Iran, Alborz housing project was not realised. However, it became a source of inspiration for the development of large-scale housing project such as Shahrak Atisaz (1978-92), in Tehran. In 2002, the housing project of Alborz was redesigned and constructed by the Development Organisation of Ekbatan (DOE) in 2005. For more information, see: http://tarhoamayesh.co.ir/Projects/alborz.html

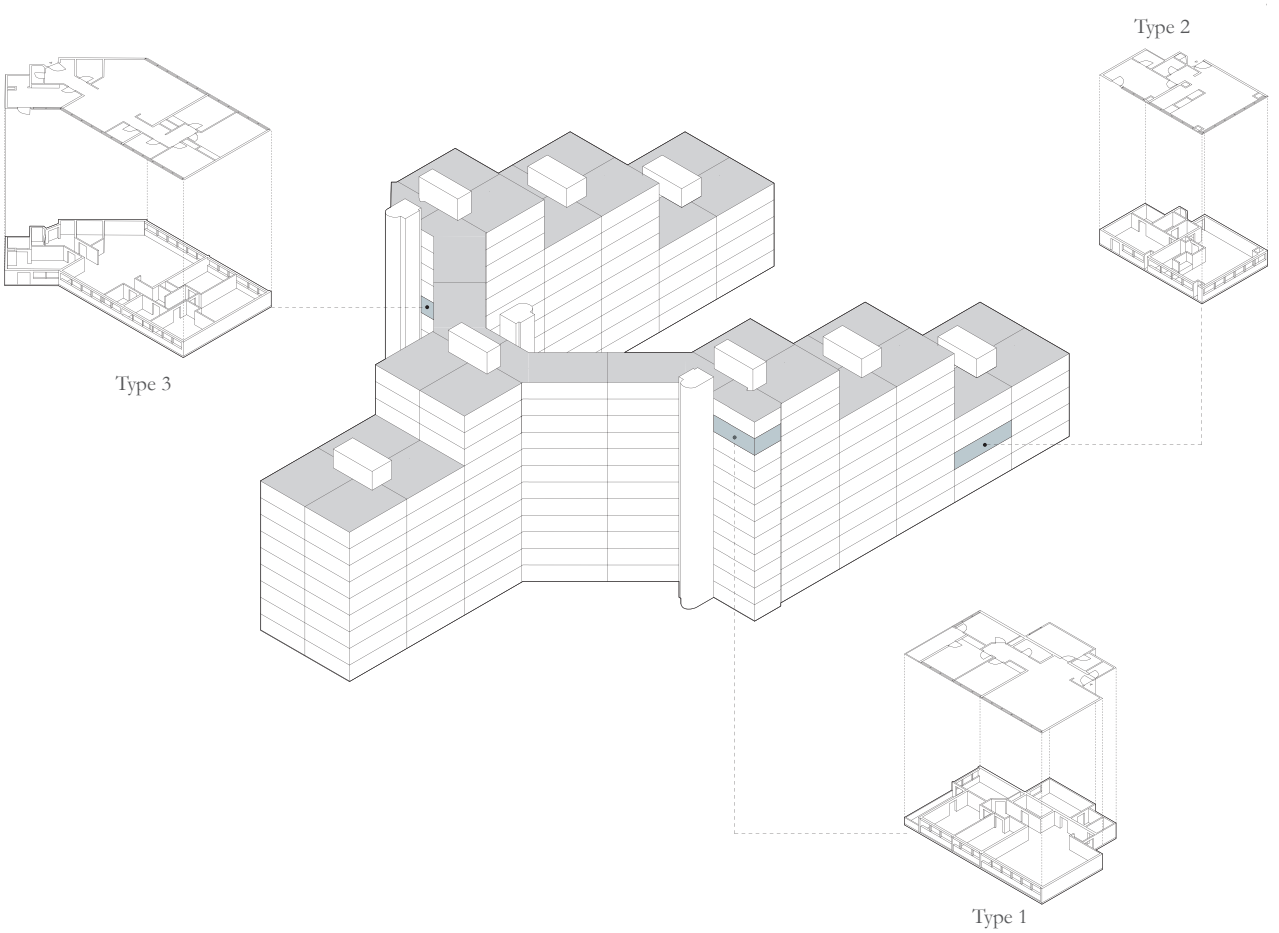
110. According to the MPT, an area with 5,000 inhabitants and an area with 15,000 to 30,000 inhabitants were defined as a neighbourhood and a district entity, respectively. The MPT defined that for each entity, a distinct urban centre is needed to be constructed. This planning strategy can be found in a detailed overview of Ekbatan housing programme: See: Ekbatan Redevelopment Company, "Shahrak-E Ekbatan," (Tehran1993).

111. In the first phase of the development, the water and sewage treatment plants and the main transportation network, such as high-speed motorways and roads should be constructed. In addition, the construction of a big shopping mall, a hospital, and a recreation centre was defined as part of the future development plan for Ekbatan.

112. The mega-slabs around the central boulevard provided 5,500 dwellings units, and 2,000 apartment units were clustered in four super-blocks in north-east Ekbatan.

113. See: Habibi, "Modern Mass Housing in Tehran," 166-200.

114. For more reading, see: Pogany, *Iran-U.S. Claims Tribunal Reports*, 28.





Type 1, variation 1



Type 1, variation 2

Figure 5.24a: three typical dwelling units in east Ekbatan with lift and staircase access to the ground level.
Source: Mohamad Sedighi in collaboration with Robby Stubbs (top); and photography by Mohamad Sedighi (bottom).



Figure 5.24b: two typical dwelling units in east Ekbatan accessible through an outdoor corridor.
Source: The former archive of Ekbatan Redevelopment Company.

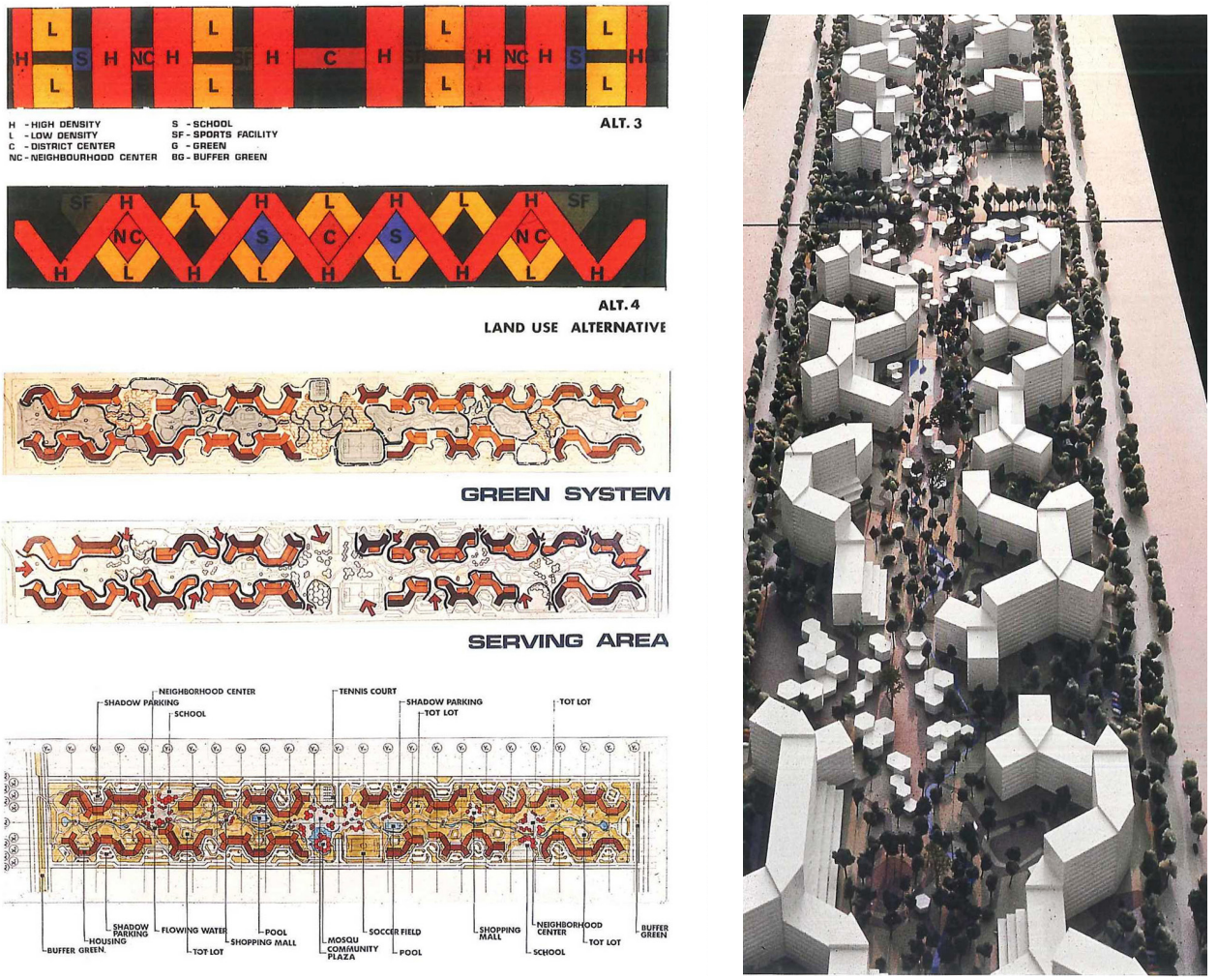


Figure 5.25: Concept diagram (left), the initial plan of west Ekbatan (top right), and the revised urban proposal (bottom right).
Source: *Dense Modernities: Kim Swoo Geun Korea's Architect for the Twentieth Century* (Berlin: Aedes, 2011), 44-45..

The load-bearing structural system in Ekbatan was designed with in-situ concrete walls placed in a grid of 7.2 by 21.6 meters and spanned with concrete slabs.[115] Some exceptions were made where the modular blocks needed to be connected to one another; so, the connecting blocks gained a grid of 7.2 by 14.4 and 7.2 by 10.2 meters. This structural system, according to Fereydoun Azari, formed the basis of designing the floor plans in east Ekbatan.[116] Within this rigid frame-work, the Azari-Starrett-Gruzen partnership proposed five dwelling types, each with small variations in dwelling size or in the number of habitable rooms [Figure 5.24]. The larger dwellings, in groups of four, were clustered around a central staircase with a lift. The smaller apartments were clustered alongside an outdoor corridor, in groups of eight. Noticeably, radical changes to the customary layout of traditional Iranian houses could be observed, in the proposed floor plans of east Ekbatan.

Traditionally, a private outdoor space, the courtyard-garden, formed the core of Iranian houses.[117] The dwelling layout was based on a clear division between the domestic social and private spaces, for the matter of privacy. Through a web of corridors, all habitable rooms were accessible to the front door, and therefore to the public space, independently. This also enabled the inhabitants to use each habitable room, interchangeably. Although, these spatial features are barely traceable in east Ekbatan. Except for a few apartments with small balconies, most of the dwellings were designed with no private outdoor spaces. While the kitchens are placed as an enclosed compound in the layout of apartments and the bedrooms are mostly group together as the domestic private spaces, all these spaces are only accessible through the domestic social space of the apartments. Further, the rigidity of the load-bearing structure as well as façade openings restricted the internal modification of the dwelling's layout and the interchangeable use of habitable spaces.

Following Tehran's masterplan, the initial urban layout of east Ekbatan had rigidly functional zoning and primacy for private cars rather than pedestrians. Between the central boulevard and the non-residential zone, a local urban centre was proposed. The architects of east Ekbatan designed a shopping mall and included public amenities such as schools, administrative buildings and a sport complex around it.[118] Undoubtedly, this resonated with Victor Gruen's car-based ideals for Tehran. But, only the sport facilities were retained for the revised version of their proposal: the boulevard was instead replaced by a linear commercial megastructure, pedestrian at ground level, and with spaces for residents parking underneath.

A car-free zone was also created in west Ekbatan. Kim Swoo Geun placed parking areas under the residential blocks that were only accessible from the surrounding ring-road. His urban design was based on an agglomeration of 19 semi-hexagonal residential super-slabs around a central green spine, providing some 6,000 dwelling units [Figure 5.25]. Each super-slab consisted of a series of modular towers, again on a double-row of huge pier-like *pilotis*. Further, these

115. The consecution system was based on the application of flying forms, slip forms and prefabricated concrete panels.

116. See: Marbaghi, *Ekbatan Town*, 29-34.

117. For more information about the spatial layout and organisation of traditional Iranian houses, see: Golamhossein Memarian, *Ashnaee Ba Memari Maskuni Irani: Gunehshenasi Darungara* [Understanding the Architetcure of Housing in Iran: The Introverted Typology] (Tehran: Iran University of Science and Technology, 1994).

118. For more reading about the relationship between the ideology of shopping mall, as defined in the master plan of Tehran, and the housing scheme of Ekbatan, see: Habibi, "Modern Mass Housing in Tehran," 166-200.

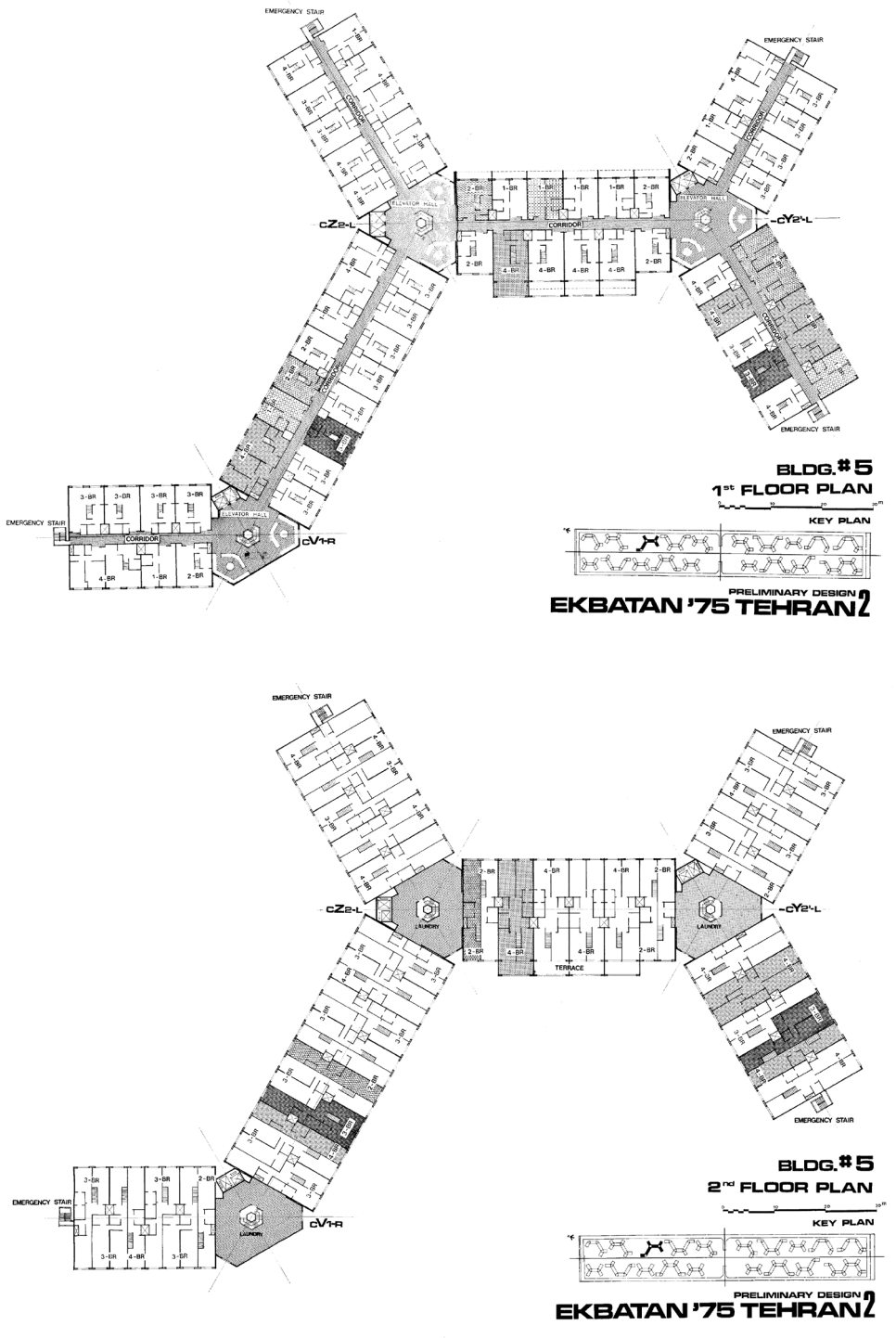


Figure 5.26: a typical residential mega-slab in west Ekbatan. (with following page)
Source: From the archive of Kim Swoo Geun, available at Iran's Centre of Contemporary Architecture, Tehran..

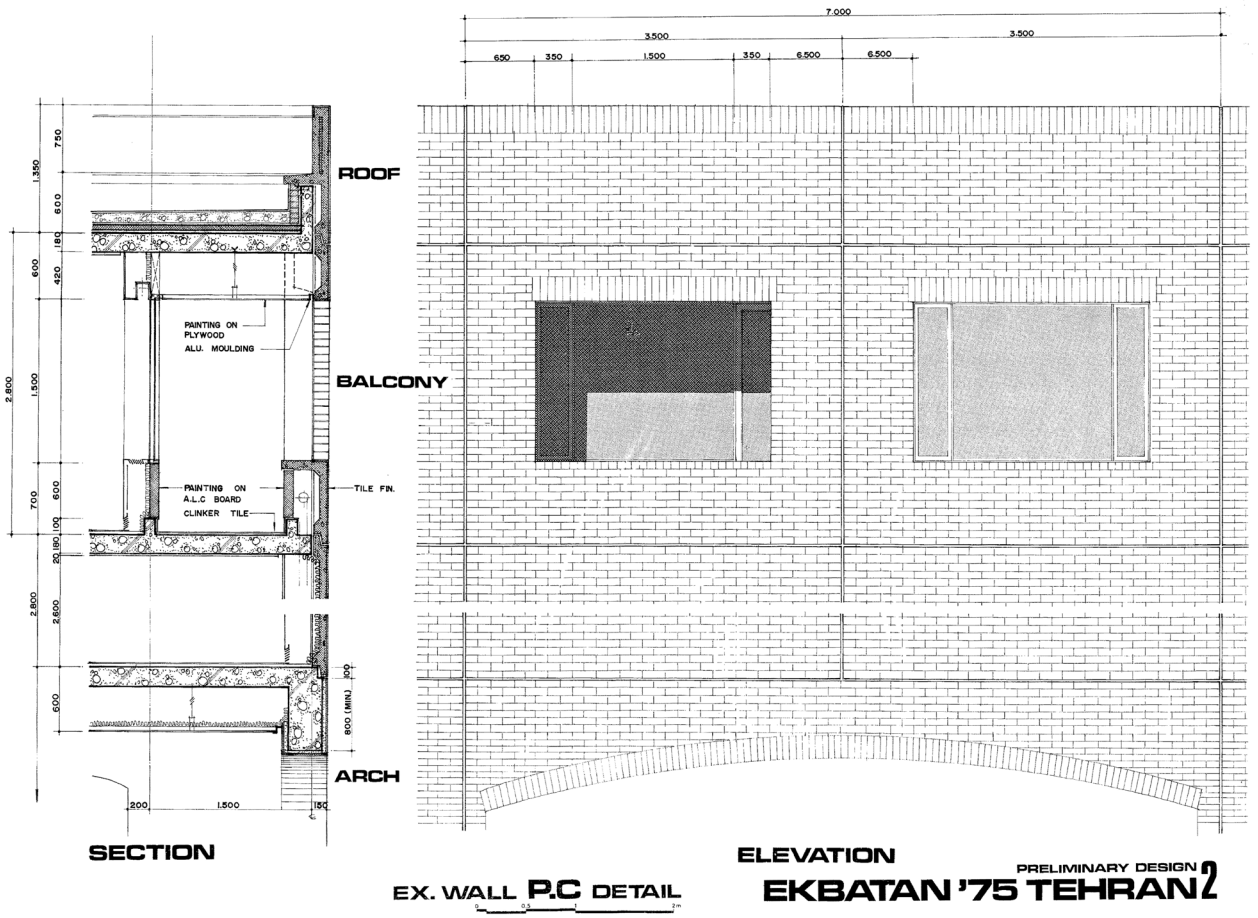


Figure 5.27: brick as the main material for cladding the façade in west Ekbatan.
Source: From the archive of Kim Swoo Geun, available at Iran's Centre of Contemporary Architecture, Tehran..

REQUIREMENT ANALYSIS

● TOTAL DWELLING UNITS

6.000 UNITS : 30.000 PERSONS APPROX.

● DWELLING TYPES

TYPES	BED RM.	PERSONS
1 BR.	M	2.0 - 2.5
2 BR.	M + L	3.0 - 4.0
3 BR.	M + L + S	4.0 - 5.5
4 BR.	M + L + S + S	6.0 - 6.5
	M + L + L + S	6.5 - 7.0

M:MASTER'S BR. L:LARGE S: SMALL

● COMPOSITION PERCENTAGE

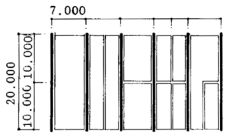
1 BR. - 10% - 600 UNITS

2 BR.- 20% - 1,200 UNITS

3 BR. - 45% - 2,700 UNITS

4 BR. - 25% - 1,500 UNITS

● SPAN - AREA



● SECTION PATTERN

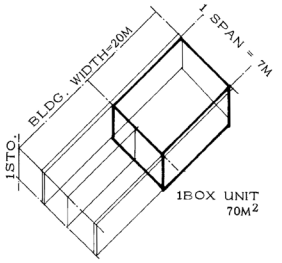


● VISTA

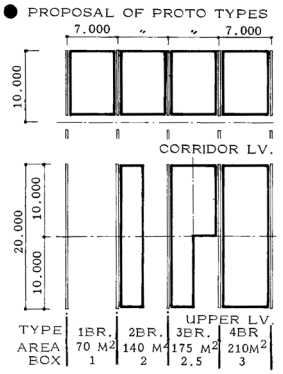


PROPOSITION OF DWELLING PROTO TYPES

● HYPOTHESIS OF BOX CONCEPT



● PROPOSAL OF PROTO TYPES



● TOTAL NUMBER OF BOXES, NEEDED

TYPE	1 BR.	2 BR.	3 BR.	4 BR.	TOTAL
NEEDED BOXES	1	2	2.5	3	
DWELLING UNITS	600	1,200	2,700	1,500	6,000
TOTAL BOXES	600	2,400	6,750	4,500	14,250

HOUSING PROGRAM

PRELIMINARY DESIGN

EKBATAN '75 TEHRAN

Figure 5.28: Geun's diagrams for creating a playful combination of duplex dwellings and single-floor apartments in each super-slab in west Ekbatan. (with following pages)
Source: From the archive of Kim Swoo Geun, available at Iran's Centre of Contemporary Architecture, Tehran..

pilotis were partly closed-off in each block to provide indoor communal spaces such as indoor gathering places at ground level for the residents. Initially, Geun suggested a combination of 9- as well as 12-storey towers to form a dynamic skyline comparable to that in east Ekbatan. However, in the revised scheme, all towers were uniformly 12-storeys high [Figure 5.26]. This was done to create an additional amount of 2,000 apartment units in west Ekbatan, as added into the brief by the TRC.[119] For the modular towers, Geun also designed an in-situ concrete frame with prefabricated concrete infill elements, and proposed local bricks for cladding the facades [Figure 5.27].

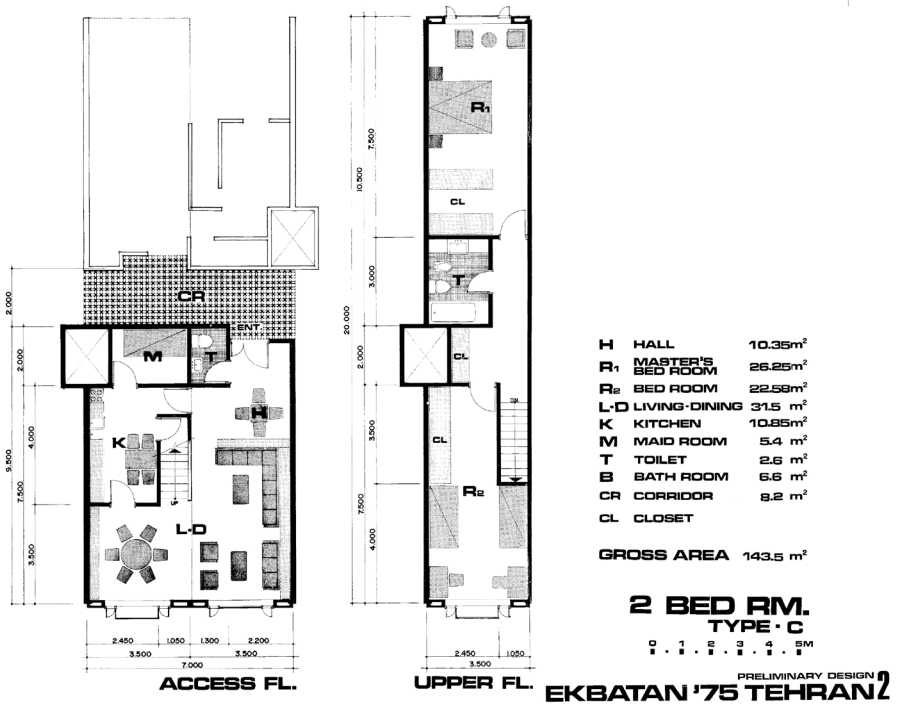
To allow diversity in the layout of apartments, the loadbearing concrete walls and floors had varied openings, enabling Geun to create a playful combination of duplex dwellings and single-floor apartments [Figure 5.28]. In all, he designed ten dwelling types of different sizes.[120] Similar to the layout of dwellings in east Ekbatan, Geun placed the kitchens as an enclosed compound in his floor plans. He grouped all the bedrooms together in the duplex dwellings, and placed them on the upper floor to make a distinction between the domestic private and social spaces. Nonetheless, the private spaces were only accessible through the social space of the apartments [Figure 5.29]. Moreover, the initial design of Geun included small balconies for the apartments, deep loggias for duplex dwellings, and a series of terrace for large apartments designed on the first four floors, a strategy that aimed to provide private outdoor spaces for each dwelling. This changed in the revised proposal, where he excluded most of these private outdoor spaces from the floor plans to employ a similar load-bearing structural and façade system, as proposed by Starrett for east Ekbatan [Figure 5.30].

Kim Swoo Geun also collaborated with Kwaak Young-hoon, a South Korean landscape architect who considered greenery to be the heart of any urban community.[121] Thus, in west Ekbatan, the 19 residential slabs were placed around a central linear park not only for leisure activities, but also for everyday urban life. Geun integrated public amenities such as playgrounds, schools, culture centres, and shopping centres into chain of gardens and pools, again with a sports complex and shopping mall placed centrally. Interestingly, this urban centre included a plaza partly built over a west-east street that divided west Ekbatan into its two neighbourhoods. A whole series of communal spaces, such as workshops and pavilions were also distributed throughout the central park to encourage pedestrian movement. Despite the fact that the 1979 Iranian Revolution partly interrupted the construction process, and resulted in the elimination of some public facilities like the outdoor pools and pavilions, the layout for west Ekbatan was otherwise implemented between 1976 and 1992.

119. The initial housing programme of Ekbatan defined an amount of 6,000 dwelling units, as needed density for east-Ekbatan. However, to house a larger number of middle-income families in Ekbatan, the TRC added an amount of 2,000 dwelling units to the housing programme of west-Ekbatan. For more reading, see: Ekbatan Redevelopment Company, "Shahrak-E Ekbatan."

120. See: Geun and Hyungmin, *Dense Modernities: Kim Swoo Geun Korea's Architect for the Twentieth Century*, 44.

121. See: Marbaghi, *Ekbatan Town.*



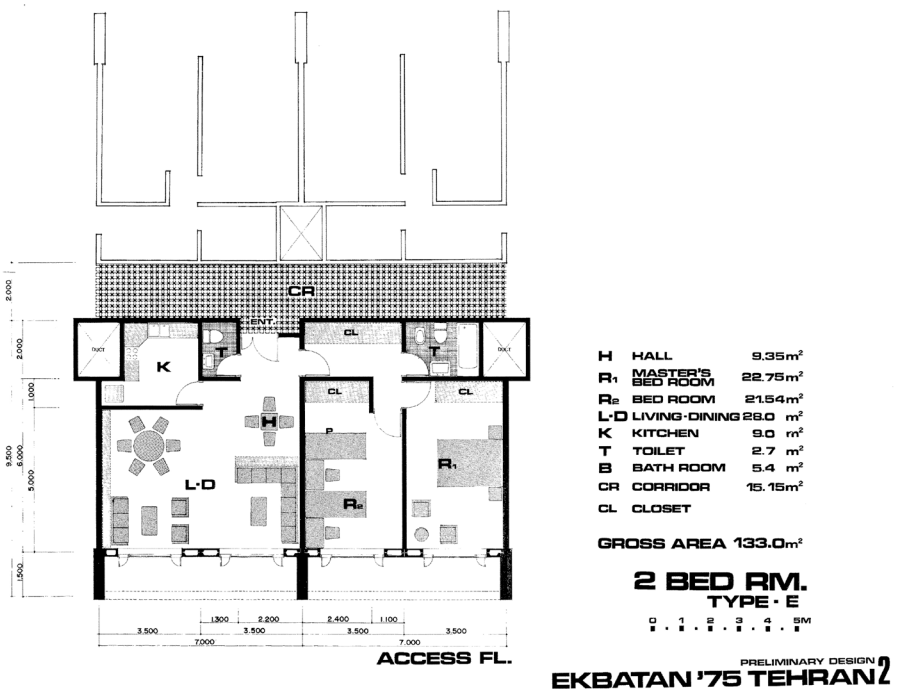
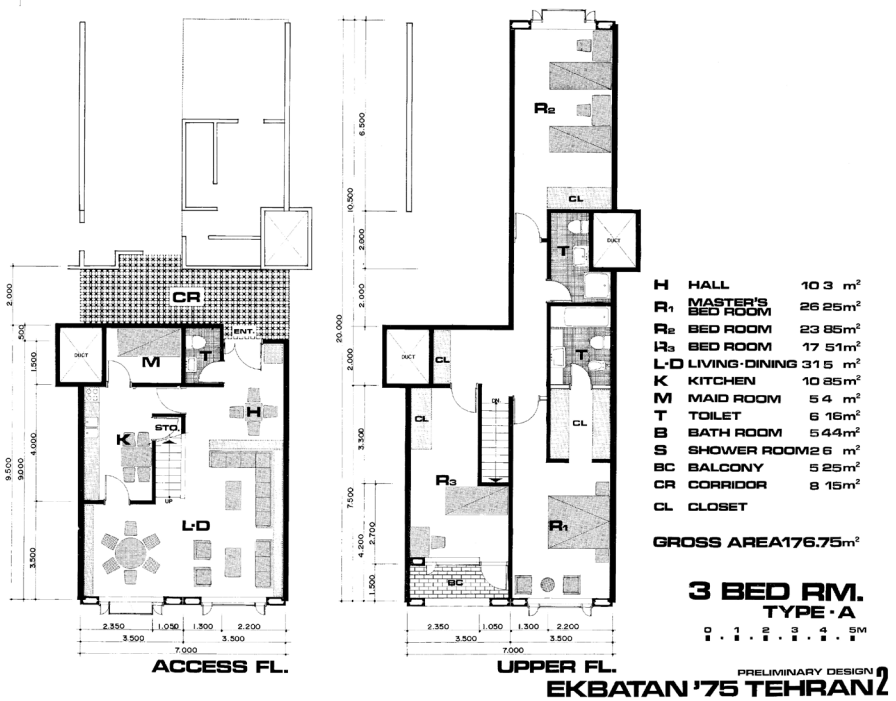


Figure 5.29: the examples of some initial dwelling types in west Ekbatan. (with following pages)
Source: From the archive of Kim Swoo Geun, available at Iran's Centre of Contemporary Architecture, Tehran..



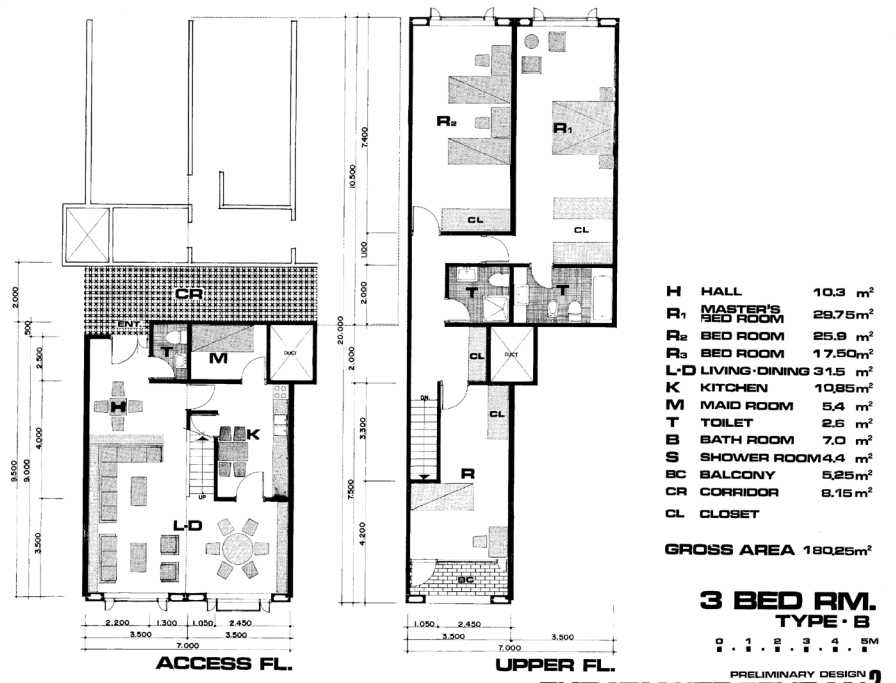
H	HALL	10 3 m²
R1	MASTER'S BED ROOM	26 25m²
R2	BED ROOM	23 85m²
R3	BED ROOM	17 51m²
L·D	LIVING·DINING	31 5 m²
K	KITCHEN	10 85m²
M	MAID ROOM	5 4 m²
T	TOILET	6 16m²
B	BATH ROOM	5 44m²
S	SHOWER ROOM	2 6 m²
BC	BALCONY	5 25m²
CR	CORRIDOR	8 15m²
CL	CLOSET	

GROSS AREA176.75m²

3 BED RM.
TYPE·A

0 1 2 3 4 5M

PRELIMINARY DESIGN
EKBATAN '75 TEHRAN 2



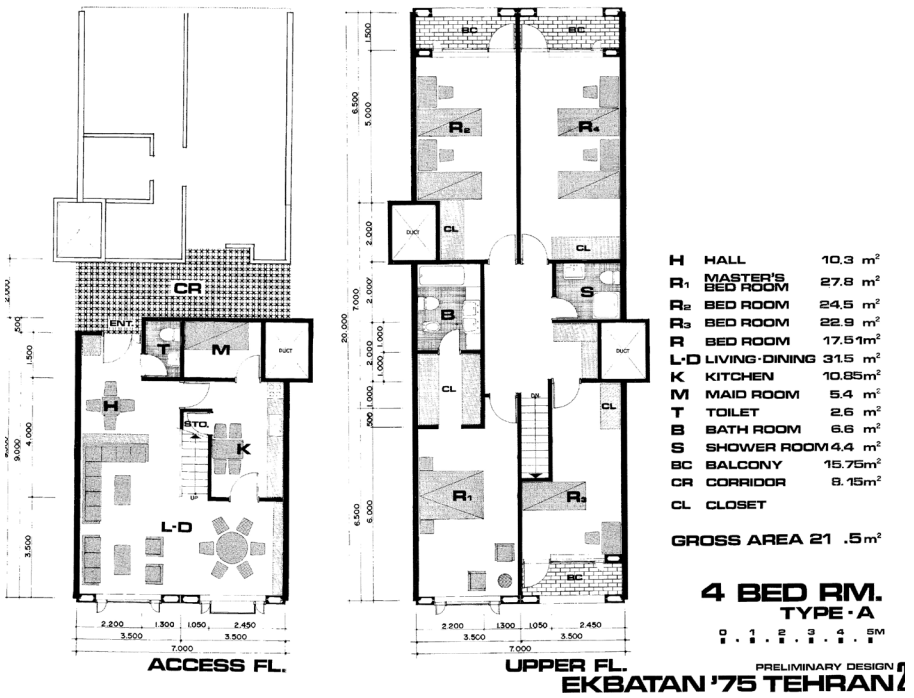
H	HALL	10.3 m²
R1	MASTER'S BED ROOM	29.75m²
R2	BED ROOM	25.9 m²
R3	BED ROOM	17.50m²
L·D	LIVING·DINING	31.5 m²
K	KITCHEN	10,85m²
M	MAID ROOM	5,4 m²
T	TOILET	2.6 m²
B	BATH ROOM	7.0 m²
S	SHOWER ROOM	14,4 m²
BC	BALCONY	5,25m²
CR	CORRIDOR	8.15m²
CL	CLOSET	

GROSS AREA 180,25m²

3 BED RM.
TYPE·B

0 1 2 3 4 5M

PRELIMINARY DESIGN
EKBATAN '75 TEHRAN 2



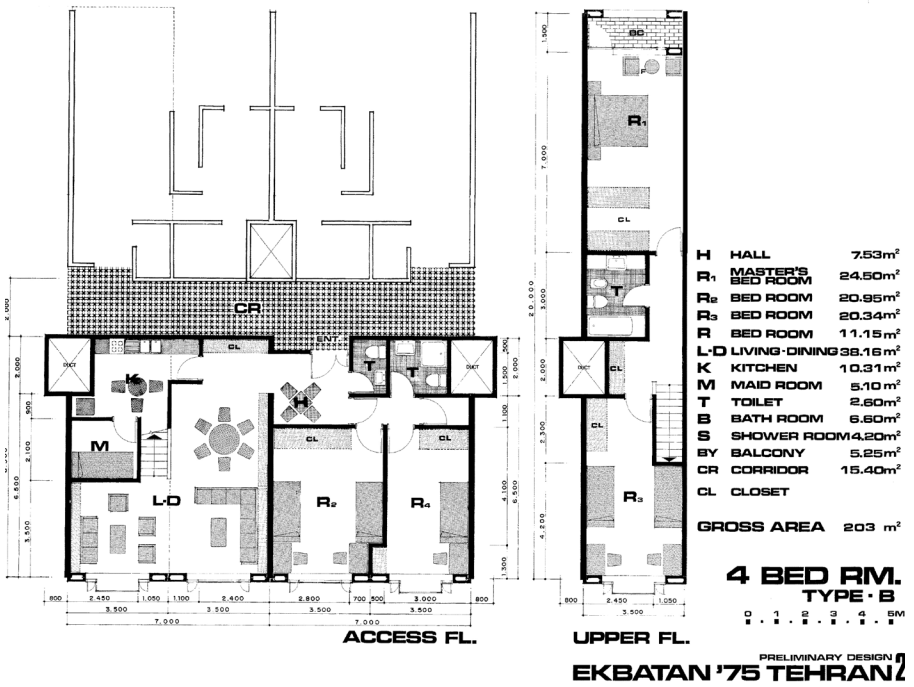
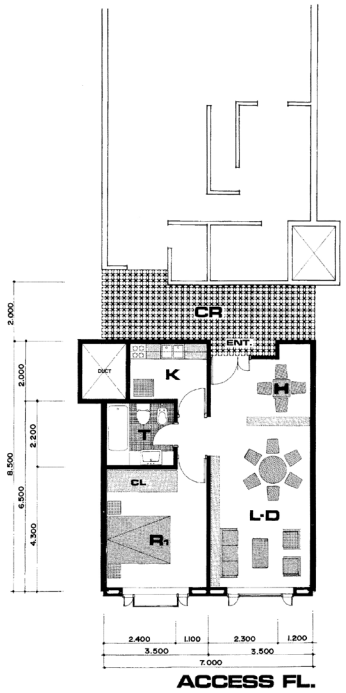


Figure 5.29: the examples of some initial dwelling types in west Ekbatan. (with previous pages)
Source: From the archive of Kim Swoo Geun, available at Iran's Centre of Contemporary Architecture, Tehran..



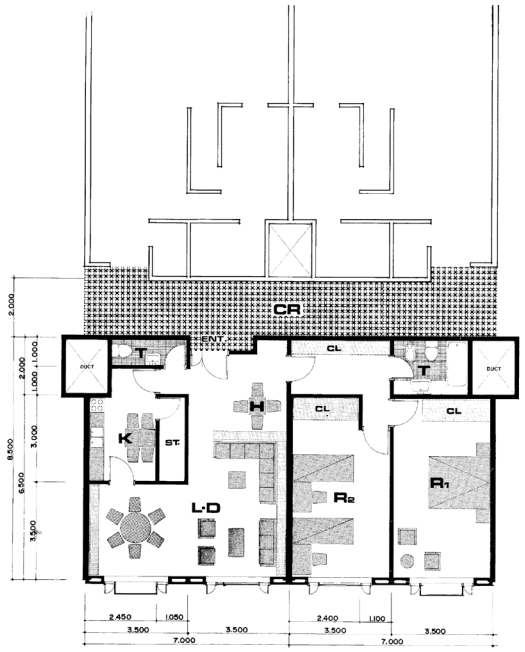
ACCESS FL.

R_1	MASTER'S BED ROOM	15.6 m²
L·D	LIVING·DINING	28.6 m²
K	KITCHEN	5.95 m²
B	BATH ROOM	5.28 m²
CR	CORRIDOR	8.15 m²
CL	CLOSET	
GROSS AREA		66.5 m²

1 BED RM.
TYPE·A

0 1 2 3 4 5M

PRELIMINARY DESIGN
EKBATAN '75 TEHRAN 2



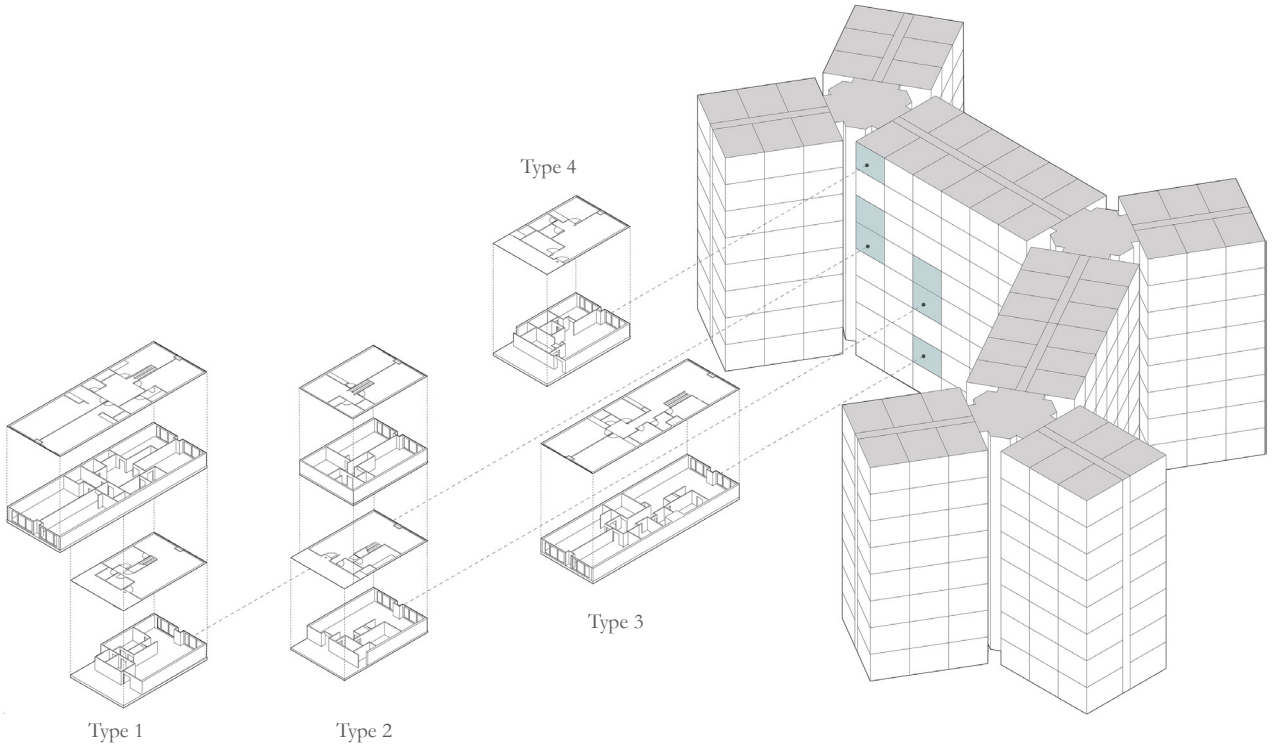
ACCESS FL.

H	HALL	9.35m²
R_1	MASTER'S BED ROOM	22.75m²
R_2	BED ROOM	21.54m²
L·D	LIVING·DINING	28 m²
K	KITCHEN	9 m²
T	TOILET	2.7 m²
B	BATH ROOM	5.4 m²
CR	CORRIDOR	15.15 m²
CL	CLOSET	
GROSS AREA		133 m²

2 BED RM.
TYPE·B

0 1 2 3 4 5M

PRELIMINARY DESIGN
EKBATAN '75 TEHRAN 2





A variation of Type 4



A variation of Type 3

Figure 5.30: in the revised proposal, a similar construction and façade system was employed to build west Ekbatan. Further, in the revised dwelling types, all private outdoor spaces were excluded from the floor plans, as shown in interior images.
Source: Mohamad Sedighi in collaboration with Robby Stubbs (top); photograph by Mohamad Sedighi (bottom).

Megastructure Reloaded

The 1968 masterplan of Tehran stimulated market-led urbanism and a neo-liberal housing system. Except for a small elite, the majority of Iranians were unfamiliar with living in multi-storey residential buildings. Lower income industrial workers, as well as civil servants and other mid-tier government employees, mostly lived in small 1-, 2- or 3-storey houses around a courtyard,[122] or else perhaps in 4-storey apartment buildings constructed by the *Bank-e Sakhtemani* (Construction Bank) from the early-1960s.[123] In contrast, living in high-rise flats was very popular among upper-income families, especially for those who preferred to live close to Tehran's centre.[124] Private investors and real-estate agencies were, thus, interested in developing multi-storey apartments, complete with luxurious facilities such as saunas and swimming pools to attract rich Iranians and extract more surplus value from urban land.[125] Expectedly, the implementation of the 1968 masterplan of Tehran eased the involvement of private investors in the housing market, and the privatisation of urban land contributed to an expansion of multi-storey blocks for privileged Iranians. The residential complex of Saman and Kuh-Nour were a representative example of this market-led urbanism, as a group of high-rise towers built in the late-1960s in Tehran.

Arguably, the Ekbatan housing scheme formed a synthesis between the Iranian government's ambitions programme for housing low-income groups and the market-led urbanism promoted by the MPT. According to Iran's 'Fourth Development Plan', the government was to be responsible for providing housing for blue-collar industrial workers and civil servants, mostly in Tehran.[126] Moreover, since all land within a city's boundaries, whether it was undeveloped (*Mavat*) or unutilised (*Bayer*), was now nationalised, and thus, in the possession of the Iranian government; this situation further encouraged the construction of affordable housing in urban areas.[127] As a consequence, the municipalities were to become responsible for providing urban facilities, while private developers would be the main agents for housing production. This might explain why the TRC granted urban sites in Tehran for free to Starrett Housing Corporation. In the agreement signed between Golzar and Benach, Starrett was able to ask lower- and middle-income applicants for a small down-payment fee, while selling a certain number of apartments to upper-income Iranians in the free market.[128] It was a strategy that secured the developer's required capital return on its investment. In this sense, it is no surprise that Ektaban's layout included numerous luxurious amenities and leisure facilities, with apartment sizes ranging from 50 to 350 square metres. This range provided options to make the project attractive to upper-income classes, and affordable for different low-income social groups.

Furthermore, the urban structure of Ekbatan was an early attempt to design self-contained residential megastructures for ordinary Iranians.[129] It certainly seems

122. For more reading, see: Habibi, *De La Cite a La Ville*.

123. For more reading, see: Abdol Hamid Eshragh, "Sakhteman-Haye Bank-E Rahni Iran," [The housing projects constrcuted by Bank-e Rahni.] *Honar va Memari* 3, no. 10-11 (1971): 109-24.

124. Although upper-income families mostly lived in large villas in north Tehran, the luxurious facilities provided for high-rise residential buildings and the big size of apartment units also stimulated rich and privileged Iranians to live in the newly constructed apartments in central Tehran. This was a way of living, comparable with a life-style promoted in big cities in Western countries. See: Feniger and Kallus, "Israeli Planning in the Shah's Iran: A Forgotten Episode."

125. Since the late-1960s, private developers and real-estate agencies focused on the development of luxury condominium housing to encourage market-led urbanism, and to house the high-ranked government employees in Tehran. See: ibid.

126. See: Abdi, Mehdizadegan, and Kordi, *Six Decades Housing Planning*.

127. Edward Helgeson and Elihu Lauterpacht, *Iran-U.S. Claims Tribunal Reports*, vol. 29, Iran-U.S. Claims Tribunal Reports (Cambridge: Cambridge University Press, 2000), 301.

128. For more information about the contract, see: Pogany, *Iran-U.S. Claims Tribunal Reports*, 28, 51-79.

129. See: Barron, "American Architects in Iran."

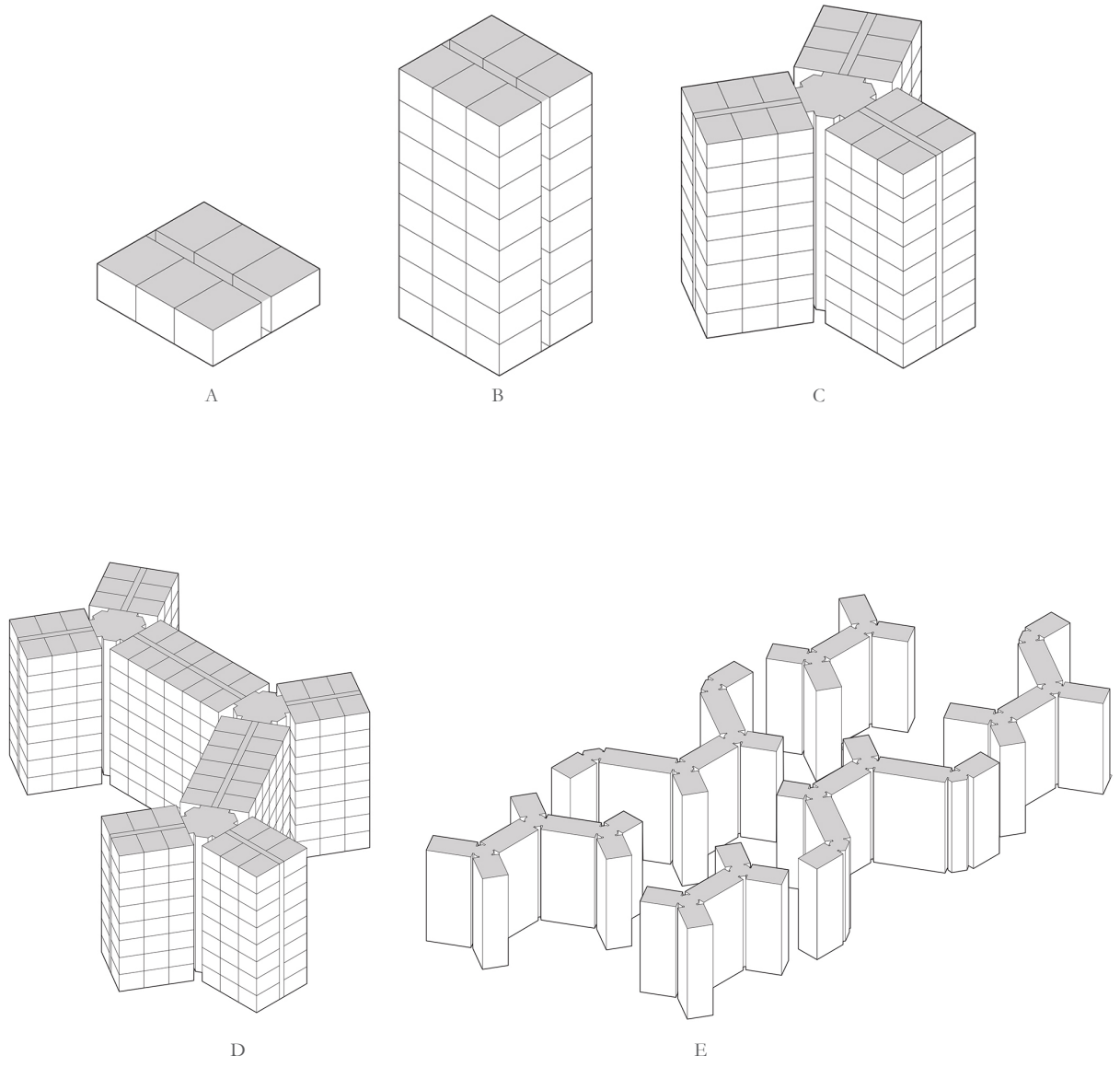
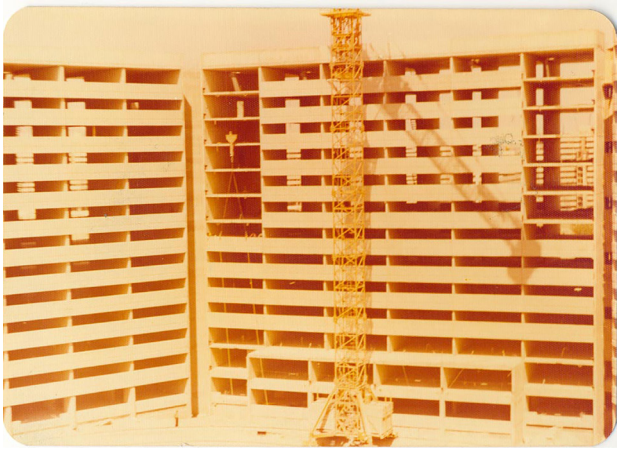


Figure 5.31: the configuration of semi-hexagonal slabs in west Ekbatan. (with following page)
Source: Mohamad Sedighi in collaboration with Robby Stubbs (left), and the former archive of Ekbatan Redevelopment Company (right).





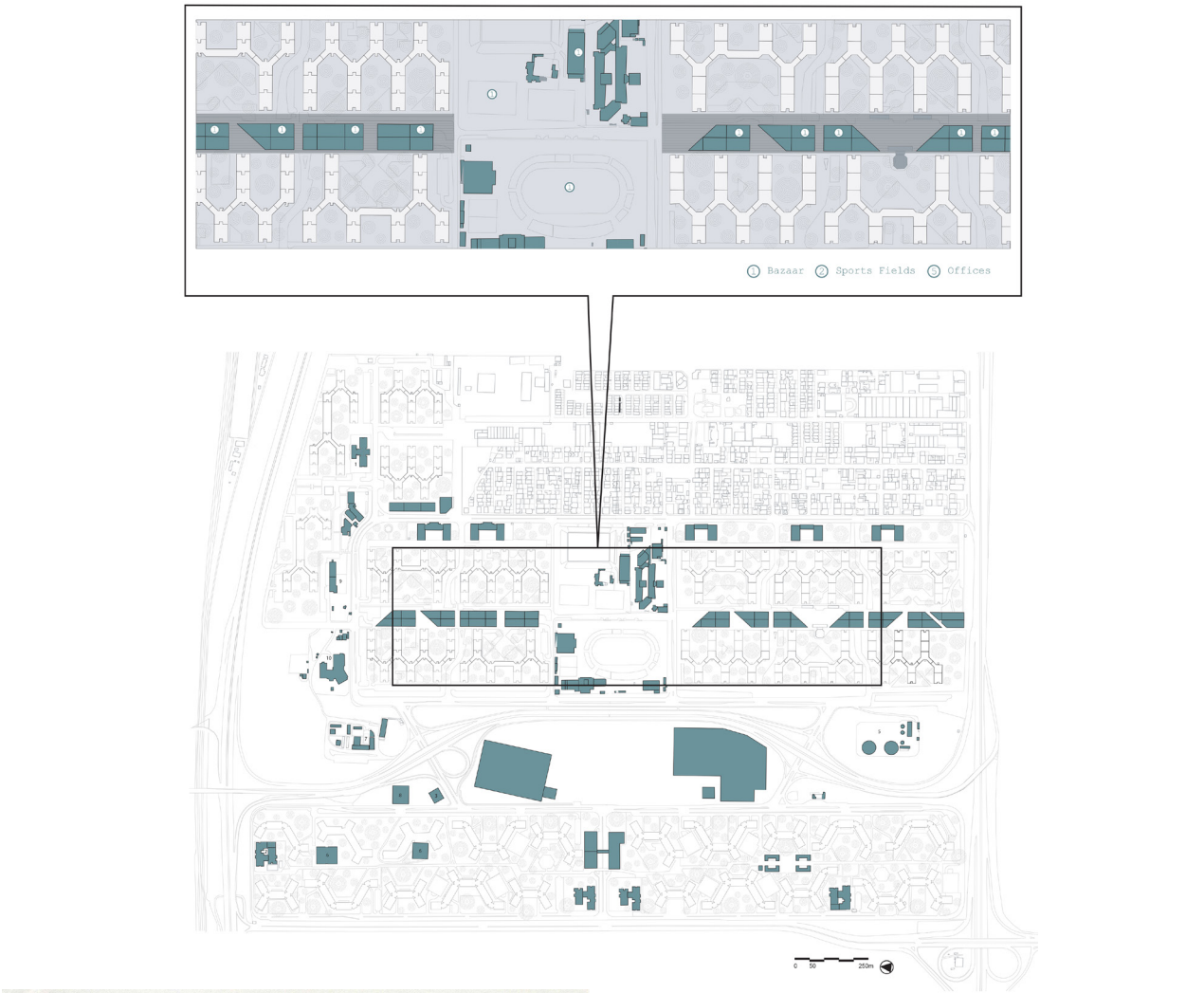


Figure 5.32: the strip-like two-story megastructure with a parking area beneath. In this image, communal amenities such as mosques, culture centres, sport facilities, clinics, administrative buildings, bars, restaurants, and schools are indicated with green color.
Source: Mohamad Sedighi in collaboration with Robby Stubbs (top); and the former archive of Ekbatan Redevelopment Company (bottom).

that its designers took inspiration from architectural models developed by the pioneers of megastructure movement, such as Le Corbusier Marcel Breuer, Paul Rudolph and Kenzo Tange. During his study in France, Fereydoun Azari was largely influenced by the works and thoughts of Le Corbusier.[130] For many years, Peter Samton worked in Marcel Breuer's office,[131] while Jorden Gruzen's role model was Paul Rudolph.[132] This would explain why east Ekbatan resembles a combination of Le Corbusier's, Breuer's, and Rudolph's architectural language.

