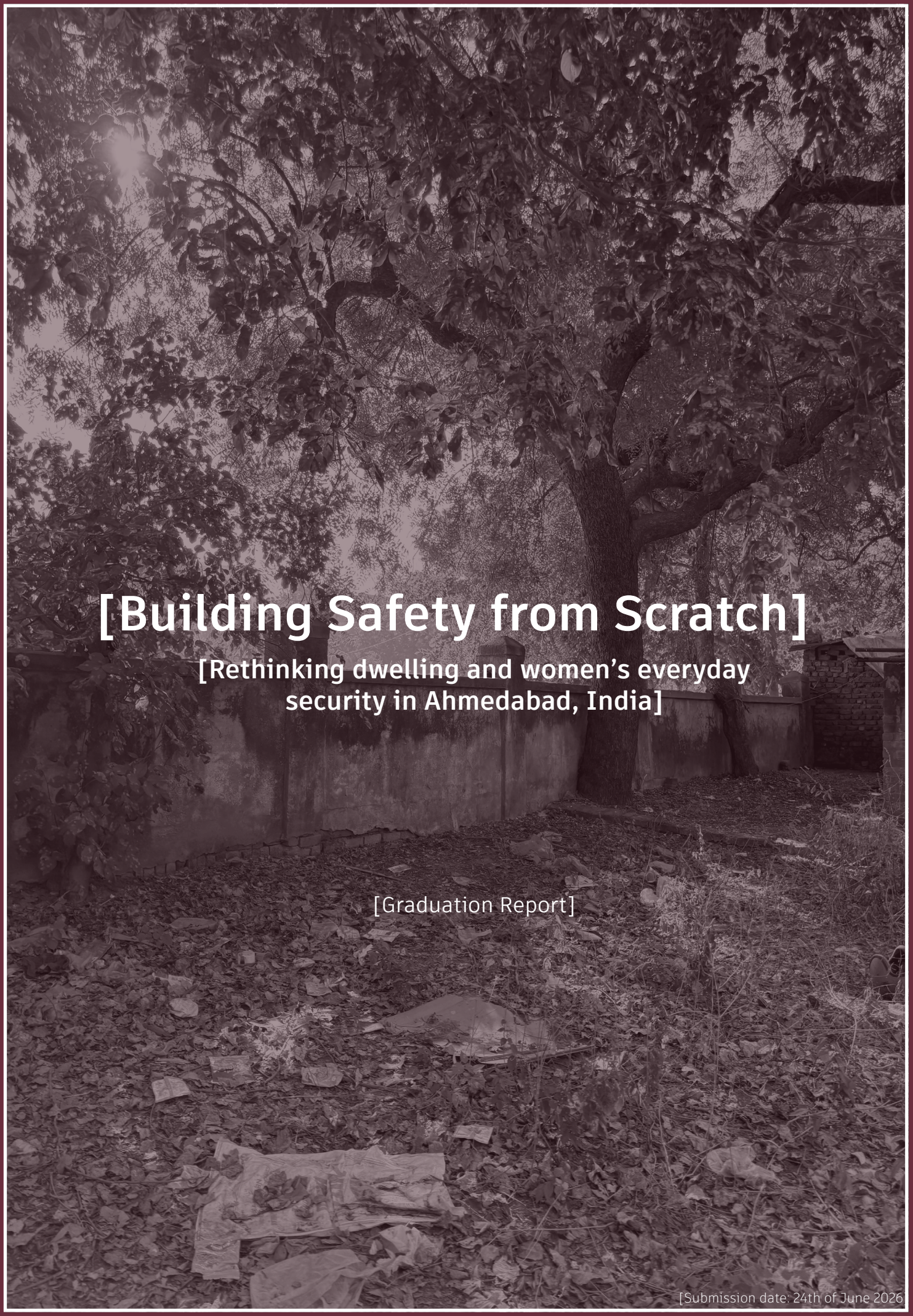

[Building Safety from Scratch]

[Rethinking dwelling and women's everyday security in Ahmedabad, India]

[Graduation Report]

[Submission date: 24th of June 2026]

Graduation Thesis Plan 2025-2026
Master of Architecture, Urbanism and Building Sciences
Architecture Track
Delft University of Technology (TU Delft)

Building Safety from Scratch
Rethinking dwelling and women's everyday security in Ahmedabad, India

Andreea Dragan | 6248691

MSc4 Graduation Studio (AR4GH010)
Global Housing: Dwelling in Ahmedabad

Teaching Team:
Prof. Marina Tabassum
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In collaboration with faculty and students from CEPT University, Ahmedabad, India

Front and back cover: View from the other side of the surrounding wall around Bimanagar plot
Photo: Andreea Dragan (2025)

TU Delft Delft University of Technology

[Foreword]

Choosing to go beyond European borders for my master's dissertation was a deliberate choice meant to help me examine and challenge my own architectural biases. I sought to fully experience a reality where the rules of urbanism and architecture completely differ from what I had known and worked with so far, allowing me to design in a context shaped by rapid densification and much more complex social layers. More than just an academic challenge, I believed that architecture is inherently political. As designers, we hold the power to either reinforce social inequalities or work to dismantle them. In this sense, I wanted to prove to myself that my gathered knowledge and education could become valuable tools for social justice, not just for creating "beautiful architecture".

While I was well-aware that gender-based violence is a critical global issue, preliminary research conducted prior to my departure highlighted India as a context where these challenges are particularly acute. Consequently, the decision to center my project on women's safety was driven by both statistical urgency and lived reality. Navigating Ahmedabad, I engaged with the urban environment as an architect and as a woman at the same time, becoming highly aware of the subtle, unwritten rules that dictate women's daily mobility and interactions with the urban environment here. The constant necessity of maintaining vigilance, whether interacting with chaotic street edges or assessing safety after dark, transformed abstract data and numbers into a tangible understanding of how the built environment can impact one's sense of security, especially a woman's.

These experiences lived in Ahmedabad during my two-week visit revealed a pressing and uncomfortable truth: in most cities across India, the right to public space is not a guarantee, but a conditional privilege that women are forced to earn by constantly remaining vigilent. Moreover, it became clear that for a woman, the simple act of inhabiting the city is never passive or easy; it is a silent, ongoing game of survival: measuring the light, watching the corners and predicting the risks. Ultimately, this mental burden transforms the city from a public space into a maze where safety is not given by the architecture, but earned through a woman's own perpetual vigilance.

This dissertation, intentionally titled *Building Safety from Scratch*, is my answer to that vulnerability. It aims to change the conversation from reactive surveillance and policing, to real, proactive spatial designs. By integrating architectural strategies that enhance visibility, such as permeable thresholds and active street edges, with a program focused on shared homemaking and community building, I aim to demonstrate how the built environment can actively support rather than restrict women. My ultimate goal is to create a replicable architectural matrix that proves safety is not a luxury, but a basic right for both women and men that they can both benefit from at the same time.

[Reading Guide]

This report is structured into four sequential parts, guiding the reader from initial contextual observations of gendered urban safety to a final, concrete design project.

Part 1 – *Introduction*
This section introduces the research topic, problem statement, objectives and the underlying motivation regarding women's everyday safety in Ahmedabad. Furthermore, it outlines the central research question, defines the project's scope and establishes the relevance of this study.

Part 2 – *Approach*
The theoretical framework explores existing literature on gendered spaces, urban safety and environmental design as well as design precedences. Alongside this, the methodology details the specific research approach, field data collection methods and analysis techniques used to study the Bimanagar neighborhood and the wider city of Ahmedabad.

Part 3 – *Results*
This section documents the empirical findings of the research, analyzing and visualizing how specific spatial qualities impact women's sense of security. These insights are directly translated into a series of design explorations, bridging the gap between site analysis and spatial intervention.

Part 4 – *Conclusion and Discussion*
The final section synthesizes the answers to the core research questions and demonstrates how the findings have culminated in strategic design and planning guidelines. Lastly, it offers a holistic reflection on the thesis journey, assessing how the chosen methodology shaped the final design proposals and addressing the broader implications for safer urban environments.

Appendices
Supplementary materials (including a bibliography of literature and imagery) are included at the end of the report.

[Abstract]

Despite India's rapid economic growth, urbanization has paradoxically reinforced gendered exclusion, trapping women in a cycle of forced immobility and hyper-vigilance. This dissertation addresses the critical gap in urban safety measures, which currently rely on reactive surveillance rather than proactive design. Titled *Building Safety from Scratch*, the research advocates for a paradigm shift where safety is embedded into the architectural DNA of housing itself.

Located on the Bimanagar site in Ahmedabad, the study utilizes a mixed-methods approach, integrating sociographic data with immersive fieldwork to map the lived reality of insecurity. The resulting design proposal offers a replicable template that is meant to encourage natural surveillance and ensure shared domesticity, along with the creation of a sense of community for the future residents. Moreover, by prioritizing the female perspective, this project demonstrates how architecture can actively dismantle spatial barriers, transforming the built environment from a source of anxiety into an infrastructure of care.

[Table of Contents]

PART 1

Introduction

“Globally, almost 1 in 3 women have experienced physical and/or sexual violence at least once in their life.”

(UN Women, n.d.)

