BUILDING FUTURES

Growing opportunities through everyday space

/ Colophon

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MSc4 Graduation Studio: Global Housing AR4GH010
Dwelling in Ahmedabad
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/ Abstract

This research explored how housing in Rajiv Nagar, Ahmedabad can support flexible spatial conditions for domestic life, education and income generation, with the aim of expanding opportunities for stay-at-home women and children across generations. Rapid urbanisation in Ahmedabad has led to the growth of informal settlements, where residents often face inadequate housing, limited access to services and socio-economic marginalisation. Existing redevelopment and resettlement approaches frequently fail to address these conditions, as they rely on standardised housing models that overlook everyday spatial practices and informal livelihoods.

The study focuses on Rajiv Nagar to understand how spatial organisation, infrastructure and everyday practices shape social and economic opportunities, and how these influence daily life and long-term prospects. The findings show that women and children primarily operate within the immediate surroundings of the dwelling, which strengthens social networks but also limits access to education, work and services. Housing is already multifunctional, yet constrained by limited infrastructure, space and dedicated facilities, while informality reveals strong adaptive capacity.

Climate conditions further intensify these limitations, as extreme heat impacts reduce comfort and safety in both indoor and outdoor spaces. At the same time, passive design strategies can significantly improve environmental conditions and extend the usability of spaces for everyday activities.

The research concludes that improving opportunities for women and children cannot be achieved through housing alone. It requires an integrated spatial approach in which housing, social infrastructure, economic activity and climate responsiveness work together. By strengthening flexibility and connectivity across scales, housing can act as a means to break intergenerational cycles of limited access to education and economic opportunity.

01/

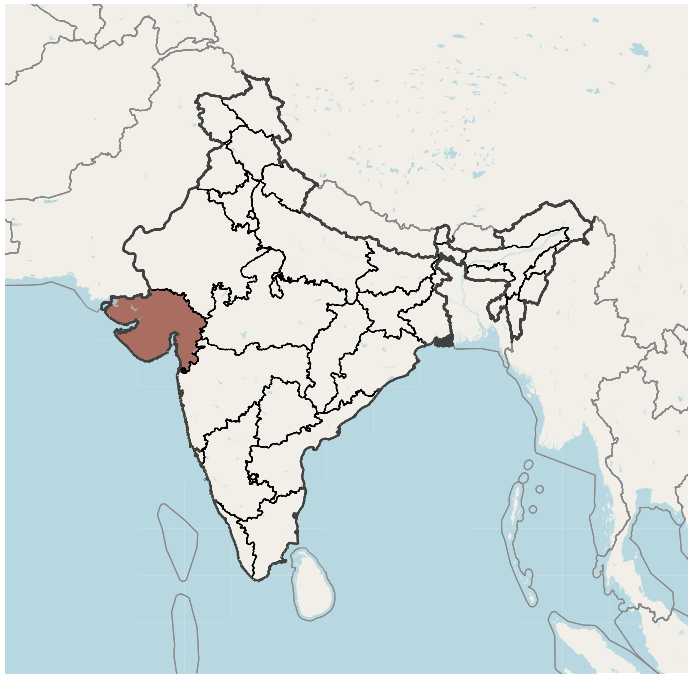
INTRODUCTION

01/ Introduction

Ahmedabad, Gujarat, India

The city of Ahmedabad is a rapidly growing city in Gujarat, India, because of urbanization. This growth is mainly due to migration from smaller rural villages in Gujarat to the bigger cities because of industrialization (Pandya, 2006). As a consequence, social-spatial inequality has increased: a considerable number of people live in informal settlements in Ahmedabad now. They have limited access to basic amenities like clean water, sanitation, ventilation and light; inadequate housing and insufficient infrastructure (Marnane & Greenop, 2023; Ahmedabad Mirror, 2024).

Existing redevelopment and resettlement projects often also fail to offer these needs, as they rely on standardized dwelling units that overlook the social organization, spatial practices, and informal economies that shape everyday life in these informal settlements (Vaid, 2022). These resettlement and redevelopment projects are often located on the periphery of the city, far from the original settlements. As a result, residents are displaced from their established social networks, workplaces and support systems. Moreover, such approaches tend to spatially concentrate and segregate this specific population group in isolated areas, reinforcing socio-economic divisions and limiting interaction with other income groups.

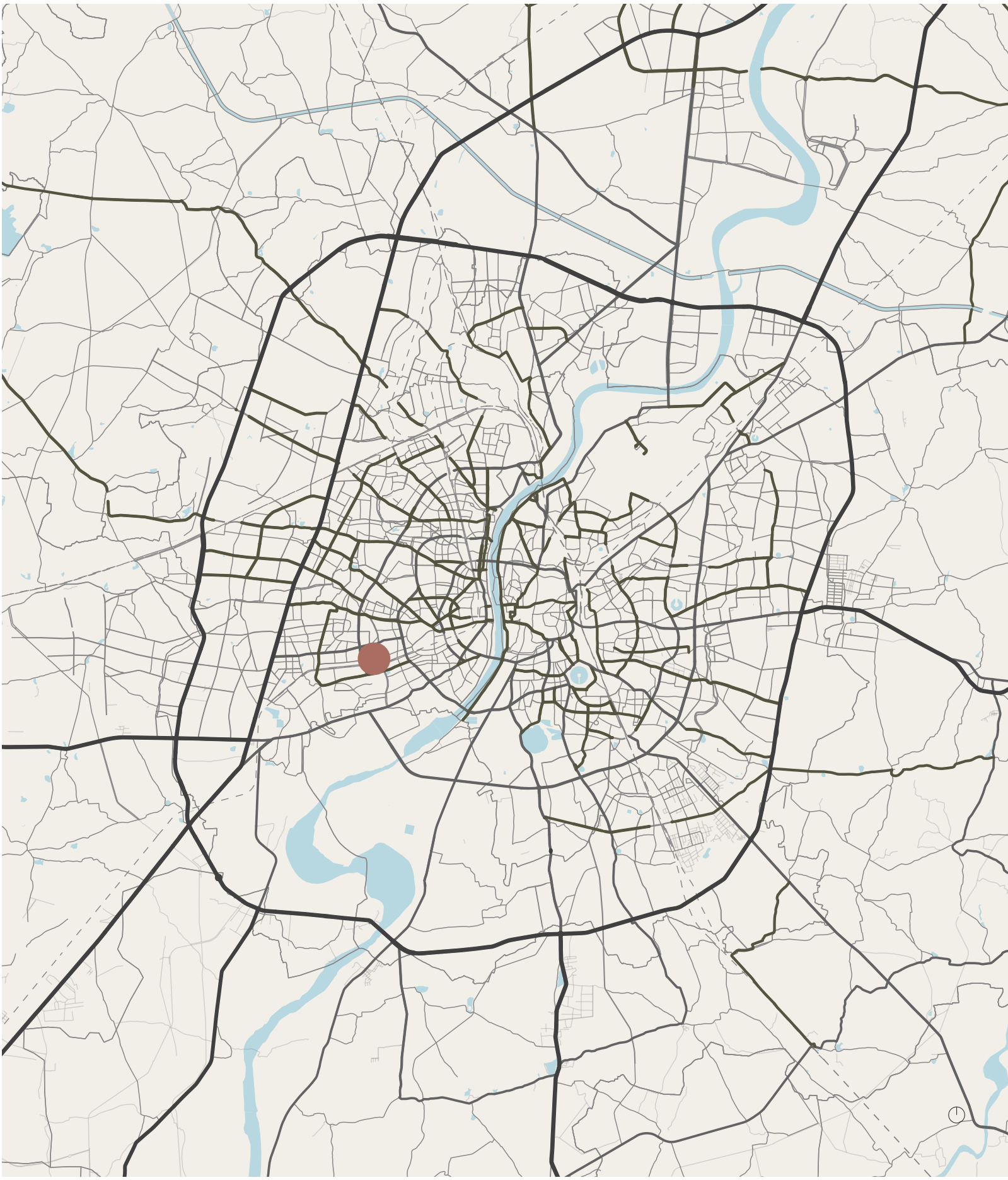


01 *Gujarat, India*



02 *Ahmedabad, Gujarat*

03 *Rajiv Nagar, Ahmedabad*



Problem statement

Rajiv Nagar, an informal settlement in the southwest of Ahmedabad, exemplifies these challenges. The settlement is characterized by high density, adaptable self-built housing and informal economies (Marnane & Greenop, 2023). It is mainly home to migrants. Many of them have moved to Ahmedabad in search of work from rural villages such as Dahod (informal conversation with resident of Rajiv Nagar, 2025). Common jobs among men are vegetable seller, rickshaw driver and naka worker (daily-wage street laborer, mostly construction) (informal conversation with resident of Rajiv Nagar, 2025). These jobs require long hours away from home during the day, while women and children stay at home.

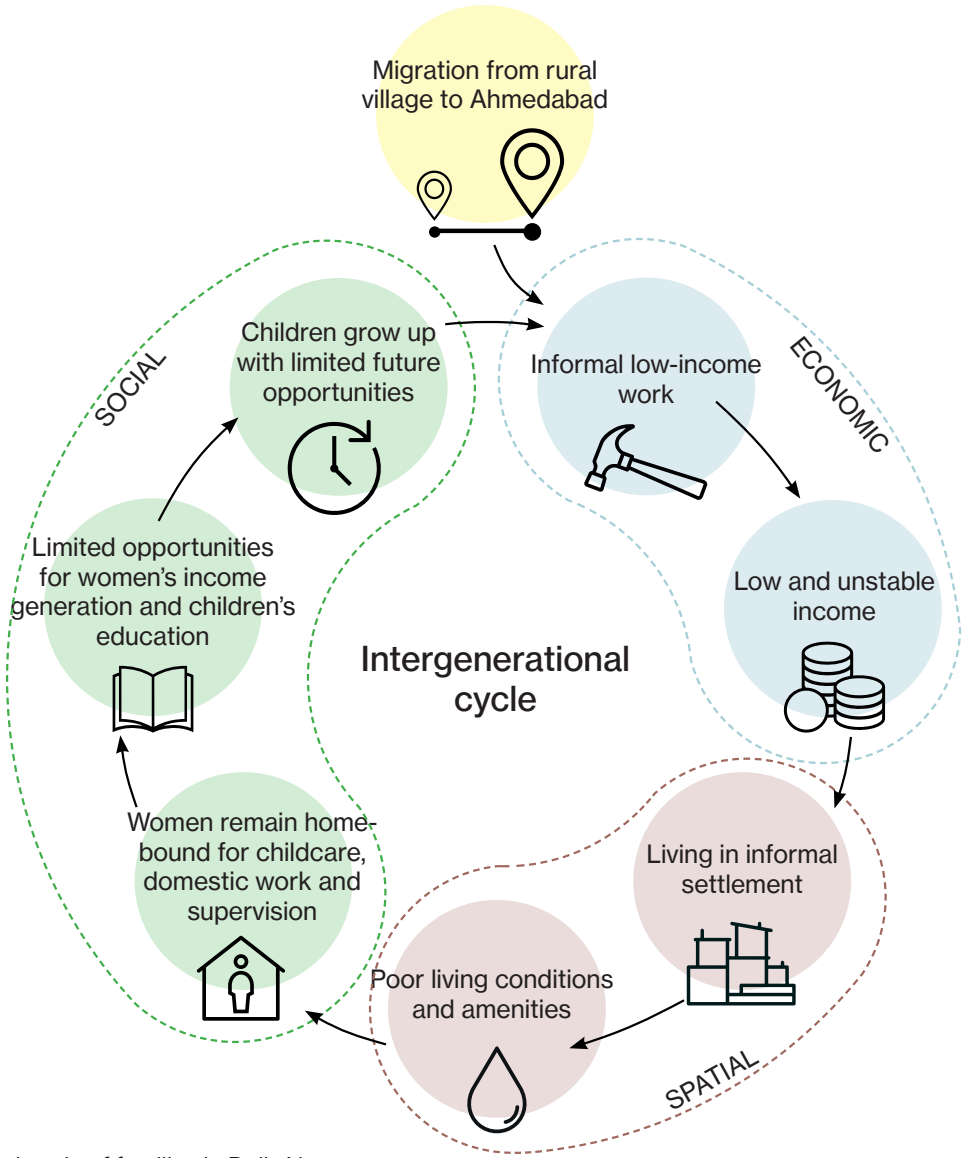
Compared to men, women in Rajiv Nagar have less opportunities for paid work. They are often perceived as unskilled, are paid less for similar work, face spatial confinement, are often less educated and are also limited by household responsibilities, including childcare and breastfeeding (Bose, 1999; Kamdar, 2025). The latter limiting women's ability to engage in income-generating activities without leaving the home, because women spend most of their day within the home and its immediate surroundings. Many of their activities take place outside of the home, for various reasons. The dwellings usually consist of only one small room, which means there is insufficient space to do everything indoors. In addition, it is often too hot inside due to extreme heat and poor ventilation and some tasks are rather done outside, such as cooking and doing the dishes. This also allows them to supervise their children at play while doing domestic activities. Despite the importance of this outside space, these spaces are often uncomfortable, unsafe and function poorly.

While surrounding areas are filled with shops and small home-based work, Rajiv Nagar itself lacks this, particularly for women. The lack of such opportunities limits economic independence and keeps families trapped in unstable, low-income work across generations. Access to education is also limited: schools are often too expensive, distant, overcrowded, or of poor quality, making steady schooling difficult for many children (Deshpande, 2022). Providing comfortable, safe and socially active areas in and around the home, where women can work while taking care of their learning and playing children, could improve household incomes. It can also contribute to better long-term educational and economic prospects for children growing up in an informal settlement. This reflects something parents in the informal settlement aspire to, as they have indicated being quite concerned about the mental well-being, development, and social environment of their children (Mokshagundam, 2025).

These social and spatial challenges are further intensified by environmental exposure. Ahmedabad is one of the hottest cities in India, with summer temperatures frequently reaching 45°C (Knowlton et al., 2014). Residents of informal settlements experience heat stress more severely due to heat-retaining building materials, dense construction, lack of shading, limited ventilation, and limited access to electricity, thus cooling devices such as fans or air conditioning. Water access is limited to two times a day, increasing the risk of dehydration and heat-related illness, particularly among children, the elderly, and working adults (Knowlton et al., 2014). Besides that, they experience monsoon season with intense rainfall combined with inadequate drainage, that leads to frequent flooding, forcing residents to repair or rebuild their homes repeatedly (informal conversation with resident of Rajiv Nagar, 2025).

Taken together, these challenges highlight the critical role of architecture in shaping everyday living conditions. The design of housing and its immediate surroundings becomes a key instrument in supporting work, care, education, climate resilience and creating something more than just a shelter.

The resulting design challenge is to develop dwellings within an urban framework that supports everyday domestic life, climate resilience, and income generation for stay-at-home women, while providing safe, flexible spaces and a stimulating learning environment for children.



04 Intergenerational cycle of families in Rajiv Nagar

Research and design questions

In response to the issues described and the stated design challenge, this study focuses on the following main and sub-questions:





05 *Stay at home moms with their children, living in Rajiv Nagar*

“How can housing in Rajiv Nagar, Ahmedabad, support flexible spatial conditions for domestic life, education and income generation that expand opportunities for stay-at-home women and children across generations?”

1

Spatial practices

How are domestic and surrounding spaces in Rajiv Nagar currently used by stay-at-home women and children throughout the day and how do these patterns reinforce or limit future opportunities?

2

Livelihoods

What spatial conditions constrain or support income generation, childcare and learning practices within Rajiv Nagar?

3

Social infrastructure

How can an integrated spatial approach across housing and urban scales create safe, flexible, and socially active environments that support children’s development, education and women’s participation in everyday urban life?

4

Climate response

How do climatic conditions influence the use of indoor and outdoor spaces, and how can design improve usability throughout the day and seasons?

Relevance

With 13.1% of Ahmedabad's population living in informal settlements (CEPT University's Centre for Research and Development Foundation et al., 2014), and a significant proportion consisting of women and children spending their daily lives within and around self-constructed dwellings, the relevance of this research becomes evident. In recent decades, the Indian government has increasingly acknowledged the significance of women in these settlements, as well as their central role within both household structures and everyday domestic practices. Consequently, a growing number of urban development initiatives have begun to place greater emphasis on women (Bose, 1999). This is based on the fact that women mainly remain within the domestic environment, often accompanied by their children and are therefore particularly dependent on a supportive and stimulating living environment that facilitates personal and social development.

Furthermore, this research and design challenges standardized approaches to affordable housing, in which households are frequently relocated to high-rise apartment blocks. In such cases, residents frequently experience little to no improvement in access to amenities, while social organization, spatial practices, and informal economies characteristic of informal settlements are largely overlooked (Vaid, 2022). Instead, this study proposes a flexible housing typology within an urban context that supports everyday life, income-generating activities, and educational development, while accommodating diverse household structures and enabling incremental growth over time.

This makes this research and resulting design highly relevant, as it may serve as a model for future development projects, not only in Ahmedabad but also in other comparable contexts.

Objective and motivation

This low-rise, high-density housing project faces several technical and architectural challenges. Current residents live in kutcha houses made from leftover materials and do not pay for the land. The project aims to provide puccha (permanent, well constructed homes made of durable materials) housing for these residents, despite their limited ability to pay. This requires keeping the cost of elements like facade materials as low as possible and the development of a master plan that incorporates an income mix. This mix of different income groups can also help integrate the residents of the settlement into the urban fabric and can create job opportunities.

In addition, climate-responsive design is essential because of the extreme heat and monsoon season in Ahmedabad. Furthermore, the project must accommodate a high number of households on a limited site while remaining mainly low-rise. Finally, it is crucial to consider the social and spatial dynamics of informal settlements, which are often overlooked in conventional redevelopment and resettlement projects. This includes considering the strong social bonds between residents, as well as the flexible use of spaces in and around the home throughout the day and the availability of amenities within walking distance.

Having grown up in the Netherlands, a prosperous country where I always had access to quality education and, as a woman, rarely feel limited in my daily life, this topic immediately resonated with me. It made me aware of my privileged position and how I benefit from it every day, often without conscious reflection. Observing the daily lives of women and children living in self-built homes, who face gender inequality, have limited access to education and an uncertain future ahead, was deeply confronting. These conditions limit their opportunities for income generation and maintain existing social inequalities. For this reason, I want to explore through this project how architecture can help reintegrate people into society and become a means of support rather than limitation.

Scope

The project site, Rajiv Nagar, is located in the southwestern part of Ahmedabad, an urbanizing city in the state of Gujarat, India. The site covers a plot of approximately 3.28 hectares, situated next to a recently completed metro station. The number of households is estimated at 200–250, the majority of whom are migrants. Since 2013, the land has been squatted. Residents live there illegally in kuccha houses: dwellings constructed from leftover and temporary materials such as wood, corrugated metal sheets and tarpaulin.

The project investigates the redevelopment of the informal settlement of Rajiv Nagar through an affordable housing scheme. The design considers financial feasibility, climate-responsive strategies,and existing social and spatial practices. It should also integrate public space, community functions and urban infrastructure within the settlement while addressing its integration into the surrounding urban fabric.

The design proposes a low-rise, high-density housing scheme for this site, which may also serve as an example for comparable redevelopment projects of informal settlements elsewhere in India.



06 *Rajiv Nagar next to the metro station*

Number of housholds: 200-250
Average household size: 5-6 people
Area: 3.28 hectares
Density: 68.6 du/ha
Current fsi: 0.1
Income: 600-800 INR per day
Average floor area: 12m2



07 *Rajiv Nagar and context in 2025*

02/

APPROACH

02/ Approach

Methods

This research uses a combination of fieldwork, case studies, spatial analysis and research-by-design.

The fieldwork is conducted through multiple site visits, by walking through the settlement and entering individual homes. The methods used are observation, note taking, photography, and videography. Short semi-structured interviews are held with inhabitants to gain insight into household composition, everyday activities, which jobs they have, spatial needs and shortcomings, the presence of (domestic) animals, access to amenities and waste within the settlement (see appendix).

The site is also analyzed through mapping at different scales. These include mappings of density, building materials, spatial organization, the surroundings and satellite images. Mapping is applied both at the scale of the overall site and at the level of individual houses to understand both macro and micro dynamics. At last sensory mapping, inspired by the drawings of Jan Rothuizen, is used to capture subjective experiences and perceptions. This is done in collaboration with CEPT University, as well as a density massing model and a 'a day in the life' poster of a resident.

The design research follows a research-by-design methodology. An iterative design process is used to develop a masterplan, clustering, and housing typologies, through a combination of hand sketches, CAD drawings, and physical models. There are also interim reviews with feedback from the design tutors. Case studies of low-income and high income housing projects are analyzed to understand spatial principles, plan typologies and incremental strategies.

The expected output of this research is to provide a foundation for the design process of high-density, low-rise housing in an informal settlement in India, with a focus on creating opportunities, better facilities and supporting the everyday life of women and children.

Theoretical framework

This research draws on a set of theoretical perspectives to understand how housing in informal settlements can support the everyday lives, spatial practices, and potential economic activities of stay-at-home women and children. Central to this framework is the concept of housing as an active and multifunctional space, informed by the work of John Turner. Turner's notion of 'productive housing' challenges the idea of the house as merely a shelter, instead he frames it as a dynamic environment that enables income generation, social reproduction, and incremental adaptation. This perspective is particularly relevant for this research, as it provides a spatial and architectural foundation for exploring how dwellings in Rajiv Nagar could be designed to accommodate future possibilities for home-based work, education, and domestic life. It supports the investigation of spatial conditions that enable flexibility, adaptability, and gradual transformation within limited environments (Turner, 1976).

To understand these spatial possibilities in relation to wider socio-economic dynamics, this research engages with Ananya Roy's theory of 'urban informality'. Roy views informality not as an insignificant or temporary condition, but as a form of urban development shaped by governance, power, and selective regulation. This perspective is crucial for understanding Rajiv Nagar as an environment where the use of space is continuously shaped by everyday interactions and informal social structures. Roy's framework allows this research to critically examine how new spatial interventions can introduce opportunities without disrupting existing social structures, and how design can respond to informal conditions in a way that is supportive rather than imposed (Roy, 2005).

The framework further builds on Paula England's work to examine how labour and domestic space are shaped by gender, highlighting the interconnections between care work, domestic responsibilities, and women's access to economic opportunities. Rather than assuming the presence of home-based work, England's perspective is used here to understand the structural constraints that may limit women's participation in income-generating activities, such as time poverty, care responsibilities, and social confinement (England, 1993). This focus directly informs the first sub-question by analysing how spaces within and around the home are currently used throughout the day by women and children, and how these conditions may either constrain or enable future economic and educational activities. It also supports the identification of spatial conditions that could reduce these constraints and create opportunities.

To understand how spatial practices unfold in everyday life, this research uses the concept of 'everyday urbanism' as developed by Margaret Crawford. Crawford emphasizes the significance of informal and often overlooked practices in shaping urban environments. This perspective is particularly useful for analysing the day-to-day experiences of Rajiv Nagar, where spaces are continuously adapted by residents. It supports the research focus on observing daily of use, the timing and regularity of activities, and the overlapping spaces between private and public areas (Crawford, 1999). Furthermore, it provides insight for the third sub-question by suggesting that an integrated spatial approach should build upon existing practices while also allowing for new forms of use to emerge over time.

Finally, this framework incorporates the concept of 'eyes on the street' by Jane Jacobs to address issues of safety, accessibility, and social interaction in the public and semi-public realm. Jacobs argues that active, well-used streets with continuous human presence create safer and more inclusive

environments through informal social surveillance. This is particularly relevant for women and children in Rajiv Nagar, whose ability to engage in education, social interaction, and potential future economic activities is closely tied to the sense of safety in spaces surrounding the home. Jacobs' work therefore guides both the second and third sub-questions by providing a framework to evaluate how spatial configurations, such as thresholds, street edges, and mixed-use environments, can enhance visibility, safety and participation in everyday urban life (Jacobs, 1961).

Together, these theories provide a framework at multiple scales that connects housing, gender, informality, and everyday spatial practices. Rather than only analysing existing conditions, they facilitate this research to explore how flexible spatial strategies adapted to the context can support the gradual introduction of new opportunities, such as home-based work and education, within the everyday lives of stay-at-home women and children in Rajiv Nagar.

Case studies



08 Aranya Low-Income Housing

ARANYA LOW-INCOME HOUSING
Indore, India
B.V. Doshi

SOLA ROAD HOUSING
Ahmedabad, India
Gujarat Housing Board



09 Sola Road Housing



10 Dar Lamane Housing

DAR LAMANE HOUSING
Casablanca, Morocco
Charai + Lazrak Architects

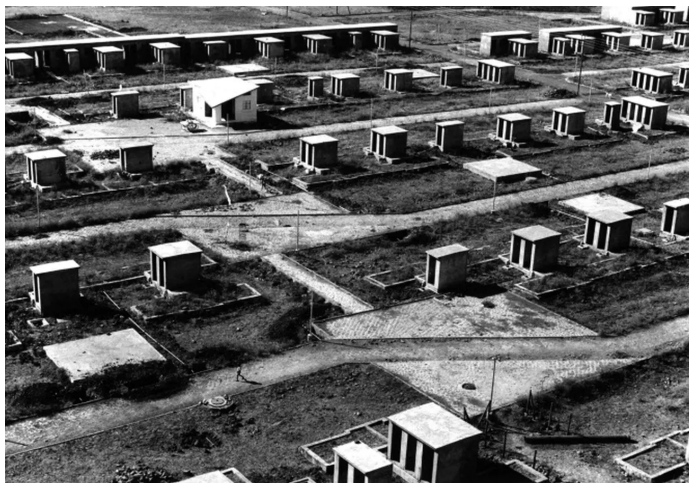
CENTRE POINT RESIDENCY
Ahmedabad, India
Hashmukh Chandulal Patel



11 Centre Point Residency

Case study: Aranya Low-cost Housing - Balkrishna Doshi

Balkrishna Doshi's Aranya Low-Cost Housing in Indore, completed in 1989, is a low-cost housing project that focuses on an open-ended development model rather than a fully fixed and completed design. A simple structural system was introduced for each unit, significantly reducing financial and material requirements across the project (Hidden Architecture, 2023). This basic structure consists of a wet core and a planned framework, allowing each family to incrementally expand and develop their home over time.



12 Basic structure: frameworks and wet cores



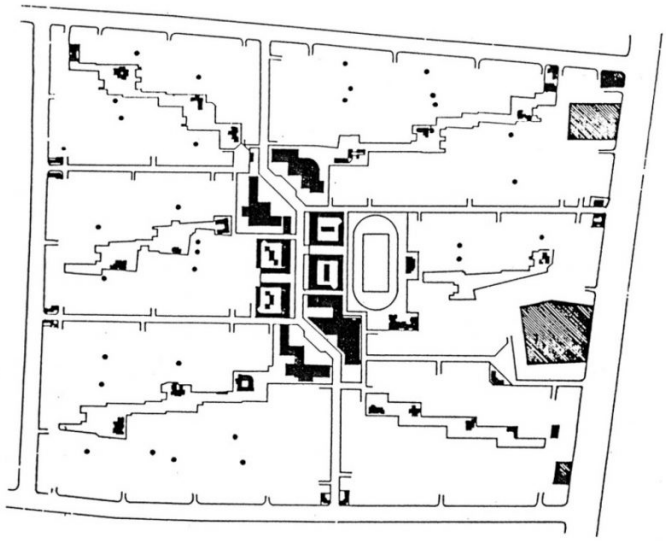
13 Otta

In addition to the housing units, the project incorporates intimate open spaces along every street. These so called ottas are small platforms that function as shared gathering spaces for several homes, located just outside the dwellings to encourage social interaction and community life.

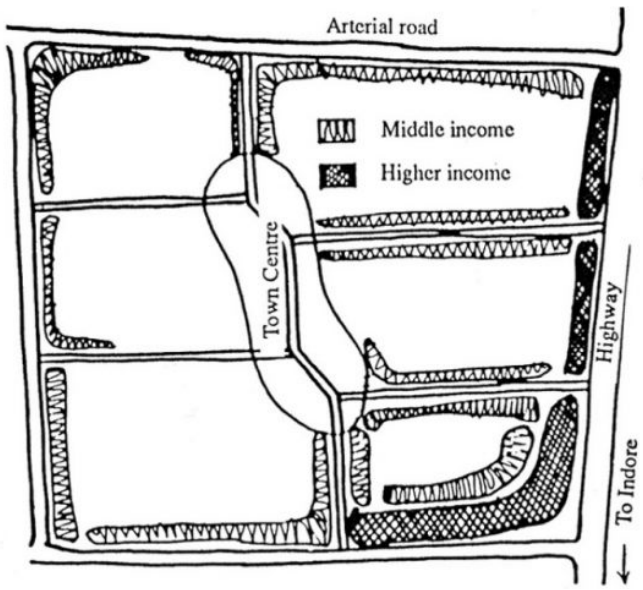
The masterplan also establishes a clear organization of open spaces and public facilities across the site. A diagonal spine runs through the plot, connecting larger public spaces and amenities, from which a network of branching paths extends. These branches become progressively narrower and lead directly to the housing units, forming pedestrian-oriented routes. This creates a hierarchy of roads in which vehicular and pedestrian movement are clearly and safely separated. Vehicles are directed toward the straight peripheral roads around the site, while pedestrians use the more informal and interconnected internal pathways (Hidden Architecture, 2023).



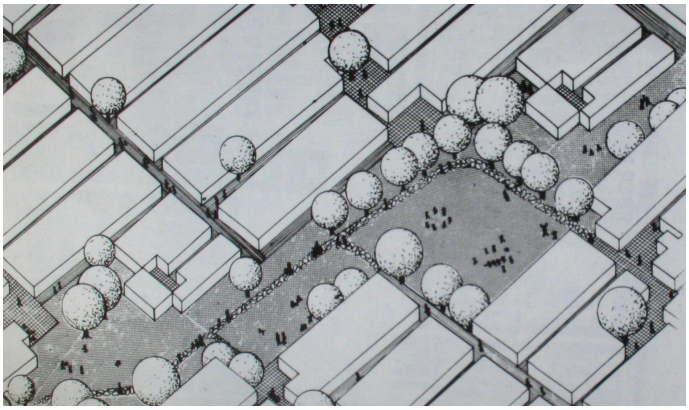
14 Illustration outside space



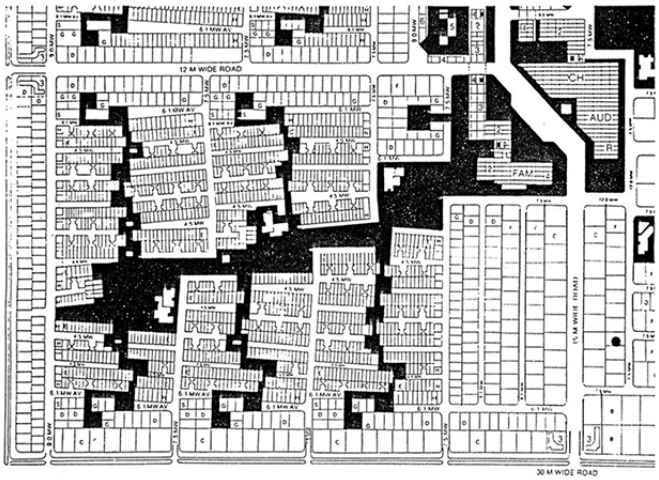
15 Diagonal spines with public spaces and amenities



16 Distribution income groups



17 Open space in between clusters



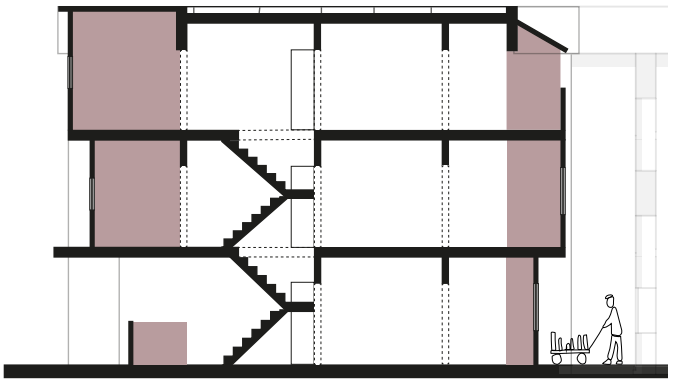
18 Network of branching pedestrian paths

Furthermore, the project accommodates different income groups. Lower-income housing is located primarily within the inner pedestrian network, ensuring that all essential services and amenities are within walking distance. Middle- and higher-income housing is positioned along the larger vehicular roads surrounding the site. This arrangement creates a spatial structure with higher-income groups forming a outer edge, while lower-income communities and public amenities occupy the central core of the development (Hidden Architecture, 2023).