Likewise, Kim Swoo Geun graduated under Kenzo Tange, and he had a great interest in the architectural principles of Le Corbusier and Japan's Metabolist group.[133] This could be seen from Guen's architectural projects, where for instance, he proposed plug-in capsules for a masterplan for Yeoudio; or perhaps, when he incorporated the idea of a growing structure to design his model for the 1970 competition to design the Pompidou Centre in Paris. For west Ekbatan, Geun proposed a series of modular towers based on two simple components: a vertical shaft and a series of modular concrete cells with a proportion of 7.2 metres wide by 21.6 metres deep by 3.2 metres high, and forming dwellings of between 60 and 300 square metres. The triangular-shaped core was designed to accommodate staircases, lifts, and other services. By stacking the cells on top of one another, Geun could create his 9- and 12-storey towers. He then clustered these towers in groups of three, and placed a central core in the middle of each. By combining these towers into groups of three, four or five, Geun formed a series of semi-hexagonal slabs in various configurations [Figure 5.31].[134] By enabling the clustering of living cells independently in all directions, Geun was hence able to add in an extra 2,000 units when the TRC increased the dwelling density for west Ekbatan.

Despite strong references to the megastructural models, Ekbatan's layout also incorporated some local architectural ideas. This could be seen, especially from the changes made in the urban layout of east Ekbatan. In 1975, the TRC rejected the initial proposal of the Azari and Starrett-Gruzen partnership. As indicated by Rahman Golzar in an interview with Behrooz Marbaghi, east Ekbatan needed a more coherent integration of public amenities and housing.[135] It is, thus, not surprising that for east Ekbatan, some Iranian members of the design team made references to the traditional urban fabric of Iranian cities, such as Isfahan where the bazaar stitched together the urban structure of residential neighbourhoods as the main public space.[136] Perhaps, this explains why the Azari and Starrett-Gruzen partnership proposed a strip-like, two-storey megastructure with a road and huge car-parking area beneath for their revised design [Figure 5.32].[137]

But, this strip-like megastructure was more than just a commercial centre. This continuous linear structure, 1.5 kilometres long, was cut through at sharp angles to connect visually the residential slabs on both sides of the mega-complex.

130. Marbaghi, *Ekbatan Town*, 29-35.

131. For more information, see: Gruzen and Samton, "Loyal Partners, Loyal Donors."

132. See: Nicholas Dagen Bloom, Matthew Gordon Lasner, and David Schalliol, *Affordable Housing in New York: The People, Places, and Policies That Transformed a City* (Princeton: Princeton University Press, 2016), 221-23.

133. See: Geun and Hyungmin, *Dense Modernities: Kim Swoo Geun Korea's Architect for the Twentieth Century*, 1-8.

134. The modular living cells were designed based on a three-dimensional grid of 7.2-meter (in width) by 21.6-meter (in depth) by 3.2-meter (in height). In addition, by pairing each two basic unit on the top of one another, an alternative cell (with double height) was created. Accordingly, these basic cells could be juxtaposed in groups of 3, 4, and 5 cells to create a variety of configurations.

135. See: Marbaghi, *Ekbatan Town*.

136. Many Iranian scholars consider Bazaar as the backbone of traditional Iranian cities. Similar to an urban mega-structure, Bazaar formed a network of connection between residential areas and hosted all needed urban activities in itself. For more reading , see: Mohammadreza Pourjafar et al., "Role of Bazaars as a Unifying Factor in Traditional Cities of Iran: The Isfahan Bazaar," *Frontiers of Architectural Research* 3, no. 1 (2014).

137. For more reading about the relation of Ekbatan's shoppin centre and the structure of Bazaar, see: Habibi, "Modern Mass Housing in Tehran," 166-200.

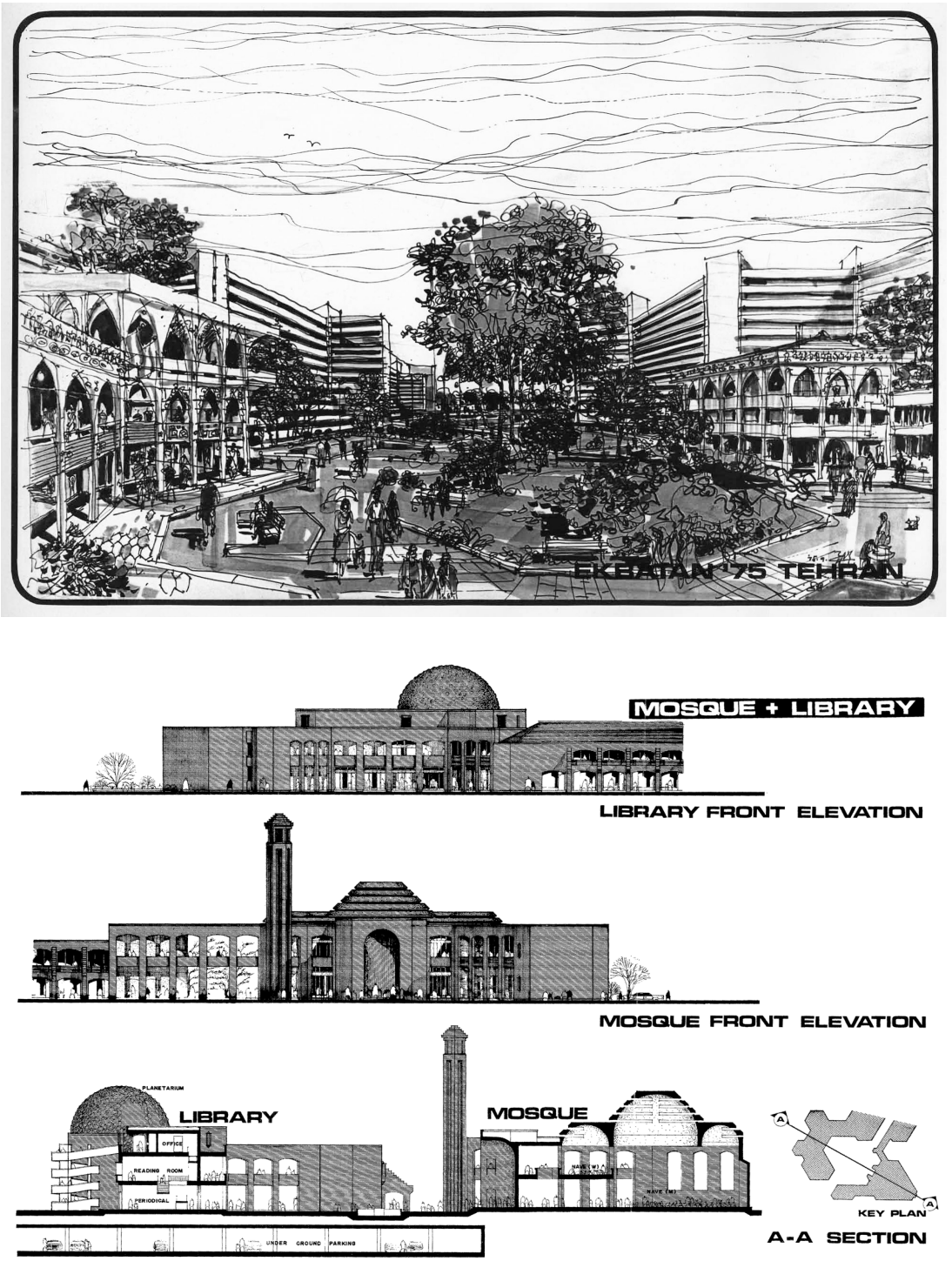
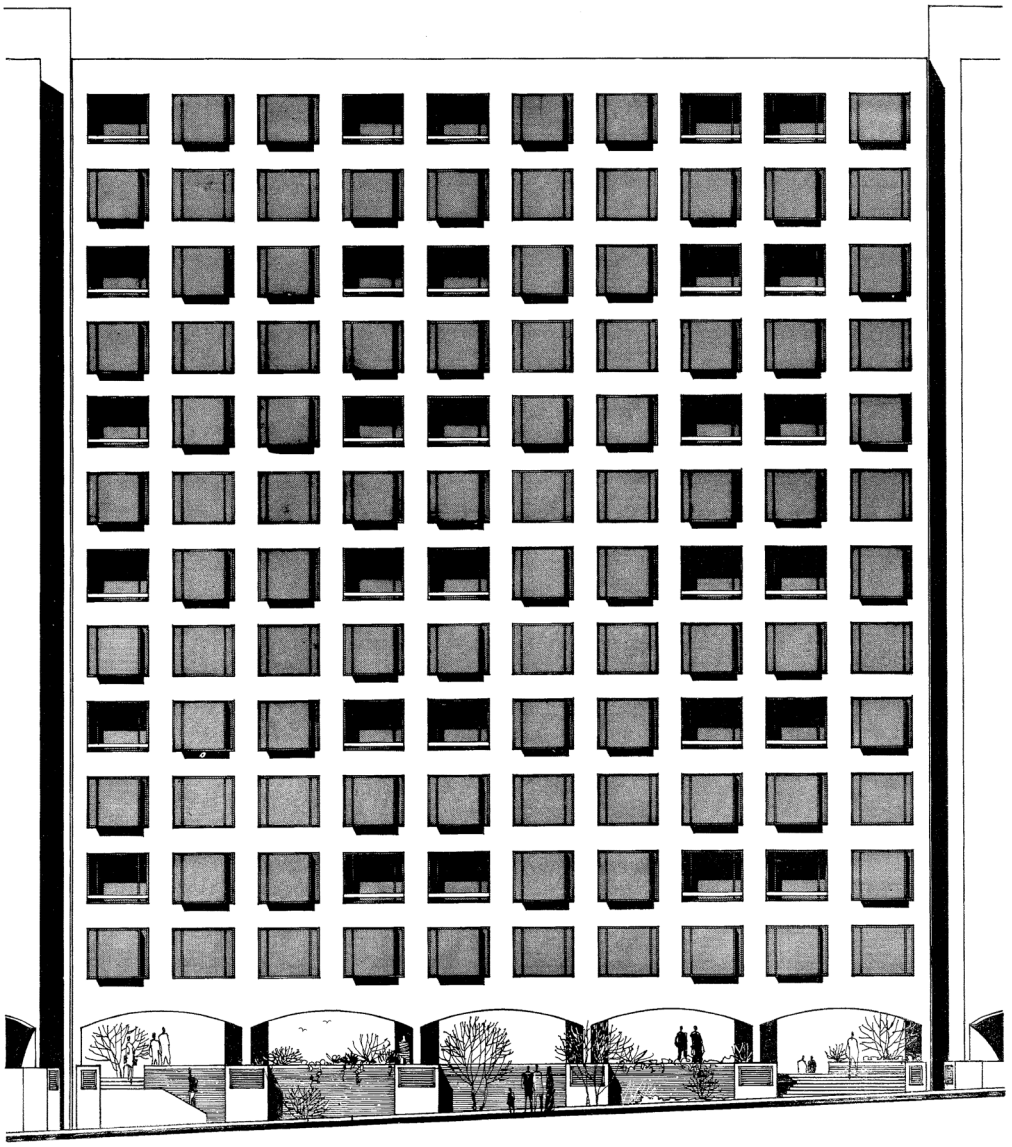


Figure 5.33: the incorporation of some local references such as public squares (*Meydan-bagh*) as well as the barrel- and pitched-shaped Iranian-Islamic vaults into the design of façades for the pilotis and public buildings. (with following page)
Source: From the archive of Kim Swoo Geun, available at Iran's Centre of Contemporary Architecture, Tehran..



ELEVATION 5S. TYPE

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PRELIMINARY DESIGN

EKBATAN '75 TEHRAN





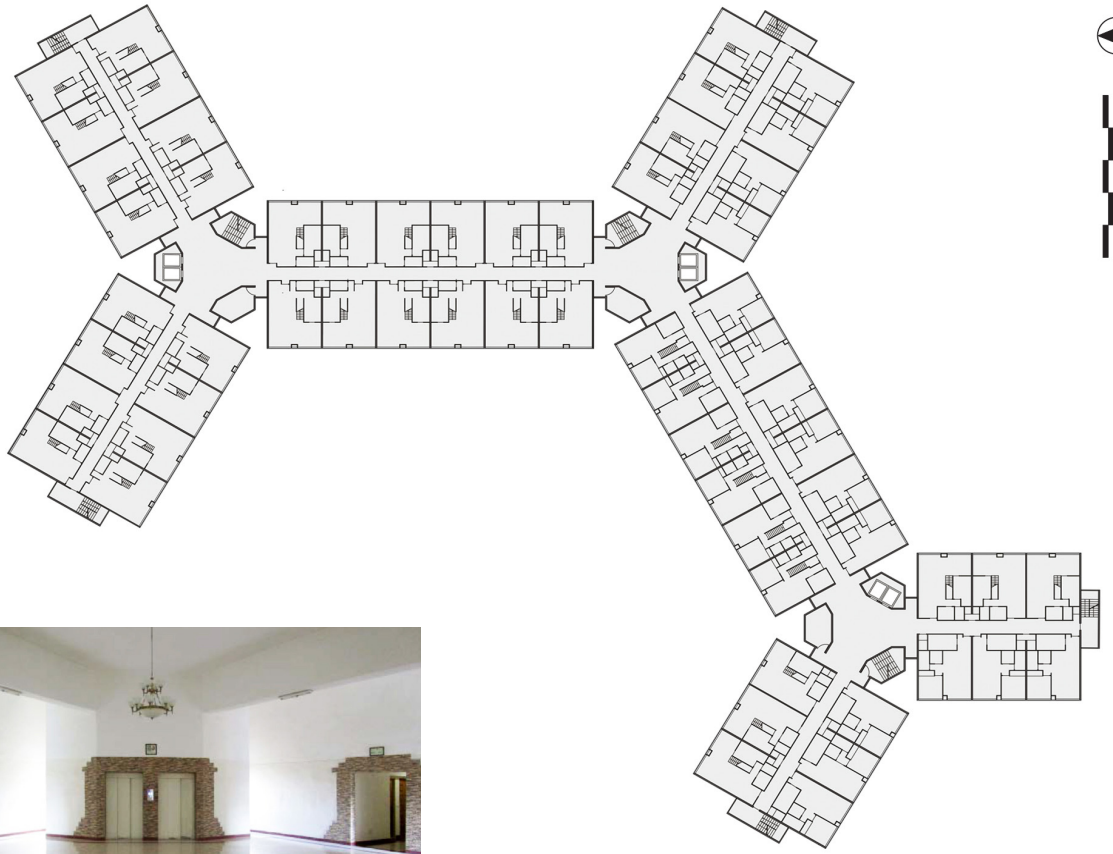




Figure 5.34: the spatial hierarchy of public spaces from the dwelling units to the central linear park in west Ekbatan.
Source: Drawing and photograph (top-left and bottom-left) by Mohamad Sedighi; and the image on top-right is taken from the former archive of Ekbatan Redevelopment Company (accessed April 2010).

This, in turn, created a series of plazas as gathering places for pedestrians and as playgrounds for children. Around the plazas, the designers of east Ekbatan included a few urban amenities such as a cultural centre, mosque, bars, restaurants and workshops. It would help to stimulate outdoor activities and social encounter in these plazas, creating a self-reliant urban structure for east Ekbatan, which, according to Rana Habibi, reminds the structure of traditonal Bazaars in Iran.[138] It explains why Alexandra Staub highlighted their importance in creating a strong collective identity and sense of belonging among Ekbatan's residents.[139]

Moreover, the design of public spaces on the ground level became a locus of referencing some of Iran's local architectural models, in west Ekbatan. As mentioned earlier, Kim Swoo Geun designed each super-slab on a double-row of huge pier-like *pilotis*. These pilotis were articulated through the integration of the barrel- and pitched-shaped Iranian-Islamic vaults into the façades. A similar approach was employed for materialising the façade of public buildings such as mosques and community centres with bricks [Figure 5.33]. Aside from visual references to local architectural culture, Geun's proposal for the layout of super-blocks was based on an ever-increasing hierarchy of public spaces. Every dwelling unit was connected through a web of corridors to at least two double-height communal space with a triangular shape. These indoor communal spaces included staircases, lifts, and pieces of furniture to form a small gathering place for the residents. These areas were linked through the pilotis to a series of semi-enclosed public gardens on the ground level, and through these gardens to the central pedestrian precinct [Figure 5.34]. This configuration of public spaces in Geun's plan recalls that of traditional neighbourhoods, as discussed in chapter one.[140]

In both proposals for east and west Ekbatan, a combination was made among the small and large apartment units, while they were meant to be built for different social classes. This approach contracted with the Gruen and Farmanfarmaian's housing proposal introduced in the MPT. In their proposal, the built form was used as a mean to segregate people based on their yearly income: luxury high-rise towers for upper-income classes, mid-rise apartment slabs and blocks for mid-income groups, and low-rise row-house typology for low-income families and the urban poor. On the contrary, in each super-block and sub-neighbourhood of Ekbatan, the social tissue included a mixture of groups, such as the government officials and teachers, small/big landlords, (non-)bazaar merchants with various religious and ethnic backgrounds, and with different income levels representing a socially inclusive middle-class neighbourhood.

In fact, the role of Rahman Golzar and his Iranian architectural team was crucial in developing a well-knit community in Ekbatan. While their rigid proposal restricted future changes in the layout of apartments and small modifications were only possible, for instance, in the kitchens [Figure 5.35], their attempts to include basic

138. See: Ibid.

139. Staub claimed that the commercial centre of Ekbatan forms a place similar to a Bazaar where Iranian's social life in traditional cities took place. For more reading, see: Staub, "*Conflicted Identities*," 91-101.

140. For more reading about the spatial structure of traditional neighbourhoods in Iran, also see: the introduction, and Masoud Kheirabadi, *Iranian Cities, Formation and Development* (New York: Syracuse University Press, 2000).



Figure 5.35: a typical modification of the Kitchen's layout (top), and the living area (bottom), where enclosed walls were removed by the inhabitants to make an open kitchen or a bigger living room. Source: Photograph by Mohamad Sedighi.



Figure 5.36: east-Ekbatan before (top) and after its completion with a series of communal gardens and a bazaar-like public space (bottom). Source: *Honar-e Memari,* no. 27 (2011): 117 (top); photograph by Saeed Ghazi (bottom).



Figure 5.37: Ekbatan redevelopment plan for the central part (top), and the new Ekbatan mega-mall (bottom).
Source: http://neguin.com/construction/ (top); and EMCO Iran Archive (bottom).

ingredients of Iranian urban lives such as playgrounds, neighbourhood centres, and places for gardening and leisure activities helped to create a collective urban realm with a human scale that activated the public life of residents at the ground level. It became an effective characteristic of Ekbatan's urban spaces, an aspect that Thomas Erdbrink, a Dutch journalist, described in his 2015 documentary movie about Iran as "a piece of paradise", distinguishing Ekbatan from the rest of the city [Figure 5.36].[141] Ali Javan Forouzandeh and Ghasem Motallebi also observed that the well-organised public spaces and the social cohesion are the most effective indicators of neighbourhood attachment among the residents of Ekbatan. As a result of these factors, the project comprises a self-reliant district of Tehran.[142]

Other design decisions by the TRC were also instrumental in creating a strong sense of community. While part of Ekbatan's central zone was allocated for a hospital, subway station and motorway, much of this area was left empty for future development. This enabled the urban structure of Ekbatan to grow from within, accommodating new urban needs and facilities. Peter Rowe notes in *Modernity and Housing* that this characteristic testifies to an open-ended structure that provides "a balance between self-determination on the part of prospective inhabitants and technical decision-making capable of exploring useful options".[143] Thus, the Development Organisation of Ekbatan in collaboration with Tehran Municipality were able to implement a subsequent redevelopment plan in 2008 that included new recreational facilities such as a golf course and rowing lake, so as to improve the district's urban quality and increase the real-estate value of its properties [Figure 5.37].[144] Accordingly, it seems that this megastructure is still capable of responding to the socio-economic needs of Ekbatan's inhabitants.

Ekbatan became an inspiring and popular place to live, distinguishing the residents of this residential neighbourhood from elsewhere. While sharing architectural characteristics with 'failed' megastructure projects such as Arlington House in Margate, Bijlmermeer in Amsterdam, Vele in Napoli, and Robin Hood Gardens in London, its dense, yet green urban environment gained a reputation amongst Tehran's citizens. This can be seen in representational mediums such as social media, movies, and artworks. The Facebook 'Ekbatan' group forms a platform where residents can share their old photos and memories.[145] Further, a spectacular movie, *Ekbatan* (2012), directed by the well-known Iranian novelist, Mehrshad Karkhani, depicted it as a peaceful and welcoming residential neighbourhood for artists and lovers. Artworks such as the photographic exhibition of Behnam Sedighi titled 'Ekbatan: West of Tehran' portray the district as a paradoxical place, where its well-designed greenery and public spaces contrast sharply with the Brutalist architecture of the residential slabs. Representing a decade of industrial progress in Iran, the Ekbatan scheme became a source of inspiration for subsequent public housing projects in Tehran, notably those at Shahrak Omid (1976-88), Shahrak Apadana (1977-90), and Atisaz complex (1978-92).

141. In his documentary movie entitled 'Onze Man in Tehran', Thomas Erdbrink made a series of interviews with Iranian people to understand the differences between the images and stories transmitted by Western media and the reality of Iranian lifestyles. One of his interviewees was an Iranian journalist who lived in Ekbatan. On his way to Ekbatan, Erdbrink observed the project from his car and described it as a concrete jungle. However, when he experienced the project from within, visited homes, and spend few hours in public spaces, in particular communal gardens, at the end of his visit, he reported: "despite its aggressive appearance, Ekbatan resembles a piece of paradise on the earth." See: Thomas Erdbrink, "Het Land Waar Niks Mag Maar Alles Kan," in *Onze man in Tehran*, ed. Roel van Broekhoven (the Netherlands: nop, 2015).

142. See: Ali Javan Forouzandeh and Ghasem Motallebi, "The Role of Open Spaces in Neighborhood Attachment , Case Study: Ekbatan Town in Tehran Metropolis," *International Journal of Architecture and Urban Development* 1, no. 3 (2012): 11-20.

143. See: Peter. G. Rowe, *Modernity and Housing* (Cambridge and London: The MIT Press, 1993), 285.

144. Since 2008, the Development Organisation of Ekbatan in collaboration with the Municipality of Tehran, EMCO Iran and a developer agency from Malesia, Neguin, have worked on a redevelopment project for the central zone of Ekbatan. As a first step to attract citizens of Tehran to Ekbatan, a new urban centre, Tehran Mega-Mall, was constructed in this area, between 2009 and 2014. In the next phase, this redevelopment project aims to create a recreational complex with sport and game facilities in Ekbatan. For more reading, see: http://neguin.com/?@=13, accessed 18 August 2016.

145. See also: Habibi, "Modern Mass Housing in Tehran;" and Marbaghi, *Ekbatan Town*.



Figure 5.38: the image on the top illustrates Dan Eitan's housing scheme in the city of Bushehr; and the image on the bottom depicts the physical model of Aryamehr town, Isfahan. In the foreground: the AIRA's Typology, and in the background: the I-464 Typology
Source: *Honar va Memari* 9, no. 39-40 (1977): 65 (top); and the archive of Iran's National Library (bottom).

The ideals of megastructure movements went beyond just influencing the Master Plan of Tehran and the housing model of Ekbatan. Indeed, in the early years of the 'Westernisation' period (1966-1973), these ideals also paved the way for the expansion of multiple residential mega-structures, across the country. This can be especially seen from the construction of multiple residential megastructures with industrialised building techniques in Isfahan, Shiraz, and Kermanshah. The most outstanding example outside the city of Tehran is the Still Mill Factory Town, known as Shahrak Aryamehr, which was erected 40-kilometre from Isfahan. In this project, Iran's Finance and Planning Organisation assigned the Housing Organisation (*Sazman-e Maskan*) to build a company town for the future workers of the industry.[146] The Housing Organisation appointed the Tehran-based Association of Iranian Registered Architects (AIRA) to collaborate with Soviet planners and architects from the Research and Design Institute for Dwellings (RDID) in Moscow, for designing the Aryamehr New Town. Aiming to accommodate 30,000 people, the Soviet and Iranian planners designed the Master Plan of Aryashahr in 1968. Providing a set of self-contained urban units, their proposal divided the city into two main parts: the central and the north-western regions. In the centre, all large-scale public facilities such as a central park were designed, and in the north-western region, a series of residential neighbourhoods with a small centre with needed communal amenities such as school and shops were planned. Together, these communal areas were meant to house a population of 2,500 to 3,000 inhabitants. These neighbourhoods were separated through a network of roads, but connected by a park-like landscape [Figure 5.38].[147]

Iranian and Soviet designers proposed all residential areas with various dwelling types including two, three, four, and five room units; and they employed different housing typologies such as low-rise two/three-storey row-houses, mid-rise four or five apartment clusters, and high-rise freestanding slabs and towers. The latter type was mostly located in the centre of the town, while the low and mid-rise types were spread all over the project. The AIRA focused on the development of low and mid-rise buildings, where they employed local materials, such as steel frames for the structure and bricks for the infill. But, RDID developed a series of 5 to 16-storey prefabricated apartment blocks with the so-called I-464 typology.[148] The latter were developed in forms of gigantic Z, L, and I blocks, capable of apparently unlimited extension in all directions. For the apartments, the designers proposed a combination of duplex and simplex dwellings, varying from 50 to 150 Square meters. In 1970, RDID also built a small factory close to Aryamehr Town to manufacture prefabricated building elements, such as concrete panels of the I-464 typology, a factory that still produces concrete panels for building structures as present.

In 1971, RDID updated the I-464 building method based on Iran's contextual circumstances, such as the need to reinforce the building structure against seismic

146. See: "Tarh-E Jame Aryashahr," [The Master Plan of Aryashahr New Town.] *Honar va Memari* 9, no. 39-40 (1977): 52-72.

147. See: Ibid.

148. As presented by Nikolay Erofeev and Mohamad Sedighi at the EAUH conference 2018 in Rome, "the I-464 was developed in 1958 by Research and Design Institute for Dwellings (RDID), based on French Camus system. In France, Raymond Camus et Cie was one of the proponents of industrialised housing construction. in 1949, developed a large-scale prefab system, which offered a high level of off-site fabrication. Soon, it won ample support of progressives officials in France and abroad. By 1966, Camus company had in total, 22 factories in operation, including six large factories in France and no less than sixteen abroad, including two in Algeria, two in West Germany, two in Austria, three in Great Britain, two in Italy, one in Spain and one in Japan. The Soviet officials purchased three Camus factories in mid-1950s for the post-war reconstruction of Baku and other cities. They simultaneously developed their own building system, similar to Camus, but based on Soviet building standards, local climate and soil conditions: the I-464 typology. The system did not require use of metal frame, and all weight was distributed between vertical panels of internal walls. its main constructive principle was similar to the one, pioneered by Camus system where several of slabs at once were casted in vertical cassettes. This typology soon became the most widespread housing delivery system in the country. factories for its production spread rapidly into even the most distant regions of the USSR, from Tallinn and Riga to Yakutia and Vladivostok. Already by 1963, in the USSR, there were more than two hundred factories operating with the I-464 system. The factories associated with it grew huge, reaching capacities of up to 280,000 sq.m. per annum. The amount of production and expansion was so influential that according to an anecdote, when in the 1960s Raymond Camus himself visited one of these factories he said: 'Camus est petit, Rosanov est Grand.' These factories functioned continuously through the 1970s and 1980s; the system underwent several major 'upgrades' which introduced more building types and higher architectural changeability. However, in many cases these updates were not soon implemented, continuing production of similar boxy block. Not less because of this difficulties of making upgrades, soviet housing delivery gained a notoriety for being responsible for uniform and monotonous living environment." For more reading, see: Nikolay Erofeev and Mohamad Sedighi, "The I-464 Housing Typology: A Tool for Urban Modernisation in the Soviet World," in *EAUH 2018* (Rome2018).

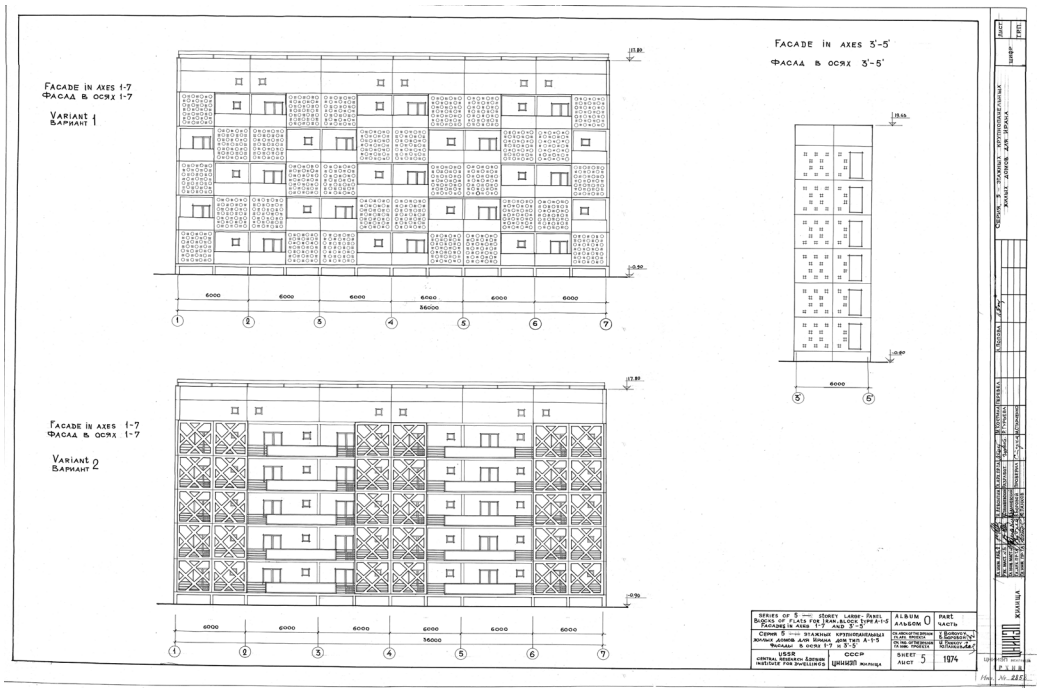


Figure 5.39: high-walls and motifs included to the I-464 Typology.
Source: The Archive of Research and Design Institute for Dwellings (RDIID), in Moscow.

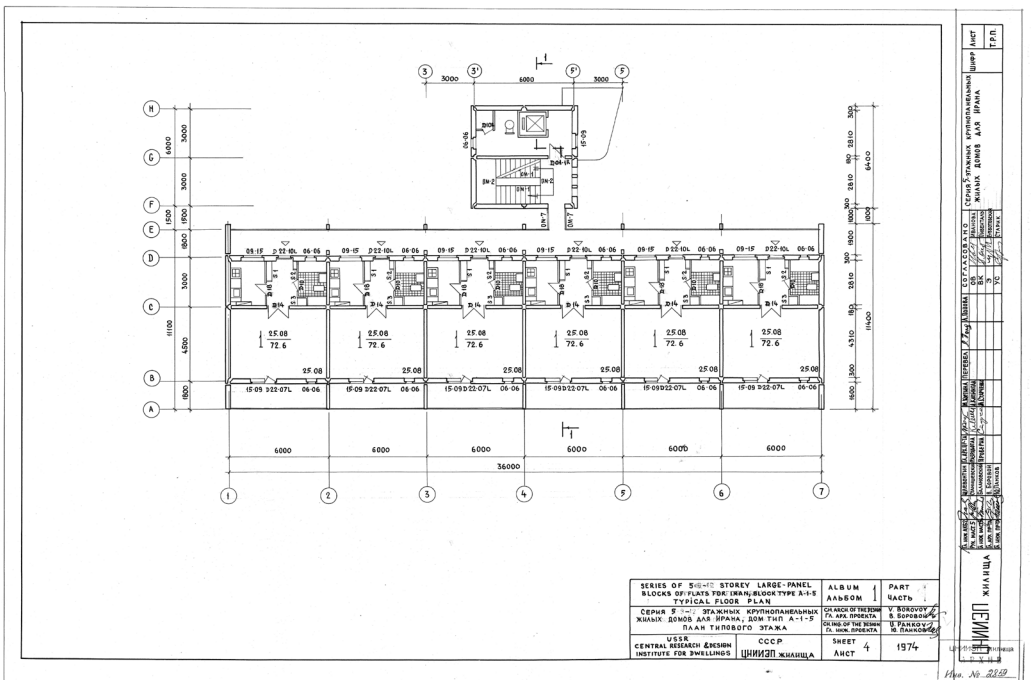


Figure 5.40: the placement of the staircase as an independent entity in the spatial organisation ot the building, creating a new version of the I-464 Typology.
Source: The Archive of Research and Design Institute for Dwellings (RDIID), in Moscow.

activities. RDID also revised its system to address some local or cultural needs. One example is the design of facades, where high-walls with traditional motifs in the balconies were created for the reason of privacy [Figure 5.39]. To this end, a joint-technical office was established in Isfahan where ARIA and RDID experts discussed their views for adapting the system. This exchange of ideas not only resulted in the aforementioned changes, but also led to the modification of internal layouts and the provision of a catalogue, where different house types were illustrated. This resulted in an Iranian version of I-464 typology that offered more architectural flexibility, various facade articulations and more dwelling and block layout variations.

The proposed typology was erected in less than two years, which conceived the Housing Organisation to expand the involvement of RDID in Iran's housing development. Isfahan geographically central location in Iran provided a unique condition for RDID to expand the factory as the central prefabrication concrete industry in the country. This enabled the provision of needed construction materials for multiple megastructural housing projects with the I-464 typology or prefabricated concrete panels. In 1974, RDID developed a series of housing schemes in the form of residential towers or slabs in Tehran, Kermanshah, and Shiraz. The most outstanding examples were Shahrak Lavizan (1978-85) and Qasr-e Firouzeh (1976-92), which were developed for the employees of Iran's Military Forces. To make this building method more adaptable to different design schemes, the joint-technical office re-designed its system to accommodate lifts and staircases as an external entity (access box) in the building layout. In so doing, the access system could be placed outside building volumes for connecting each set of individual units through a bridge and gallery to the ground level; and therefore, the I-464 became a housing model that was expandable in multiple directions to provide needed units in each project [Figure 5.40].

Conclusion

In this chapter, I contended that the Shah's 'White Revolution' facilitated the expansion of the 1960s ideals of the urban megastructure in Iran, first through Tehran masterplan, and then as a housing model throughout the whole country. In the time that the country's construction industry was largely dependent on local materials and traditional builders, a tremendous increase in oil revenues fuelled the Shah's modernisation plan and enabled the Iranian government to involve foreign experts, Western architects and international construction firms in developmental projects, creating transnational collaborations. As a result, numerous urban projects and plans were realised, among which the Master Plan for Tehran by Victor Gruen and Abdolaziz Farmanfarmaian played an influential

role. In their proposal, particular emphasis was given to high-rise self-contained residential blocks that made use of advanced construction technologies. This gave birth to the expansion of megastructure ideals in Tehran, after the model was declared 'dead' by Reyner Banham at the time of the 1973-74 'Oil Crises' in Western countries. Indeed, districts like Ekbatan were representative in that their urban layouts produced self-contained megastructures facilitating growth and transformation of his housing scheme over time, at urban scale.

The synthesis of the state-initiated housing policy and the market-led urbanism went hand in hand with the design and development of Ekbatan. While the project was built by a private developer, it was accessible to both upper-class elites and low- and middle-income civil servants. It was largely possible through the TRC selling strategy for the low-income groups. In fact, these groups needed to pay half of the total price of each apartment in the form of down payment; however, for the other half, they would receive a long-term loan with a low-interest from the TRC. Ekbatan's housing design created a demand for a 'minimum home' for Iranians. Smaller apartment units of between 50 and 70 square metres was very rare in a context that market-let urbanism pushed public and private developers into building larger dwellings for wealthier families. Instead, smaller apartments forming almost 30 percent of total dwelling stock in Ekbatan were related to the new need of an emerging social groups that were seeking affordable living units, especially young professionals, entrepreneurs, couples, artists, students, and lower-income civil servants. In fact, this housing scheme might be seen as an attempt of some modernist Iranian architects within the context of market-led urbanism to secure the rights of the unprivileged to the city, as Henri Lefebvre put it.[149]

In a situation where the 1968 Master Plan of Tehran was based upon a car-based lifestyle, a self-reliant neighbourhood such as Ekbatan offered the great privilege of accessing all necessary urban facilities within a walkable distance, a condition that created a safer, car-free zone environment for residents and facilitated social encounters at ground level. Advanced structural techniques, including prefabricated concrete systems, also contributed to create a positive mind-set among ordinary people, who believed that Ekbatan's residential slabs would resist all kinds of seismic activity.[150] In relation to the rest of Tehran, these Modern megastructures with well-defined public spaces formed a notion of the 'other', as termed by the French existentialist philosopher, Jean-Paul Sartre.[151] This sense of otherness enabled a type of space that empowered residents of Ekbatan to create their own sense of familiarity with this new built form and provided a peculiar distinction between the residents of Ekbatan and the general public, elsewhere.

Ekbatan was not only a housing model that its urban structure represented the ideals of megastructure movements, from its conception to realisation. Eventually,

149. In 1968, Henri Lefebvre introduced the concept of 'the right to the city'. In his book, *Le Droit à la ville*, Lefebvre defined his concept as a right of no exclusion of urban society from qualities and benefits of urban life. Although addressing socio-economic segregation and cultural estrangement, he referred to the "tragedy of the banlieusards," by which the unprivileged were forced to live in the outskirt of cities, far from the centre and most public amenities. He demanded the right to the city as to transform urban space into "a meeting point for building collective life". For more reading, see: Henri Lefebvre, "Right to the City," in *Writings on Cities*, ed. Eleonore Kofman and Elizabeth Lebas (Oxford: Blackwell, 1996), 149.

150. The construction systems and structural techniques of the residential slabs in Ekbatan gained a considerable reputation among Iranian civil engineers and structural mechanic experts. They described this project as a model that its structural system can perfectly resist seismic activities such as earthquakes, in Tehran. For instance, see: Alireza Fallahi and Azadeh Khodabandeh loo, "Barnamerizi Moghabele Ba Zelzeleh Dar Mojtama Haye Maskuni Shahri: Nemuneh Motaleati, Faze 1 Shahrak-E Ekbatan," [Earthquake Counteraction Planning in Urban Residential Complexes: The Case Study, Ekbatan Phase 1.] *Nameh Memari va Shahrsazi* 3, no. 6 (2011).

151. In his book, *Being and Nothingness: An Essay on Phenomenological Ontology*, originally published in 1943, Sartre explained how the notion of 'Other' appears as a psychological phenomenon in the course of a person's life, and not as a radical threat to the existence of the 'Self'. For more reading, see: Jean-paul Sartre, *Being and Nothingness: An Essay on Phenomenological Ontology* (London: Taylor & Francis, 2015).

Ekbatan's development led to the expansion of industrialised housing production in Iran. Although Starrett Corporation was guaranteed technocratic autonomy to build, the TRC also asked the company to train and involve local engineers, experts, and sub-contractors in the new construction processes. In so doing, the TRC aimed to localise these techniques, contributing to transfer technological knowledge to Iran. This clearly explains why both Iranian engineers and local contractors were able to complete the housing project of Ekbatan, even after the 1979 Iranian Revolution, when the American government dismissed all its technical support to Iran and imposed sanctions on technological exchange.

6 • Continuity & Change

Framing a New Discourse on the Architecture of Regionalism in the 1970s[1]

Introduction

In the period of 'Westernisation' (1966-1979), as Mohsen Habibi termed it, the Cold War oil-led geopolitics caused Iran to be influenced by multiple larger international actors.[2] Nevertheless, this situation considerably changed when the 1973 oil crisis pushed the West into a deep recession, and enabled Mohamad Reza Pahlavi, the Shah of Iran, to solidify a complex network of relations with global powers.[3] As observed by Douglas Little, an American historian in U.S. diplomatic history, the windfall oil profit of the mid-1970s empowered the Shah to reposition Iran in the system of world power: from being a passive county at the Cold War periphery to an influential player, especially in the global energy market.[4] Iran became the main oil supplier of nations such as the United States, as well as most West European countries that supported Israel during the Yom Kippur War.[5] The Shah also gained the support of the Organisation of the Petroleum Exporting Countries (OPEC), to impose a new oil price to the global energy market [Figure 6.01].[6] The tremendous increase in petro-dollars empowered the Shah to invest in and provide loans for many European countries, in particular France and Britain.[7] Simultaneously, the exponential oil revenues helped the monarchy to accelerate the socio-political project of reconstructing Iranian identity, under the auspices of the Shah's 'Great Civilisation' (*Tamadon-e Bozorg*).

1. A modified version of this chapter is published in the peer-reviewed *International Journal of Islamic Architecture (IJIA)*.

2. The Westernisation period started from 1966 when the state's modernisation agenda focused on implementing new urban development models in Iran based on the idea of 'Master Plan' for cities to modernise the country. This period ended with the 1979 Iranian Revolution. For more reading, see: Seyed Mohsen Habibi, *Az Shar Ta Shahr: Tahlili Tarikhi Az Mafhume Shahr Va Simaye Kalbudie an Tafakkor Va Taassor* [De la Cite a la Ville-Analyse Historique de la Conception Urbaine et Son Aspect Physique] (Tehran: University of Tehran Press, 1999), 200-12.

3. The 1973 oil crisis began in October 1973 when most Arab countries proclaimed an oil embargo. The embargo was targeted at nations perceived as supporting Israel during the Yom Kippur War. For more reading, see: Elisabetta Bini, Giuliano Garavini, and Federico Romero, eds., *Oil Shock: The 1973 Crisis and Its Economic Legacy* (London, New York: I.B.TAURIS, 2016).

4. Douglas Little, *American Orientalism: The United States and the Middle East since 1945* (Chapel Hill: The University of North Carolina Press, 2008), 221-26.

5. As part of the Arab-Israeli conflict, the Yom Kippur War took place from 6 to 25 October by a coalition of Arab states led by Egypt and Syria against Israel. The Arab-states boycotted the oil supply to most advanced industrialised countries of the West, which supported Israel during this war. For more reading, see: Abraham Rabinovich, *The Yom Kippur War: The Epic Encounter That Transformed the Middle East* (New York: Schocken Books, 2004).

6. The Shah became so influential in imposing new rules and wills to the global oil market that in 4 November 1974, *Time Magazine* entitled its special issue as: 'The Emperor of Oil, Shah Of Iran'. See: Spencer Davidson, "Oil, Grandeur, and a Challenge to the West," *Time* 4 November 1974.

7. To overcome the effect of the oil crisis on their economy, countries such as Britain and France asked Iran to provide them long-term loan and invest in industrial projects such as the steel-industry. International organisations such as International Monetary Fund (IMF) and World Bank also received a considerable financial support from Iran. For more information see the documentary movie: Andrew Keep, "Mostanade Enghelab-E 57," in *Mostanade Enghelab-e 57*, ed. Michael Brownsey (https://www.youtube.com/watch?v=Cbor9KpXZk8: Manoto TV, 2014).

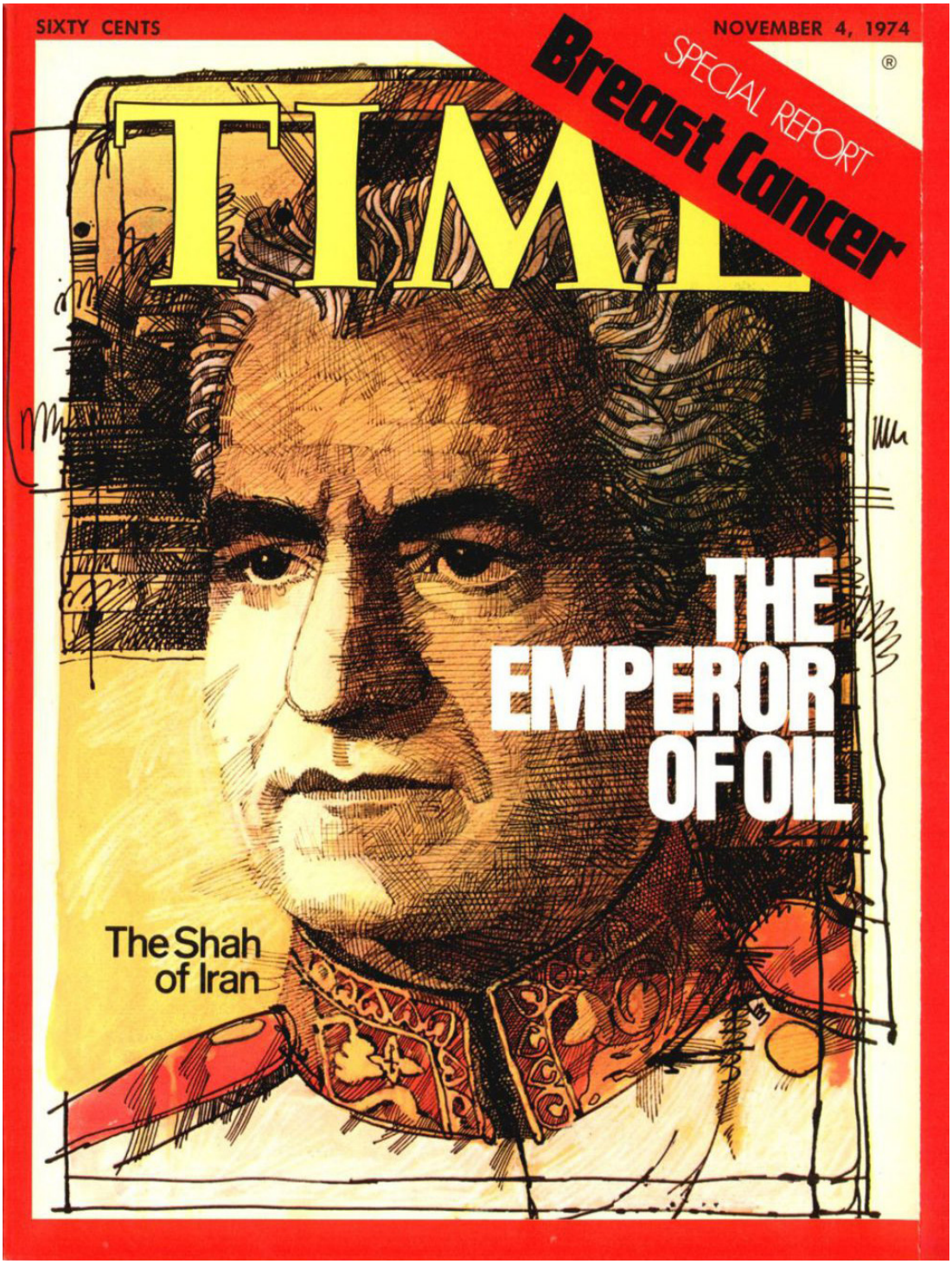


Figure 6.01: the cover page of Time magazine, illustrating the Shah of Iran as the leader of the global energy market in the mid-1970s.
Source: *Time*, 04 November 1974: cover page.

This ambitious modernisation project was part of the Shah's White Revolution (*Enghelab-e Sefid*), as discussed in the previous chapter. One of the objectives of this project was to legitimise Iranian tradition, and thus, the Shah's monarchy, through a particular conception of modernity that hinged on contextualising the need for 'development' within Iran's historical narrative.[8] In the fields of art and architecture, it was Empress Farah Diba (Pahlavi) that became the driving force behind this socio-political project.[9] After her marriage with Mohamad Reza Pahlavi, she took this active interest in promoting culture and arts in Iran because of her previous training at the École Spéciale d'Architecture, in Paris, France.[10] While supporting historical and folkloric arts, Farah Pahlavi extensively focused on the promotion of Iranian 'contemporary' art and architecture. She commissioned avant-garde Iranian artists and architects, such as Parviz Tanavoli, Kamran Diba, and Nader Ardalan, for her cultural projects. Tanavoli was granted generous financial support to explore his revolutionary artworks, inspired from traditional Iranian literature and poetry;[11] Diba received the assignment for designing the Museum of Contemporary Art in Tehran; and Ardalan was given responsibility to develop Tehran Centre for Celebration of Music [Figure 6.02].

Farah Pahlavi's contribution to the field of architecture went beyond commissioning Iranian architects to design new urban projects. She sponsored several international architecture events in Iran, in order to discuss the reconciliation of tradition with industrialisation. Initiated throughout the 1970s, these events were organised by Iran's Ministry of Development and Housing (IMDH), and in cooperation with the Association of Registered Iranian Architects. Based on this collaboration, five international conferences were organised as follows: (1) the first Iran International Congress of Architects, called the '*Interaction Between Tradition and Technology'*, held in 1970 in Isfahan, (2) the second Iran International Congress of Architects, named '*Towards a Quality of Life: The Role of Industrialisation in the Architecture and Urban Planning of Developing Countries'*, organised in 1974 in Shiraz, (3) the first International Congress of Female Architects, called '*The Crisis of Identity in Architecture'*, held in 1976 in Ramsar,[12] (4) the first International Conference on New Towns organised in 1976 in Tehran, and (5) the International Conference of Islamic Culture and Architecture, named '*Towards an Architecture in the Spirit of Islam'*, held in 1977 Tehran.

Among these events, the second Iran International Congress of Architects (IICA), held in the historic site of Persepolis in Shiraz, became a turning point. The 1974 IICA attracted many leading architects of that time, such as Paul Rudolph, Josep Lluis Sert, Georges Candilis, Oswald Ungers, Buckminster Fuller, Jacob Bakema, Kenzo Tange, among others, to discuss alternative approaches to the development of large-scale housing in transforming societies. Furthermore, the IICA became a platform for a number of emerging architects from industrialising countries, such as Nader Ardalan and Kamran Diba from Iran, as well as Charles Correa, Raj Rewal, and Balkrishna Doshi from India. These architects collectively worked to

8. See: Ali Mohamad Ansari, "The Myth of the White Revolution: Mohammad Reza Shah, Modernization and the Consolidation of Power," *Middle Eastern Studies* 37, no. 3 (2001): 1-24.

9. See: Farshid Emami, "Urbanism of Grandiosity: Planning a New Urban Centre for Tehran (1973-76)," *International Journal of Islamic Architecture* 3, no. 1 (2014).

10. Farah Diba established numerous organisations to help Iranians improve their education and health condition, and funded the construction of many sport facilities and cultural buildings around the country. See: Farah Pahlavi, *Kohan Diara: Khaterat Farah Diba (Pahlavi)* [The Ancient Land: The Memories of Farah Diba (Pahlavi)] (Paris: Farzad, 2004).

11. Tanavoli is known for his *Heech* (nothing) sculptures that he produced in multiple ways. Indeed, Heech is a three-dimensional representation of the Persian word for 'nothing', composed of three Persian characters in the style of *Nasta'liq*. Tanavoli was also one of the co-founders of *Saqqakhaneh* School of art that played an influential role in the promotion and expansion of Iranian contemporary arts. For more reading, see: Hamid Keshmirshekan, "Saqqakhaneh School of Art," in *Encyclopædia Iranica*, ed. Elton Daniel (Encyclopædia Iranica, 15 August 2009).

12. The Congress in Ramsar attracted many international well-known female architects such as Alison Smithson, from the UK, Denise Scott Brown, from the U.S., Gaetana Aulenti, from Italy, and De La Tour, from France. The important Iranian participants were Nectar Papazian Andrev, Leila Sardar Afkhami, and Nasrin Faqih. See: "Zan Va Memari," [Women and Architecture.] Honar va Memari 8, no. 35-36 (1976): 14-128.

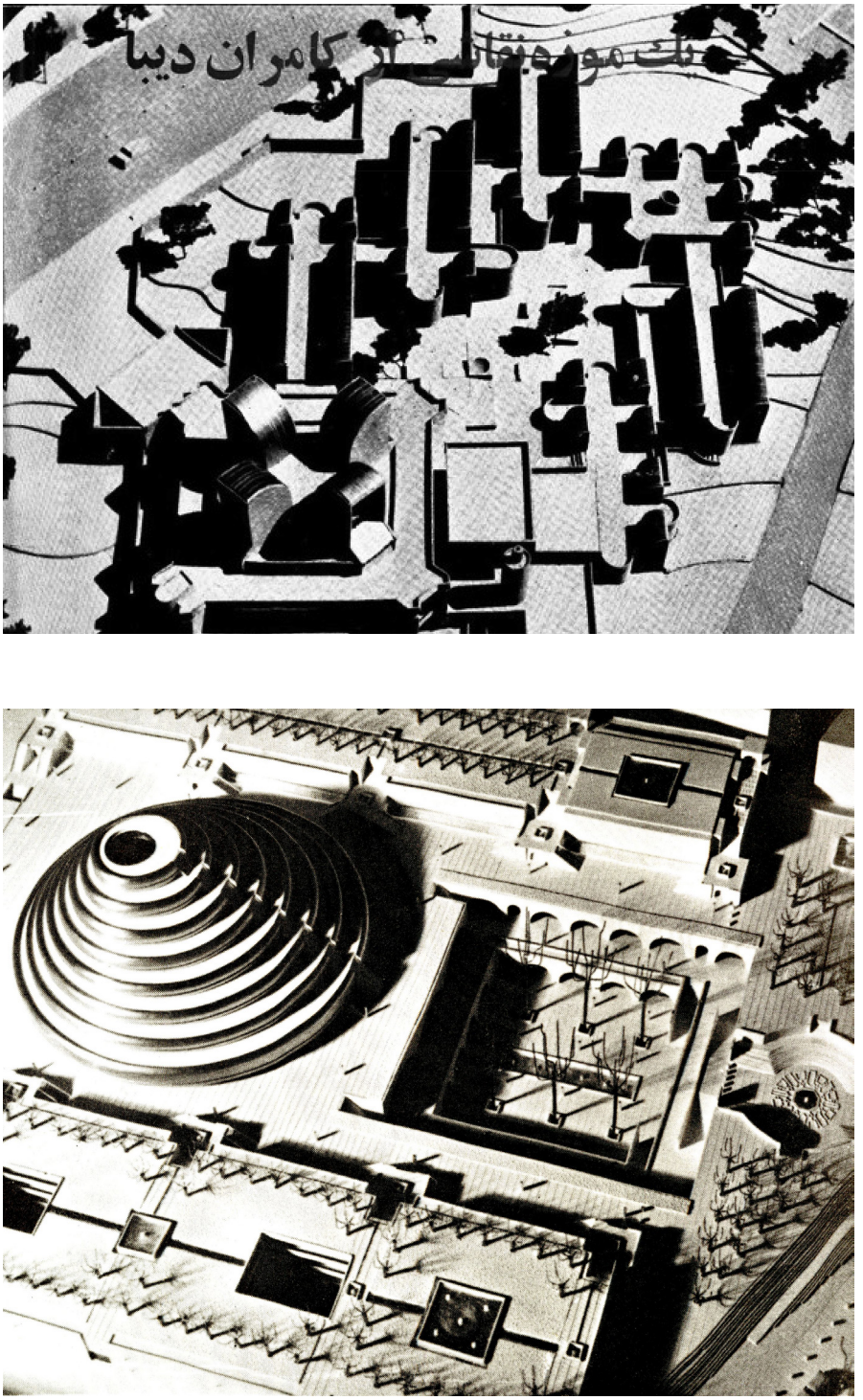


Figure 6.02: this image on the top depicts Tehran Museum of Contemporary Art, designed by Diba in 1967-68; and the image on the bottom shows the physical model of Ardalan on Tehran Centre for Celebration of Music.
Source: *Honar va Memari* 10, no. 45-46 (1978).

reconceptualise and formulate the notion of 'tradition' and 'regional identity' for developing new urban communities and large-scale housing, otherwise referred to as, human habitats. Eventually, these debates led to the provision of the 'Habitat Bill of Rights'; a CIAM-like charter of habitat that, according to the *New York Times* 8 June 1976, intended to emphasise "human scale and modest, vernacular architecture as opposed to the often abstract quality of much modern design, particularly as expressed in government-built housing."[13] In 1976, the Habitat Bill of Rights was submitted by the Iranian government to the first UN conference on the theme of 'Human Settlements' held in Vancouver-Canada [Figure 6.03].[14]

Focusing on the last years of Iran's period of 'Westernisation' (1973-1979), this chapter will reveal how the 1974 IICA played an instrumental role in shaping a discourse on the notion of architectural regionalism in the design for human habitats. In line with this theme, there are some earlier contributions that have become an important reference for the ideas presented in this chapter. Aiming to discuss the evolution of housing paradigms in the 1970s Iran, these studies addressed themes such as traditionalism, the relation of tradition and modernity, and critical regionalism. Nigel Westbrook examined the role of the first IICA for promoting a regionalist debate in the context of the 1970s Iran, and discussed the notion of traditionalism, as promoted by Ardalan.[15] Ali Mozaffari and Nigel Westbrook briefly highlighted some discussions of the 1974 IICA and focused on the influence of these debates on the design of Shushtar-Nou.[16] Mohamad Reza Shirazi conducted a significant study on contemporary urbanism in Iran, and discussed the relation of Ardalan's theory of the New Creation (*Khalq-e Jadid*), presented in the 1974 IICA, and Kenneth Frampton's idea of Critical Regionalism.[17] Shirazi also traced this relationship in the works of three leading Iranian architects including Kamran Diba, Nader Ardalan, and Hossein Amanat; and he claimed that their architectural language represents an authentic critical regionalist approach where a 'space-in-between' is creatively produced.

Despite the invaluable insights provided by these scholarly materials, the authors mentioned above did not examine the role that Team X participants in the 1974 IICA served in promoting a model habitat allowing growth and change over time. These studies overlooked how the notion of architectural regionalism was disseminated through housing manuals, influencing the design and production of housing in the 1970s Iran. Thus, this chapter will discuss how the idea of continuity and change for developing human habitats was conceptualised by the key members of Team X and Nader Ardalan in the 1974 IICA. It will, then, argue that Ardalan's theory of the 'New Creation' formed a basis for drafting the Habitat Bill of Rights (HBR), a document that contributed to fostering and promoting an alternative way of adapting modernism to the architecture of dwelling in Iran. Finally, this chapter will discuss the design guidelines introduced by the HBR, and illustrate the extent to which they triggered a shift of paradigms in the design of Iranian housing.

13. "Architects Have a Blueprint for Habitat," *New York times* 8 June 1976.

14. Taking place between 31 May to 10 June 1976, Habitat-I aimed to tackle the issues related to adequate housing and urbanisation, globally. See: Ontario Ministry of the Environment, "Summary & Observations on Proceedings of Habitat: U.N. Conference on Human Settlements, Vancouver, 1976," (Vancouver: United Nations, 1976).

15. Nigel Westbrook, "The Regionalist Debate in the Context of the 1970s Architectural Forums in Iran," in *Proceedings of the Society of Architectural Historians, Australia and New Zealand: 31, Translation*, ed. Christoph Schnoor (Auckland, New Zealand: SAHANZ and Unitec ePress, 2014), 385–96.

16. Nigel Westbrook and Ali Mozaffari, "A Return to the Beginnings of Regionalism: Shushtar New Town Seen in the Light of the 2nd International Congress of Architects, Persepolis, Iran 1974," in *Proceedings of the Society of Architectural Historians, Australia and New Zealand: 32, Architecture, Institutions and Change*, ed. Paul Hogben and Judith O'Callaghan (Sydney: SAHANZ, 2015), 715-25. See also: Ali Mozaffari and Nigel Westbrook, "Shushtar No'w: Urban Image and Fabrication of Place in an Iranian New Town, and Its Relation to the International Discourse on Regionalism," *Fusion*, no. 6 (2015).