[Problem Background]

[Global context]

Despite rapid industrialization and the expansion of human rights frameworks in the 21st century, violence against women remains a widespread global crisis. While economic development is often correlated with social progress, gender-based violence persists as a critical issue worldwide, resisting the ameliorating effects of modernization (UN Women, 2025).

Moreover, data suggests that urbanization and economic growth do not automatically translate into safer environments for women. Instead, they often reconfigure the spatial dynamics of exclusion and fear (Sandhir, 2025). This global stagnation sets the stage for examining specific geographies where this inconsistency is most serious.

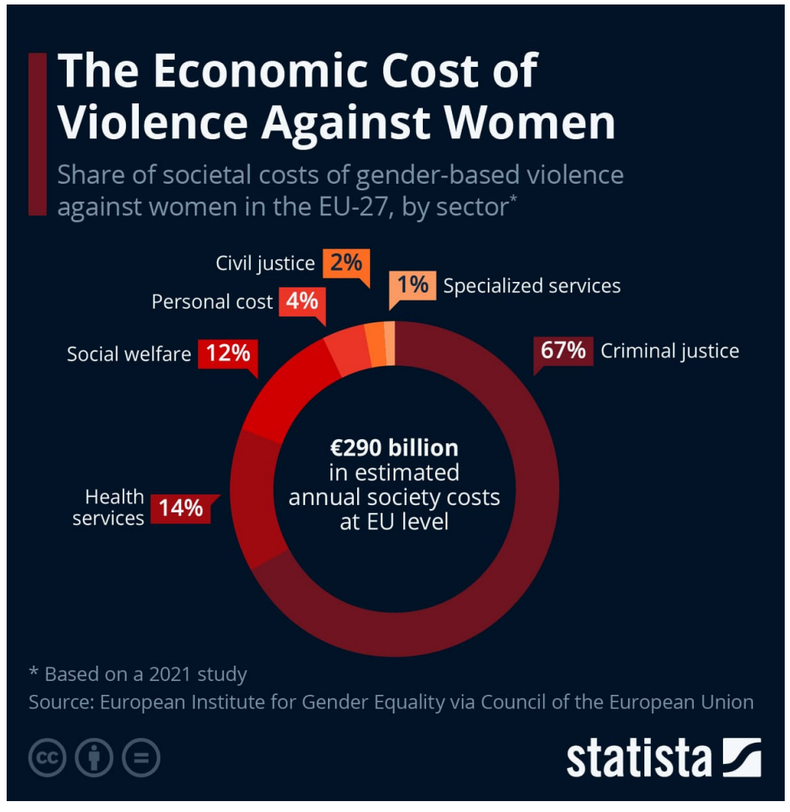
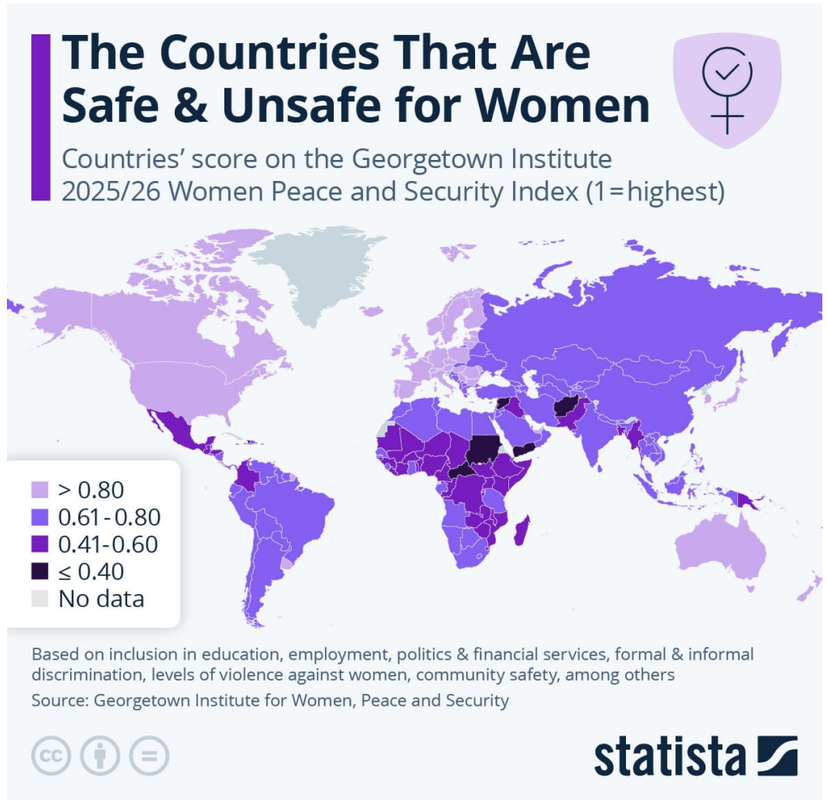


Fig. 1, "The Economic Cost of Violence Against Women" (Fleck, 2023)

Fig. 2, "The Countries That Are Safe & Unsafe for Women" (Buchholz, 2025)



[National context]

India occupies a unique and paradoxical position in this global landscape. On the surface, the nation is an economic powerhouse, with a booming GDP and a trajectory set to define the Asian economy of the future (Thinkwithniche, 2025). This financial growth has been accompanied by a visible shift in civil society, where women are increasingly stepping forward by voting in higher numbers and entering the workforce at growing rates (DD News, 2024).

However, these progressive strides collide with a harsh reality regarding public safety. Despite the country's modernization, India remains statistically unsafe for women, with security indicators lagging significantly behind its economic metrics (Bansal & Bali, n.d.). This creates a profound tension: while the economy increasingly relies on women to participate in public life, the built environment and social infrastructure have failed to evolve alongside them, denying them the safety they need to navigate the city freely.

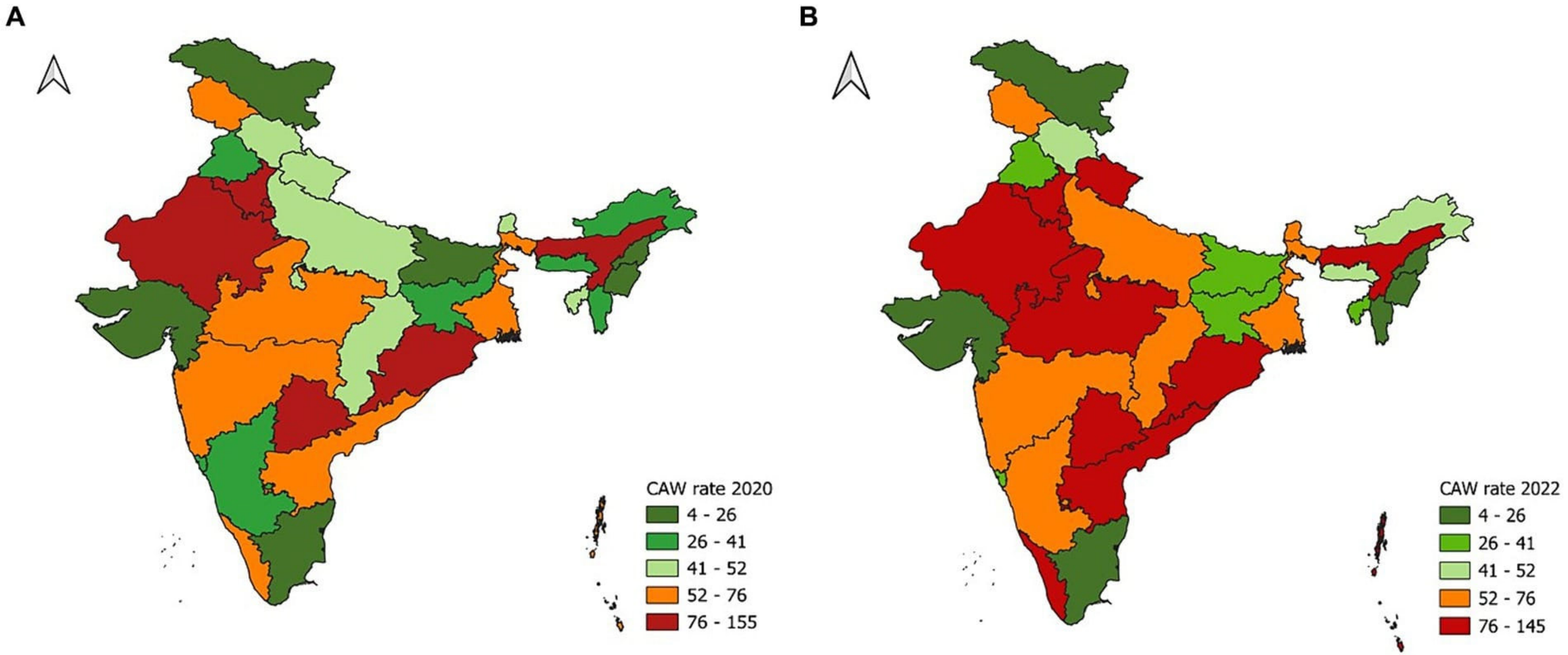


Fig. 3, "Crimes Against Women rate growth between 2020 and 2022" (Sharma et al., 2022)

[Local context]

This contrast between economic progress and gendered insecurity is especially clear in Ahmedabad. As a rapidly developing metropolis, the city contributes approximately 1.9% to India's national GDP and is characterized by a relatively high literacy rate and an educated population (Thinkwithniche, 2025). Consequently, Ahmedabad markets itself as a model of urban prosperity and is frequently regarded as a "safe city" for women, which serves as a point of pride for residents and a primary attraction for visitors and immigrants. Moreover, its reputation is often strengthened by the state's prohibition policies and the presence of women in public spaces during festivals like Navratri (Cornago Bonal & Desai, 2020).