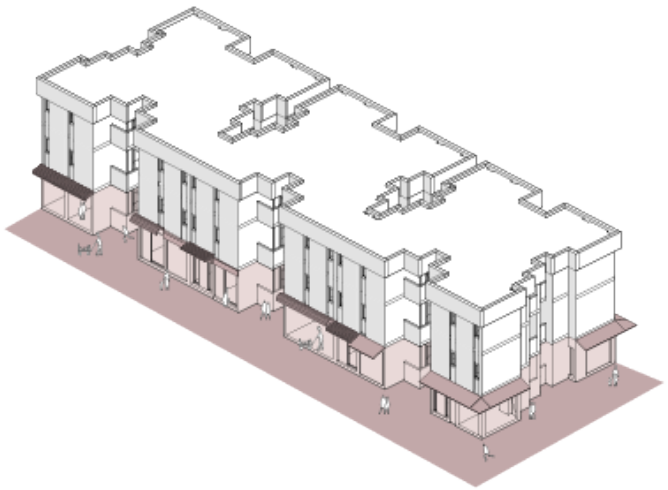
Case study: Sola Road Housing - Gujarat Housing Board

Sola Road is a housing project developed by the Gujarat Housing Board in Ahmedabad, India. Built in 1984, the project consists of low-income housing blocks arranged in a windmill-like configuration. Over time, Sola Road has evolved into an important link between the old neighbourhood and newer developments such as Sola Bridge, Science City, and the SG Highway. As a result, the area transformed from a low-density residential neighbourhood into a mixed-use urban fabric (Han & Aung, 2026).

The original design consisted solely of residential units, but the buildings gradually adapted to the changing needs of the residents. Today, many of the ground floors have been converted into commercial shops. Residents have also added extensions to the buildings (Han & Aung, 2026), such as enlarged balconies and bigger windows, in order to expand their living spaces or businesses.



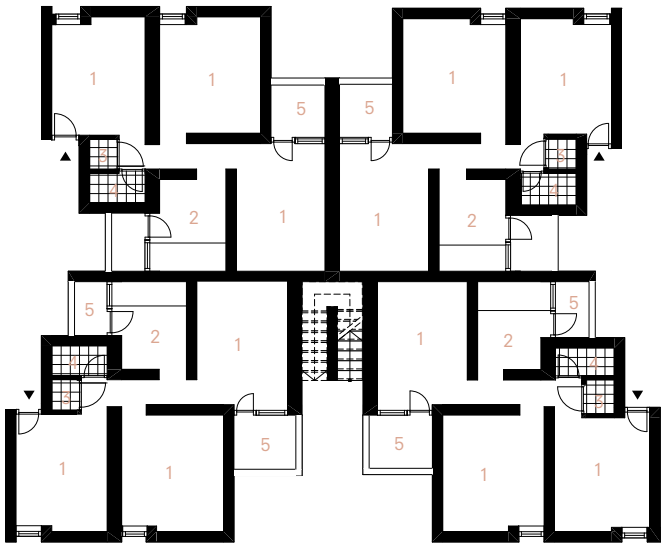
20 *Self-built extensions*



19 *Ground floor with commercial shops*



21 *Staircase*

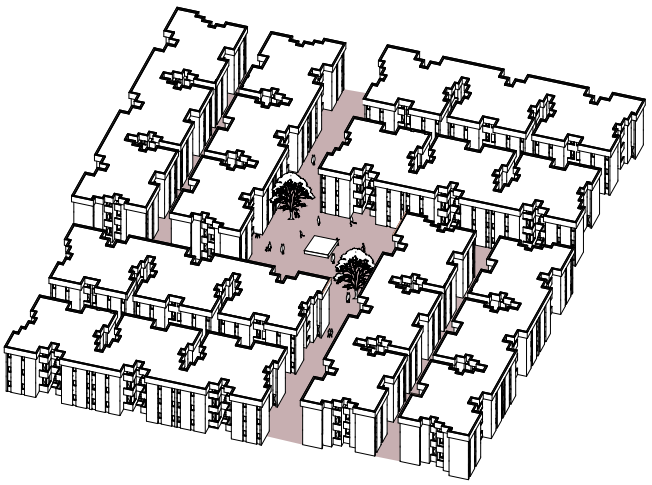


1 Living/Bedroom
2 Kitchen
3 Toilet
4 Bathroom
5 Outdoor space

22 Four units around the central staircase

The floor plan contains four units per floor organised around a central staircase. This staircase not only provides efficient vertical circulation but also functions as a ventilation shaft, improving airflow throughout the building. Each housing unit includes five different types of spaces: three rooms used as living and sleeping areas, one kitchen, one toilet, one bathroom, and two outdoor spaces. The kitchen is positioned next to a balcony at the rear of the unit to enhance natural ventilation. The toilet and bathroom are compact and designed to use only the minimum required space efficiently (Han & Aung, 2026).

Each cluster is made up of four identical blocks arranged in a windmill formation, creating a large central open space intended for community activities and social interaction. The blocks are separated by internal roads and small pedestrian pathways, contributing to the accessibility and communal character of the neighbourhood (Han & Aung, 2026).



23 Cluster in windmill formation creates a large open space

Case study: Dar Lamane Housing - Charai + Lazrak Architects

Dar Lamane is a low-income housing project by Charai + Lazrak architects in Casablanca and was completed in 1983. It was primarily designed to accommodate formerly rural or nomadic communities. As a result, the project focused less on the design of individual housing units and more on the quality of public space, pedestrian networks, and the relationships between housing clusters (Aga Khan Development Network, 2024). Entrances to the dwellings face one another, staircases extend into the streets, and open stairways function as communal balconies where neighbors can meet and interact.

The housing clusters consist of parallel rows of four- to five-story apartment blocks, separated by pedestrian streets that lead directly to the building entrances (Aga Khan Development Network, 2024). To break up the long facades, gateways and open staircases were incorporated, improving ventilation, enhancing the sense of safety, and helping residents navigate through the complex. These gateways often connect to shopping streets and link the different housing clusters together.



24 *Extending staircase into the street*

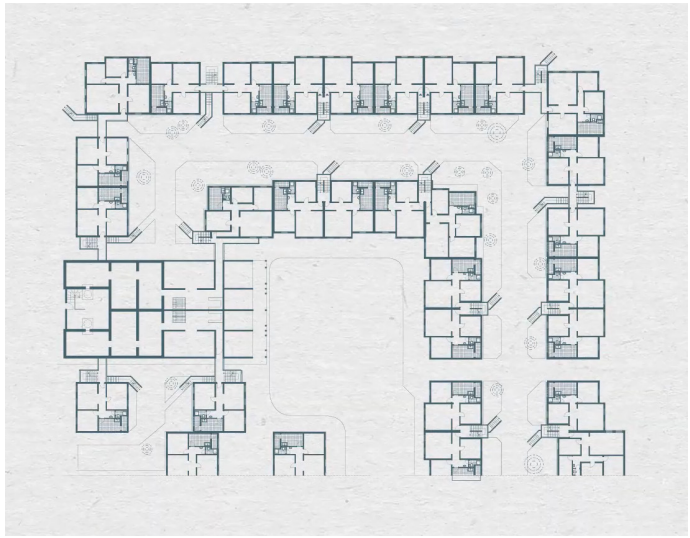


25 *Painted ground floor arcade*



26 *Dynamic facade composition with gateway*

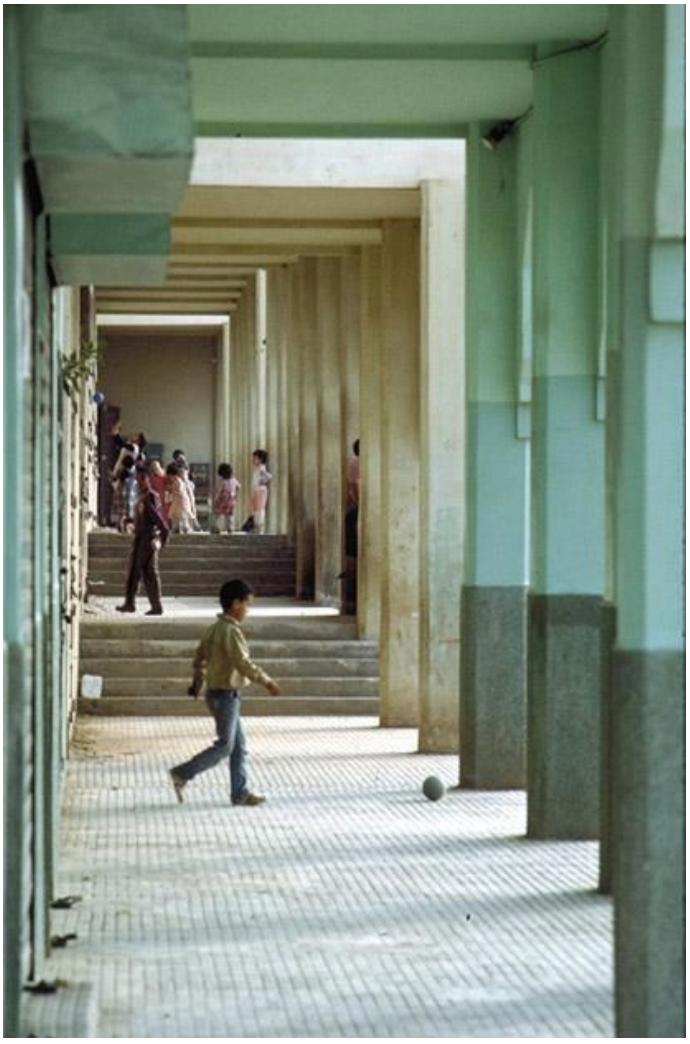
On the ground floor, aracdes are frequently painted in different colors, while sections of the upper facades project outward, adding depth and variation to the buildings. The buildings are constructed from concrete and brick, with a plaster finish that helps reduce heat absorption and keeps the interiors cooler.



27 *Parallel rows of housing*



28 *Shops located under the arcade*



29 *Shaded arcade*

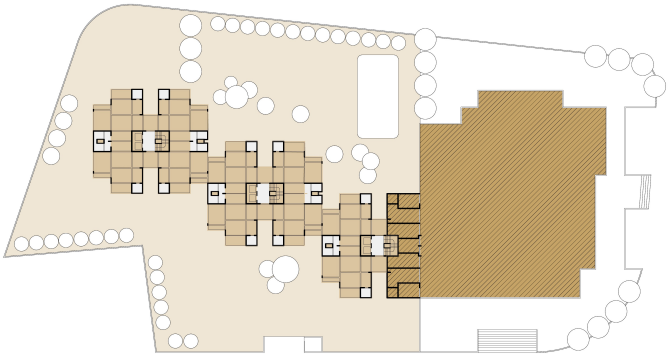
Case study: Centre point residency - Hashmukh Chandulal Patel

Centre Point Residency in Ahmedabad was designed by Hashmukh Chandulal Patel and his firm, HCP Design, Planning and Management and built between 1985 and 1987. He is known for his user-centered design approach, practical spatial organization and high professional standards (Van Beveren & Prins, 2026) and applied these principles in this mixed-use development, which combines residential towers with retail facilities.

The ground floor is divided into two zones: a public shopping center and plaza facing the busy five-road intersection and a collective residential area with a swimming pool, playground, and clubhouse. The complex is constructed with an RCC frame and brick infill walls, finished with plaster and painted in an orange/yellow tone that make it stand out in its surroundings (Van Beveren & Prins, 2026).



31 *Open ground floor play area*



32 *Public and collective area division*



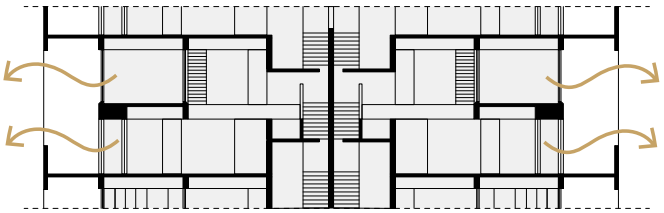
30 *Facade*



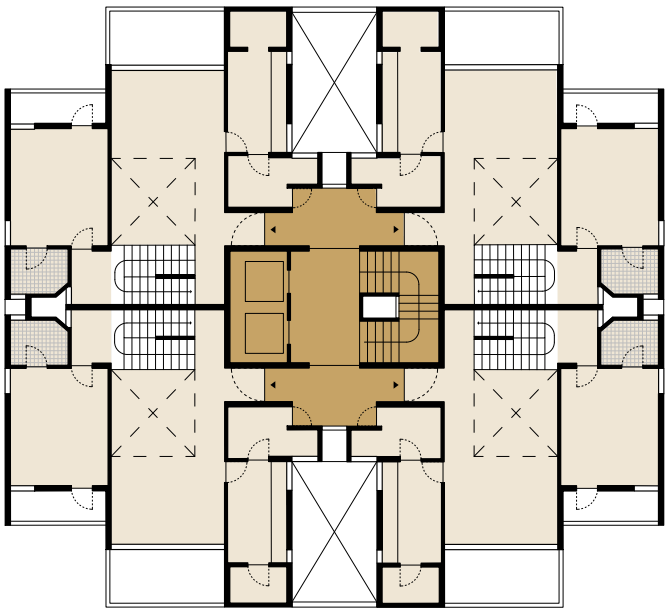
33 *Located at a five-road intersection*

The project consists of three staggered residential towers, creating interlocking forms while ensuring privacy, natural ventilation and daylight for the apartments. Designed for high-income families, the spacious maisonette units separate social and private functions across different levels.

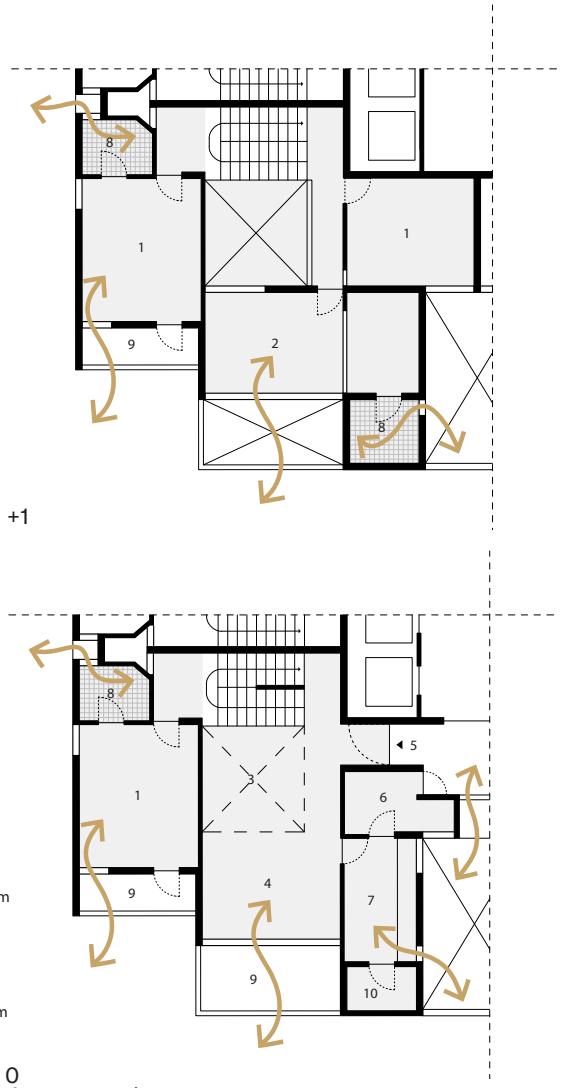
Each floor contains four mirrored apartments arranged around a central circulation core with elevators, stairs, and service spaces. Large ventilation voids and vertical shafts provide additional airflow and daylight (Van Beveren & Prins, 2026). Private balconies, en-suite bathrooms and separate servant entrances further enhance the quality of the units. The combination of double-height spaces, balconies, ventilation openings, and projecting facade elements creates a varied and dynamic facade composition.



35 Maisonette typology



34 Four mirrored appartments around the circulation core



36 Ventilation flow, social/private division and double heights

Case studies: Conclusion

By comparing the four case studies, several recurring spatial and social design principles become clear. Although the projects differ in scale, target group, cultural context, and architectural expression, they all demonstrate how housing can act as an evolving structure that adapts to urban, climatic, and social conditions rather than functioning as a fixed object.

A key recurring theme is the clear structuring of public, collective, and private layers. Across all projects, this hierarchy is carefully organized at multiple scales: from the internal organization of units and circulation cores, to the configuration of buildings within clusters and further to the urban design of streets and open spaces. Rather than strict separation, these realms are layered and interconnected, allowing for controlled interaction and meaningful transitions between different levels of privacy and social interaction.

Closely related to this is the importance of circulation as a structuring device. Hierarchies of movement, distinguishing between pedestrian and vehicular networks, are consistently used to organize spatial relationships and improve safety. Circulation cores and staircases do not only serve functional purposes but also support ventilation and informal interaction between residents.

Another shared strategy is the integration of adaptable housing systems. In projects such as Aranya and Sola Road, dwellings are designed to evolve over time through incremental growth or user-driven adaptation. This open-ended approach allows dwellings to evolve over time through incremental growth and user-driven adaptation, supporting both spatial expansion over time and the continuous redefinition of domestic space through use.

The case studies also emphasize the role of public and semi-public open space as a structuring urban element. Varying scales of open space, ranging from intimate thresholds such as ottas to larger communal courtyards and plazas, support orientation, social interaction, and a sense of community. These spaces are often directly connected to circulation routes, reinforcing their accessibility and everyday use.

Finally, the projects demonstrate that density and socio-economic diversity can be organized through spatial strategies rather than segregation. Different income groups and functions are integrated within organized spatial arrangements, where distance, accessibility, and infrastructure play a key role in balancing separation and inclusion.

Overall, the case studies show that housing design relies on a careful interplay between structure and flexibility. A clear framework is used to organize movement, access, and public life, while also allowing for diversity in use and responsiveness to changing social and urban conditions.

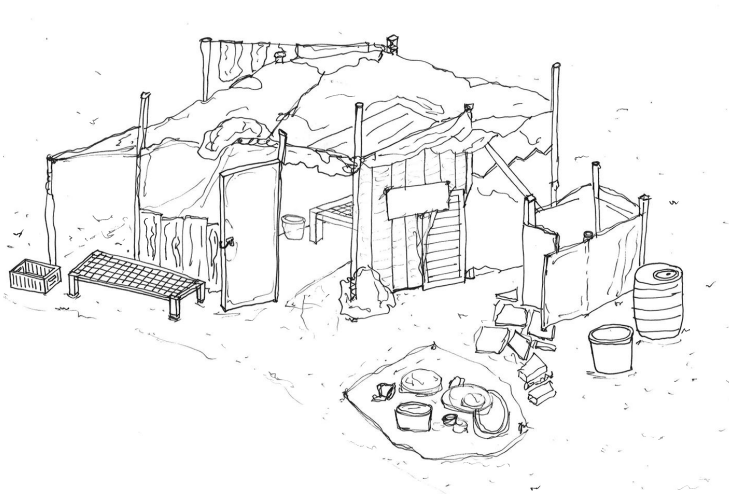
03/

RESULTS

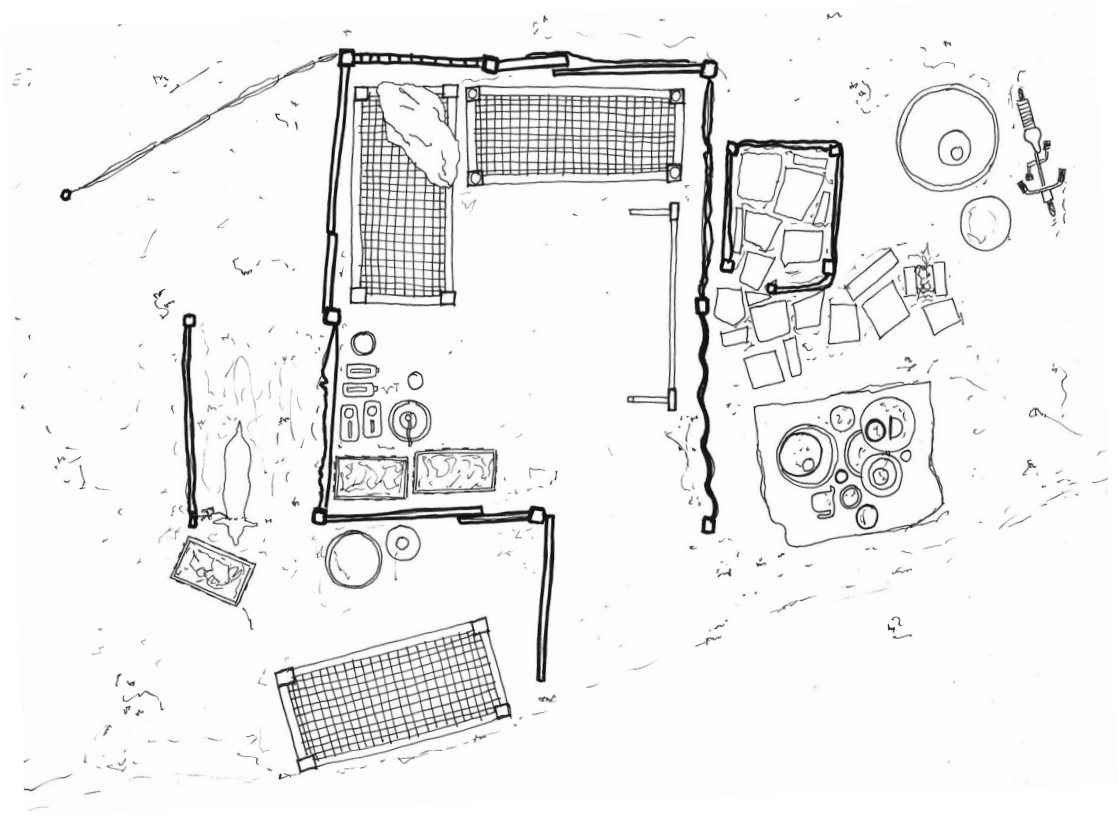
03/ Results

Fieldwork: Typical dwelling unit

The residents of Rajiv Nagar live in kutcha houses: self-built dwellings constructed from leftover and recycled materials such as corrugated metal sheets and tarpaulins. The interior living space averages around 12 m² per household. In addition, residents often appropriate a small area adjacent to their homes for various essential activities, including self-built sanitation facilities, keeping domestic animals, washing clothes and cooking. Despite the limited living space, each dwelling is generally shared by five to six people.



38 Illustration typical dwelling unit



37 Floorplan typical dwelling unit



39 *Materials dwelling units*

Fieldwork: The site

Although everything in Rajiv Nagar has been built informally, years of continuous occupation have resulted in a clear spatial and social structure structure within the community. The settlement includes several shared facilities, such as a public toilet and a temple, while informal pathways and clusters of dwellings have emerged organically over time. Many residents have designated spaces for their vehicles and livestock and some households have been able to upgrade their homes with more durable bamboo-based constructions. Furthermore, the settlement has clearly recognizable boundaries and maintains little to no interaction with the surrounding area.



***40** Open field*



41 *Kuccha houses*



42 *Entrance to the settlement from the metro side*

Fieldwork: The site



43 *Dwellings built close together*



44 *Naturally formed pathways*



45 Self-built sanitary facilities



46 Temple

Fieldwork: The site



47 Dwellings built in a cluster



48 Lots of animals



49 Parked rickshaw next to a dwelling



50 Bigger dwelling with a bamboo construction

Fieldwork: The site



51 *High blank wall surrounding the settlement*



52 *Passage from the surrounding area into the settlement*



53 *Metro seen from the settlement*

Fieldwork: Challenges

There is a lack of basic amenities in Rajiv Nagar that makes everyday life both unpleasant and more complicated. Households, for instance, do not have access to running water, drainage systems or electricity, which also means that residents lack proper sanitation facilities.

In addition, waste is often dumped next to houses by local residents and collected by the municipality only once every two to three months. There is also a clear physical separation between Rajiv Nagar and its surroundings, as the entire informal settlement is enclosed by high blank walls. Finally, the dwellings are poorly adapted to the climate, as the temporary materials used in construction only worsen living conditions.



54 Water supply in jerry cans



55 Self-built sanitary facility



56 *High blank wall surrounding the settlement*



57 *Pile of dumped waste*



58 *Dwelllings made out of temporary constrcution materials*

Fieldwork: Everyday life of a woman

Women in Rajiv Nagar spend most of their day in and around their homes. Here, they carry out household tasks, socialize with neighbors, and care for their children. For activities such as collecting water, visiting public toilets or going to the temple, they move somewhat further into the settlement. However, they rarely leave the settlement, and when they do, it is generally accompanied by their husband. In addition, employement is notably absent as a daily activity in the lives of stay-at-home women.



1 - 05:45AM
Wake up

2 - 06:00AM
Get water at the water pump

3 - 06:30AM
Stand in line for the public toilet

4 - 07:30AM
Wash herself

5 - 09:00AM
Take care of kids

6 - 10:00AM
Wash dishes

7 - 12:00PM
Hang up laundry

8 - 15:00PM
Socialize on daybed

9 - 20:00PM
Cook food for her family

10 - 21:00PM
Feed the goats with leftover food

1 - 22:00PM
Go to bed

59 Diagram day-in-the-life of a stay-at-home women

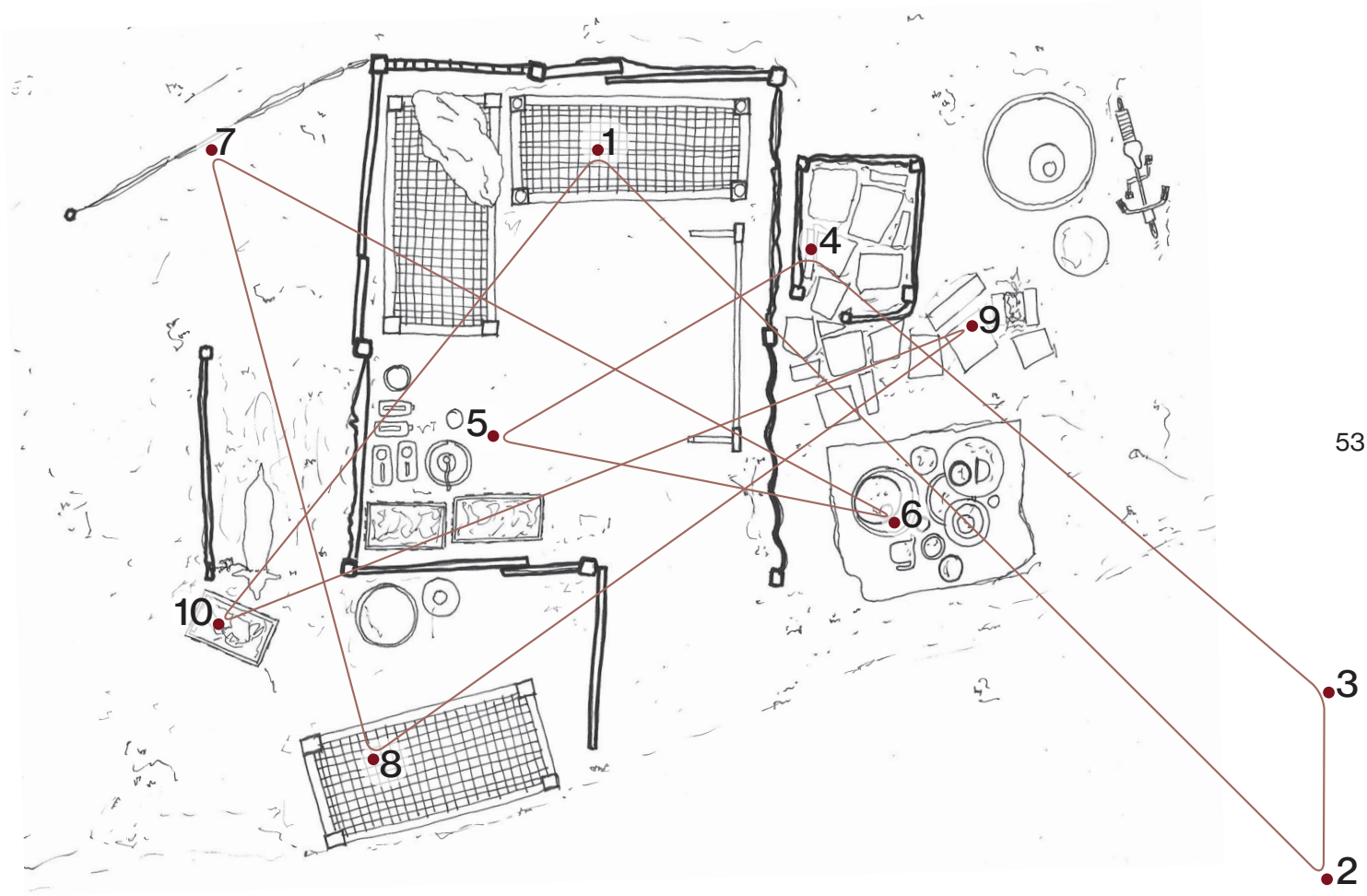

1


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3


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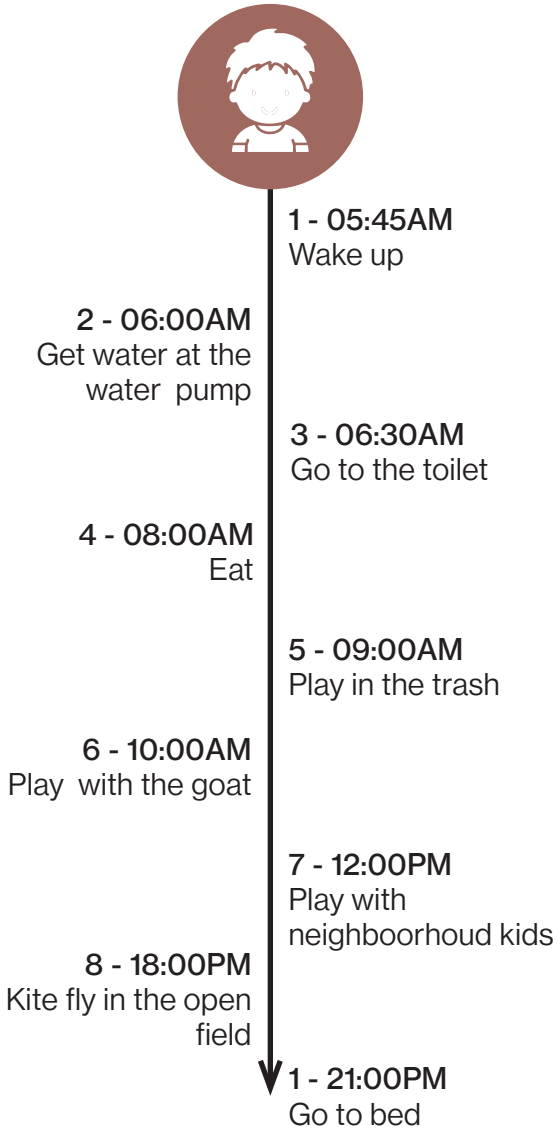

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9


10

Fieldwork: Everyday life of a child

Children in Rajiv Nagar also spend most of their day in and around their homes. They often assist with tasks such as collecting water fromt the water pump located elsewhere in the settlement and spend much of their remaining time playing with other children from the neighborhood. Although there is a small school located outside the settlement, attending it is not always possible for all children. As a result, many children do not receive formal education.