17. Mohamad Reza Shirazi, *Contemporary Architecture and Urbanism in Iran: Tradition, Modernity, and the Production of 'Space-in-Between'*, The Urban Book Series (Cham, Switzerland: Springer, 2018), 45-101.

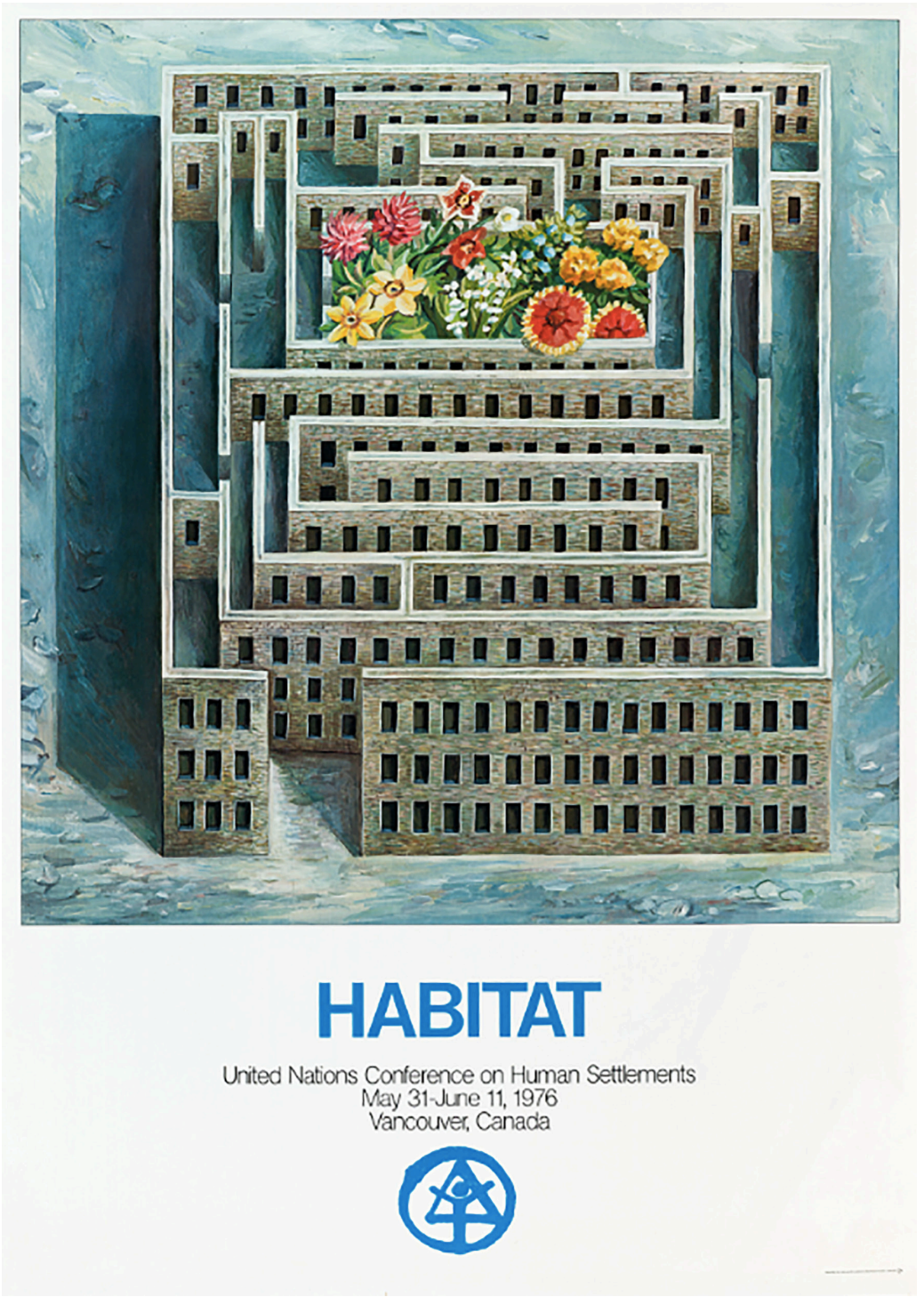


Figure 6.03a: the image above shows the Habitat 76 conference poster.
Source: www.habitat76.ca, accessed June 2018.



THE NEW YORK TIMES, TUESDAY, JUNE 8, 1976

Architects Have a Blueprint for *Habitat*

Special to The New York Times

VANCOUVER, British Columbia, June 7 — Architecture has been little discussed at the week-old United Nations Conference on Human Settlements here, but pressure is growing to include a provision for the quality of design in the final final declaration to be adopted later this week.

Early in the conference, which is known as habitat, Jai Rattan Bihalla of India, the president of the International Union of Architects, charged that architects were being "neglected" in the official proceedings.

Two delegations, Iran and Greece, have formally proposed resolutions on design, and the United States is "solidly behind any thing in this area," according to David Meeker, Assistant Secretary of the Department of Housing and Urban Development and a member of the delegation.

Both of the resolutions proposed as amendments to the conference's overall declaration are strongly oriented away from the approach generally associated with modern architecture and urban renewal.

Focus on Quality of Life

The Iranian delegation has proposed that the conference state its commitment to design "related to the particular circumstances of time and space, and based on consideration of the human scale." This phrase is seen as an argument in favor of modest, vernacular architecture and as opposed to the often abstract quality of much modern design, particularly as expressed in government-built housing.

"We were very concerned that the conference was thinking only in materialistic terms, not in terms of the quality of life," said Zaven J. Simonian, Deputy Housing Minister of Iran and a conference delegate. "At one point, one phrase of the original resolutions said that if there are policy choices, they should be made on the basis of cost. We changed that to say on the basis of social benefit as well."

The change is considered significant. The original resolutions, which were drafted before the conference began and which have been the subject of intense debate for the last week, concentrate on land use, public participation in the planning process, and the distribution of resources to underdeveloped countries. These are issues that are as concerned with politics as with planning, so the attempt on the part of Iran and other governments to insert design provisions into the final declaration is viewed as a significant departure.

A Film From Yemen

Greece's delegation, which issued a statement saying it "deplores the lack of any mention of the sociopsychological requirement to be granted for a harmonious urban life," has proposed an amendment similar to Iran's. It says that while planning new human settlements or restructuring existing ones," a high priority should be given to the promotion of optimal and creative conditions of human coexistence." It goes on to urge "human scale," and "the creation of chances of human encounters and the elimination of urban concepts promoting human isolation."

Both the Iranian and the Greek resolutions reflect the general mood of the conference, which has been strongly in the direction of smaller structures, architecture more concerned with human use, and with the native traditions of particular regions.

The conference has thus implicitly rejected the all-pervasive approach of much modern architecture and planning, in which technology and abstract forms were major determinants of design. This attitute was expressed, for example, in a film brought to the conference by Yemen; it admitted its Government's failure in its attempt to introduce Western-style modern technological methods.

The modern buildings, the film said, "had thin walls, were hot in summer, cold in winter and expensive to maintain." It explained how the small Arab country reversed its policy and encouraged the reuse of its traditional mud-block building methods.

"We recommend that the architects explore thoroughly the local traditions before venturing into any modernistic kinds of construction," the film said.

The same attitude was expressed in documents offered by the International Union of Architects and the Iranian Government. The union proposed a "habitat charter" calling for the right of all human beings to "a habitable space conducive to good health and exclusive to personal use."

The Government of Iran has been circulating what it calls the "habitat bill of rights." It is an elaborate, book-length presentatin that advocates the design of dwellings based on the values and living patterns of residents rather than buildings which force occupants to alter their life styles; the retention of pedestrian precincts in urban areas, and the harmonic relationship of architecture to its surroundings.

THINK FRESH:
THINK FRESH AIR FUND

Figure 6.03b: the image shows the article published about the Habitat Bill of Rights in New York Times.
Source: *New York times* 8 June 1976; also available through: https://www.ardalanassociates.com/habitat-bill-of-rights.html

Non-Western Modernity and the Concept of Tradition

Non-Western modernity and the influences of local culture and contexts became a key subject of many studies related to modernisation processes.[18] As observed by Yael Allweil, these studies mostly put a distinct emphasis on the multiplicity of modernism, and discussed the idea of non-Western modernity as something that involves confrontation with and assimilation of 'modernism'.[19] It has also been argued that non-Western architecture can be seen in the form of 'translation and hybridisation', developed in parallel to its Western counterparts.[20] In this view, it appears evident that concepts such as 'Vernacular Modernism' were introduced to emphasise place particularism as a strategy for the preservation of cultural identity in spatial practices developed under the auspices of the globalisation process.[21] While modernism is widely associated with foreignness and alienation, it also catered for a mutual cross-cultural exchange of architectural and planning ideas, as observed by Carola Hein in the case of Japan.[22]

Fostering and promoting a synthesis of modernity and tradition, thus, became a strategy to suggest a touch of familiarity to something exogenous.[23] In this context, while modernity often refers to "the total condition of culture in those societies that have been transformed by science" and the application of cutting-edge technologies, tradition becomes a household term for describing the processes and methods of these transformations.[24] Accordingly, architectural historians such as Paul Oliver, Jean-Paul Bourdierand, and Nezar Al-Sayyad attempted to define the meaning of modernism in the context of tradition. For instance, Bourdier and al-Sayyad argue that "tradition must not be interpreted as the static legacy of the past, but rather as a model for the dynamic interpretation of the present."[25] In this view, modernity represents the continuity of tradition; yet, the latter connoted the practice of passing on and the process of transmission.[26] This approach would allow an understanding of socio-spatial relationships between forms, meanings, and processes that formed 'traditional' environments to identify some vernacular patterns of inhabitations;[27] so, these patterns could be used as a basis for shaping our living environment at present, but with different forms and through various interpretation.

Architectural regionalism, both of the 'critical' and 'non-critical' model, also attempted to position place, region, and identity in the heart of discourses on the relationship between tradition and modernity.[28] In these regionalist debates, a particular emphasis was mostly given to "the value of the singular circumscribed projects within the physical, social, and cultural constraints of the particular, aimed at sustaining diversity while benefiting from universality."[29] Thus, it might be argued that the architecture of regionalism seeks a dialectical expression of being simultaneously both modern and traditional, standard and irrational, or universal and regional. This dialectic would create a condition of thirdness, as

18. See, for instance: Duanfang Lu, "Introduction: Architecture, Modernity and Identity in the Third World," in *Third World Modernism, Architecture, Development and Identity*, ed. D Lu (New York: Routledge, 2011). Tom Avermaete, *Another Modern: The Post-War Architecture and Urbanism of Candilis-Josic-Woods* (Rotterdam: NAi, 2005). Tom Avermaete et al., *Casablanca Chandigarh: A Report on Modernization* (Montréal, Québec, Canada and Zürich, Switzerland: CCA, Canadian Centre for Architecture, 2014). Carola Hein, "Japanese Cities in Global Context," *Journal of Urban History* 42, no. 3 (2016): 463–76..

19. Yael Allweil, "Plantation: Modern-Vernacular Housing and Settlement in Ottoman Palestine, 1858-1918," *ABE Journal* (2016): 9-10.

20. See: Sandy Isenstadt and Kishwar Rizvi, eds., *Modernism and the Middle East: Architecture and Politics in the Twentieth Century* (Seattle: University of Washington Press, 2002).

21. See: Maiken Umbach and Bernd Huppauf, *Vernacular Modernism* (California: Stanford University Press, 2005), 1-23.

22. Carola Hein, "Japanese Cities in Global Context," *Journal of Urban History* 42, no. 3 (2016): 463–76..

23. David, "Multiple Modernisms and Modernities," 181-88.

24. See: Robert L Woolfolk and Frank C Richardson, "Behavior Therapy and the Ideology of Modernity," *American Psychologist* 39, no. 7 (1984): 778.

25. Nezar AlSayyad, "The End of Tradition, or the Tradition of Endings?," in *The End of Tradition?*, ed. Nezar AlSayyad (London & New York: Routledge, 2004).

26. Amos Rapoport, "On the Attributes of Tradition," in *Dwellings, Settlements and Tradition: Cross-Cultural Perspectives*, ed. Jean-Paul Bourdier and Nezar Alsayyad (Lanham, New York, London: University Press of America, 1989).

27. Nezar AlSayyad and Elena Tomlinson, "Traditional Environments in a Post-Traditional World: Interdisciplinary Perspectives," Sustainable Built Environment (2011). Also available at: http://www.eolss.net/sample-chapters/c15/e1-32-13-00.pdf

28. For instance, Liane Lefaivre, Alexander Tzonis, and Kenneth Frampton were mostly considered as the proponent of 'critical' regionalism, while Lewis Mumford was seen as an architecture critic advocating the idea of 'regionalism'. See: Liane Lefaivre and Alexander Tzonis, *Architecture of Regionalism in the Age of Globalization: Peaks and Valleys in the Flat World* (Abingdon: Routledge, 2012); Kenneth Frampton, "Towards a Critical Regionalism: Six Points for an Architecture of Resistance," in *Anti-Aesthetic: Essays on Postmodern Culture*, ed. Hal Foster (Seattle: Bay Press, 1983); Lewis Mumford, *The South in Architecture* (New York: DaCapo Press, 1967).

Nelson Mota argued, emerging from the "challenge to the previously accepted symmetries and dualities."[30] Accordingly, the notion of regionalism could be seen as a mediator of negotiating tradition and modernity, aiming to "deconstruct universal modernism in terms of values and images which are quintessentially rooted, and at the same time to adulterate those basic references with paradigms drawn from alien sources."[31] In this view, modernity becomes a necessity to re-interpret native tradition, but "without degenerating into kitsch historicism", as Kenneth Frampton puts it.[32] It is thus not surprising that Paul Ricour defined rooted traditions as "a living culture, at once faithful to its origins and ready for creativity on the levels of art, literature, philosophy, and spirituality, is capable of sustaining the encounter of other cultures…[and] giving meaning to that encounter".[33] According to Ricour, "when the meeting is a confrontation of creative impulses, then it is itself creative".[34]

In the following section, this chapter, first, discusses how a mutual cross-cultural exchange of architectural and planning ideas between Western and non-Western participants of the 1974 IICA framed a new regionalist discourse on the notion of human habitat for transforming societies. This chapter reveals the role Nader Ardalan and his theory of the New Creation performed in generating and guiding these debates. It is argued that Ardalan's theory of the New Creation contributed to set a basis for fostering such regionalist discourse on architecture in the 1970s Iran. Considering the architecture of dwelling, this discourse also contends that modernity and tradition can be synthesised through the production of spaces that allows acts of exchange and simultaneous presence, which are essential for the previously mentioned process of re-interpretation.[35]

29. Alexander Tzonis, "Introducing an Architecture of the Present: Critical Regionalism and the Design of Identity," in *Critical Regionalism: Architecture and Identity in a Globalized World*, ed. Liane Lefaivre and Alexander Tzonis (New York: Prestel, 2003), 20.

30. Nelson Mota, "Between Populism and Dogma: Alvaro Siza's Third Way," *Footprint*, no. 8 (2011): 44.

31. Kenneth Frampton, "The Isms of Contemporary Architecture," *Architectural Design* 52, no. 7-8 (1982): 77.

32. "The Resistance of Architecture: An Anthological Postscript," *Architectural Design* 52, no. 7-8 (1982): 106.

33. Paul Ricoeur, 'Universal Civilization and National Cultures', in *History and Truth*, trans. Charles A. Kelbley (Evanston, IL: Northwestern University Press, 1965), 283.

34. Ibid.

35. See also: Shirazi, *Contemporary Architecture and Urbanism in Iran*.

36. See also: Westbrook, "The Regionalist Debate in the Context of the 1970s Architectural Forums in Iran."

37. See: Shima Mohajeri, "Louis Kahn's Silent Space of Critique in Tehran, 1973-74," *Journal of the Society of Architectural Historians* 74, no. 4 (2015).

38. Nader Ardalan, "Building in the Persian Gulf," in *Iran: Architecture for Changing Societies*, ed. Philip Jodidio (Torino: Umberto Allemandi, 2004), 81.

39. Mohamad Reza Shirazi, *Contemporary Architecture and Urbanism in Iran: Tradition, Modernity, and the Production of 'Space-in-Between'*, The Urban Book Series (Cham, Switzerland: Springer, 2018).

Framing a Regionalist Discourse on Architecture of 1970s Iran

As discussed in the previous chapter, the seed of a regionalist discourse on Iran's so-called 'contemporary architecture' was planted at the first Iran International Congress of Architects, held in Isfahan.[36] In this congress, Louis Kahn became an influential participant whose works and ideas regarding the meaning of tradition in the context of modernity influenced the organisers of the event.[37] While acknowledging the relevance of architectural modernism, Kahn defined tradition as "golden dust falling in space", and claimed that "if one but had possibility of grasping this golden dust, one would possess the powers of anticipation of the future."[38] According to Louis Kahn, the world of archetypal paradigms consisted of perennial metaphors of civilisations that would be a guiding light in architecture. This approach, noticeably, could be seen in the works of most leading Iranian architects participated in the 1970 architectural congress of Isfahan [Figure 6.04].[39]



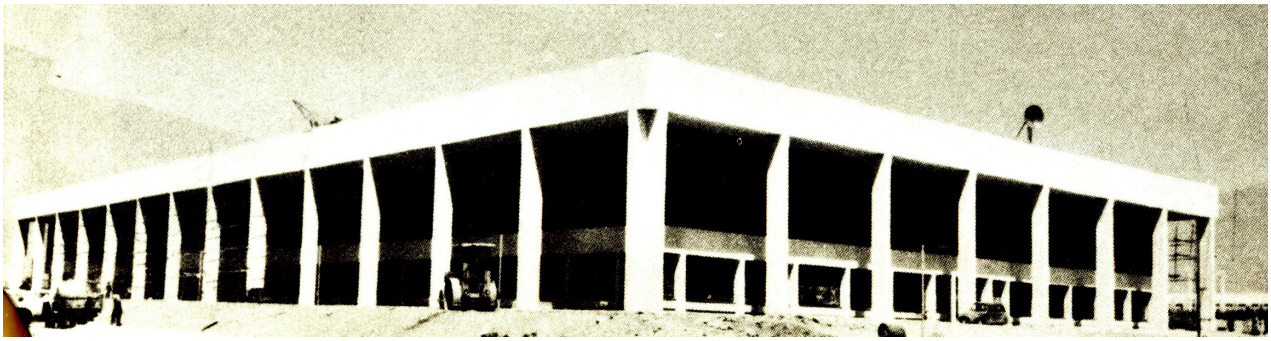


Figure 6.04: Iran's Centre for Management Studies by Nader Ardalan (top); and his design for Shahyad Sport Complex-Indoor (bottom).
Source: *Honar va Memari* 10, no. 45-46 (1978): 51 (top); *Honar va Memari* 10, no. 22-24 (1978): 68 (bottom).


نخستین هفته معماری

هفته معماری در شهرستانها

آبادان

در آبادان، طی جلسه‌ای با شرکت شخصیت‌های برجسته محلی، آغاز هفته معماری آذین گرفته شد. در این جلسه که بالشوق و شور صمیمانه میهندوستان معمار و معمارانجربی همراه بود برگزاری نخستین هفته معماری مورد تحلیل قرار گرفت و اظهار امیدواری شد که برگزاری هفته معماری تا استقرار نظام معماری در ایران همه‌ساله ادامه یابد.

سخنرانی‌های دراجتماع معماران‌تجربی، بدرسه‌کمال، اجتماع دانش‌آموزان، بررسی اشاء دانش‌آموزان در باره معماری وانتخاب بهترین آنها، سخنرانی مهندس هاشم‌پور و مهندس انصاری در جلسه اختتامیه و صدور قطعنامه از اهم برنامه‌هائی بود که کمیته برگزاری هفته معماری در آبادان، طی هفته معماری به‌گمر رسانده‌اند.

اردبیل

مراسم افتتاح هفته معماری در اردبیل، در اجتماع باشکوهی از شخصیت‌های محلی با تعلق فراندار اردبیل برگزار شد. در همین جلسه در توجه معماری سنتی ایران و تشریح سبک معماری دوره صفویه و درباره معماری امروز وهدی از برگزاری هفته معماری‌سخنانی ایراد شد.

آموزش معماری در قبوخانه طاووس، سخنرانی دکتر شکوری درباره معماری‌سیاوه، سخنرانی آقای قدیمی درباره معماری کهن ایران، اهمیت بافت شهر توسط مهندس خوشنویس، چگونه خانه بسازیم توسط آقای حبیبی، سخنرانی برای دانش‌آموزان توسط آقای فرزانه و جام قاضی‌زاده و پاک بخش‌آراء به مدیریت آقای سلمان‌نژاد از مهمترین برنامه‌هائی بود که در اردبیل بمناسبت هفته معماری برگزار شد.

اهواز

طی بیانات جالبی که توسط آقای مهندس استاندار خوزستان ایراد گردید، برنامه هفته معماری درخوزستان،اهواز آغاز گردید.

در این هفته در جلسات ومجامع‌مختلف درباره تاریخچه معماری، هماهنگی عوامل معماری، تکنولوژی در معماری سنتی، معماری سنتی ایران بطورکلی‌وارزش جدید، ملاحظات فنی ساختمان، مقایسه پوشش‌های جدید وقدیم، هماهنگ ساختن معماری سنتی و معماری جدید سخنرانی‌های جامعی ایراد شد.

کمیته برگزاری هفته معماری در اهواز، سرانجام در روز پنجشنبه ۲۴ آبان ماه بامصدور یک قطعنامه به‌کار خود پایان داد.

بوشهر

هفته معماری در بوشهر بما ندارکات هم‌جانبه‌ای که از طرف کمیته برگزاری‌هفته معماری صورت گرفته بود باشکوه خاصی برگزار شد. در جلسه افتتاحیه بدنبال سخنان آقای استاندار، شرح چامعی از فعالیت‌های کمیته باطلاع مقدمین رسید و سپس آقای مهندس حمید معمار دربارهٔ‌سنجانی لزوم‌ایستار نظام معماری را در ایران پیادآور شد، در جلسات بعد که در مراکز مختلف برگزارشد، آموزش معماری برای همه توسط مهندسان معماری و معماران تجربی توجیه شد، دوبرنامه دیدار از کاخهای قدیمی بوشیری ومحلات و نقعه‌های قدیمی از دیگر برنامه‌هائی بود که کمیته برگزاری هفته معماری در بوشهر انجام داد.

اصفهان

هفته معماری در اصفهان با بیانات افتتاحیه آقای دکتر کیانپور استاندار اصفهان آغاز بکار کرد، در روزهای بعد، اصل ومضا تئوریهای جدید معماری، طراحان و مجریان واحدهای معماری، توجیه معماری برای هزبه آموزان طراحی هنرستان دخترانه، توجیه معماری در هنرستان صنعتی پسرانه،بحث درمورد قرار گرفت و سخنرانیهای سودمندی درباره هریك از آنها ایراد گردید.

نخستین هفته معماری

بندرعباس

مهندس طبیری استاندار استان ساحلی با ایراد سخنانی مراسم هفته معماری در بندرعباس را افتتاح‌کرد ومبس گمیته‌برگزاری هفته معماری در بندرعباس بطور فعال وثمربخش بفعالیتهای دیگه که از قبل تدارك دیده شده بود پرداخت. در برگزاری مراسم هفته معماری که در بندرعباس بمدت شش روزبطول انجامید بدنبال گزارش مبسوطی از سرپرست نمایندگان اطلاعات در این استان مهندس کشاورز درباره معماری اقلیمی و معماری مدرن صحبت کرد و در پایان بحث آزاد مهندس سرتیپ و مهندس رنجبر و مهندس کشاورز اداره جلسه پرثمری را بعهده گرفتند.

آموزش معماری در قبوخانه وسخنرانی مهندسین غلامی برای ۱۲۰ نفر دانشجوی برنامه‌ریزی و مهندسی محیط‌زیان از سایر جمله برنامه‌های سودمندی بود که در توجیه هر معماری صورت تحقق گرفت.

تبریز

تبریز در جریان هفته معماری ازنامه‌کنند برنامه کاملی از آموزش معماری‌برای همه بود.

در مراسم گشایش هفته معماری‌تیمسار ارتشبد صرفاهی استاندار سخنانی ایراد داشت.

تشکیل میز گرد در دانشگاه تبریز برای دانشجویان رشته بهزیستی وبرگزاری‌میز گرد دیگری در مدرسه راهنمائی سرداز ملی‌جلسات سخنرانی در دبیرستان دخترانه پروین،مدرسه راهنمائی آذر آبادگان، دبیرستان ایبرخت، انستیتو تکنولوژی بازرگانی، هنرستان‌معماری، دبیرستان مبعثی، هنرستان صنعتی پسران دبیرستان شاهدخت، انستیتو تکنولوژی‌صنعتی و دبیرستان حقوق پشر و پاك برنامه آموزشی معماری در قبوخانه سایر برنامه‌های بود که طی هفته معماری از طرق گمیته برگزاری این هفته بمرحله اجرا درآمد.

خرمشهر

در خرمشهر، پس از مراسم افتتاح، گشایش پاك نمایشگاه آموزش معماری در قبوخانه، بحث و بررسی اطاقه دانش‌آموزان درباره معماری، و چند جلسه سخنرانی توسط آقایان مهندس کریم‌پور و مهندس چمالی‌در ردیف بهترین کارهای گمیته هفته معماری در خرمشهر قرار داشت.

رشت

در رشت نیز از گشایش هفته معماری با بیانات استاندارگیلان آقایان مهندس‌قاپچور، مهندس ازیدی و مهندس تیموریان در سایر روزهای هفته سخنانی ایراد داشتند. پاك بین گزه از مهندسان آرشیتکت و چند برنامه آموزش همگانی برجسته‌ترین برنامه‌هائی‌بودند که در شبر رشت برگزار گردید.

بموجب برنامه‌های گمیته در ایمن شبر تدوین شده بود، غروب هربروز دسته موزیك نیروی دریائی در میادین شبر بمناسبت هفته معماری به‌رقم میپرداختند.


نخستین هفته معماری

گروه کم‌سرمایه قدرت پرداخت حق‌الزحمه به آرشیتکت را ندارد

در جلسه‌ای که ۱۴ آبانماه تشکیل‌شد چندین از آرشیتکت‌ها شرکت داشتند:

از طرف شرکت‌کنندگان در این‌جلسه اظهار شد:

..... یك کارگر حداکثر بعمد از دو سال یك نیز معماری یاف وسئولیت کاری بی اهمیت معماری را بعهده گرفته است که متاسفانه مداخلات اینگونه‌افراد بدون‌صلاحیت لطمه بزرگی به‌معماری وارد میکند.

..... کمتر کسی است که با سرمایه کم برای بنای خانه‌ای به‌آرشیتکت راجعه کرده باشد، زیرا گروه سرمایه‌دار میخاهد که بدون‌مراجعه‌به‌آرشیتکت از نقاده و دیگر اینکه گروه کم‌بود اطلب با معماری توین آشنائی ندارند، آنها هدخان داشتن یك چهار دیواری است و حال چه فرق میکند این چهاردیواری چگونه بنا شود.

..... که خرفه معماری هنوز برای مردمعنکه نیست. این وظیفه آرشیتکت‌ها است که وسیله‌ای فراهم کنند تا یك حداقل دانش معماری در مردم بوجود بیاید.

در انتقاد از خود آرشیتکت‌ها اظهار داشتند:

..... تا به نیز حمله را متوجه دیگران کردیم در اجرا ناقوان. ما آرشیتکت‌ها کاسه‌ای هستیم، یعنی بمنطق به‌کسانی هستیم که روی کاغذ آشپتکت شدیم و بی‌اطلاع از اجرا. و عقریب با کسانی از آرشیتکت‌های مسواجه خواهیم شد که بیشتر زیبائی و خرفتی هستند تا کاغذی و آنها هر باید مثل ما ناخی‌گریختن را در کارهای ساختمانی مردم در بیاورند.

..... تا بساط‌نمایهای ساختمانی تنها ارتباط به اجرای کارها ندارد، مشکلات بسیاری موجود است که بدون رابط بین مهندس و مشاور و کارگران ساختمانی، نمداشتن کنار کران متخصص و فنی با تجربه و عدم اعتماد به‌انجام کار تعیر و عدم اجرای صحیح جزئیات‌معماری مشکلاتی است که باید بدانرو شد.

در این جلسه مسئله اقتصاد نیز مطرح گردید و عقیده داشتند: وقتی بخش خصوصی با کمبی که سرمایه‌گذاری میکند تا بیك آپارتمان بسازد و منظورش اجاره و بازده اقتصادی است، بساط‌نمایه شواهدی کند آن شخص برای این کار بر نظر میگیرد کلا با تمام راه‌حل‌هائی که آرشیتکت برای اجرا انتخاب کرده مخالف پیدا میکند.

کوشه‌ای از اجتماع اولین روز

نخستین روز ـ افتتاح هفته معماری

از روز شنبه ۱۹ آبان بود که نخستین جلسات هفته معماری در تهران و شهرستانها آغاز گشت. واولین جلسه آن ساعت بعد از ظهر در سالن مؤسسه اطلاعات تشکیل شد.

در مراسم گشایش هفته معماری‌ستاور عباس مسعودی مدیر مؤسسه اطلاعات پس از خیر مقدم سخنرانی خود را چنین آغاز نمود:

«از آنجا که علاقه‌مندی شیوائم نهایت توجه و علاقه را نسبت به‌هرگونه امیدل و بخصوص هنر معماری ایران ابراز میدارند، روزنامه اطلاعات با همکاری مجله هنر ومعماری برگزاری هفته معماری را بعهده گرفته است.

فکر برگزاری این هفته از آنجا آغاز شد که گروهی از میهندمان ملاحظه به‌معماری امیدل ایرانی طی مطالعاتی باین نتیجه رسیدند که برای بهبود وضع معماری ایران و بررسی مسائل آن اقدداماتی معمول دارند.

بدنبال این فکر کمیته‌ای مرکب از رئیس دانشکده معماری دانشگاه تهران، رئیس دانشکده معماری دانشگاه ملی، فرهاد مسعودی و مهندس عبدالحمید اشراق تشکیل شد و چنین اتخاذ تصمیم بعمل آمد که به حضور بیارك علیاحضرت شیهانو شرفیابی حاصل‌گردد تا از نزدیك به نیات علیاحضرت در زمینه هنر امیدل معماری که مورد توجه خاص مطلوبا میباشد آگاه شوند، این استادها مورد قبول واقع شد و علیاحضرت شیهانو ضمن ارشاد و راهنمائی گمیته فرمودند:

«لازم است اقدامات‌دامنه‌داری باهمکاری وسائل ارتباط جمعی برای آگاهی بیشتر مردم از معماری انجام گردد و معماری ایران درسطح کشور به مردم شناسانده شود.»

بعد از این دیدار برگمیو به هیئت مزبور، جلسه ادامه شد تا در این مورد مطالعات عمیقی در شناخت اصول معماری قدیم و جدید درفرد تشکلات متعدد معماری کنونی و راههای میرد. پاسی از معماری قدیمی انجام دهد بدین منظور جلسات بحث و گفتگو و میز گردهای مختلف

مهندس عبدالحمید اشراق

معماری برای مردم

خلاصه‌ای از اظهارات مهندس اشراق مسئول گمیته برگزاری هفته معماری:

هفته معماری عامل گفتگوئی دهنده مسائل معماری در توده مردم در سطح مملکتی است. گوشه‌های این هفته پاك پایه واساسی برای دگرگون کردن وضع نابسامان معماری امروز در سالهای آینده و تعالی بخشیدن به افکار و نظرات مردم در مورد معماری کنونی خواهد بود.

باید، دید کدام مردم باشند، زیرا که آنها را با مسائل معماری و حداقل دانش در این زمینه آشنا نکرده‌اند و مقصر اصلی توده میهندمین باشند که برنامه‌ریزی خود را غلط برای همکاران خود تنظیم نموده‌اند، البته نباید عدم توجه و بیعلاقگی وسائل ارتباط‌جمعی را در تحقق این جریان بی‌اثر دانست.

حرفه معماری چند صباحی بیش نیست که در ایران شکل تازه گرفته و در آیزمان علاوه برآینکه در پیشبرد و سائل مؤثر نبوده بلکه معماری اصیل را نیز دگرگون نموده و یك اثر ناهنجار بی‌روبه‌ای بجاگذاشته است. این نابسامانی سبب گردیده که‌هنرهای پنام معماری در سراسر مملکت در دهات ودر اقامه در قصبه‌ها در دبستانها ودبیرستان‌ها، در دانشگاه‌ها وبالاتر از همه‌در قشر توده مردم بصورت نو و ازنده‌ای جلوه کند.

نخستین هفته معماری

سناتور مسعودی همراه سخنرانی در روز افتتاح هفته معماری

چه در تهران و چه در شهرستانها با حضور استادان و دانشجویان معماری، معماران باتجربه و مردم طی برنامه‌های متعلقی در مؤسسه اطلاعات برگزار شد.

سناتور عباس مسعودی بدنبال مقالب بالا فرمود:

همزمان با آغاز کار این جلسه، در ۲۵ شبر بزرگ و کوچك ایران اینگونه جلسات به کمك شخصیتهای محلی افتتاح و شروع بکار میکند و این جنبشی فرهنگی در سراسر کشور است که امیدواریم نتایج درخشانی بار آورد.

سپس سناتور مسعودی اظهار داشت: بر حسب اراده و ارشاد شیهانوی گرامی، چنین هفته معماری جنبه کاملا ملی دارد، با آنکه از فرهنگ و هنر، وزارت آموزش و پرورش، وزارت‌آبادانی وسکن وسازمان رادیوتلویزیون ملی ایران و سایر مؤسسات بی‌بهره نمانده‌ایم اما این نخستین کوشش فرهنگی در سطح ملی است که توسط وسایل ارتباط جمعی انجام میگیرد و سعی بر آنست که مسئله معماری را با بیانی ساده و شکلی درست با مردم درمیان نهیم.

سپس نماینده کمیته هفته معماری گزارش کارهای انجام شده را شرح زیر بیان داشت: کمیته برگزاری هفته معماری درشهران

تخست میزگردهای متعددی با حضور استادان دانشجویان، کارشناسان معماری ترتیب داد، سپس با معماران قدیمی تهران بحث و گفتگو شد، مشکلات و مسائل معماران با در حقیقت سازندگان شهرها بررسی گردید، با مردم و مصرف‌کنندگان معماری سخن گفته شد که بخشی از این بحث و گفتگوها در روزنامه اطلاعات چاپ شد.

حاصل کار آن بود که معماران تحصیلکرده، معماران سنتی و مردم از وضع نابسامانی که درمعماری پیش آمده، اندیشه کنند و آینده این وضع را بزیان فرهنگ و معماری میدانند و هفته معماری این مسائل را باز دیگر رو در روی مردم منعکس میکند، بینیك طرح مسائل معماری، پاسخ آنرا نیز دربر خواهد داشت.

درهفته معماری علاوه برایجاد نمایشگاه، جلسات متعددی در انجمنهای فرهنگی، در مدارس عالی، دانشگاهها و گالریهای هنری، گروهی از مهندسان در جلسات عمومی با مردم گفت و شنود خواهند داشت و در مؤسسه اطلاعات نیز هر روز گروهی کارشناسان و استادان دانشگاه در زمینه ارتباط معماری و مردم جلسات بحثی داشته که انتشار آن از طریق روزنامه‌ها، رادیو، تلویزیون، گسترش و تعوری پرتأثیر داشت.

سپس آقای بنوری، رئیس هیئت اعزامی به شهرستانها نیز گزارش خود را بدینسان ارائه برگزاری سمینار کرد، افتتاح‌نمایشگاه، و نمایش فیلم و همچنین سخنرانیهای جانبی درسراسر معمار گیست و معماری چیست و نقش آنها در ساختمان، از دیگر فعالیت‌های گمیته بخشی که توسط کمیته برگزاری معماری‌ارائه شد.

Figure 6.05: the image shows the discussions taking place during the Architecture week in different cities of Iran and with participation of the general public, architects, developers, municipal agents, etc.
Source: *Honar va Memari* 5, no. 20 (1973): 62-63.

The ideas discussed in the 1970 congress became a source of inspiration for organising various national festivals, to discuss the concept of tradition in the context of modernity. Perhaps, the Architecture Week (*Hafte-ye Memari*), taking place in 1973, was the biggest national event that aimed to bring forth the relation of tradition and modernity to the public debate. In this architectural event, the importance of addressing local culture for housing practices was discussed;[40] and a series of workshops were organised among local/traditional builders, architects, municipal agencies, and the general public [Figure 6.05]. This event, according to Abdolhamid Eshragh, the editor in chief of the Iranian journal of Art and Architecture (*Honar va Memari*), had a substantial impact on the perception of ordinary Iranians about the notion of vernacular architecture and its relevance for the construction of new buildings.[41] However, it was the second Iran International Congress of Architects (IICA), held in Persepolis-Shiraz, that became a turning point.

Between 24 and 30 September 1974, a group of modernist Iranian architects including Nader Ardalan, Kamran Diba, Nader Khalili, and Laleh Bakhtiar conveyed the second IICA: *'Towards a Quality of Life: The Role of Industrialization in the Architecture and Urban Planning of Developing Countries'*. Sponsored by Farah Pahlavi and facilitated by the IMDH, the conveners of the event gained the opportunity to invite many leading international architects and urban designers of that time.[42] The 1974 IICA brought these architects together to discuss four main issues as follows: (1) continuity versus change in local culture and tradition, (2) alternative approaches regarding the development of appropriate habitats in transforming societies, (3) the meaning of ecology in developing man-made environments, and (4) the methods and the materials of expression in architecture. Arguably, the first two themes formed the main body of the conference discussions.

On the theme of local culture and tradition, Nader Ardalan became an influential figure to foster and lead the debates. Indeed, he played a prominent role in the Shah's socio-political agenda for reconceptualising Iranian identity.[43] Ardalan received generous state-funding support for his study about the development of Islamic architecture under Iranian influences. While the general scope of Ardalan's research was in line with the state's agenda of creating 'cultural nostalgia', intending to romanticise the country's Islamic heritage, his research offered a new typological insight into the evolution of Persian-Iranian architecture. He believed that timeless architecture could be achieved through an understanding of traditional forms and especially architypes.[44] Taking inspiration from the philosophic thoughts of Seyed Hossein Nasr, a well-known Iranian scholar in Islamic studies who served as the cultural advisor of Farah Pahlavi,[45] Ardalan conducted an in-depth study on the meaning and relation of spirituality (tradition) and materiality (modernity) in architecture.[46] In his seminal book,

40. See: Abdol Hamid Eshragh, "Nokhostin Haftey-E Memari," [the First architecture week.] Honar va Memari 20 (1974).

41. Abdolhamid Eshragh, interview by Arash Tabibzadeh, 25 November, 2012.

42. Just to mention a few participants, there can be named architects such as Paul Rudolph, Lluis Sert, Oswald Ungers, Moshe Safdie, Kenzo Tange, Buckminster Fuller, Jacob Bakema, Hassan Fathy, Balkrishna Doshi, Constantinos Doxiadis, Paolo Soleri, Aldo van Eyck, Georges Candilis, James Stirling, Bruno Zevi, Michael Ecochard, and Charles Correa, among others. For more reading about the conference, see: Laleh Bakhtiar, ed. *Towards a Quality of Life: The Role of Industrialization in the Architecture and Urban Planning of Developing Countries - Report of the Proceedings of the Second International Congress of Architects, Persepolis, Iran, 1974* (Tehran: Hamdani Foundation, 1976).

43. Ardalan studied architecture at Harvard University, and benefited from the tutorials of Paul Schweiker, Fumihiko Maki, Felix Candela, Howard Salman, and Louis Kahn, among others. After graduation, he became a project manager at Skidmore, Owings, and Merrill (SOM) architecture office (1962-64). Upon his return to Iran, he was appointed as the chief architect of Iran's National Oil Company. In 1966, he joined Farmanfarmaian Associates, where he was involved in designing numerous urban projects. As a modernist architect, Ardalan's early works were highly influenced by the architectural language of Mies van der Rohe, Le Corbusier, and Josep Lluis Sert; however, it was Louis Kahn's thoughts, designs, and geometry used by Ardalan as a tool for realising a sublime ideal. He became the Iranian partner of Kahn since 1973, when Farah Pahlavi appointed Kahn to design 'Shahestan Pahlavi' in Tehran. See: Nader Ardalan, "Simultaneous Perplexity: The Paradise Garden as the Quintessential Visual Paradigm of Islamic Architecture and Beyond," in *Understanding Islamic Architecture*, ed. Attilio Petruccioli and Khalil Pirari (Curzon, Newyork: Routledge, 2002).; and "Dialogue: Issues About Contemporary Architecture," Memari va Shahrsazi 54-55 (2000).

44. Laleh Bakhtiar and Leila Farhad, eds., *The Interaction between Tradition and Technology: Report of the Proceedings of the First International Congress of Architects, Isfahan, 1970* (Tehran: Shahrivar Press, 1970), 34-37.

45. Influenced by the thoughts of Henry Corbin, a Heideggerian philosopher and orientalist, Nasr emerged as one of the world's leading experts on conceptions of Islamic spirituality addressing the notion of *Tasawwof* (Sufism) and *Erfan* (Mysticism). See: Seyed Hossein Nasr, *The Encounter of Man and Nature: The Spiritual Crisis of Modern Man* (London: George Allen and Unwin, 1968); Seyyed Hossein Nasr, *Sufi Essays* (New York: Schocken Books, 1972). Nasr had been recruited by the Pahlavi government to return from MIT and help to improve the university system, in Iran. In 1973, Farah Pahlavi appointed Nasr "to establish a centre for the study and propagation of philosophy under her patronage. Hence, the Imperial Iranian Academy of Philosophy was established and it became one of the most vital centres of philosophical activities in the Islamic world attracting some of the distinguished international scholars in the field such as Henry Corbin and Toshihiko Izutsu". See Nasr's website: http://www.nasr.org/bios.html. Accessed March 2017.

'*The Sense of Unity: The Sufi Tradition in Iranian Architecture*' published in 1973, Ardalan saw Islamic Sufi-tradition as the most direct manifestation of Iranian culture, and argued that these influences can be traced in geometric forms, spatial organisation, orientation, and place.[47]

Ardalan traced the origins of traditional forms in Islamic architecture back to archetypal elements of the pre-Islamic Persian architecture.[48] He also defined a representational characteristic for each archetype, and claimed that these material elements are complementary to the spiritual nature of the Sufi-tradition.[49] For instance, in his extensive analysis about the development of the porch archetype (*Ivan*), Ardalan argued that:

> "[t]he development of the Ivan, which has been traced from the Achaemenian Apadana through the Parthian palaces of Hatra and Ashur, has been primarily associated with the Sasanian period, where its appearance in palace plans becomes customary…The concept of porch as transition and of Ivan in particular, as niche has had profound implications throughout Islamic history. The Ivan is then the 'way' or the transitional space between the temporal and terrestrial worlds. Metaphysically, the Ivan can be viewed as the locus of the soul moving between the garden or court, taken as spirit, and the room, seen as body. Its bisected form leaves it an incomplete form, capable of attaining completion only by uniting man to the universal spirit and thereby accomplishing the Ivan's own reabsorption."[50]

Ardalan offered a new interpretation of the concept of the traditional Iranian house. Contrary to a common notion of public-private separation as a driving force for creating spatial organisation in Iranian home life, he proposed a division based on the notion of the material-spiritual. Within this framework, the spatial organisation of the built form and its materialisation are meant to transcend the spiritual life of men; so, the forms and objects are subject to change in time, but their essence and spatial meaning are fixed. It comes, thus, as no surprise to see that while Ardalan described the courtyard as a main characteristic of traditional Iranian house types, he emphasised the importance of enclosure as a prerequisite of place making, where "the soul can be sensed and its spiritual quest fulfilled."[51] Accordingly, Ardalan's take on modernity is not to entirely break away from what came before or to mimic its perfunctory characteristics; but instead, it is to reinterpret tradition in a way that transcends the typical dialogue of change from past to present,[52] a position that is also traceable in Ardalan's architectural language, as presented in figure 6.04.

46. While taking inspiration from the works of Toshihiko Izutsu (1914-93) and Joseph Campbell (1904-87), it was Seyed Hossein Nasr that deeply influenced the thoughts of Ardalan, after his return to Iran. Nasr encouraged Ardalan to learn more about famous Iranian Sufis such as Shahab al-Din Suhrawardi (1155-1191), Ibn Arabi (1165-1240) and Jalal ad-Din Mohammad Rumi (1207-1273). For more information, see: Nader Ardalan, "Negahi Be Farhang Va Meemarie Iran," [A View on the Culture and Architecture of Iran.] Memari va Sharsazi 84 (2006): 82.

47. Recommended by Louis Kahn to University of Chicago Press for publication, Ardalan's book was the most leading Iranian contribution to international scholarship of that time, becoming a key reference for many scholars and professionals, all around the world. It mainly focuses on fundamental principles of Sufism and related traditions such as the 'dignity of the inner' and 'unity in multiplicity', and provides phenomenological discourse on the notions of 'the sense of place', 'cardinal directions,' 'architectural archetypes', and 'architectonic elements'. See: Shirazi, *Contemporary Architecture and Urbanism in Iran.* Further, the book of Ardalan was also credited by Nasr, who wrote in its introduction: "the present book is the first study to be made of the traditional architecture of Islam in its Persian setting from the point of view of the traditional principles involved… There is nothing more timely today than…the message that comes from tradition…To speak of tradition is to speak of immutable principles of heavenly origin and of their application to different moments of time and space". For more reading, see: Nader Ardalan and Laleh Bakhtiar, The Sense of Unity: The Sufi Tradition in Persian Architecture (Chicago: University of Chicago Press, 1973), xi.

48. The period during which the Arab-Muslims under Umar (the second Khalifah after the Prophet Muhammad) invaded Iran in 633 A.D., is mostly considered by many historians as a turning point in the history of Iran; and therefore, they referred to pre-Islamic and Islamic Iran to describe similarities and differences between these two periods. See: Kazem Mousavi-Bojnourdi, ed. *The Comprehensive History of Iran*, 20 vols., The Comprehensive History of Iran (Tehran: The Centre for the Great Islamic Encyclopaedia, 2015).

49. Nader Ardalan and Laleh Bakhtiar, *The Sense of Unity : The Sufi Tradition in Persian Architecture* (Chicago: University of Chicago Press, 1973), 69-79.1973

50. Ibid., 70-71.

51. Ibid., 68.

52. In an interview with Mohamad Reza Shirazi, Ardalan expressed his vision on the meaning of 'tradition' and claimed that "tradition continues but changes and progresses". See: Shirazi, *Contemporary Architecture and Urbanism in Iran*, 131.

The 1974 IICA: Continuity versus Change

Conspicuously, the distinction between the notion of spiritual and material became the point of departure for Ardalan's contribution to the theme of 'Continuity versus Change'. In the 1974 IICA, Ardalan questioned the western notion of linear progression, as manifested in the idea of time, and as understood in its threefold aspects of past, present and future representing a material world.[53] Instead, by referring to the Persian-Islamic conception of time that was taken from the Sufi-tradition, he proposed an alternative approach, which "commences with a specific beginning, the creation, and through a cyclical motion repeats the very act of the first creation in an ever ascending spiral, which seeks transcendence and ultimate timeless union with the One."[54] He connected this notion with his concept of 'New Creation' where the word 'New' expressed "a cyclical manifestation of archetypical ideas" that would cater for generating a timeless and spiritual architecture.[55] This timelessness, as Ardalan pointed out, is developed "through time and form as simultaneous continuities."[56] Subsequently, Ardalan defined 'Hermeneutics' (*Ta'wil*) as the ultimate condition by which the New Creation can be achieved.[57] In his vision, hermeneutics would "free the purely physical reality from its quantitative prison and have it ascend to its archetypal origin." Without hermeneutics, Ardalan argued, "all that was to be said would have been said long ago".[58]

Ardalan's speech became a controversial discourse within the context of the 1974 IICA. Western architects such as Buckminster Fuller and Georges Candilis criticised Ardalan's view on the notion of time and continuity. Candilis, for instance, expressed that the idea of continuity is not just formal and spiritual, but also related to everyday practices.[59] He urged Iranian architects to use tradition with a critical approach and as a reforming force. Similarly, Fuller challenged Ardalan's notion of spiral time. In Fuller's view, the notion of time and its linearity were essential for accumulating knowledge and human progress. According to Fuller, new technological innovations and findings proved that human achievements, to date, were very limited. Then, Fuller called for developing a new architecture based on integrity, which can be achieved through learning from experiences of the past, and concurrently, employing available technologies and new techniques.[60]

As opposed to Fuller and Candilis, non-Western architects such as Balkrishna Doshi, Hassan Fathy, and Charles Correa praised Ardalan's position on the concept of New Creation. In his speech, Fathy pointed out that technology and industrialisation depleted the value of traditional techniques and architectural patterns that created a sense of participation among people for developing their settlements.[61] He also argued that the application of new technologies should be limited to building materials production. According to Fathy, this would allow each member of the community to maintain access to the needed construction resources, and allow them to keep largely their inherited design principles.

53. Ardalan also argued that "If one's view is based on simply past, present and future in a linear progression, one is forced into the conclusion, which obsesses the contemporary man. That is, creation was a one-time phenomenon. The absolute has not intervened since that time. Thus, creation is viewed simply as temporal and the idea of progress is simply a temporal, material one. This static view is the antithesis of the Persian view of reality." See: Bakhtiar, *Towards a Quality of Life: The Role of Industrialization in the Architecture and Urban Planning of Developing Countries - Report of the Proceedings of the Second International Congress of Architects, Persepolis, Iran, 1974*, 35-42.

54. Ibid., 36.

55. Ardalan expressed that "as all conceptions within this living tradition seek their inspiration in revelation, so the concept of the new creation stems from the Quranic verse, 'What! Were we wearied by the first creation? No, indeed.' But they are in uncertainty as to the New Creation… in this view, creation is not only a one-time event that occurred at genesis and is moving linearly towards the apocalypse but it includes the possibility that with every breath, every expansion-contraction, a new creation in a spiral time, the process may begin anew." See: ibid., 37.

56. Ibid., 40.

57. In Quranic and Sufi tradition, Ta'wil has two meanings: literal and phenomenal. The literal meaning refers to the discovery and excitement of the inner meaning of the word or its appearance and is placed against the interpretation; however, the phenomenal meanings explains the realisation of the external truth that the phenomenon or the word refers to it. In Islamic philosophy and particularly in Sufism, Ta'wil is transcendental interpretation of a phenomenon to understand the underlying ideas behind a sign of figurative meaning or the appearance. For more information, see: *The Great Islamic Encyclopedia*, vol. 14 (Tehran: The Centre for the Great Islamic Encyclopedia, 2006), 371.

58. Nader Ardalan, "The New Creation," *Honar va Memari* 6, no. 25-26 (1974): 13. See also: Shirazi, *Contemporary Architecture and Urbanism in Iran.*

59. Bakhtiar, *Towards a Quality of Life: The Role of Industrialization in the Architecture and Urban Planning of Developing Countries - Report of the Proceedings of the Second International Congress of Architects, Persepolis, Iran, 1974*, 81.

60. Ibid., 75.

61. Ibid., 303-05.

Similarly, Doshi criticised the misuse of technology and called for a return to a human-scale architecture. He argued that the purpose of industrialisation is not only to achieve economic prosperity, but also "to give man increasing leisure so that his quality of work, through time and reflection, will improve." Building upon Ardalan's concept of New Creation, Doshi suggested that "with today's technologies, it is easy to build a new world, which can link with the great past in terms of basic values, and with the future in terms of convenience for the larger number."[62] Noticeably, Ardalan in particular, and his non-Western colleagues in general, played a crucial role in the discussions on the theme of 'Continuity versus Change'. They made a call for in-depth study and documentation of the adaptive architecture and technologies of traditional settlements, and the analysis of the principles relevant today, upon which traditional architecture is based.[63]

Aside from the matter of local culture and tradition, the IICA extensively focused on the issues regarding the development of large-scale housing and human-scale environment. Western and Japanese architects were most active in these discussions, as these themes correlated with their primary concerns about architecture.[64] Notably, three main figures of Team X including Jacob Bakema, Aldo van Eyck, and Georges Candilis, played a dominant role in fostering debates on the notion of human habitats, and in particular on the theme of 'Appropriate Habitat'.[65]

The 1974 IICA: Appropriate Habitat

In the 1974 IICA, the role of industrialisation in developing human-scale habitats became a main topic for the discussions. Kenzo Tange described the 'key' to designing new communities was to create a balance between size, scale and relationships of all parts that form a proper closeness and compactness in the mass development.[66] Similarly, Fumihiko Maki discussed the conditions for creating a micro-scale living environment, a theme that he extensively pinpointed in his book, '*Investigations in Collective Form*'.[67] Maki explained that the industrial process makes "a constant demand on architecture for standardisation, mass production, specialisation of functions and an increase in scale for the maximisation of economic efficiency."[68] However, he added, "architecture differs from a tool which is meant to satisfy a specific need, and is rather a container, which accommodates more than its expressed function." By discussing the work of Amos Rapaport who categorised architecture into three basic types of primitive, vernacular and high-style, Maki, then, described his micro-scale living environment as a new vernacular that can be developed within a reasonable framework of a larger environment.[69]

Moshe Safdie further elaborated on Fumihiko Maki's notion of micro-scale living environment. In his talk, 'Towards a Contemporary Vernacular', Safdie made a

62. Ibid., 347.

63. Ibid., xi-xvii.

64. The Japanese participants of the IICA were: Kenzo Tange, Arata Isozaki, Fumihiko Maki, and Kiyonosi Kikutaki.

65. For more information about the conference, see: ibid.

66. Ibid., 23.

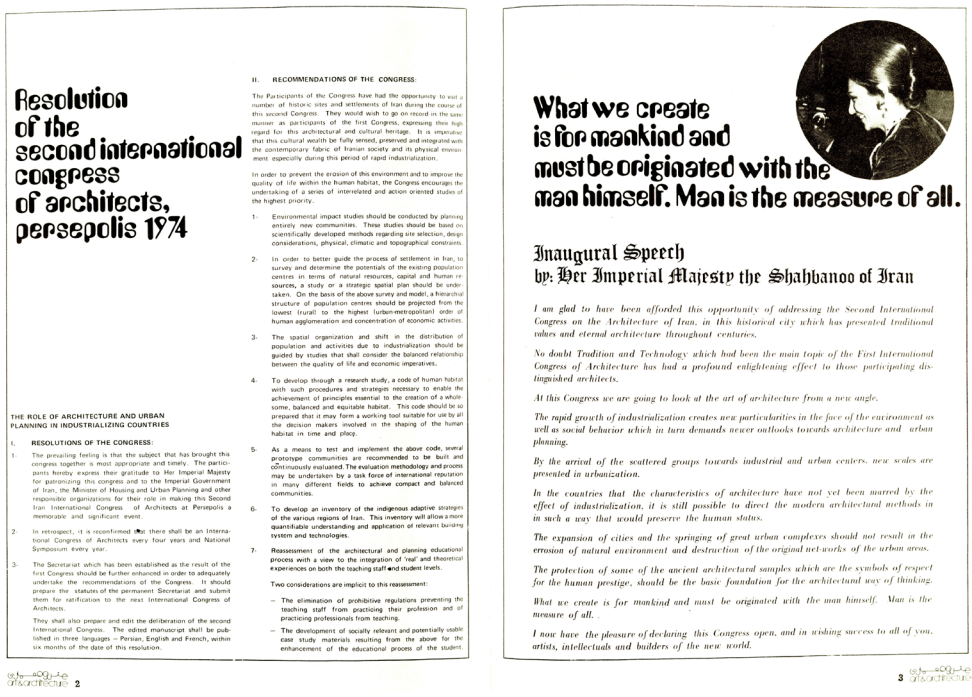
67. In his book, Maki defined the prototypes of urban form as the compositional form, the megastructure, and the group form. He described that the first type of urban form is mostly traceable in historical context, but the second two models are new but based on historical models. For more reading, see: Fumihiko Maki, *Investigations in Collective Form*, The School of Architecture Special Publication; 2 (St. Louis: Washington University, 1964).

68. Bakhtiar, *Towards a Quality of Life: The Role of Industrialization in the Architecture and Urban Planning of Developing Countries - Report of the Proceedings of the Second International Congress of Architects, Persepolis, Iran, 1974*, 126.

69. Ibid., 128.



Figure 6.06: Previ Housing, 1976.
Source: Photograph by Peter Land in *¡el Tiempo Construye!* (Barcelona: Editorial Gustavo Gili, 2008).



Resolution of the second international congress of architects, persepolis 1974

THE ROLE OF ARCHITECTURE AND URBAN PLANNING IN INDUSTRIALIZING COUNTRIES

I. RESOLUTIONS OF THE CONGRESS:

1- The prevailing feeling is that the subject that has brought this congress together is most appropriate and timely. The participants hereby express their gratitude to Her Imperial Majesty for patronizing this congress and to the Imperial Government of Iran, the Minister of Housing and Urban Planning and other responsible organizations for their role in making this Second Iran International Congress of Architects at Persepolis a memorable and significant event.

2- In retrospect, it is reconfirmed that there shall be an International Congress of Architects every four years and National Symposium every year.

3- The Secretariat which has been established as the result of the first Congress should be further enhanced in order to adequately undertake the recommendations of the Congress. It should prepare the statutes of the permanent Secretariat and submit them for ratification to the next International Congress of Architects.

They shall also prepare and edit the deliberation of the second International Congress. The edited manuscript shall be published in three languages – Persian, English and French, within six months of the date of this resolution.

II. RECOMMENDATIONS OF THE CONGRESS:

The Participants of the Congress have had the opportunity to visit a number of historic sites and settlements of Iran during the course of this second Congress. They would wish to go on record in the same manner as participants of the first Congress, expressing their high regard for this architectural and cultural heritage. It is imperative that this cultural wealth be fully sensed, preserved and integrated with the contemporary fabric of Iranian society and its physical environment especially during this period of rapid industrialization.

In order to prevent the erosion of this environment and to improve the quality of life within the human habitat, the Congress encourages the undertaking of a series of interrelated and action oriented studies of the highest priority.

1- Environmental impact studies should be conducted by planning entirely new communities. These studies should be based on scientifically developed methods regarding site selection, design considerations, physical, climatic and topographical constraints.

2- In order to better guide the process of settlement in Iran, to survey and determine the potentials of the existing population centres in terms of natural resources, capital and human resources, a study or a strategic spatial plan should be undertaken. On the basis of the above survey and model, a hierarchal structure of population centres should be projected from the lowest (rural) to the highest (urban-metropolitan) order of human agglomeration and concentration of economic activities.

3- The spatial organization and shift in the distribution of population and activities due to industrialization should be guided by studies that shall consider the balanced relationship between the quality of life and economic imperatives.

4- To develop though a research study, a code of human habitat with such procedures and strategies necessary to enable the achievement of principles essential to the creation of a wholesome, balanced and equitable habitat. This code should be so prepared that it may form a working tool suitable for use by all the decision makers involved in the shaping of the human habitat in time and place.

5- As a means to test and implement the above code, several prototype communities are recommended to be built and continuously evaluated. The evaluation methodology and process may be undertaken by a task force of international reputation in many different fields to achieve compact and balanced communities.

6- To develop an inventory of the indigenous adaptive strategies of the various regions of Iran. This inventory will allow a more quantifiable understanding and application of relevant building system and technologies.