However, this narrative hides a critical paradox: the city's safety is largely relative rather than absolute. While Ahmedabad may witness fewer crimes against women compared to metropolises like Delhi, this comparative advantage does not equate to a city that is safe "in and by itself" (Cornago Bonal & Desai, 2020). Instead, beneath the appearance of development lies a fragmented urban fabric defined by deep geographic and socio-economic divides (Kaushik, 2024).

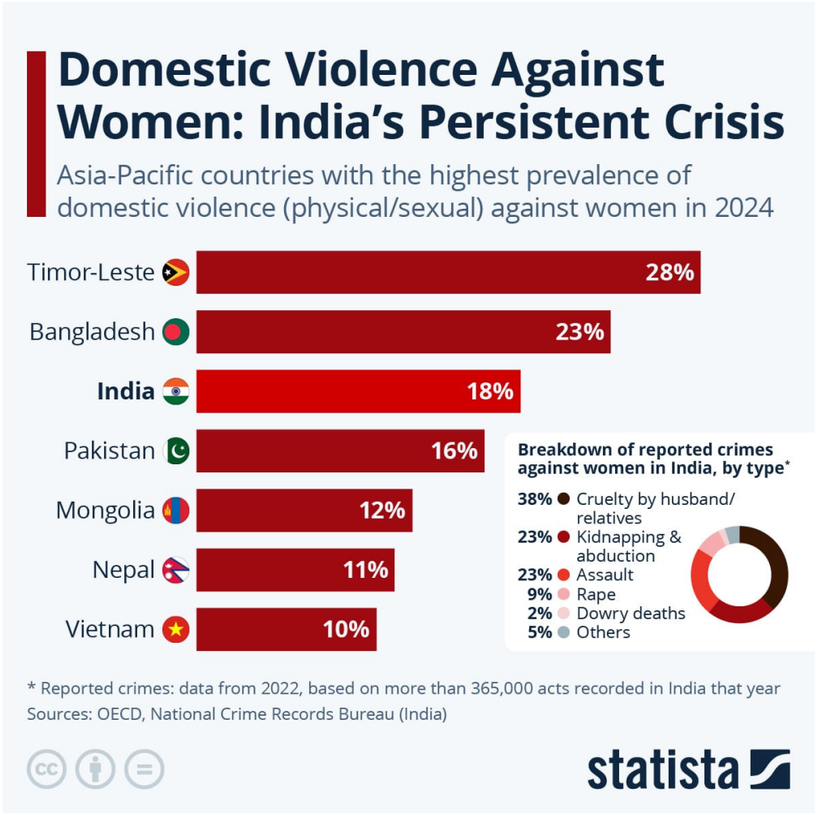


Fig. 4, "Domestic Violence Against Women: India's Persistent Crisis" (Gaudiaut, 2025)

In addition, the perception of safety is predominantly derived from the substantial experiences of Western Ahmedabad, masking the systemic violence faced by women in Eastern industrial hubs such as Vatva, Naroda, and Odhav. In these areas, uneven infrastructural growth has led to the formation of vacant sites and dangerous neighborhoods where harassment is commonplace (Cornago Bonal & Desai, 2020).

Ultimately, for many women in Ahmedabad, safety is not a guaranteed right but a negotiated condition maintained through self-policing strategies, such as moving in groups or avoiding unknown roads, rather than through genuine unconstrained access to the public space (Cornago Bonal & Desai, 2020). Thus, the "safe city" label acts as a myth that must be peeled away to understand the conditional privilege of safety that exists within the city's urban fabric. It is within this specific context, where high economic aspirations meet the ground reality of gendered insecurity, that this research is situated.

[Problem Statement]

While Ahmedabad undergoes rapid urban expansion, the spatial configurations of its residential neighborhoods frequently neglect the specific daily safety requirements of its female inhabitants (Viswanath et al., 2022). Despite the city's economic prosperity, research indicates that housing layouts often perpetuate insecurity through design failures such as poor lighting, unsafe thresholds, and the creation of blind corners that sever visual connectivity (Sharma, 2024). Moreover, this infrastructural issue is particularly present in low-income and rapidly densifying areas, where the built environment creates zones of exclusion rather than a sense of community formation (Viswanath et al., 2022).

The primary consequence of this spatial failure is the "forced immobility" of women. In other words, the absence of gender-sensitive design pressures women into fundamentally adjusting their behavior to survive and travel through the urban environment. Instead of the city facilitating their movement, women are forced to adopt avoidance strategies, such as restricting travel times, engaging in complex "trip chaining" or relying on designated drivers, effectively treating public space as a hostile territory (Sandhir, 2025).

Fig. 5, Ahmedabad at nighttime (AcidCow, n.d.)

Fig. 6, Ahmedabad at nighttime (AcidCow, n.d.)

[Research Relevance]

Shifting from proactive to architectural design: the project adapts the profession's reliance on fortress architecture (gates and surveillance), which often promotes isolation (Bansal & Bali, n.d.). Instead, it establishes a *Building Safety from Scratch* methodology, offering a replicable matrix, with penetrable thresholds and active edges, that provides an example of a design for "caring dwellings" from the ground up.

Combating forced immobility: in the context of India's economic growth, the forced immobility of women remains a critical barrier to empowerment (Thinkwithniche, 2025). Therefore, this research proposal addresses the state of vigilance that conditions women to adjust their behavior, arguing that spatial safety is a requirement for full economic and civil participation (Sandhir, 2025).

Universalizing urban safety: by prioritizing the needs of the most vulnerable demographic, this research demonstrates that gender-sensitive design creates safer environments for all citizens. It also proves that reducing violence against women through spatial interventions is essential for sustainable urban development globally (UN Women, 2025).

[Research Gap]

Furthermore, a significant gap exists in how urban safety is currently addressed. Successful interventions tend to be relying on surveillance technology (CCTV) or policing, which attempt to manage risk after the urban fabric has already failed its users. However, there is a critical lack of proactive architectural strategies that prioritize safety during the design phase (Observer Research Foundation, 2023). Consequently, there is an urgent need to shift the paradigm from retrofitting security to establishing architectural principles that uphold women's dignity and freedom of movement as foundational elements of housing design.

[Project Objective and Motivation]

In cities that are growing quickly, the built environment often places economic efficiency ahead of human safety, which unintentionally makes the city's walls and streets "dangerous." Therefore, this project is motivated by a desire to prove that architectural education can be translated into a tangible tool for social justice, moving beyond the mere production of aesthetic forms to address the urgent crisis of spatial equity.

While preliminary research highlighted the statistical severity of gender-based violence in the country, it was the lived experience of Ahmedabad that defined the project's core motivation. On-site immersion revealed that for women, the right to public space is rarely a guarantee. Instead, it is a conditional privilege that must be earned through continuous vigilance. In facts, the act of inhabiting the city transforms into a silent, strategic negotiation involving the assessment of lighting, the scanning of sightlines, and the avoidance of blind corners. Furthermore, this invisible mental burden fundamentally alters the relationship between the woman and the city, turning the urban fabric from a shared commons into a landscape of survival where safety depends entirely on her state of alertness.

Consequently, the primary objective of this project is to shift the paradigm of urban safety from reactive measures to proactive spatial solutions. In this sense, it is worth mentioning that current interventions often rely on "band-aid" mechanisms, such as surveillance cameras, policing, or gating, which attempt to manage risk only after the environment has already failed its users. In contrast, this research insists that safety must be embedded into the architectural DNA of housing itself. Thus, the project seeks to develop a replicable design template that can be adapted to similar developing contexts. This involves synthesizing vernacular strategies, such as porous thresholds and active street edges, with a program centered on shared domesticity and community visibility.

Ultimately, this dissertation aspires to demonstrate that the built environment can be designed to actively redistribute the burden of safety, proving that security is not a luxury commodity, but a fundamental spatial right that can be designed, built and lived.