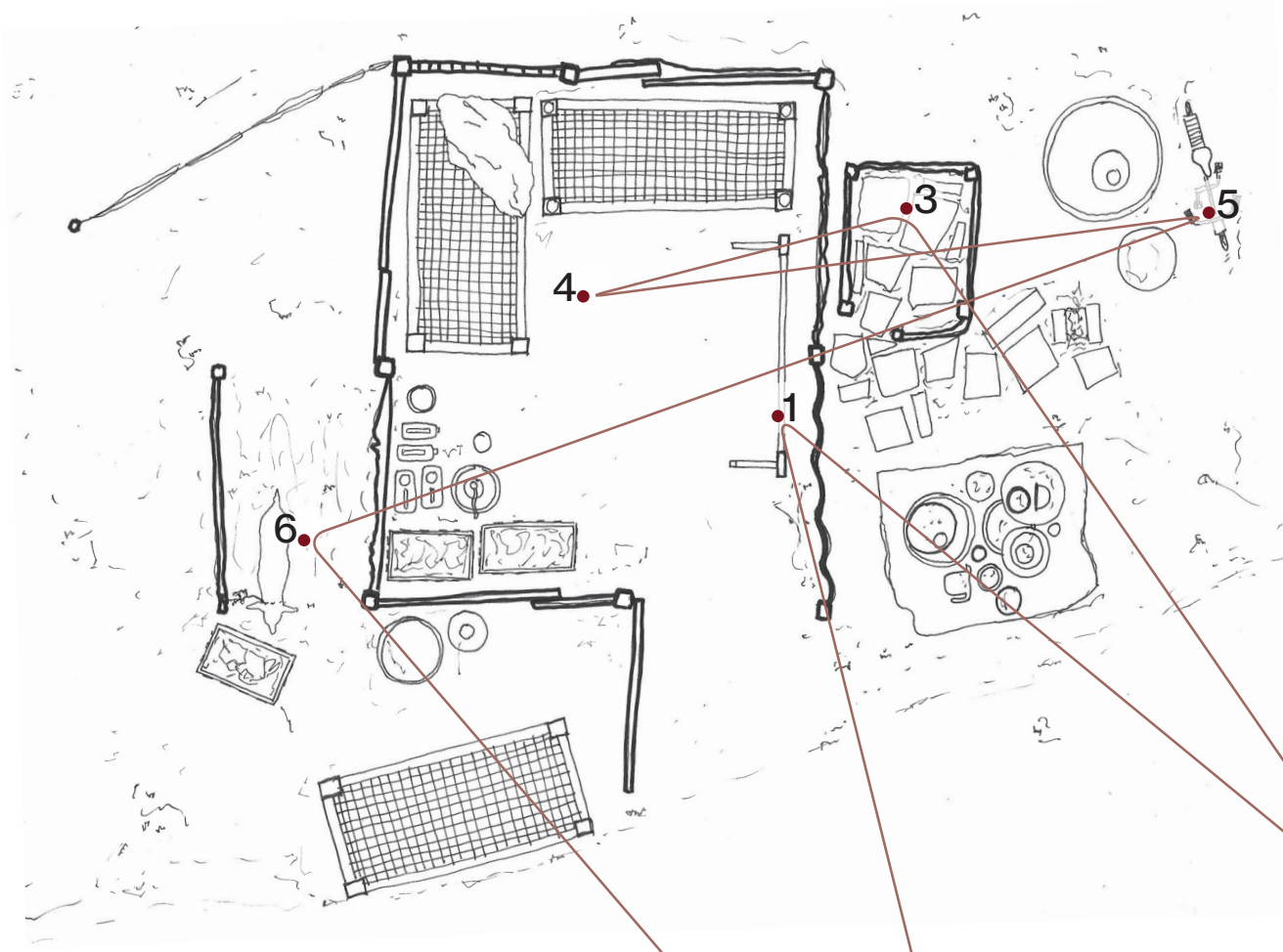
60 Diagram day-in-the-life of a child


1


2


3


4




5


6


7


8

Mapping: Site analysis

As shown in these satellite images, Rajiv Nagar is a relatively new settlement that has witnessed the development of the nearby metro station over time. During the past twelve years, the settlement has experienced significant growth, with many new dwellings being added. Nevertheless, large areas of the site remain vacant, indicating potential for further expansion.



61 *Residential development 2013 - 2017 - 2020 - 2025*

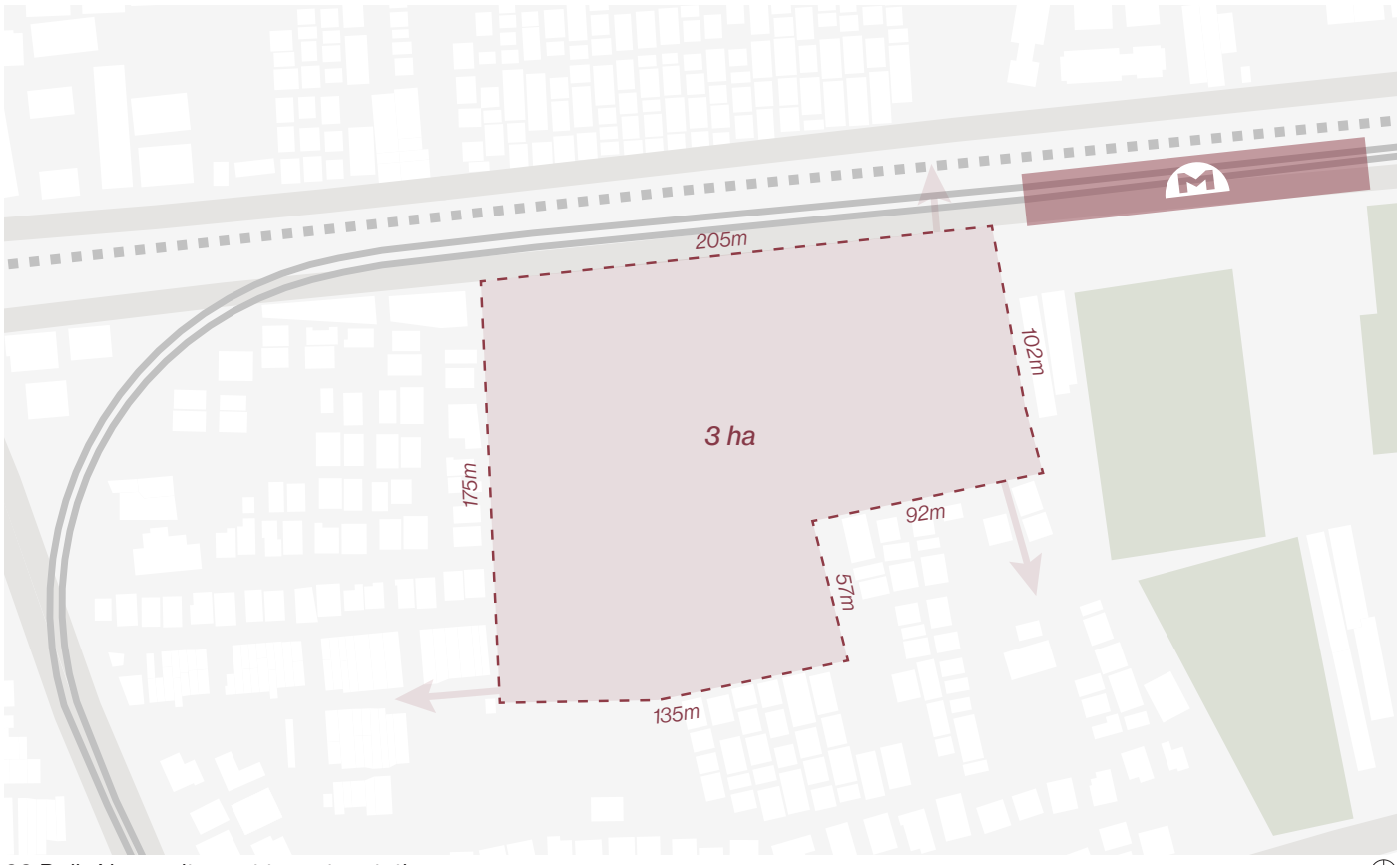




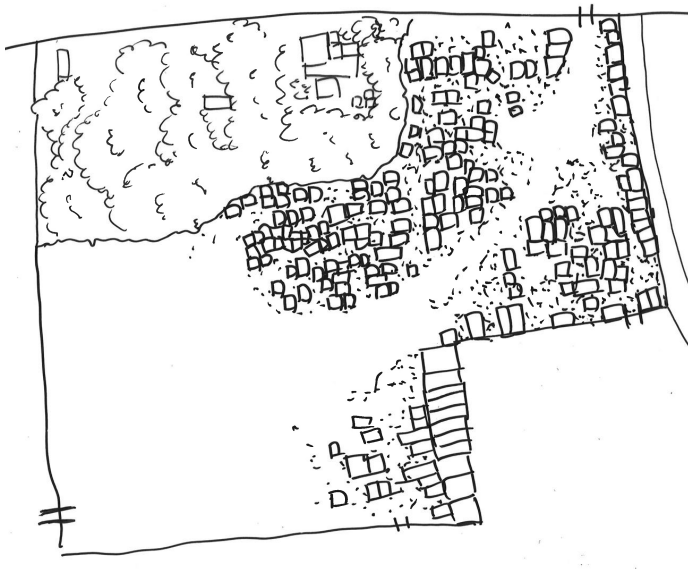
Mapping: Site analysis

Rajiv Nagar is clearly separated from its surroundings, with only three main access points connecting the settlement to the wider urban area. Differences in construction materials and building heights further emphasize this distinction, with temporary materials dominating inside the settlement and concrete and brick buildings outside.

New dwellings are typically built next to existing ones rather than in open spaces and a path leading from the metro station is clearly visible and runs through the settlement. Residents with similar occupations, such as naka workers, vegetable sellers, and rickshaw drivers, also appear to live close to one another.



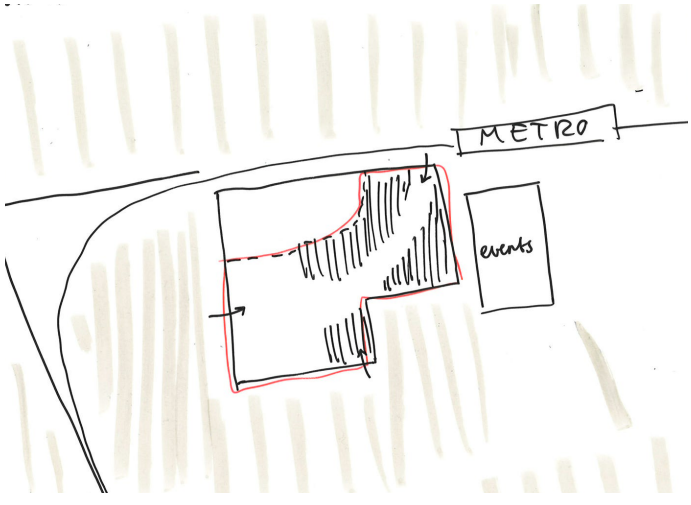
62 Rajiv Nagar site next to metro station



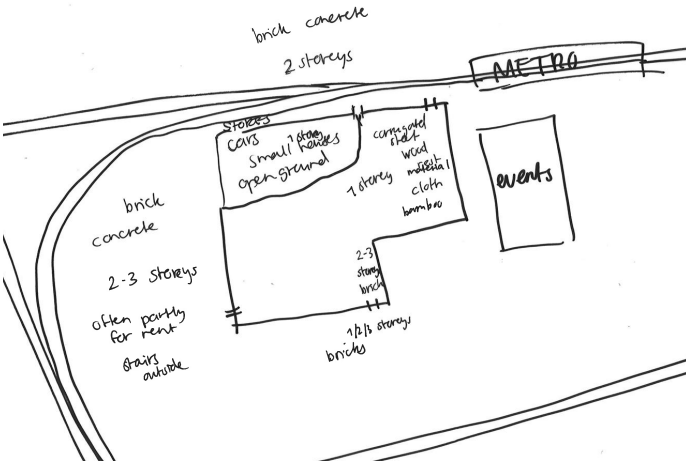
63 *Density*



65 *Observations site*



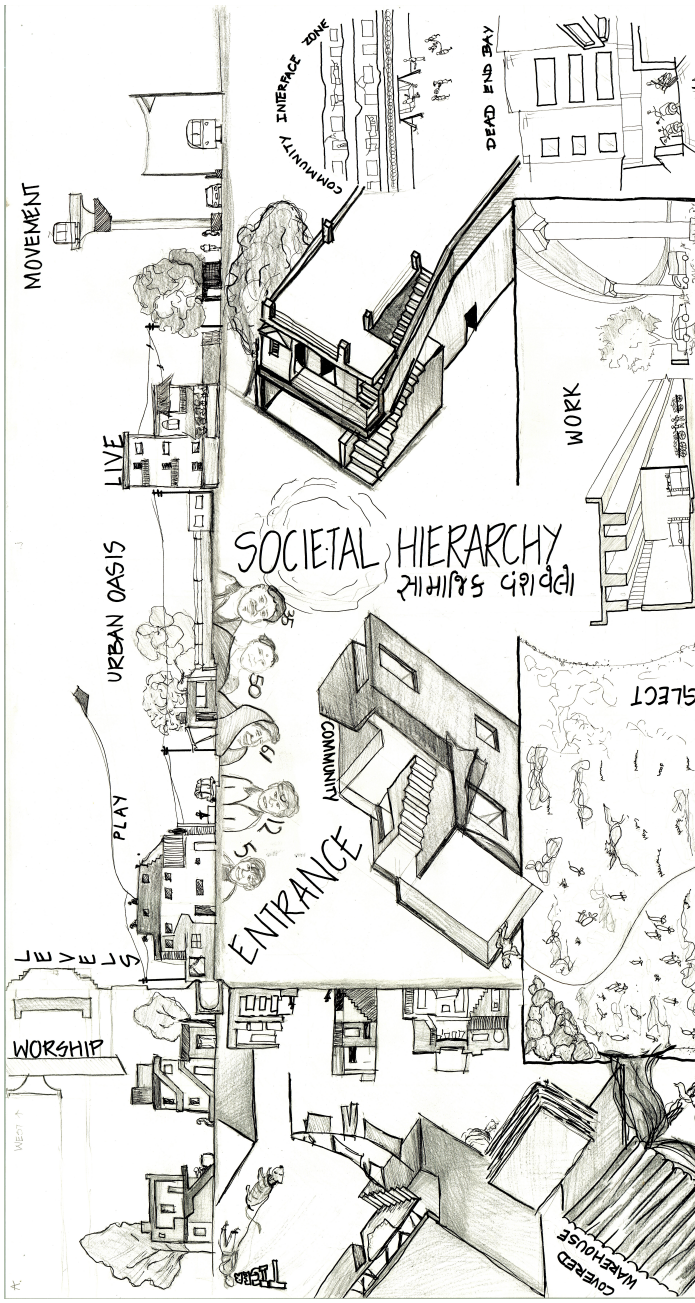
64 *Built mass on and around the plot*



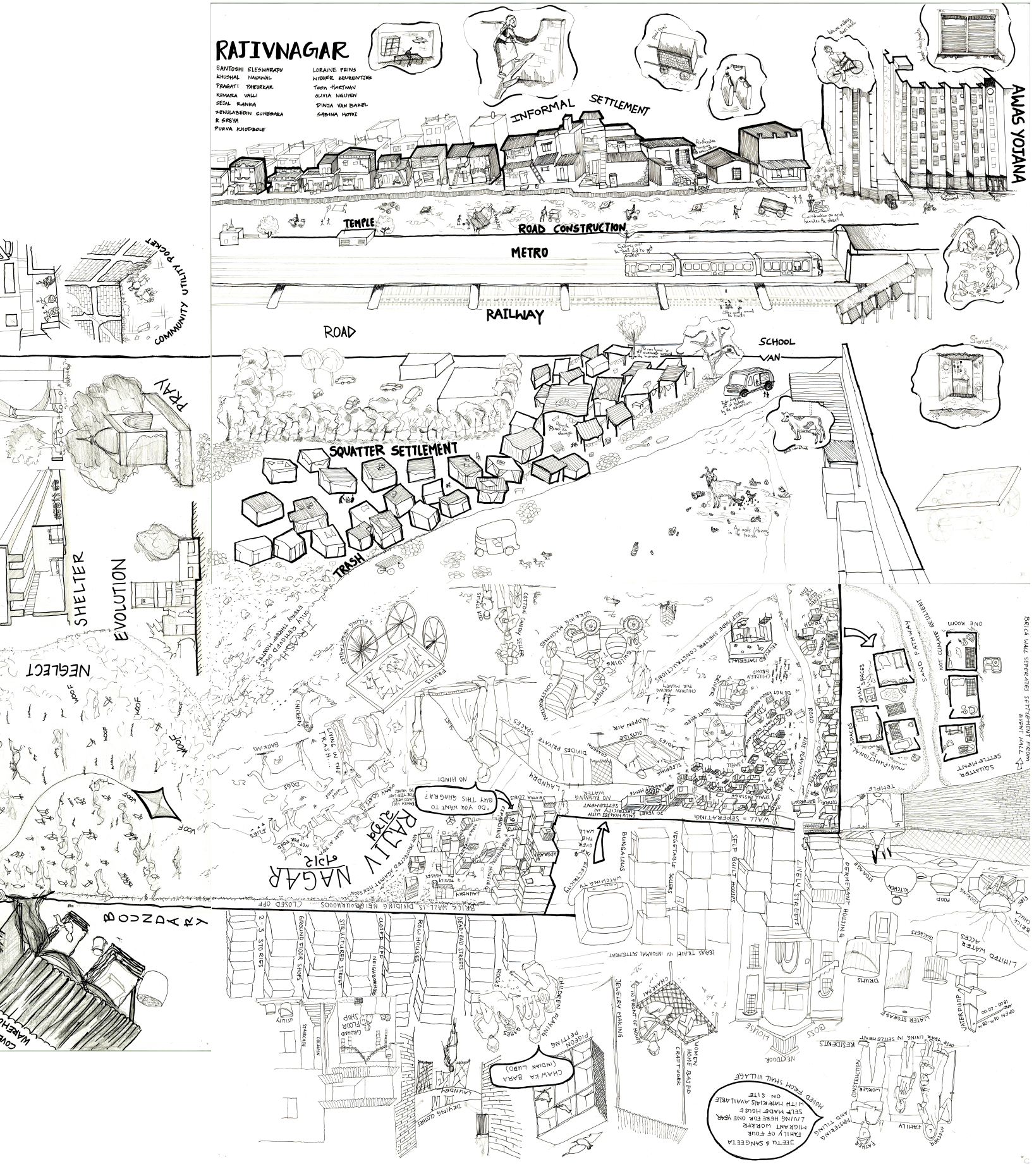
66 *Observations dwellings*

TU Delft X CEPT winterschool

A sensory map was developed in collaboration with students from CEPT University in Ahmedabad, illustrating what people feel, see, experience and notice within the informal settlement and its surrounding areas.



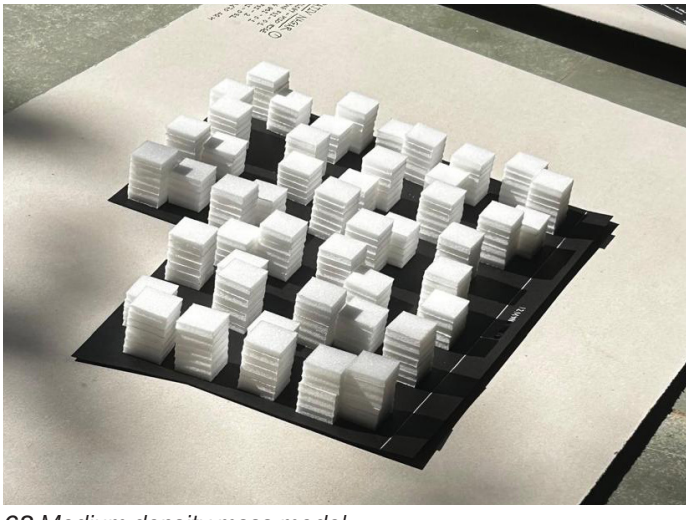
67 Sensory map Rajiv Nagar


RAJIVNAGAR
SANTOSHI ELESWARAPU
KHUSHAL NAVAWAL
PRAGATI TAKURKAR
KUMARA VALLI
SEJAL RANKA
ZENULABEDIN GUNESARA
R SREYA
PURVA KHOPDOLE
LORAINE PRINS
WIEGER KEURENTJES
TOON HARTMAN
OLIVIA NGUYEN
DINJA VAN BAKEL
SABINA HOTOI
INFORMAL SETTLEMENT
AWAS YOJANA
TEMPLE
ROAD CONSTRUCTION
METRO
RAILWAY
ROAD
SCHOOL VAN
COMMUNITY UTILITY POCKET
PRAY
SQUATTER SETTLEMENT
TRASH
SHELTER
EVOLUTION
NEGLECT
BOUNDARY
RAJIV NAGAR
BRICK WALL SEPERATES SETTLEMENT FROM EVENT HALL
ONE ROOM
SQUATTER SETTLEMENT
TEMPLE
WALL - SEPERATING
LAUNDRY
DO YOU WANT TO BUY THIS GHAGRA?
NO HINDI
BUNGALOWS
VEGETABLE SELLERS
SELF BUILT HOMES
PERMANENT
TOILETS
LIMITED WATER ACCESS
GOSS HOUSE
NEXTDOOR
RESIDENTS
WATER STORAGE
WATER PUMP
OPEN 04:00 - 10:00
WORKER
CONSTRUCTION
FAMILY
PAINTING AND TILING
MARBLE
JEETU & SANGEETA
FAMILY OF FOUR
MIGRANT WORKER
LIVING HERE FOR ONE YEAR
SELF MADE HOUSE
WITH WATER AVAILABLE ON SITE
MOVED FROM SHAH VILLAGE
CHAW KA GHAR (INDIAN LUDO)
WOMEN HOME BASED CRAFTWORK
JEWELRY MAKING
PIGEON PETTING
GAMES PLAYING
CHILDREN
DEAD END STREETS
ROAD HOUSES
CLOSED OFF
NEIGHBOURHOOD
STRUCTURES STRAIGHT
GROUND FLOOR SHOPS
2 - 3 STORIES
BRICK WALL IS DIVIDING NEIGHBOURHOODS CLOSED OFF
COVERED WATER
LAUNDRY
DRYING CLOTHES
SHOP
GROUND FLOOR
STORAGE
COUNTRY
CLOTHES
DOGS
GOATS
CHICKEN
COWS
TRASH
SHEEP
HOOF
SELLING USEFUL THINGS
CLOTHES
TOOLS
COTTON CANDY SELLER
SELLING
CONSTRUCTION
CEMENT
BUILDING
WORKING MACHINES
SELF MADE JHUGGI CONSTRUCTIONS
CHILDREN PLAYING
CHILDREN AT WORK
DO NOT LITTER
OPEN AIR
OUTSIDE
DIVIDES PRIVATE
SLEEPING
SHOES
SPACES
KIDS PLAYING
ROAD
SANITATION
SPACES
MULTIFUNCTIONAL
SANDPATH WAY
SQUATTER SETTLEMENT
EVENT HALL
TEMPLE
LEAVES TRASH IN INFORMAL SETTLEMENT
NO FLUSHING
NO RUNNING WATER
30 YEARS OF EXISTENCE IN SETTLEMENT
ONLY WORKERS WITH
STRUCTURES
TOILETS
SHOPS
SELF BUILT HOMES
VEGETABLE SELLERS
BUNGALOWS
WARTIME TV
FLUSH
WATER
TOILET
BLOCK
CHULA
FOOD
KITCHEN
STORAGE
PERMANENT
TOILETS
LIMITED WATER ACCESS
DRAINS
GUARD
NEXTDOOR
GOSS HOUSE
WATER STORAGE
WATER PUMP
OPEN 04:00 - 10:00
RESIDENTS
ONE YEAR LIVING IN SETTLEMENT
CONSTRUCTION
WORKER

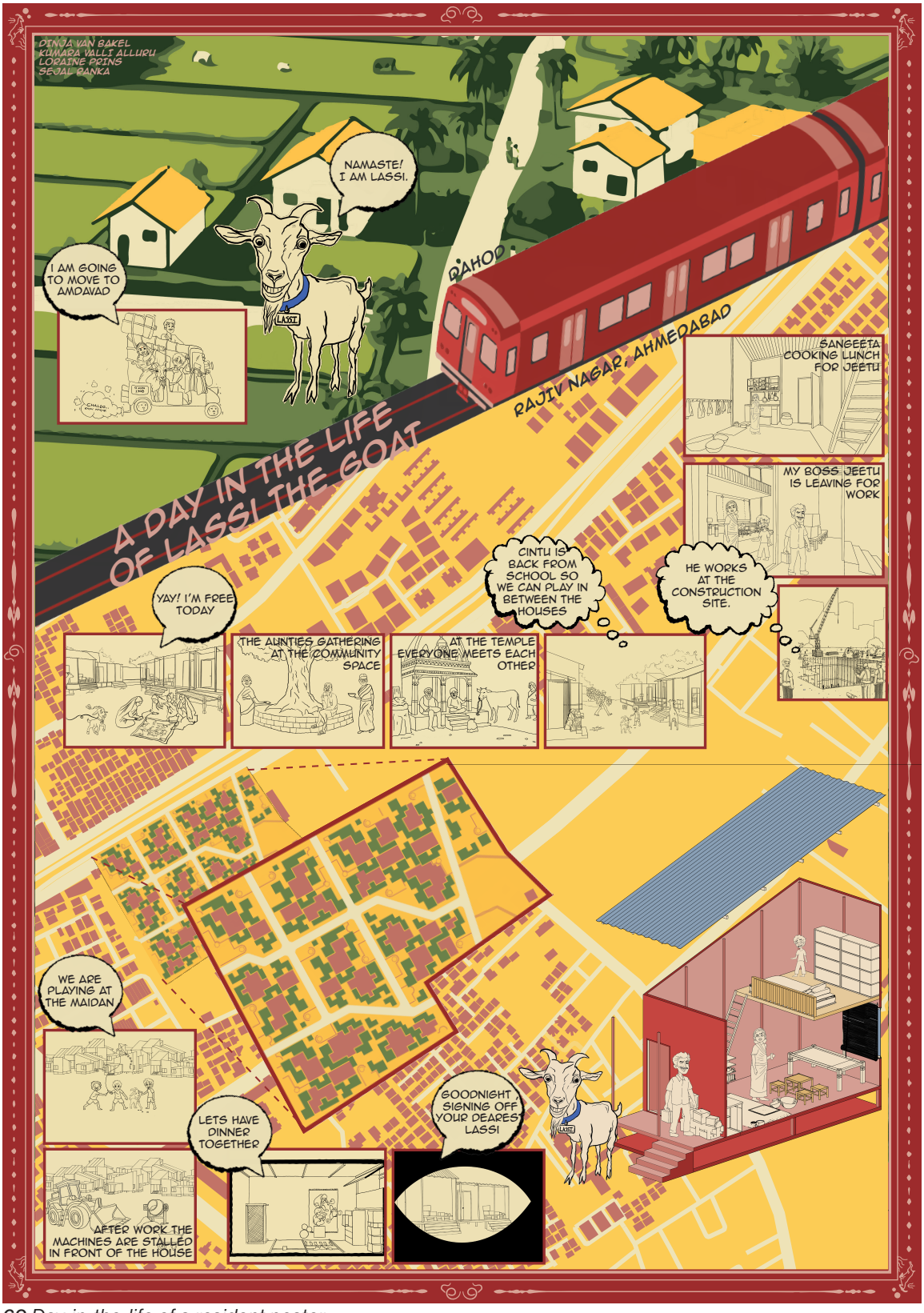
TU Delft X CEPT winterschool

Working in smaller groups, students explored urban density through massing models. A “Day in the Life” poster was also developed to illustrate the daily experiences and routines of a resident of Rajiv Nagar.





68 *Medium density mass model*



69 Day-in-the-life of a resident poster

Fieldwork: Surrounding area

The surrounding area of Rajiv Nagar was also studied to understand how people live and to learn from their everyday environment and conditions.



70 *Pucca house*



71 Shop on the ground floor of a dwelling



72 Narrow shaded streets

Fieldwork: Surrounding area



73 Roof terraces



74 Outside washing area



75 *Higher buidlings*



76 *Informal market*

Fieldwork: Surrounding area



77 Drainage problem



78 Pedestrian pathways with greenery



79 *Neighbours socializing on street*



80 *Vehicular road underneath the metro line*

Design framework

The research provides a clear foundation for a design framework. The investigations reveal how informal settlements function as complex social and spatial systems and highlights opportunities for architectural intervention that go beyond simply providing housing. Four key findings have been translated into a set of spatial strategies that together form the design framework for this project.

Urban integration

The first strategy focuses on strengthening the integration of the informal settlement into the wider urban fabric. Rajiv Nagar is currently a highly isolated community with limited interaction with its surrounding areas. By reinforcing both physical and social connections with neighbouring districts, the metro network and the city, new opportunities for development can emerge.

Social infrastructure

The second strategy addresses the need for social infrastructure. The research shows that women and children spend most of their time in and around the home. By improving the local infrastructure with appropriate facilities and gradual transitions from private to (semi-)public space, women and children can expand their social networks and improve their opportunities for economic participation and development.