7- Reassessment of the architectural and planning educational process with a view to the integration of 'real' and theoretical experiences on both the teaching staff and student levels.

Two considerations are implicit to this reassessment:

– The elimination of prohibitive regulations preventing the teaching staff from practicing their profession and of practicing professionals from teaching.

– The development of socially relevant and potentially usable case study materials resulting from the above for the enhancement of the educational process of the student.

What we create is for mankind and must be originated with the man himself. Man is the measure of all.

Inaugural Speech
by: Her Imperial Majesty the Shahbanoo of Iran

I am glad to have been afforded this opportunity of addressing the Second International Congress on the Architecture of Iran, in this historical city which has presented traditional values and eternal architecture throughout centuries.

No doubt Tradition and Technology which had been the main topic of the First International Congress of Architecture has had a profound enlightening effect to those participating distinguished architects.

At this Congress we are going to look at the art of architecture from a new angle.

The rapid growth of industrialization creates new particularities in the face of the environment as well as social behavior which in turn demands newer outlooks towards architecture and urban planning.

By the arrival of the scattered groups towards industrial and urban centers, new scales are presented in urbanization.

In the countries that the characteristics of architecture have not yet been marred by the effect of industrialization, it is still possible to direct the modern architectural methods in in such a way that would preserve the human status.

The expansion of cities and the springing of great urban complexes should not result in the erosion of natural environment and destruction of the original networks of the urban areas.

The protection of some of the ancient architectural samples which are the symbols of respect for the human prestige, should be the basic foundation for the architectural way of thinking.

What we create is for mankind and must be originated with the man himself. Man is the measure of all.

I now have the pleasure of declaring this Congress open, and in wishing success to all of you, artists, intellectuals and builders of the new world.

Figure 6.07: the resolution of the 1974 IICA and the inaugural speech of Empress Farah Pahlavi in the pages of the Iranian journal of Art and Architecture.
Source: *Honar va Memari* 6, no. 25-26 (1974): 2-3.

distinction between the peasant architecture and high-architecture in pre-modern time, and argued that the peasant architecture was a collective work of a community that included cultural values.[70] Safdie expressed that peasants had limited choices to build their homes and communities; but in our time, new techniques and advanced technologies make more choices possible. In view of these new opportunities, Safdie contended, the peasant architectural culture could be coupled with advanced technologies to form a basis for our new urban environment. By addressing the importance of separating cars from pedestrians to create a continuous space for social integrity, Safdie proposed the idea of a 'growing village' based on a set of environmental codes that would secure a minimum standard for daylighting and green spaces. Interestingly, Safdie's proposal recalls his Habitat 67 housing scheme in Montreal, Canada.

The theme of man-made environment gained momentum when the three main figures of Team X centred and led the discussions on the theme of human habitats.[71] This theme, indeed, became a kernel focus of the members of Team X since the mid-1950s. While seeking new concepts for designing large-scale housing schemes, the Team X group began to criticise the modernist design principles developed by the older generation of the CIAM, such as Le Corbusier and Sigfried Giedion. The Team X group particularly focused on reconnecting universal civilisation to tradition not through historicism, but through a rediscovery of what Van Eyck termed as the 'archaic principles of human nature.'[72] Their view was to place emphasis on developing human habitats, rather than single dwellings. Therefore, the 1974-IICA conference formed a new platform for the Team X to continue the debate on habitat and regional identity.[73] Following the discussions regarding the theme of 'total environment' provided by Kahn in the 1970-IICA in Isfahan,[74] the Team X participants of the IICA described human habitat as a total environment with a structure that is formed from a continuous string of identical fragments that would accommodate growth and change over time.[75]

In this model of habitat, as Bakema argued, the continuity of the spatial units plays a significant role. In his speech 'Continuity and Change', Bakema put emphasis on spatial, physical and visual relationship between individuals and the built forms. He claimed that the architectural elements could change, but the relationships that they produced should remain permanent. To reinforce his claim to the audience, he referred to the vernacular architecture of the Grand Bazaar in Tehran as an example of this concept. He pointed out that the structure of the Bazaar forms a relationship between different spatial units, creating a continuity through both time and space.[76] Rather than emphasising the archaic principles of Iran's vernacular architecture, he focused on the relation of modules and patterns as an open-ended built structure for developing community models. In Bakema's view, "the built environmental form can function, to make what is far become familiar with what is near. It can function so that which has to be

70. Ibid., 219-26.

71. For more reading about the conference, see: ibid.

72. For more information about Van Eyck ideas and his contribution to the Team X discussions, see: Annie Pedret, *Team 10: An Archival History* (London and New York: Routledge, 2013). See also: See also: Westbrook, "The Regionalist Debate in the Context of the 1970s Architectural Forums in Iran".

73. Lefaivre and Tzonis, *Architecture of Regionalism in the Age of Globalization: Peaks and Valleys in the Flat World*, 164.

74. For more information about the conference, see: Abdolhamid Eshragh, "International Congress of Architects, Isfahan Sepember.1970," Honar va Memari 3, no. 6-7 (1971).

75. See: "2nd Iran International Congress of Architecture - Persepolis. Shiraz. September 24-30, 1974," *Honar va Memari* 25-26, no. Special Issue (1975).

76. Bakhtiar, Towards a Quality of Life: The Role of Industrialization in the Architecture and Urban Planning of Developing Countries - Report of the Proceedings of the Second International Congress of Architects, Persepolis, Iran, 1974, 29-32.

developed in large programmes with the fear of a scale which the human mind cannot take in, become fragmented as colour is disfragmented, otherwise the film is destroyed."[77] He concluded by claiming that architects must introduce these transitional elements, which can break down large entities into smaller components, allowing the human mind to digest them 'bit-by-bit'.

Georges Candilis further elaborated on Bakema's notion of bit-by-bit development of space. He gave an overview of his contribution to the development of PREVI housing project in Lima, Peru, that was funded by the United Nations. Candilis explained that for this project, 13 international architects, such as Fumihiko Maki, James Sterling, Aldo van Eyck, and himself, were selected to propose methods of constructing pre-fabricated elements, and find a model to construct housing for the poor [Figure 6.06].[78] Despite these efforts, Candilis described the project as a big failure, since each architect would have to build his/her own proposal as an isolated entity. He added that the proposed construction techniques were diverse and included a very sophisticated method of industrialisation;[79] and Candilis defined the 'real problem' of housing as "to find the direction, the method, not only by building houses, but [also] what house one must built, a total house with its environment: a habitat."[80] Finally, he pinpointed that architects should enable people to build their own houses and environment, and for doing so, the only technological means that designers could employ is local materials and construction techniques that are dependent on available resources.

Candilis' call for relying on local resources in the production of affordable housing led to a debate on the effectiveness of self-build housing programmes. While Hassan Fathy and Oswald Ungers stressed the importance of low-tech construction systems and the role of architects in developing self-help communities, Aldo van Eyck challenged this view by focusing on the design of 'interior spaces'.[81] In his short talk, 'Inner Spaces', Van Eyck criticised the limited scope of individual contribution to the development of human habitats. In his view, 'inner spaces' would cater for a sense of familiarity with the built environment. This sense of familiarity, as Van Eyck claimed, is largely dependent on the changeability of a place, and "change only has meaning when it is applied with constancy."[82] Van Eyck concluded that in a process of evolution, "each subsequent step leads from the previous one, where the inner spaces together not only comprise the whole, but individually, they are also as consequence of that whole."[83]

These diverse and extensive discussions resulted in the provision of the 1974 IICA resolution [Figure 6.07]. Expectedly, the discussions regarding the themes of 'Continuity and Change', and 'Appropriate Habitat' formed the main body of the resolution. The resolution indicated that through research studies, "a code of human habitat should be developed with such procedures and strategies necessary to the achievement of principles essential to the creation of a wholesome, balanced and

77. Abdol Hamid Eshragh, "2nd Iran International Congress of Architecture - Persepolis. Shiraz. September 24-30, 1974," *Honar va Memari* 25-26, no. Special Issue (1975): 25.

78. Bakhtiar, Towards a Quality of Life: The Role of Industrialization in the Architecture and Urban Planning of Developing Countries - Report of the Proceedings of the Second International Congress of Architects, Persepolis, Iran, 1974, 237-38.

79. For this project, the selected architects presented 26 proposals; and the Peruvian government decided to build 20 samples of each proposal, a decision that Candilis described as 'sophisticated' and 'absurd' in the IICA. See: ibid., 238.

80. Ibid., 237-38.

81. Ibid., 270-310.

82. Ibid., 301.

83. Ibid., 302.

equitable habitat."[84] It explicitly stressed the importance of translating the congress debates into spatial codes and design patterns to "form a working tool suitable for use by all decision makers involved in the shaping of human habitat in time and place," all around the world.[85] Within a year after the 1974 event, the discussions were drafted as a series of codes and patterns in a document known as the 'Habitat Bill of Rights', where Ardalan played a crucial role in preparing the document.

The Habitat Bill of Rights

Often referred to as 'Habitat I', the first-ever United Nations Conference on 'Human Settlements' was held over twelve days in Vancouver, Canada in 1976. The largest UN meeting at that time, the conference was a global event that tackled the problems of adequate housing and urbanisation of both the so-called West (Europe and north America) and also of the Developing World. A major outcome of this event was the 'Vancouver Declaration', the founding document of what later became known as the United Nations Human Settlements Programme, shortly UN-Habitat.[86] The conference was unique by attracting people across the board, from missionaries such as Mother Theresa to architects like Buckminster Fuller. Among these participants, there were also several of the architects who had come together at the 1974 IICA, such as Charles Correa who was invited as a Consultant to the Director-General of the conference. It was during this event that the 'Habitat Bill of Rights' (HBR) was presented by Nader Ardalan.[87]

As Iran's contribution to Habitat I, the HBR aimed to define the qualitative issues connected with the design of houses and their grouping into new communities. Indeed, the HBR document was an attempt to provoke a sense of resistance against universal homogenisation, but simultaneously, it emphasised the significance of modernism as a vehicle to promote change in societies. The HBR document was drafted by Nader Ardalan, Josep Luis Sert, Moshe Safdie, George Candilis, and Balkrishna Vithaldas Doshi; and, it was based on four main themes including Dwelling, Cluster, Pedestrian Precinct, and Urban Community. According to the HBR document, these themes were carefully selected to tackle the issues related to the design and development of human-scale urban environments that lacked attention by the period of architectural modernism after World War II.

This critical position towards the 1950s and 1960s architectural modernism was further elaborated in the pages of the HBR. In the introduction, the authors of the HBR argued that the cause of poor quality of habitats was a singular focus on only industrialising the building process in the hope that it may offer solutions to the housing needs of growing populations in both developed and developing countries. "In this form of modernisation", they claimed, "the tendency is to

84. Ibid., 237-38.

85. The Vancouver Declaration on Human Settlements, "Habitat: United Nations Conference on The Vancouver Declaration on Human Settlements, "Habitat: United Nations Conference on Human Settlemets," (Vancouver, Canada1976), 5.

86. Ibid.

87. See also: Mohamad Sedighi and Rohan Varma, "Framing a New Discourse on the Notion of Habitat in Transforming Societies," *International Planning History Society Proceedings* 18, no. 1 (2018): 1231-41..

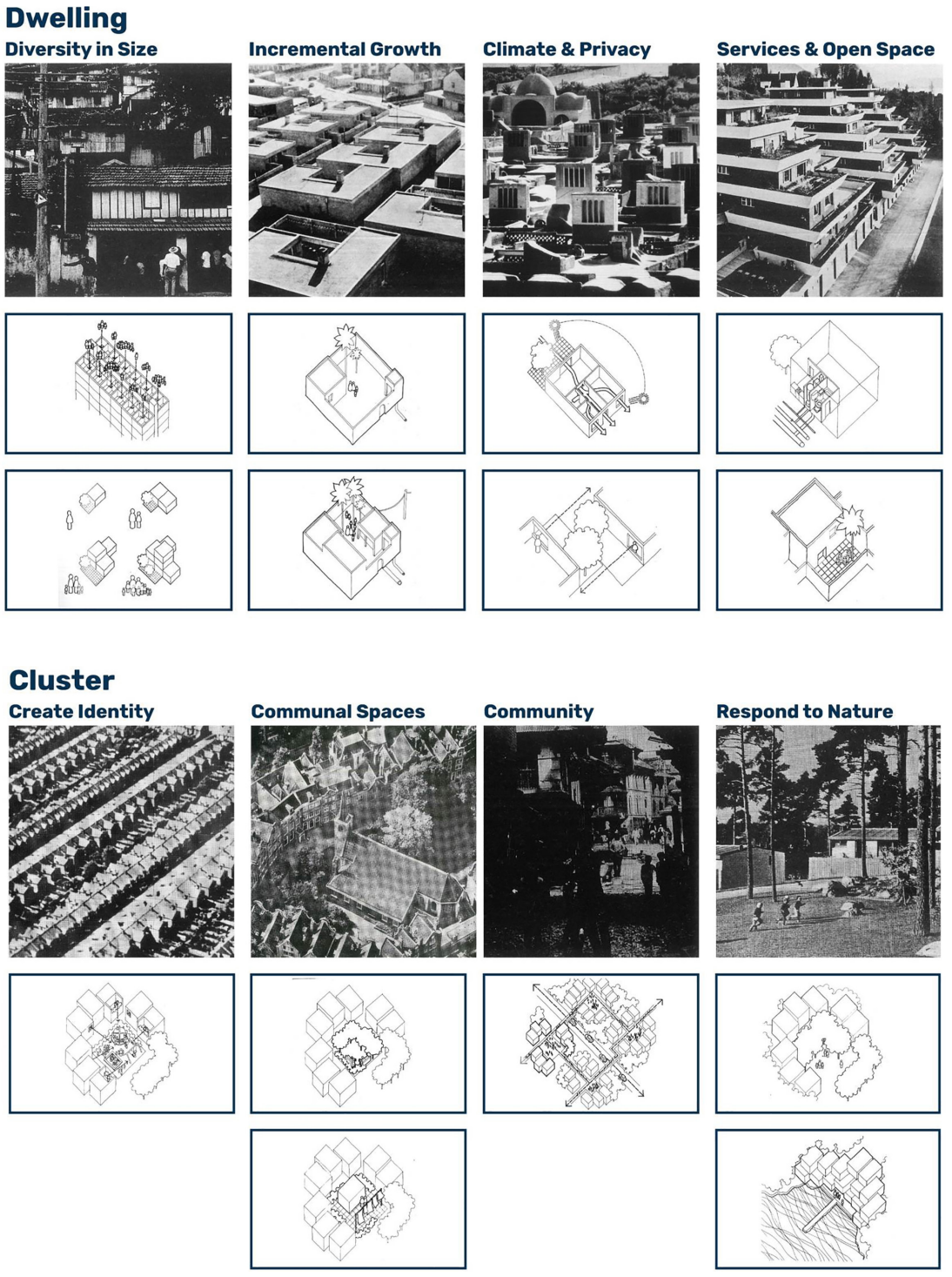


Figure 6.08: on the top: a few key principles of the Habitat Bill of Rights regarding the theme of Dwelling; and on the bottom: a few key principles of the Habitat Bill of Rights regarding the theme of Cluster.
Source: *The Habitat Bill of Rights* (Tehran, Iran: Hamdami Foundation, 1976).

create monotonous, standardised, repetitive, and inhuman environment."[88] It comes, thus, as no surprise to see that they urged for designing human-scale habitats, and argued that "the human scale is the measure of habitat, based on the concept of man only as a physical body with certain functional needs…the goal of all habitat must be the provision of environments which stimulates the greatest physical and spiritual potential of every person as an individual, a member of family or of a community". By referring to everyday life of people as the source of inspiration for the design of urban communities, they concluded that at a time of very rapid change, "a fundamental principle of habitat is the respect for accumulated experiences of man found in every culture"; so, a sense of continuity in the fundamental values of society should be at the core of our approach to habitat rather than blind conformity to the latest stylistic [and technological] approach to design."[89]

The themes of Dwelling, Cluster, Pedestrian Precinct and Urban Community were further detailed in the HBR by diagrams, texts and photographs analysing examples of both 'successful' and 'failed' housing for creating urban community, in different contexts. Each theme started with a short introduction, substantiated with observations, and explained with additional diagrams, figures, and text. Indeed, this document was an attempt to identify common patterns of inhabitation in both industrialising and industrialised societies, and describe problems that repeatedly occur in the built environment. It also provided examples of "the essential field of relationships needed to solve the problem in a very general and abstract way."[90]

As described in the 'Habitat Bill of Rights, the aim to define the 'qualitative' issues connected not just with the design of individual dwellings, but focusing as well on the importance of how dwellings would come together and how they would relate to the neighbourhood and city. The document defined a set of 'codes' and 'recommendations' that could supplement 'Building Codes' and 'Regulations' present in all countries, and in the process, help generate habitats that are more than just houses. To do so, the document divided the main ingredients in generating habitat into 4 scales: the scale of 'Dwelling' as the smallest living unit, of 'Cluster' as the ways individual dwellings aggregate, of 'Pedestrian Precinct' as the network of pathways and streets that connect clusters, and of 'Urban Community' as housing that is thought of as a piece of city.[91]

In each case, the theme tried to define the key principles of each scale. The theme of Dwelling included ten main recommendations, as follows:

1) The interior and exterior layout of new dwellings should incorporate a contemporary reflection of the cultural values and living patterns of the prospective residents; 2) The size of dwelling unit should be determined by total

88. Nader Ardalan et al., *Habitat Bill of Rights* (Tehran: Hamdami Foundation, 1976), 10-11.

89. Ibid., 7.

90. Ibid.

91. Ibid., 1-9.

basic requirements for each individual of a family. Moreover, minimal dwellings should be designed so that they may be progressively upgraded and enlarged; 3) Each family dwelling should be open to the air and views in at least two directions to permit cross ventilation and light, and sense of space and time; 4) Each dwelling should have direct access to a private, furnishable outdoor garden, court, terrace, atrium, balcony, or roof space, preferably open to the sky; 5) The territory of the dwelling unit should be clearly distinct from public spaces, either physically, or visually; 6) In medium and high-rise buildings, each family dwelling should be comprehensible as a unit from the outside; 7) The entrance to the dwelling should have a sense of gateway; 8) The windows and doors of dwellings adjacent to public areas, at ground level or above, should be located and designed to provide adequate security to the residents (either physically or visually); 9) The design of the dwelling should minimize dependence of mechanical methods of climate control; and 10) Each dwelling unit should have basic utilities consistent with, for instance, health and sanitation standards.

The theme of 'Dwelling' further stressed the importance of diversity in unit sizes and types as a reaction to the prevalent standardisation of mass housing, where a 'one size fits all' approach is often the case. It highlighted the significance of allowing people the chance to expand and colonise their own homes, and of issues pertaining to climate-responsiveness and privacy, as well as the importance of basic services and open space in the dwelling layout [Figure 6.08].

The theme of 'Cluster', then, looked at how individual dwellings could create small communities. This theme included eleven main recommendations, as follows:

1) Dwellings should be planned in clusters related in size to the optimum grouping of residents who can recognise and know their neighbours and whose children play together. Also the grouping of dwellings should create a recognisable clusters; 2) The cluster should be designed to be in harmony with the culture of its locality; 3) A cluster should be supported by communal facilities and amenities (e.g., parking area, playgrounds, gathering places) in proportion to its size and location within a neighbourhood; 4) The means of access, whether it is a street, a court, pedestrian path, or elevator lobby, is of primary importance in establishing the character, identity, and sense of territoriality of the cluster; 5) The cluster should not be thought of in isolation, but as an interconnecting element of a larger community; 6) The cluster should be planned so that each dwelling and the common space related to it benefit and are protected from the prevailing climatic conditions; 7) Natural landscape features which adjoin a cluster, such as a brook, lack, or outstanding vegetation should generate a unique design response that encourage people's participation for the maintenance and people's encounter as well as interaction; 8) Each cluster should be comprehensible as a group of families within the community whether it is a low or high density

neighbourhood; 9) Each cluster should have a particular sense of entrance and territoriality whether this is achieved by the use of a pedestrian way, courtyard, meeting place, or other device; 10) The cluster should be organised to encourage face to face contact and cooperation between the residents and foster a sense of identity and belonging for those who live within the cluster; and 11) The public utilities and services (e.g., lighting, trash spots) provided to a residential cluster should efficiently supplement and complement those available inside the dwelling.

The theme of 'Cluster' further described that the design of much new housing "no longer relates to the human scale or the environmental needs of individuals." As a solution, it stated that "the number of dwelling units in a cluster may vary from ten to fifty depending on family size and structure, social customs and housing density." Furthermore, while it emphasised the importance of amenities and other communal spaces within housing schemes, it urged the need for thinking about responses to the natural and geographical features of a site, in housing development, as shown in figure 6.08.

For the theme 'Pedestrian Precinct', thirteen general guidelines were described, as follows:

1) The number of families living in a pedestrian precinct may vary from 600 to 2000, representing approximately 2000 to 8000 people, depending on density, family-composition, and lifestyle; 2) The pedestrian precinct should provide accommodation for individuals and families of varied ages, incomes and social backgrounds; 3) Resident participation in the decision-making process and in the day to day administration, organisation, and maintenance of the life activities of the precinct should be encouraged; 4) The pedestrian precinct should include suitable mixed land uses so as to provide local enterprise and employment; 5) The physical form and organisation of the pedestrian precinct must grow from a regard for the basic lifestyle and culture of the people; 6) The historical uniqueness of a development site must be understood and preserved; 7) A pedestrian precinct should contain common facilities and amenities in proportion to its size and location, encouraging the separation of car roads and pedestrian paths; 8) Roads within the pedestrian precinct should be limited to vehicular traffic with a local destination; 9) The pedestrian precinct should be served by a system of walkways; 10) The pedestrian precinct should have a special character and sense of place within the total community; 11) The pedestrian precinct, notwithstanding its needs for separate identity and definition of its boundaries, should be so enmeshed in the fabric of the community that its territory overlaps the territory of adjoining precincts; 12) The objectives inherent in the cluster concept, including economies of land, energy, and material resources, should also guide the planning of the pedestrian precinct; and 13) The organisation of the pedestrian precinct should capitalise on the unique topographical and ecological features of the site.

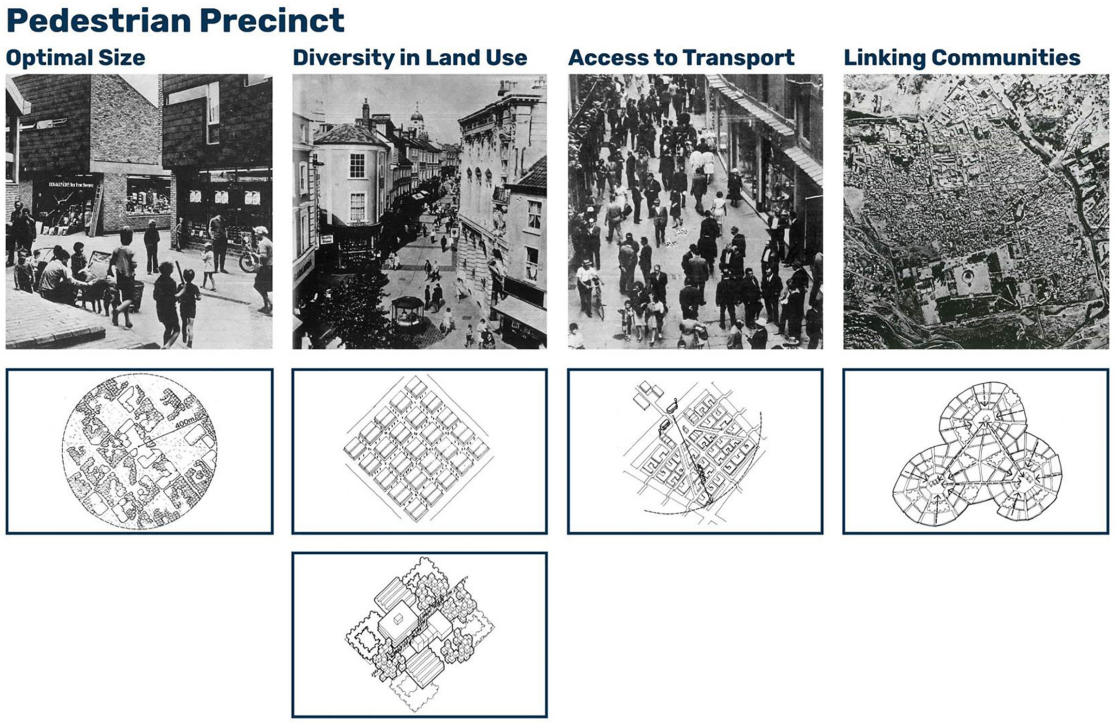


Figure 6.09: on the top: a few key principles of the Habitat Bill of Rights regarding the theme of Pedestrian Precinct; and on the bottom: a few key principles of the Habitat Bill of Rights regarding the theme of Urban Community.
Source: *The Habitat Bill of Rights* (Tehran, Iran: Hamdami Foundation, 1976).

For the theme of 'Pedestrian Precinct', optimal areas and distances were further listed in detail, based on metrics of walkability, encouraging the need for mixed-use design and planning, access to public transport, and the crucial importance of linking various neighbourhoods together [Figure 6.09]. Finally, for the largest scale, 'Urban Community', the document identified core ingredients of what could make a successful community or even city. In this view, four main guidelines were described, as follows:

1) The scale of development should be based on human-size and scale; 2) The size of urban community should be defined in a way that it optimises population and building density; 3) The design of a community should be based on the idea of 'total habitat', fostering a form of diversity and mixture of multiple target groups, but simultaneously, creating a mosaic of subcultures; 4) The ideal type of community can be shaped through a seamless connection between large parts of a city and small neighbourhoods creating physical forms that allow inhabitants for self-governance and self-expression.

The theme of 'Urban Community' also stressed the significance of inclusiveness against segregation, of access to public transport, of developing low-rise, high-dense, and car-free settlements with optimum integration of communal facilities and income-generating activities to the structure of neighbourhoods, and of the need for visual landmarks that would help orient oneself in a city. Moreover, it attempted to identify common socio-spatial patterns of inhabitation in societies across the world, looking into aspects such as the need to create a sense of belonging, identity, and to rethink the arrangement and configuration of public and private spaces in urban areas, as shown in figure 6.09.

Interestingly, this document included an appendix where those main themes were tested on the case of Iran. While recognising some main changes in the lifestyle of contemporary Iranians, this appendix claimed that "certain fundamental principles [of Iranian architecture] are timeless to the nature of man and the mode of operation of his environment."[92] Further, it clearly indicated that the intent of this study is not "to seek the nostalgic historic styles of the past, but rather, to reaffirm those valid aspects of the indigenous architecture of this country." Accordingly, the Habitat Bill of Rights provided ten recommendations for the development of new communities in Iran. Drafted by Nader Ardalan, this set of guidelines was noticeably developed based on his notion of the New Creation, forming a basis for a re-interpretation of archetypical elements in Iranian architecture.

Arguably, the Habitat Bill of Rights and its appendix became a catalyst for changing the design of public housing, in Iran. The appendix was particularly conducive to this change because of its successfulness in synthesising the ideas

92. Ibid., 147.

93. See: The Finance and Planning Organisation, "The Housing Cluster Prototype," ed. Urban Development & Housing Department, The Housing Cluster Prototype (Tehran: Tehran Development Council Secretariat, 1977). Also one year after disseminating the manual of housing prototypes, another document was published by Tehran Development Council Secretariat to provide guidelines regarding the design of urban spaces and housing projects in Tehran. This document included street profiles and design strategies for urban designers and presented the models of Housing Cluster Prototype document as the point of departure for the design of large-scale housing in Tehran. For more information, see: Tehran Development Council Secretariat, "Tehran's Built Form: Guidelines for a Coordinated Urban Design Policy," (Tehran: Municipality of Tehran, 1978).

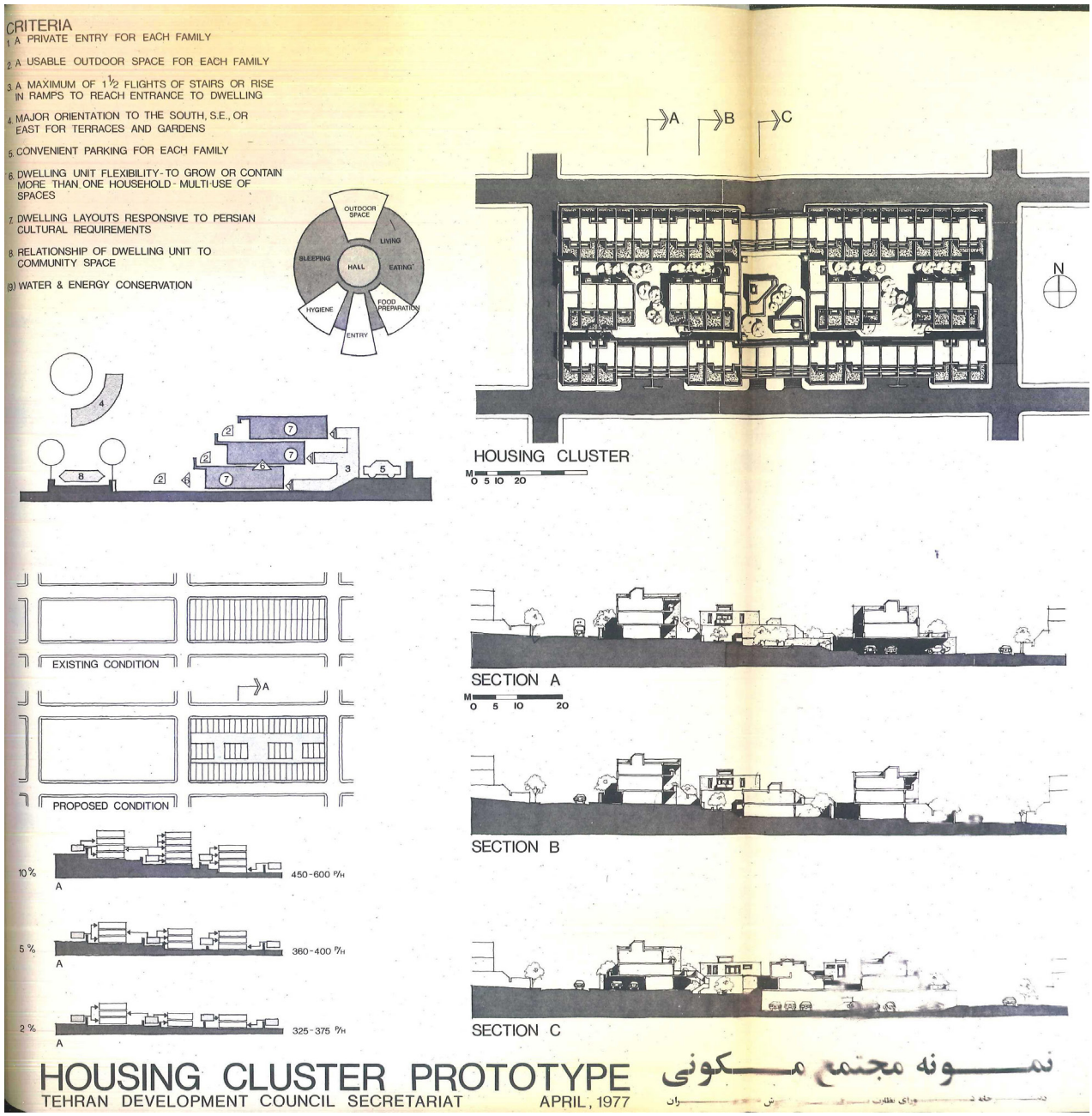
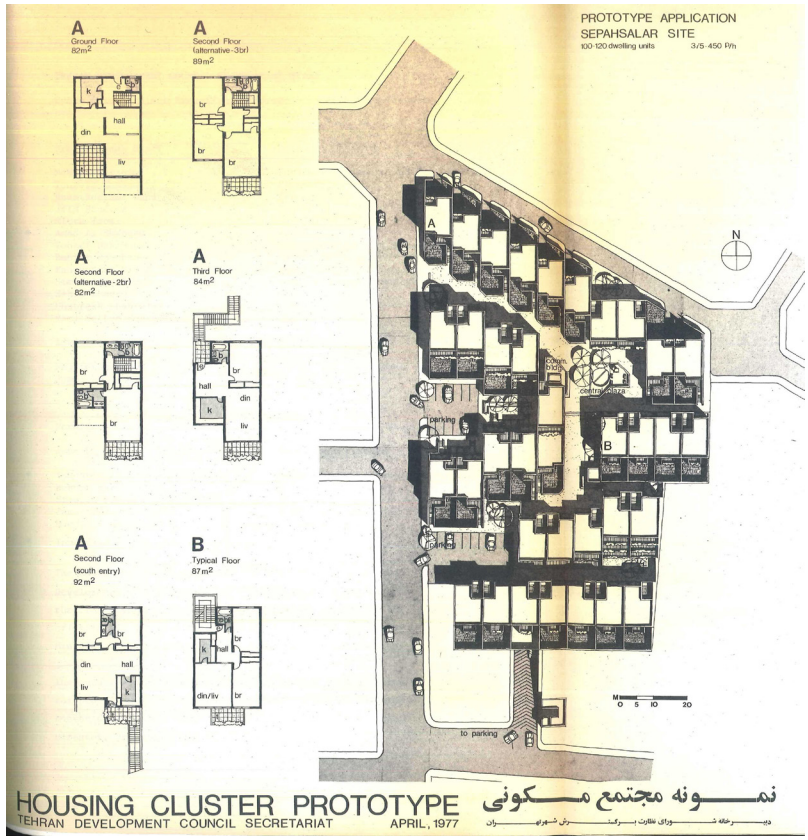


Figure 6.10: the criteria provided by 'The Housing Cluster Prototype' for the design of public housing in Tehran.
Source: *The Housing Cluster Prototype* (Tehran: Tehran Development Council Secretariat, 1977), 27.



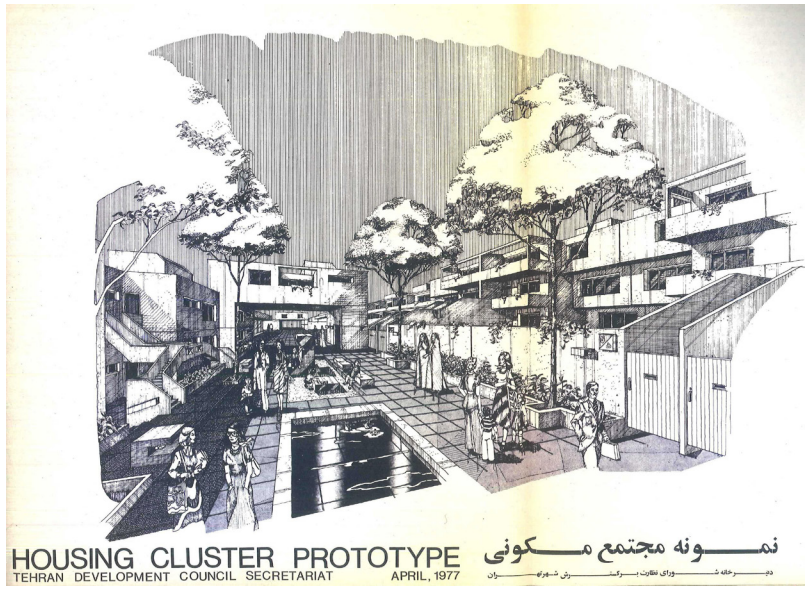


Figure 6.11: the urban layout and floor plans of the Sepahsalar project, proposed by the Housing Cluster Prototype.
Source: *The Housing Cluster Prototype* (Tehran: Tehran Development Council Secretariat, 1977), 31-32.



Figure 6.12: the image shows the Aga Khan Award for Architecture Steering Committee Founding Members 1977-80, including Hassan Fathy, His Highness the Aga Khan, William Porter, Sir Hugh Casson, Garr Campbell, Dogan Kuban, Oleg Grabar, Nader Ardalan, Charles Correa, Renata Holod, Convener, and Hassan-Uddin Khan.
Source: the archive of Ardalan Associates, LLC; available at: https://www.ardalanassociates.com/the-aga-khan-award-for-architecture.html

of the main body of the document into a concise set of guidelines for designing new communities that became a new tool for the designers. Subsequently, the appendix formed the basis for the preparation of 'The Housing Cluster Prototype', a planning and design document for developing large-scale housing schemes that was prepared by the IMDH in ten volumes and officially published in 1977.[93] This document was drafted by a group of Iranian architects, together with an advisory team from Harvard Institute for International Development, under the leadership of Nader Ardalan.[94]

Eventually, the 1977 planning and design document provided a series of criteria for the design of public housing; and it illustrated a set of diagrams, dwelling layouts, and clustering prototypes [Figure 6.10]. In contrast to the models promoted in the 1972 housing manual,[95] the 1977 document extensively focused on promoting human-scale, low-rise, and high-density housing schemes as well as urban communities. The 1977 document illustrated a pilot housing project in Tehran, where the guidelines of this document were fully implemented in an actual design project [Figure 6.11].[96] More significantly, this document described the urban community model of Shushtar-Nou, designed by Kamran Diba, as an outstanding case study for developing new housing schemes and prototypes, in Iran. This community model will be further discussed, in the next chapter.

Conclusion

The influences of the 1974 IICA went beyond the works of its organisers. The event helped bring together Ardalan, Diba, Doshi, Correa and Rewal, among others, who played significant roles as members of the Aga Khan Award for Architecture (AKAA) in dealing with issues related to squatter housing, community improvement and other forms of development [Figure 6.12].[97] The 1974 IICA played, undoubtedly, a major role in aligning Western and non-Western trajectories of architecture by serving as a crossroad between the two. However, the later outcomes of the 1974 IICA caused the debate on architecture, both locally in Iran and even globally, to be broadened for including previously ignored regions. Some examples of these outcomes include the debates taking place in congress, the subsequent publication of the Habitat Bill of Rights, the first UN Conference on Habitat, and the formulation of the AKAA; an organisation that filled the absence of CIAM and Team X and remains as the leading platform cutting across all scales in architecture. By facilitating discussions on adapting modernism to the architecture of transforming societies, one could even argue that the stated events had a role to play in the development of theories such as 'Critical Regionalism'; a term that first was coined by Alexander Tzonis and Liane Lefaivre in the late-1970s, as a reaction to the 'placelessness' of modernist design

94. The Iranian team included Mohsen Ebrahimi, Youseff Massomi, Reza Rostami Sani, Jila Shadruz, Mitra Toosi, Asad Shaheed, Yousef Debghani, Behjat Pooshanchi, Manouchehr Simai, Simin Ashrafian, Zahra Shadru, Shahrokh Shahrokhy, and Pari Soltan Mohanmiedi. The US-American group included Theodore Liebman, Robert Sarly, Stephen Freeman, James Prescott, and Harry Garnett.

95. The manual of public housing prepared by Iran's Housing Organisation in 1972 is extensively discussed in Chapter 4, mainly in the conclusion section related to the project of Kuy-e Kan.

96. The pilot project was designed in a vacant spot in old central Tehran, an area that was known as Sepahsalar. The construction of the project started in the late-1978; however, the 1979 Iranian revolution disrupted the process. As a result, the project was never fully realised.

97. Established in 1977 by Aga Khan IV, the Aga Khan Award for Architecture (AKAA) aims to recognise and promote excellence in the field of architecture and planning in Islamic societies. As an agency of the Aga Khan Development Network (AKDN), the award is presented in three-year cycles to a multiple of projects with a cash prize totalling 1 million U.S. Dollars, making it the largest architecture award in the world. However, from its very inception, the award made a conscious decision to not only cover issues related to restoration and the design of public buildings, but strive to provide a platform that looked into - and celebrated - projects that dealt with issues related to squatter housing, community improvement and other forms of development. As such, the award stands out till today in being the only major architecture award that not only looks into these varied and complex issues, but does so while also promoting often unknown architects and agencies for their work. This has been the case from the very beginning of the AKAA. For the First Cycle of the Award (1978-80), a Steering Committee comprising of some of the most well-known western and non-western architects, including Nader Ardalan, Charles Correa, Hassan Fathy, William Porter and Sir Hugh Casson, among others, held a series of meetings and discussions along with the Aga Khan where they formulated the agenda and scope of the award. In addition to this, a separate Master Jury that included the likes of Giancarlo de Carlo, Kenzo Tange and Muzharul Islam reviewed and judged the numerous nominations that cut across the length and breadth of the Islamic World. Recognising their difficult task, the report of the Master Jury praised the AKAA for venturing into previously unchartered territory, and acknowledged that "the present is a period of transition, a period when traditional heritage is being rediscovered, when new experiments are being made to combine modern technology with cultural continuity in both richer and poorer countries, and when there is urgent search for socially responsive forms of architecture for the poor majority". For more reading, see: Katharine Ann Ruth Bartsch, "Re-Thinking Islamic Architecture: A Critique of the Aga Khan Award for Architecture through the Paradigm of Encounter" (The University of Adelaide, 2005).

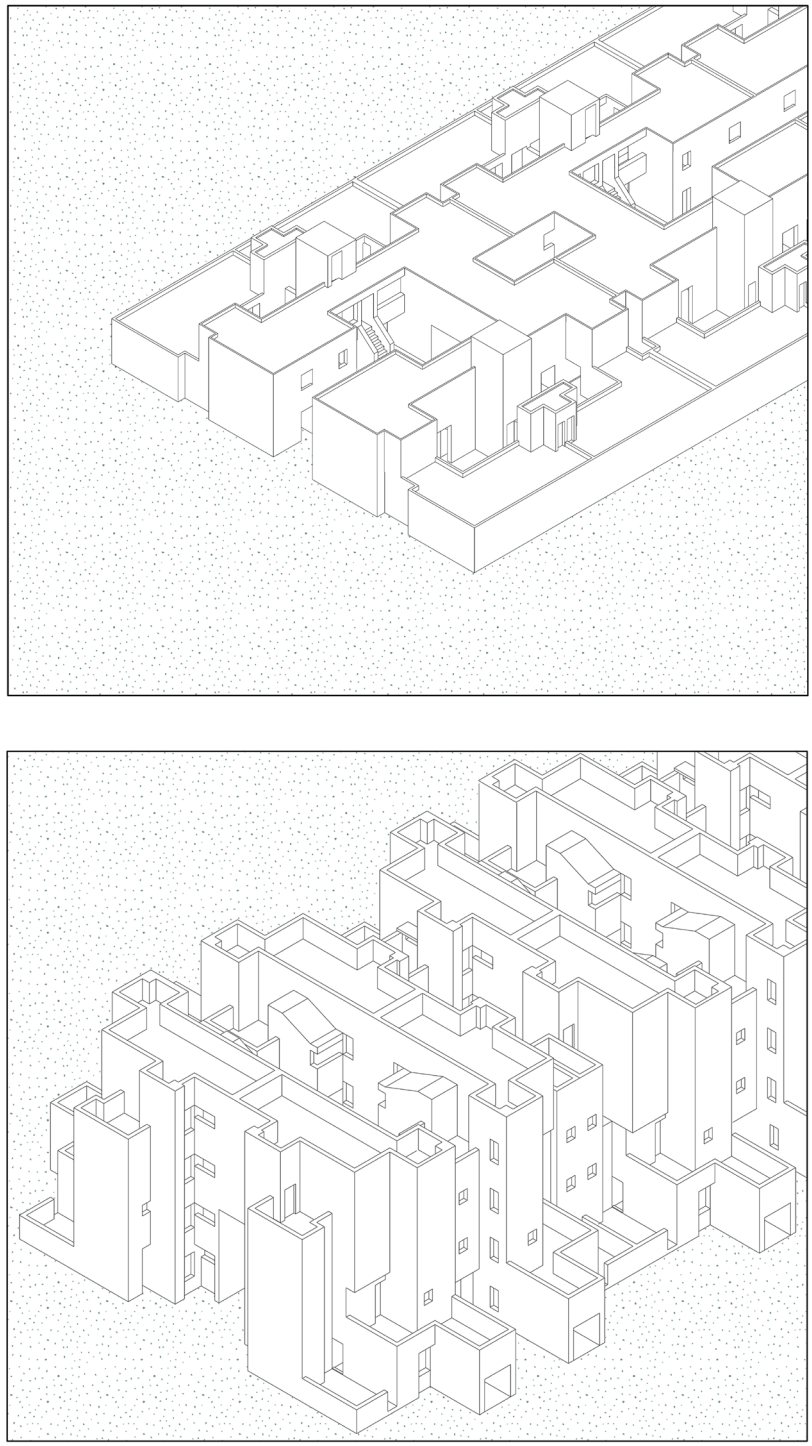


Figure 6.13: similarities between Diba's design proposal for Shushtar-Nou in 1976 (top) and that of Rewal for Sheikh-Sarai in 1980 (bottom).
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

principles (e.g., standardisation and rationalisation), mostly described as the so-called 'International Style'.[98]

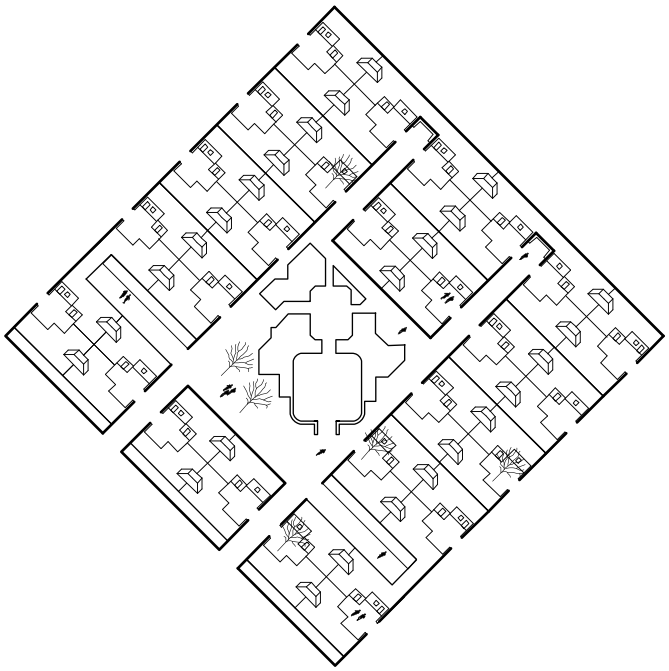
Ardalan and Correa, for instance, often referred to as two of the prominent proponents of Critical Regionalism, built prolifically afterwards not just in their native countries, but also abroad.[99] But of course, the impact of the 1974 IICA goes well beyond helping private practices. The 1974 event and the Habitat Bill of Rights helped set the stage for forming collaborations amongst the various participants of the congress. In 1977, Oswald Ungers invited Diba to Cornell University Graduate School as a visiting professor to work with the graduate students, and Ardalan became a visiting professor at Harvard, MIT, and Yale.[100] Moreover, Ardalan, in collaboration with Candilis, designed the Bu-Ali Sina University in Hamedan; whereas, Diba sought the assistance of Rewal to work on the design for Shushtar-Nou.[101] It comes, thus, as no surprise to see strong resemblances among the works of several of these architects, most notably in the similarities between the design for Shushtar-Nou and Rewal's Sheikh Sarai in New Delhi [Figure 6.13].

98. See: Liane Lefaivre, "Critical Regionalism: A Facet of Modern Architecture since 1945," in *Critical Regionalism: Architecture and Identity in a Globalised World*, ed. Liane Lefaivre and Alexander Tzonis (Munich, Berlin, london, New York: Prestel Verlag, 2003).

99. The first collaboration of Ardalan and Correa took place in 1977, when they formed the jury of the international competition for the National Library of Iran in central Tehran, where Ardalan served as the president of the jury, and Correa as the vice-president. Moreover, Ieoh Ming Pei, Giancarlo de Carlo, Fumihiko Maki, Trevor Dannatt, and Pedro Ramirez Vazques formed the other members of the jury. Interestingly, more than 100 Iranian leading scholars collaborated with UNESCO to draft the building programme and the Competition was held under auspices of UIA. More than 618 design proposals from 87 countries were submitted to the committee. The winning projects were as follows: Von Gerkan Marc and Partners - Bock Stanek from Germany (the first place), Engelbert Eder Rudolf Weber et Reiner Wieden (the second place), William O'Meyer - Francois Pienaar (the third place), and Alison and Peter Smithson (the forth place). For more reading, see: Francois Lombard, "Pahlavi National Library Project: International Architecture Competition 1977-1978," *Honar va Memari* 10, no. 45-46 (1978).

100. For more information, see: Shirazi, *Contemporary Architecture and Urbanism in Iran*, 119-27.

101. Ardalan designed and erected multiple buildings in different regions of the U.S., Persian Gulf, India, South Asia, and Europe. Perhaps, the most outstanding examples are: the Abu Dhabi Ecological Residential Park and IT College in the U.A.E, the Intelligent Tower in Qatar, and Alfred Residential Tower, in Lincoln Centre, New York. For more information, see: http://www.ardalanassociates.com/, Accessed April 2018.



7 • Open-ended Total Habitat

A Forgotten Episode of Architectural Regionalism in the 1970s Iran: Shushtar-Nou (1975-1985)[1]

Introduction

On account of the sudden increase in oil revenues in the last years of the 'Westernisation' period,[2] Iran's 'Fifth National Strategic Planning' (1972-1977) focused on the heterogeneity and the decentralisation of housing provisions.[3] This planning emphasised the need for constructing large-scale urban housing schemes to improve the living condition of the government employees and civil servants, as well as to accommodate blue-collar workers of new industries in new towns.[4] To achieve these goals, the Finance and Planning Organisation (*Sazman-e Barnameh va Budjeh*) gave autonomy to governmental as well as public institutions to develop prefabricated and industrial housing projects.[5] Thus, from the sizable budget allocated by this organisation to the housing sector, a larger portion was made available within different industrial packages in the form of housing for workers.[6] In the absence of sufficient and well-experienced local designers, most governmental institutions and public industries involved foreign firms and well-known architects in the development of public housing schemes, in Iran.

1. A modified version of this chapter is published in the peer-reviewed *International Journal of Islamic Architecture (IJIA)*. Further, a distinct part of this chapter will be disseminated in an upcoming book: *'Towards a History of Ecological Housing: Rethinking the Relationship between Landscape and Dwelling'*, edited by Jeanne Haffner.

2. The Westernisation period started from 1966 when the state's modernisation agenda focused on implementing new urban development models in Iran based on the idea of 'Master Plan' for cities to modernise the country. This period ended with the 1979 Iranian Revolution. for more information, see: Seyed Mohsen Habibi, *Az Shar Ta Shahr: Tahlili Tarikhi Az Mafhume Shahr Va Simaye Kalbudie an Tafakkor Va Taassor* [De la Cite a la Ville-Analyse Historique de la Conception Urbaine et Son Aspect Physique] (Tehran: University of Tehran Press, 1999), 200-12.

3. Kamran Diba, "The Recent Housing Boom in Iran-Lessons to Remember" (paper presented at the Architectural Transformations in the Islamic World, Jakarta, Indonesia, 1979), 38.

4. Mohamad Ali Abdi, Sima Mehdizadegan, and Farzaneh Kordi, *Six Decades Housing Planning in Iran (1948-2008)* (Tehran: BHRC Publication, 2011).

5. Among these governmental institutions, the Ministry of Urban Development and Housing as well as the Ministry of Mining and Industry gained the most autonomy for housing development. For more reading, see: Amir Bani Masoud, *Memari Moaser Iran* [Iranian Contemporary Architecture] (Tehran: Nashr-e Honar-e Memari Gharn, 2015).

6. Diba, "The Recent Housing Boom in Iran-Lessons to Remember," 40.

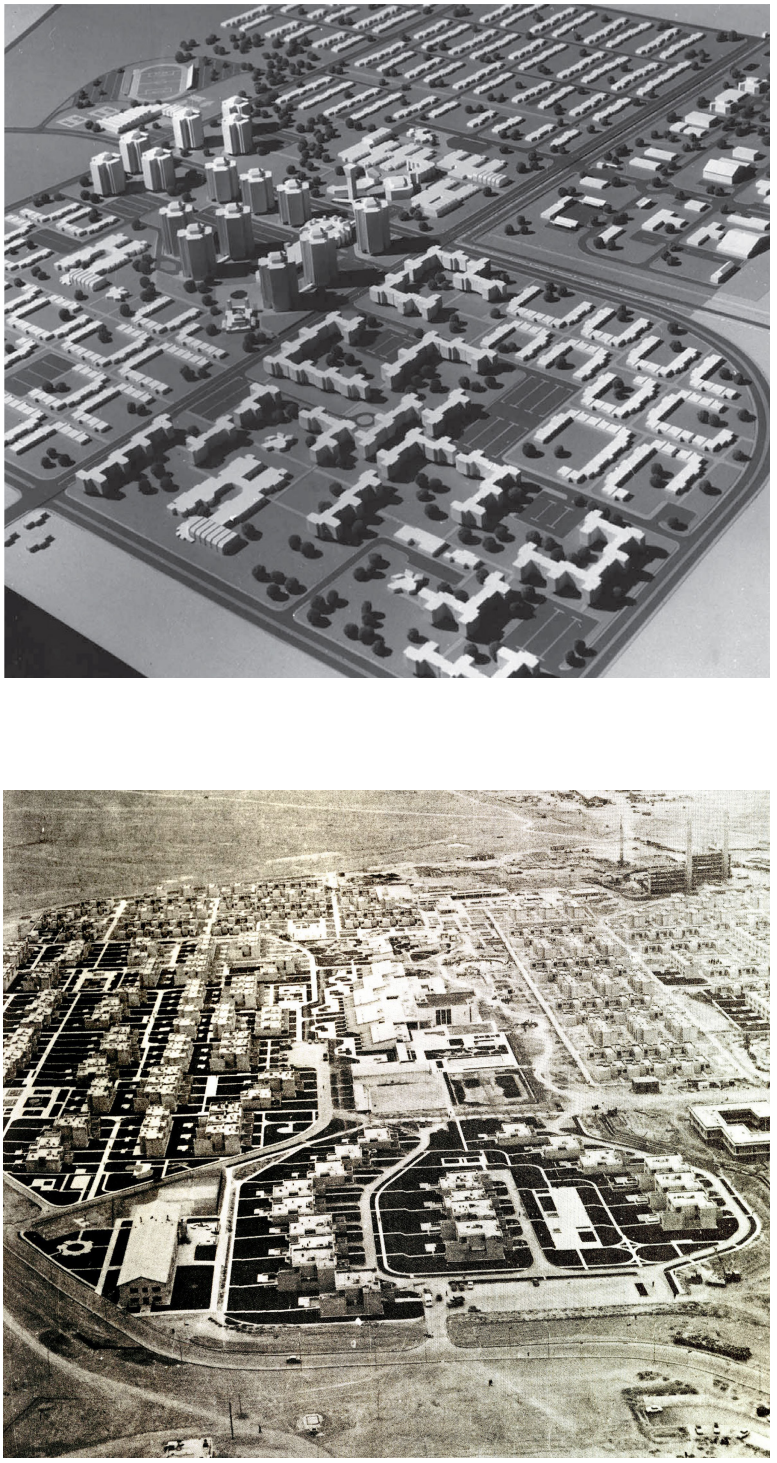


Figure 7.01: Dan Eitan's housing scheme in Bushehr (top); and the Aryamehr town, Isfahan (bottom).
Source: "Building a 'New Middle East': Israeli Architects in Iran in the 1970s," *The journal of Architecture* 18, no. 3 (2013): 384 (top); and *Honar va Memari* 9, no. 39-40 (1977): 65 (bottom).

The involvement of these international stakeholders was pervasive all over Iran. For instance, the office of Empress Farah Diba (*Daftar-e Makhsus*) commissioned Moshe Safdie to design a housing neighbourhood for the employees of the Shah's Court in north Tehran.[7] The Housing Cooperative of the Ministry of Finance and Economic Affairs assigned Kenzo Tange to develop three residential towers, a project that intended to accommodate the mid-tier employees of this Ministry in central Tehran.[8] To provide housing for its low-income personnel, Iranian Navy appointed the Israeli architecture firm, Dan Eytan Associate, to design a series of residential neighbourhoods in Bandar Abbas and Bushehr.[9] The Technical Bureau of the Ministry of Mining involved Soviet planners and architects in the design of Aryashahr New Town, to accommodate the workers of the steel-industry, near Isfahan.[10] In addition, comparable housing schemes were realised in Shiraz, Mash'had, Kermanshah, and many other Iranian cities [Figure 7.01].

These state-sponsored large-scale housing schemes were mostly developed as high-rise residential slabs and towers, based on the modernist design principles. Rather than addressing local traditions as well as specific geographical and cultural features of context, these principles put more emphasis on the abstract and functional qualities of transportation and land-use, which failed to form a strong basis for developing human-scale urban communities.[11] Considering this as the general condition of architectural practices in the 1970s Iran, a group of young-leading Iranian architects including Nader Ardalan and Kamran Diba sought to develop housing models that did not rely on these imported concepts and were more sensible to Iran's vernacular architectural culture. They organised the second Iran International Congress of Architects (IICA) in Shiraz in 1974, and initiated the provision of the Habitat Bill of Rights (HBR). The main goal of this initiative was to foster and promote an alternative way of adapting modernism to the design for human habitats, as discussed in the previous chapter. More importantly, through their architectural commissions, they aimed to resist the radical transformation of vernacular socio-spatial and cultural patterns of inhabitation based on Western standards and ideals, in Iran.

This chapter focuses on the architecture of Kamran Diba, and examines how his approach to the design of public housing and urban communities aimed to bridge the gap between local culture and universal civilisation (internationalism).[12] To illustrate this, I will examine Shushtar-Nou (also known as Shushtar New Town), one of the key housing projects developed during this period by Diba in the province of Khuzestan [Figure 7.02]. First, this chapter will discuss how this project was initiated to serve as an alternative model for Iran's Western-inspired housing practices. Second, it will reveal how the 1974 IICA debates and the HBR guidelines influenced the design of Shushtar-Nou's community model. Lastly, this chapter will demonstrate to what extent Diba's model habitat provoked and facilitated change in the design of public housing, in Iran.

7. The project was designed in Elahiyeh, a residential district in north Tehran. The project's name was 'Habitat Tehran 1976', employing the same design and construction principles used by Safdie in Montreal, Canada for Habitat 67. For more information, see: http://caoi.ir/index.php/en/projects/item/369-habitat-tehran-1976.

8. For more information about Tange's involvement in Iran, see: Farshid Emami, "Urbanism of Grandiosity: Planning a New Urban Centre for Tehran (1973-76)," *International Journal of Islamic Architecture* 3, no. 1 (2014).

9. For more reading about the project, see: Neta Feniger and Rachel Kallus, "Israeli Planning in the Shah's Iran: A Forgotten Episode," *Planning Perspectives* 30, no. 2 (2015).

10. For more information about the project, see: "Tarh-E Jame Aryashahr," [The Master Plan of Aryashahr New Town.] *Honar va Memari* 9, no. 39-40 (1977): 52-72.

11. Peter. G. Rowe, *Modernity and Housing* (Cambridge and London: The MIT Press, 1993), 207-10.

12. For more reading about the notion of universal civilisation, see: Paul Ricour, "Universal Civilization and National Cultures," in *History and Truth*, ed. Charles A. Kelbley (Evanston: Northwestern University Press, 1965).



Figure 7.02: the location of Shushtar-Nou in the province of Khuzestan.
Source: Mohamad Sedighi in collaboration with Robby Stubbs.