[Research Question]

a *b*

How can **dwelling design** and **neighborhood planning** in Ahmedabad enhance women's everyday **safety and sense of security**?

c

Sub-questions:

1. Which specific spatial qualities most influence women's sense of safety? — *b* — **SPATIAL SAFETY & PERCEPTION**

2. How do women navigate and modify unsafe housing environments, both in informal and formal neighborhoods? — *c* — **GENDERED SPATIAL NAVIGATION**

3. What building design principles can decrease risk and increase visibility? — *a* — **SAFE DESIGN STRATEGIES & HOUSING ADAPTATION**

[Project Scoping]

Understanding what is within, respectively outside the scope of the research is essential for the feasibility of the project. In the case of the current research project, a table was utilized to present this scoping information:

Parameter	IN Scope	OUT of Scope
• Geographic context	• Bimanagar plot, Ahmedabad (focused specifically on the local socio-cultural and climatic context of this neighborhood)	• Comparative urbanism (analysis of other Indian metropolitan areas or international case studies outside of Ahmedabad)
• Demographic focus	• Female safety (prioritizing the specific spatial needs, anxieties and mobility patterns of women)	• Universal safety protocols (specific security strategies designed explicitly for the male demographic, though inclusive design benefits all)
• Intervention	• “Designing from scratch” (on new plots to test ideal spatial configurations)	• Retrofitting (strategies for adapting or renovating existing, failed infrastructural fabrics)
• Project impact	• Social & spatial strategy (focusing on architectural form, community programming and high-level financial viability)	• Detailed financial feasibility (exhaustive cost-benefit analysis, construction budgeting or developer profit modeling)

Fig. 7, Project scoping matrix (author’s work, 2026)

[Focus Group]

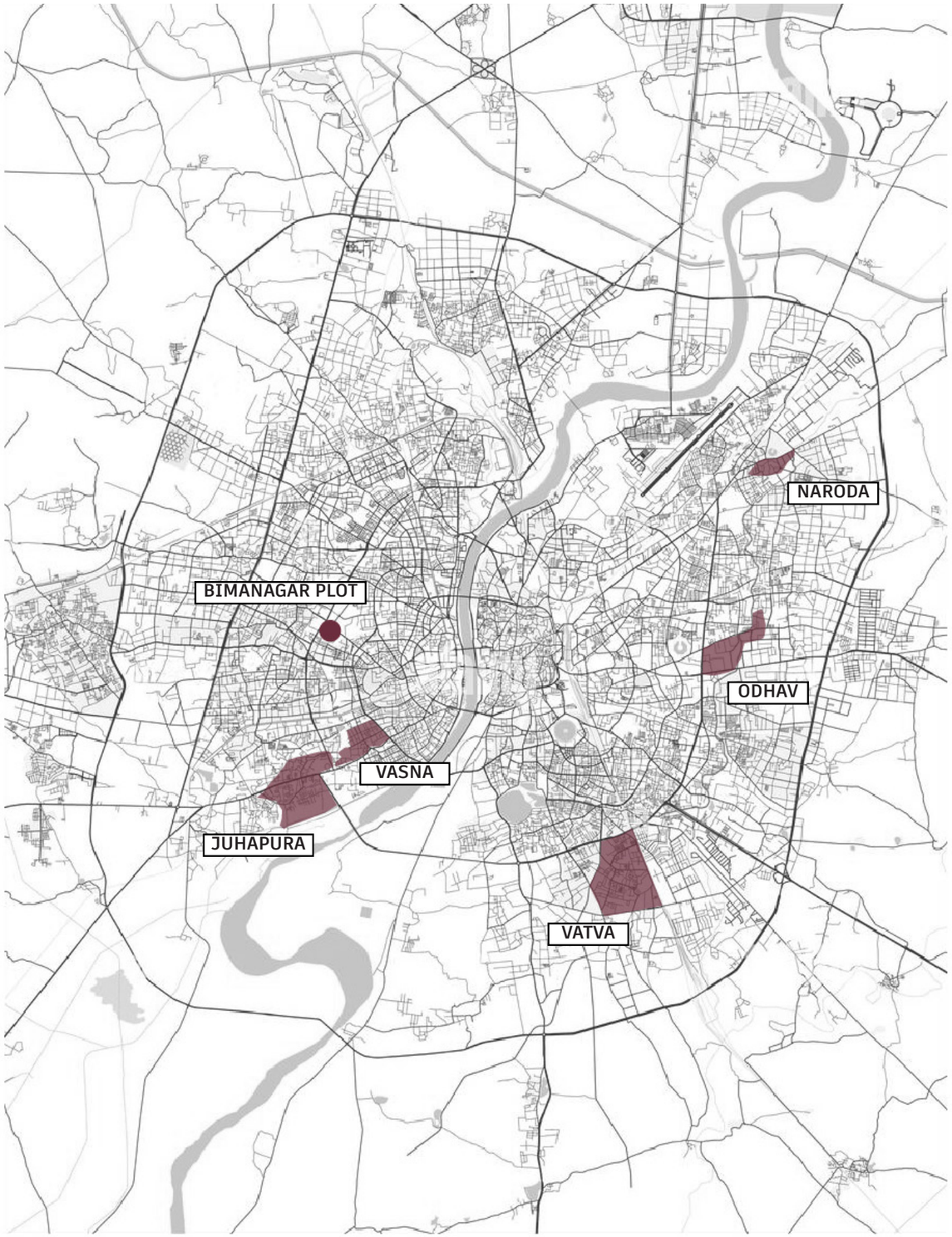


Fig. 8, Low-income areas around Ahmedabad (author's work, 2026)

Fig. 9, Focus group (author's work, 2026)

The target demographic for this project aligns with the established research scoping, which places low- to middle-income women at the absolute center of the urban intervention. Specifically, the project addresses three distinct demographic layers: single working women, single mothers, and women-led families.

These groups frequently navigate unique, overlapping socio-spatial barriers, ranging from a severe deficit of secure, affordable housing to a desperate need for integrated childcare and proximity to viable employment hubs.

Data derived from local registries, supported by witness testimonies and empirical field observations, indicates that these demographic patterns are deeply concentrated in specific peripheral and industrial zones throughout Ahmedabad. Prime examples of such neighborhoods include Juhapura, Vatva, Odhav, Vasna and Naroda. According to Sandhir (2025), these specific areas frequently function as “transport deserts” characterized by broken infrastructure, unreliable transit options, and persistent safety concerns. For local women, a lack of safe, reliable connectivity directly worsens “time poverty,” forcing them to spend excess hours waiting or walking through poorly lit pathways, which strips away valuable time from economic or personal care opportunities (Sandhir, 2025).

Furthermore, the routine discomfort and fear of harassment on these streets act as invisible barriers that compel families and women to adopt rigid behavioral adjustments, such as completely avoiding travel after dark (Sandhir, 2025).

By focusing directly on these underserved neighborhoods, this research exposes a critical gap in the city’s current housing stock. It highlights exactly where institutional planning and social infrastructures have failed to support the everyday domestic, financial and mobility realities of women’s lives.

Single mothers with one or multiple children

» manage a difficult balance between earning an income and managing domestic care alone, often with very limited time and financial resources

Needs:

- integrated daycare center
- safe, visible playgrounds located directly within the housing complex
- ground-floor apartments for mothers with multiple children to ease daily mobility
- units designed with clear sightlines from cooking spaces to play areas

Studying/ working women

» young women, students and early-career professionals who often have the lowest incomes and navigate the city at irregular hours

Needs:

- affordable, small studio units
- secure entry points
- well-lit pedestrian pathways
- direct visual connection to public transport or street edges
- access to communal laundry facilities, study lounges and shared social areas within the building fabric

Women -led families

» larger, low-to-middle-income households where women are the primary decision-makers or breadwinners

Needs:

- family apartments that can comfortably accommodate multi-generational living or multiple family members
- flexible spaces within the dwelling or shared spaces that can easily accommodate home-based economic activities
- semi-private or shared domestic thresholds (where women can share the labor of food preparation, bulk shopping and household management with neighbors)

Fig. 10, Target group needs matrix (author’s work, 2026)

[Site Programme]

This table shows the distribution of amenities and which scale it serves:

	Urban	Neighbourhood	Cluster	Dwelling
WHAT	Amenities at this scale are positioned along the outer streets of the plot to seamlessly integrate Bimanagar into the surrounding city fabric. By transforming the perimeter into a series of publicly accessible, active street edges, these facilities bring the surrounding streets to life.	These shared facilities are placed within the plot to safely serve the daily domestic and communal needs of the neighborhood's residents.	These amenities serve a specific block or group of immediately adjacent buildings, organized by close proximity to create a safe, semi-private transition space between the street and the home.	This is the core architectural shell and personal living environment, accommodating varying low- to middle-income household structures with an occupancy from 1 to 8 people, depending on the tyopology and, respectively, size of the unit.
AMENITIES	• restaurants • chai stalls • shops/ supermarkets • boutiques • pharmacies	• community center (includes women's clinic, pharmacy, social hub, daycare, children school, library, community event hall, skills development workshops) • community area (can serve as an event square, market or a park for residents' children)	• laundromats • communal kitchens	• basic infrastructure (sanitation units & electricity) • functional unit for cooking & cleaning of food and self • small outdoor area (shared/ private terrace or *otla*)

Fig. 11, Site amenities matrix (author's work, 2026)

[Stakeholders]

The realization of the Bimanagar housing proposal relies on a collaborative ecosystem involving state authorities, private developers and civil society organizations. As the site is currently government-owned land, the project is envisioned as a state-driven initiative executed through public-private cooperation.