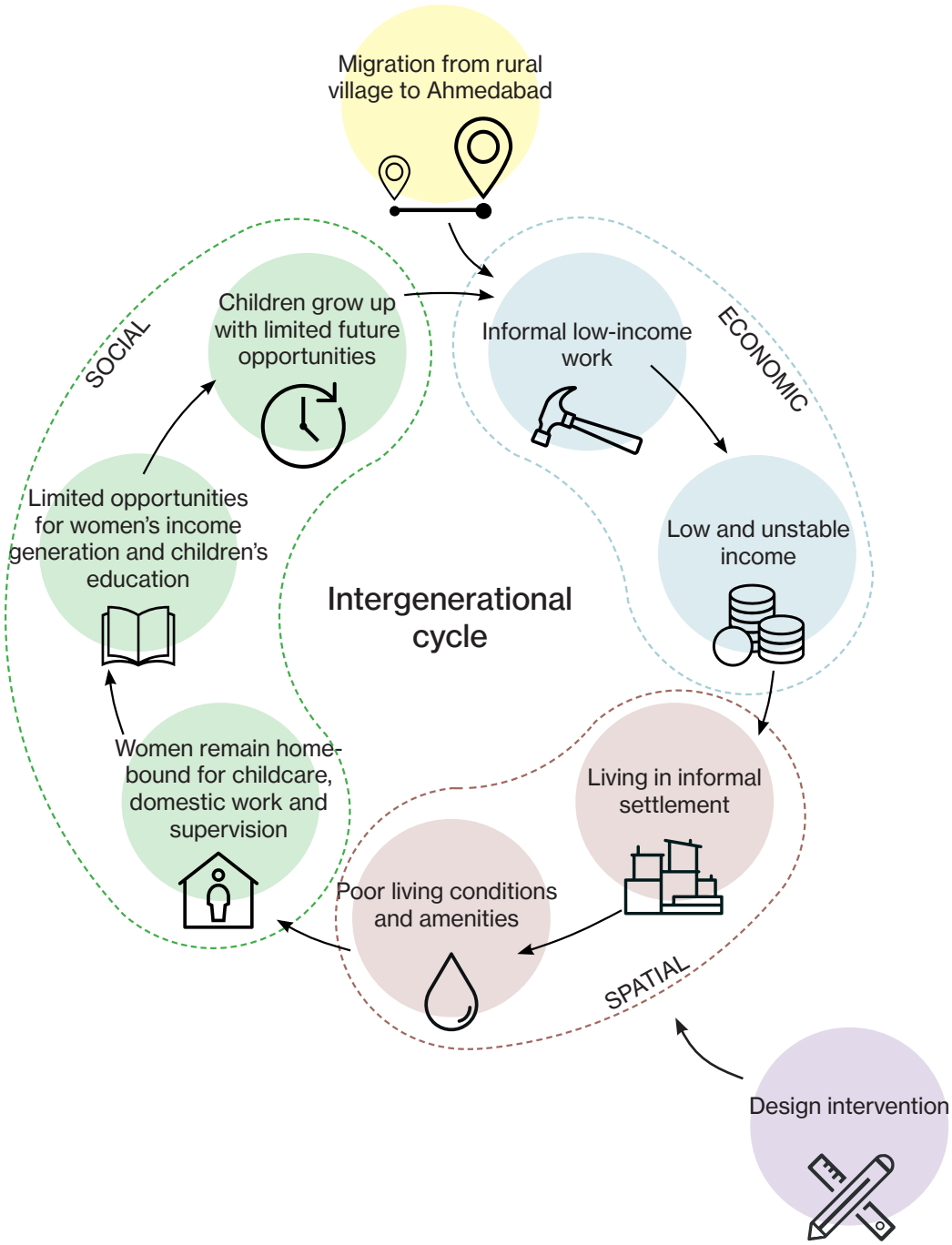
Climate-responsive living

In addition, creating a climate-responsive living environment is essential. Ahmedabad's climate strongly shapes daily life within the settlement, affecting both indoor and outdoor spaces. By applying climate-adaptive strategies across different scales, environmental discomfort can be reduced and spaces can be used more effectively throughout the day and across seasons.

Adaptive housing systems

Finally, housing should be understood as more than just shelter. It must be flexible and capable of adapting to daily life, social development, economic activities and future growth.

Together, these strategies form an integrated framework that balances permanence and flexibility, enabling residents to improve their living conditions while preserving the social structures and adaptive qualities that characterise informal urban environments.



81 Place of the design intervention in the intergenerational cycle

Design synthesis

Integration urban fabric

The masterplan strengthens the integration of Rajiv Nagar within the surrounding urban fabric through a series of access roads that connect directly to the existing city network, improving overall accessibility to and from the site.

A key element is the adjacent metro line and station, which is integrated into the design strategy. The main road along the metro corridor is lined with a continuous green buffer zone that reduces noise pollution and enhances the environmental quality of nearby residential areas.

The existing pedestrian route from the metro station is preserved and incorporated into the site layout, reinforcing public transport access and pedestrian connectivity as key urban principles.

The building strategy responds to both the urban context and the internal social structure. The tallest buildings are located near the metro station, aligning with the surrounding urban scale. Heights gradually decrease towards the interior of the site, creating a smooth transition and clear spatial hierarchy.

This height strategy also reflects different residential typologies: MIG and HIG housing are denser and more vertical, with a stronger focus on privacy, while lower-income housing maintains a closer relationship with the ground floor and the public realm.





82 Ground floor masterplan 1:1000

Pedestrian diagonal spine

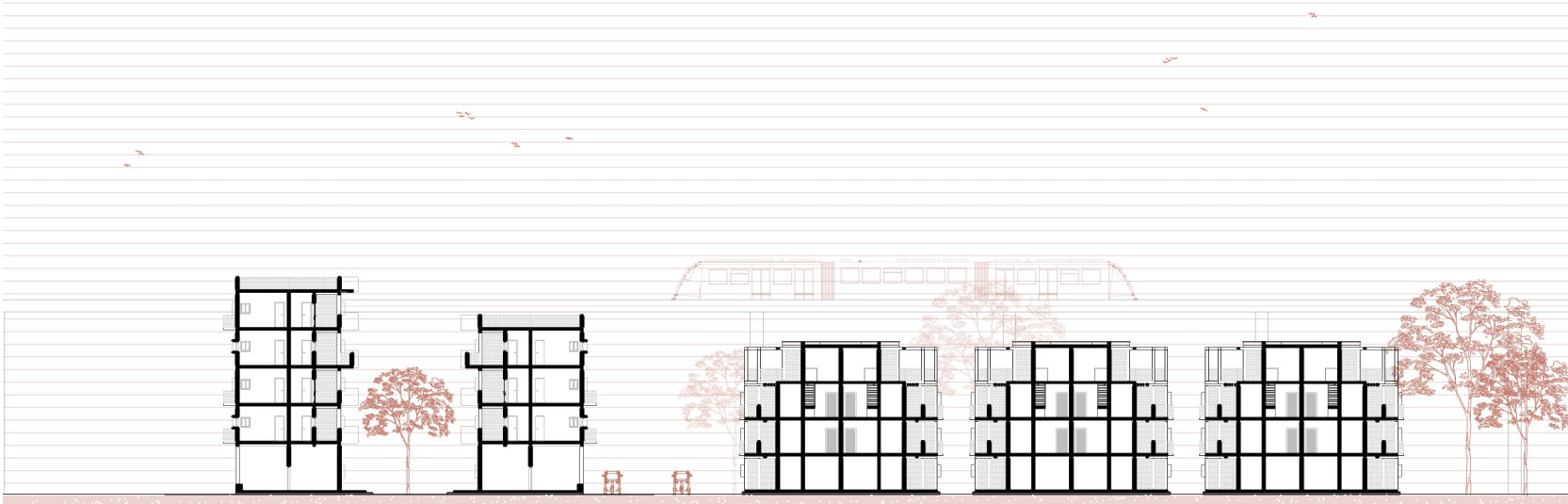
The site is organised around a diagonal public spine that acts as the main pedestrian and social connector through the neighbourhood. Along this route, key public functions are distributed, including temples, a school with daycare, a women-led training centre, and a sunken seating area for community gatherings, religious performances, and cultural events. Shaded spaces are integrated throughout, making the spine both a circulation corridor and a continuous social landscape that encourages interaction between residents and visitors.

Movement is structured through a clear hierarchy of roads, with primary vehicular routes connecting the site to the wider city and pedestrian paths distributing access deeper into the neighbourhood. The housing strategy introduces a mix of income groups (EWS/LIG, MIG I, and MIG II/HIG) as a framework for social integration rather than segregation. Higher-income housing is placed along main access roads and near the metro corridor, while lower-income housing is connected through pedestrian networks, promoting interaction between groups while supporting cross-subsidisation and local economic activity.

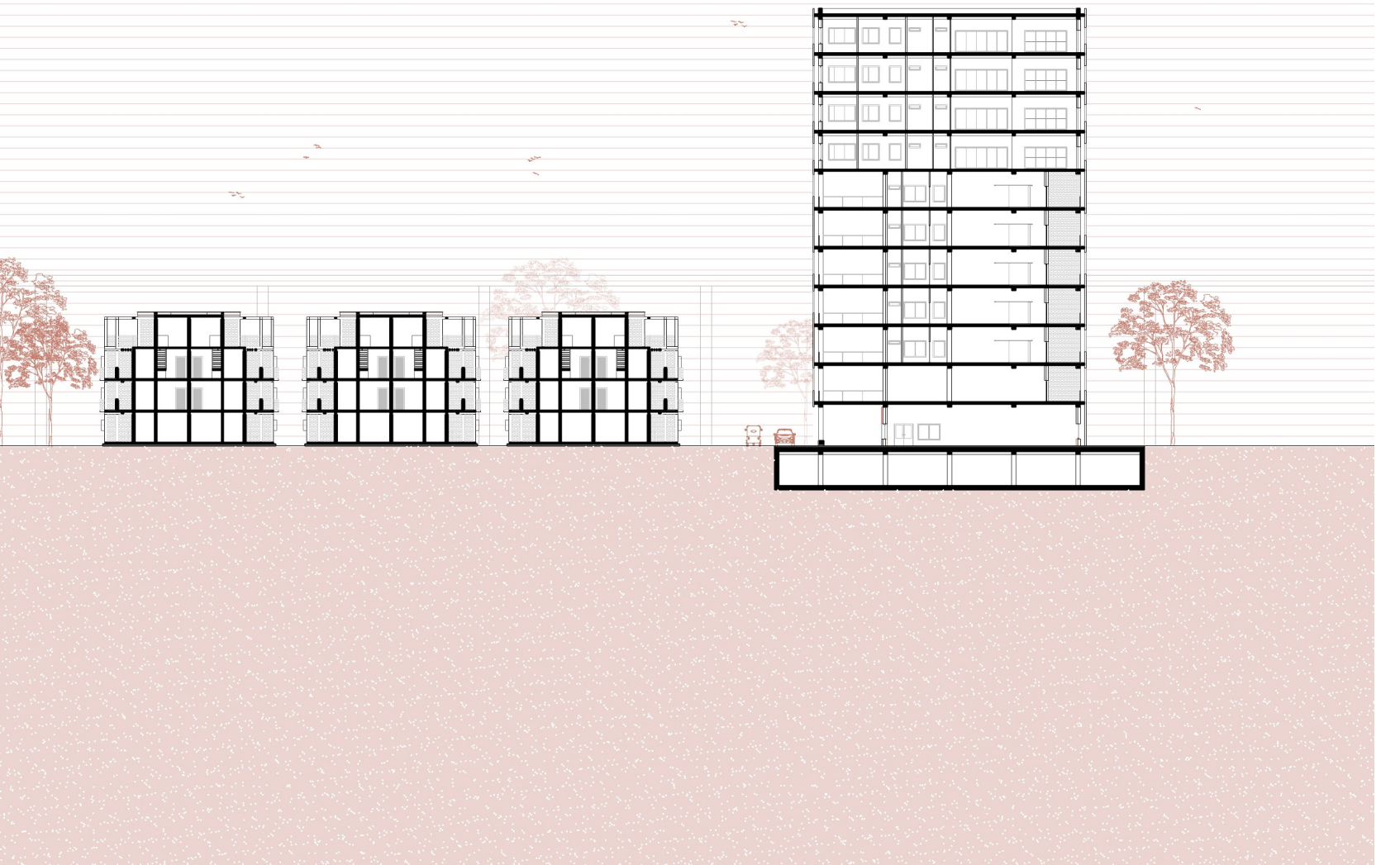




83 Second floor masterplan 1:1000

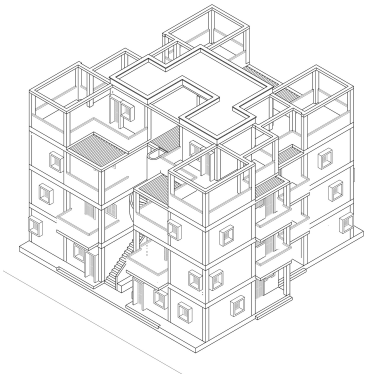


84 *West-east section masterplan 1:500 (scaled)*



Typologies

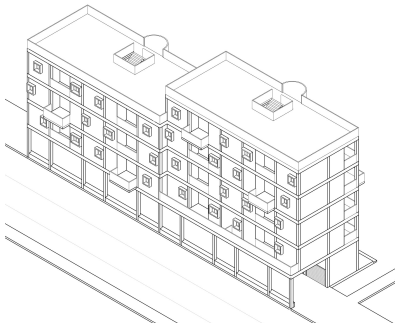
EWS/LIG



Target group	Economically weaker section/ Low income group
Floors	4
Interior floor area	36-31.5-37 m2
Exterior floor area	8-10-33 m2
Total units	384
Circulation	Stairs
Bedrooms	1
Bathrooms	1 seperate toilet + bathroom
Parking	0-0,25 per household, surface parking
Residential/amenities	Residential

85 Axonometric of the three typologies with programme of requirements

MIG I



Lower middle income group

4-5

55 m2

9 m2

173

Stairs

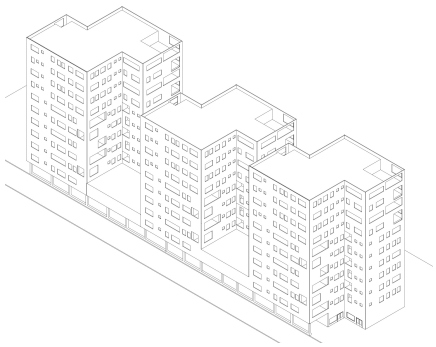
2

1 seperate toilet + bathroom

0,5-1 per household, surface parking

Residential + ground floor public plinth

MIG II/HIG



Higher middle income group/ High income group

10-11

180-360m2

21-47.5m2

28 MIG II + 12 HIG

Elevator + stairs

3-4 (+study + servant room)

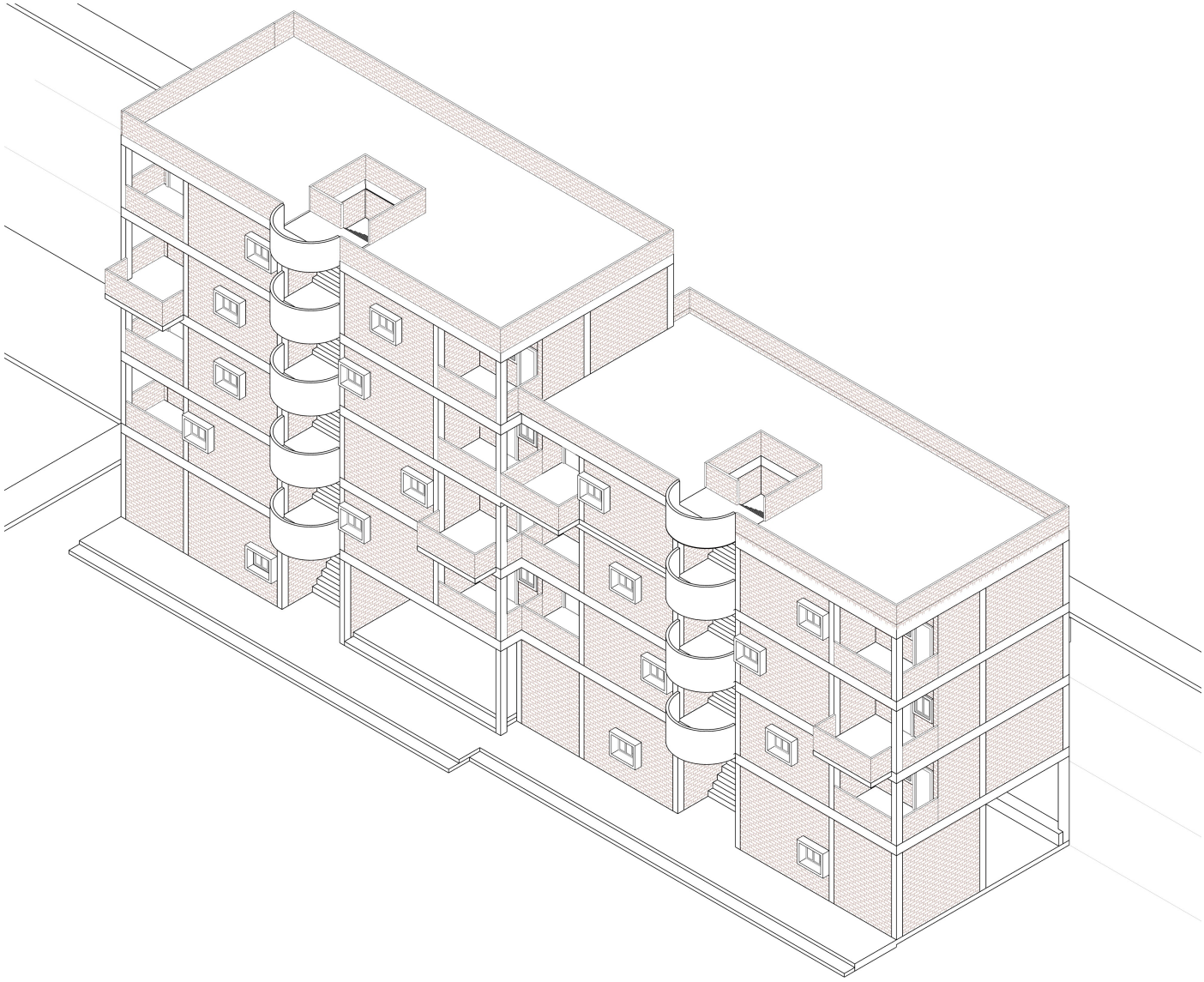
En-suite

1-2 per household, underground

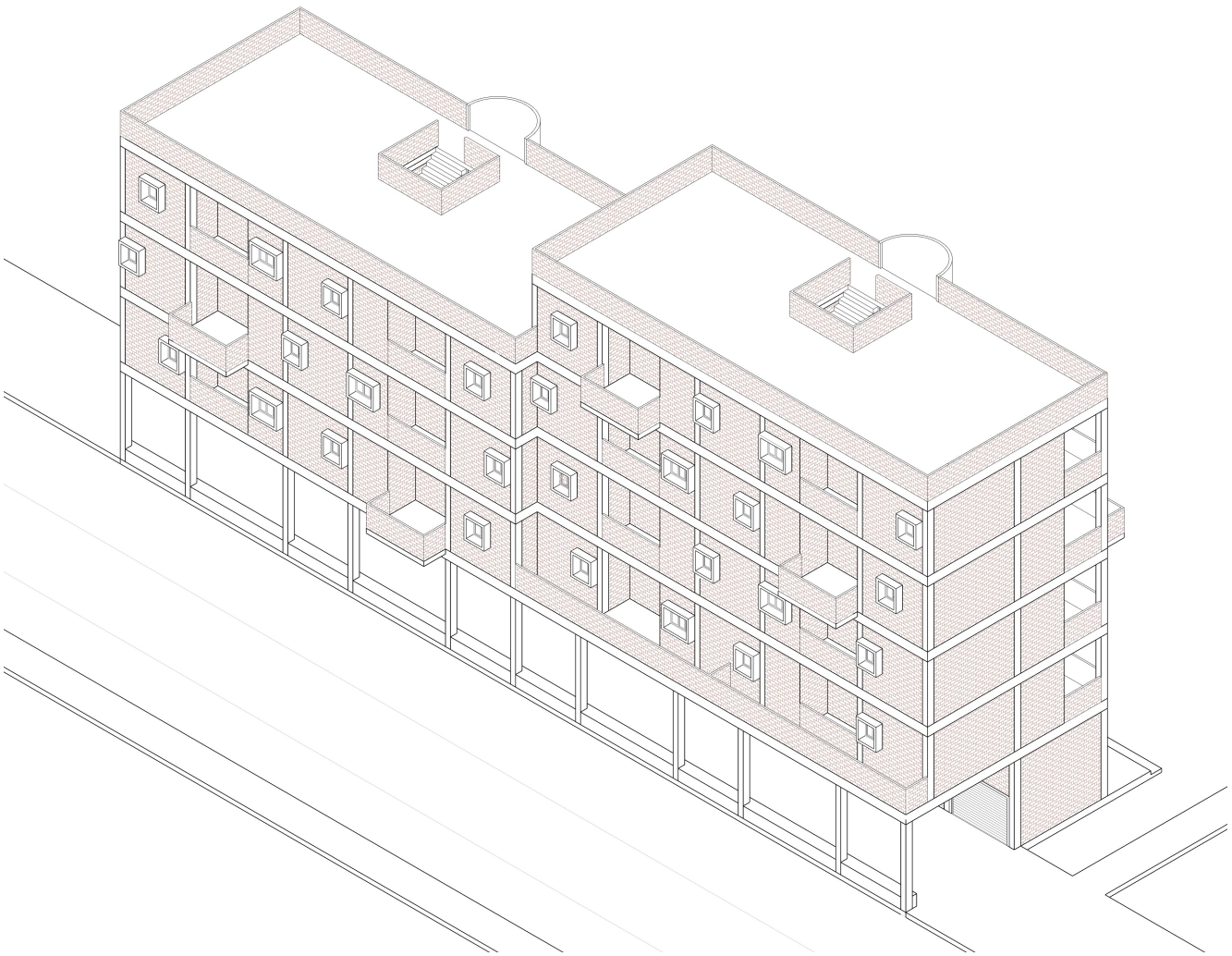
Residential+ ground floor public plinth + first floor collective space

Middle income group

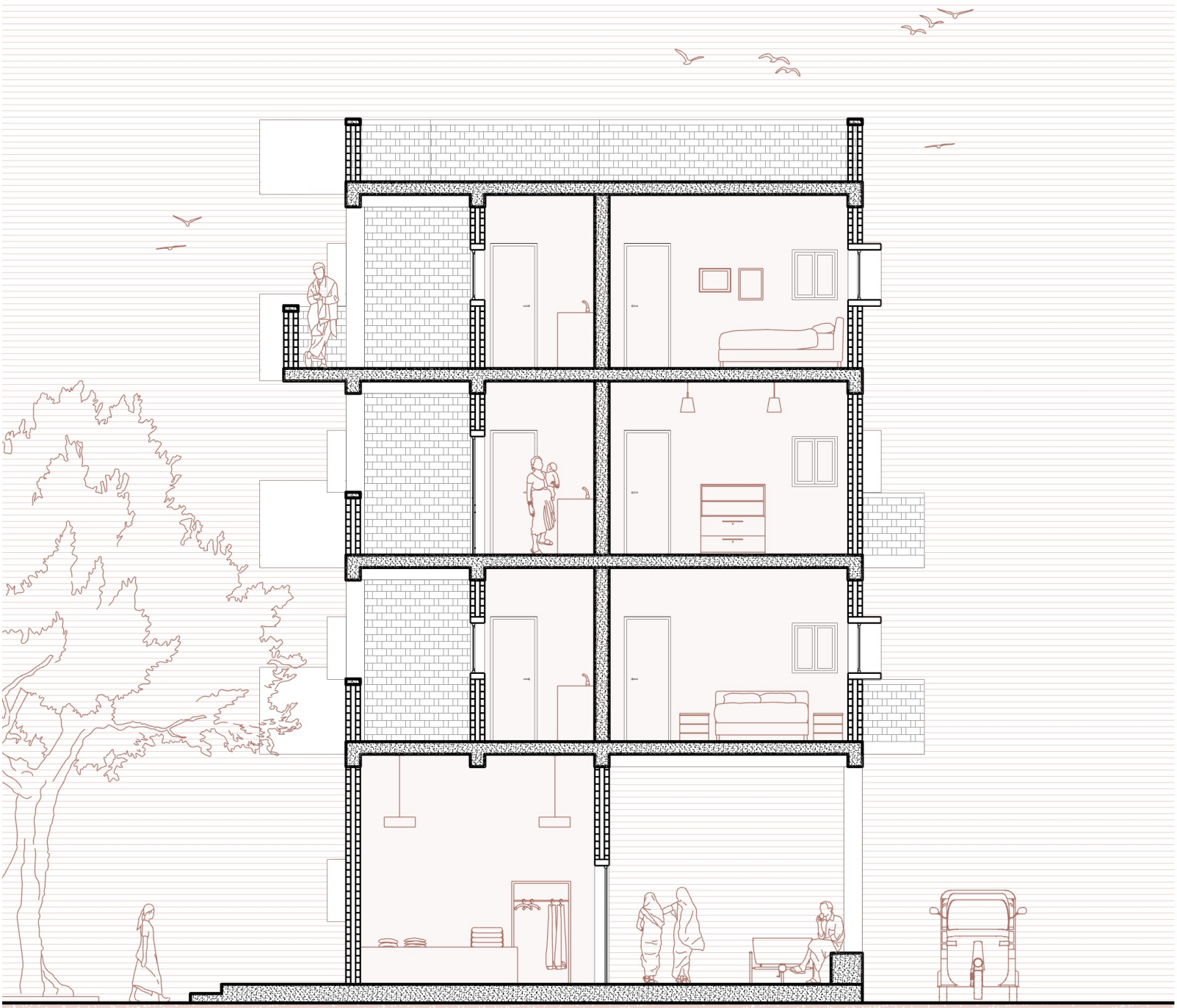
The middle-income housing typology consists of two bedrooms, a separate toilet, a separate shower, a living area, a kitchen and shaded outdoor spaces on two sides of the dwelling. At ground floor level, along the street-facing side, an arcade with an active public plinth is provided, accompanied by a generous sidewalk that offers shaded space for informal street vendors. On the opposite facade, a shared staircase is located, providing access to the residential floors above, typically consisting of three to four storeys.



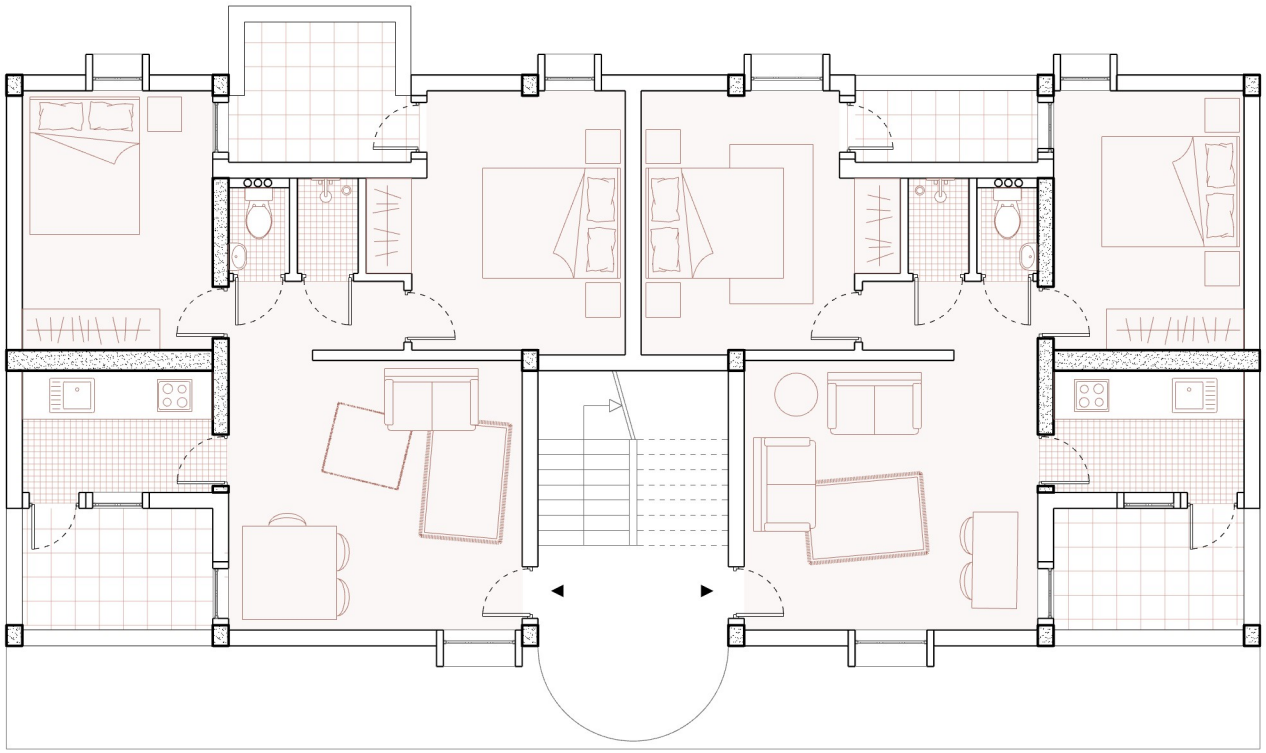
86 Axonometric elevation MIG typology staircase side



87 Axonometric elevation MIG typology arcade side



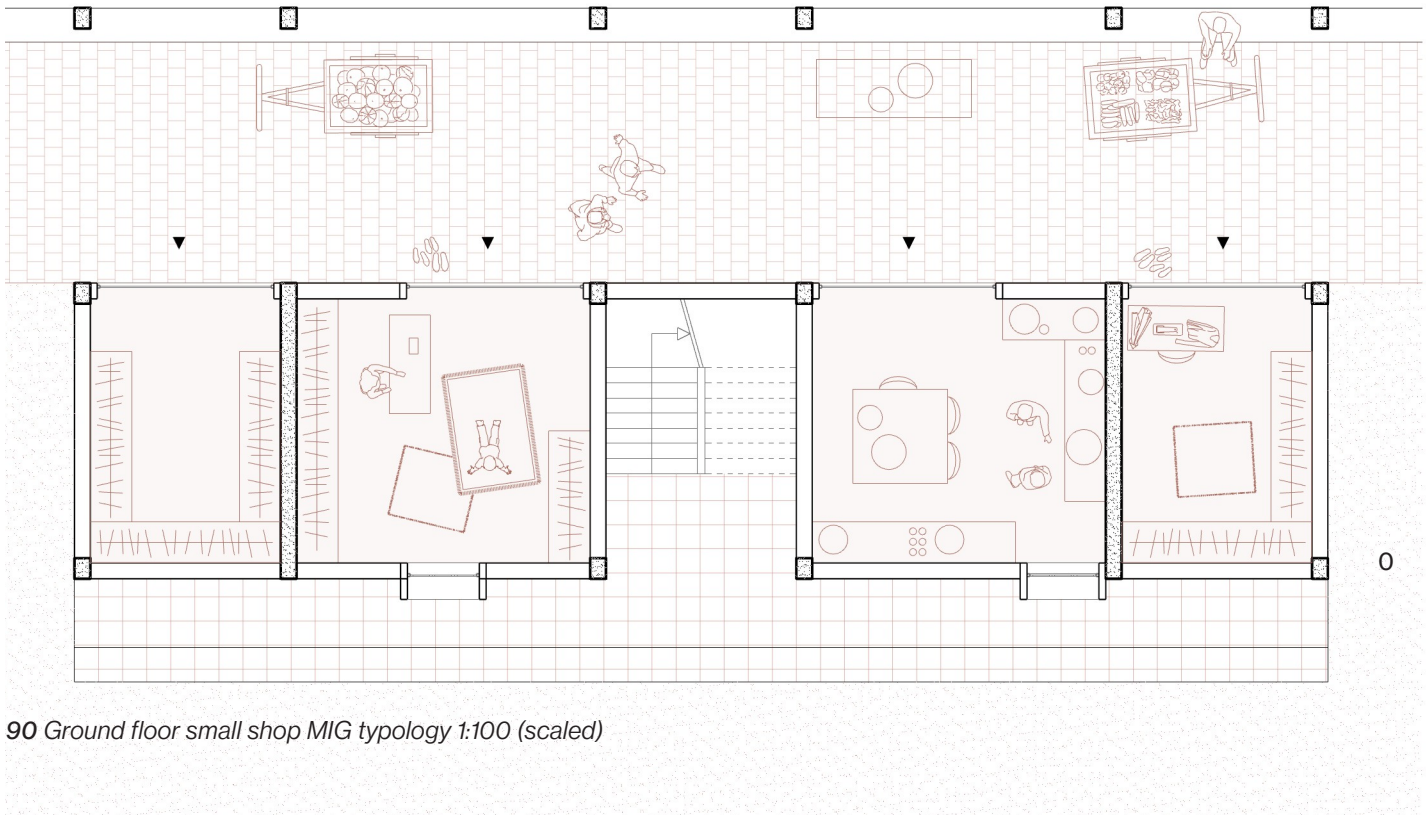
88 *Arcade street section MIG typology 1:50 (scaled)*