Figure 7.03: Jondi-Shapour (Shahid Chamran) University in Ahvaz.
Source: Personal Archive of Kamran Diba.

To achieve the intended goals, I will use archival materials and iconography as a tool to analyse the design and development of Shushtar-Nou. I will combine the results of this analysis with the outcome of a site survey in the housing district and my interview with the architect of the project: Kamran Diba. Indeed, this methodological approach aims at expanding current scholarship on the debates related to the evolution of housing paradigms in the 1970s Iran, which have been addressed by a number of scholars. These studies mostly discussed themes such as critical regionalism, traditionalism, and the relation of modernity and tradition, in particular by focusing on the development of Shushtar-Nou.[13]

Describing Diba's works as the architecture of resistance, Mohamad Reza Shirazi discussed Shushtar-Nou through the lens of 'Critical Regionalism', as defined by Kenneth Frampton, and argued that Diba's housing model aimed to promote a 'social agenda'.[14] Ali Mozaffari and Nigel Westbrook drew parallels between the influence of Oswald Ungers's architectural language, some of the 1974 IICA debates related to the theme of habitat, and Diba's housing model in Shushtar-Nou. Further, they argued that Diba's community model resonates with Louis Kahn's idea of 'total environment', which was debated in the 1970 IICA, in Isfahan.[15] In spite of invaluable insights provided by these studies, the authors mentioned above have overlooked open-ended characteristics embedded in Diba's Habitat model which, I would argue, is formed through a novel synthesis of two approaches: a critical reinterpretation of archetypal elements and developing a collective urban form that accommodates growth and change over time.

Building upon available scholarly materials, this chapter, thus, will examine Diba's community model in relation to a model of habitat discussed by the Team X participants of the 1974 IICA. It will also analyse the impact of Nader Ardalan's concept of the 'New Creation' and the ideas presented in the HBR on the design and development of Shushtar-Nou.[16] Finally, by combining the results of this analysis with the outcomes of interviews with some current residents of Shushtar-Nou, this chapter will unravel the roles performed by the agency of the dweller in the transformation through time of this experimental housing district. It will also illustrate the extent to which Diba's design mechanism allowed for continual growth and change, in the past 40 years.

13. Mohamad Reza Shirazi, *Contemporary Architecture and Urbanism in Iran: Tradition, Modernity, and the Production of 'Space-in-Between'*, The Urban Book Series (Cham: Springer, 2018); "From Utopia to Dystopia: Shushtare-No, Endeavours Towards a Paradigmatic Shift," in *Urban Change in Iran: Stories of Rooted Histories and Ever-Accelerating Developments*, ed. Fatemeh Farnaz Arefian and Seyed Hossein Iradj Moeini (London: Springer, 2016); Ali Mozaffari and Nigel Westbrook, "Shushtar No'w: Urban Image and Fabrication of Place in an Iranian New Town, and Its Relation to the International Discourse on Regionalism," *Fusion*, no. 6 (2015).

14. Shirazi, "From Utopia to Dystopia.".

15. Mozaffari and Westbrook, "Shushtar No'w: Urban Image and Fabrication of Place in an Iranian New Town, and Its Relation to the International Discourse on Regionalism".

16. For more reading about the concept of the New Creation, see: Chapter 5, and See: Bakhtiar, *Towards a Quality of Life: The Role of Industrialization in the Architecture and Urban Planning of Developing Countries - Report of the Proceedings of the Second International Congress of Architects, Persepolis, Iran, 1974.*.

Shushtar-Nou

In late-1975, the Karun Argo-Industries Corporation (*Kesht-o-San'at-e Karun*) commissioned Diba to design a new town near the ancient city of Shushtar in Khuzestan. This project was part of a larger state-led modernisation plan: the Shah's White Revolution. As discussed in Chapter 5, this modernisation plan (the



Figure 7.04: Shushtar historic centre with its historical hydraulic system.
Source: *Iran: Elements of density* (McClelland and Stewart: Torento), 354 (bottom).

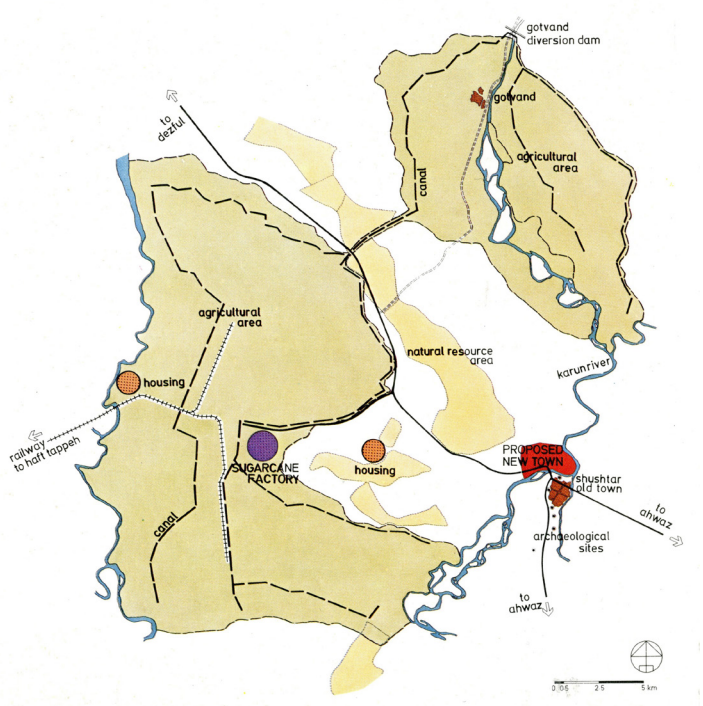


Figure 7.05: this image illustrates the initial location of Shushtar New Town (with orange), close to the Karoun Sugar Industry. The new location of Shushtar New Town is indicated with red in this image.
Source: *Iran: Elements of density* (McClelland and Stewart: Torento), 354.

White Revolution) focused on developing industry and expanding agricultural activities, particularly in undeveloped areas of the country with rich mineral/natural resources, such as in south-west Iran.[17] Under the auspices of this modernisation plan, the government erected the Dez Dam on the Karun River in the northern Khuzestan province; and "with land reclaimed from the river basin, a major sugar cane production and refining industry was undertaken".[18] Further, this project created new jobs and attracted a sizable work force to this region; a location that was almost 20 kilometres away from the old centre of Shushtar. Further, the Karun Argo-Industries Corporation (KAIC) received funding from the government to construct housing for its workers.

The KAIC commissioned Diba just a few months after the 1974 IICA. In this event, a motion was carried that "the Iranian government should commission the design of model housing projects, embodying the new concept of habitat", a proposal that was supported by Empress Farah Diba (Pahlavi) and approved by Iran's Ministry of Development and Housing (IMDH).[19] The company town of Shushtar was one of the early large-scale housing projects in Iran launched after the 1974 IICA, a unique opportunity for the key organisers of the Congress, especially for Kamran Diba who had a great interest in designing non-profit public works.[20] It comes, thus, as no surprise to see that the new town of Shushtar had to serve as an experimental pilot project for the new concept of habitat, as discussed in the second International Congress of Architects in Persepolis-Shiraz.[21]

Diba's special relationship with Iran's imperial office was also instrumental in the design of Shushtar-Nou, as well in many other architectural and urban projects.[22] Upon his return to Iran in 1965, for instance, he received multiple assignments, such as Yousef-Abad Park from the Municipality of Tehran, and the projects of Niavaran Culture Centre, Niavaran Park, and the Empress Office, from Farah Pahlavi.[23] After establishing his firm, D.A.Z. Consulting Architects, Diba collaborated with the IMDH to realise numerous urban projects in Khuzestan. Among these projects, the most noticeable ones were as follows: the master plan of Khoramshahr port city, a project that Diba developed in collaboration with Doxiadis Associate in the late-1960s;[24] the new campus of *Jondishapur* University (now *Shahid Chamran*) in Ahvaz, a project that was designed in the early-1970s and might be seen aligned with the design principles of Louis Kahn's projects in Ahmedabad, India and Dhaka, Bangladesh; and the comprehensive urban plan of Shushtar, Defzul, and Shush (Susa) [Figure 7.03].[25] Indeed, Diba's architectural involvements in Khuzestan made him familiar with local architectural culture of this region, and made him an ideal candidate for designing the pilot project of Shushstar-Nou, among the key organisers of the IICA.

Diba planned his project in five stages to be started in 1976 and be completed in 1985, aiming to accommodate 40,000 blue-collar workers of the Sugar

17. Mohamad Reza Pahlavi Shah of Iran, *The White Revolution of Iran*, 1st ed. ed. (Tehran: Imperial Pahlavi Library, 1967).

18. Kamran Diba, "Shushtar New Town," in *Mimar 17: Architecture in Development*, ed. Hasan-Uddin Khan (Singapore: Concept Media Ltd, 1985), 49.

19. Ali Mozaffari and Nigel Westbrook, "Reclaiming Heritage through the Image of Traditional Habitat," in *The Making of Islamic Heritage: Muslim Pasts and Heritage Presents*, ed. Trinidad Rico, Heritage Studies in the Muslim World (Singapore: Palgrave Macmillan, 2017), 55.

20. Diba rejected all commissions to design private villas and homes, and he only accepted to design the private house and the studio of his closest friend, Parviz Tanavoli (a well-known Iranian sculptor), in Tehran.

21. For more information about the new concept of 'habitat', see Chapter 5. Also see: Ali Mozaffari and Nigel Westbrook, "Shushtar No'w: Urban Image and Fabrication of Place in an Iranian New Town, and Its Relation to the International Discourse on Regionalism," *Fusion*, no. 6 (2015).

22. Mohamad Sedighi, Interview with Kamran Diba (2019). Further, Kamran Diba was a cousin of Farah Pahlavi, the former queen of Iran. This family relationship was an opportunity to collaborate with the MHUD, Municipalities, and governmental institutions for designing public projects such as the Tehran Museum of Contemporary Art, and the Niavaran Cultural Centre in Tehran. For more reading, see: Kim Murphy, "Picasso Is Hiding in Iran," *Los Angeles Times* 2007.

23. In his early design projects, Diba took inspiration from the works of Le Corbusier. For instance, in Yousef-Abad Park, the composition of buildings and the layout of landscape might be seen in line with Corbusian composition. See: Kamran Diba, *Baghi Miane Do Khiaban: Chaharhezaro Yekrooz Az Zendegie Kamran Diba - Dar Goftegoo Ba Reza Daneshvar* [A Garden Between Two Streets: 4001 days of the life of Kamran Diba - In Converstation with Reza Daneshvar] (Paris: Alborz, 2010), 64.

24. For more reading about this project, see: Ludovico Micara and Veronica Salomone, "Shushtar New Town: The Idea of a Community - Interview with Kamran Diba," *L'architettura delle città - The Journal of the Scientific Society Ludovico Quaroni* 8 (2016).

25. See: Mohamad Reza Shirazi, *Contemporary Architecture and Urbanism in Iran: Tradition, Modernity, and the Production of 'Space-in-Between'*, The Urban Book Series (Cham, Switzerland: Springer, 2018), 108.

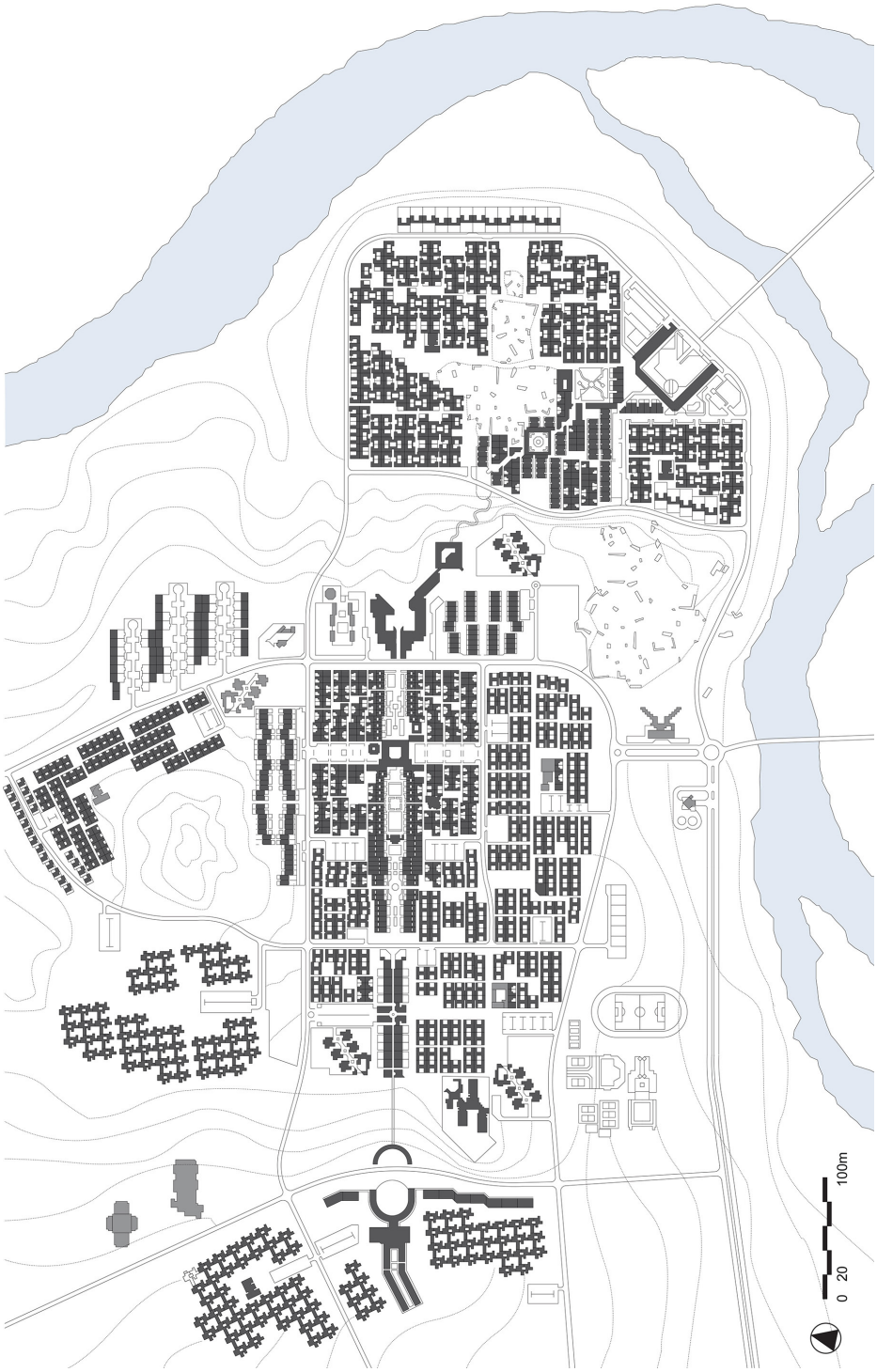


Figure 7.06: the image depicts the final version of Shushtar-Nou's urban layout, as proposed by Kamran Diba.
Source: Mohamad Sedighi based on his contribution to Global Housing: Affordable Dwellings for Growing Cities. *DASH*, [12-13]. Rotterdam: NAI010 Uitgevers, 2015.

industry. Arguably, he designed a collective urban form with an open-ended total environment based on local socio-cultural and environmental characteristics. Indeed, Khuzestan was one of the most important regions of Mesopotamia dating back to the 4th millennium BC, where cities like Dezful, Shushtar, and Shush (Susa) were erected. While located on a hot-arid area of the Iranian Plateau,[26] the mentioned cities benefited from rich underground water resources and the Karun River, a natural condition that enabled certain daily and agricultural activities. Accommodating multiple ethnic groups such as Persian, Bakhtiari, Lour, Arab, mostly with a Muslim background, these cities followed the pattern of piecemeal urban growth that is found in most traditional Iranian cities. Their urban fabrics were compact and interwoven including private and public gardens as a main outdoor urban space, and mud-brick or clay as predominant construction material [Figure 7.04].

These regional characteristics became a point of departure for the design of Shushtar-Nou. For instance, while the KAIC design letter expressed the need for constructing a prefabricated housing project, Diba assured the client that his low-tech design scheme would meet the quantitative goals of the project, in terms of time-plan and mass production.[27] As opposed to the KAIC proposal asking to build a new town far from the city and close to the sugar industry, Diba proposed a new location, close to the ancient city of Shushtar [Figure 7.05].[28] In this area that later became known as Shushtar-Nou, Diba designed a series of residential quarters with one- and two-story single-family houses interconnected through a central pedestrian axis. This central spine was articulated by a set of three- and four-story walk-up apartments designed with two dwelling units on each floor. Around this spinal cord, there were proposed public amenities such as shops, schools, Friday Mosque, and communal gardens. At the eastern part of his plan, Diba provided an open space for local farmers to sell their produced vegetable and food, connecting the hinterland activities to the urban texture. Diba also included a public plaza, a sport complex, and a bus station to his plan [Figure 7.06].[29]

In Diba's proposal, Shushtar-Nou was described as a modern town that would be separated from the old city by the 'Karun River', but would be connected via its main pedestrian precinct to the historic centre.[30] While striving for continuity with the historic urban structure of Shushtar, Diba claimed that his design would herald a new form of urban living within the traditional society of Khuzestan.[31] These characteristics of Shushtar-Nou imply a reflection of Diba's general philosophy towards design, modernity, and internationalism which can be also seen in various other works that he completed throughout his career.[32]

26. The Iranian plateau is the territory of central Asia and Near East, which used to be the living ground for early Indo-European tribes. Despite its local sub-terrains, this land stretched between Himalaya and the Mediterranean Sea. The Khuzestan province is located at the southern part of the Iranian plateau, sharing borders with Iraq and overlooking the Persian Gulf.

27. In an interview with Ludovico Micara and Veronica Salomone, Diba claimed that the client intended to contact some American firms to propose a prefab-model for Shushtar-Nou. He explained that he refused this quest and told the client: "it is ridiculous to use prefab, when you could produce bricks there, creating work for Iranian workers." For more information, see: Micara and Salomone, "Shushtar New Town: The Idea of a Community - Interview with Kamran Diba," 141.

28. For more information see: DAZ Consulting Architects and Engineers, "Gozaresh-E Ejmali: Marhale Aval Tarh-E Jame Shushtar Jadid," (Tehran: The Housing Organisation, 1977).

29. For the design of the public squares, Diba took inspiration from the Italian piazzas and Naghsh-e Jahan Square in Isfahan, and to connect the main Plaza with the old city, Diba was inspired by the Khajou Bridge of Isfahan and the Ponte Vecchio bridge in Florence. For more reading, see: Faryar Javaherian and Kamran Diba, "Shushtar New Town" (paper presented at the New Towns Development Cooperation, Tehran, 2005), 15-36. And Kamran Diba, *Buildings and Projects* (Stuttgart: Hatje, 1981).

30. For more reading about the project, see: "Shushtar New Town on-Site Review Report," in *Aga Khan Award for Architecture* (http://archnet.org/sites/103/publications/1781986).

31. For more information, see: *Bagh-I Miane Do Khiaban.*

32. See: Shirazi, "From Utopia to Dystopia." And, Mozaffari and Westbrook, "Shushtar No'w: Urban Image and Fabrication of Place in an Iranian New Town, and Its Relation to the International Discourse on Regionalism".

Type A

Type B

Type C

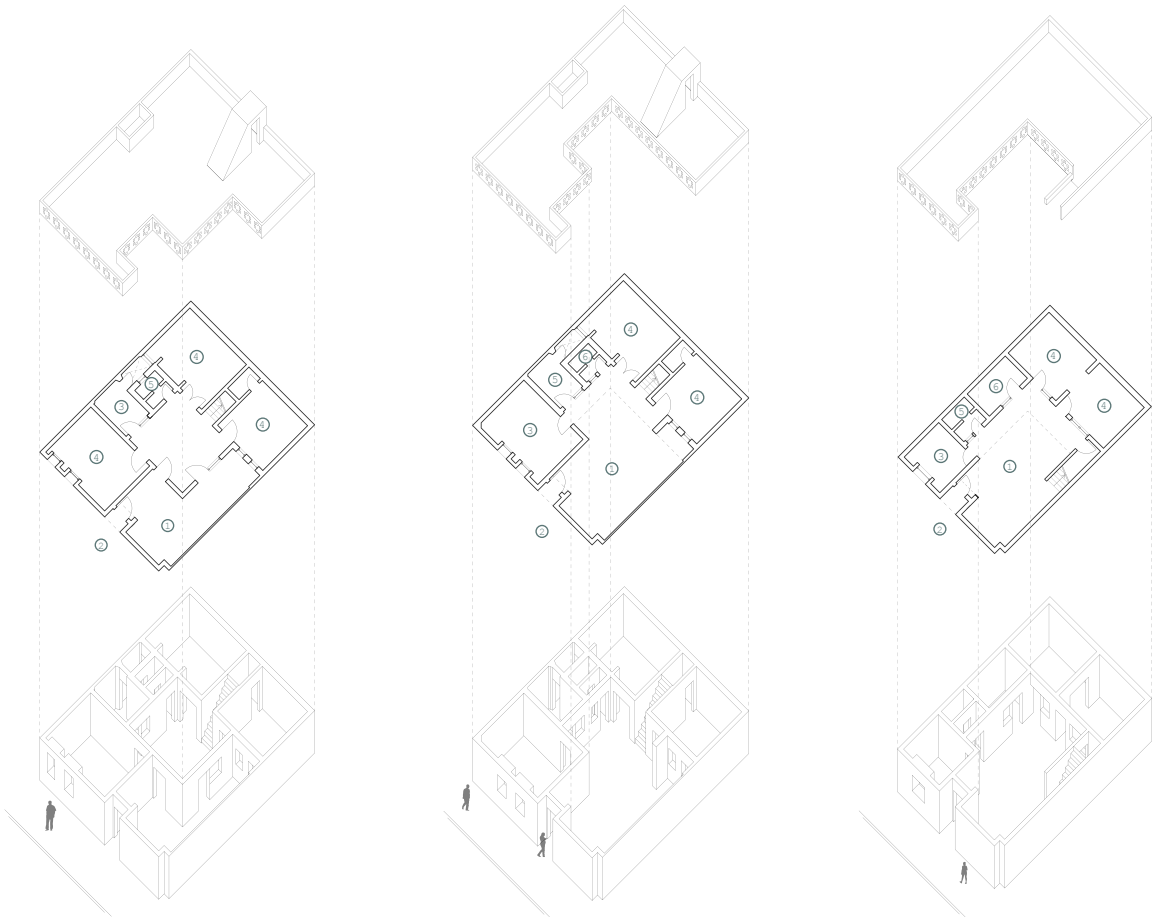


Figure 7.07a: the main courtyard-garden house types in Shushtar-Nou. (with following page: 325)
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

The Architecture of Kamran Diba

As an Iranian architect educated and worked in the United States,[33] Diba had a keen commitment in asserting the practices of architecture and urbanism as something simultaneously universal and rooted in its local circumstance. This binary position might be seen from both Diba's design vocabulary, and his vision on bringing local tradition into the architecture of modernism. While being a modernist at heart, Diba considers 'tradition' and 'the experience of the past' as a continuous phenomenon "incorporated into the body and preserved as a bodily memory".[34] In a conversation with Reza Daneshvar, a well-known fiction writer, Diba claimed that although "we [Iranians] have become part of global culture since the start of the twentieth century, the historiographical account of Persian architecture has shown that our local architectural culture has a great potential to foster a dialectic synthesis of tradition and modernity."[35] He argued that critically looking at the past and adapting vernacular elements to new programmatic and contextual circumstances would transcend the current architectural design culture and provide a condition for moving forward.[36] Thus, it comes as no surprise to see that in many cases Diba's architectural works go beyond superficial imitation and direct reference to historical motifs to provoke a sentimental sense of tradition, advocating a more indirect recollection that may be referred to as 're-interpretation'.[37]

While crediting both the continuity and transmission of local archetypes, Diba's architecture might be seen as a manifestation of Nader Ardalan's notion of 'New Creation' from the IICA. As discussed in the previous chapter, Ardalan built his theory upon the Persian-Islamic conception of time that was taken from the Sufi-tradition, and proposed an alternative approach, which "commences with a specific beginning, the creation, and through a cyclical motion repeats the very act of the first creation in an ever ascending spiral, which seeks transcendence and ultimate timeless union with the One."[38] Ardalan, then, connected this notion with his concept of 'New Creation' where the word 'New' expressed "a cyclical manifestation of archetypical ideas" that would cater for generating a timeless and spiritual architecture.[39] Subsequently, Ardalan defined 'Hermeneutics' (*Ta'wil*) as the ultimate condition by which the New Creation can be achieved.[40]

Ardalan's intake on re-interpreting archetypal ideas is traceable in Diba's vision on architecture. Regarding the architecture of dwelling, for instance, Diba described the courtyard garden as a local archetype that had a special value for traditional Iranian society by being a timeless element of Iranian culture and vernacular architecture. That being said, Diba further argued that this archetype is shaped by inhabitable walls that surround a void open to the sky; therefore, the walls allow the adaptation of this idealised type to various building programmes, climate conditions, and geographical locations, while the courtyard remains intact.[41] In this view, the courtyard becomes an instrument of transmission, while the wall

33. Kamran Diba studied architecture at Howard University (Washington, D.C.) and graduated in 1964. He was under influence of Morton Hoppenfield's thoughts, a U.S-American town planner interested in social philosophy in urban design. Diba worked in his office and then added a year of post-graduate studies in sociology. In 1966, Diba returned to Tehran and in 1967 established DAZ Consulting Architects, Planners and Engineers. For more information, see: Micara and Salomone, "Shushtar New Town: The Idea of a Community - Interview with Kamran Diba."

34. In an interview with Mohamad Reza Shirazi, Diba described himself as a modernist whose design decisions could be seen as an attempt to make a ling to our disappearing identity. For more information, see: Shirazi, *Contemporary Architecture and Urbanism in Iran*, 79.

35. For more reading about Diba's ideas regarding the notion of modernity and the vernacular, see: Diba, *Bagh-I Miane Do Khiaban.*

36. Janet Rady, "Janet Rady in Conversation with Kamran Diba," V (2008). See also: Diba, *Bagh-I Miane Do Khiaban.*

37. See also Shirazi, *Contemporary Architecture and Urbanism in Iran.*

38. Laleh Bakhtiar, ed. *Towards a Quality of Life: The Role of Industrialization in the Architecture and Urban Planning of Developing Countries - Report of the Proceedings of the Second International Congress of Architects, Persepolis, Iran, 1974* (Tehran: Hamdani Foundation, 1976), 36.

39. For more reading, see Chapter 5 and ibid., 37.

40. For more information, see Chapter 5 and *The Great Islamic Encyclopedia*, vol. 14 (Tehran: The Centre for the Great Islamic Encyclopedia, 2006), 371. See also: Shirazi, *Contemporary Architecture and Urbanism in Iran.*

41. To reinforce his claim, Diba refers to the works of a well-known Italian surrealist painter, de Chirico, whose paintings mostly illustrated wall with an ambiguous position that provokes the imagination of a mysterious place beyond it. For more information, see: Diba, *Bagh-I Miane Do Khiaban.*

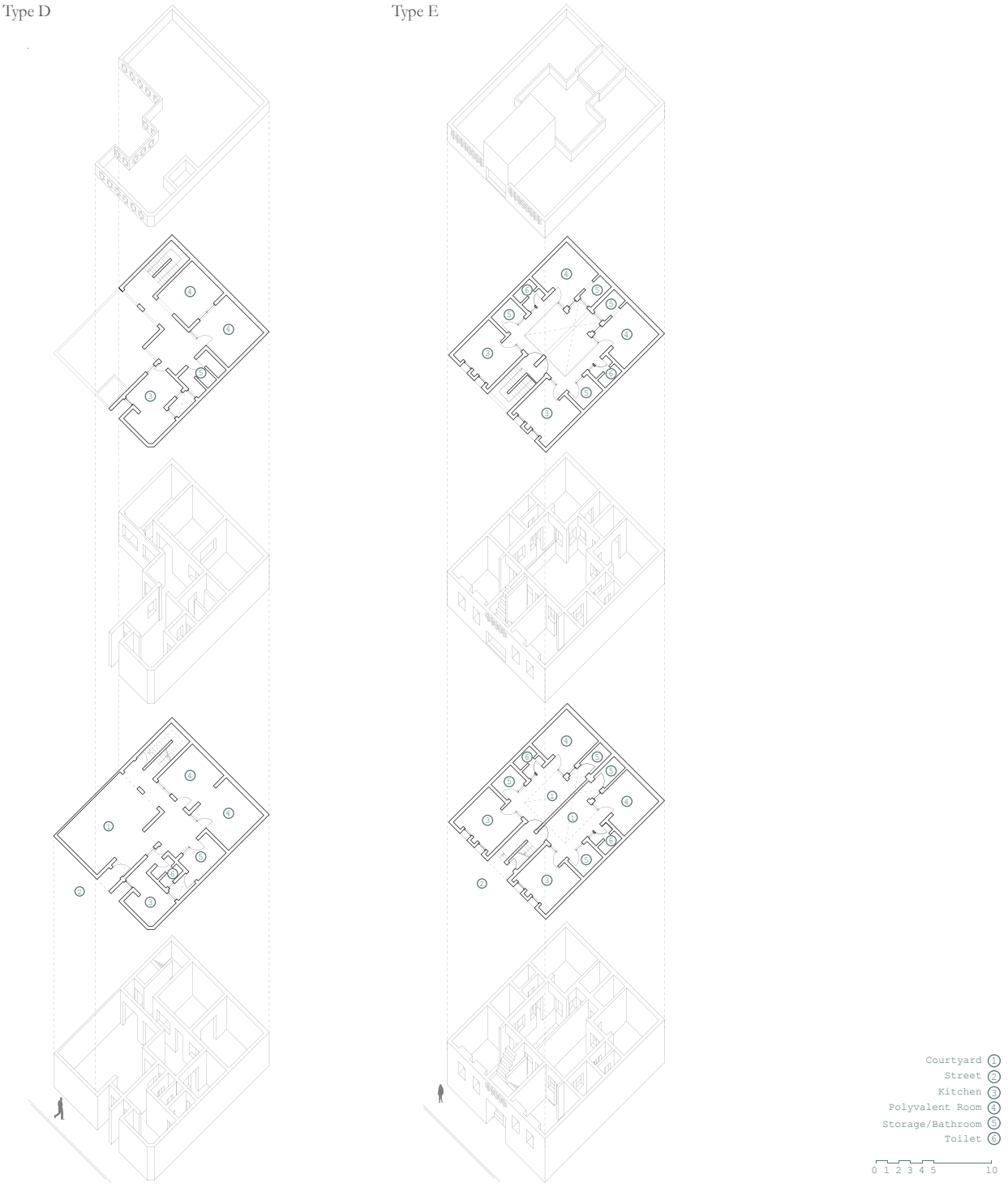


Figure 7.07b: the main courtyard-garden house types in Shushtar-Nou.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

enclosing the courtyard becomes a household that is able to cope with change. In Diba's vision, the wall also does not represent an element of separation, but rather, it presents the possibility of confrontation and contradiction, or linkage and separation between interior and exterior.[42]

This 'creative re-interpretation' and 're-creation' of the local elements can be seen in the design of individual dwellings for Shushtar-Nou. In order to accommodate various lifestyles in this collective whole, Diba provided five main different house types, meant to be constructed in the first development phase. Although these types varied significantly in physical size and proportion, they all shared the common motif of the courtyard-garden as a fundamental organisational tool [Figure 7.07]. This motif is also traceable in the other house types proposed by Diba for the second and third phase of the Shushtar-Nou's development. In Diba's proposal, the apartment units were also provided with a large and deep private outdoor space, the loggia, protected inhabitants from the immediate neighbours with high side-walls and from the street with high parapet [Figure 7.08].

The Habitat Bill of Rights (HBR) also became an influential instrument in Diba's architecture. The HBR included an appendix where Ardalan's notion of the New Creation was translated into ten design recommendations for developing new urban communities in Iran. Arguably, these suggested strategies might have informed and affected Diba's process of decision making in Shushtar-Nou. This can be seen, clearly, form the strong resemblance between the design diagrams of the HBR and those of Diba presented in the 1986 Aga Khan's technical report on Shushtar-Nou [Figure 7.09]. These guidelines, I would argue, were largely incorporated in Diba's scheme that are traceable in the urban layout of Shushtar-Nou. In the remainder of this chapter, I will demonstrate how the ideas presented in the HBR influenced the design for Shushtar-Nou's community model, and examine the extent to which the ideas discussed on the notion of 'habitat' and presented by the Team X participants of the 1974 IICA created the backbone of Diba's experimental model for Shushtar-Nou.

Shushtar-Nou and the Habitat Bill of Rights

One recommendation of the HBR that Diba specifically considered was the first point, which was related to the 'Sense of Place'. According to the document, "the fundamental Persian sense of place [is] based upon the concept of the container and the contained [and] should be incorporated in all urban developments at the scale of precinct, cluster, and dwelling."[43] To illustrate this point, the document provided a series of diagrams indicating a clear spatial network "defined by houses and buildings, with a clear hierarchy, from the court of the house to the

42. Ibid., 56.

43. Nader Ardalan et al., *Habitat Bill of Rights* (Tehran: Hamdami Foundation, 1976), 156.

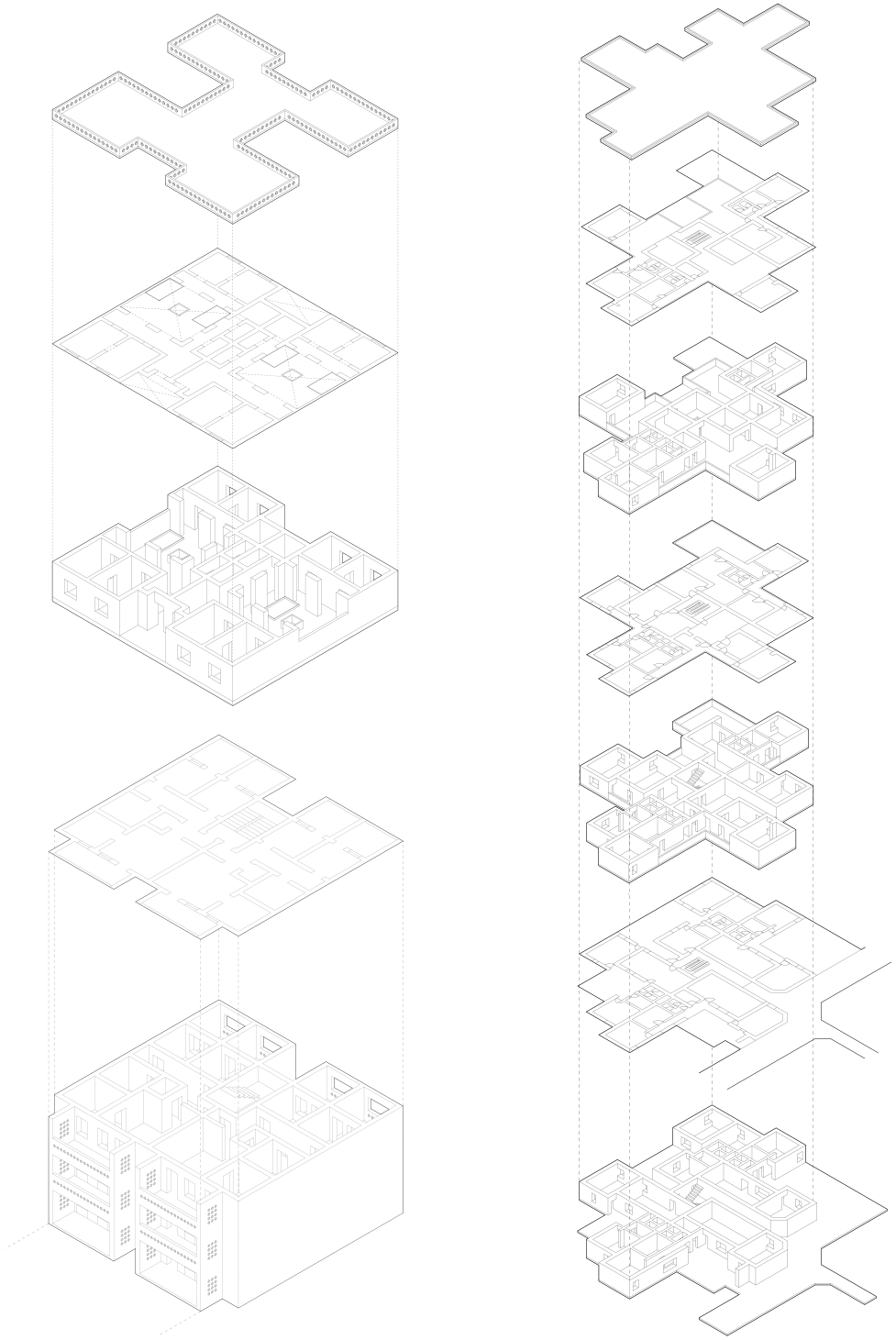
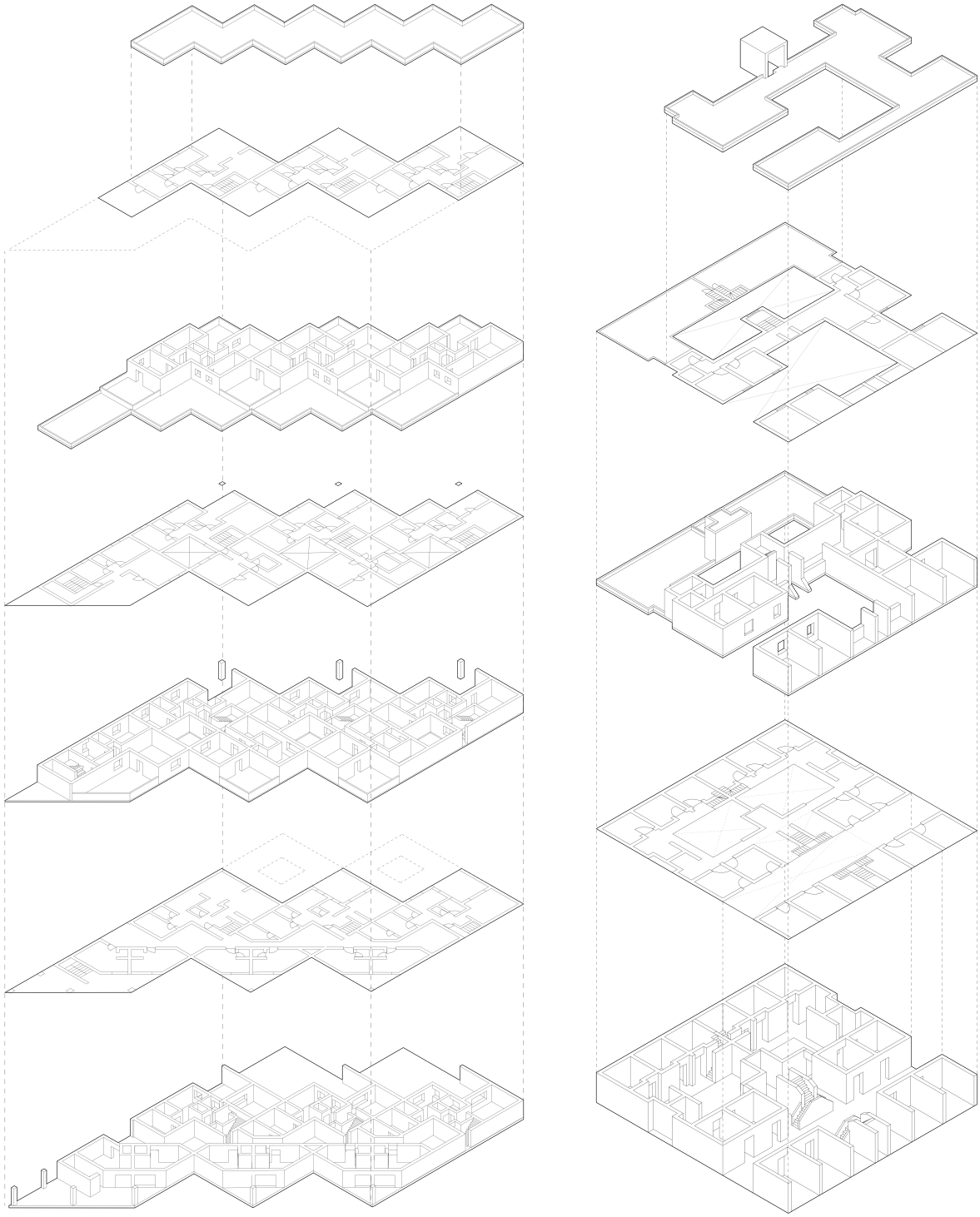


Figure 7.08: for the second and third phase of the Shushtar-Nou's development, Diba also developed a series of courtyard house-types and apartments among which only a few houses and apartment buildings were realised. (with following page)
Source: Mohamad Sedighi in collaboration with Robby Stubbs.



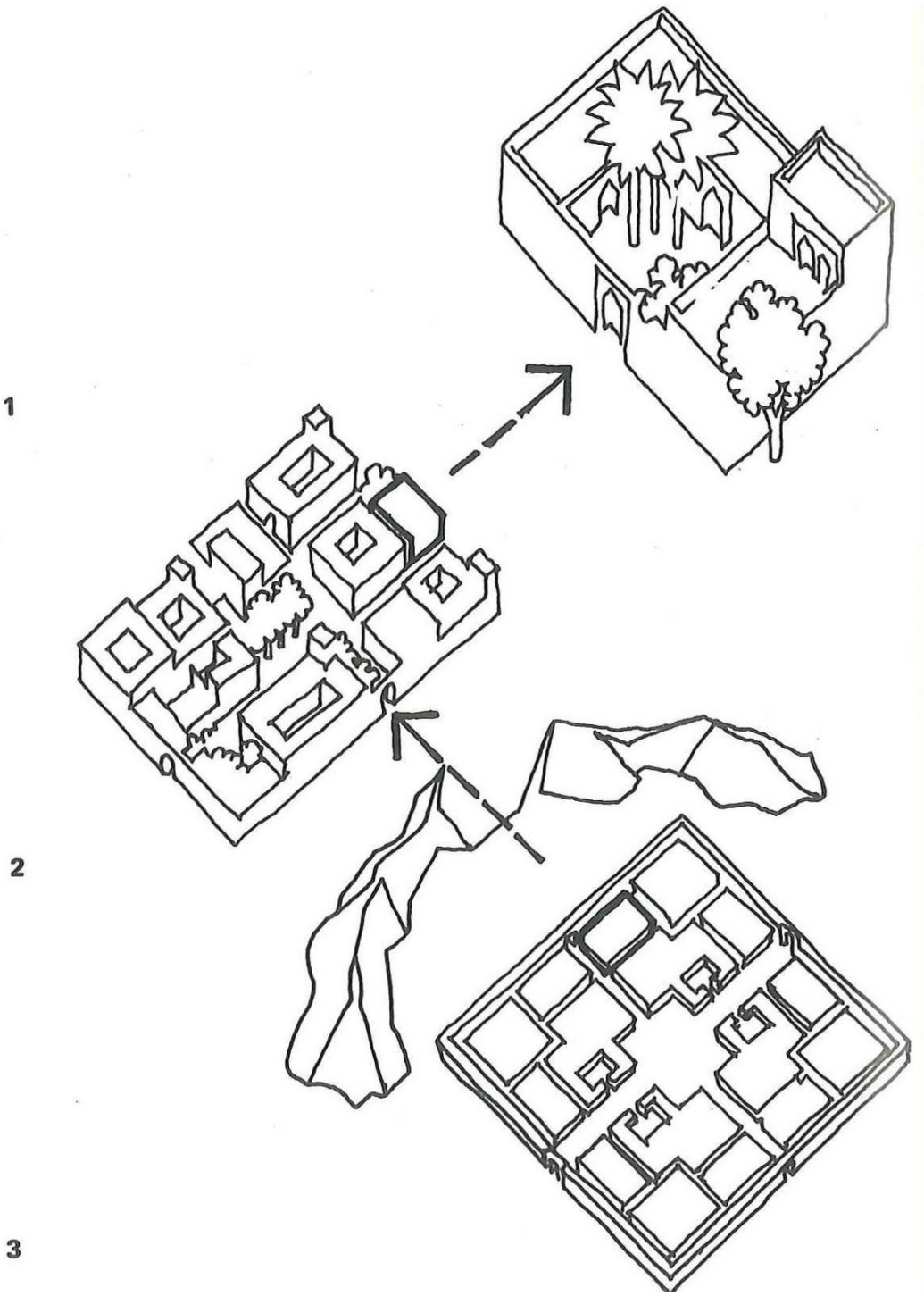
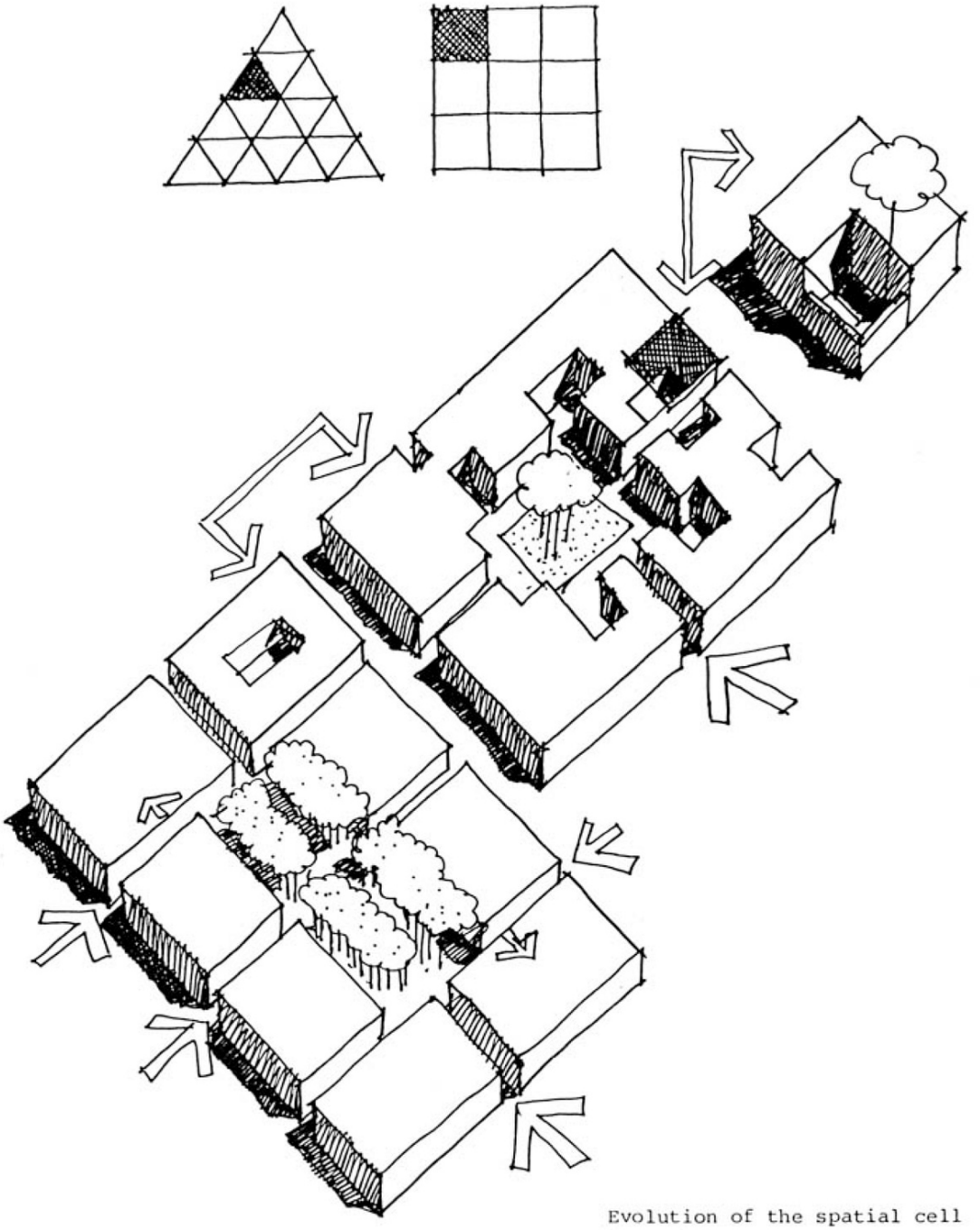


Figure 7.09: the hierarchy of ever-increasing levels of privacy in both Habitat document and Diba's scheme. (with following page)
Source: *The Habitat Bill of Rights* (Tehran, Iran: Hamdami Foundation, 1976), 156 (left); & "Shushtar New Town On-Site Review Report," 13 (right).



Evolution of the spatial cell
Formation of the urban complex



Figure 7.10: these diagrams (on the top and middle part) show how the cluster of one and two-story houses formed the neighbourhood enclosure in Diba' plan; the images below show some examples of porch-like pathways as the neighbourhoods' gateways.
Source: Mohamad Sedighi in collaboration with Robby Stubbs (top and middle); and photograph by Mohamad Sedighi(bottom).

court of the cluster, to the square of the precinct, and to the city as a whole." In fact, this hierarchy of ever-increasing levels of privacy and the related illustrations explicitly resembles Diba's explanatory sketches about the spatial configuration of Shushtar-Nou, depicted in the 1986 Aga Khan's technical report.[44] In this configuration, the districts, neighbourhoods, and individual houses were clustered around a chain of communal outdoor spaces, as depicted in figure 7.09.

The second and third recommendation point focused on the climate condition of Iran. Explaining the importance of south-east and north-west orientation for the construction of buildings and the provision of shading for outdoor spaces, these categories strongly suggested that in hot-arid regions of Iran, the exterior surfaces needed to be minimised.[45] To do so, the habitat document proposed that "buildings should be planned in compact groups", and, "long walking distances between houses and the community facilities should be avoided."[46] Noticeably, these recommendations resonate with Diba's sketches depicting Shushtar-Nou's access system where the deep-narrow streets provide shading and natural cooling for the pedestrians, resisting the harsh climate conditions of the region.[47] To achieve this, Diba relied on the provision of car-free neighbourhoods, a strategy that enabled him to minimise the size of exterior surfaces and the streets, as well as to develop interwoven and compact routes where pedestrians would enjoy shaded zones and oases of coolness.[48]

The fourth point referred to the idea of 'Gateway' as an "essential element of Persian architecture and city planning should be used to give a sense of arrival and territoriality."[49] According to the document, the gateway should clearly define "the access and territory of a cluster of houses." Arguably, this idea played a significant role in Diba's scheme. As mentioned earlier, Diba designed each neighbourhood out of a variety of one- and two-story house types. To cluster these different types, he placed almost all two-story houses around the edge of each neighbourhood, forming a wall-like enclosure. However, Diba chose to replace some of the two-story with the one-story types to soften the degree of closure. Then, around this edge, Diba designed a series of bridges and cantilevered rooms to create a clear threshold where one enters the neighbourhood. In so doing, each neighbourhood become an autonomous spatial entity with a distinct identity. In a few parts of his plan, Diba designed symbolic gateways that mostly integrated with surrounding public buildings to create representative entrances to the new urban community of Shushtar [Figure 7.10].

The fifth recommendation point focuses on the network of paths as well as the pedestrian movement system of the community. According to this category, urban passages and community walkways should be formed by buildings and articulated by urban activities.[50] As a concrete example, the document referred to the structure of the Bazaar in traditional Iranian cities, and argued that "the

44. Diba, "Shushtar New Town on-Site Review Report," 13.

45. Ardalan et al., *Habitat Bill of Rights*, 157.

46. Ibid.

47. Diba, "Shushtar New Town on-Site Review Report," 10.

48. Ibid., II.c.

49. Ardalan et al., *Habitat Bill of Rights*, 159.

50. Ibid., 160.

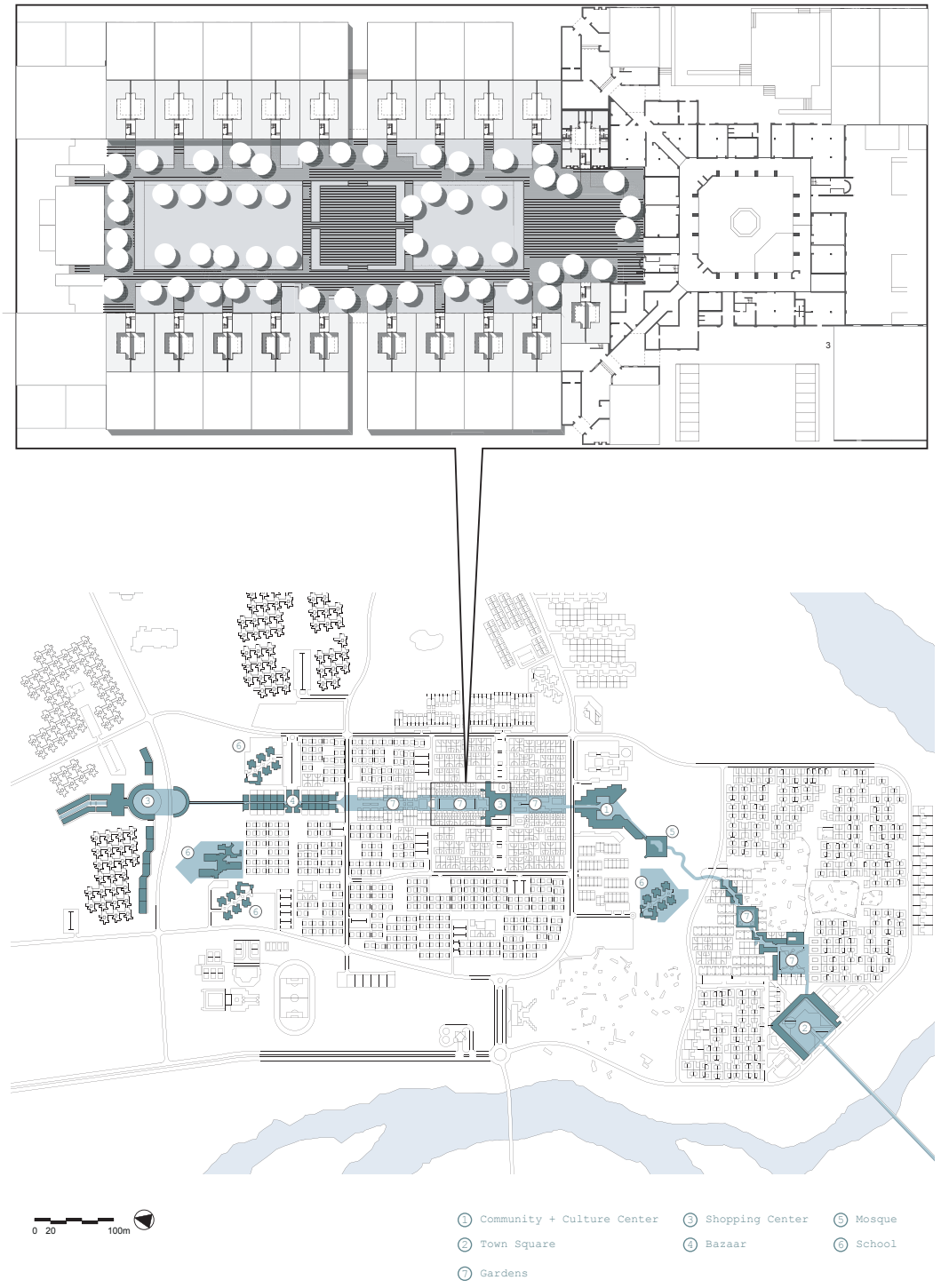


Figure 7.11: the configuration of public amenities, such as schools, mosques, and culture centre, integrated with the pedestrian route and communal gardens. Source: Mohamad Sedighi in collaboration with Robby Stubbs.

contemporary expression of the bazaar…could be the life-line land spine of the community."[51] This approach is very similar to Diba's strategy for designing a main public pedestrian route. As depicted in the 1986 Aga Khan's report, Diba considered the Bazaar as an element that would stimulate movement and create spatial continuity in the urban configuration of the old and new city in Shushtar.[52] It is, thus, not surprising why he introduced a pedestrian boulevard as the backbone of his plan, where a series of communal amenities were designed alongside this public route [Figure 7.11]. Indeed, the provision and distribution of the facilities, such as schools, shops, mosques, sport complexes, and workshop rooms over his plan was meant to encourage walking and movement in Shushtar-Nou.

The sixth point referred to the importance of gardens for creating pleasant outdoor environments, a theme that deeply influenced Diba's design for Shushtar-Nou. In this category, the design and provision of gardens at both the dwelling and community scale were highly recommended. Moreover, this category emphasised the fact that the gardens should provide "a sense of oasis, or paradise garden, and be shelter from the oppressive climate."[53] Accordingly, in Aga Khan's technical report, Diba described his project as an attempt to design "an oasis that [would] become the image of paradise."[54] To achieve this objective, Diba designed the small streets of the neighbourhoods in Shushtar-Nou without trees to reduce the cost of maintenance, but integrated a chain of communal gardens with the main pedestrian route, forming a pleasant place for outdoor activities. It seems, however, that the integration of gardens into Diba's plan was more than just a strategy for mitigating the oppressive climate. As mentioned earlier, the architectural conception of the Persian Garden was used to reflect a 'sense of place'. In this view, it comes as no surprise to see that Diba employed this concept and integrated a series of gardens into his plan to design a liveable environment, as shown in figure 7.11.

Generally, in Iranian architectural culture, the idea of the garden is understood as an apparatus to construct the ideal living place: the terrestrial Paradise.[55] Rather than being only a place for agriculture, gardens historically allowed the creation of any form of life through a process of tabula rasa in the Iranian plateau.[56] According to Mohamad Beheshti, a well-known Iranian scholar and landscape designer, the life inside the Persian gardens represents a cultural way of engaging with the world. In his extensive analysis on traditional Iranian miniature paintings, Beheshti showed that the most representative characteristic of the Persian garden is the activity inside the enclosed garden, rather than its formal aspects and geometry.[57] In his view, gardens devoid of people have no life and meaning; so, the gardens would form a setting, a background on which leisure activities and social encounters can take place. Indeed, this explains why Azadeh Shahcheraghi, an Iranian landscape scholar, described the importance of the garden that is embedded in the courtyard as the very characteristic that makes traditional Iranian houses a pleasant living environment, rather than the formal space of the courtyard itself.[58]

51. Ibid.

52. Diba, "Shushtar New Town on-Site Review Report," 5.

53. Ardalan et al., *Habitat Bill of Rights*, 161.

54. Diba, "Shushtar New Town on-Site Review Report," 23.

55. For more information, see: Hamed Khosravi, "Geopolitics of Tabula Rasa: Persian Garden and the Idea of City," Journal of Architecture and Urbanism 38, no. 1 (2014).

56. Ibid.

57. Seyed Mohamad Beheshti, "Jahan Baghe Irani," [The Myth of the Persian Garden.] *Golestan-e Honar* 11 (2008): 7-15.

58. Azadeh Shahcheraghi, Paradaym-Haye Pardis: Daramadi Bar Bazshenasi Va Bazafarini Bagh-E Irani [paradigms of paradise: recognition & re-creation of The Persian Garden] (Tehran: Jahad Daneshgahi, 2010), 84.



Figure 7.12: private gardens in Shushtar-Nou, behind the street walls.
Source: Aga Khan Image Archive, available at: https://archnet.org/sites/103/media_contents/9437..