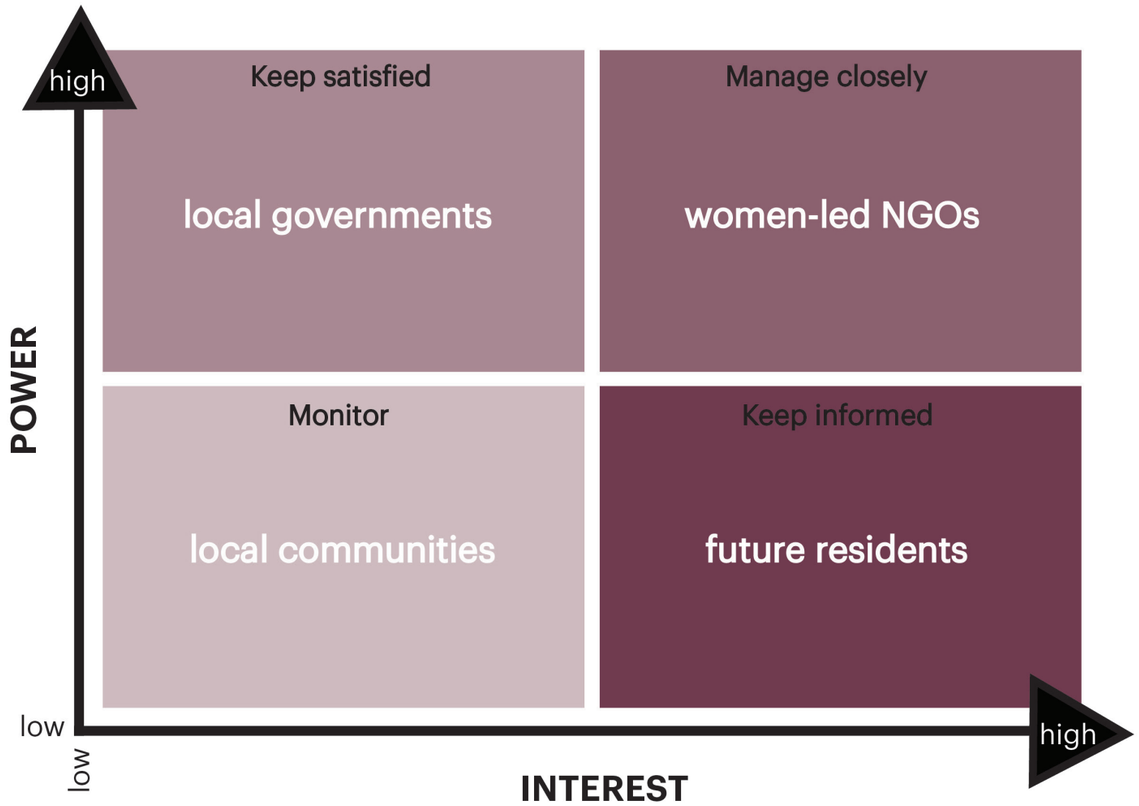


Fig. 12, Stakeholder analysis matrix (author's work, 2026)

Primary stakeholders

- *Future residents*

the core stakeholder group consists of working-class and lower-middle-class women (and their families) seeking tenure security; their primary interest lies in a living environment that reduces the constant state of vigilance, allowing for greater economic participation and social freedom

- *Resident Welfare Association (RWA)*

a proposed community-led body responsible for the post-occupancy maintenance of shared spaces (corridors, community kitchens); their involvement is crucial for the long-term success of the "shared domesticity" model

Project intiators and landowners

- *Ahmedabad Urban Development Authority (AUDA) / Ahmedabad Municipal Corporation (AMC)*

as the owners of the Bimanagar plot, these bodies are responsible for land allocation and zoning approvals

(motivation: to meet the targets of the "Smart Cities Mission" and "Safe City" initiatives, which commision gender-inclusive urban planning; utilizing underused government land for high-density housing helps alleviate the city's housing shortage (Ministry of Housing and Urban Affairs, 2021))

- *Gujarat Housing Board (GHB)*

the executing agency for state-sponsored housing projects

Financial & implementation partners

Given the scale of the project, funding would likely stem from a Public-Private Partnership (PPP) model, which is the standard framework for modern Indian housing schemes (Pradhan Mantri Awas Yojana) (Ministry of Housing and Urban Affairs, 2021).

- *Private real estate developers: construction and structural financing*

(motivation: through the "In-Situ Slum Redevelopment" (ISSR) or Affordable Housing in Partnership (AHP) components of national policy, developers are granted incentivized FSI; this allows them to build extra "free-sale" commercial or residential units on a portion of the site to cross-subsidize the affordable housing, making the project financially lucrative (Mahadevia et al., 2018))

- *Corporate Social Responsibility (CSR) Donors*

funding specific "soft infrastructure" elements, such as commercial spaces, urban furniture or solar lighting systems

(motivation: large corporations in Gujarat are legally mandated to spend 2% of profits on CSR (Gupta, 2025); investing in "Women's Safety Infrastructure" offers high brand value and alignment with UN Sustainable Development Goals (SDG 5: Gender Equality) (The Global Goals, 2024))

Advocancy partners (NGOs)

- *SEWA (Self-Employed Women's Association)*

as a dominant force in Ahmedabad, SEWA would act as the bridge between the design team and the residents, ensuring the "social architecture" functions correctly

(motivation: to secure safe housing and work-live environments for their members, ensuring that the architecture supports home-based economic activities (SEWA Bharat, 2023))

Fig. 13, Stakeholders analysis matrix (author's work, 2026)

[Financial Strategy]

In terms of financial strategy, the development of the Bimanagar plot moves away from traditional speculative real estate paradigms to deploy a diversified cross-subsidization model. Rather than relying on a single funding mechanism, the economic feasibility of the site is sustained through three distinct structural pillars aligned with the project's stakeholder matrix:

Government-subsidized rental housing

- To protect the most vulnerable demographics without introducing immediate capital burdens, the residential units designated for single mothers and young working or studying women will operate under a state-supported rental framework.
- Backed by government initiatives like the "Safe City" and "Smart Cities Mission" protocols, these units are subsidized directly by state municipal bodies (such as AUDA or the Gujarat Housing Board).
- This strategy guarantees long-term tenure security and affordable rental rates for the inhabitants while ensuring a steady, predictable baseline of operational revenue to cover building maintenance.

Family-housing capital engine

- The primary financial engine of the plot is the low-to-middle-income family housing sector. Targeted at women-led families, these substantial apartments will be sold directly to the residents.
- Operating on an incremental development template, families will purchase their core structural shells at construction cost and self-build their interior infill over a specified interval of time.
- The capital generated from these upfront purchases creates a significant internal cash flow, effectively absorbing the development costs of the site's shared social infrastructure.

Active street edge and communal micro-economies

- Further economic resilience is generated along the plot's outer street perimeters. By transforming these borders into an active commercial strip containing restaurants, pharmacies and various shops, the project aims to create a multi-functional neighborhood asset that regularly captures revenue from the surrounding urban fabric.
- For the project's external financial partners, this commercial infrastructure offers a self-sustaining return on investment.
- For the residents of the plot, these on-site amenities generate immediate, accessible employment and entrepreneurial opportunities, localizing economic empowerment directly within a safe, protected environment.

Fig. 14, Financial strategy (author's work, 2026)

PART 2

Approach

[Research Methodology]

This dissertation utilizes a multi-layered mixed-methods approach to examine the relationship between gender violence and urban form. In addition, the methodology aims to connect abstract sociological data with concrete architectural solutions, organized into three separate but successive stages:

1. Desk research - reviewing global, national (India) and local (Ahmedabad) data and reports to quantify the inconsistency between economic growth and female safety)

2. Fieldwork

Acknowledging that safety is a subjective, lived experience, the research relies heavily on qualitative data gathered during a two-week on-site visit in Ahmedabad.

- Site analysis - documenting the physical attributes of the Bimanagar plot and its surroundings, focusing on street atmosphere and edge conditions
- Behavioral observation - recording how women navigate the streets and how they use the spaces around their homes as well as throughout the city
- Photographic documentation - capturing the “female gaze” perspective of the urban fabric to visualize the psychological barriers discussed in the problem statement

3. Research by design

The final phase transitions from analysis to synthesis. The design process itself is utilized as a research tool, testing how the identified safety principles can be spatially translated into a high-density housing typology.

- Typological investigation - developing a matrix that tests different configurations of thresholds, circulation and cluster/unit layouts
- Impressions and modelling - using 3D visualization tools in order to test sightlines and surveillance potentials from a female’s eye level (1.55m)

[Theoretical Framework]

This sub-chapter establishes the theoretical lens through which the research proposal was developed. It navigates the intersection of gender geography and architectural form, moving from the sociology of fear to tangible spatial strategies found in both vernacular and contemporary Indian urbanism.

[The sociology of gendered space]

Studies in Ahmedabad’s peripheral neighborhoods show that women are often forced into “forced immobility,” modifying their routes or relying on dedicated drivers regardless of distance (Sandhir, 2025). Therefore, the foundational theory of this research is that urban planning is not neutral; it often actively restricts the mobility of vulnerable groups.

In Ahmedabad, women’s navigation of the city is defined by avoidance behaviors used to survive a hostile urban environment. This creates a conditional privilege where a woman’s right to public space is dictated by the time of day and the perceived safety of the built environment.

This research utilizes the concept of “infrastructural violence” to describe how poor lighting, blind corners and unsafe thresholds physically manifest as psychological barriers. By acknowledging this mental burden of constant alertness, the design focus shifts from merely preventing crime to ensuring full spatial equity and freedom of movement.

Fig. 15, Inter-block street (author’s work, 2026)

[Natural surveillance and the concept of “eyes on the street”]

To counter spatial exclusion, this framework adopts the architectural theory of natural surveillance. This research explicitly rejects the austerity of modern high-rise towers and high compound walls, which interrupt the visual connection to the ground and promote social isolation (Bansal & Bali, n.d.).