1-5

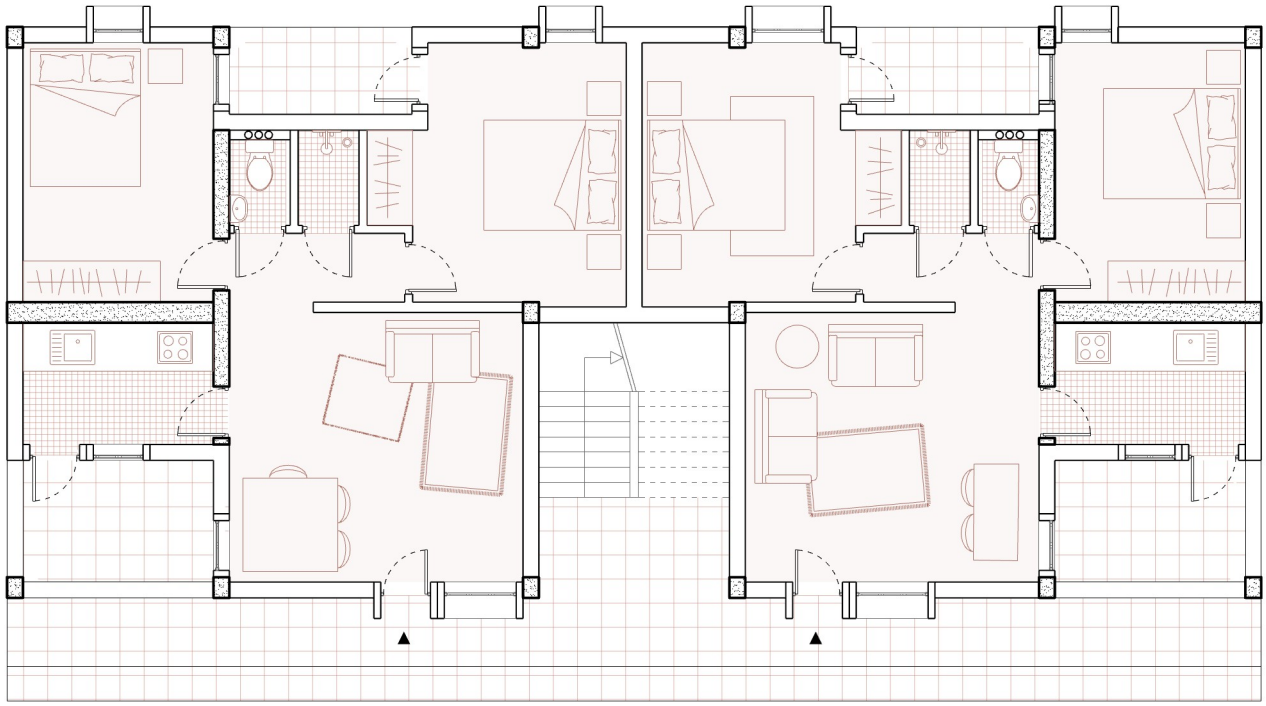
55m2

89 First floor- fifth floor residential MIG typology 1:100 (scaled)



0

90 Ground floor small shop MIG typology 1:100 (scaled)



0

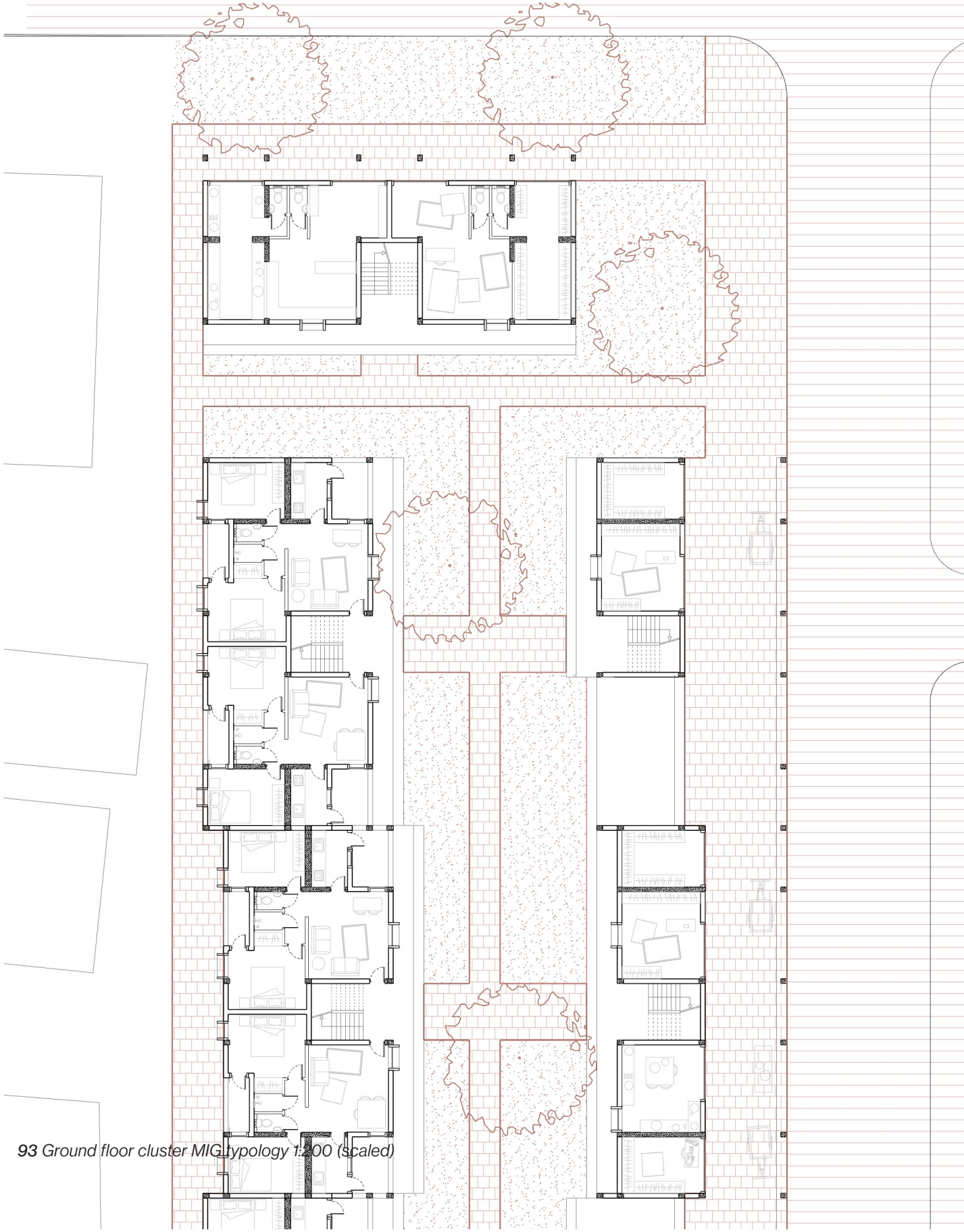
55m2

91 *Ground floor residential MIG typology 1:100 (scaled)*



0

92 *Ground floor bigger shop MIG typology 1:100 (scaled)*



93 Ground floor cluster MIG typology 1:200 (scaled)

High income group

For the higher middle-income and high-income groups, spacious apartment units are designed. The plans typically include generous outside spaces, en-suite bathrooms, a dedicated servant entrance, utility spaces adjacent to the kitchen and a central circulation core with lifts. Within each unit, a clear separation is made between service, social, and private zones.

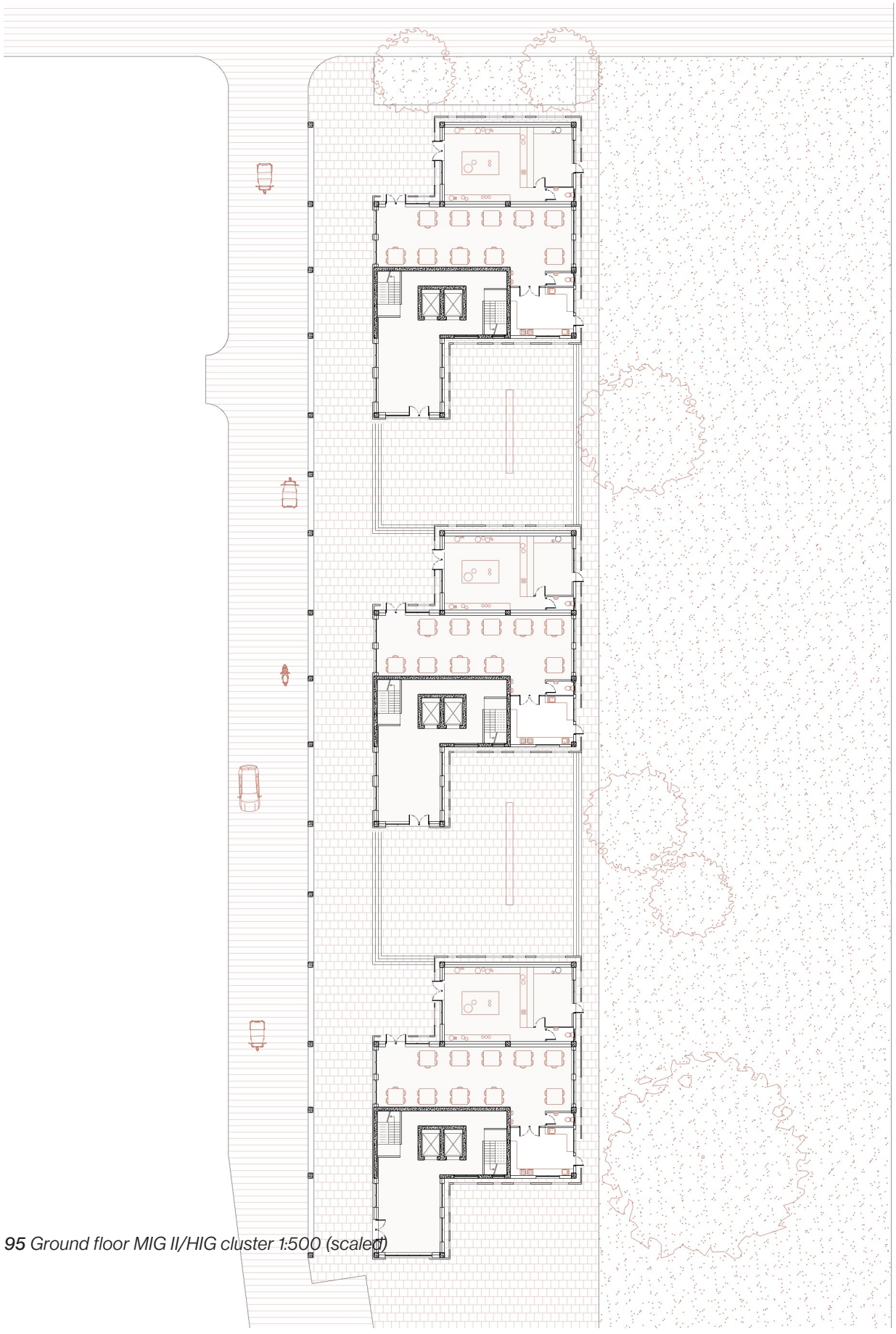
This spatial organisation is also expressed at the building scale. The ground floor features a covered arcade with an active public plinth, while the first floor accommodates shared amenities such as a gym and office spaces. Above these levels, the middle-income units are placed on the intermediate floors, with the high-income units occupying the uppermost floors.

In addition, these income groups are provided with underground parking facilities.

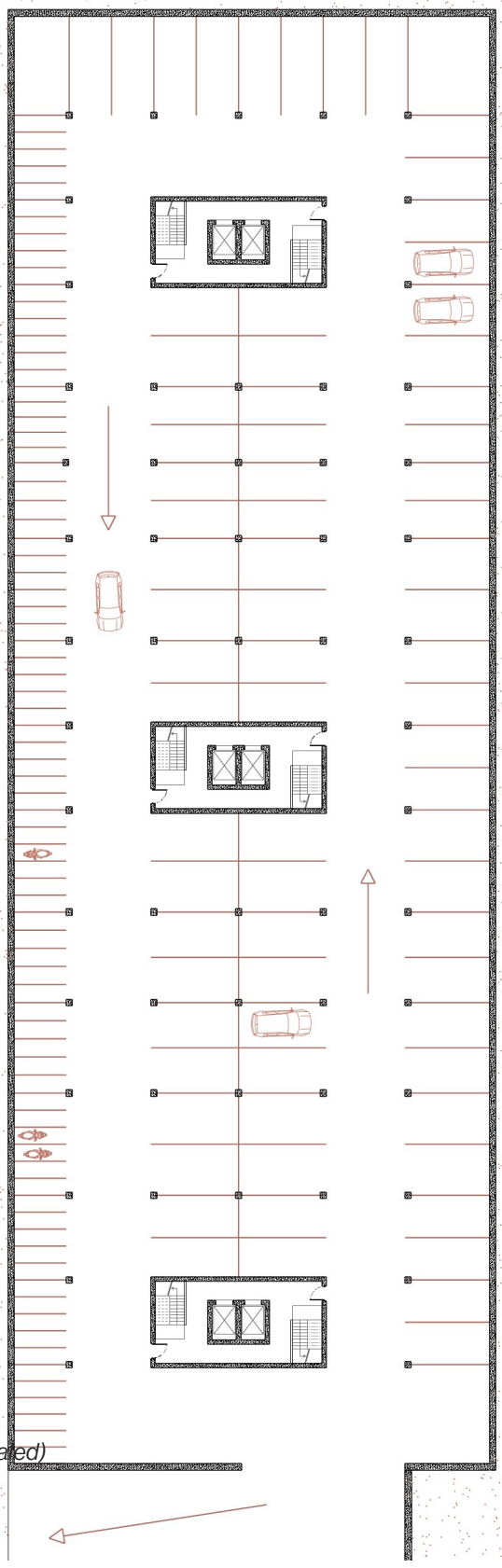
The towers are wrapped by a secondary skin of perforated jaali screens, acting as a climatic and spatial buffer. This layer filters sunlight, reduces heat gain and improves thermal comfort while allowing natural ventilation to continue across the facade. At the same time, the jaali introduces a dynamic visual rhythm and enhances privacy.



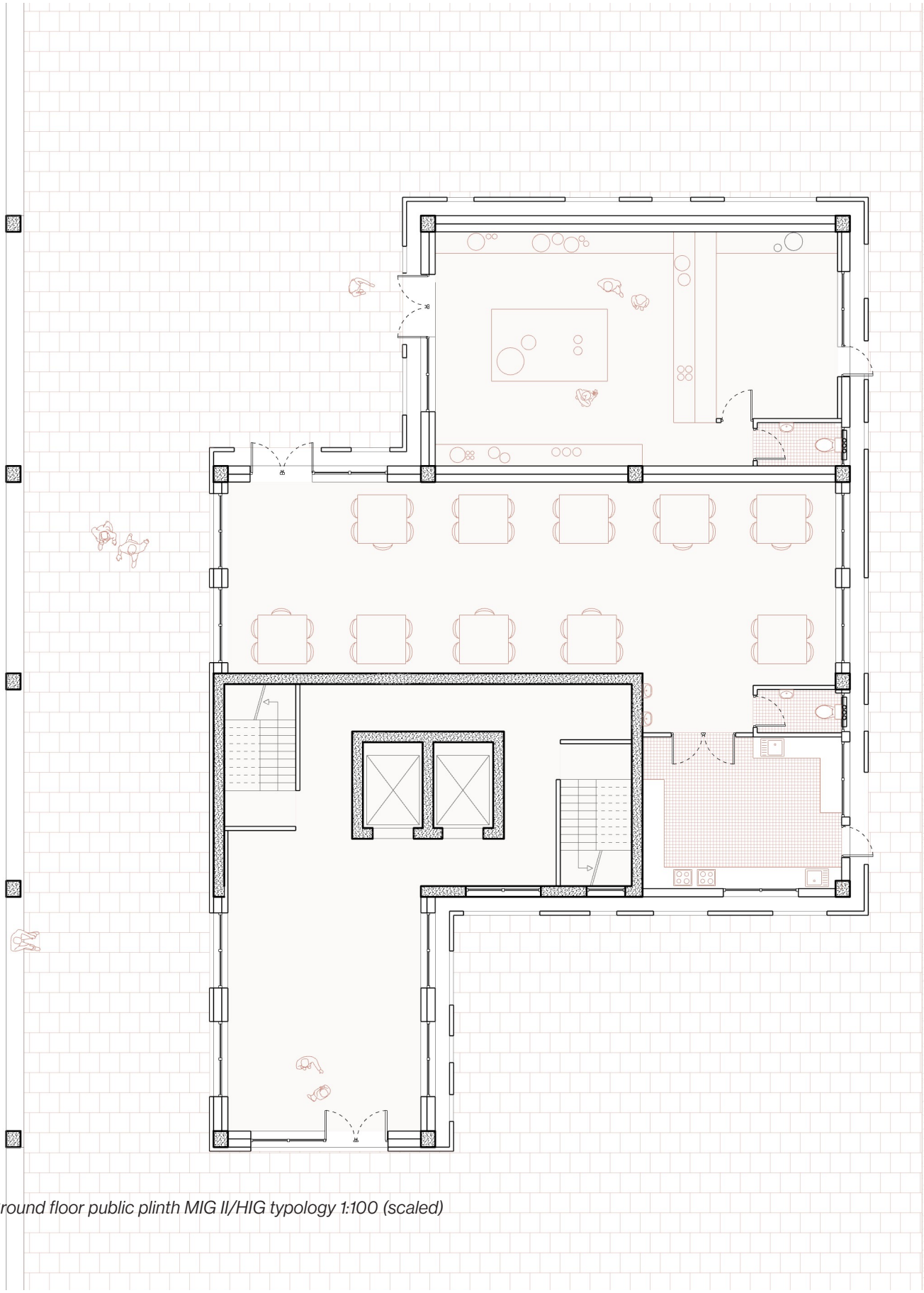
94 *Arcade street section MIG II/HIG typology 1:200 (scaled)*



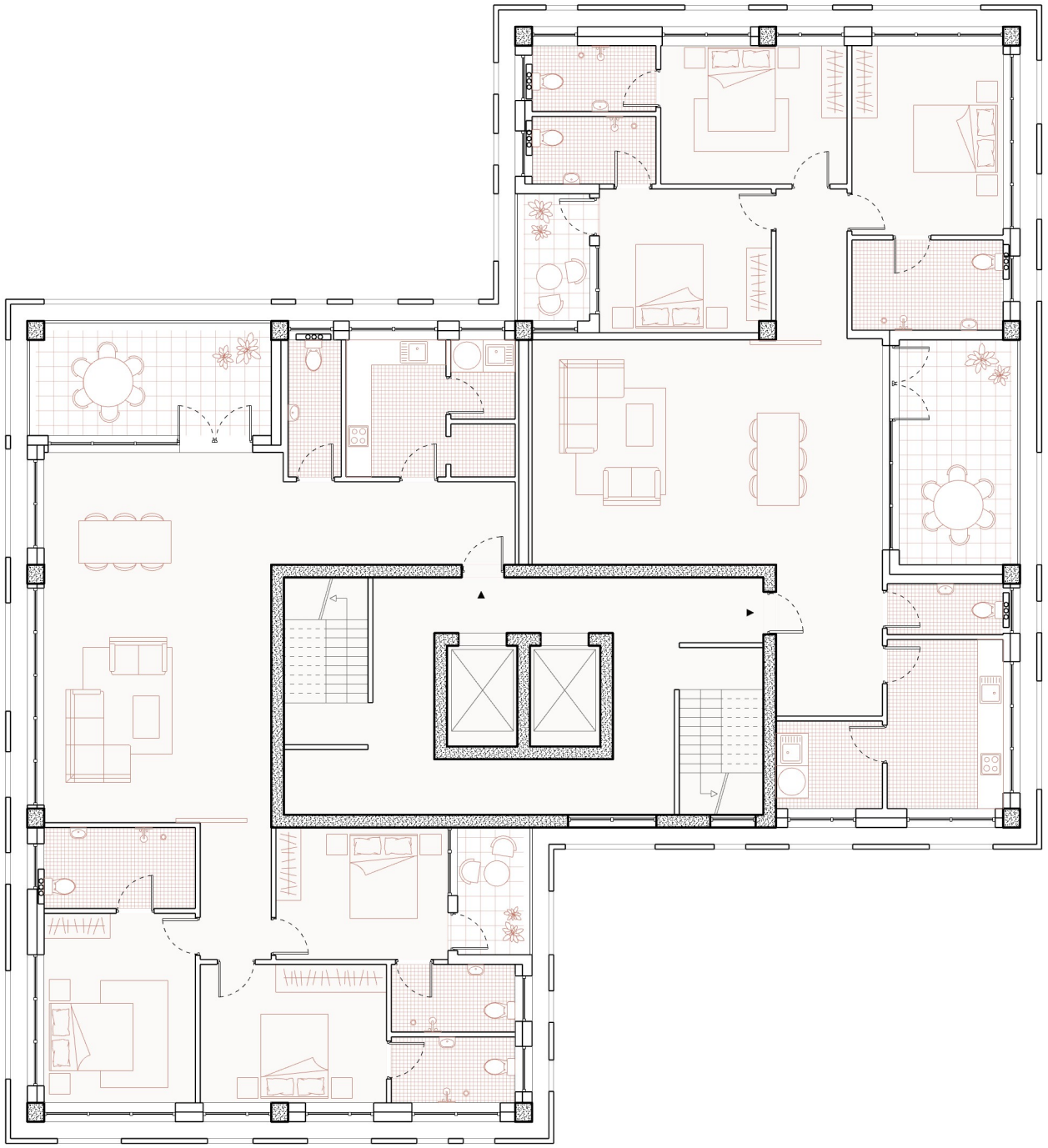
95 *Ground floor MIG II/HIG cluster 1:500 (scaled)*



96 Underground parking garage 1:500 (scaled)



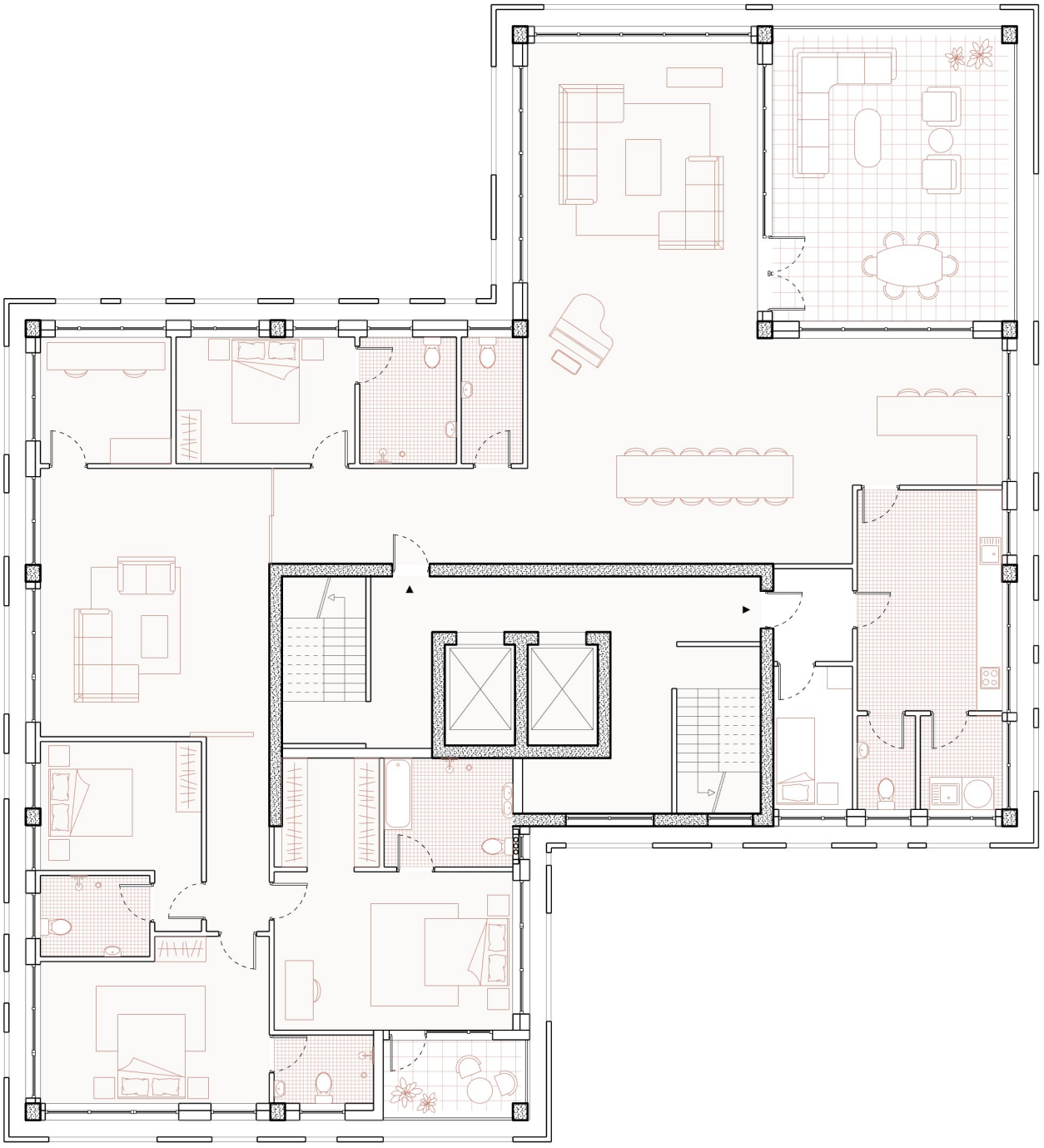
97 Ground floor public plinth MIG II/HIG typology 1:100 (scaled)



180m2

3-7

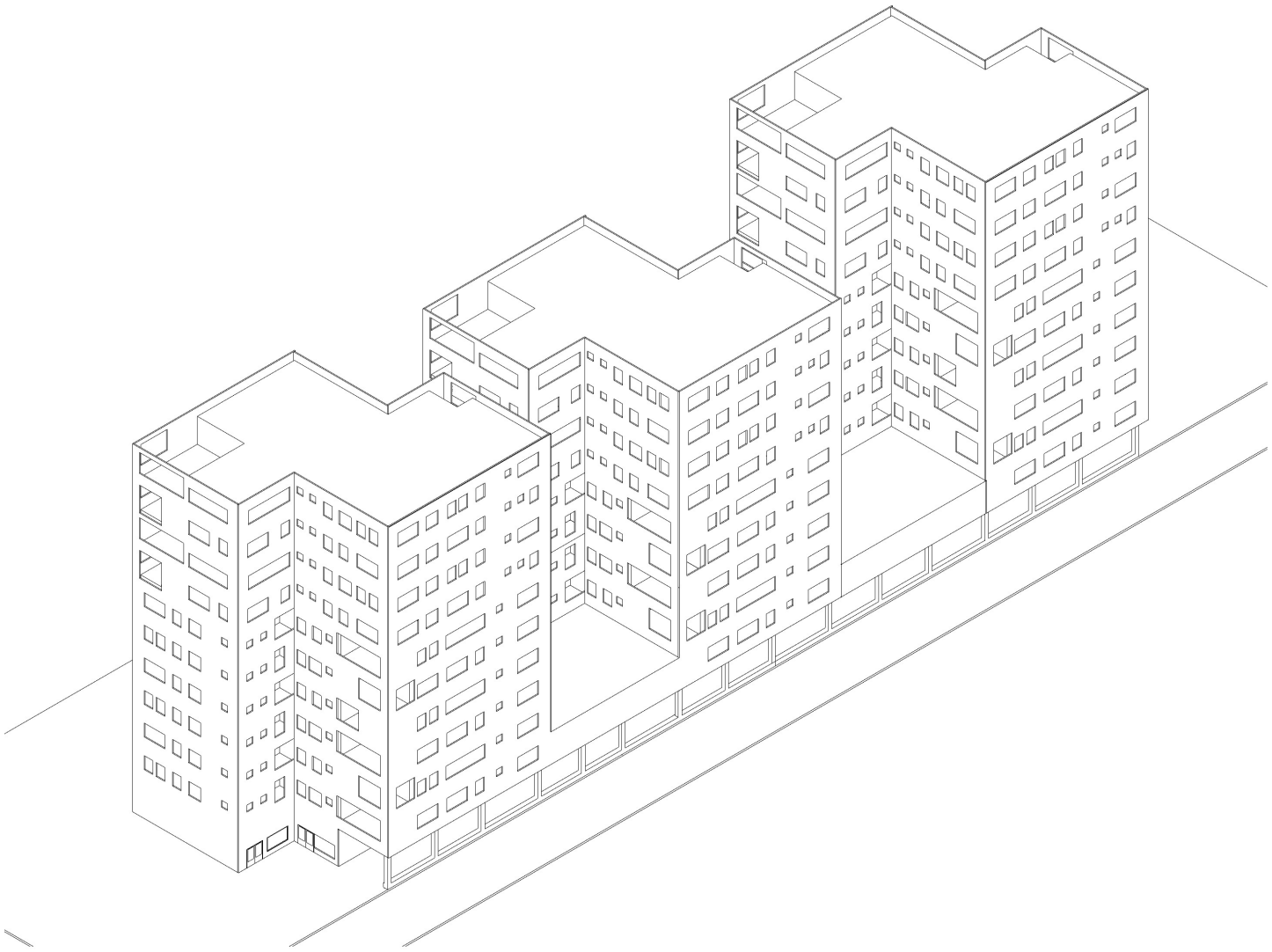
98 *Third floor-seventh floor residential MIGII typology 1:100 (scaled)*



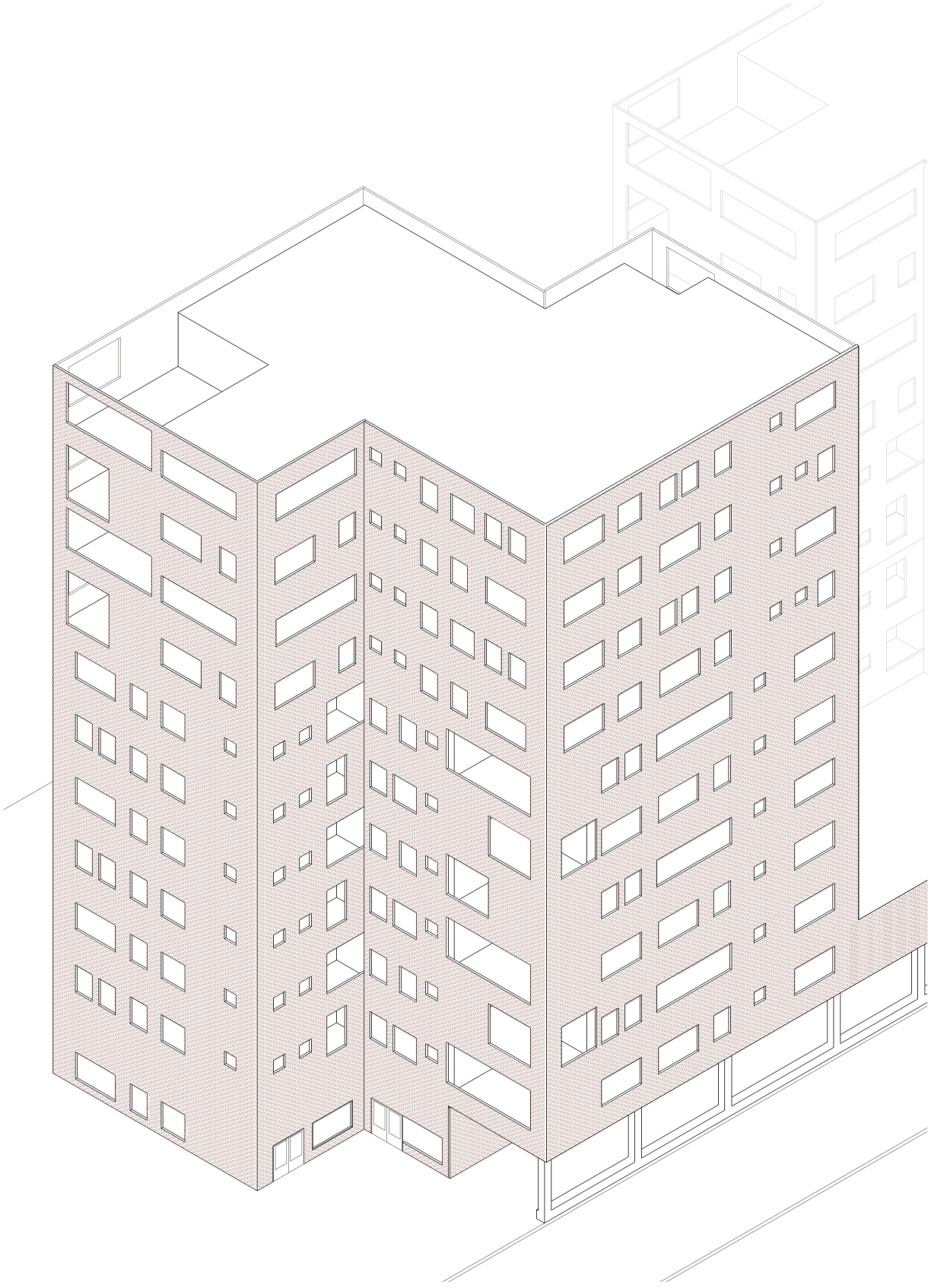
360m2

8-11

99 *Eighth floor - eleventh floor residential HIG typology 1:100 (scaled)*



100 *Elevation cluster HIG typology*



101 *Elevation one tower HIG typology*

Low income group

The low-income housing typology is defined by a staggered, recessed form that creates shaded outdoor spaces, improving thermal comfort and allowing incremental expansion over time.