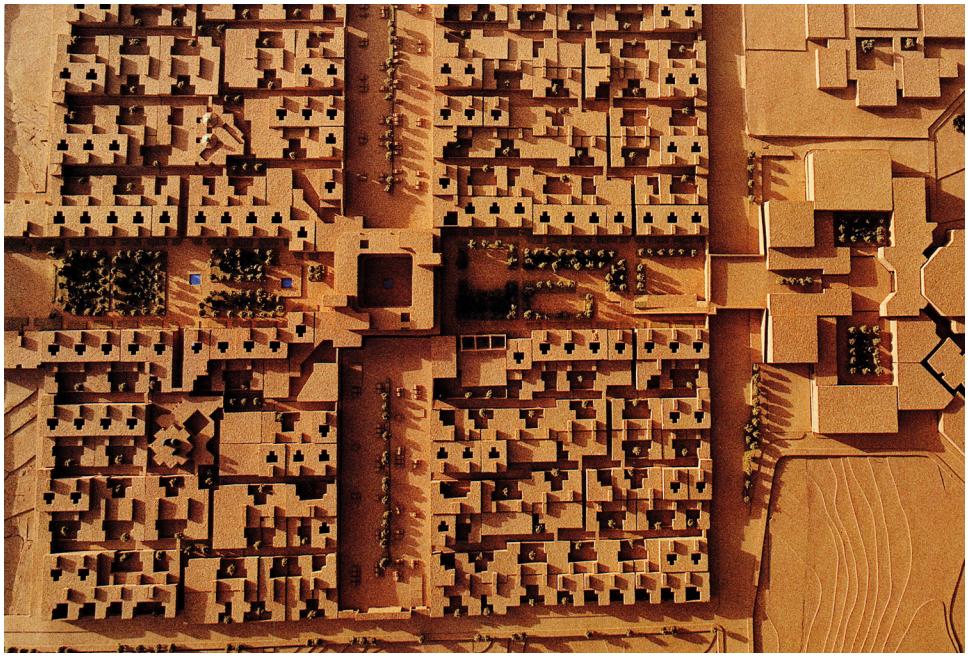


Figure 7.13: the physical model of Shushtar-Nou indicating that in each sub-neighbourhood, a dwelling plot was intentionally left unbuilt to make space for spontaneous exchange and communal activities.
Source: *Elements of Density* (Torento: McClelland and Stewart, 1978).

The notion of life inside gardens can be traced at both dwelling and community scale in Shushtar-Nou. Diba designed each house with a courtyard and a small garden that was placed adjacent to the streets.[59] In so doing, the vegetation of private gardens, behind the walls, provided shade and green touch to the narrow streets [Figure 7.12]. Ironically, rather than choosing to place communal gardens inside the urban structure of neighbourhoods, Diba placed them just outside the neighbourhood enclosure. By integrating gardens with the pedestrian boulevard, Diba intended to design spaces of joy and encounter at an urban scale. While connecting different segments of Shushtar-Nou's urban plan to form a sense of unity, these gardens would become a very precious place where people could gather, meet, and be engaged in some leisure activities, or small-scale cultivation.

This aim of creating a unified plan to achieve social integrity was clearly indicated in the seventh recommendation point of the Habitat Bill of Rights. In this category, the idea of 'Crossing' was proposed as a design methodology to intensify activities and encounter among people, and to unite disparate parts of a plan.[60] In this view, it comes as no surprise to see that Diba intentionally omitted a few plots from some rows of houses to make space for spontaneous exchange and communal activities, without defining any functions for these places within the neighbourhood structure [Figure 7.13]. Moreover, it seems that distributing public amenities, such as local mosques, bath-houses, and playgrounds in Diba's plan was also a strategy to create a network of encounter among the neighbourhoods. Thus, amenities were evenly distributed throughout the different sectors of the urban plan, encouraging exchange between various neighbourhoods from people commuting for their daily activities.

To make these public facilities more accessible, Diba pulled the rows of houses apart from the middle of each neighbourhood structure, forming a route perpendicular to the parallel streets. This caused the street network of the neighbourhoods to reflect a rectilinear pattern of infrastructure, with planned irregularities that occur through differences in narrow-street levels and setbacks of façades with altering perspectives. Interestingly, the points where small streets intersect one another were designed as collective squares or as playgrounds to facilitate social interaction [Figure 7.14].

By introducing a compact urban form and incorporating height-differences, Diba intended to increase the chance of encounter among people. As mentioned in the eighth recommendation point, the idea of a 'Platform' enables the separation of functions, and maintains the walkability of new developments.[61] Interestingly, the Aga Khan Technical Report on Diba's plan indicated that he sought to achieve this goal by elevating the ground level of residential neighbourhoods to create a car-free zone with pedestrian alleys that were situated a few steps above the street level [Figure 7.15].[62] The differences in heights and widths of streets formed

59. In Iran, the traditional courtyard house types are mostly an "introverted form defined by an open court shielded from the outside by the built spaces" that surround them. For more information about courtyard house types, see: Nasser Rabbat, *The Courtyard House: From Cultural Reference to Universal Relevance* (Burlington, USA and Surrey, England: Asligate Publishing Limited, 2010), xxi.

60. Ardalan et al., *Habitat Bill of Rights*, 162.

61. Ibid., 163.

62. Diba, "Shushtar New Town on-Site Review Report."



Figure 7.14: the points where small streets intersected one another, they formed collective squares or playgrounds where children could play outside.
Source: Photograph by Mohamad Sedighi.

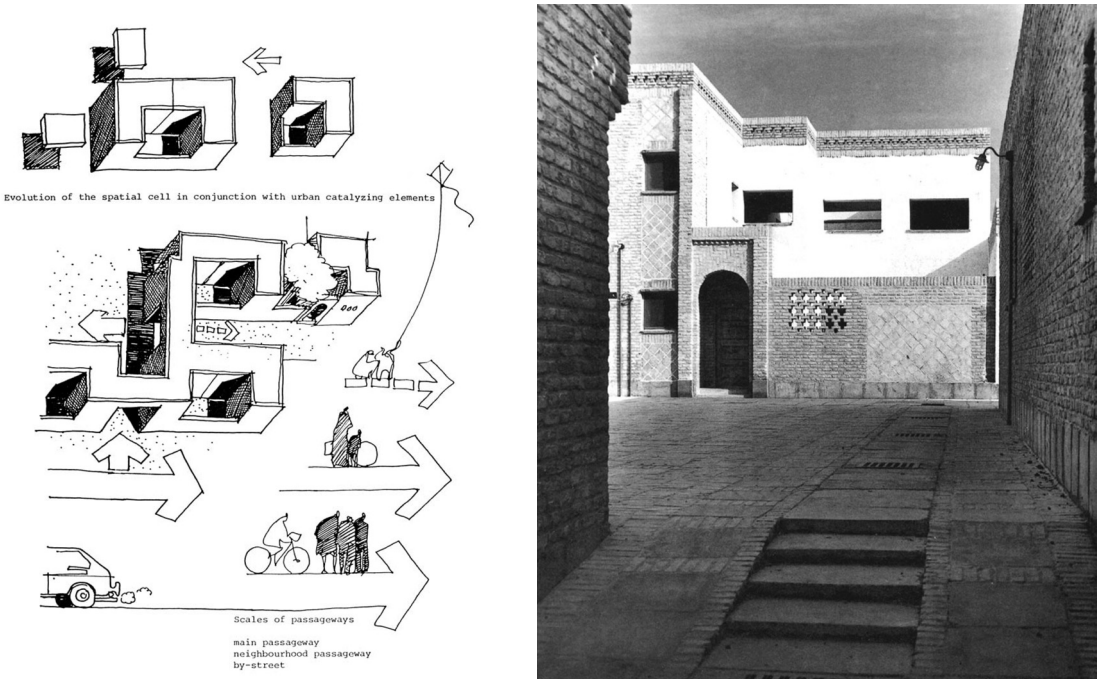


Figure 7.15: the left image shows the distinction of pedestrian and automobile zones. The right image depicts the height-differences in the urban structure of Shushtar-Nou, creating a barrier for private cars to enter the neighbourhoods.
Source: "Shushtar New Town On-Site Review Report," 11 (left), and "Shushtar New Town On-Site Review Report," 163 (right).

a clear distinction between pedestrian and vehicle routes, leading to a smooth transition to the car-free neighbourhoods, in Shushtar-Nou.

The ninth point referred to the idea of the 'Porch'. In this category, the porch was described as "a transitional element between indoor and outdoor spaces, placed at either entrance, court oriented facades or both."[63] Similar to the illustrations provided by the HBR document, Diba introduced varying sets of transitional elements, such as arcades, colonnades, and deep loggias within the facades of those public buildings that faced the ground-level around communal squares. At the urban scale, Diba designed the city plaza as a transitional zone between the old and new city. The plaza, positioned adjacent to the riverbank, formed a hinge point where the extension of the old Bazaar and the new pedestrian boulevard intersected. The plaza accommodated the new elements of urban life, such as bars, cinema, theatre, restaurants administrative buildings and offices [Figure 7.16].

The last recommendation point addressed the importance of designing landmarks. It described that the landmarks "should be located in new developments as orientating devices and territorial markers."[64] This provides an explanation of why Diba introduced a series of monumental and identifiable elements to his plan, forming reference points within the urban structure of Shushtar-Nou. For instance, Diba placed a predominant structure in the heart of his scheme where different neighbourhoods intersected, which was designed as a hostel with a view to the historic centre of Shushtar [Figure 7.17]. On the ground level, this building accommodated a small plaza to facilitate daily markets and host cultural ceremonies such as mourning rituals. In another location, Diba designed a peculiar structure for the Friday Mosque, a building that was planned to be located on the highest part of Shushtar-Nou's hilly landscape, which was in conjunction with the man-made forest. The mosque was designed without a dome, but included a series of walls with various heights that formed a labyrinth configuration [Figure 7.18]. In so doing, Diba offered a new interpretation of traditional mosque architecture, with his outstanding cubic-like structure that resembles the most holy building in the Islamic religion: the Kaaba.

Diba's Community Model and the IICA Debates

The architecture of Diba even surpassed the concept of New Creation by considering the future social evolution of neighbourhoods. While Diba defined the garden and its enclosure as the main elements of local architectural culture, he put more emphasis on the importance of developing a community that would accommodate growth and change to form a basis for a new collective identity.[65] Arguably, Diba's interest in developing such a community model might be related

63. Ardalan et al., *Habitat Bill of Rights*, 164.

64. Ibid., 165.

65. Mohamad Sedighi, Interview with Kamran Diba, (2019). See also: Ludovico Micara and Veronica Salomone, 'Shushtar New Town: The Idea of a Community - Interview with Kamran Diba', *L'architettura delle città - The Journal of the Scientific Society* 8 (2016): 121-55.

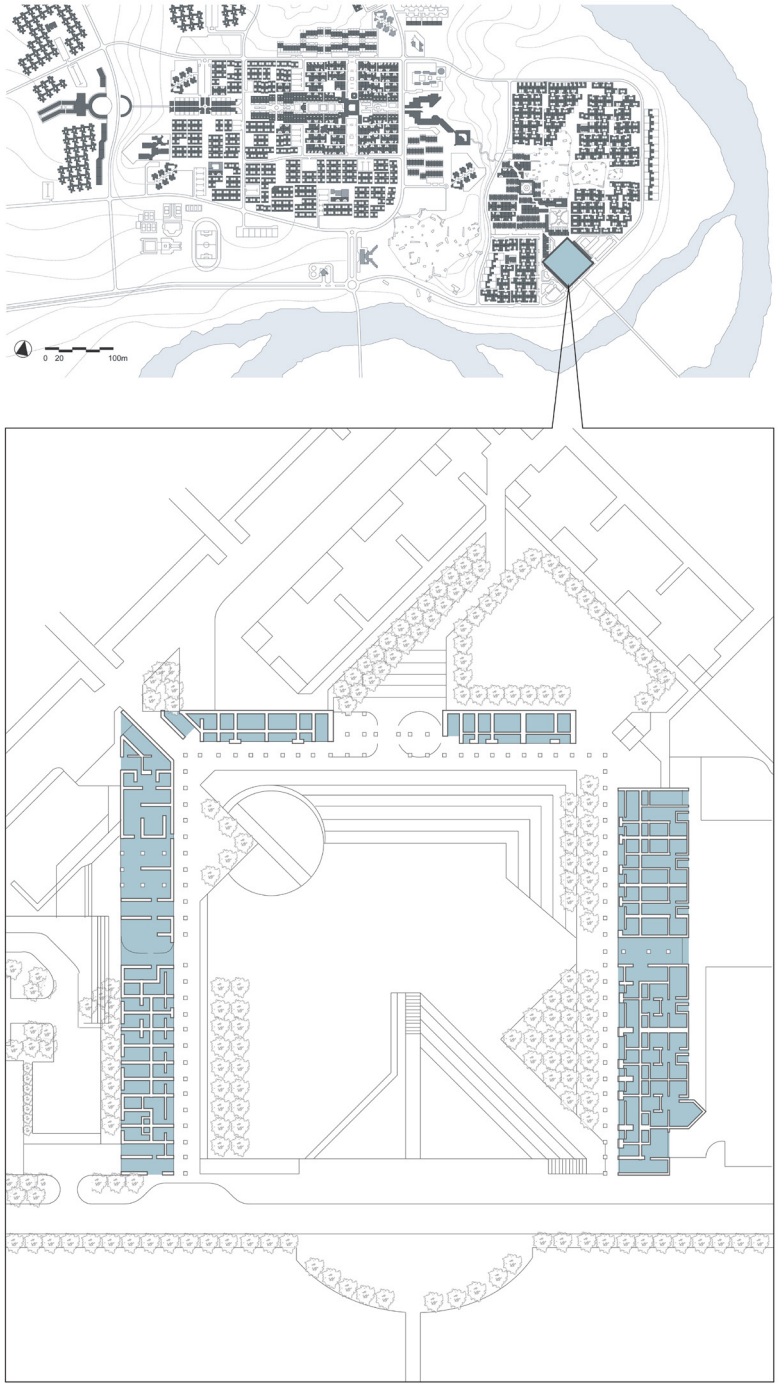


Figure 7.16: the layout of the City Plaza in Shushtar-Nou.
Source: Mohamad Sedighi in collaboration with Robby Stubbs.



Figure 7.17: the landmark of Shushtar-Nou, as a four-story walk-up hostel, with a communal square on the ground level surrounded by shops.
Source: Photograph by Mohamad Sedighi.

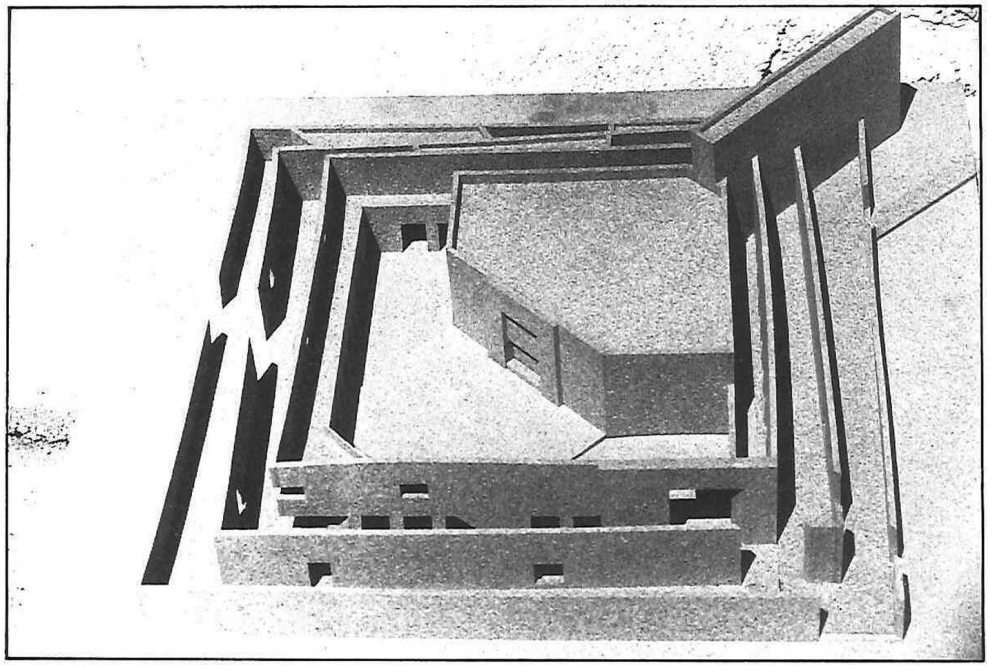


Figure 7.18: the proposed scheme for the Friday mosque of Shushtar-Nou.
Source: *Buildings and Projects* (Stuttgart: Hatje, 1981), 221.

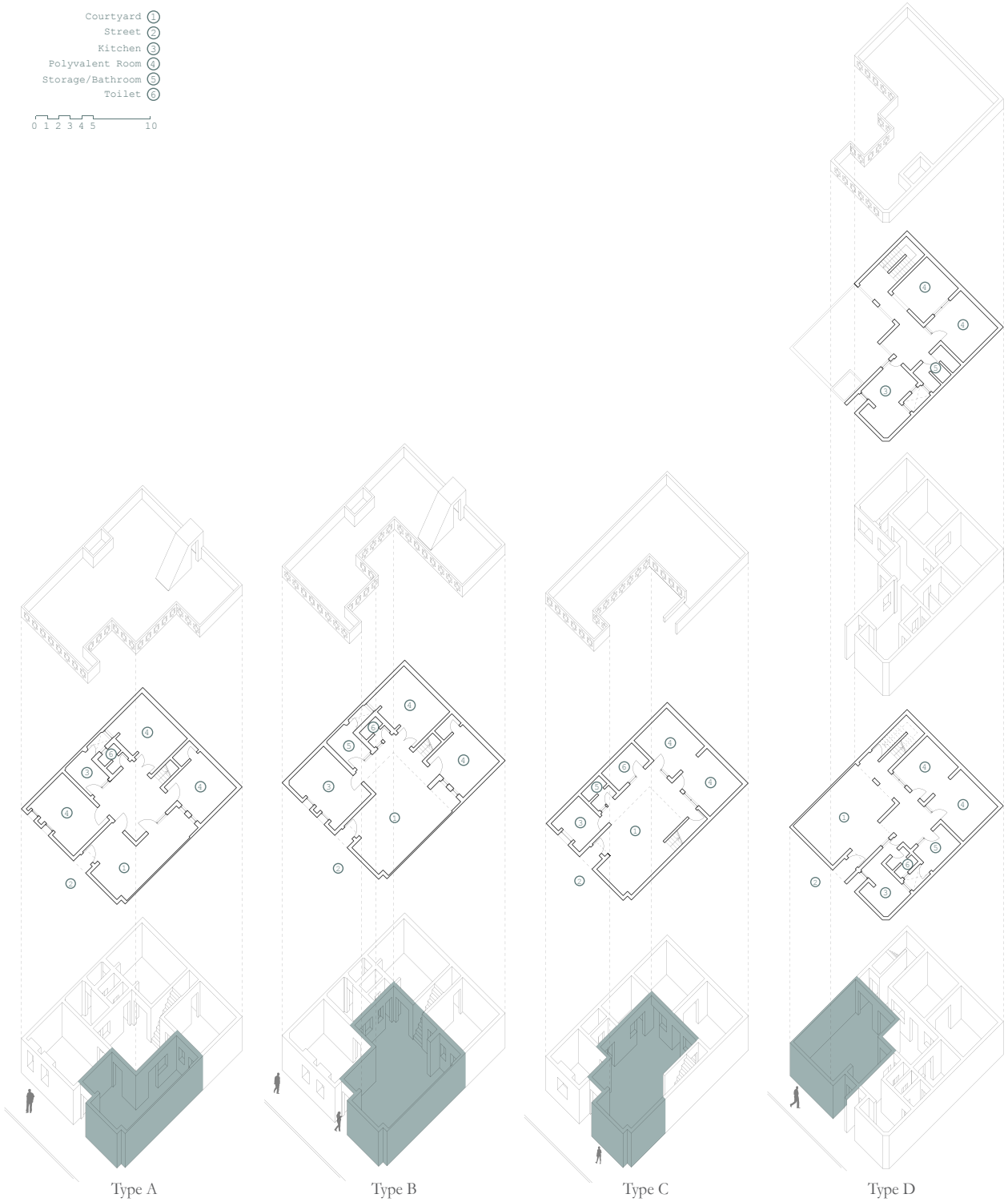


Figure 7.19: the placement of the courtyards adjacent to the public spaces.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

to his post-graduate experience and his critical view on the structure of traditional Iranian society. After graduating in architecture, Diba studied sociology which turned him to a person who is sensitive to the local vernacular environment. This experience influenced him to think not only in the typical mind-set as an architect, but also in a way similar to how a theatre director sets the stage for certain human situations that would provide users with the possibility of engagement and interactions.[66] Diba saw the structure of Iranian society largely based on a division of genders, ethnic groups, religions, and public-private spheres, at urban and domestic scales of space.[67] Aside from these, Diba observed Iranian society as largely individualistic, family-oriented, and anti-community.[68] It comes, thus, as no surprise to see that Diba urged for designing new residential neighbourhoods as places of increased diversity and encounter, especially in the time that social demands of urban life tie people to one another.[69] This vision can also be traced in the design of Shushtar-Nou, where Diba allocated some houses for the people of the old city, to link the new and old city, open the society to the outside, and escape creating an insulated company town.[70]

Diba's social agenda, as Mohamad Reza Shirazi put it, goes beyond the formal and programmatic aspects that define the lifestyle of Iranians.[71] He was also critical of the traditional position of Iranian women in the society. Diba saw traditional women's veil (*chador*) and the introverted layout of traditional Iranian houses as a result of a fanatical insistence on feminine concealment from the eyes of strangers.[72] This fanatical insistence, according to Diba, limited the engagement of women in societal activities, and brought about the separation of sexes and a strong demarcation between private and public spaces. Simultaneously, Diba referred to a traditional woman, wearing the chador and looking at modern arts in a museum as a symbolic phenomenon which represents a society full of contradictions that despite its historical barriers, has a choice to become contemporary.[73] In this view, Diba's architecture might be seen as an attempt to mediate the tensions that co-existed between local and universal values. In response to this desired shift in lifestyle, Diba reconfigured the courtyard house to provide female inhabitants the option to control their level of exposure between the private domain of the home and the public domain of the street.[74] This was done by orienting the courtyard directly adjacent to the streets, with a wall that serves as an operable mediator between these two realms [Figure 7.19].

Human 'relations and encounter' became a main theme in Diba's social agenda. In his essay, '*What Islamic Architetcure Is Not*', Diba contends that urban density would generate dialogues among people and let them negotiate their common issues.[75] To reinforce his claim, he refers to an afternoon ritual in old neighbourhoods in Iran, where women wash the streets in front of their houses, an activity that provides a chance for a chat between neighbours and an opportunity for their children to play outside. In his view, these activities created a feeling of responsibility among

66. *Bagh-I Miane Do Khiaban.*

67. See: Gholamhossein Memarian and Frank Brown, "The Shared Characteristics of Iranian and Arab Courtyard Houses," in *Courtyard Housing: Past, Present & Future*, ed. Brian Edwards, et al. (Taylor & Francis, 2006), 21-30.

68. Diba, *Buildings and Projects*, 11.

69. See: *Bagh-I Miane Do Khiaban.*

70. "A Case Study: Design Concept of Shushtar New Town," in *Housing: Process and Physical Form*, ed. Linda Safran (Philadelphia: Aga Khan Award for Architecture, 1980), 41-44.

71. See: Shirazi, "From Utopia to Dystopia.".

72. *Buildings and Projects*, 11.

73. See: *Bagh-I Miane Do Khiaban.*

74. In the Islamic architecture, the traditional courtyard house types are mostly an "introverted form defined by an open court shielded from the outside by the built spaces" that surround them. For more information about courtyard house types, see: Rabbat, *The Courtyard House: From Cultural Reference to Universal Relevance*, xxi.

75. For more information, Diba, *Buildings and Projects.*

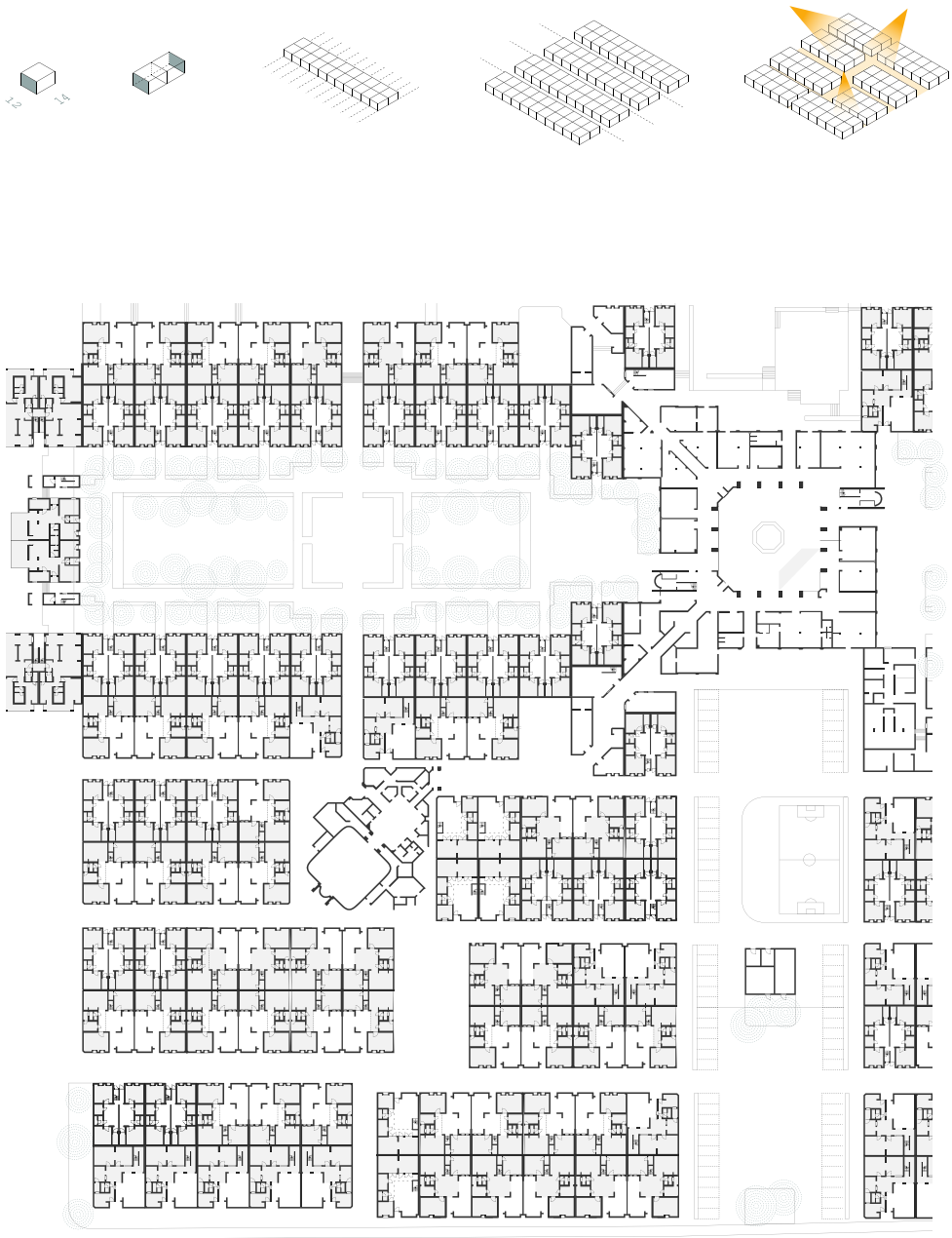


Figure 7.20: the configuration of a neighbourhood structure in Shuhstar-Nou's urban layout.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

the residents of such neighbourhoods and an increased sense of belonging among them to their living environment. Indeed, this explains why Diba considers high-rise residential buildings as a serious enemy of human habitats, especially in the Muslim societies; and he claims that these building types neglect the sense of community by restricting the life of people to their living units.[76] Considering Diba's interest in developing human-scale community models and resisting the overwhelming trend towards modernist approaches to housing development, it is of little surprise that the IICA's debates on the theme of 'Appropriate Habitat' had a substantial impact on his proposal for Shushtar-Nou.[77]

As discussed in the previous chapter, the three main figures of Team X, including Jacob Bakema, Georges Candilis, and Aldo van Eyck, played a central role in fostering the discussions on the theme of human habitat in the 1974 IICA. In their discussions, they put emphasis particularly on the importance of developing a total environment, a theme that can be traced in Diba's proposal for Shushtar-Nou. In an interview conducted by Enayat Fani, Diba conceived his project as an attempt to "articulate and link a series of small units that were structured within a pattern of modular grids, an organised structure of changeable units that forms a total human habitat."[78] Interestingly, this approach strongly resonates with what Bakema defined as a total environment in the IICA.[79] This might also be seen from the parcel layout that Diba employed to organise the structure of neighbourhoods in Shushtar-Nou. In this layout, Diba replicated an identical plot size of 12 by 14 meters, and arranged them in pairs, back-to-back. This gave Diba a comprehensibly changeable structure, which remained independent of its periphery to allow inhabitants the option of eventual adaptation through combining plots in the future.[80] Accordingly, each neighbourhood was designed with four rows of 11-paired houses, and the streets between them provided natural light for and access to the individual houses [Figure 7.20].

Diba's fundamental decision on the choice of construction system also recalls Candilis's approach on the notion of 'Appropriate Habitat'. In the IICA, Candilis clearly expressed the importance of construction techniques that are dependent on available resources for the development of large-scale housing projects.[81] Diba did occasionally used bricks and natural stone as façade cladding in all his projects, but he had a great interest in employing exposed concrete for the materialisation.[82] This labour-intensive and high-tech construction system required a high degree of precision, which can be found in most Diba's projects, such as in Niavaran Culture Centre, Namazkhaneh, and Tehran Contemporary Museum. Interestingly, Shushtar-Nou was one of Diba's first attempts to build the whole structure with available local resources. Moreover, Diba's endeavour to change the initial construction system from pre-fabricated, as described in the design assignment, to in-situ techniques might explain the lessons that Diba learned from Candilis' experiences, in PREVI Housing Lima.

76. "What Islamic Architecture Is Not," in *Understanding Islamic Architecture*, ed. Attilio Petruccioli and Khalil Pirari (New York: Routledge Curzon, 2002), 121.

77. See also: Mozaffari and Westbrook, "Shushtar No'w: Urban Image and Fabrication of Place in an Iranian New Town, and Its Relation to the International Discourse on Regionalism".

78. For more information, see the interview: Enayat Fani, interview by Kamran Diba, 2014. Diba further explained his approach to the notion of creating total habitat in an interview conducted by Mohamad Sedighi in 2019.

79. For more reading, see Chapter 5 and Bakhtiar, *Towards a Quality of Life*, 36.

80. Diba, "Shushtar New Town."

81. For more reading, see Chapter 5 and Bakhtiar, *Towards a Quality of Life*, 237-40.

82. For more information, see: Diba, *Bagh-I Miane Do Khiaban*.

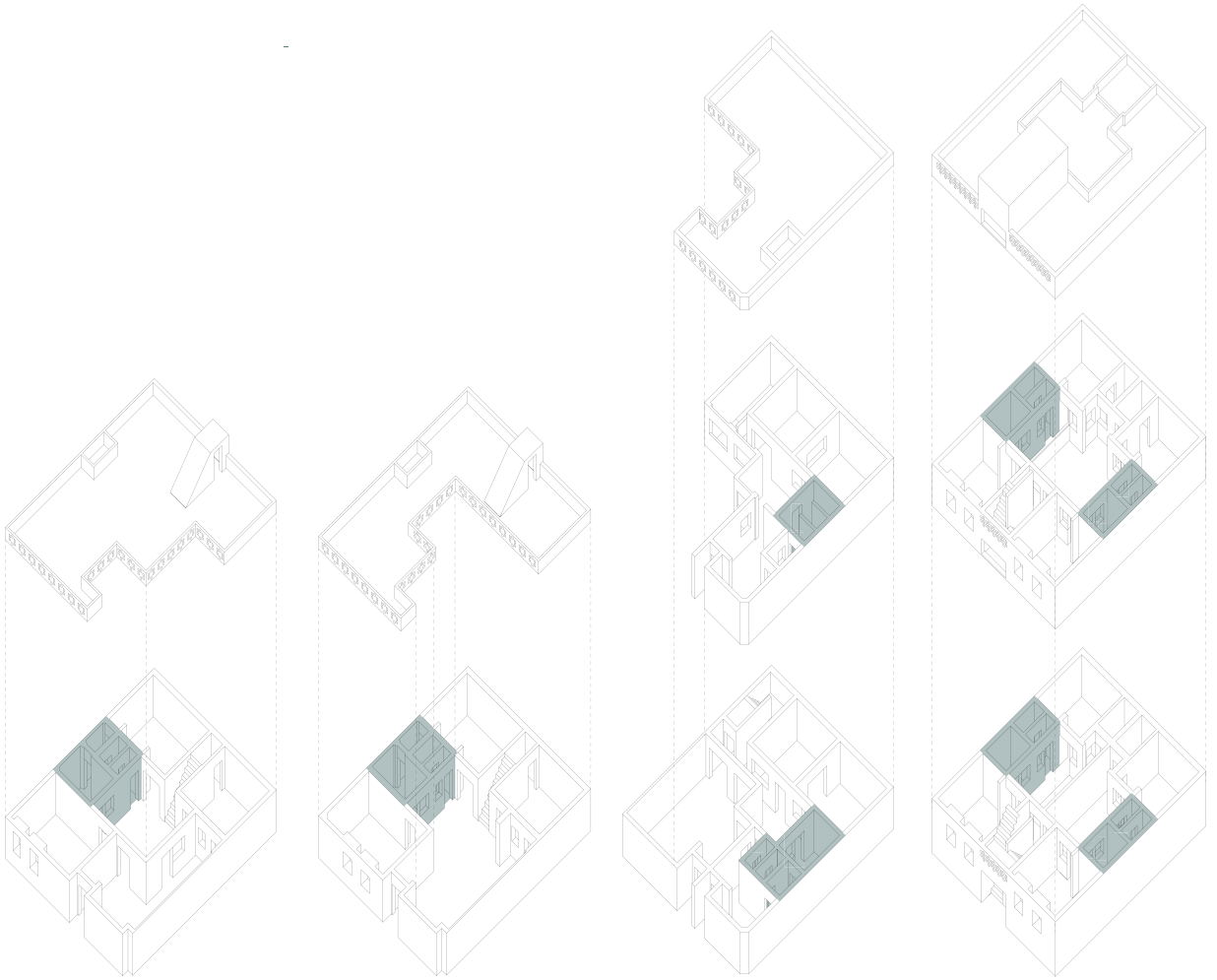


Figure 7.21: the placement of the service space among habitable rooms.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

Shushtar-Nou was built based on a very common and ordinary construction technique that was used often in Iran. Diba chose to select a low-tech construction system with load-bearing brick walls placed on concrete footing, allowing local contractors to hire unskilled labours for the construction. Indeed, this was a strategy Diba employed to accelerate the process of housing production in Shushtar-Nou, since high-skilled workers were mainly involved in large-scale governmental projects in the big cities.[83] Aside from the impact of Diba's decision on local economy, the choice of masonry structure led to the involvement of *Mi'mars* (traditional/local builders) in the process of large-scale housing production. Diba also gave freedom to and encouraged local masons to innovate with ornamental brick patterns on exterior facades where possible.[84] In so doing, it seems that Diba intended to preserve local architectural patterns that were traditionally used in the region of Khuzestan for materialising the exterior façade of houses. Interestingly, the employed motifs formed cohesion between the new houses of Shushtar-Nou and those constructed in the historic city of Shushtar.[85]

The changeability and internal arrangement of individual houses can also be seen as an important characteristic of Diba's scheme. This changeability, as Diba claimed, might enable individuals to form a living environment based on their needs,[86] an approach that recalls Van Eyck's notion of 'inner spaces'.[87] Instead of designing a house as a conglomeration of different rooms with specific functions, Diba developed a series of multifunctional-rooms; so, dwelling layout were mainly a combination of 5-meter by 5-meter, 4-meter by 4-meter and 3-meter by 4-meter spaces. To bring these rooms in a variety of configuration, the service zone, including the bathroom, the kitchen and the water closet, was placed among the habitable rooms as an autonomous unit, forming a frame around which change and transformations could take place [Figure 7.21]. In so doing, each room would accommodate a variety of activities, reflecting a lifestyle that is prevalent among low-income families and rural population of Iran.[88]

The similarities of Diba's design decision-making process and the recommendations provided by the Habitat Bill of Rights testify to Diba's commitment for incorporating both regional identity and the new concept of 'habitat' conceptualised in the 1974 IICA into the development of a new urban community, in Iran. More importantly, Diba's attempts to develop an open-ended total environment illustrates his interest in accommodating growth and change over time, enabling the emergence of new lifestyles with increased levels of social exchange between residents. This community model underwent a series of changes in the past years; however, these changes perplexed some scholars who wrote in-depth reviews and reflection on Shushtar-Nou. For instance, Mohamad Reza Shirazi claimed that the current situation of Diba's project illustrates an initial gap between the architect's utopian vision and the real life of the inhabitants in Shushtar-Nou.[89] Shirazi also referred to the multiple changes that people made in the façade and internal organisation

83. "The Recent Housing Boom in Iran-Lessons to Remember," 41.

84. For more information, see: "Shushtar New Town," *Mimar* 17: Architecture in Development (1985): 52.

85. Ibid.

86. *Bagh-I Miane Do Khiaban.*

87. See, Chapter 5 and Bakhtiar, T*owards a Quality of Life*, 299-302.

88. For more information, see: Diba, *Buildings and Projects*, 196.

89. See: Shirazi, "From Utopia to Dystopia," 120-36.

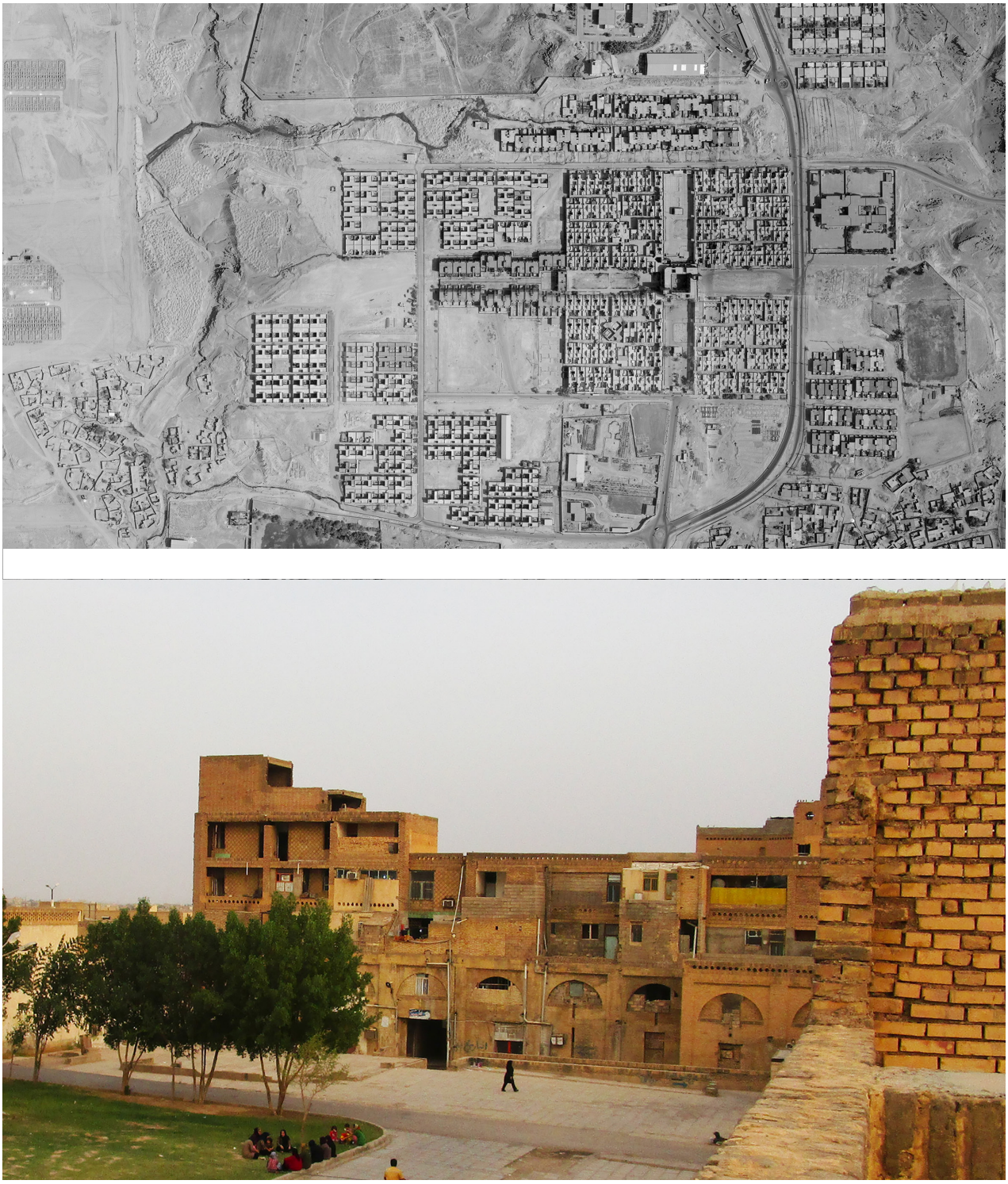


Figure 7.22: the image on the top shows the unfinished urban layout of Shushtar-Nou in 2001. The image on the bottem illustrates examples of changes made by the war refugees in the façade of the hostel building in this project.
Source: Courtesy of Iran's Cartographic Centre. (top); and photograph by Mohamad Sedighi (bottom).

of their houses, to prove his claim.[90] In the following section, I will show how Diba deliberately designed an open-ended structure and examine to what extent his design decisions contributed to facilitate growth and change, in Shushtar-Nou.

Shushtar-Nou's Growth and Change

Shushtar-Nou's design and development was a preliminary attempt of the Iranian government in the 1970s to house a large group of urban poor in the city. This housing project was initiated in a time when the state-led modernisation programme was greatly focused on the provision of upper- and middle-class housing, rather than improving the widespread poverty in Iran.[91] The first phase of Shushtar-Nou, in fact, was completed in late 1978; but the Iranian Revolution of 1979 disrupted the development of Diba's model habitat. By the time of the revolution, a large number of unprivileged Iranians did not have a proper house to live, and housing low-income families of workers and of civil servants still remained a main issue of the Iranian government.[92] Both the urban poor and other social groups saw this situation as a result of the Shah's Western-oriented modernisation, mobilising them against the Pahlavi regime under the leadership of Ayatollah Khomeini in 1978-1979.[93] Shushtar-Nou, thus, became a late cure for the issue of housing the urban poor, particularly based on their local patterns of inhabitation, in Iran. Diba's model habitat never gained the chance to be fully realised, and just over 650 out of 6500 dwellings were built by 1985 [Figure 7.22].[94]

Moreover, the eight years of war between Iran and Iraq (1980-1988) dramatically changed the public image of this project. In the absence of Karun Argo-Industries Corporation (KAIC) administrative control, part of Shushtar-Nou was occupied by the war refugees. The empty hostel rooms, constructed on the top of a small plaza that was initially meant to accommodate daily open markets in Shushtar-Nou, became a new home for the refugees. They turned these temporary guest rooms to their habitable spaces for everyday activities; and they partly changed the façade of the building, mainly the windows and openings, for the matter of privacy.

Despite these unforeseen changes and challenges, this project has accommodated a collective community with a strong sense of belonging.[95] In a recent study published in the Iranian journal of *Shahret*, it was shown that the existing social-bond among the residents of Shushtar-Nou played a crucial role in creating a secure and safe living environment. In addition, this study explained how a participatory spirit among the residents contributed to resolve many urban issues such as limited access to public facilities.[96] In many cases, the extent of social participation in an urban project is largely dependent on the design decisions

90. Ibid.

91. For more reading, see: Ali Mirsepassi, *Intellectual Discourses and the Politics of Modernization: Negotiating Modernity in Iran* (Cambridge: Cambridge University Press, 2000), 74.

92. Rana Habibi, "Modern Mass Housing in Tehran: Episodes of Urbanism 1945-1979" (KU Leuven, 2015), 197-98.

93. For more reading, see: Mirsepassi, *Negotiating Modernity in Iran*, 57.

94. Hassan-Uddin Khan, "Introductory Essay - Expressing Identities through Architecture, from Colonialism to Pluralism," in *World Architecture 1900-2000: A Critical Mosaic*, ed. Kenneth Frampton and Hassan-Uddin Khan (Wien, New York: Springer-Verlag, 2000), 151.

95. Micara and Salomone, "Shushtar New Town: The Idea of a Community - Interview with Kamran Diba."

96. Published in the Iranian journal of *Shahret* (Your City) in 2016, this research was the results of a site survey, conducted by a group of students at Tehran University. See: Golnoosh Mozafari, "Shahr-E Harf-Haye Magoo: Shushtar-Nou," [The City of Untold Stories: Shushtar-Nou.] *Shahret: Nashriye-ie Darbareye Shahr* 6, no. Shahr va Jorm [City and Crime] (2016): 20-23.

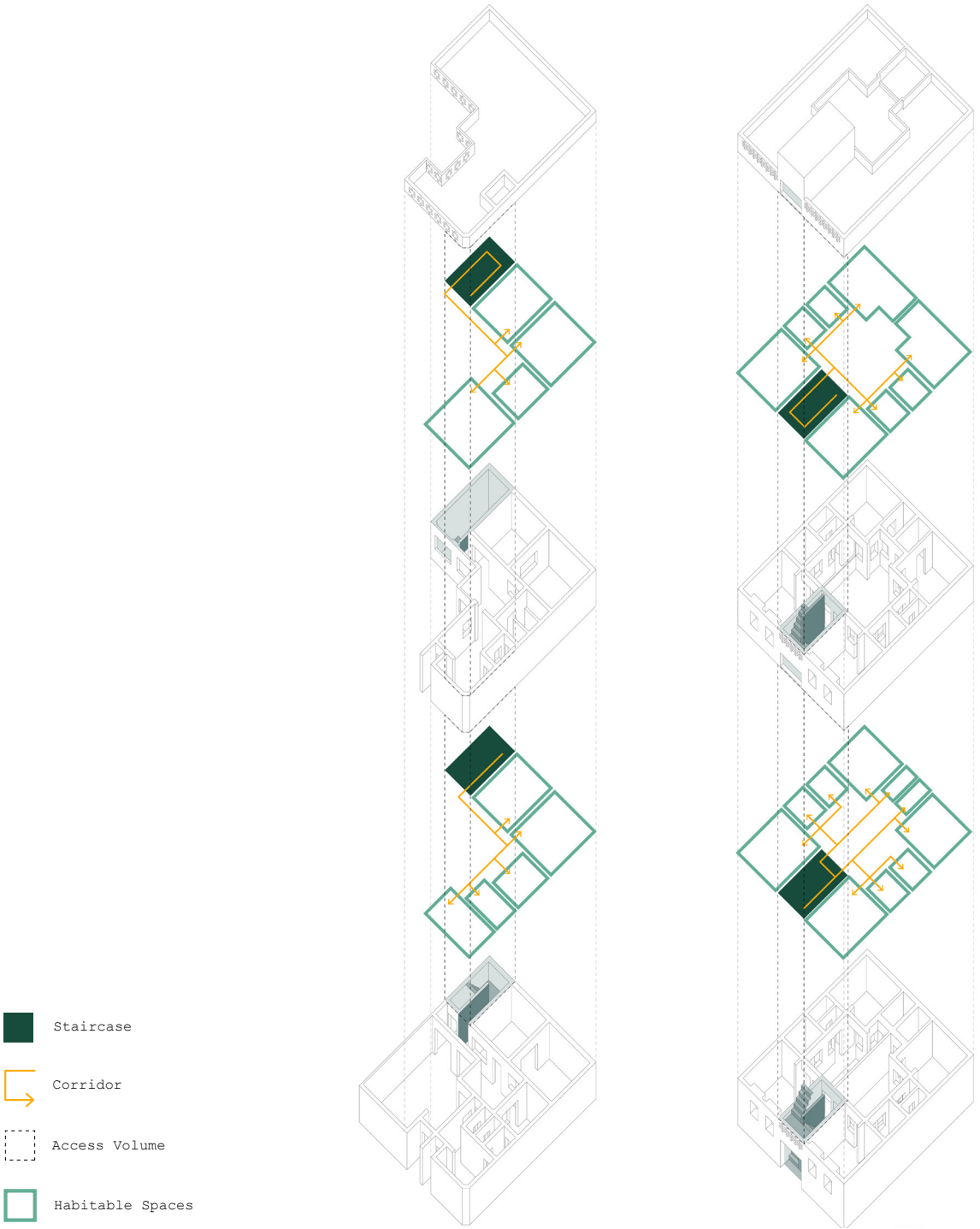


Figure 7.23: the access system accommodated the residents' aspiration to have an independent connection with the public space.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.

that would cater for both individual initiatives and user autonomy, as Christopher Alexander put it.[97] Arguably, Diba's model habitat for Shushtar-Nou included a few characteristics that might have greatly triggered and facilitated participation in the development of this urban community model.

First, it can be argued that the integration of the access system as an autonomous entity into the spatial layout of dwellings was essential to stimulate individual initiatives and achieve user autonomy. For instance, in the two-story house types, the access system accommodated the residents' aspiration to have an independent connection with the public space. In this system, the staircase was placed between the private interior and public exterior realm, giving all dwelling units a direct access to the street; and the internal gallery was designed adjacent to the courtyard to connect independently all interior spaces to the front door. In so doing, the inhabitants were able to use separately their private indoor spaces, without interfering one another [Figure 7.23]. This spatial configuration also allowed the residents to partly utilise the gallery as an extension to their internal spaces. As a result, some chose to integrate the access system into the interior layout of their houses, and some modified it for other purposes, such as a storage area or a small balcony [Figure 7.24].

Second, employing the idea of the courtyard as an intermediate space became instrumental to accommodate change in Diba's proposal. In one-story house types, for instance, the courtyard became the point of departure for further modifications to the layout of houses. In general, residents chose to expand their indoor habitable spaces towards the courtyard. While some used part of the courtyard as private parking space, the others mostly took advantage of the courtyard as an outdoor room for their daily activities such as cooking or sleeping. Surprisingly, in all cases, a small part of the courtyard remained intact for gardening [Figure 7.25], which testifies to what Shahcheraghi described as the very characteristic of the Iranian house. While, the intermediate character of the courtyards, as a space between private indoor and pubic outdoor realm, enabled people to bring a variety of changes in the internal layout of the dwellings, it also created a sense of malleability and incompleteness. This, indeed, formed a balance between individual expression and sufficient architectural standardisation, a characteristic that resonates with the notion of open-endedness, as Peter Rowe put it, that would enable the user of space for self-determination in prescriptive housing development.[98]

This ability for self-determination can be traced from the individual initiatives taking place around the communal gardens. As a buffer zone between public and private realms, Diba designed a series of front gardens next to the entrance area of the two-story houses for small families. Surprisingly, Diba did not choose to fence-off these gardens, a decision that created an ambiguity in terms of

97. Christopher Alexander, Sara Ishikawa, and Murray Silverstein, *A Pattern Language: Towns, Buildings, Construction* (New York: Oxford University Press, 1977).

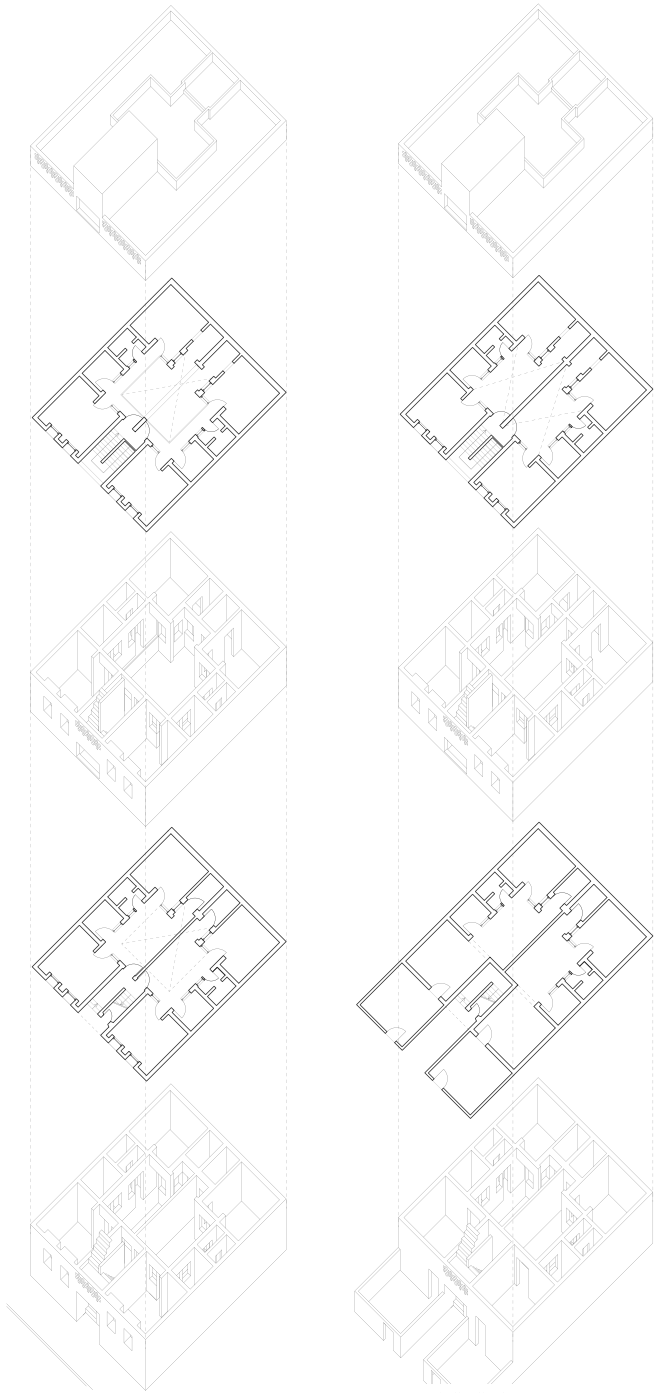
98. Peter Rowe describes open-endedness as balance between self-determination on the part of prospective inhabitants and technical decision making capable of exploring useful options. Accordingly, this concept has reasonably narrow limits in a world of conventions, making a case for building explicitly and well. This description is taken from: Rowe, *Modernity and Housing*, 285-88.



Figure 7.24: the modification of the access system and internal layouts in two-story house-types.
Source: Photograph by Mohamad Sedighi (right); and Mohamad Sedighi in collaboration with Federico Pellegrini (left).



Figure 7.25: the courtyards as a new outdoor room for domestic activities.
Source: Photograph by Mohamad Sedighi.



Before

After



Before



After

Figure 7.26: many residents of Shushtar-Nou chose to wall-off the buffer zone between public and private space in front of their houses, which added a new component to the internal organisation of their home.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini (left & bottom-right); and *Buildings and Projects* (Stuttgart: Hatje, 1981), 185 (top-right).

ownership. Residents were given the ability to choose between leaving them as an extension of public space or enclosing these spaces as private property. Many residents chose the latter, adding a new component to the internal organisation of the home. In most cases, enclosing the gardens changed the access system of the home by providing a direct connection to the indoor private spaces on the ground floor [Figure 7.26]. Originally, in these house types, a central courtyard provided access to the habitable rooms on the ground level. By replacing the front door, from the central to the newly established front courtyard, the inhabitants gained an opportunity to cover the internal courtyard and use this space as their new living room. The covered courtyard also formed the basis of a patio on the second level, enabling the residents of the upper dwellings to use this outdoor space as an extension of their living areas.

Third, Shushtar-Nou has simultaneous sense of being complete and unfinished. While the internal organisation of houses is carefully designed and realised, it also enables growth and change in the interior arrangement of the house. As shown previously, the courtyard allows the extension of living areas; and the design of multifunctional rooms enables the inhabitants to alter their living environment. Indeed, interchangeability of the habitable rooms has helped to accommodate different lifestyles and domestic activities, such as sleeping, cooking, living, or dining, while the exterior façade was thoroughly erected, but also left seemingly incomplete. As mentioned earlier, the local masons partly decorated the facades with brick patterns. Yet, some parts were intentionally left blank so that the future users could finish the materialisation of the facades with their motifs. It is, thus, not surprising why these blank areas were later painted, decorated, or materialised differently, enabling the residents' opportunities for self-expression [Figure 7.27]. The front garden of two-story houses was built without trees and walls. More trees and greenery appeared instead around the edges of public spaces, when people walled-off and maintained their front gardens, a change that partly transformed the image of central communal spaces in Shushtar-Nou. Originally trees were only placed in public squares, however, over time inhabitants gradually claimed these front gardens by surrounding them with walls and later planted trees in them. This leads to a new image of the town, with trees no longer being exclusive to squares, but also appearing on the edges of public space.

Fourth, a change in the land-ownership system of Shushtar-Nou played an instrumental role in increasing social participation and the development of the project. This can be seen not only from the residents' ability to modify their individual houses, but also from the evolution of communal gardens in Shushtar-Nou. Before the 1979 Iranian revolution, the public gardens of Shushtar-Nou were partly realised, and the KAIC was responsible for the construction and maintenance of public amenities and private houses. The Iran-Iraq war partly destroyed the public amenities, mainly the communal gardens of Shushtar-Nou,



Figure 7.27: the modification of facades by the inhabitants of Shushtar-Nou (top); and the emergence of more greenery around the edges of public spaces.
Source: Photograph by Mohamad Sedighi.



Figure 7.28: the situation of Shushtar-Nou in 2005 without and in 2015 with public gardens.
Source: Photograph by Mohamad Sedighi.

and the KAIC left the project unattended for a long period of time. Moreover, the financial instability of the company in the 1990s exacerbated the situation and delayed the reconstruction of communal amenities and public spaces in Shushtar-Nou.[99] These challenges brought the KAIC to a conclusion that convening the ownership of houses to their inhabitant would release the company from a considerable cost of the maintenance and accelerate the process of reconstruction.

This decision was implemented in the late-1990s, finally, resulting in a set of radical changes and modifications in the urban and dwellings layout of Shushtar-Nou, as explained previously.[100] Undoubtedly, the change in ownership system created a new platform for the engagement of people in the development of public spaces. This can be seen, particularly from the changes taking place in the image of public spaces. Since the early-2000s, the residents of Shushtar-Nou have spontaneously begun to plant seeds and vegetation in the places that former communal gardens were erected. As a result, the communal gardens, for instance, have become a place full of trees, a place that would re-engage people with their living environment, and facilitate certain leisure activities [Figure 7.28]. Indeed, this sense of ownership created a form of social responsibility among the residents, mainly in the absence of a central managerial figure; so, individual families worked together out of necessity to reorganise their living environment.[101] This collaboration continued even after the formation of a local municipality in Shushtar-Nou, where through a close and productive cooperation between the inhabitants and municipal agencies, greenery was maintained, the facades were renovated and street paving was replaced.[102] These achievements testify to a participatory spirit among the residents of Shushtar-Nou that was inspired by a design mechanism that allowed for continual growth and change, over time.