Instead, the project advocates for a low-to-mid-rise, high-density typology that ensures public spaces remain visually connected to private dwellings. This creates a self-regulating environment where safety is a communal byproduct of daily activity rather than an enforced condition. In addition, key to this strategy are porous thresholds such as balconies, semi-open verandas and active street edges that mediate between the home and the street, ensuring constant “eyes on the street” (Sharma, 2024).

Fig. 16, Woman sitting on her *otla* (author's work, 2026)

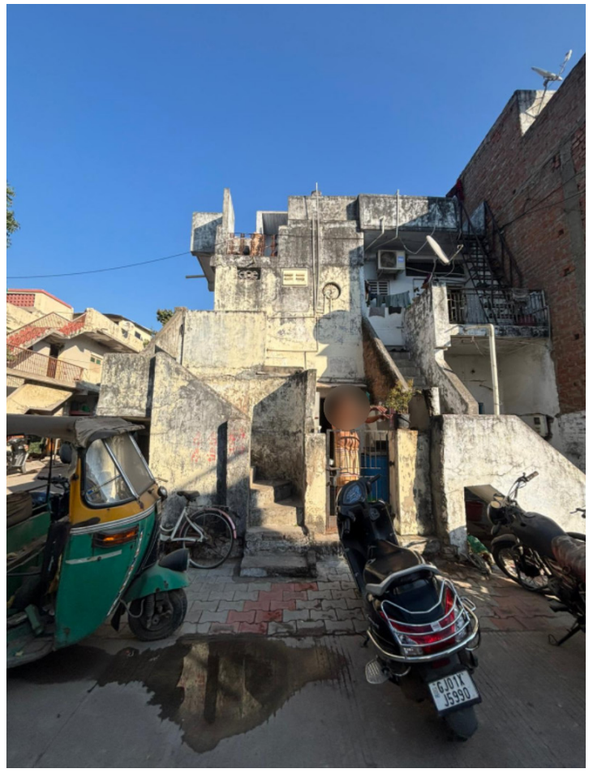


Fig. 17, Man on his *otla* (author's work, 2026)

[Sense of ownership]

Safety in the urban context of Ahmedabad is not merely a product of sightlines and lighting. It is fundamentally tied to the right to inhabit.

This research argues that a sense of ownership, specifically legal tenure security, is the primary shield against the systemic displacement many women face in India today. In many contemporary Indian contexts, women are disproportionately vulnerable to being “thrown out” or displaced due to fragmented social structures or lack of property rights (SEWA Bharat, 2023).

Consequently, providing housing that women can legally own and maintain transforms the dwelling from a temporary shelter into a permanent asset of resistance. In addition, the psychological impact of such ownership is profound it replaces the chronic anxiety of potential eviction with a sense of stability and agency (Bansal & Bali, n.d.). When a woman owns her home, her perception of safety shifts from reactive, constantly scanning for external threats, to proactive, as she becomes the empowered guardian of her own space. This stability allows residents to move beyond a state of “forced immobility” and instead invest in their community, as the fear of being uprooted no longer dictates their daily lives. In this sense, architectural design must facilitate not just the physical building, but the legal and social structures that ensure women remain anchored in their neighborhoods.

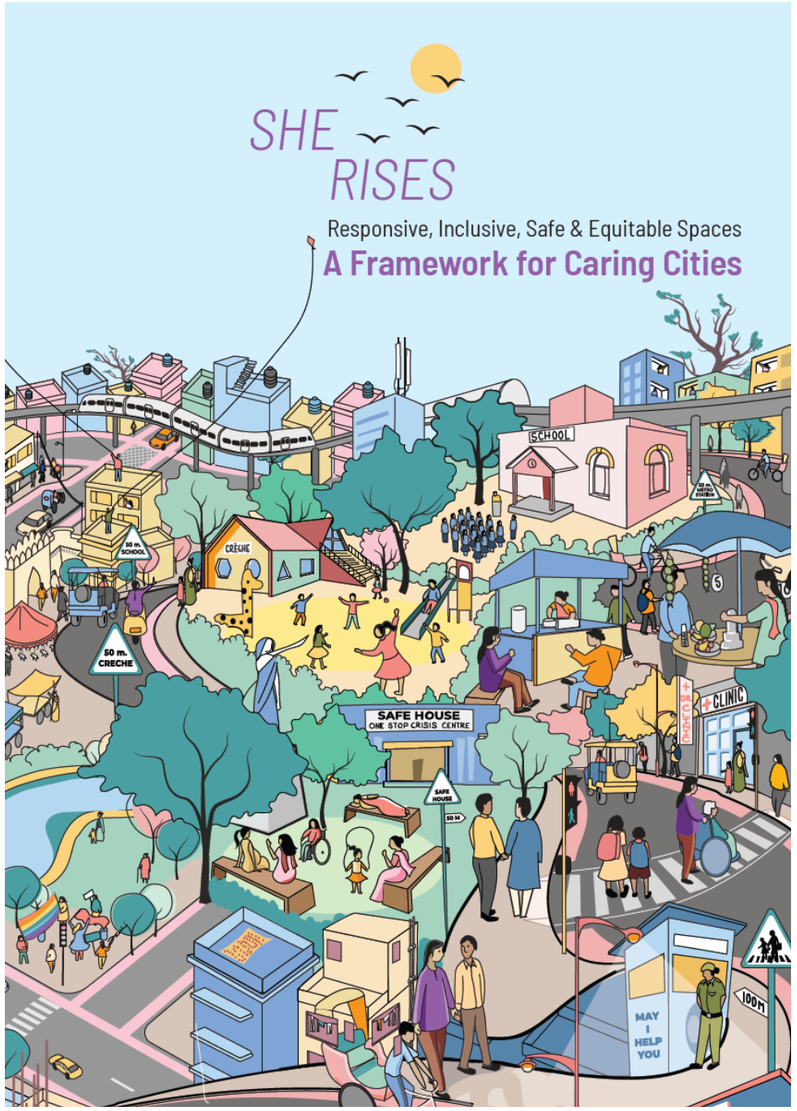


Fig. 18, *She RISES* Initiative booklet cover page (Viswanath et al., 2022)

[The rationality of care and economic empowerment]

Ultimately, this concept serves as the overarching ethical guide for this project, moving the architect's role from a producer of aesthetic forms to a mediator of social justice.

This approach is operationalized through the She RISES framework, a strategic model for the development of "caring cities" developed by the social enterprise Safetypin that prioritizes the lived experience of the most vulnerable citizens. The framework emphasizes that, for an environment to be truly safe, it must go beyond reactive surveillance and instead embed support systems into the architectural DNA of the neighborhood (Viswanah et al., 2022).

Under the She RISES lens, design is structured around two essential pillars:

- physical infrastructure: utilizing low-to-mid-rise typologies and porous thresholds to ensure "natural surveillance" and visibility

- social infrastructure: integrating essential services such as community kitchens, laundry rooms and a childcare center directly into the housing block to lower the mental burden of domestic labor

By synthesizing these pillars, the Bimanagar proposal creates a multifunctional ecosystem where the architecture acts as an infrastructure of care. This framework proves that safety is not a luxury commodity to be guarded by gates, but a fundamental spatial right achieved through the empowerment of women as stakeholders and owners of their urban environment.

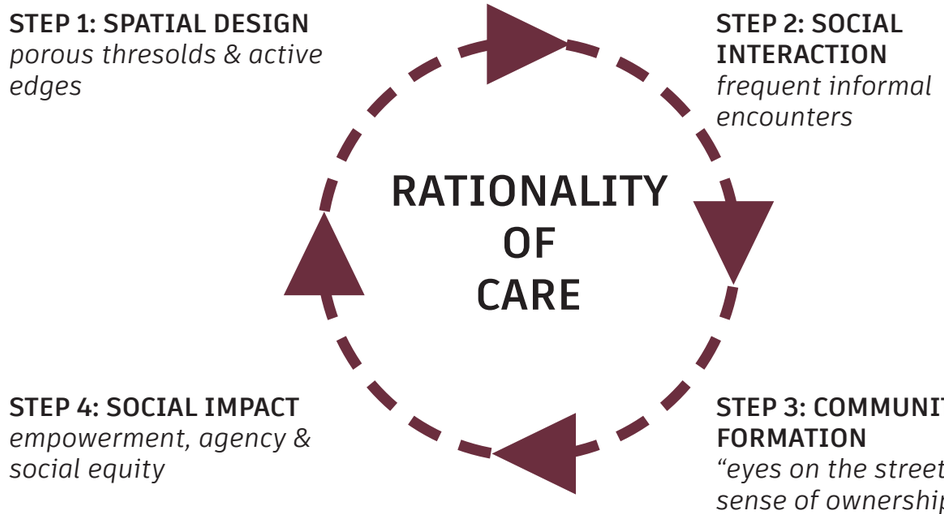


Fig. 19, Theoretical framework diagram (author's work, 2026)

[Design Precedences]

[Dhal ni Pol, Ahmedabad]

[Mahila Housing SEWA Trust (MHT), 2021]

Prior to the intervention, the public realm of Dhal ni Pol was highly compromised by overlapping spatial failures: vehicle parking, deteriorating infrastructure, poorly functioning wet services and dark, unlit pathways. These factors combined to create a landscape of exclusion, particularly around desolate spaces and transit nodes, which significantly hindered women's mobility (CityCollab, 2023).

250 m

The total length of streets and *chowks* developed as a model stretch with upgraded infrastructure.