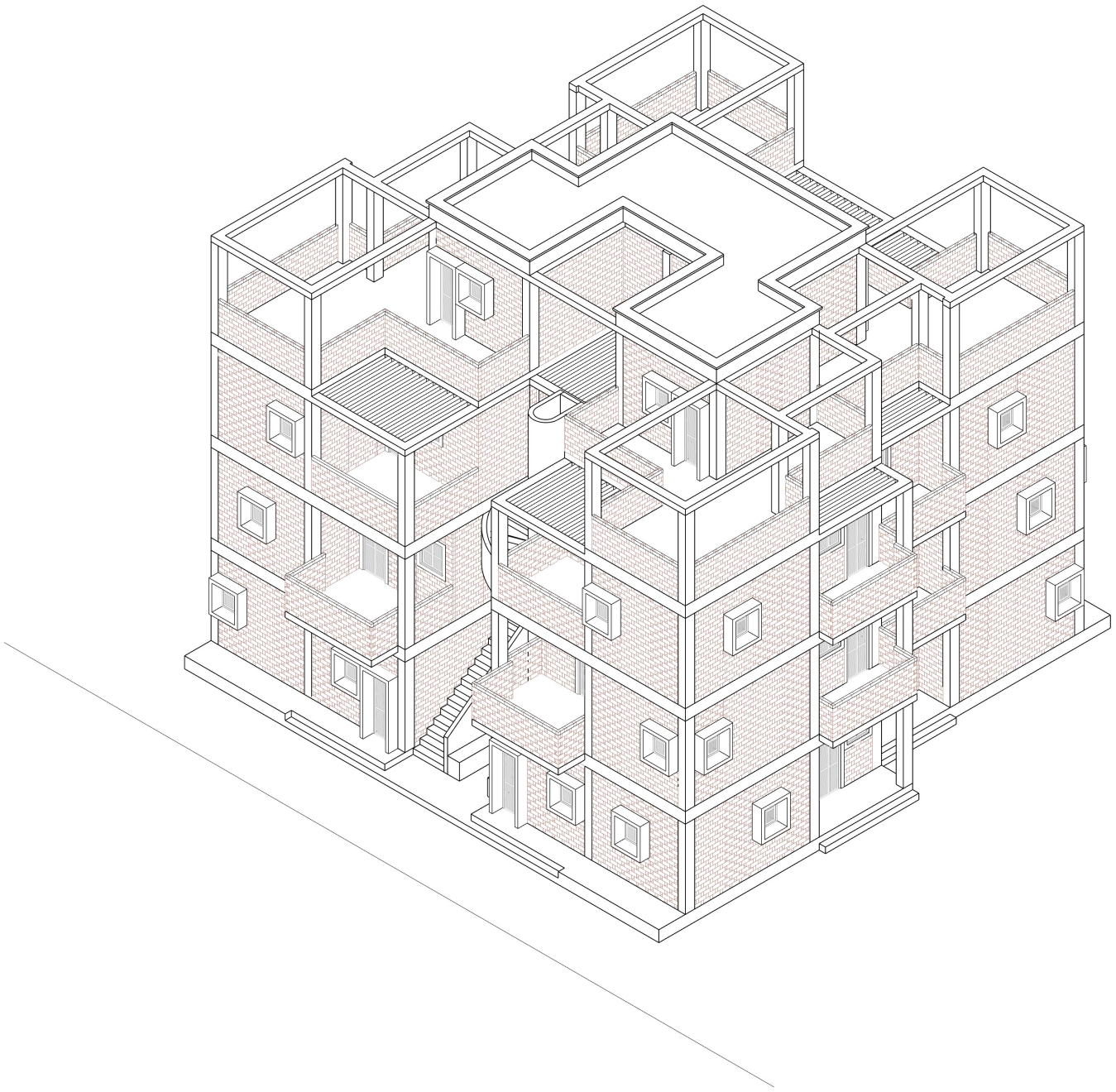
Each cluster block contains 12 dwellings, with four units per floor served by a shared staircase. Units have outdoor spaces on two facades, promoting cross-ventilation and strengthening connections between clusters through semi-private areas.

The facade consists of a clear brick infill system within a concrete structural grid. Within this framework, the placement of openings can be varied, allowing each cluster block to develop its own configuration. This results in a system that is easy to build and replicate, while ensuring that no two blocks are identical, reflecting an incremental identity characteristic of the Indian urban context.

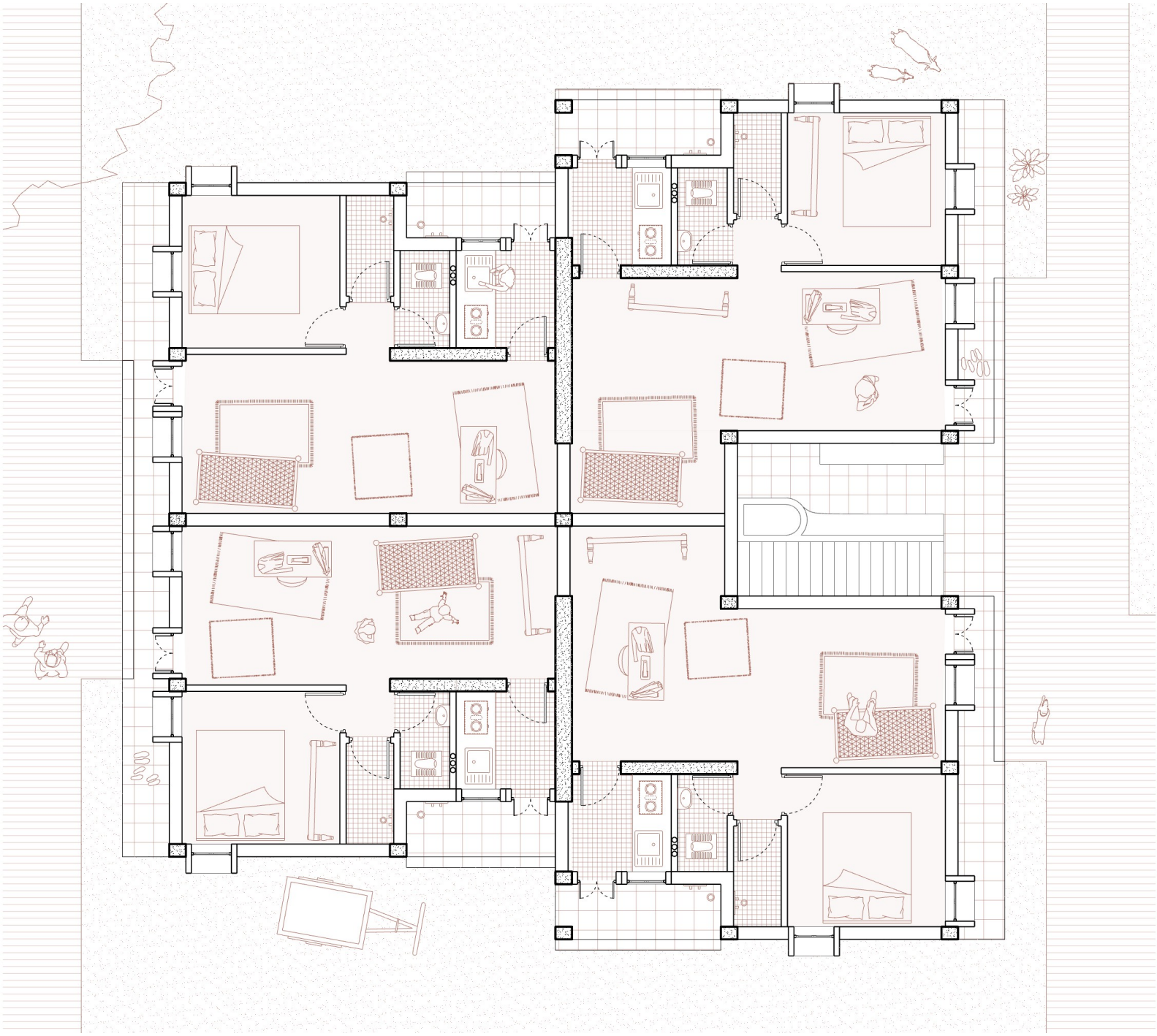
Entrances, terraces and otlas on the north and south facades respond to the sun path and daily solar exposure, while east and west facades accommodate outdoor washing areas adjacent to the kitchens. Openings on multiple facades enable residents to regulate ventilation throughout the day.

Although unit sizes vary per floor, each floorplan is organised around a consistent service core with a kitchen, separate toilet and bathroom. Upper units are designed as duplexes with an additional room that allows for future expansion. On other floors, it is possible to merge two dwellings into one if a family expands in the future and requires more space.

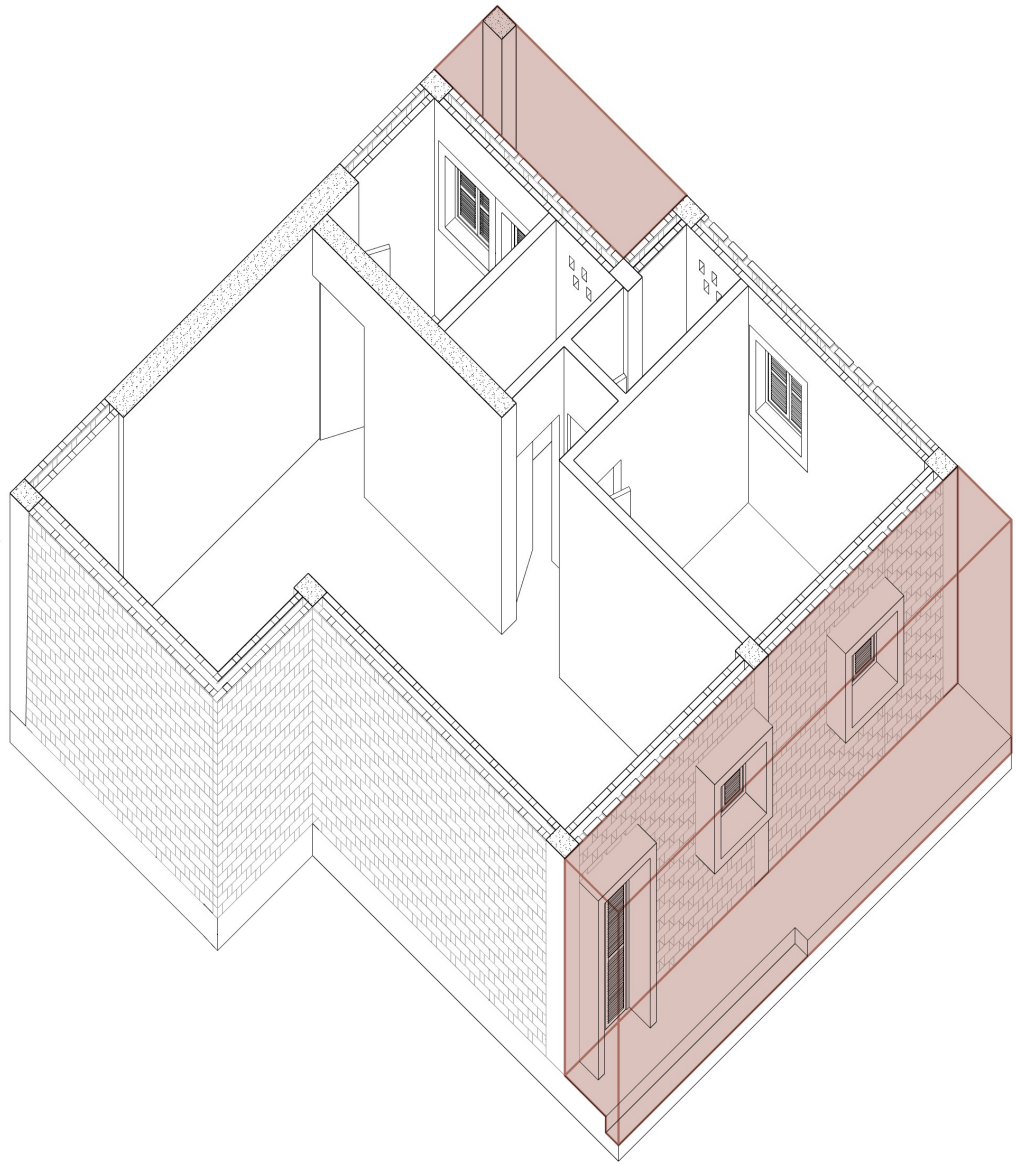
Spaces are flexible and support multiple uses throughout the day, enabling residents to adapt rooms for work, living or sleeping as needed.