Eventually, Diba's architectural language in general and his scheme for Shushtar-Nou in particular became a source of inspiration for designing new housing projects in the post-revolutionary Iran. These influences can be seen, especially from the design proposals submitted to the first national competition on the theme of 'habitat', held in 1989. As the competition brief clearly pointed out, the purpose of the project was to "instil architecture of housing with 'Islamic and cultural values' in accordance with the ideology of the 1979 Islamic Revolution".[103] The competition's brief additionally recommended that participants focus on the preservation of cultural continuity from the roots of Islamic-Iranian values, while trying to avoid pastiche references to pre-modern Iran. Accordingly, it is no coincidence that many of the schemes submitted to the competition directly resembled Shushtar-Nou's urban form and layout, as well as the concepts of Diba's architecture. As observed by Ali Mozaffari and West Brook, the third-placed project, submitted by the Tajeer Architecture Group,[104] for the historic city of Isfahan resembles Shushtar-Nou's layout with the Chahar-Bagh like pedestrian street, and its structuring of dwellings around public courtyards.[105]

99. Shirazi, "From Utopia to Dystopia," 120-36.

100. Mohamad Sedighi, interview with Mohamad Rashidi (the municipal contractor in Shushtar-Nou), 2015..

101. See: Micara and Salomone, "Shushtar New Town: The Idea of a Community - Interview with Kamran Diba," 152.

102. Rashidi, "Shushtar-Nou."

103. The civil society movements played a key role before and during the 1979 Iranian revolution, triggered by religious leaders. Islamic intellectuals including non-clerics and clergies (ulama) worked hand-in-hand with leftist parties such as the liberal-nationalist party (*Nehzat-e Azadi*) and the socialist-communist party (*Tudeh*) to counteract the Shah's top-down modernisation. By initiating these movements, they set a basis for protest against their diminishing right to the city. The 1979 revolution brought an end to this situation, and the new government aimed to halt the projects promoting Western ideals. The slogan, 'neither West, nor East, Islamic Republic' is a clear representation of their ideologies. By promoting the idea of the 'Islamic Democratic Republic of Iran', the new government aimed to promote the idea of a modern Iran based on rooted Islamic-Iranian values, and to secure the rights of all social classes to the city and related amenities. For more reading about the ideology of the 1979 Islamic Revolution in Iran, see: Ervand Abrahamian, *Iran between Two Revolutions* (New Jersey: Princeton University Press, 1982). And Charles River Editors, *The Iranian Revolution : The Islamic Revolution That Reshaped the Middle East* (San Bernardino, CA: Createspace Independent Publisher, 2014). Furthermore, for more information about the competition brief, see: Ali Mozaffari and Nigel Westbrook, "Designing a Revolutionary Habitat: Tradition, Heritage and Housing in the Immediate Aftermath of the Iranian Revolution - Continuities and Disruptions," *Fabrications* 28, no. 2 (2018).

104. In 1980, the Tajeer Architecture Group was established by Ali Akbar Saremi, a close friend of Kamran Diba. Saremi graduated as an architect from the Faculty of Fine Arts, University of Tehran, in 1968. Saremi followed a doctoral programme in the University of Pennsylvania under the supervision of Louis Kahn; he earned his PhD degree in 1976.

105. For more reading, see: Mozaffari and Westbrook, "Designing a Revolutionary Habitat: Tradition, Heritage and Housing in the Immediate Aftermath of the Iranian Revolution - Continuities and Disruptions.".

Conclusion

Shushtar-Nou's design and development illustrated an attempt of a group of young-leading Iranian architects, in particular Kamran Diba, to mitigate the impact of Western imported housing models on Iran's vernacular architectural culture. It depicted an alternative way of adapting modernism to the architecture of dwelling, in Iran. Indeed, Shushtar-Nou was a reaction to the external pressures of foreign actors in the country, at a time when the dominant building and construction style was irrelevant to the lifestyles of Iranians.[106] As a result of high oil revenues in the 1970s, industrial or prefabricated housing was proposed as a quick solution to meeting housing needs. Diba tried to resist these influences and introduce new perspectives on the design of dwelling and human habitat. Diba's architectural vision particularly focused on designing compact urban form and total urban layout, on social planning and cultural programming, and on developing both innovative and experimental housing shemes.[107] Conspicuously, Diba's architectural vision had a fourfold character in Shushtar New Town: 1) negotiating the desires of the decision makers; 2) deconstructing local cultural and traditional societal values; 3) challenging the modernist logic of planning and design; 4) enabling users' participation in developing human habitat. The method of incorporating these characteristics was primarily through Diba's act of reinterpreting the design of public housing by using Ardalan's theory of the New Creation and the notion that Shushtar-Nou should be thought of as a 'community package' rather than as 'housing'.

Indeed, Diba's model of Shushtar-Nou calls for a balance in the use of modern planning logic and that of traditional settlement structures, where citizens have control over their community's social and physical environment. This balance was created by a 'unique' and 'creative' response to place and climate [Figure 7.29], and through a novel synthesis of two approaches discussed in the 1974 IICA: critical reinterpretation of archetypal elements and developing an open-ended total environment. In this view, the logic of total habitat and planning became critical for creating cohesion in Diba's community model. This logic, as pointed out by Diba in an interview with Mohamad Reza Shirazi, was also essential for transcending the chaotic pattern of rural-urban land ownership that resulted in an incremental growth of individual houses over decades often in response to the position of the sun or immediate neighbours, jeopardizing the existence of public outdoor spaces.[108] Simultaneously, the act of reinterpretation contributed to generating a discursive space for exchange and dialogue, and to stimulating awareness in the community of its common experiences.

Diba enabled this synthesis by encouraging new social encounters throughout his design. This was done primarily by designing the layout of neighbourhoods without trees, and by placing the gardens outside of the neighbourhood's

106. Kamran Diba, "Shahrak-E Shushtar Dar Nemaieshgah-E Jahani," [Shushtar New Town in the World Expo.] *Me'mar* 01 (1998): 87.

107. See also Shirazi, *Contemporary Architecture and Urbanism in Iran*, 53.

108. Shirazi, *Contemporary Architecture and Urbanism in Iran*, 111.

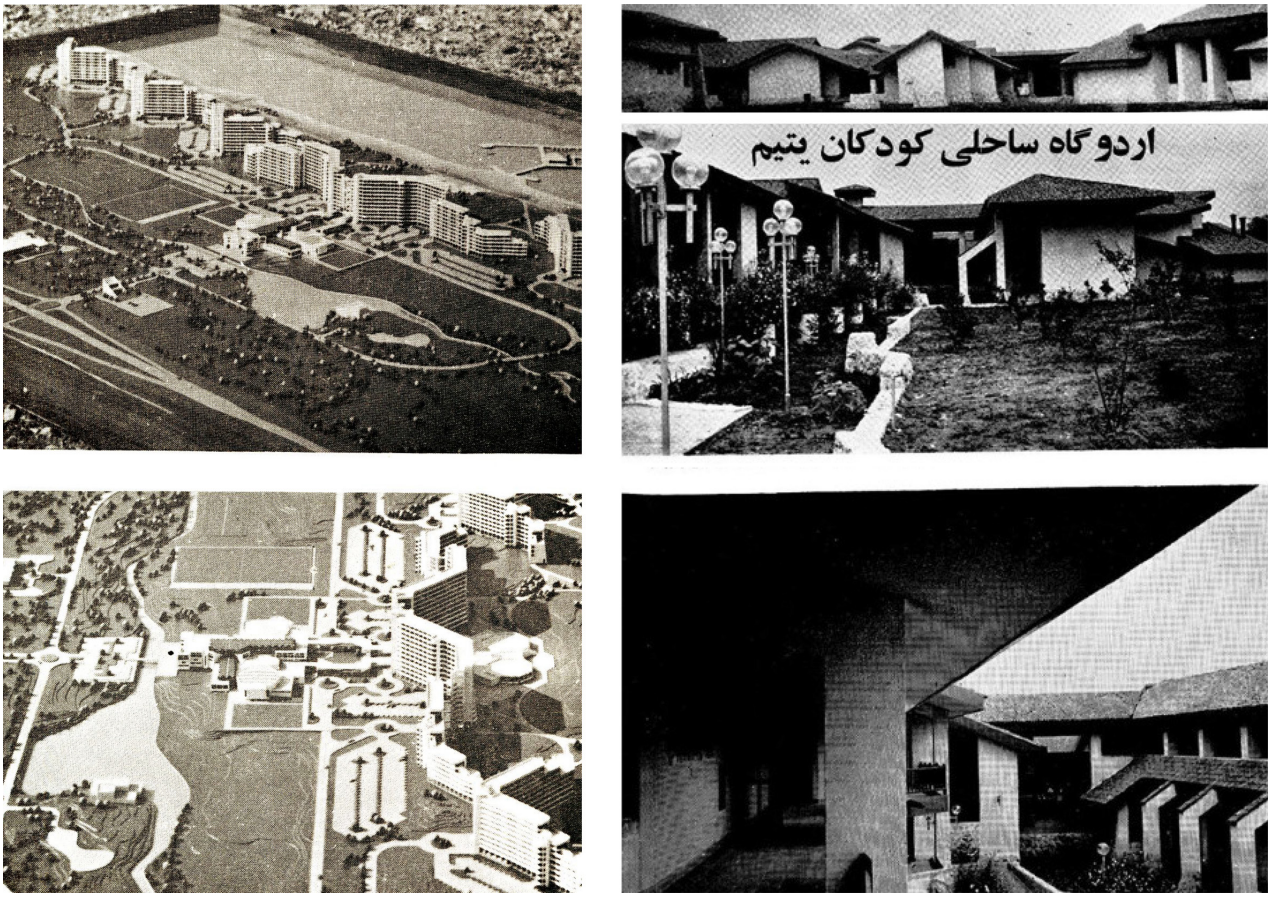


Figure 7.29: the Mahmoud-Abad project (left) and Orphanage Village (right) designed by Kamran Diba showing different approaches and responses to the site and context.
Source: *Honar va Memari* 8, no. 33-34 (1976): 34 (left); and *Honar va Memari* 1, no. 3-4 (1969): 80-81 (right).

fabric. Accordingly, the act of reinterpretation was based on deconstructing the concept of the 'Persian Garden'. Traditionally, the gardens were erected as private compounds, and the garden's walls were constructed as solid elements to segregate the private interior from the public exterior. However, in Diba's model, the walls lost their solidity and became a habitable space, where a cluster of houses formed an enclosure embedding a garden in it. Thus, instead of designing walled gardens with restricted access, the gardens became integrated with the main pedestrian route that connected all communal amenities, generating a pleasant place for outdoor activities and leisure. The integration of gardens with the street was instrumental to encourage outdoor urban life in the harsh climate condition of Khuzestan; but this integration also reminisced the idea of *Chahar-Bagh*, bringing forth some shared remembrance of the past to present experiences, which would eventually trigger the 'collective memory' of people in association with familiar objects, settings, and places, as Aldo Rossi put it.[109]

While Diba's habitat model was never completely built and it underwent multiple changes,[110] the project gained an excellent reputation.[111] In 1986, Shushtar-Nou was awarded the Aga Khan prize; and the jury described Diba's model as:

> "relevant to the cultural values of Iran and maintains a continuity with the past, allowing cultural expression. Its example of urban housing is unique as a new town conceived and produced by local designers and builders attempting to satisfy indigenous lifestyles and contemporary goals of industrial development".[112]

This statement, regardless of Shushtar-Nou's failure or success in creating an appropriate habitat, reflects Diba's pivotal role of promoting the concepts of architectural regionalism for the design of dwellings in Iran. The Jury's interpretation of Shushtar-Nou also reflects Lefaivre's and Tzonis' belief that the events taking place in the 1970s Iran were an essential part of understanding the emergence of a new regionalist discourse in the discipline of architecture, in the 1980s.[113]

Although Shushtar-Nou was influential immediately after its creation as well as during the early post-revolutionary period, Iranian architects and decision makers quickly forgot the ideas of Diba's habitat model as well as the Habitat Bill of Rights. Only a select few architects, such as Seyed Hadi Mirmiran and Ali Akbar Saremi, continued to include these notions in their work.[114] One of the main culprits of this shift in attitude was the government's market led approach to solving the housing shortage in the mid-1990's that was led through the so-called 'Building Small' strategy.[115] This strategy was meant to provide housing for low-income residents that lost their home during the Iran-Iraq war. While these new construction projects did provide the basic definition of a house, they

109. In his famous book, *L'Architettura della cittá* (the Architecture of the City), Aldo Rossi described the deepest structure of urban artefacts, and thus, their form as the architecture of the city, and claimed that "the soul of the city comes the city's history, the sign on the walls of the municipium, the city's distinctive and definitive character, it memory." Then, Rossi argued that "the city itself is the collective memory of its people, and like memory it is associated with objects and places. The city is the locus of the collective memory." For more information, see: Aldo Rossi, *The Architecture of the City*, Oppositions Books (Cambridge, Massachusetts, and London: MIT Press, 1984), 130.

110. Khan, "Introductory Essay - Expressing Identities through Architecture, from Colonialism to Pluralism," 151.

111. Diba's community model was widely published in various international journals. Based on the publication year, the most outstanding ones were: Architectural Review, Vol. CLXII, No. 965, July 1977; Progressive Architecture, January 1978; Domus, No. 579, February 1978; Architecture d'Aujourd'hui, February 1978, Vol. 195; Progressive Architecture, May 1978; Architecture d'Aujourd'hui, October 1979, Vol. 205; Progressive Architecture, October 1979.

112. Ismail Serageldin, *Space for Freedom: The Search for Architectural Excellence in Muslim Societies* (London, Boston, Singapore, Sydney, Toronto, Wellington: Butterworth, 1989), 165.

113. For more information on the emergence of a new regionalist discourse in the 1980s, see: Liane Lefaivre and Alexander Tzonis, *Architecture of Regionalism in the Age of Globalization: Peaks and Valleys in the Flat World* (Abingdon: Routledge, 2012).

114. Seyed Hadi Mirmiran, a close friend of Kamran Diba, was a founding member of Naghsh-e Jahan Pars Consulting firm, in Iran (NJPC). Mirmiran graduated as an architect from the Faculty of Fine Arts, University of Tehran, in 1968.

115. The first 5-year national strategic planning, approved under the post-revolutionary government after the Iran-Iraq war in 1989, focused on the rebuilding strategies and on the provision of small-size apartment units with a mass production approach to overcome the housing shortage of the post-war period, in Iran. for more reading, see: Abdi, Mehdizadegan, and Kordi, *Six Decades Housing Planning.*



Figure 7.30: the project of Navab, built between 1991 and 2000 indicates a primary result of the new housing policy approved by the post-revolutionary Iranian government.
Source: https://www.kayson-ir.com, accessed June 2017

failed to supply a 'strong' sense of community as their concentration was on mass-production of small apartment units, as well as employing industrialised building techniques for rapid development [Figure 7.30].[116] This quantitative approach has been the foundation of housing policy in the post-revolutionary Iran until present day.[117] It seems that today, more than ever, both architects and decision-makers need to re-visit the guidelines of the Habitat Bill of Rights, in order to initiate projects that respond more sensitively and creatively to their context, and to afford adequate public spaces to urban residents, a condition that would cater for the architecture of appropriate habitats, as the Greek-French architect, Georges Candilis stated in the 1974 IICA.[118]

116. See: The Study Group of Rahpou Sakht Sharestan Company, *Arzyabi Maskan Mehr* [The Assessment of Mehr Housing Scheme] (Tehran: Azarakhsh, 2013).

117. See: Habibollah Zanjani, "Housing in Iran," in *Encyclopedia Iranica*, ed. Ehsan Yarshater (Winona Lake: Eisenbrauns Inc., 2004).

118. In the second Iran International Congress of Architects, held in Shiraz (1974), Georges Candilis made a distinction between building houses and developing human habitats. He claimed that constructing houses alone, isolated from everything around it, cannot endure and provide appropriate condition for living. Referring to the experiences gained in the development of PREVI housing in Lima, Peru (1967), he argued that for creating appropriate habitats, the house must be seen in its totality to provide certain forms of relationships among people, with their living environment, and to local context. See: Georges Candilis, "Appropriate Habitat," in *Towards a Quality of Life: The Role of Industrialization in the Architecture and Urban Planning of Developing Countries - Report of the Proceedings of the Second International Congress of Architects, Persepolis, Iran, 1974*, ed. Laleh Bakhtiar (Tehran: Hamdani Foundation, 1976), 237-38.

• Epilogue

The Architecture of Appropriate Habitats[1]

In this dissertation, I studied the relationship between the practice of architecture and the everyday life of ordinary people, through the lens of 'dwelling'. I discussed the influence of the Cold War oil-led geopolitics on the architecture of dwelling, and revealed the roles that the agency of the dweller performed in the transformation through time of some experimental housing districts, developed by modernist Iranian architects, in Iran's period of high-modernisation. Further, I illustrated how these housing schemes accommodated growth and change over time, and examined the roles that the architects of these projects played in both promoting and fostering a place for belonging and togetherness, where one has the ability to link themselves with their fellow members of society. This was, indeed, demonstrated through the investigation of five state-funded large-scale housing models that were initiated in Iran's period of high-modernisation stretching from the aftermath of World War II to the 1979 Iranian Revolution.[2] I argued that in developing these public housing projects, Iranian architects who were mostly educated in the West, played an instrumental role in implementing people's need and the state's socio-political agenda for modernising the nation that eventually evolved the paradigms of domesticity and housing in the country. However, these architects employed an innovative approach to the incorporation

1. The term 'Appropriate Habitat' is borrowed from the title of a speech given by Georges Candilis at the second Iran International Congress of Architects, held in Persepolis-Shiraz (1974). In this event, Candilis made a clear distinction between building houses and developing human habitats. He claimed that constructing houses alone, isolated from everything around it, cannot endure and provide appropriate condition for living. Referring to the experiences gained in the development of PREVI experimental housing in Lima, Peru (1967), he argued that for creating appropriate habitats, the house must be seen in its totality to provide certain forms of relationships among people, with their living environment, and to local context. See: Georges Candilis, "Appropriate Habitat," in *Towards a Quality of Life: The Role of Industrialization in the Architecture and Urban Planning of Developing Countries - Report of the Proceedings of the Second International Congress of Architects, Persepolis, Iran, 1974*, ed. Laleh Bakhtiar (Tehran: Hamdani Foundation, 1976), 237-38.

2. In his seminal book: *Iran's legacy of Modern Architecture*, Eskandar Mokhtari, a well-known Iranian architectural historian, described the years between 1945 and 1979 as the period of high-modernisation, in Iran. According to Mokhtari, the present reality of most Iranian cities and urban regulations rooted in this period, when the government used state-led large-scale housing projects (public housing) as a tool for urban transformation to disseminate a notion of 'modern' living among Iranians. For more reading, see: Eskandar Mokhtari Taleghani, *Miras-E Memari-E Modern-E Iran* [Iran's legacy of Modern Architecture] (Tehran: Fekr-e Nou, 2011).

of some vernacular socio-spatial patterns of inhabitation, and local archetypes such as *Khaneh-Bagh*, *Meydan-Bagh*, and *Chahar-Bagh,* into their housing solutions to establish a system of relationship between inhabitants and their living environment. Creating a sense of familiarity with the built forms, this creative integration catered for the involvement of urban dwellers in the development and transformation of their living environments. Moreover, the iconographical and historical analysis showed how these housing projects reflected the attempts of Iranian architects to translate, challenge or mitigate the visions and realities of the state and general public in the built environment.

Modernity and Housing in Iran

While Iran's process of urban modernisation started in the early-1800s, it gained a real momentum in the aftermath of the second Word War. Sharing similar characteristics with the transformation of other Middle Eastern countries, the Iranian project of modernisation greatly accelerated under the oil-led geopolitics of the Cold War. This brought about changes in the socio-economic and political structure of Iran, and eventually triggered a shift of paradigm in both the design of public housing and the architecture of dwelling. In this study, I argued that in Iran's context of the Cold War period, the architecture of dwelling represented a dual characteristic. While initially used as an instrument of modernisation by the Iranian government, the architecture of dwelling became both a place of resistance against societal changes by urban dwellers who actively transformed their living environments, and simultaneously, a key vehicle to promote a shift of paradigm in terms of local customs and habits, by Iranian architects.

This dual characteristic was shown through the investigation of five experiential housing projects. The architects of these five schemes used the architecture of dwelling as a mediator between the state's ambitions of modernisation and local culture, aiming to both preserve and transcend some traditional premises of everyday life and to disseminate a notion of 'modern' living through public housing development. In other words, I argued that European-educated Iranian architects fulfilled the mediator role between Western standards of living and Iran's local patterns of inhabitation; so, while promoting cross-cultural exchanges, they persistently challenged old concepts and values. As shown through an-in-depth analysis of the case studies, their approach to architectural modernity was not based on eliminating traditional values, but rather, on deconstructing and (re) interpreting them to design new housing schemes.

In the process of design decision making, this approach to the architecture of dwelling necessitated a dual role for architects in recreating vernacular socio-spatial

patterns of inhabitation. This duality of role was created through negotiating the desires of decision makers, mainly those of the state's socio-political agenda for modernising the nation and the objectives set by public housing policies, and through challenging the modernist logic of planning and design by incorporating local archetypes into the proposed housing solutions. Eventually, these solutions accommodated the ever-changing needs of their residents, either at architectural or urban scale. As illustrated in this study, this process of negotiation and integration took place in different forms, and was experienced at various moments during Iran's period of high-modernisation.

Multiple forms of modernity pervaded the country in different time periods, but took place in the same geopolitical location. As observed by Seyed Mohsen Habibi, three forms of modernisation (i.e., the Centralisation, Urbanisation, Westernisation) took place between 1941 and 1979, a time-frame that greatly overlapped with Iran's period of high-modernisation.[3] This research demonstrated that within each time-frame defined by Habibi, multiple local and international actors in the form of stakeholders, agencies, institutions, organisations, and urban dwellers were involved in the process of public housing design and development, and various approaches were examined towards the architecture of dwelling. This study also showed how within this time-frame, the process of modernisation in Iran through public housing development was perceived by the agency of the dweller; and how the inhabitants of the investigated housing schemes changed, modified, or adapted their living environment based on their real and changing needs. In this view, Iran's urban modernisation process through public housing development could not be seen as linear or only Western-oriented that ignored local initiatives. On the contrary, this characteristic that recalls Shmuel Eisenstadt's notion of 'multiple modernities' acknowledges the multiplicity and diversity of the path to modernity depending on a society's historical context.[4]

In the Centralisation period (1941-1953), Iranian reformists became active agents of socio-political change in the country. They lay a distinct emphasis on the implementation of new legislations and planning documents, and promoted the use of local resources and models for developmental projects. In the process of housing development, Chaharsad-Dastgah and Narmak became experimental models. For designing Chaharsad-Dastgah, a group of Iranian architects used a planning document that they revised for deconstructing traditional neighbourhood planning structures. This process was also underpinned by bottom-up initiatives in Narmak where the participation of its dwellers was essential for the construction of this housing neighbourhood. In this context, Iranian architects created an eclectic combination of modernist design principles with local references. In fact, this allowed an integration of archetypal elements and models with new urban structures, and also enabled the residents of new neighbourhoods to practice self-organisation and expression. This might explain why the state's project of

3. As defined by Habibi, The Centralisation period started from the abdication of Reza Shah in 1941, and ended with the overthrowing of the prime-minister, Mohamad Mosaddeq, in 1953, by the U.S. and British secret services. The period of 'Urbanisation' in Iran started from 1953, and ended in 1966 when the country began to experience a new urban expansion approach, the moment that the Master Plan of Tehran was set in motion. The Westernisation period started from 1966, and ended with the 1979 Iranian Revolution. See: Seyed Mohsen Habibi, Az Shar Ta Shahr: Tahlili Tarikhi Az Mafhume Shahr Va Simaye Kalbudie an Tafakkor Va Taassor [De la Cite a la Ville-Analyse Historique de la Conception Urbaine et Son Aspect Physique] (Tehran: University of Tehran Press, 1999).

4. For more information about the notion of multiple modernities, see: Shmuel Noah Eisenstadt, "Multiple Modernities," Daedalus 129, no. 1 (2000): 1-29.

modernisation in this period was often described as an attempt to promote a creative modernism, allowing the active engagement of the general public in the process of housing production.

In the Urbanisation period (1953-1966), the country experienced a significant involvement of the U.S-American governments/officials in its political and economic scene. The socio-political agenda implemented after the overthrowing of the Mosaddeq administration widely limited the role of local architects who previously performed a key position in introducing and developing new housing schemes in Iran. In this period, building standards and urban regulations became instrumental vehicles to expand consumerism and introduce a paradigm shift in the domestic landscape of ordinary people. It was in this context that the government published a series of housing planning and design documents for the construction of residential buildings and public housing schemes. In fact, this was a strategy to standardise housing practices in the country and to promote new lifestyles among the working class. Despite the limitations brought forth by the new regulations, a group of leading Iranian architects developed the experimental housing project of Kuy-e Kan to improve people's living standards in Tehran. This created a platform that allowed the designers of Kan to negotiate some local patterns of inhabitation with foreign influences. Thus, in the particular case of Kuy-e Kan, it is not surprising to see that the architects aimed to accept the phenomenon of universalisation to shape physical setting of this residential neighbourhood, but also safeguard some aspects of local culture in the design of communal and public outdoor spaces.

In Iran's period of 'Westernisation' (1966-1979), a top-down modernisation approach pervaded the whole country. In this context, the state's project of inculcating a Capitalist economy with a clear bias towards rapid industrialisation was coupled with the utopian architectural ideals of the 1960s and cutting-edge technologies. This drastically influenced the landscape of housing in Iran, where foreign construction and design firms took leadership in the production of megastructures with industrialised methods. This formed a basis for expanding a market-led urbanism approach in Iran, pushing public and private developers to build larger apartments, especially for privileged Iranians. In this context, while local architects were mostly assigned to design high-rise residential buildings, some of them also attempted to highlight the importance of demand-driven production of housing, such as in the experimental model of Shahrak Ekbatan and Aryamehr Town. The designers of Ekbatan developed, based on the ideals of Tehran's master plan, a brutalist concrete megastructure with consideration that the urban space among residential buildings could become the locus of some vernacular references. This integration, eventually, promoted a notion of 'otherness' that enabled an exceptional type of space, empowering the residents of Ekbatan to create their own sense of familiarity with this new built form.

The Westernisation period took a new path in the 1970s, when a group of Iranian intellectuals and reformists gained influence in the process of decision-making by holding advisory positions in the government. By proposing a project of reconstructing Iran's regional identity, they triggered a series of bottom-up initiatives, where in the field of architecture, a group of young-leading Iranian architects took leadership of discussing the issues pertaining to local culture and industrialisation. They fostered an alternative way of adapting modernist design principles to the architecture of housing for transforming societies. It was in this context that Shushtar-Nou was designed as an experimental housing model that aimed to connect with local heritage through both recreating and reinterpreting local archetypes. This model also enabled growth and facilitated change within the structure of Shushtar-Nou's urban community.

In all of these models of modernism and development, the oil-led geopolitics of the Cold War period played an instrumental role. The socio-political movements of the late-1940s and early-1950s for nationalising the Anglo-Iranian Oil Company created a certain condition that is reflected not only in the political autonomy and economic self-determination of the government, but also the works of architects in a close collaboration with the general public. The oil-led geopolitics of the Cold War also put Iran in the cross-fire of international influences, which triggered a shift of paradigms in both the domestic and urban life of Iranians and brought about radical changes in the design and production of housing. Ironically, in the context of the 1970s, when the oil crisis pushed the West into a deep recession, Iran became the second largest oil-exporter in the world and subsequently an influential player in the global energy market. The generated wealth empowered the Iranian government for accelerating developmental projects and enabled a group of leading local architects to activate their role in fostering discussions on the importance of vernacular socio-spatial patterns of inhabitation for the design of urban communities and human habitats. By investigating the impact of oil-led geopolitics on the design of human habitats, future studies might provide new insights for the development of new public housing schemes in post oil scenarios.

The Habitat Bill of Rights

This doctoral dissertation also shed light on the significance and relevance of the ideas presented by the Habitat Bill of Rights (HBR) for the design of large-scale housing projects. It seems as though the built-form of housing in the cities of most developing countries has favoured following Western models that were largely developed in the context of Europe, while neglecting references to local culture, climate, and people's everyday practices. This, indeed, testifies to what Richard Sennett defined as a 'Closed System' architecture, a process that is additive

and repetitive, being incapable of responding to local needs and aspirations.[5] This is true not only in the case of Iran, where most state-built affordable housing schemes have followed a same identical model all over the country, but is quite typical of much of what has been called the 'Global South',[6] where standardised as well as repetitive large-scale housing models dominate the urban landscapes of cities, at present.[7]

The fact that architecture and urban planning have always existed at the intersection of politics and economics is evident in the evolution of public housing in Iran, which might be seen as starting with the creation of Chaharsad-Dastgah in the mid-1940s. In studying these projects, one would find a series of remarkable, unique, and innovative experiments in the architecture of dwelling. This approach had everything to do with the government acting as a main agent of initiating the development, who in following Mohamad Reza Shah's visions for a 'Modern Iran', used design as a tool to project the country as being part of the 'civilised world'. In this process, the role Western-educated Iranian architects performed was inevitable, especially in mediating the tensions between local and imported models of housing. However, with the economic liberalisation that coincided exactly with the end of the Cold War in 1991, one could see a paradigm shift in the ways housing schemes have further been developed. Real-estate agencies, semi-governmental corporations, and private developers have become a main agent of housing production; consequently, experiments in building communities have disappeared, and in their place have come the high-rise, standardised slab/tower blocks that are meant solely to 'house' people.

More importantly, the current increased commodification of housing has become amply evident. One would observe how state-led affordable housing programmes that were once seen as a kernel part of Iran's National Strategic Planning have been largely replaced by the dominance of market-led urbanism and home-ownership models instated from the mid-1990s;[8] or even recently, by the notion of providing shelter for each Iranian family, under the auspices of the 'Mehr Housing' scheme.[9] The participatory and experimental methods produced by the earlier-tested affordable housing policy have now largely lost any footing within the new housing policy, recently approved by the Iranian government.[10] These participatory methods were exemplified in projects such as in Kuy-e Narmak and Shushtar-Nou, while experimental and innovative responses to the matter of housing could be seen in the works of Iranian architects in Kuy-e Chaharsad-Dastgah, Kuy-e Kan, and Shahrak Ekbatan.

In the documentation of this newly approved housing policy that is entitled "*Iran's Comprehensive Housing Programme: 2014-2026*", an extensive demographic analysis is provided for the provision of new houses and apartments in both urban and rural areas.[11] The term 'quantity' is used in the headline of the introduction to

5. Richard Sennett, "The Open City," in *In the Post-Urban World: Emergent Transformation of Cities and Regions in the Innovative Global Economy*, ed. Tigran Haas and Hans Westlund (Abingdon, Oxon: Routledge, 2018), 97-106.

6. For some scholars and many non-governmental organisations (NGOs), the term global South generally "refers to countries classified by the World Bank as low or middle income that are located in Africa, Asia, Oceania, Latin America and the Caribbean. This definition uses the term in a descriptive manner and is simply the most recent in a long list of catch-all concepts used to identify, define, and cluster the 'poorer parts of the world'. Therefore, like its predecessors (periphery; less-developed, developing, underdeveloped; third world) it lumps together very diverse economic, social and political experiences and positions into one overarching category." For more reading, see the article, "Global South: what does it mean and why use the term", written by Marlea Clarke in:https://onlineacademiccommunity.uvic.ca/globalsouthpolitics/2018/08/08/

7. See: Jan Bredenoord, Paul van Lindert, and Peer Smets, *Affordable Housing in the Urban Global South: Seeking Sustainable Solutions*, (London, New York: Routledge, 2014); Agostino Petrillo and Paola Bellaviti, eds., *Sustainable Urban Development and Globalization: New Strategies for New Challenges-with a Focus on the Global South, Research for Development* (Cham, Switzerland: Springer, 2017); Dömer Klaus, Hans Drexler, and Joachim Schultz-Granberg, eds., *Affordable Living: Housing for Everyone* (Berlin: Jovis, 2014).

8. The first 5-year national strategic planning, approved under the post-revolutionary government after the Iran-Iraq war in 1989, focused on the rebuilding strategies and provision of small-size houses based on people's saving with prefabricated methods for the mass production of housing. This quantitative approach aimed to address the post-war housing shortage, in Iran, and provide "shelter with adequate access to urban services", mainly for the urban poor. Followed in the second and third 5-year strategic planning, this approach to the provision of affordable housing also became a state strategy to control the land prise and speculation in housing market. However, from the early 2000, the Iranian government authorised semi-governmental and private housing corporations to construct owner-occupied houses, depending on the need in housing market. See: Mohamad Ali Abdi, Sima Mehdizadegan, and Farzaneh Kordi, *Six Decades Housing Planning in Iran* (1948-2008) (Tehran: BHRC Publication, 2011). Also see: Pooya Alaedini, "Cities Vi. Urban Informal Settlements in Modern Iran," in *Iranica* (http://www.iranicaonline.org/articles/cities-06-settlements: Encyclopædia Iranica, 2015).

explicitly address the notion of housing as an object to provide, rather than an action to take or event to organise.[12] Accordingly, public and private developers need only to focus on the production of housing in multiple scales, a method demonstrated by the model of 'Mehr Housing', which Mostafa Javadi warned would result in the production of 'ghost towns'.[13] Some one-off alternative strategies to the architecture of dwelling can still be found today in Iran that often favour qualitative rather than quantitative types of development practised by the government or private developers. These schemes, such as the prize-wining projects of Niavaran residential building designed by Mohammad Reza Nikbakht and the Niavaran House designed by Arash Mozafari, both projects in Tehran, remain exceptions that use skill to negotiate and devise a 'unique' and 'creative' response to the matter of place and climate [Figure E.01].

In the past 30 years, an ever-growing need for the production of affordable housing made private developers and semi-governmental housing corporations a main agent of both design and construction in public housing. Mostly developed based on imported models from eastern Asia or from Europe, such as China, India, Malaysia, France, Turkey and Russia, these housing projects dramatically influenced the urban structure of Iranian cities and the life of urban residents. This might be seen particularly from the development of Tehran Metropolitan Region, and the capital city, Tehran, since the early-2000s, where the construction of several new residential neighbourhoods caused a radical urban sprawl [Figure E.02]. While architects have mostly been excluded from the process of decision making, they attempted to contribute to the design of liveable and often human-scale neighbourhoods through their individual and private commissions. However, these attempts seem insufficient in creating large societal impact through the design of housing and the architecture of dwelling.

To initiate this kind of impact in such a context, I believe that it becomes even more significant for carefully studying the so-called 'best practices', and the ingredients of what makes 'successful' and 'resilient' housing. There are no doubts that architecture cannot solve all the problems related to the matter of housing, but it is certainly part of the solution. Perhaps, this is why the HBR's recommendations and observations become even more valuable and urgent at present than they were in the 1970s. In fact, it is time that these notions are revisited in order to secure the right of everyone, especially the marginalised and unprivileged to the city, as Henri Lefebvre termed it.[14]

Thus, the strength of the HBR is its ability to identify common housing problems and provide illustrated examples of core solutions to each issue in a way that is useful for both architectural practice and pedagogy. Indeed, this document not only provides basic knowledge for designing urban communities, but also helps to study the similarities and differences among multiple housing schemes, all around

9. Implemented between 2008 and 2016, the Mehr Housing (*Maskan-e Mehr*) is a system offering private and public developers free government land to build affordable housing units for first-time owners. In this system, applicants with a small down payment (20 percent of the total construction cost) were eligible to receive a long-term state-guaranteed mortgage for 99 years, with a low-interest of 4 percent. Further, the Housing Bank (*Bank-e Maskan*) acted as intermediaries between developers and the government. For more reading, see: The Study Group of Rahpou Sakht Sharestan Company, *Arzyabi Maskan Mehr* [The Assessment of Mehr Housing Scheme] (Tehran: Azarakhsh, 2013).

10. See: The Ministry of Road and Urban Development, *Tarh-E Jame Maskan: 1393-1404* [Iran's Comprehensive Housing Programme: 2014-2026] (Tehran: The Ministry of Road and Urban Development, 2015).

11. Ibid., 1-21.

12. In his seminal book, 'Freedom to Build', John Turner defined two definitions for the notion of housing: Housing as a verb indicating action and event, Housing as a noun that resonates with object. In so doing, Turner aimed to emphasise the importance of housing for community making and planning. See: John F. C. Turner, "Housing as a Verb," in *Freedom to Build: Dweller Control of the Housing Process*, ed. John F. C. Turner and Robert Fichter (New York: Macmillan, 1972).

13. For more information, see: BBC-Persian, Mehr Public Housing and the Possibility of Reproduction 'Ghost Towns'," (http://www.bbc.com/persian/business/2014/08/140804_maskan_mehr, 04 August 2014).

14. See: Henri Lefebvre, "Right to the City," in *Writings on Cities*, ed. Eleonore Kofman and Elizabeth Lebas (Oxford: Blackwell, 1996).



Figure E.01: the Niavaran House, designed by Arash Mozafari in 2006, in Tehran (top); and the Niavaran residential building, designed by Mohammad Reza Nikbakht in 2012, in Tehran (bottom).
Source: The online archive of Contemporary Architecture of Iran: http://www.caoi.ir/en/; Accessed in July 2018.

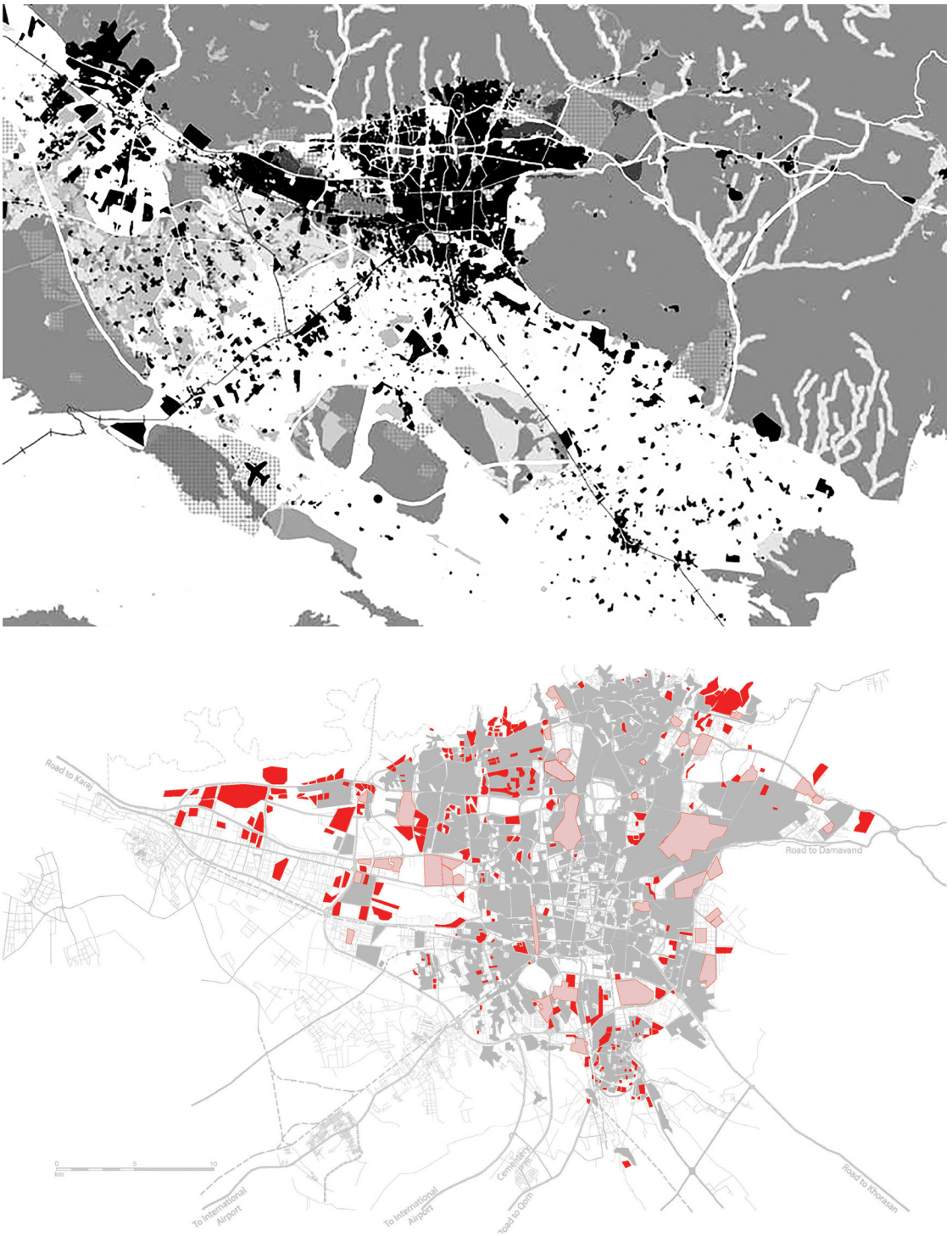


Figure E.02: the image on the top shows the area of Tehran Metropolitan Region in 2008, and the image on the bottom depicts mass housing projects in Tehran. In the latter image, housing projects constructed before 1995 were highlighted with pink and the projects erected after 1995 were indicated with red. Source: Mohamad Sedighi.

the world. It achieves this by analysing the four main categories of Dwelling, Cluster, Pedestrian Precinct, and Urban Communities at multiple scales. In this view, the HBR might be seen as a complementary document to Christopher Alexander's '*Timeless Way of Building'* and '*A Pattern Language'*. This is primarily due to how Alexander's work uses similar analytical and communication techniques to the HBR, illustrating basic principles through which local vernacular patterns of inhabitation can be modified or adapted to the modernist/innovative design principles for developing human-scale and appropriate habitats.

The five experimental housing projects discussed and analysed in this doctoral study can serve as inspiration for how this mediation for creating such habitats can take place. Certainly, if one was to study these five schemes, there are enough clues and lessons that one can learn from to see how housing and the architecture of dwelling can go beyond just the stacking of houses on top of one another. For instance, comparing some of the dwelling layouts of these housing scheme would reveal to what extent their built form accommodated the everyday life their inhabitants by enabling growth and change over time, and how people used and appropriated their living environment in these projects [Figure E.03]. These case studies serve as an example of how to instead re-think housing not just as a collection of houses, but as 'habitat': a model of 'community forming', as Kamran Diba put it.[15] In this view, the best practices designed in the period of high-modernisation that have been well-experienced by their inhabitants can provide new insights and expand architecture's disciplinary toolbox for the development of housing at present and future, in Iran and elsewhere.

Heterotopic Voids: A Locus of Collective Memory

One of the lessons learned from the investigation of these 'best practices' was the continuous attempts of Iranian architects to activate the collective memory of the general public. According to Alireza Eshraghi, a well-known Iranian historian in political science, the collective memory of a nation is similar to a narrative or story that is based on the act of collage making; therefore, it is reinterpretable and dynamic, but selective;[16] so, fragments of history can be reconfigured in an infinite number of unique sequences. This never-ending process of interpretation and recreation can also be seen as an attempt to produce a movie that is continually and constantly under the process of editing.[17] In his view, the architects' role and contribution in designing the 'future' might be seen as a director in the development of a living environment that reflects the collective memory of a society by deconstructing as well as reassembling local socio-spatial and cultural patterns of inhabitation. The inhabitants of these creations are the audience that provides feedback for the revision and continuation of the film.

15. Ludovico Micara and Veronica Salomone, Shushtar New Town: The Idea of a Community - Interview with Kamran Diba," L'architettura delle città - *The Journal of the Scientific Society Ludovico Quaroni* 8 (2016): 136.

16. Alireza Eshraghi, interview by BBC Persian, 2018. Accessible in: http://www.bbc.com/persian/arts-43623936

17. As Eshraghi argued, the proceeding, flow and process of this collage, movie, dialogue, or exchange is dependent on collaboration and sometimes on competition among political wills, intellectuals, and ordinary people. In this process, therefore, the past is continuously forming and changing based on what we want to achieve in the future. See: ibid.

18. Nader Ardalan, "The Visual Language of Symbolic Form: A Preliminary Study of Mosque Architecture," in *Architecture as Symbol and Self-Identity*, ed. Jonathan G. Katz (Philadelphia: Aga Khan Award for Architecture, 1980), 18.

19. The Iranian plateau is the territory of central Asia and Near East (stretching between the Himalayas and the Mediterranean Sea). This area used to be the living ground for early Indo-European tribes. In this area, the concept of the Persian garden became a source of inspiration for the design and construction of human settlements. See: Hamed Khosravi, "Geopolitics of Tabula Rasa: Persian Garden and the Idea of City," *Journal of Architecture and Urbanism* 38, no. 1 (2014).

20. For more reading about the archetypes of Iranian architecture derived from the idea of the Persian garden, see, for instance: Mohamad Reza Shirazi, *Contemporary Architecture and Urbanism in Iran: Tradition, Modernity, and the Production of 'Space-in-Between'*, The Urban Book Series (Cham, Switzerland: Springer, 2018); Nader Ardalan and Laleh Bakhtiar, *The Sense of Unity: The Sufi Tradition in Persian Architecture* (Chicago: University of Chicago Press, 1973); Azadeh Shahcheraghi, *Paradaym-Haye Pardis: Daramadi Bar Bazshenasi Va Bazafarini Bagh-E Irani* [The Paradigms of Paradise: Recognition and Re-creation of the Persian Garden] (Tehran: Jahad Daneshgahi, 2010).

Eshraghi's approach to the notion of collective memory resonates with Ardalan's theory of the New Creation, as both demonstrate a cyclical transformation process placing emphasis on feedback and iteration. As shown in this study, the collective memory of ordinary Iranians was activated through critical reinterpretation of archetypical ideas and their innovative application to the architecture of dwelling. These archetypes, which convey a common dialect of regions of Iran and broadly of the Islamic world, were assembled to reveal a common imagery that Ardalan referred to as a 'visual language'.[18] This language was largely based on employing the idea of Paradise (*Pardis*) in the form of the Persian garden (*Bagh*), manifesting an ideal form of living across the Iranian Plateau.[19] This concept generated three of the most prevalent archetypes of Iranian architecture: the *Khaneh-Bagh* (a courtyard house with small garden), *Meydan-Bagh* (an urban plaza with public gardens), and *Chahar-Bagh* (a pedestrian precinct with communal gardens).[20]

Employing the idea of the Persian garden was central in shaping these archetypes; and, its relation to the architecture of dwelling deserves further elaboration. Michel Foucault described the Persian garden as "a sort of felicitous and universal heterotopia."[21] Noticeably, in Foucault's view, heterotopia projects a real utopian space and juxtaposes different spaces in a single place, while at the same time embodying a smallest fragment of the world in its totality.[22] Thus, the Persian garden might be seen as implying an inhabitable void with heterotopic characteristic, or shortly a heterotopic void that mirrors what is outside. More importantly, it creates a space for and of the 'other' outside, a place with heterogeneous relationships and differences. From my own architectural perspective, this heterotopic void represents a distinct or peculiar place that embodies the tension between inclusion and exclusion; and it lies between reality and imaginary, transience and timeless, inside and outside, public and private, and standard and ideal.

This heterotopic void is neither the political 'space of appearance' (public) nor economical hidden world of the household (private), as Hannah Arendt would put it; but rather a world of 'hidden appearance'.[23] This characteristic might be seen particularly in the Persian garden where first and foremost, it creates a place for joy, happiness, and encounter among the dwellers within, allowing the pursuit of a reflection upon some important cultural interpretation and mediation.[24] In this view, the heterotopic void represents not a fixed and rigid structure, but instead, a flexible and inconclusive system of arrangement. It has the ability to adapt to a given society's logic. For the production of space at urban and architecture scale, the heterotopic void caters for mediation and negotiation of the modernist logic of rationalisation and standardisation with the 'other' differing "greatly from all categories that cannot be fitted and fixed into any rigid taxonomy".[25] Therefore, I define the heterotopic void as a main component of designing for appropriate human habitats that would engage people with their living environment, and trigger their 'collective memory' in association with familiar objects.

21. As explained by Foucault, "the traditional garden of the Persians was a sacred space that was supposed to unite four separate parts within its rectangle, representing the four parts of the world, as well as one space still more sacred than the others, a space that was like the navel, the centre of the world brought into the garden (it was here that the basin and jet of water were located). All the vegetation was concentrated in this zone, as if in a sort of microcosm. As for carpets, they originally set out to reproduce gardens, since the garden was a carpet where the world in its entirety achieved symbolic perfection, and the carpet a sort of movable garden in space. The garden is the smallest fragment of the world and, at the same time, represents its totality, forming right from the remotest times a sort of felicitous and universal heterotopia." See: Michel Foucault, "Of Other Spaces: Utopias and Heterotopias," in *Rethinking Architecture: A Reader in Cultural Theory*, ed. Neil Leach (New York: Routledge, 1997), 335.

22. The word, 'hetero-topias', means literally 'other places', a term that Michel Foucault coined in his 1967 lecture for architects: 'Of Other Spaces: Utopias and Heterotopias'. "Pointing to various institutions and places that interrupt the apparent continuity and normality of ordinary everyday space", Foucault defined heterotopia as a mirror or physical representation of a utopia, a parallel space that makes a real utopian space possible. See: ibid., 330-36.

23. In her book, *The Human Condition*, Hannah Arendt portrays an ancient society divided between Oikos, or the private representing hidden world of the household, and Agora, or the public indicating the political 'space of appearance'. The distinction between private and public life qualifies the three forms of the vita active: labour, action, and work. Labour as the necessities of life (zoë), such as birth and death, was a strictly private matter for the ancient Greeks, needed to be protected and hidden. However, action as a public matter defined the form of life of polis, the political space-city. Interestingly, work included both public and private quality, since it was an extension of the private realm of labour, and yet a public that originates in the transactional space of market exchange. For more reading, see: Hannah Arendt, *The Human Condition* (Chicago and London: The University of Chicago Press, 1989), 159-67.

24. Rather than its formal and geometric features, Seyed Mohamad Beheshti, a well-known philosopher, defined the life inside the garden the most characteristic of the Persian garden. For more reading, see: Seyed Mohamad Beheshti, "Jahan Baghe Irani," [The Myth of the Persian Garden.] *Golestan-e Honar* 11 (2008): 7-15.

25. Heidi Sohn, "Heterotopia: Anamnesis of Medical Term," in Heterotopia and the City: Public Space in a Postcivil Society, ed. Michiel Dehaene and Lieven De Cauter (London and New York: Routledge, 2008), 49.

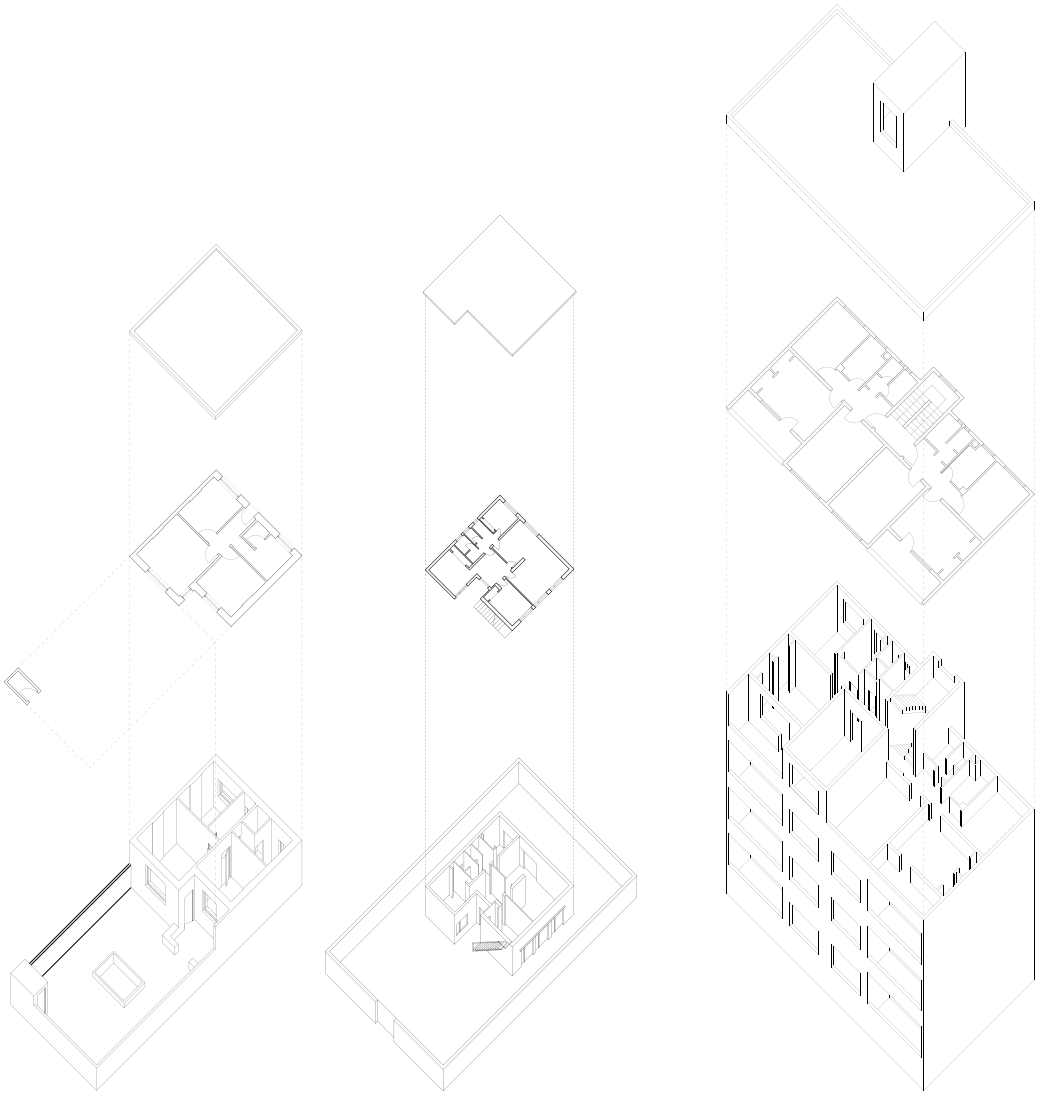
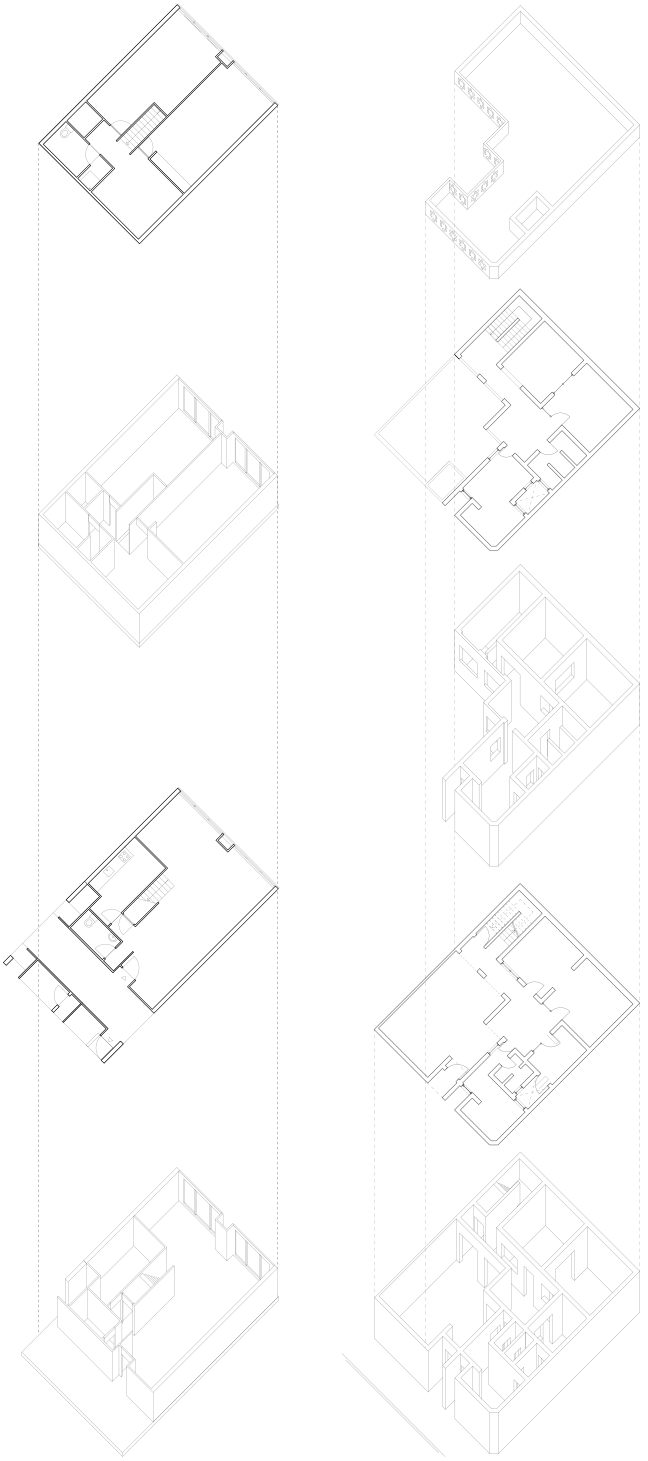


Figure E.03a: an overview from some of the dwelling types investigated in this dissertation; before and after modification/adaptation by their inhabitants over time.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.