INR3.25 cr

Total project cost incurred by MHT for funding physical improvements, community mobilization, workshops and trainings.

INR1.25 cr

Funding by HDFC towards paving, lighting, facade painting and community meetings.

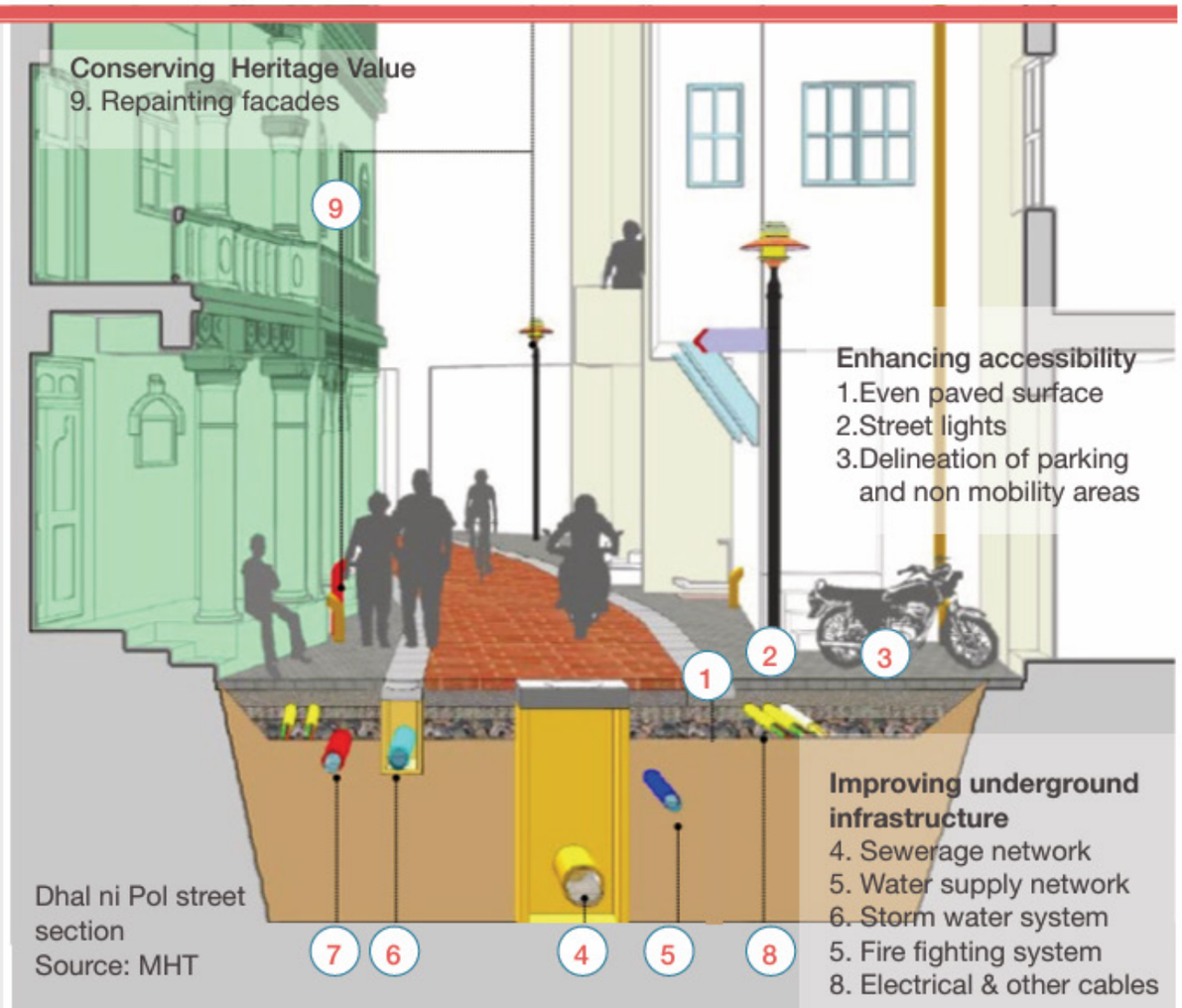


Fig. 20, Spatial improvements proposal in Dhal ni Pol, Ahmedabad (CityCollab, 2023)

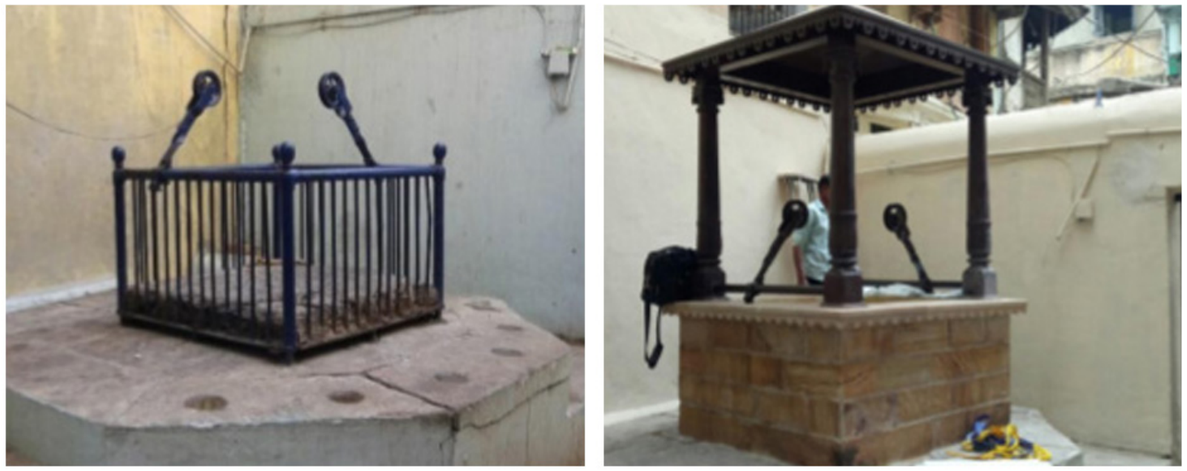
Rather than relying on reactive, technological surveillance, the project utilized a design-led strategy to reclaim and secure public space:

- **street lighting:** the strategic installation of 17 streetlights acted as a primary spatial catalyst for increasing security (in the post-occupancy impact assessment, 43.9% of respondents reported a direct increase in overall safety, explicitly citing street lighting as the prime reason for their heightened sense of security)

- **paving and clear sightlines:** by re-leveling the excavated road surfaces to match the domestic entry thresholds (*otlas)* and using distinct, locally available paver blocks, the design established a clear, unobstructed shared street hierarchy (delineating dedicated parking zones prevented vehicular encroachment into communal plazas, opening up blind spots and establishing clear sightlines across the neighborhood)

- **activation of inhabited thresholds:** the architectural improvement of shared civic landmarks such as the restoration of traditional *chabutaras* (bird feeders) and *kunvos* (wells) re-anchored community activities to public squares (this active spatial presence provided a natural, self-regulating mechanism of communal vigilance)

(CityCollab, 2023)



Kunvo at Hardarwalo Khancho, before and after restoration, Source: MHT

Fig. 21, Before & after pictures of a restored *kunvo* in Dhal ni Pol, Ahmedabad (CityCollab, 2023)