102 *Elevation LIG typology*



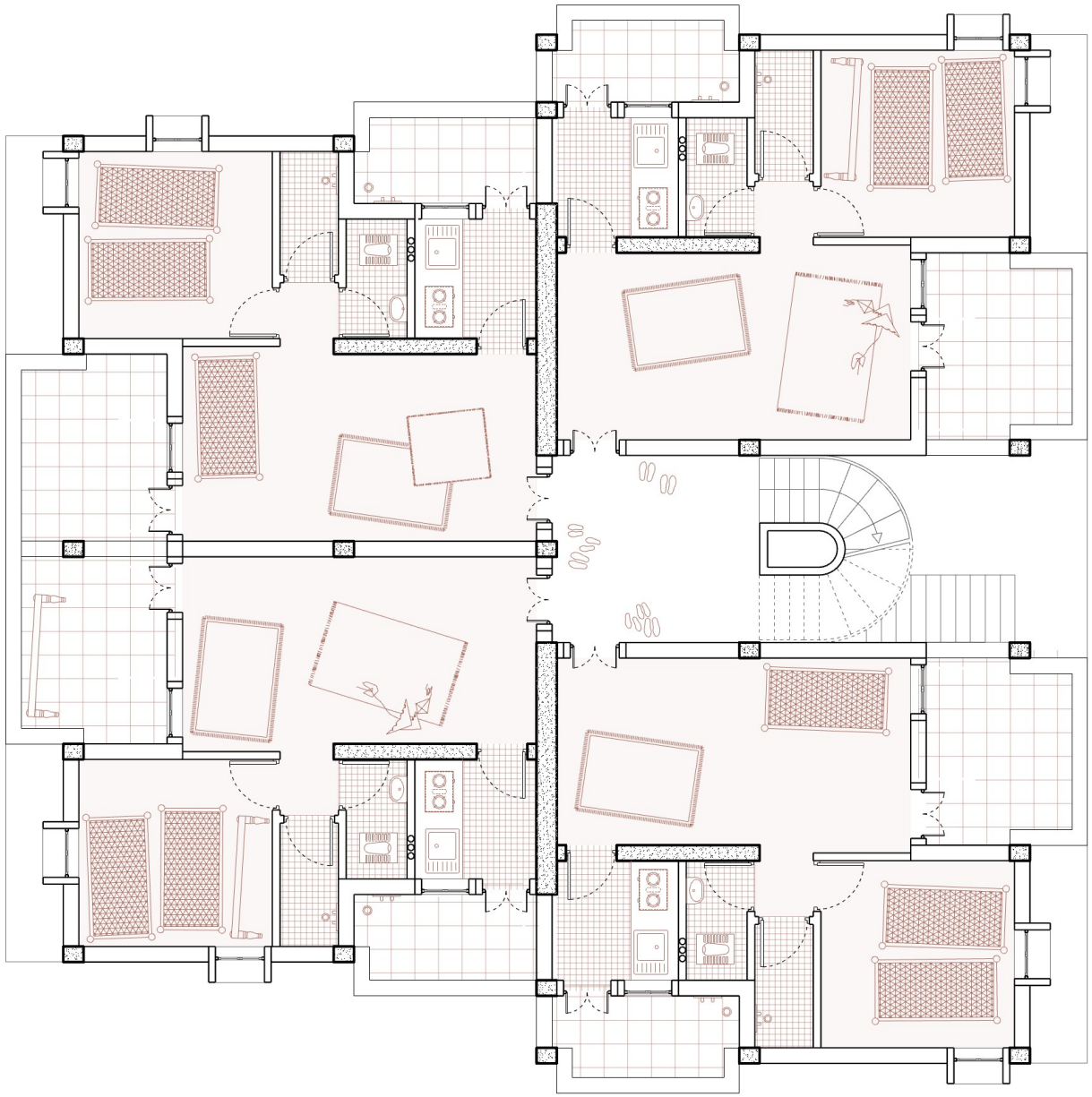
103 *Ground floor LIG typology 1:100*



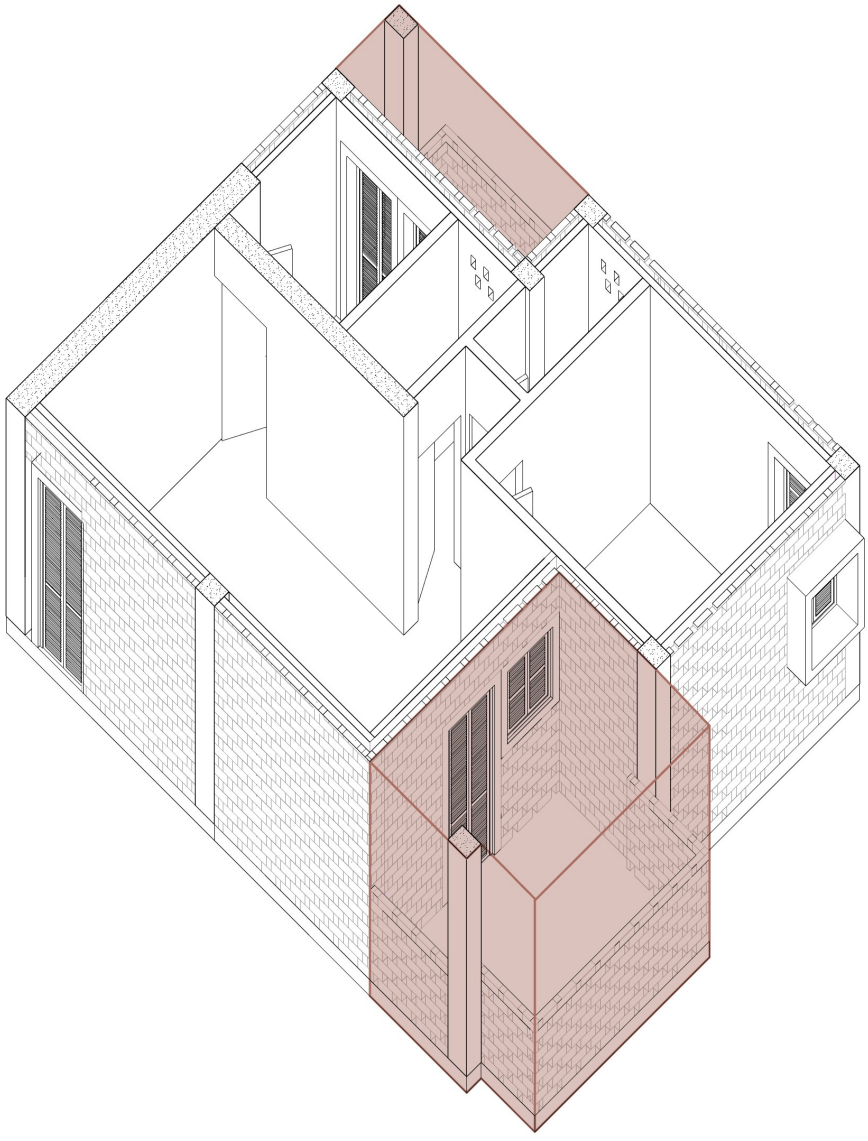
101

36m2

104 *Incrementality possibilty ground floor*



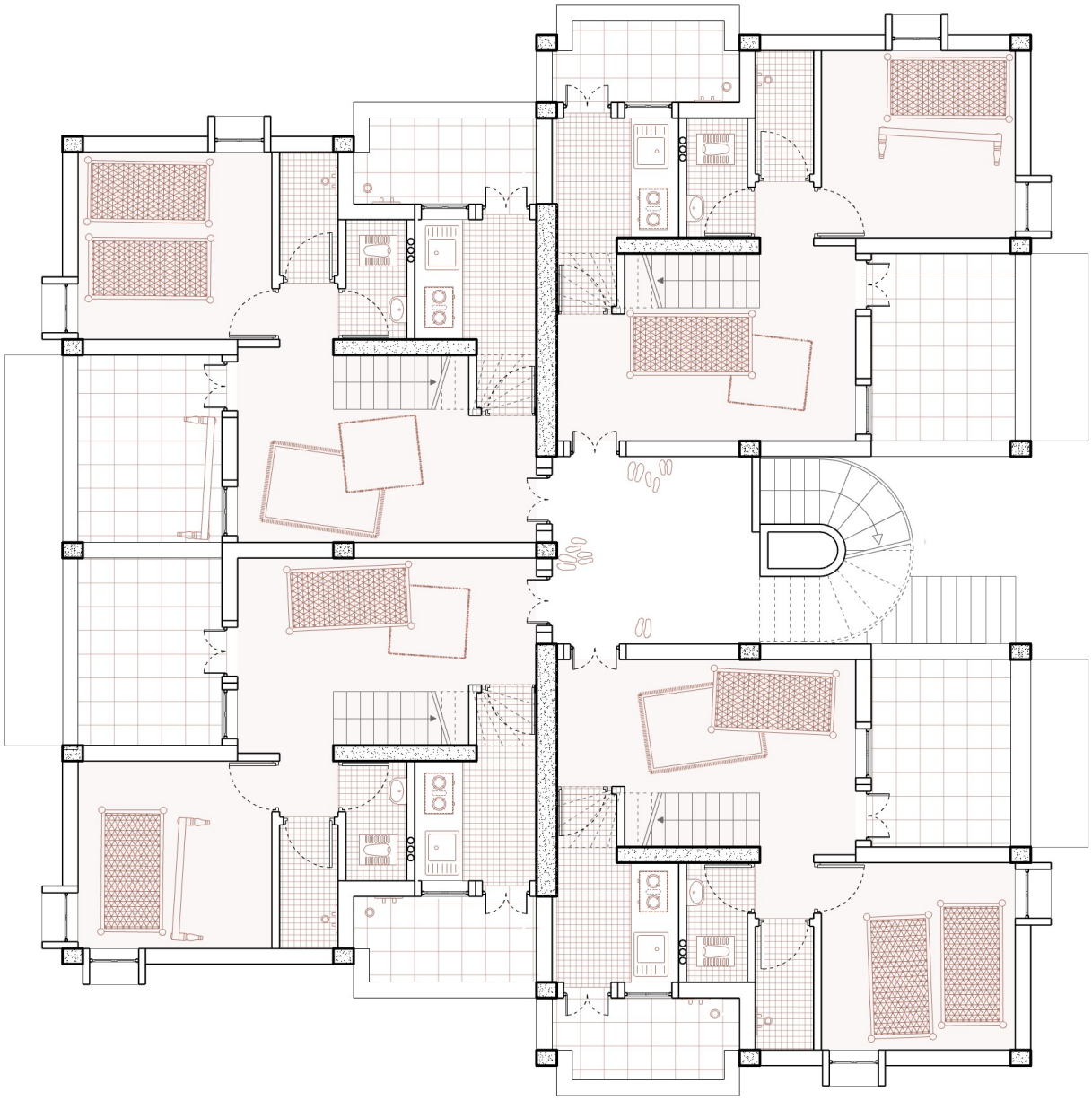
105 *First floor LIG typology 1:100*



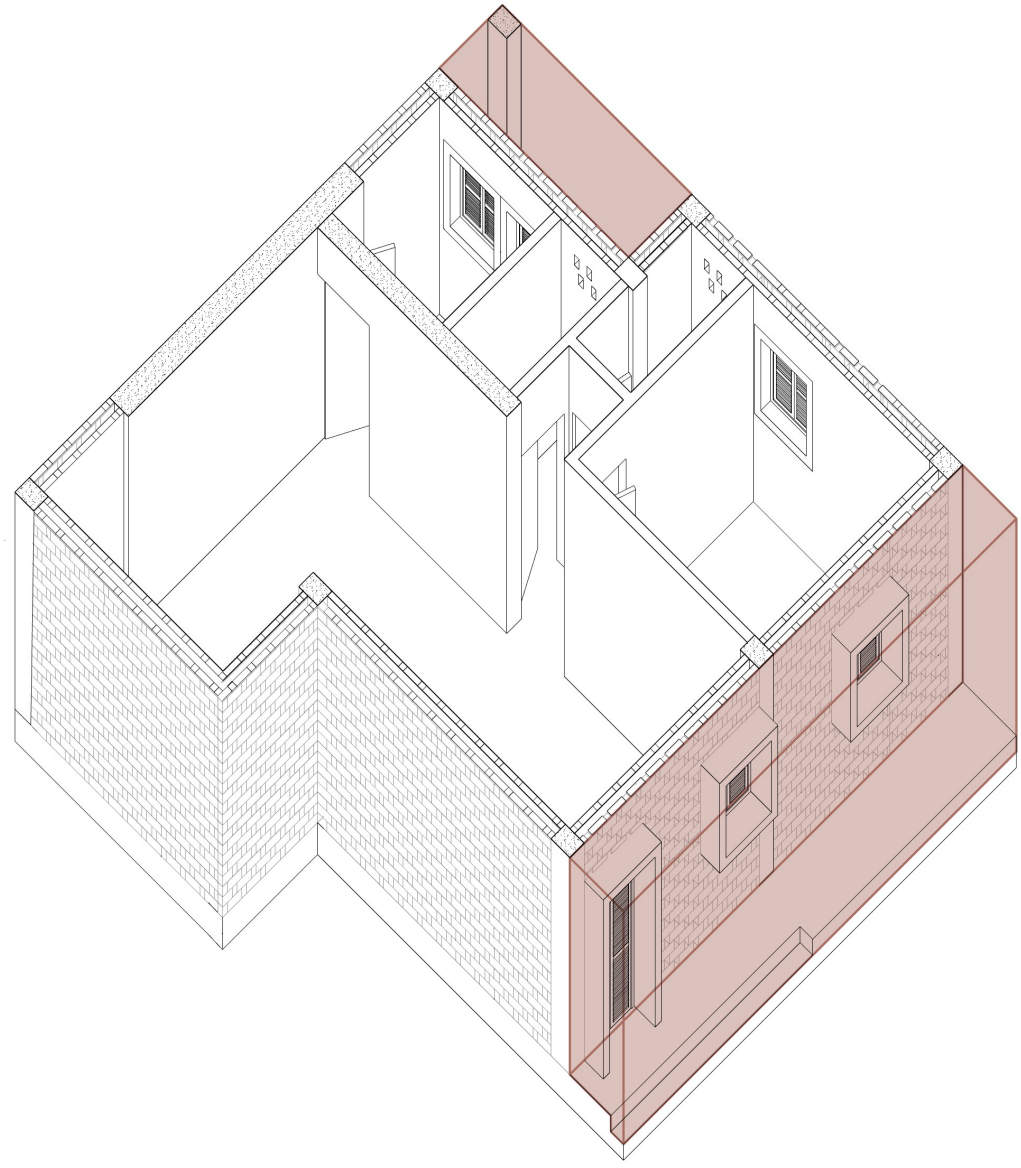
103

31.5m2

106 *Incrementality possibilty first floor*



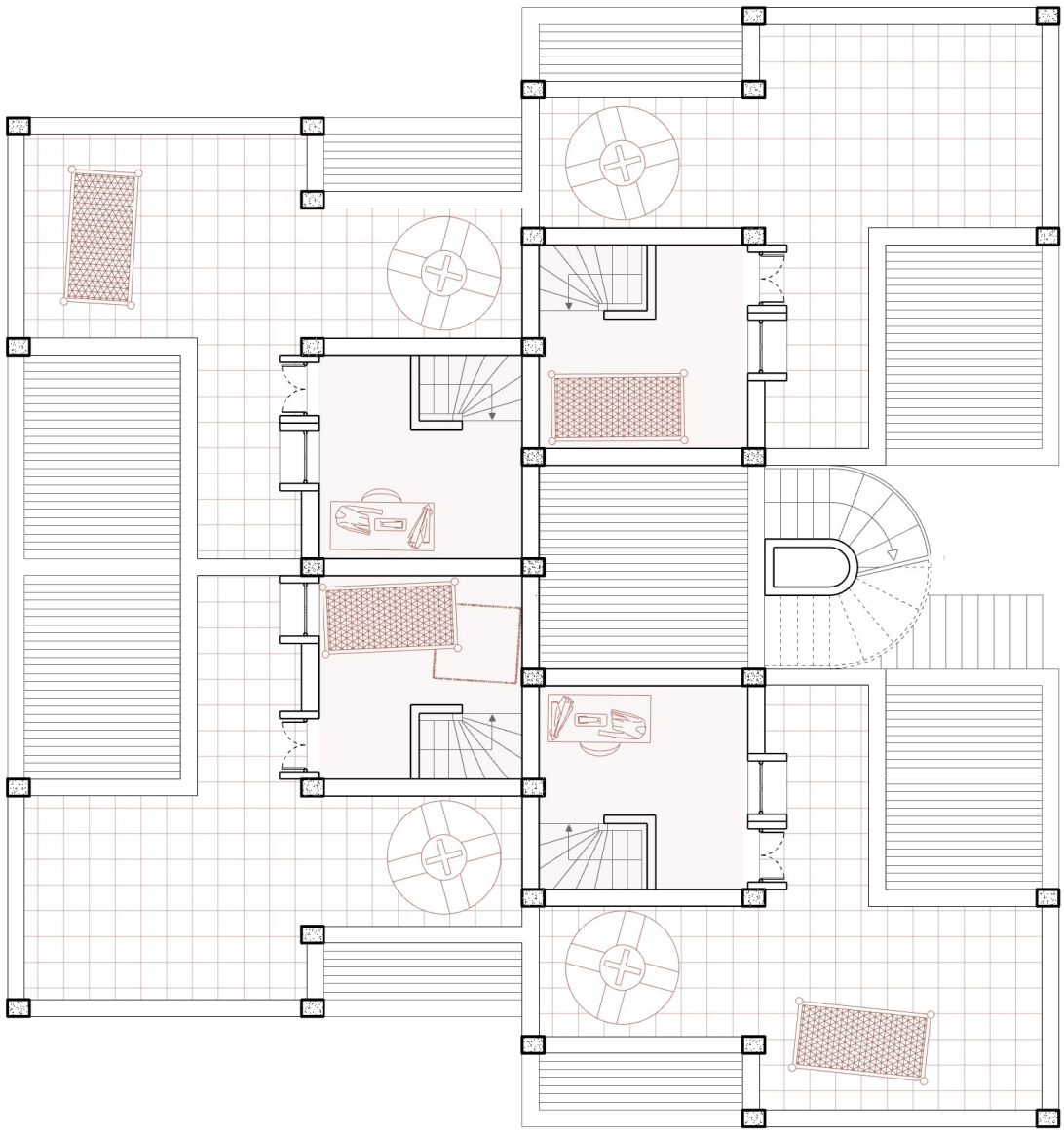
107 *Second floor LIG typology 1:100*



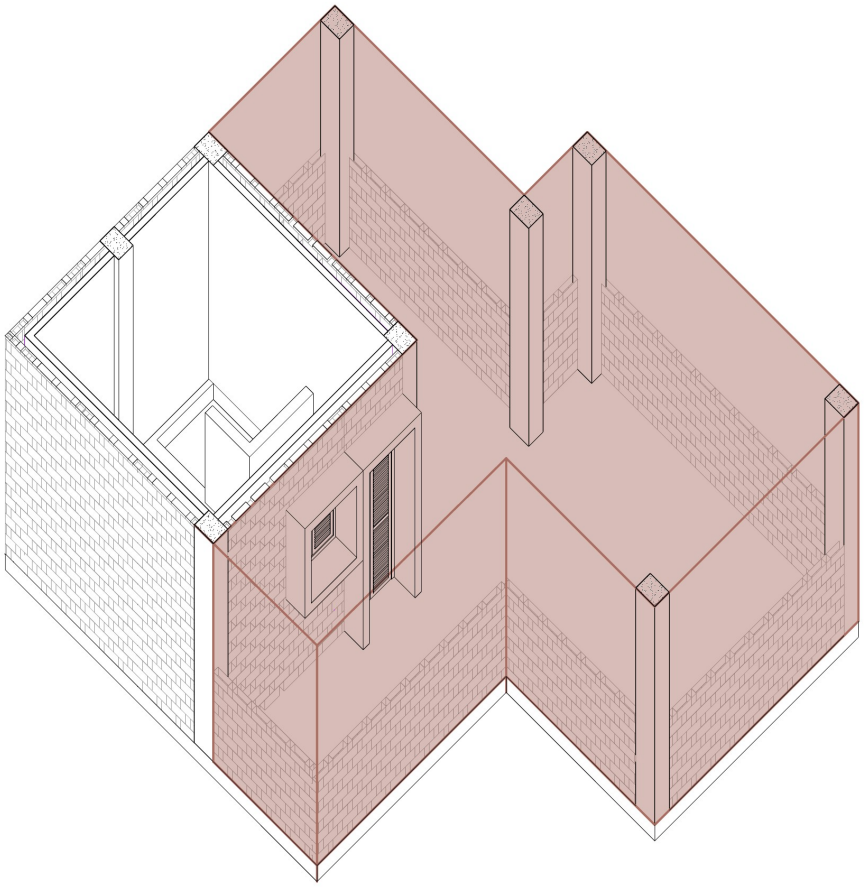
105

29m2

108 *Incrementality possibilty second floor*



109 *Third floor LIG typology 1:100*



110 *Incrementality possibilty third floor*

+8m2 = 37m2

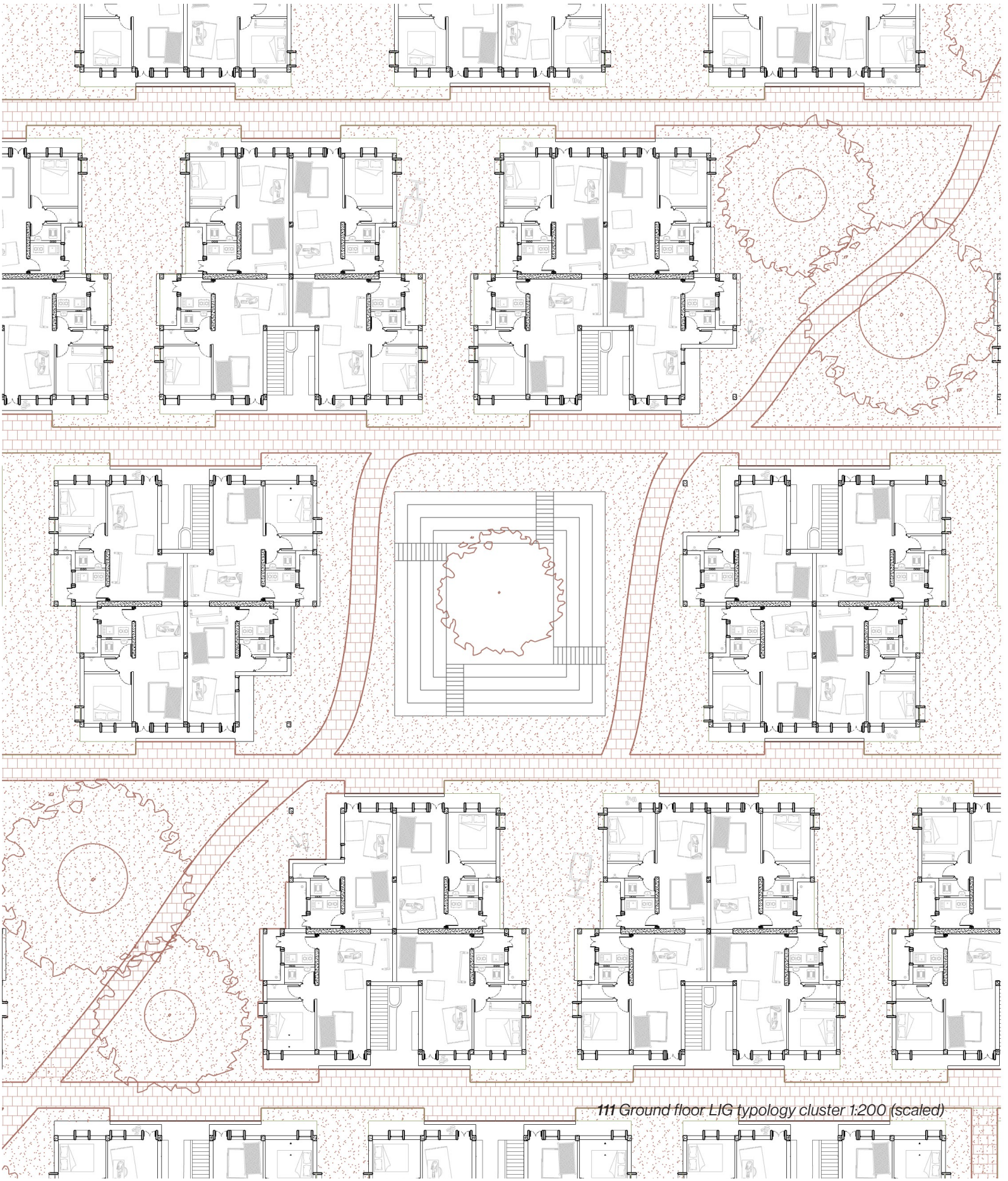
Low income group cluster

Within the LIG cluster, a variety of open spaces are created around and between the block clusters. The narrower spaces between the buildings provide shade, encourage interaction between neighbours and can accommodate domestic animals or vendor carts. As these spaces are located along the east and west facades, they remain unpaved to reduce heat retention.

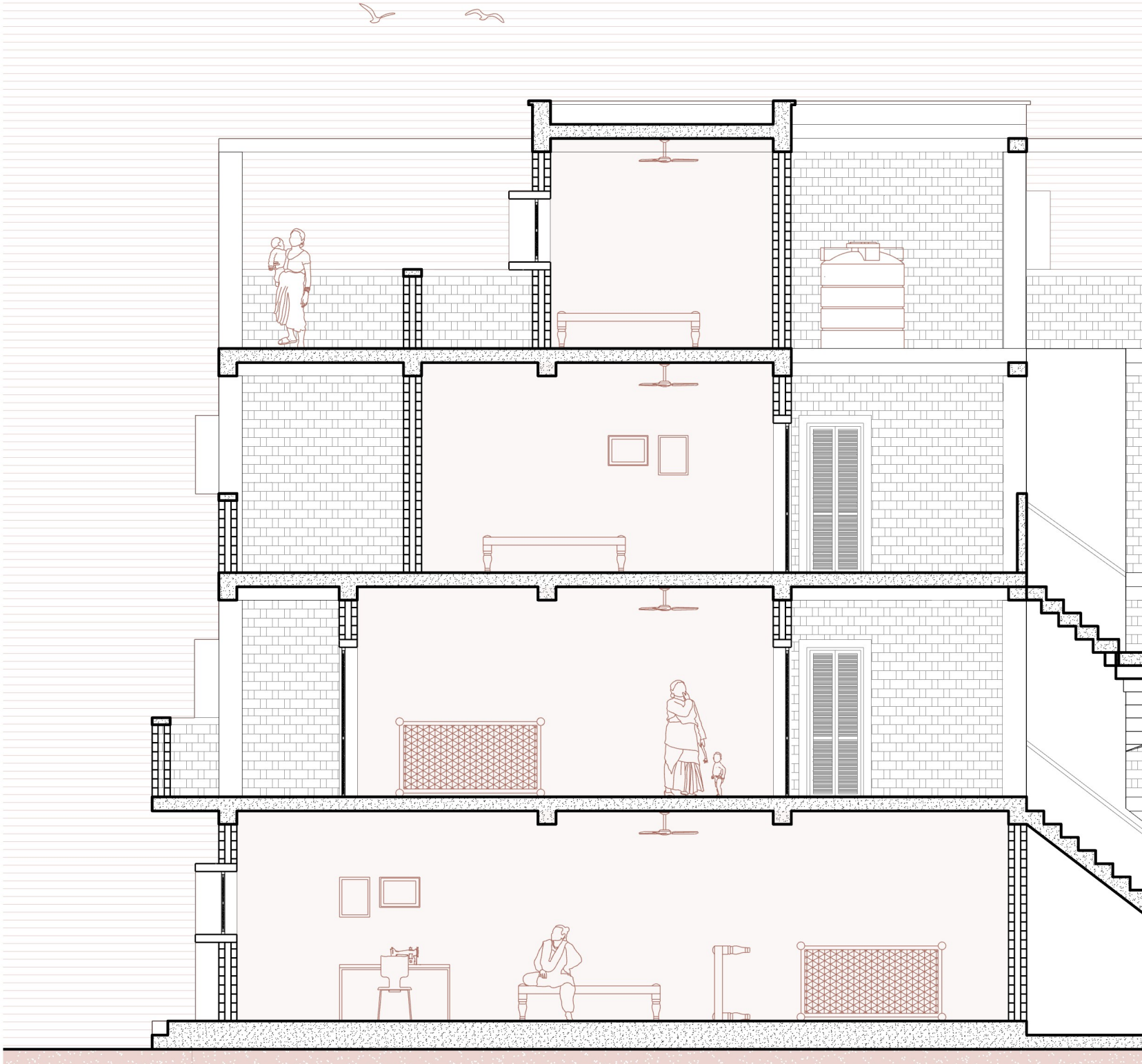
On the north and south sides, the staircases face one another, encouraging social interaction between residents. Pedestrian pathways lead to the otlas and entrances, while the otlas and outdoor washing areas create a gradual transition from the public pathway to the semi-private threshold and the private interior of the home.

The LIG blocks are located along the main pedestrian spine connecting the neighbourhood to the metro station. Larger shaded gathering spaces and public functions along this route strengthen community life and can host activities such as religious festivals. As low-income residents primarily rely on walking and own fewer vehicles than middle- and high-income households, pedestrian connections are prioritized over direct access to larger vehicular roads.

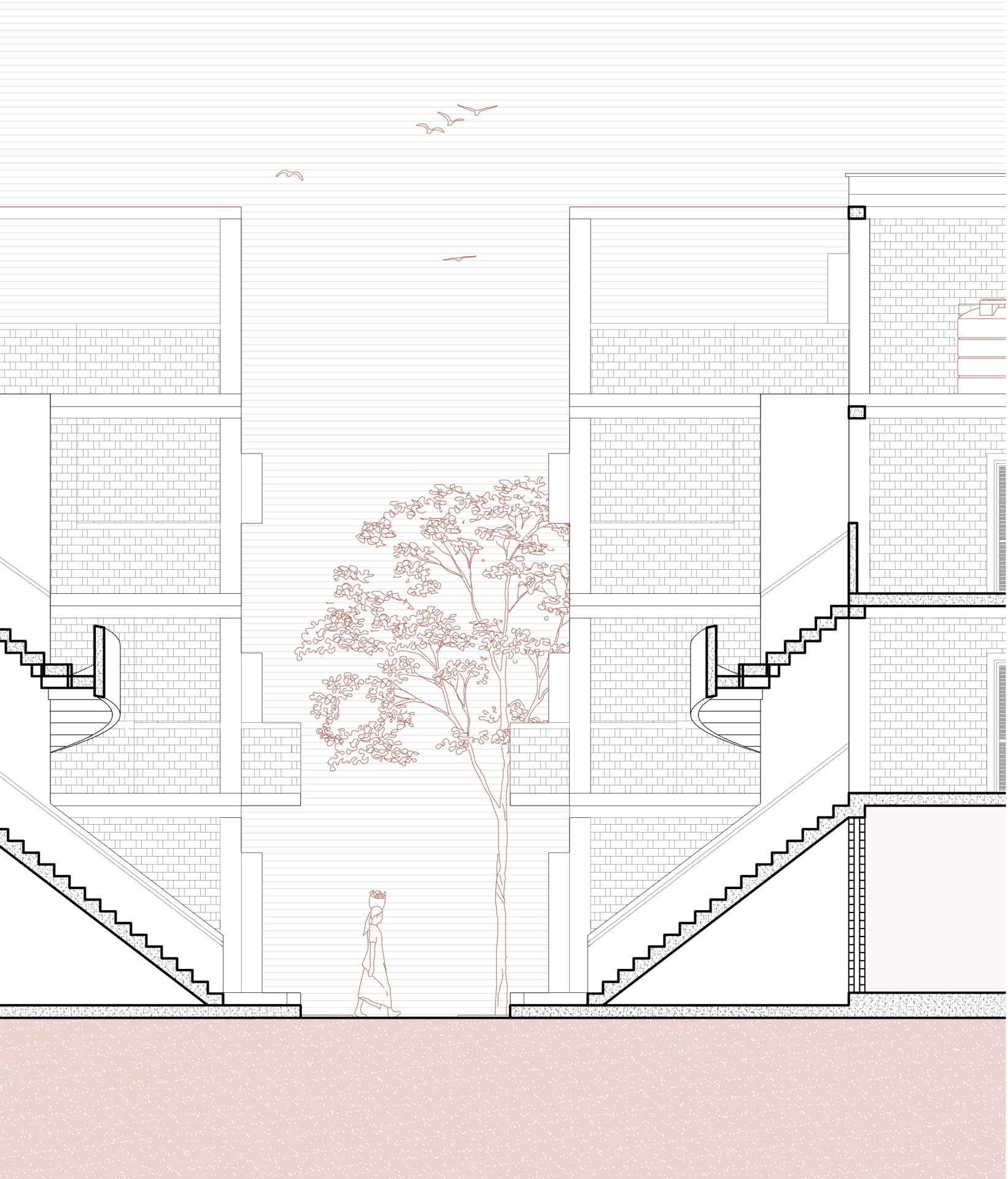


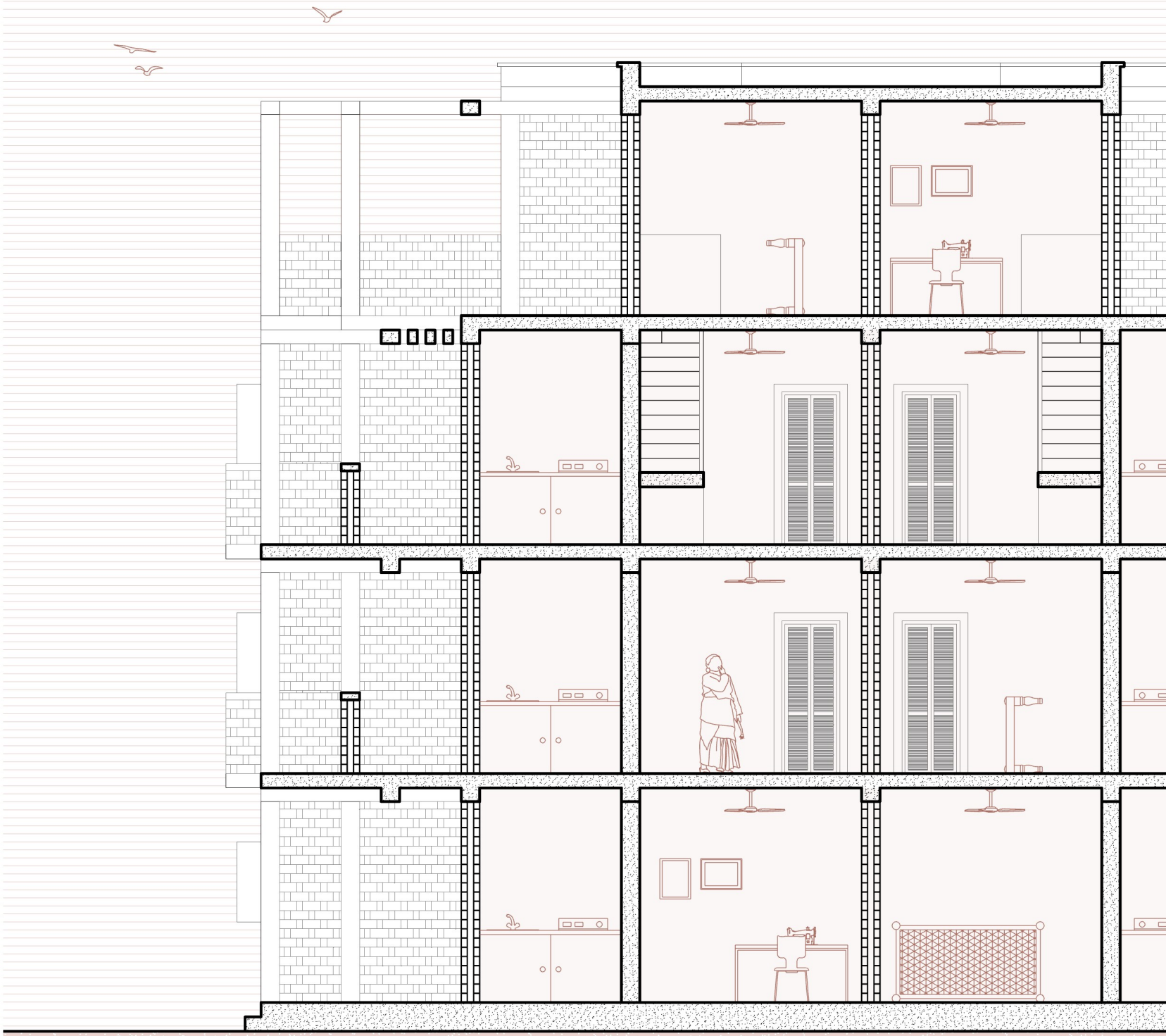


111 Ground floor LIG typology cluster 1:200 (scaled)

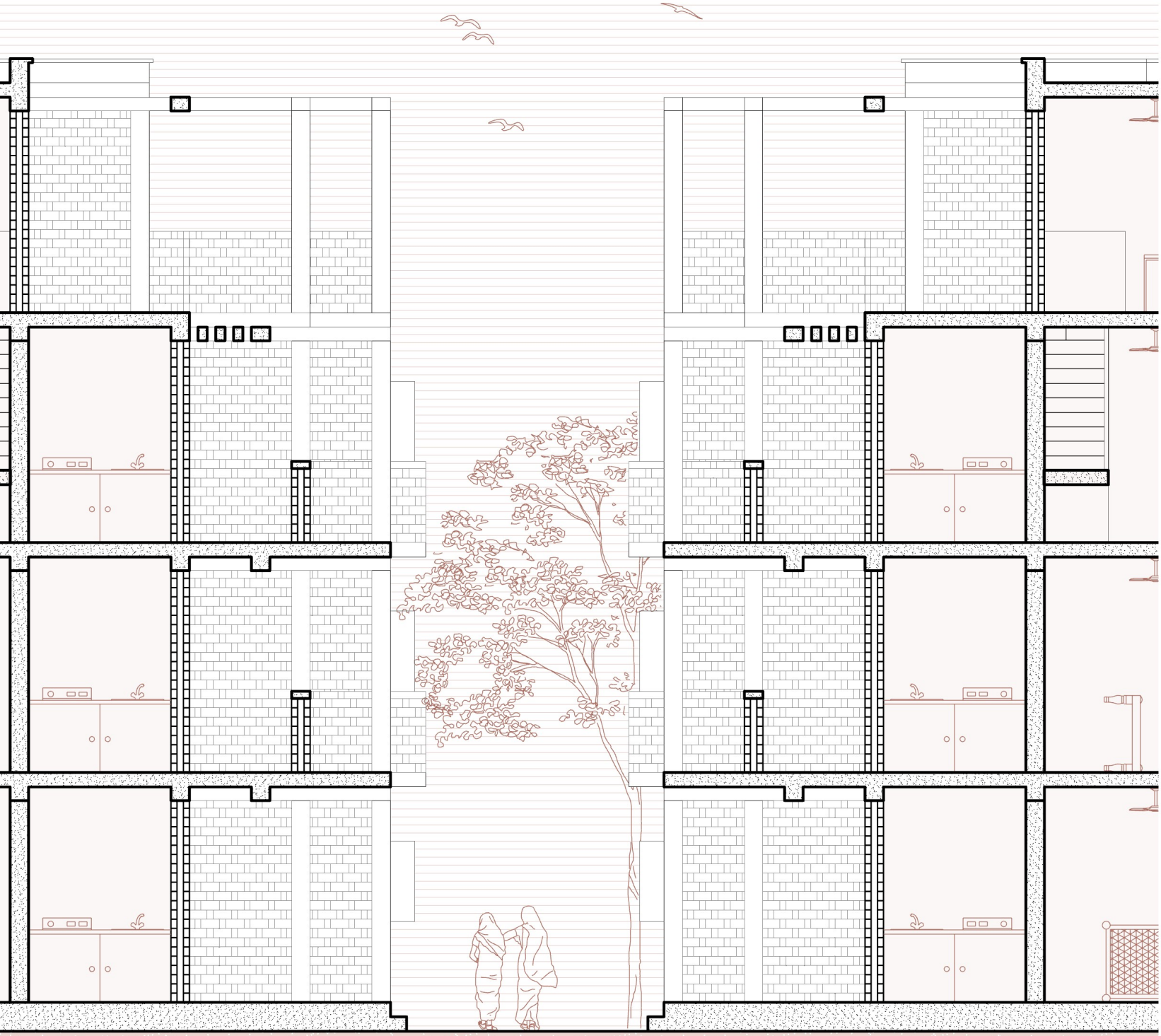


112 *Section staircases LIG typology cluster 1:100 (scaled)*





113 *Section washing areas LIG typology cluster 1:100 (scaled)*





114 *Visualisation LIG typology cluster*
Modeling: Rhino · Visualization: Twinmotion · AI Post-Production: Interstitial AI



115 *Visualisation alley LIG typology cluster*
Modeling: Rhino · Visualization: Twinmotion · AI Post-Production: Interstitial AI

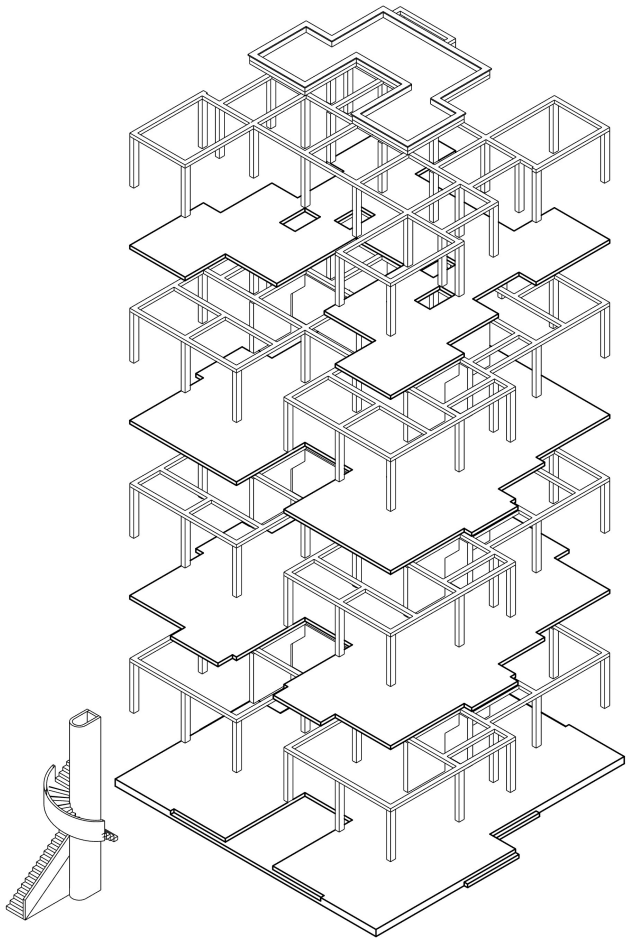
Construction and material

A reinforced cement concrete (RCC) frame with brick infill is used as the primary structural system. This widely used construction method in India supports low- to high-rise buildings, allowing a consistent structure across all housing typologies while enabling variation through brick expression and environmental performance.

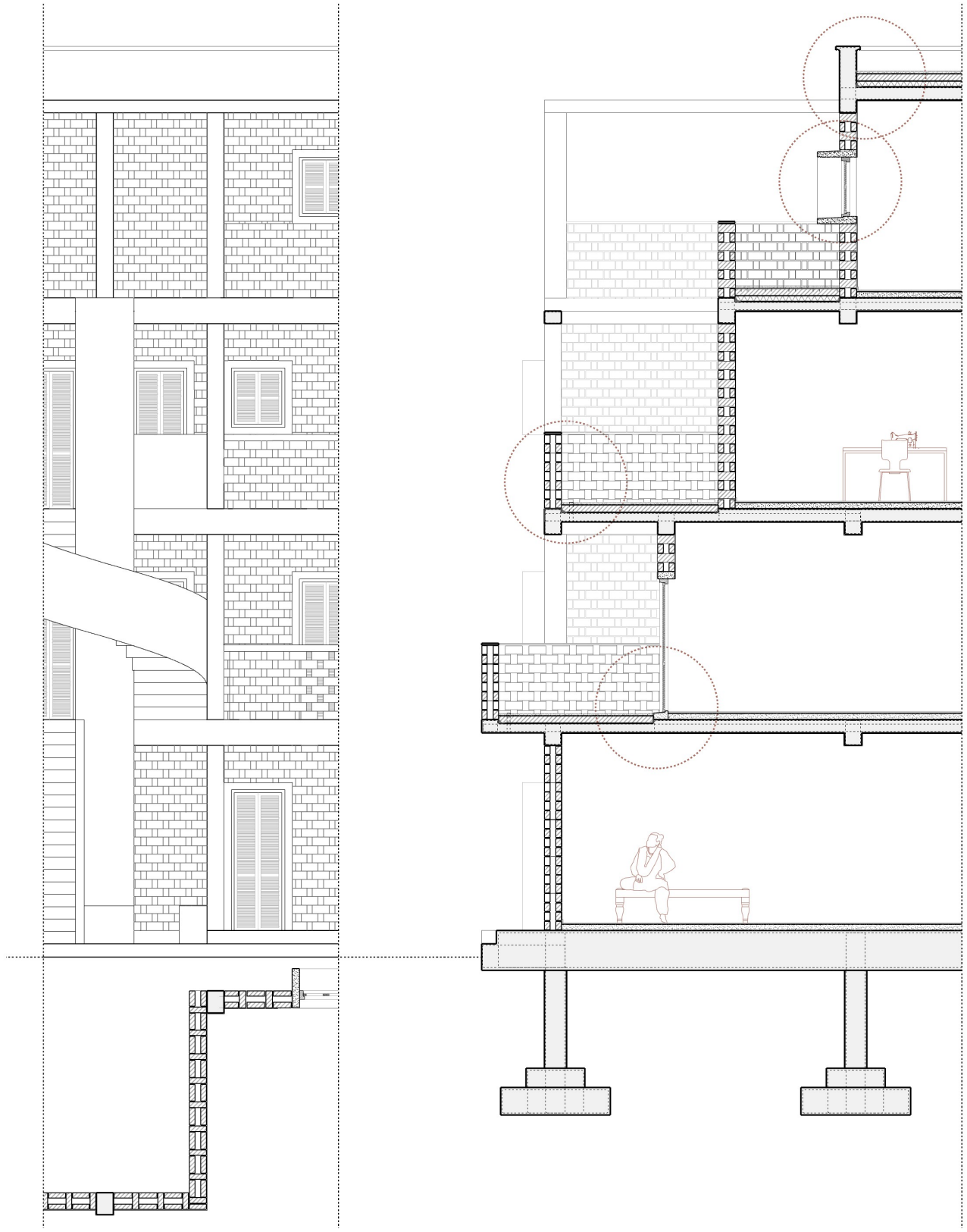
Brick is a locally available and well-understood material that provides permanence and adaptability. Depending on its use, it enables airflow or shading, for example through jaali screens. In solid wall areas, rat-trap bond masonry introduces air cavities that improve thermal performance.

In jaali sections, steel connectors link inner and outer brick layers to maintain stability while preserving separation. The in-situ RCC structure provides overall stability and durability, while the column grid establishes a modular system that allows potential incremental expansion at roof level.