Shahrak Ekbatan

Shushtar-Nou

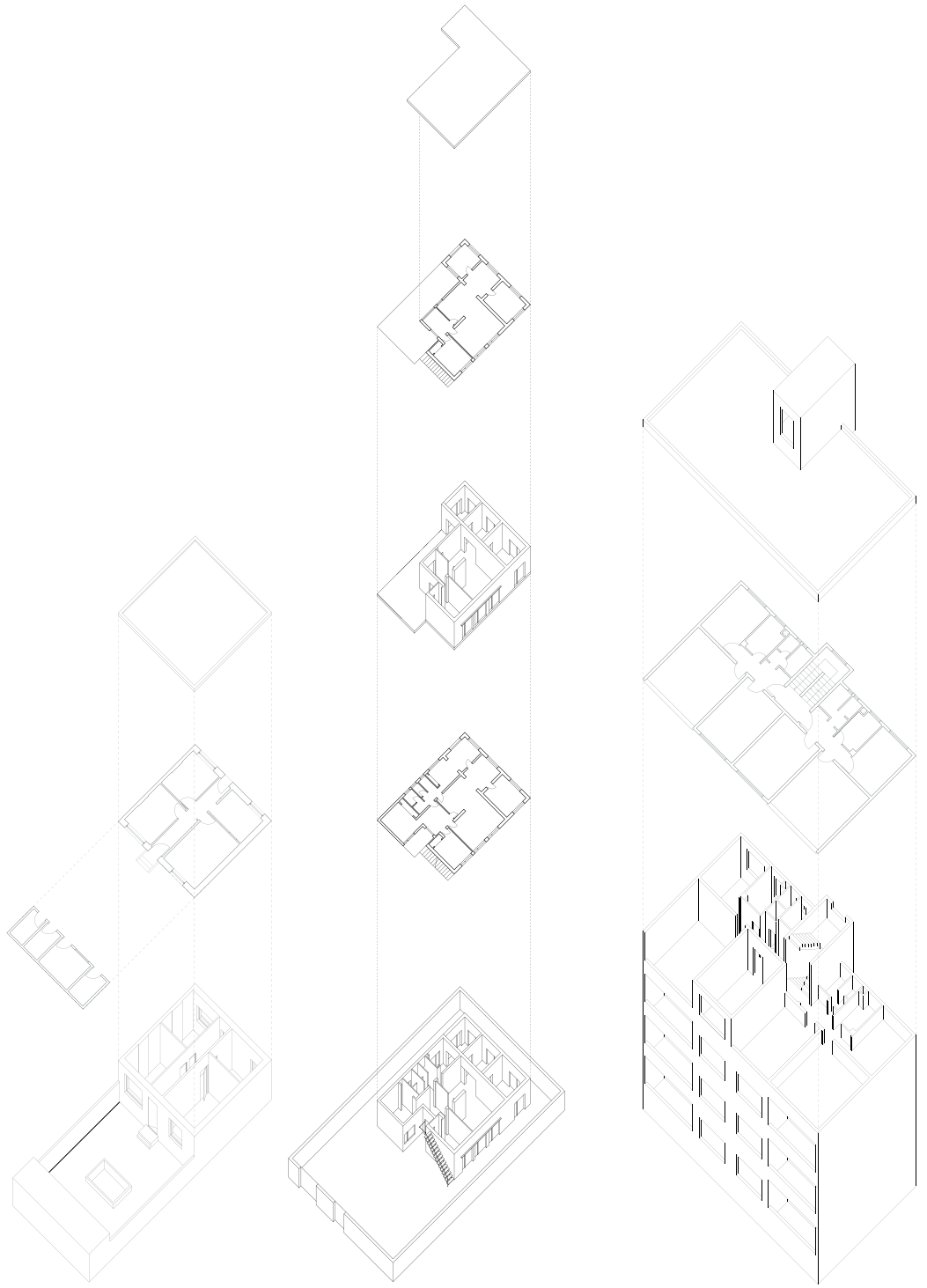
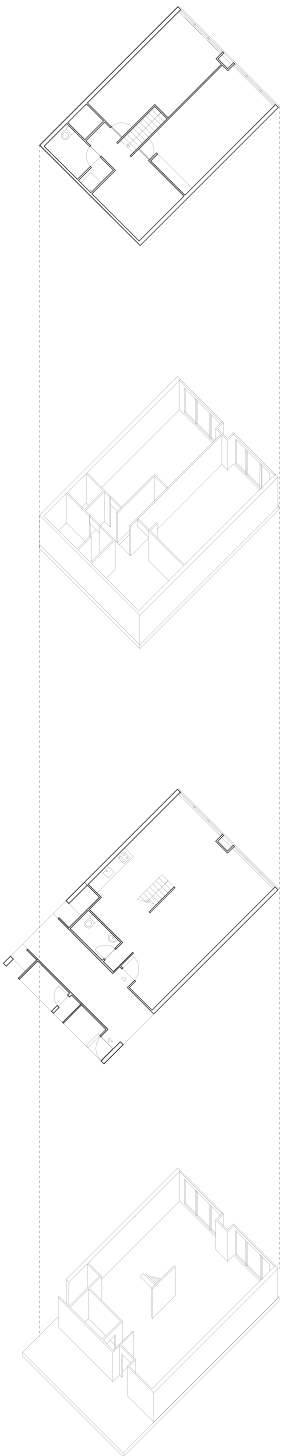
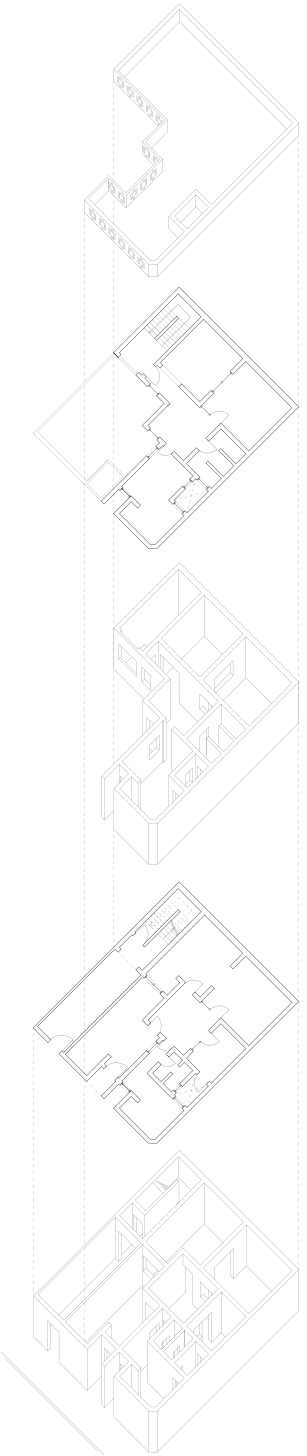


Figure E.03b: an overview from some of the dwelling types investigated in this dissertation; before and after modification/adaptation by their inhabitants over time.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.



Shahrak Ekbatan (modified)



Shushtar-Nou (modified)

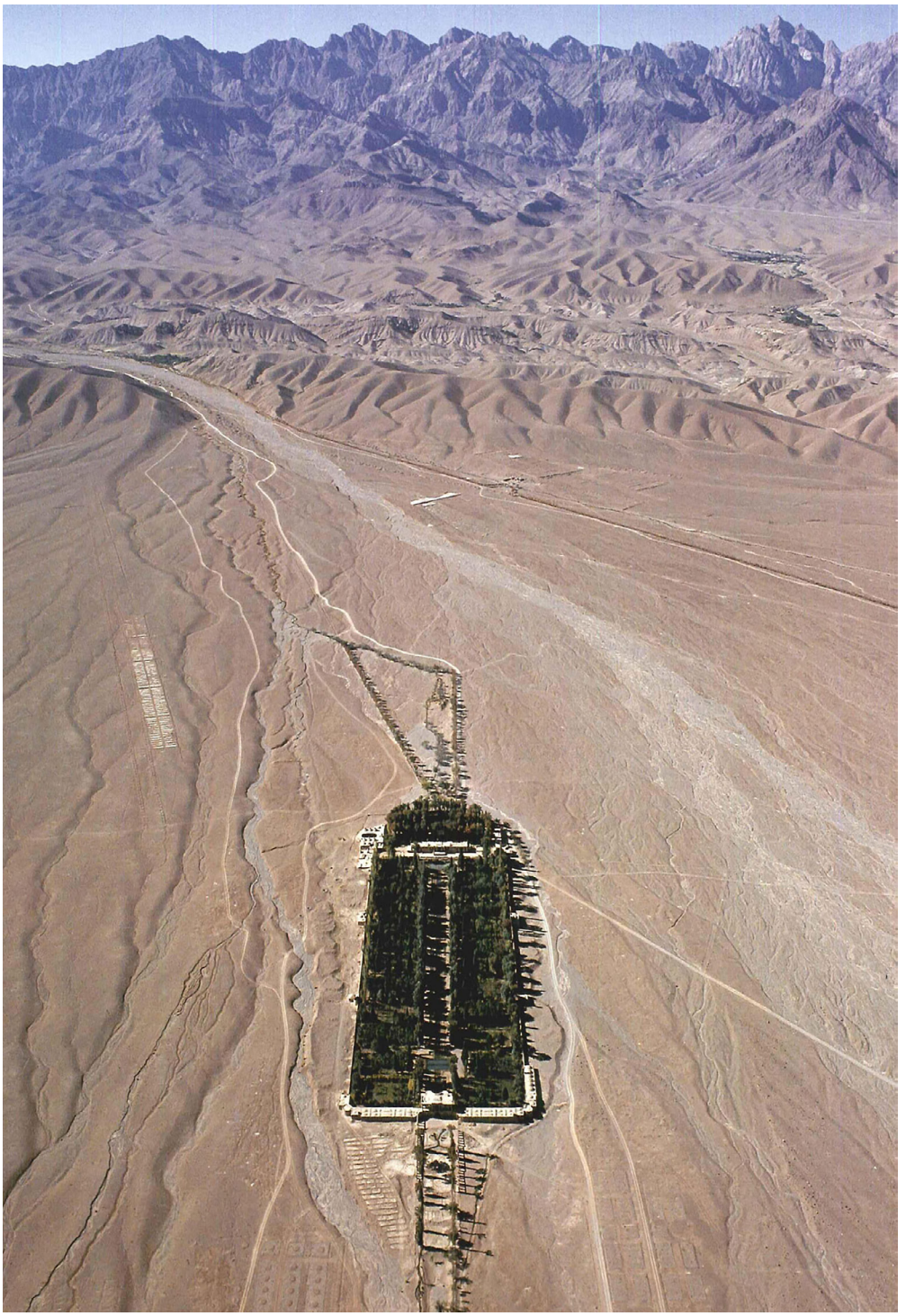


Figure E.04: a Persian garden in the middle of the Iranian Central desert.
Source: Photograph by Georg Gerster 6 September 1977, published in *Paradise Lost: Persia from Above* (London/ New York: Phaidon Press, 2008), 57.

In this doctoral thesis, I showed that the application of three of the most prevalent archetypes of Persian/Iranian architecture (i.e., the *Khaneh-Bagh*, *Meydan-Bagh*, and *Chahar-Bagh*) were not limited to their superficial, assumed characteristics relating to physical form. Their use in the architecture of dwelling exceeded their visual qualities, independent from their size, shape, material expression, geometry, and the construction technique, enabling the involvements of urban dwellers in the transformation of their living environments. The multiplicity of their application and interpretation might be seen instead as dependant on their heterotopic attributes by which one would be able to designate, mirror, and reflect a set of relations to simulate a common experience of place, in the world. Indeed, these features made the Persian garden an intangible archetype, a world of 'hidden appearance' that embodies a small fragment of the world, while also representing its totality. This 'complementary' feature can be seen as the act of combining two opposites to form a new entity, a characteristic that is embedded in the theoretical basis of traditional Persian architecture, as Nader Ardalan insightfully observed.[26] It comes, thus, as no surprise to see that Ardalan defined the idea of paradise as a perfect manifestation of this complementarity feature, where a walled garden with a set of heterogeneous relationships with its context forms a liveable environment at the heart of a desert [Figure E.04].

This form of inhabitable voids with heterotopic characteristics that enables an active involvement of its dwellers in the design and transformation of space can be traced in the experimental housing schemes selected for this doctoral study. In the case of Chaharsad-Dastgah, incorporating courtyard-gardens in the design of individual houses played a crucial role in shaping the urban structure of this neighbourhood. Interestingly, the private courtyards were largely exposed to the neighbouring houses, and clustered in a back-to-back configuration. This enabled the inhabitants of some houses to combine these courtyards together, forming a larger, collective courtyard in the heart of an urban block. In the case of Narmak, individual houses were designed in a walled domain where the owners gained the opportunity to organise or divide their plot based on their actual needs. While the plot-division and combination became instrumental in the development of Narmak, part of the walled plot was always kept intact as a small garden.

In the case of Kan, dwelling units were designed in the form of apartments with a small balcony. However, the residents of these apartments occupied and walled part of the public land on the ground level to form a collective domain for small gatherings and social gardening. In the case of Ekbatan, a similar approach was taken for the design of dwelling where apartments were grouped in a set of residential super-blocks. Interestingly, these blocks were clustered in such way that each block embedded a communal courtyard. While these courtyards connected each set of apartments to the larger body of sub-neighbourhoods and to the public amenities, some housed needed public facilities such as schools and

26. Nader Ardalan, "From Within: On the Spiritual in Art and Architecture," in *Architecture, Culture, and Spirituality*, ed. Thomas Barrie, Julio Bermudez, and Phillip James Tabb (London, United Kingdom: Routledge, 2015).

playgrounds that later were added to the urban layout of this project. In the case of Shushtar-Nou, the courtyard-gardens also played a central role in forming the architecture of dwelling. They were placed as an intermediate space between the private domain of the home and the public domain of the street to blur mental and physical boundary between these realms and to enable change in the layout of individual dwellings. Moreover, the public spaces were largely designed in the form of larger courtyards at multiple scales to connect individual houses through ever-increasing levels of privacy to the urban structure of Shushtar-nou.

From a morphological point of view, inhabitable voids with heterotopic characteristics can also be observed in the design of urban enclaves. The urban layouts of the selected housing projects were highly influenced by the modernist design and planning principles such as functional zoning. Nonetheless, each housing scheme included some figures of the Persian garden, in particular the *Meydan-Bagh* that in multiple forms and scales, creating a place that the 'other' space would flourish. Further, while the formal urban patterns of 'low-rise high-density' were considered as an ideal model for designing urban enclaves, this research illustrated that the design of public, collective, and private outdoor spaces on the ground are comparably significant to built-form in how a housing scheme would function both physically and conceptually [Figure E.05]. Therefore, these outdoor spaces can be seen as elements of belonging, togetherness, and wholeness that are essential for the formation of a place that would eventually activate people's collective memory and allow them for engagement and participation in the design and transformation of space.

Finally, one might ask how the notion of heterotopic voids contributes to the design of housing at present, and what roles architects could perform in the process of housing development, particularly in the urban global south. In order to provide a concrete reflection, I would rely on what I learned from the investigation of the five selected experimental housing schemes for this doctoral study. I would also like to refer to the knowledge gained from one of my own experiences with housing design in Iran, where, as a practicing architect, I have employed the notion of heterotopic voids as a point of departure for an experimental housing scheme in Abrisham Town, near Tehran. As part of the state-led 'Mehr Housing' project and within an urban-framework designed by EMCO Iran, a consulting engineering firm, I proposed a housing solution to provide accommodation for 8,000 low-income families in an area of 50 hectares. The design incorporated an amount of 2,000 houses divided into twelve sub-neighbourhoods, where a pedestrian precinct including communal gardens and some public amenities (e.g., schools and shops) to serve as the backbone of my urban community model.[27] In one of these neighbourhoods, I proposed a scheme to house 288 families in an area of 1.2-hectare [Figure E.06].[28] In 2013, this model received an honourable mentioned certificate form Iran's Ministry of Housing and Urban Development.

27. From this proposal, only 920 houses have been built by semi-governmental agencies and developers.

28. The design brief prescribed the need for constructing 220 houses. The FSI (Floor Space Index) and Footprint (building coverage) were defined as 1.6 and 0.4, respectively. The average dwelling size was defined as 75 m^2 (net), and 15 m^2 could be dedicated to the access and structure system for each dwelling (90 m^2 net average size). In addition, for each dwelling unit, a parking spot as well as 5 m2 open space (as greenery) should be provided on the ground level.

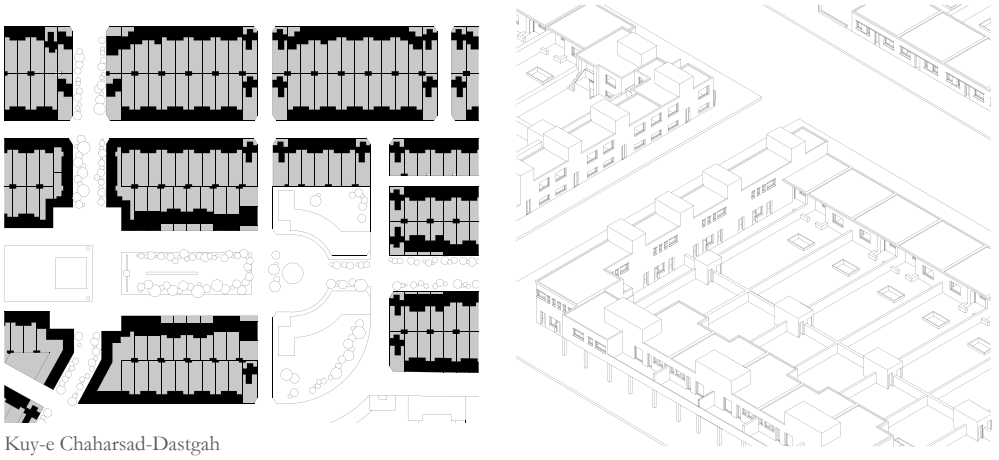
As shown in this research, a close collaboration between architects and developers or development agencies contributed to making a larger impact on society and the built environment. With the Abrisham project, I also chose the same strategy, and cooperated closely with a private developer, named ERD.Co (East Residential Development Company), to realise my ideal community model. Further, I opted to increase 30 percent the Floor Space Index (FSI) of this project. In so doing, I attempted to make my model beneficial and more attractive to the developer, from an economic point of view. In fact, increasing the FSI provided me the opportunity to negotiate my housing approach with the developer, and gave me some freedom for experimentation and innovation. Through the administrative network of ERD.Co-EMCO, I was able to approach some non-governmental organisations that were in charge of registering future end-users of Abrisham Town. I managed to organise a set of meetings and gatherings with them, not only for incorporating their wishes and needs into the design of apartments, but also for discussing my design proposal with the future residents.[29] Finally, after implementing a series of changes and revisions, my housing model was approved by EMCO, and built by ERD.Co between 2010 and 2012.

For the construction, I proposed a combination of an industrialised method with local techniques. The skeleton and slabs were to be built by prefabricated panels and in-situ concrete, while the infill, walls, and facades meant to be built by light-weight calcium-silicate blocks and bricks that were produced in smaller, local factories, near Abrisham. The choice of this combination enabled me to ease the impact of employing pre-described industrialised methods on the project, and involve local labours and sub-contractors in the process of construction. The project was designed with three clusters of 96 dwelling units, forming a super-block typology. Each block was formed with two residential building types: a 4-storey type including a central staircase and 2 dwelling units in each floor (type A), and a 2-storey type with 3 dwelling units in each floor (type B). Each block was clustered with two rows of five apartment buildings from 'type A', and with three apartment buildings from 'type B' connecting the two parallel rows in different elevations to one another.

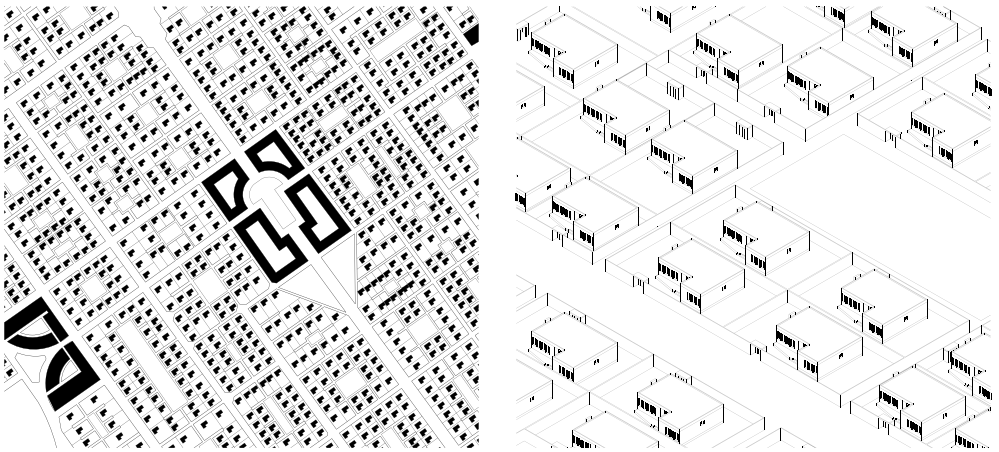
This clustering formed numerous dwelling types with various size and layout.[30] More importantly, it created multiple courtyard-gardens with the hierarchy of ever-increasing levels of privacy [Figure E.07]. The courtyards on the ground level were also elevated from the public street, a decision that enabled the creation of a parking area beneath. The topography of the site played a crucial role in hiding private cars and their access road to the blocks, which was necessary to ensure a car-free zone in this sub-neighbourhood. This allows for designing the streets between the blocks as a place where children can safely play outside, and provides direct access from public spaces to all individual apartment units through the internal courtyards [Figure E.08].

29. In these meetings, multiple issues, such as the dwelling layouts, the relation of houses with the public space and street, and access to private/collective/public outdoor spaces, were discussed with future inhabitants of this project.

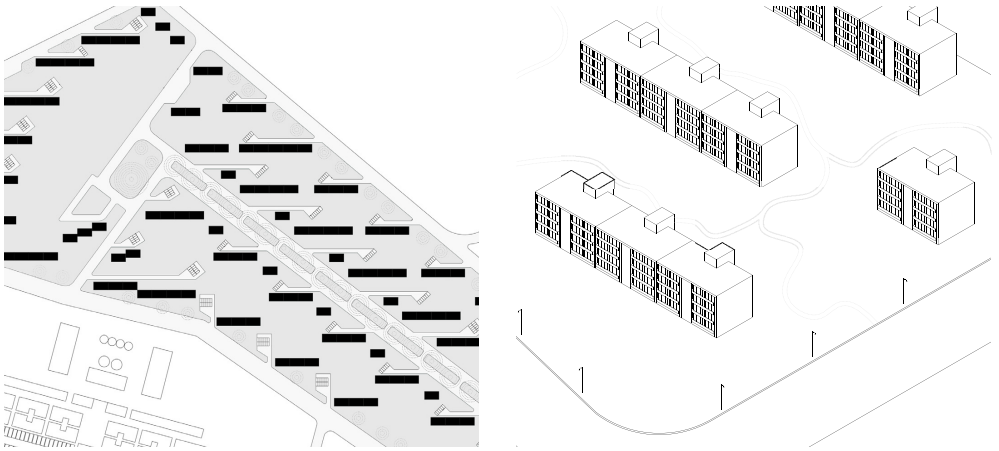
30. Every block of 96 apartments was designed with 32 dwelling types that were different in size (from 60 to 120 square metres), in orientation to sun, and in spatial layout/arrangement (from two to six habitable spaces).



Kuy-e Chaharsad-Dastgah

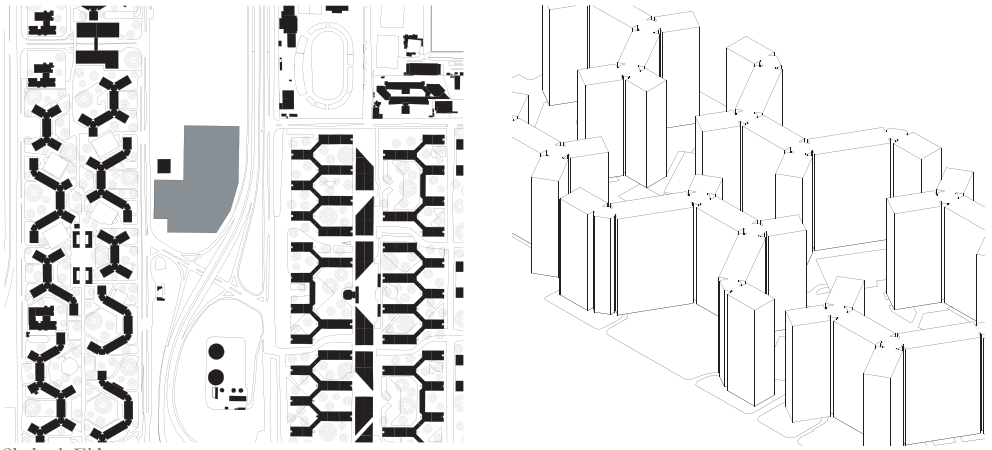


Kuy-e Narmak

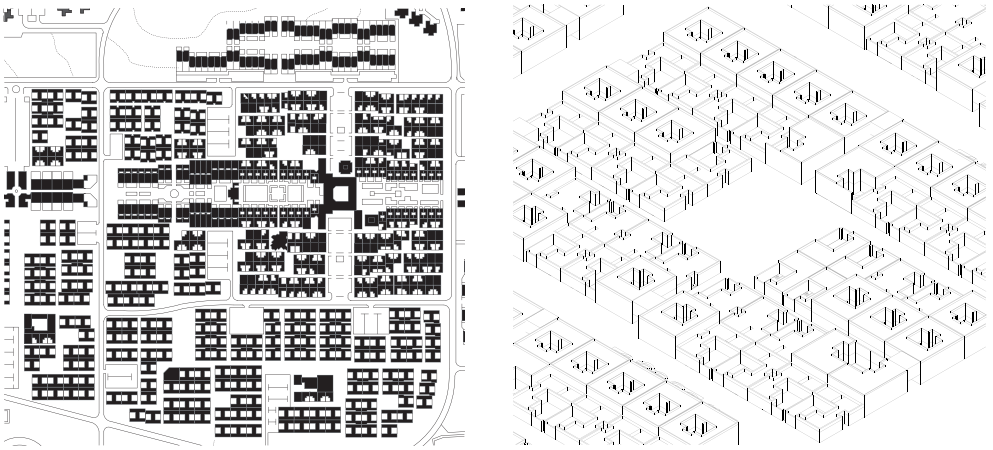


Kuy-e Kan

Figure E.05: plan and axonometry of the five investigated cases.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.



Shahrak Ekbatan



Shushtar-Nou

Figure E.05: plan and axonometry of the five investigated cases.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.



Figure E.06: the ERD housing scheme with 288 dwelling units built at the entrance areas of the Abrisham New Town.
Source: Photograph by Mohamad Sedighi.

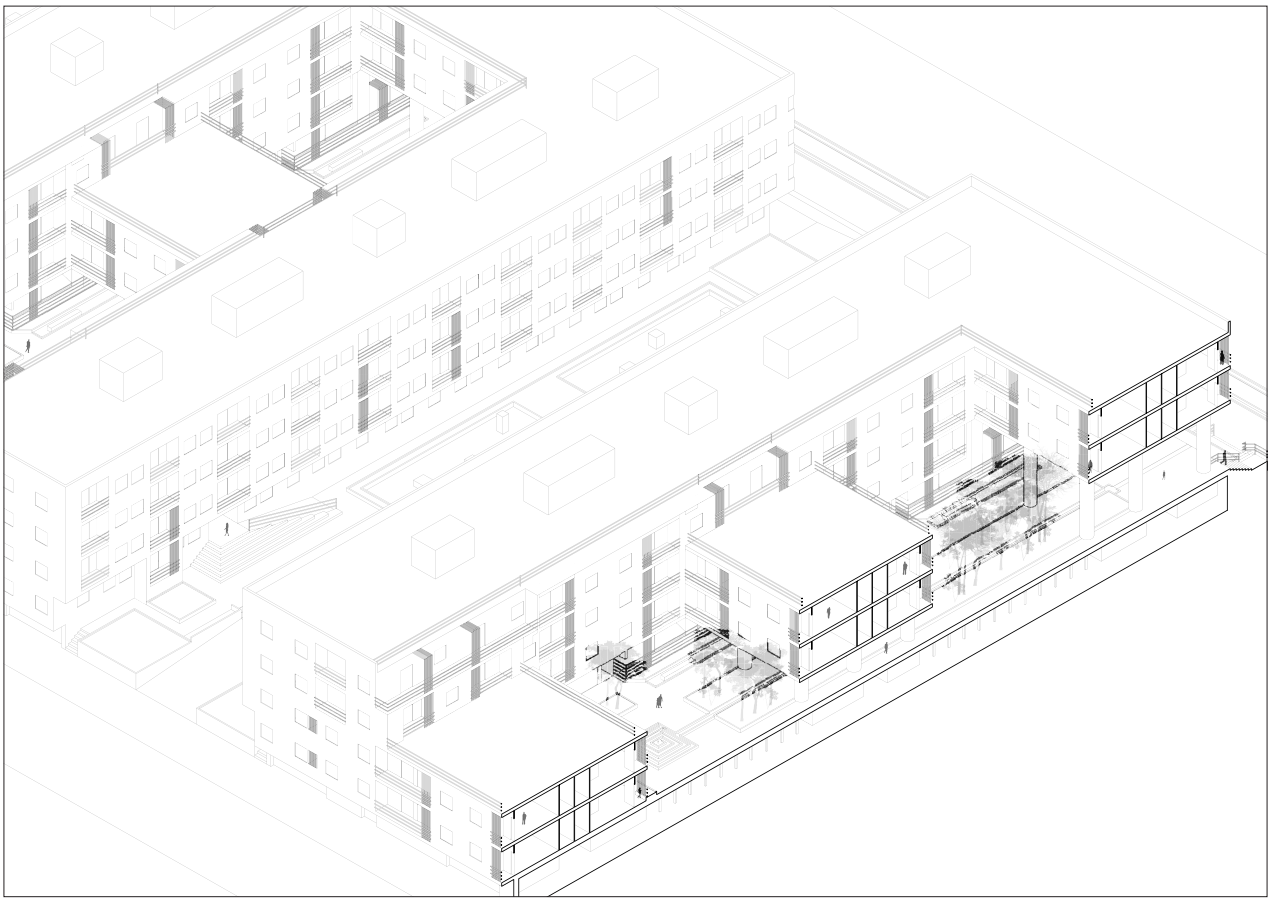


Figure E.07: the clustering principle of multiple courtyard-gardens that created a hierarchy of ever-increasing levels of privacy in this project.
Source: Mohamad Sedighi; redrawn in collaboration with Federico Pellegrini (top); and photograph by Mohamad Sedighi (bottom).

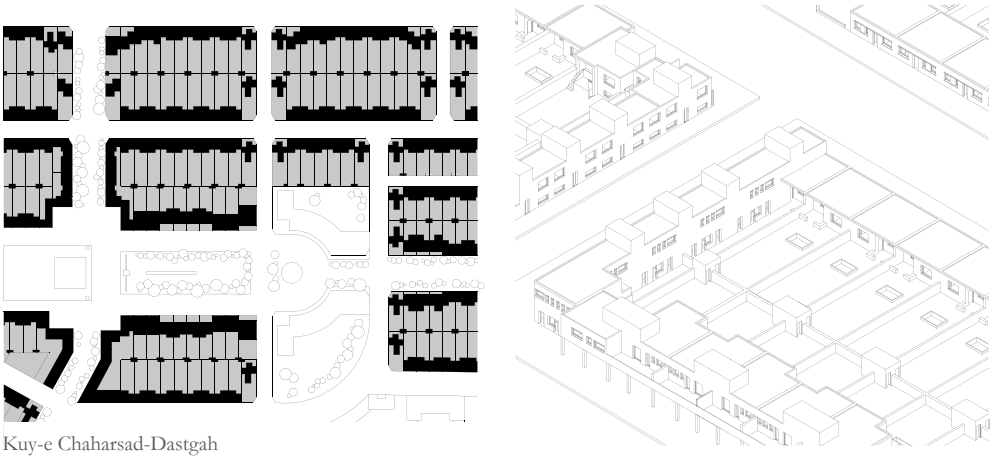


Figure E.08a: the street between the blocks as a playground for children.
Source: Photograph by Mohamad Sedighi.

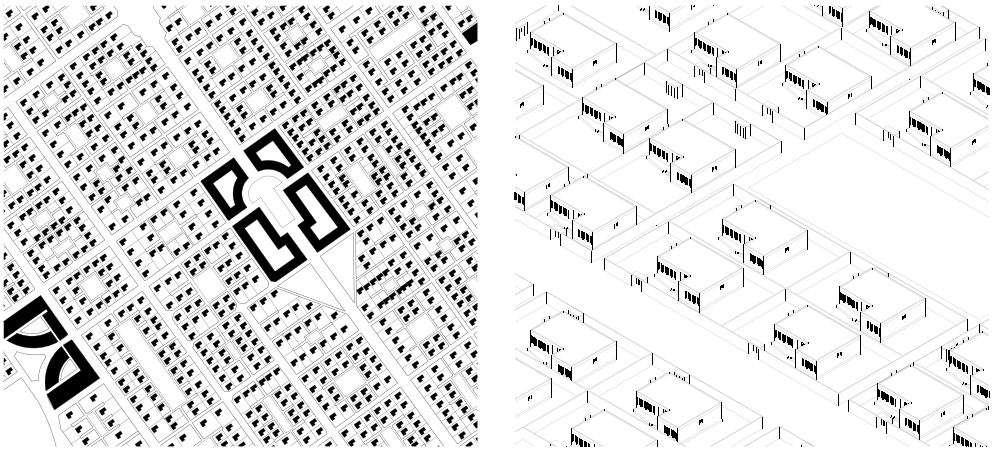


Figure E.08b: private outdoor spaces for each dwelling unit in the forms of loggias, balconies and terraces.
Source: Photograph by Mohamad Sedighi.

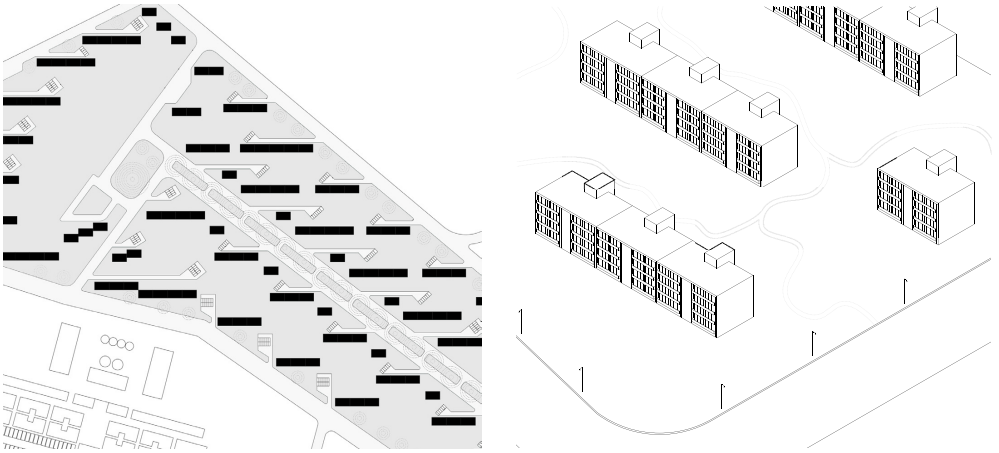
In this model, the front courtyards became more open and they served as the main entrance area to each block, while the back courtyards, surrounded with two small workshop rooms, served as the place for gathering and social interaction among the residents. These back courtyards were also connected to the large body of the neighbourhood through a small alley, providing a secondary access to each block. The courtyards on the upper levels formed a collective space, where two sets of four apartments shared their private outdoor spaces on the second as well as third floor. In addition, each dwelling unit was designed with two loggias: one with a view towards the public streets, and one with a face to the internal courtyards. All these outdoor spaces were so designed that the inhabitants of this project could use them as an extension of their private realms. In so doing, my aim was to engage people in the design and transformation of their outdoor spaces, in collaboration and negotiation with their neighbours. Similar to the five investigated case studies, my scheme became an experiment to create a community model with several inhabitable voids to stimulate 'belonging, togetherness, and wholeness' among the inhabitants. Furthermore, it attempted to activate people's collective memory, mainly in confrontation with the courtyard-gardens [Figure E.09].



Kuy-e Chaharsad-Dastgah

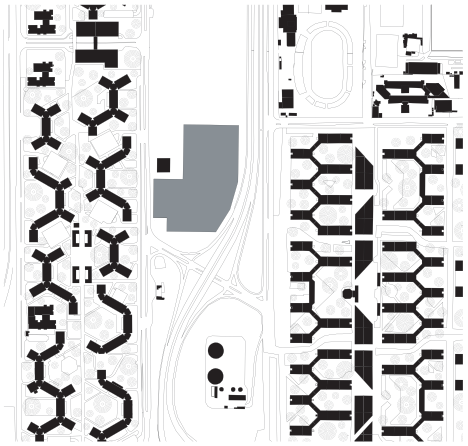


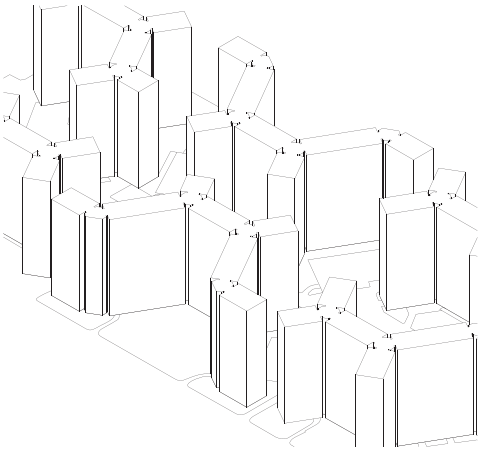
Kuy-e Narmak



Kuy-e Kan

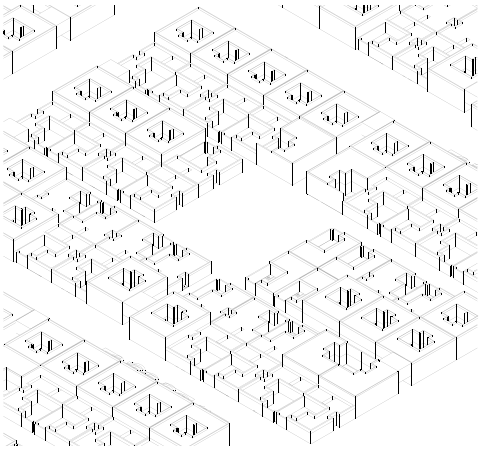
Figure E.09a: a transversal analysis of the selected five cases in relation to my own housing scheme.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.



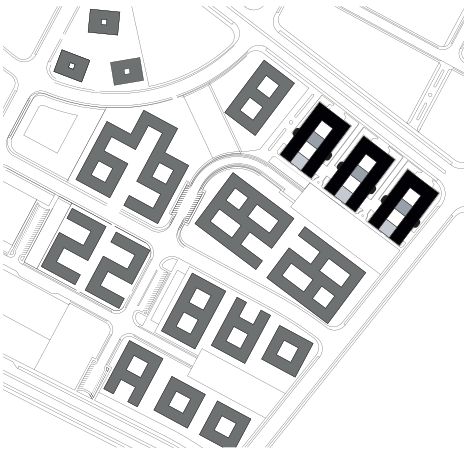


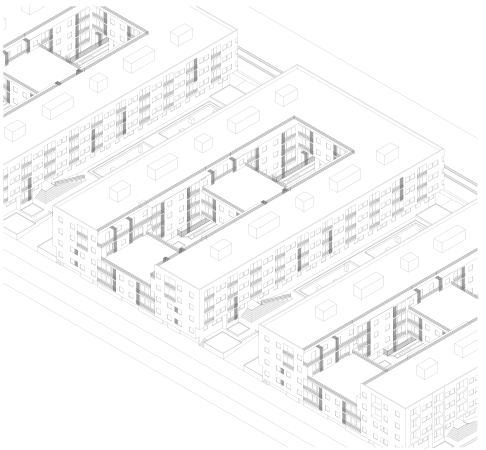
Shahrak Ekbatan





Shushtar-Nou





Abrisham Town

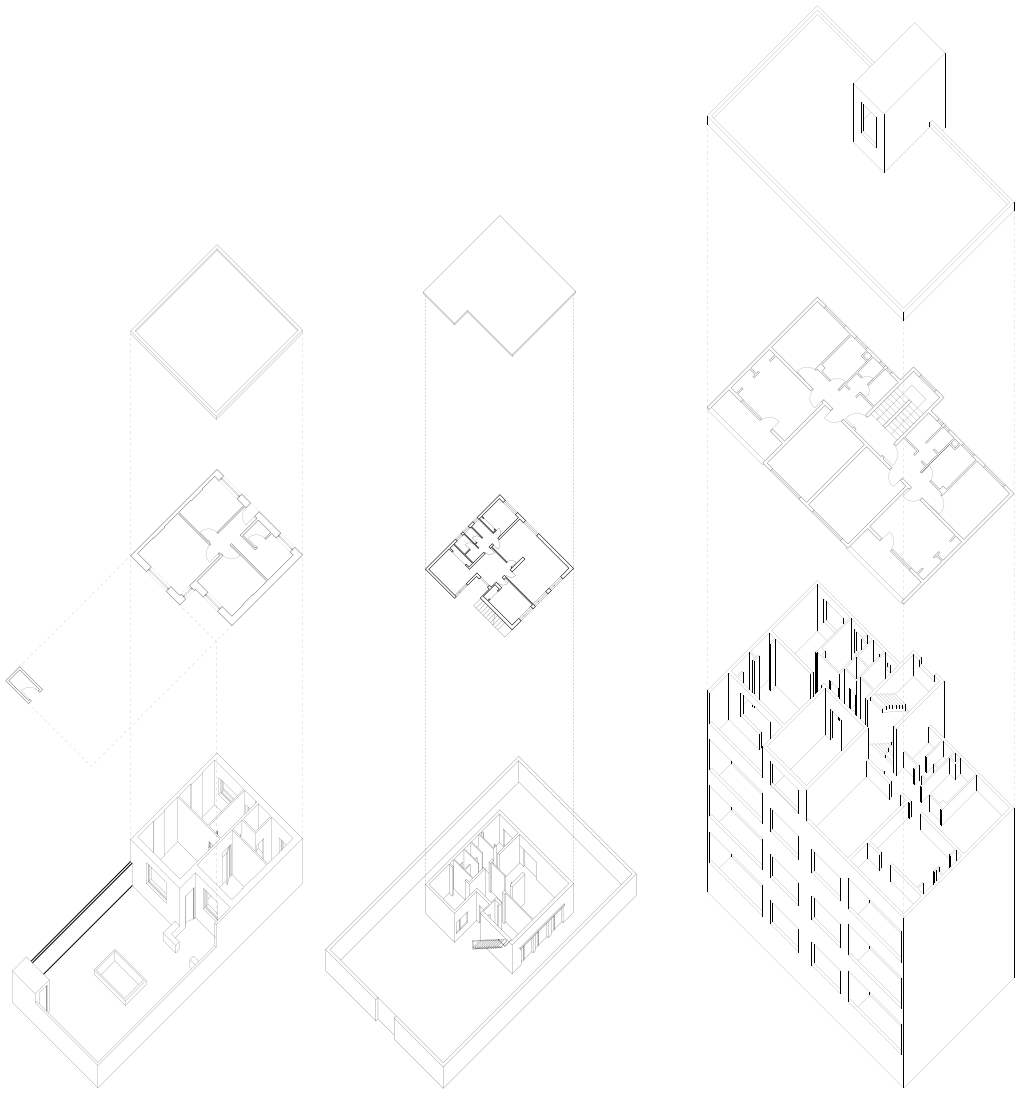
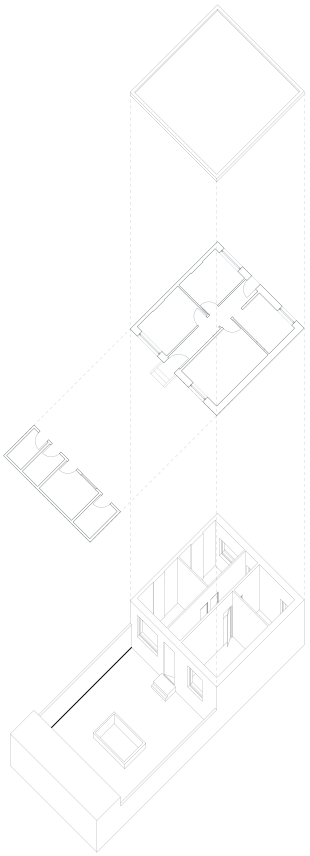
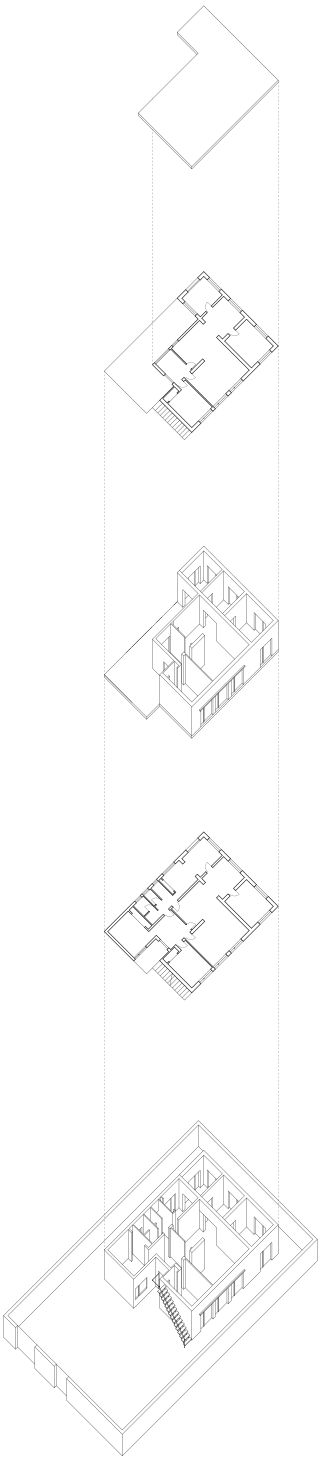


Figure E.09b: a transversal analysis of the selected five cases in relation to my own housing scheme.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.



Kuy-e Chaharsad-Dastgah (modified)



Kuy-e Narmak (modified)



Kuy-e Kan (modified)

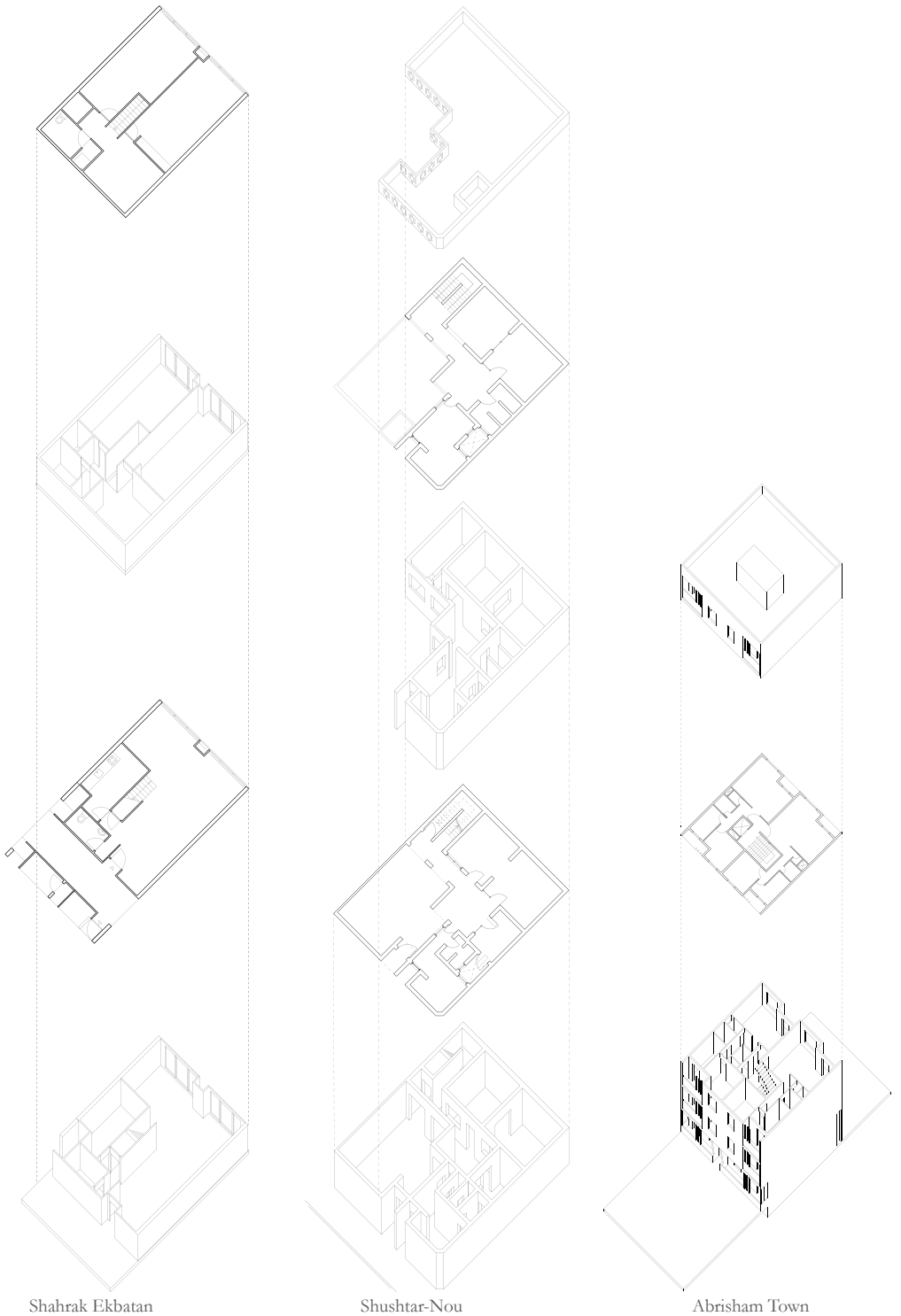
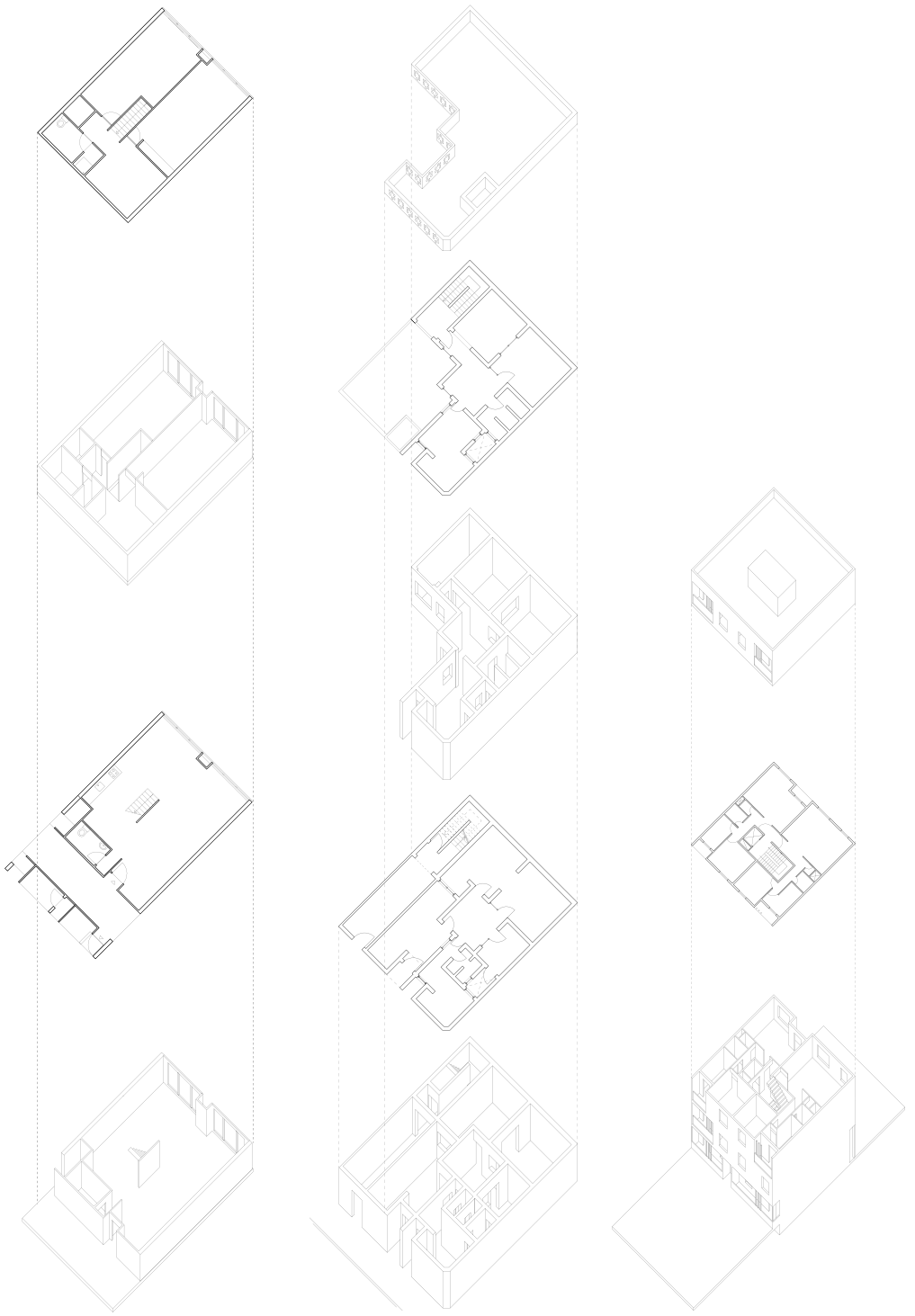


Figure E.09c: a transversal analysis of the selected five cases in relation to my own housing scheme, after modifications by their inhabitants.
Source: Mohamad Sedighi in collaboration with Federico Pellegrini.



Shahrak Ekbatan (modified)

Shushtar-Nou (modified)

Abrisham Town (modified)

Notes and Abbreviation

Abanbar: water reservoir

Aeen Nameh Sakhtemani Shahr-e Tehran: the Construction Manual of the City of Tehran

Aeen-nameh Sakhteman-ha va Gozar-ha: the Planning Document of Buildings and Streets

AJAR: Arena Journal of Architectural Research

AKAA: the Aga Khan Award for Architecture

Andarouni: seraglio, or the most private part of traditional houses, mostly used by women

Anjoman-e Me'maran-e Irani Diplomeh: the Association of Registered Iranian Architects

Arazi-e Mavat: barren lands

ARIA: the Association of Registered Iranian Architects

Arg: Iranian royal quarter

Arshitekt: the Iranian Journal of Architect

Ashura: a Shi'ite mourning ceremony for commemorating the martyrdom of Imam Hossein (the third Shiite Imam)

Bagh: the Persian Garden

Baladiyeh: municipality

Barnameh Tose'eh: the National Development Plans

Bank-e Meli Iran: Iran's National Bank

Bank-e Omran: the Development Bank

Bank-e Rahni: the Mortgage Bank

Bank-e Refah-e Kargaran: the Workers' Welfare Bank

Bank-e Saderat: the Export Bank

Bank-e Sakhtemani: the Construction Bank

Bime-ye Iran: Iran's Insurance Company

Birouni: the most social part of the traditional house mostly used by the male members of the family

Bonyad Pahlavi: the Pahlavi Foundation

BP: British Petroleum Company

Caravanserai: inn

Chador: traditional Iranian women's veil

Chahar-Bagh: or literally a four-fold garden is a type of pedestrian precinct with communal gardens in Iran

Chaharshanbehsouri: the eve of the last Tuesday before the Iranian new year, *Nowrouz*

CIAM: Congrès Internationaux d'Architecture Moderne, or in English: the International Congresses of Modern Architecture

CMCT: the Construction Manual of the City of Tehran

Dalan: the corridor of Iranian traditional house type

Daftar-e Makhsus: the office of Empress Farah Diba

DASH: Delft Architectural Studies on Housing

De Stijl: a group of Dutch modernist architects

Enghelab-e Mashrouteh: the 1906 Iranian Constitutional Revolution

Enqelab-e Sefid-e Shah va Melat: the White Revolution of the Shah and People

FPO: the Finance and Planning Organisation of Iran

Jebh-e Meli: the National Front, Iran's nationalist party

HBR: the Habitat Bill of Rights

Hafte-ye Memari: the Architecture Week

Hammam: bath

Hashti: the entrance area of Iranian traditional house type

Hejab: Islamic veil

Hezb-e Tudeh: the Party of the Masses, Iran's communist party

Honar va Memari: Art and Architecture

IJIA: International Journal of Islamic Architecture

IICA: Iran International Congress of Architects

IMDH: Iran's Ministry of Development and Housing

ISPT: Investigating Social Problems of Tehran

Iwan/Ivan: veranda

Ghanun-e Eslah-e Ghanun-e Tose-e Ma'aber: the Act of Modifying and Developing Streets and Urban Spaces

Ghanun-e Ehdas va Tose-e Ma'aber va Khiaban-ha: the Act of Developing, Building, and Widening Streets/ Alleys

Ghanun-e Haq-e Tasarof va Forush-e Zamin tavasot-e Shahrdari-ha: the Act of Land Acquisition and Sale by Iranian Municipalities

KAIC: the Karun Argo-Industries Corporation

Kalantari: police station

Kashf-e Hejab Ejbari: compulsory unveiling

Kesht-o-San'at-e Karun: the Karun Argo-Industries Corporation

Khalq-e Jadid: the New Creation

Khaneh-Bagh: traditional Iranian courtyard-garden house type

Kudetay-e 28 Mordad: or the Coup d'état of 19 August, Operation Ajax, was a military coup engineered by the US and British secret services, CIA and MI6, overthrowing Mohamad Mosaddeq in 1953

Layehe-ye Sabt-e Arazi-e Mavat: the Bill of the Vacant Lands Registration

Madreseh: traditional religious schools

Majles: the Iranian house of Parliament

Mahalleh: traditional neighbourhoods in Iran

Maharem: male members of an extended family

Maktab: traditional school

Masjed: mosque

Masjed Jomeh/Jameh: Friday Mosque

Mehmanserai: hostel

Meydan-Bagh: a type of urban plaza with public gardens in Iran

Mi'mars: traditional/local builders

MPT: the Master Plan of Tehran

Na-Mahram: male strangers and guests

Nehzat-e Melishodan San'at-e Naft: the Iranian oil nationalisation movement

Nezam-e Jadid: the New Order

NDP: National Development Plan

OPEC: the Organisation of the Petroleum Exporting Countries

Pahlavans/Lutis: a group of outstanding residents, who voluntarily patrolled streets

Pardis: Paradise

Qanat: underground water channels in Iran

Qanoun-e Tamallok-e Aparteman-ha: the Apartments Ownership Act

Qibla: the direction to the Kaaba in the city of Mecca

Rishsefied: elder man

Sarserai: reception

Sazman-e Barnameh va Budjeh: the Iranian Finance and Planning Organisation

Sazman-e Maskan: the Housing Organisation of Iran

Sazman Miras Farhangi: the Association of National Heritage

Serai: a traditional courtyard-house type in Iran

Shahrdari: Municipality

Shanashil: balcony

Sharia: the Islamic laws

Sherkat-e Omran-e Ekbatan: the Development Organisation of Ekbatan

Sherkat-e Naft-e Iran va Englis: the Anglo-Persian Oil Company (APOC) which from 1933 was renamed the Anglo-Iranian Oil Company (AIOC)

Sherkat-e Nosazi va Omran Shahr-e Tehran: Tehran Redevelopment Company

Siyasat Darvaze-haye Baz: the 'Open Gate' policy of Mohamad Reza Pahlavi, the Shah of Iran

Tamadon-e Bozorg: the Great Civilisation

Ta'wil: Hermeneutics

Tekiyeh and Hosseyniyeh: two types of religious buildings

TBR: Tehran's Building Regulations

TRC: Tehran Redevelopment Company

UIA: Union Internationale des Architectes, or in Engligsh: International Union of Architects

Vezarat-e Farhang: Iran's Ministry of Culture

Vezaratkhaneh Dakheleh: the Ministry of Interior

WWII: World War II, or the Second World War

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Mohamad Sedighi is a multidisciplinary-registered architect with solid academic and industrial experiences, capable of communicating innovative design, construction, and planning ideas simply, comprehensively and clearly with clients, team members, and academic actors. He has an extensive work experience in large-scale housing design and development, building innovation and management, and in multiple academic activities, in particular education and research. He is specialised in human settlement design and planning, and in the application of Lean construction as well as digital tools in complex projects. He earned an honourable mention from Iran's Ministry of Housing and Urban Development in 2012 for the design and construction of an innovative housing prototype in Abrisham Town, Tehran. Further, Sedighi was awarded a MIT grant in 2017 by the Global Architectural History Teaching Collaborative. His recent publications, with a major focus on housing design, are published in *Planning Perspectives*, *International Journal of Islamic Architecture*, and *Journal of Cleaner Production*.

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