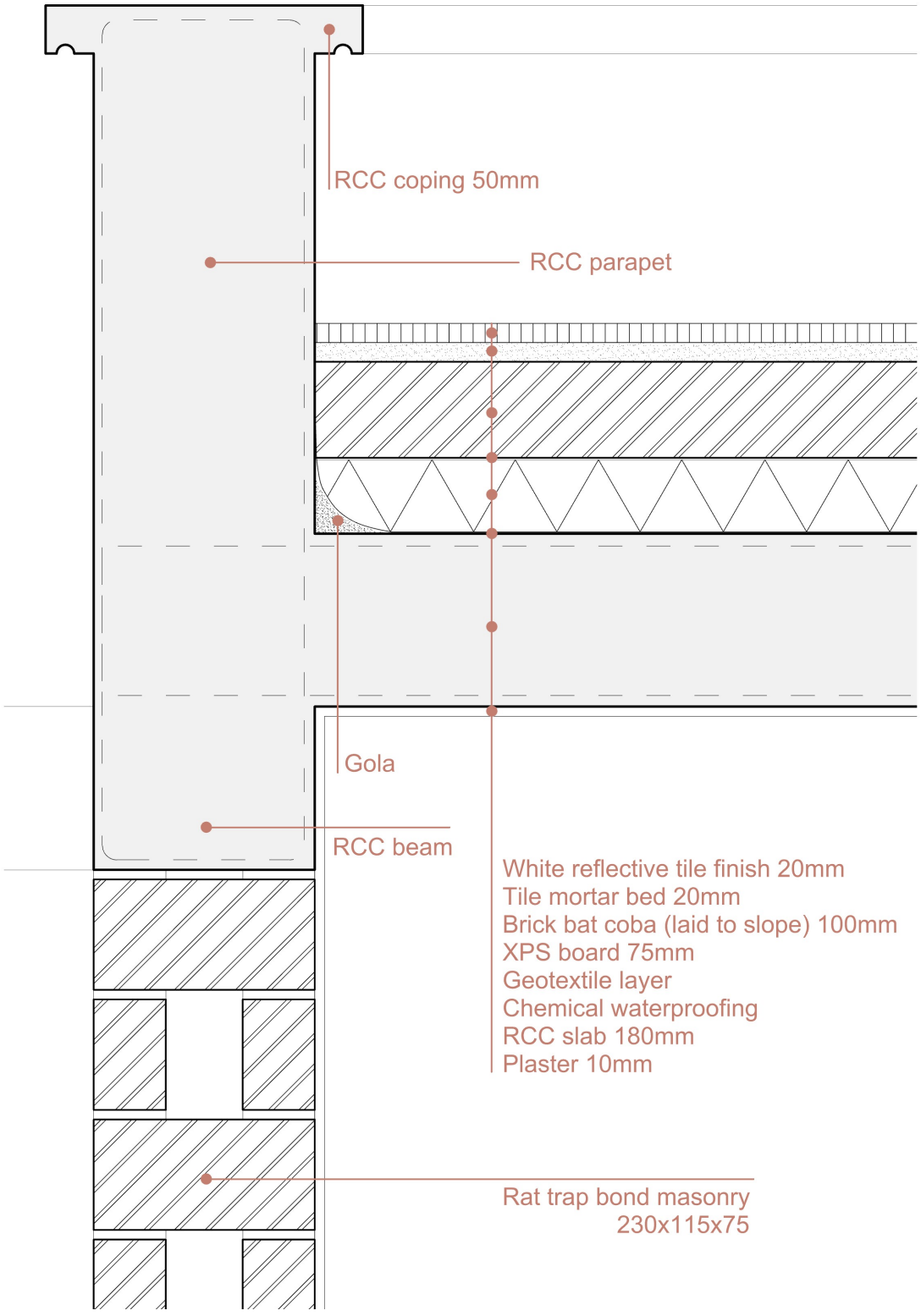
The column, beam and slab system forms the primary load-bearing structure, with brick acting as infill. Internal partitions are single-leaf brick walls used for spatial division only. Wood is used for window frames and louvers due to its durability and established use in traditional Indian architecture.



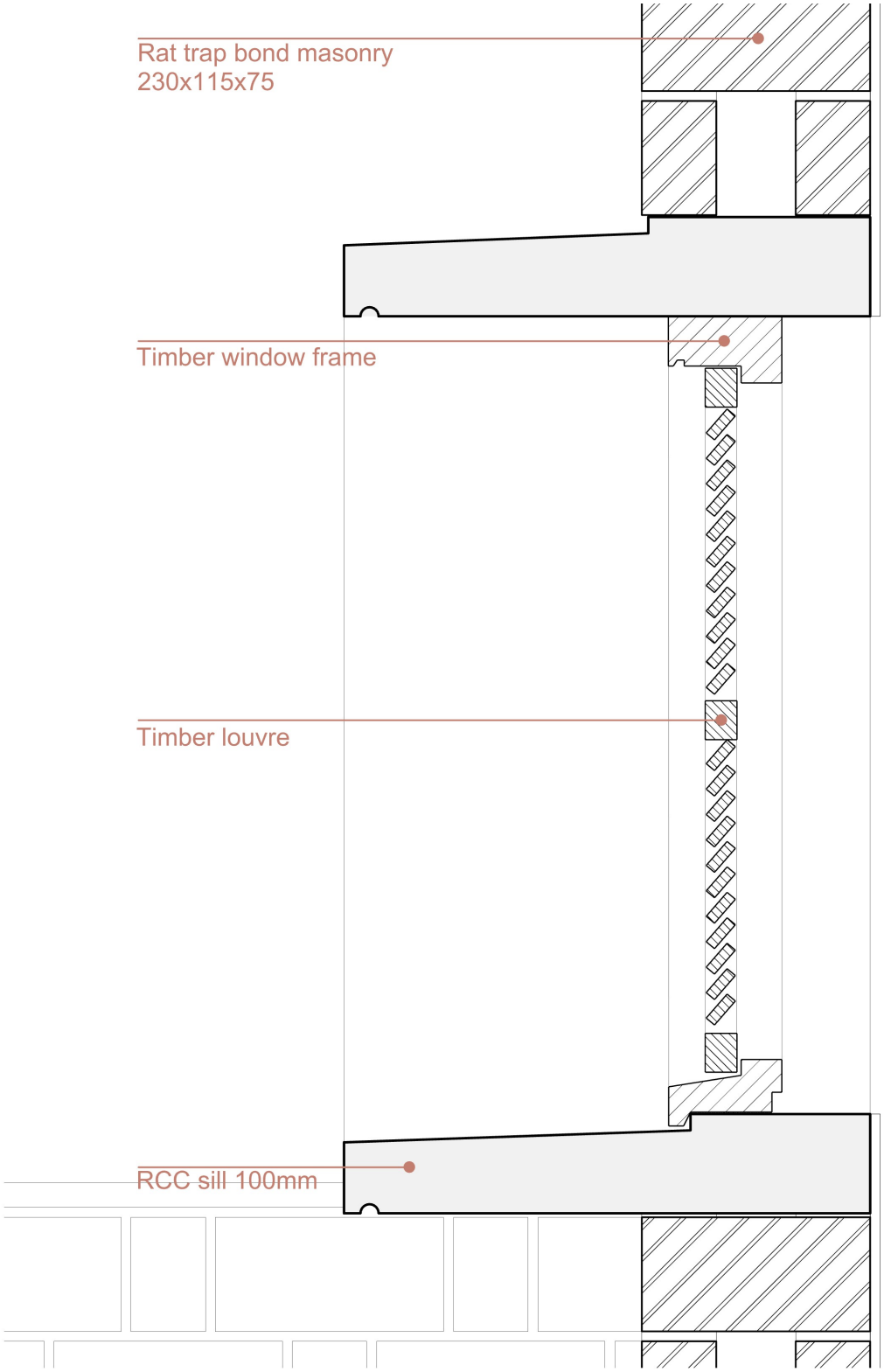
116 *Primary load bearing structure: RCC frame and RCC staircase*



117 *Facade fragment 1:20 (scaled)*

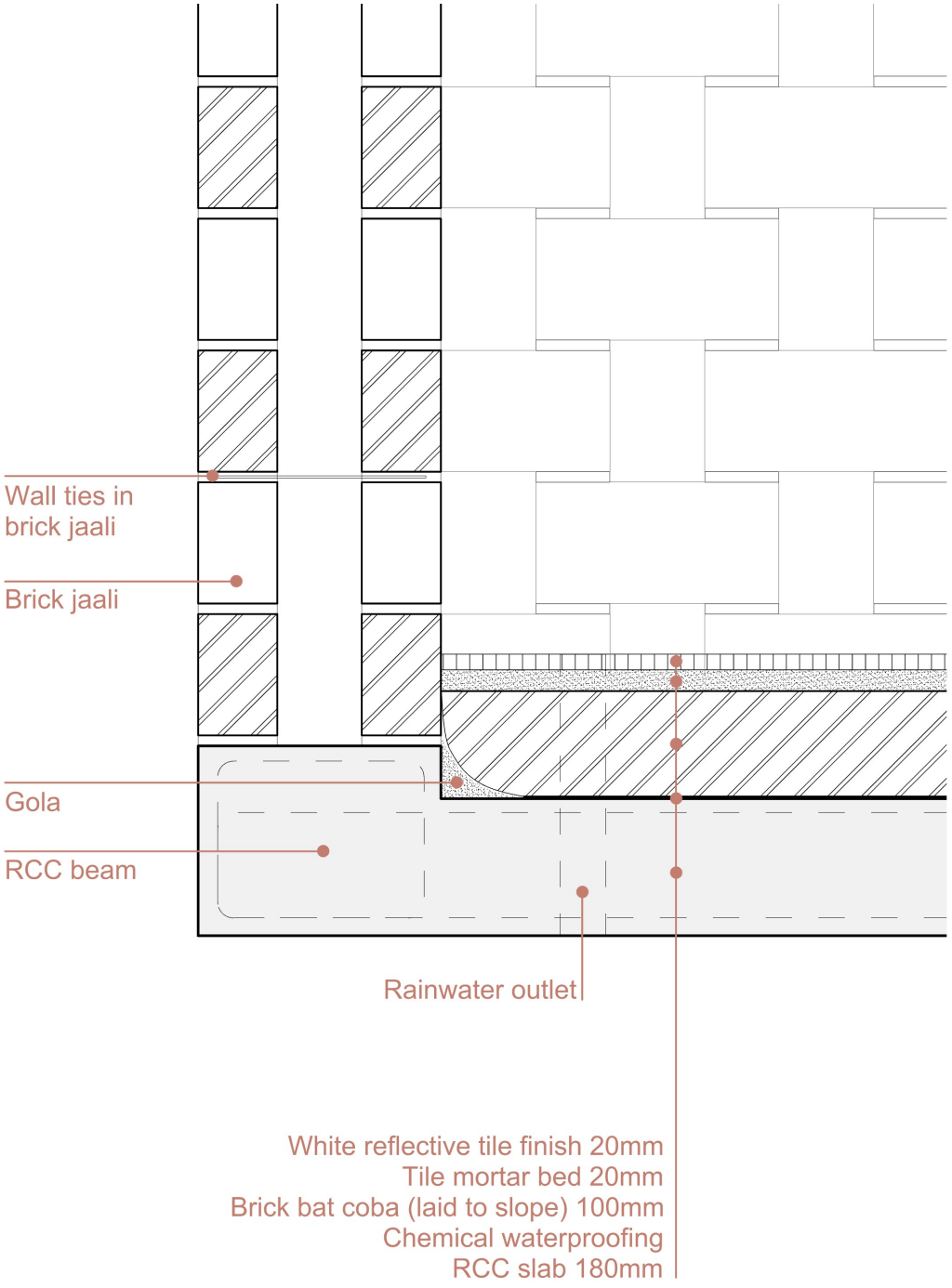


118 *Roof parapet detail 1:5 (scaled)*

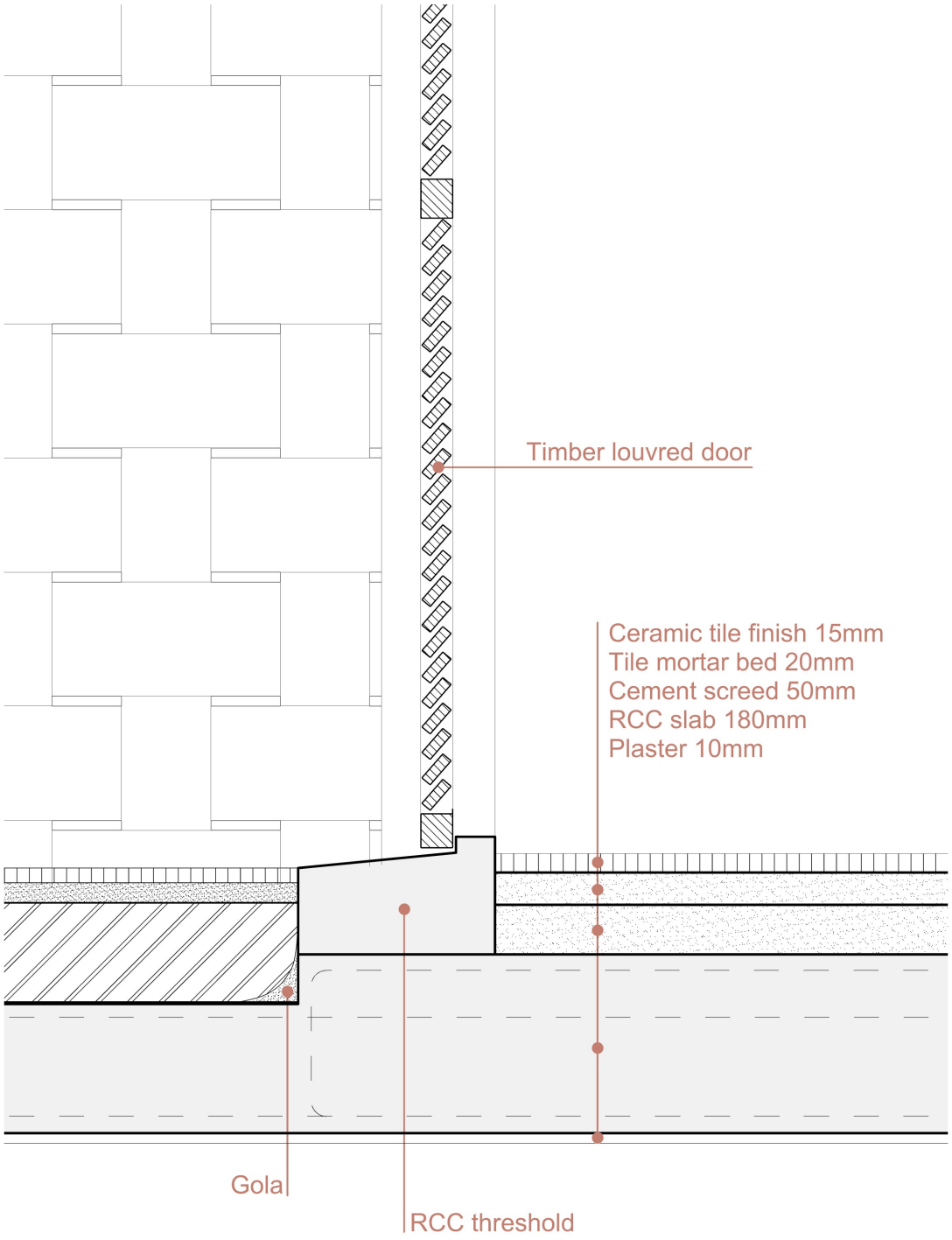


119 *Window detail 1:5 (scaled)*

120



***120** Parapet/balcony detail 1:5 (scaled)*



121 *Door detail 1:5 (scaled)*

Climate

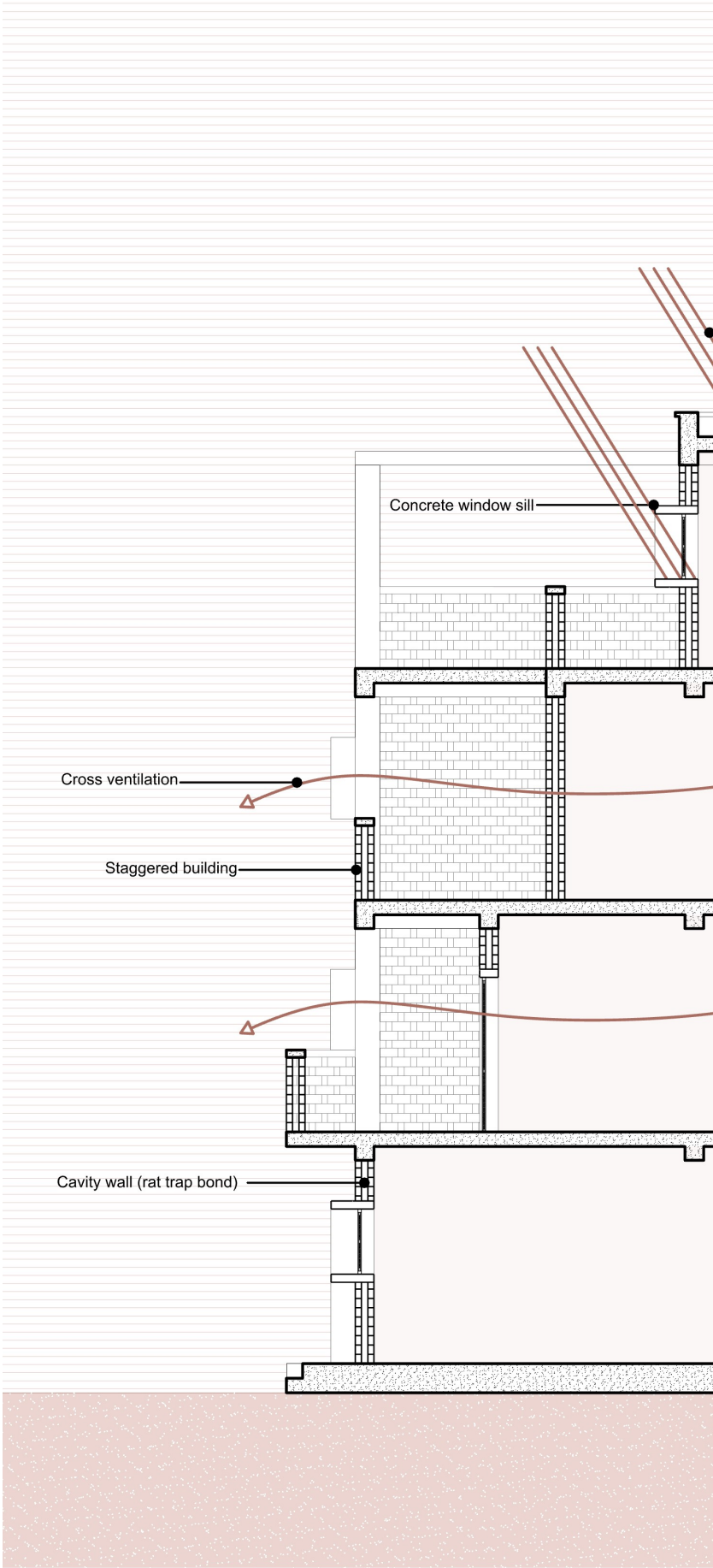
The following design strategies address climate responsiveness and aim to improve thermal comfort under local climatic conditions.

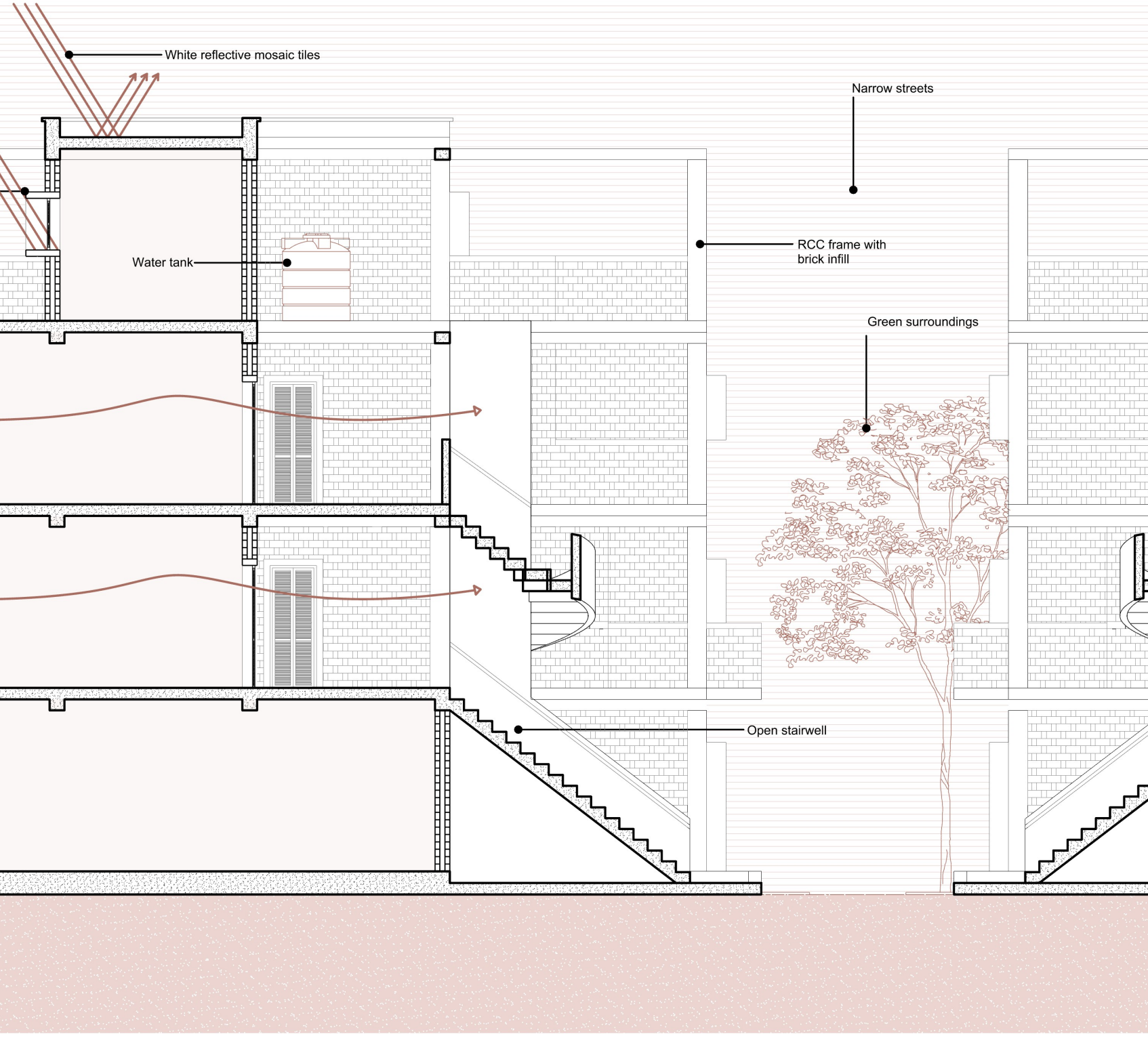
Openings on multiple facades promote cross-ventilation, while concrete sills provide additional solar shading. The staggered building typology increases shading on both facades and outdoor spaces and the absence of pavement along the east and west facades reduces heat gain.

Each floor contains four units with shared walls, reducing exposure to external conditions. The shared open stairwell also acts as an air shaft, supporting natural ventilation.

The cavity wall construction enhances thermal performance by creating a shaded inner wall protected by the outer leaf. Parts of the facade use jaali (perforated brickwork), combining an open outer layer with a half-brick inner wall. Select openings in the inner layer allow ventilation while maintaining privacy and enabling stack ventilation and night flushing.

The RCC frame with brick infill provides thermal mass, helping to stabilize indoor temperatures by absorbing and slowly releasing heat. On the roof, brick bat coba and white reflective mosaic tiles reflect solar radiation, reducing heat absorption. A rooftop water tank draws from underground storage and supplies water pressure to the building system.




White reflective mosaic tiles
Narrow streets
RCC frame with
brick infill
Water tank
Green surroundings
Open stairwell

04/

CONCLUSION AND DISCUSSION

04/ Conclusion and discussion

Conclusion

This research explored how housing in Rajiv Nagar, Ahmedabad can support flexible spatial conditions for domestic life, education and income generation, with the aim of expanding opportunities for stay-at-home women and children across generations. The study focused on understanding how spatial organisation, infrastructure and everyday practices shape social and economic opportunities within an informal settlement and how these dynamics influence daily life and long-term prospects for residents.

The findings show that daily life in Rajiv Nagar is centered around the immediate surroundings. Women's daily activities primarily take place within and around the dwelling, where domestic tasks, childcare and social interaction take place. Children similarly remain within the settlement, using the surroundings of their home and open fields as their main environment for playing and socializing. While these spatial practices create strong social networks and a sense of community, they also maintain limitations. Access to education, employment opportunities and essential services remains restricted, resulting in a cycle in which future opportunities are restricted by existing living conditions.

In relation to livelihoods and learning, the research demonstrates that housing is already multifunctional. Domestic spaces are used for cooking, washing, storage and informal income-generating activities. However, the lack of infrastructure, limited space and absence of dedicated facilities for education or work restrict the potential for more stable and varied income sources. At the same time, informality shows a strong ability to adapt, where residents continuously adjust and extend their living environments according to their needs. This indicates that flexibility is not absent, but currently unsupported by a formal spatial framework.

The role of social infrastructure proves to be crucial. Fieldwork and case studies highlight that everyday life depends heavily on shared facilities and collective spaces, yet these are limited in the current settlement. An integrated spatial approach is therefore necessary, in which housing is combined with educational facilities, childcare and spaces for training and community activities. Rather than separating functions, these elements should be embedded within a continuous urban structure that supports interaction and accessibility at different scales.

Climate conditions further shape spatial use throughout the day. High temperatures and limited shading reduce the usability of both indoor and outdoor spaces, particularly during daytime hours. The research shows that passive climate strategies such as shading, cross-ventilation and thermally responsive materials can significantly improve comfort. This not only improves living conditions but also increases the number of hours during which spaces can be used for education, work and social life.

The design responds to these findings through a framework that integrates connectivity, social infrastructure, flexibility and climate responsiveness. Housing is treated as an adaptable system rather than a fixed object, embedded within a wider urban structure that connects Rajiv Nagar to the city. This structure introduces a hierarchy of public and collective spaces and supports mixed-use and mixed-income settings. Key interventions such as a public spine, community facilities and different housing typologies aim to strengthen everyday opportunities without disrupting existing social networks.

Overall, the research concludes that improving opportunities for women and children in Rajiv Nagar cannot be achieved through housing alone. It requires an integrated spatial approach in which domestic life, social infrastructure, economic activity and climate-responsive design work together. By strengthening flexibility and connectivity across scales, housing can become a means for breaking intergenerational cycles of limited access to education and economic opportunity.

Implications and recommendations

This research demonstrates that housing in informal settlements has to be seen as an adaptive spatial system rather than a fixed object. This implies a shift away from designing isolated dwelling units, as is often the case in resettlement and redevelopment projects, towards the development of connected infrastructures that link domestic life with education, income generation and collective urban infrastructures. As a result, housing should be conceived as an open and adaptable framework that accommodates incremental growth, changing household needs and informal adaptation over time, rather than as a completed and static object.

The findings further demonstrate that spatial flexibility is a fundamental condition of everyday life in informal contexts. Architecture therefore plays a role in facilitating rather than controlling spatial use. This requires designers to move beyond fixed programmes and standardized solutions and instead develop spatial frameworks that support incremental transformation, informal appropriation and long-term change.

Furthermore, the research highlights the importance of social infrastructure as an essential component of architectural design. Facilities for education, childcare and community activities are essential spatial elements that contribute to long-term opportunities and social development. Architects should therefore integrate social infrastructure into housing strategies from the beginning, embedding educational and collective functions within residential environments rather than treating them as separate program.

The findings also demonstrate that climate responsiveness is directly linked to social and economic performance. Passive design strategies such as shading, cross-ventilation and certain material characteristics not only improve environmental comfort, but also increase the amount of time during which spaces can be used for learning, work and social interaction. Climate-responsive design should therefore be treated as a spatial principle that shapes social opportunities and everyday use, rather than as a technical layer added after the design process.

Finally, the research emphasizes the importance of working across multiple spatial scales. Housing opportunities are shaped not only by the dwelling itself, but also by its relationship to neighbouring buildings, public space and the wider urban context. Architectural interventions should therefore strengthen connectivity between the home, the settlement and the city through spatial strategies such as shared courtyards, public spines and distributed community facilities. More broadly, this requires a system that recognizes informality as a legitimate and productive form of urban development rather than a condition to be replaced.

Reflection

While this research provides a spatial and design-oriented understanding of housing in informal settlements, it is important to acknowledge its limitations. The study focuses solely on the informal settlement of Rajiv Nagar in Ahmedabad, which limits the generalisability of the findings to other contexts. In particular, settlements that include semi-pucca housing (structures made of concrete and stone) may differ significantly, as these areas are often more established and already contain more developed spatial frameworks. Comparing different types of informal contexts would therefore be valuable in order to assess the applicability of the proposed approach.

Furthermore, data collection was limited to two site visits. Conducting longer and better-prepared fieldwork, including in-depth interviews without language barriers, could have provided a richer and more comprehensive dataset to inform the design. Spending extended time within the settlement, including observation over a full day and night cycle, could also reveal important differences in spatial use and behaviour over time. In addition, involving residents throughout the design process would have added significant value, as participatory input could more clearly identify local needs and allow for iterative testing and refinement of design proposals.

Moreover, this research primarily focuses on spatial and architectural aspects, while broader economic, managerial and institutional structures remain in the background. Issues such as land tenure, finances and governance are not included in the analysis of this research.

Finally, the design proposals remain conceptual and have not been tested through real-life occupation or long-term evaluation. As a result, their actual impact, particularly in relation to social and income-generating outcomes, remains uncertain. The climate-responsive strategies have not been evaluated in practice, limiting an understanding of their actual performance in everyday contexts.

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APPENDIX

/ Appendix

Fieldwork: semi-structured interviews

During site visits to Rajiv Nagar, we asked several residents a series of questions regarding their living conditions and daily lives. The main topics included (naka) work, household composition, (domestic) animals, access to basic services such as water and electricity, waste collection, interactions with neighbors, and their perception of their homes. The residents did not speak English and often not even Hindi, but only Gujarati. Therefore, the semi-structured interviews were documented in the form of short written notes.

Household 1
Bath and washroom here, water further away, cook
At 7 o'clock every day water comes
Food inside
Tiling and plastering as work
They happy with what they have, bc don't have to pay anybody
Workers work for the boss that lives further away

Group of children
Playing cricket, catch and catch
Children want a bungalow
Bicycle want

Household 2
15 years
5–6 people live here
Vegetable man
Running water
6–8 18-20 morning and evening water
His father made it
Don't feel anything is missing
Dad passed away, brother lives upstairs and brother downstairs
Government does not collect garbage
Sometimes they use the metro
Goats are just here as pets

Household 3
Heating water to bathe because it is cold for them

Household 4
Doesn't want to talk

Household 5
1 year
Plastering and tiling done by everyone
A village in Gujarat Dahod? 3 people
Utility space next to it to wash clothes
Whatever they find, not any best material for building house
Rain: sloped roofs, bucket to get the water out
No electricity and water
Kathia, bed, sleep outside

Household 6
Rickshaw driver, Lala
35 years old

Group of children
No community spaces, temple only one

Household 7
Water storage, bathroom and kitchen
Electricity from the context next door
Husband vegetable cart, really long time, 70 years they have lived here
Best house of the plot

Household 8
12–15 people
But living in bungalow?
No problem with garbage, every 2/3 months it gets collected
Used to live in settlement, saved enough and then bought plot and built whole house themselves, vegetable seller

Household 9
600–800 INR per day, depends on work per day
Women can also work, only women who are breastfeeding not
Naka workers picked up between 9–10

Note to self
First part really followed by children, after second part they left as if they didn't live in this part of the settlement

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