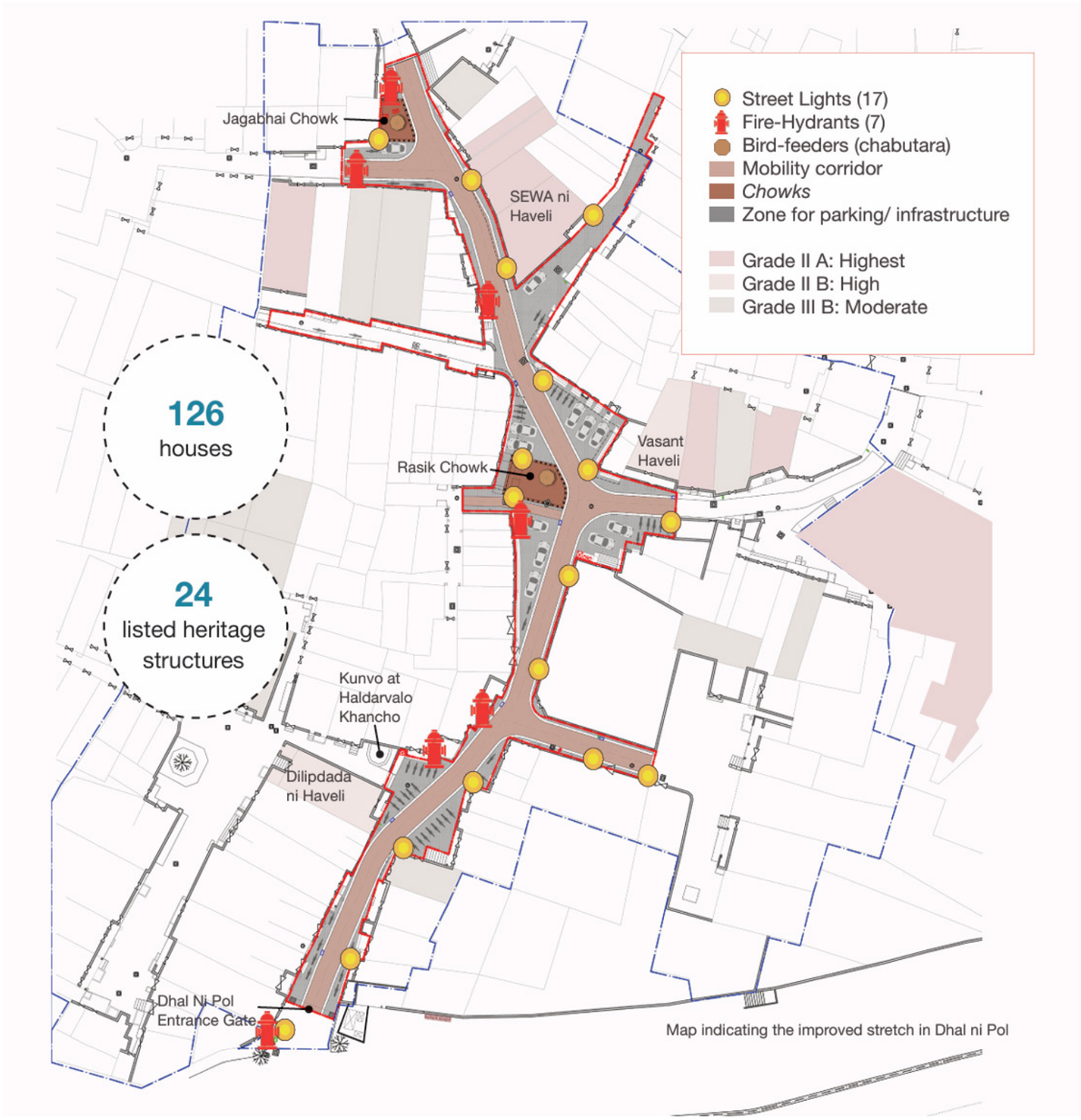


Fig. 22, Map indicating the improved stretch in Dhal ni Pol, Ahmedabad (CityCollab, 2023)

The physical changes produced a fundamental behavioral shift: post-implementation surveys revealed that women and children felt significantly safer spending extended periods in public areas, with residents confidently noting that they felt safe standing outside even at midnight (CityCollab, 2023).

children women men

"We now feel safe even at midnight when we are standing out, no one feels scared. There is a very significant difference compared to earlier and it looks better now!"

Narmada ben
Resident, Dhal ni Pol

"Earlier I used to hesitate even to enter the pol because of traffic and poor sanitation. And now our pol has become a new hot-spot for wedding shoots!"

Jethi ben
Resident, Dhal ni Pol

"I like how even at night I feel safe walking in the because there is always activity on the street. People are very welcoming and friendly. Even if someone is giving misdirections or misbehaving, women of the pol come to help."

Olga,
Tourist from Russia

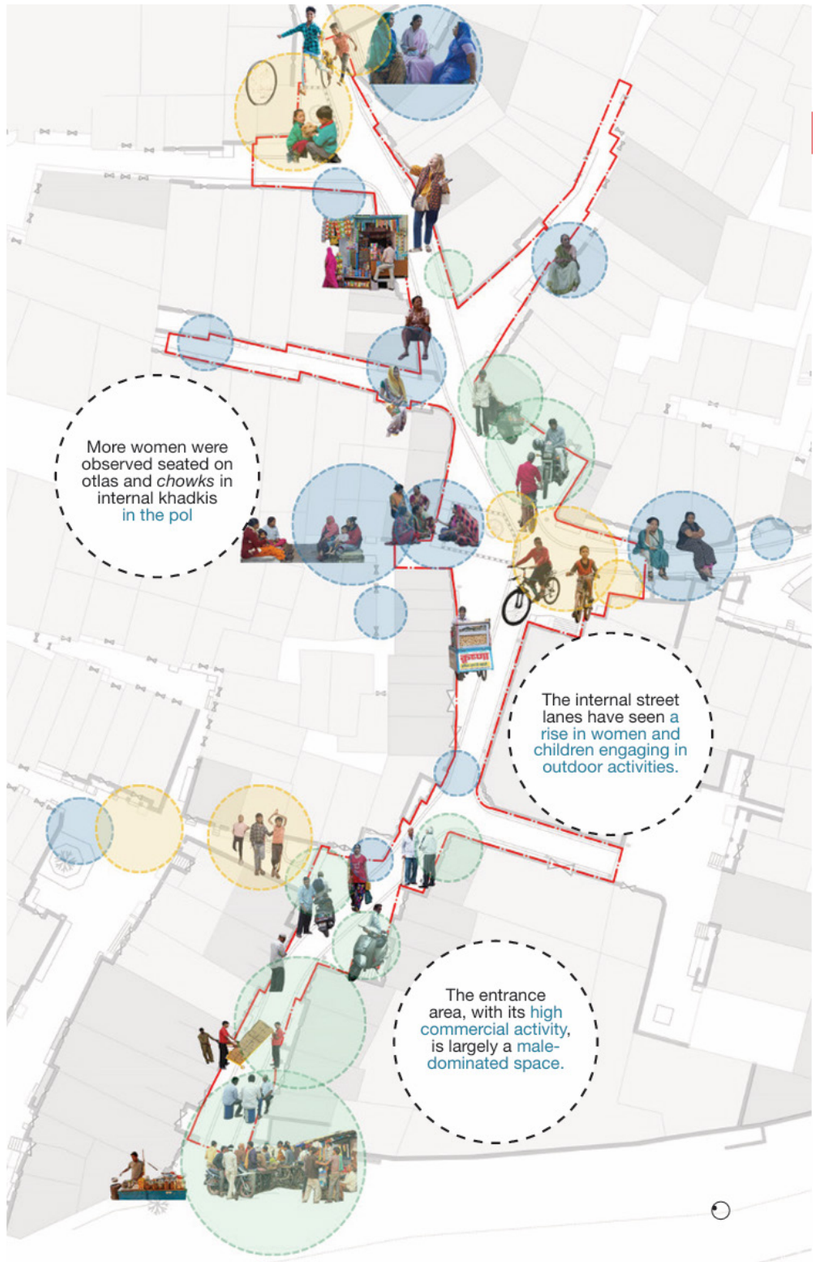


Fig. 23, Positive feedback of residents and tourists in Dhal ni Pol , Ahmedabad after its restoration (CityCollab, 2023)


Asset mapping workshop with residents of Dhal ni Pol | Source: MHT


Stakeholder engagement workshop 2 with the residents of Dhal ni Pol | Source: MHT


Residents of Dhal Ni Pol, officials from AMC Heritage Department and consultants of MHT selecting paver design at stakeholder engagement workshop 3 | Source: MHT

Fig. 24, Pictures showing the persons involved in the restoration of Dhal ni Pol, Ahmedabad (CityCollab, 2023)

[“Turning Spaces into Places”Initiative, Mumbai]

[Love Your Parks Mumbai (LYPMumbai), 2019]

The “Turning Spaces into Places” initiative, led by the civic organization Love Your Parks Mumbai (LYPMumbai), provides a highly relevant secondary precedent for this project report. While the previous case study in Dhal ni Pol shows how to revitalize an existing residential neighborhood fabric , this Mumbai precedent demonstrates how to creatively reclaim neglected, leftover urban spaces, by turning hostile or abandoned urban voids into high-value community assets that enhance everyday safety and social cohesion (Nandi & Abraham, 2020).

Existing steps.

The proposal.

Fig. 25, Initial state and proposal for redevelopment of St. Stephen’s Stairs in Mumbai (Nandi & Abraham, 2020)

Fig. 26, Redevelopment plan for St. Stephen's Stairs (Nandi & Abraham, 2020)

In high-density, rapidly growing South Asian cities like Mumbai and Ahmedabad, open urban voids frequently deteriorate into unsafe blind spots or areas for illicit activities due to a lack of maintenance and formal infrastructure (Nandi & Abraham, 2020).

Rather than accepting these "dead zones," the LYPMumbai initiative utilized tactical urbanism and creative programming to completely shift the spatial dynamic:

- **activating the public eye through programming:** the project focuses on "creative placemaking" meaning organizing free pop-up cultural events, choirs and artistic workshops under the open sky (by consistently bringing large crowds of people, specifically families, women, and children, into previously underused spaces, the initiative creates natural crowdsourcing of safety)

- **dismantling fortress mentality:** traditional security measures rely on barriers, gating or reactive surveillance; this precedent proves that "eyes on the street" can be built dynamically through citizen stewardship and high social interaction (when an urban space is filled with positive public life, the psychological and physical barriers that feed gendered exclusion are dismantled)

(Nandi & Abraham, 2020)

Fig. 27, Redeveloped St. Stephen's Stairs in use by the whole community (Nandi & Abraham, 2020)

- **cross-generational and inclusive spaces:** the initiative intentionally designs activities that center around children and parents (transforming these spaces into highly visible, welcoming family environments shifts the demographic balance of the street away from purely male-dominated groups, creating an inclusive atmosphere where women feel safe entering and occupying public space)

(Nandi & Abraham, 2020)

Ultimately, "Turning Spaces into Places" shows that public space does not have to remain a source of anxiety. By programming urban spaces for collective joy, shared domesticity, and family interaction, architecture and urban planning can turn a landscape of survival into an infrastructure of care (Nandi & Abraham, 2020).

[Dar Lamane Housing Project, Casablanca, Morocco]

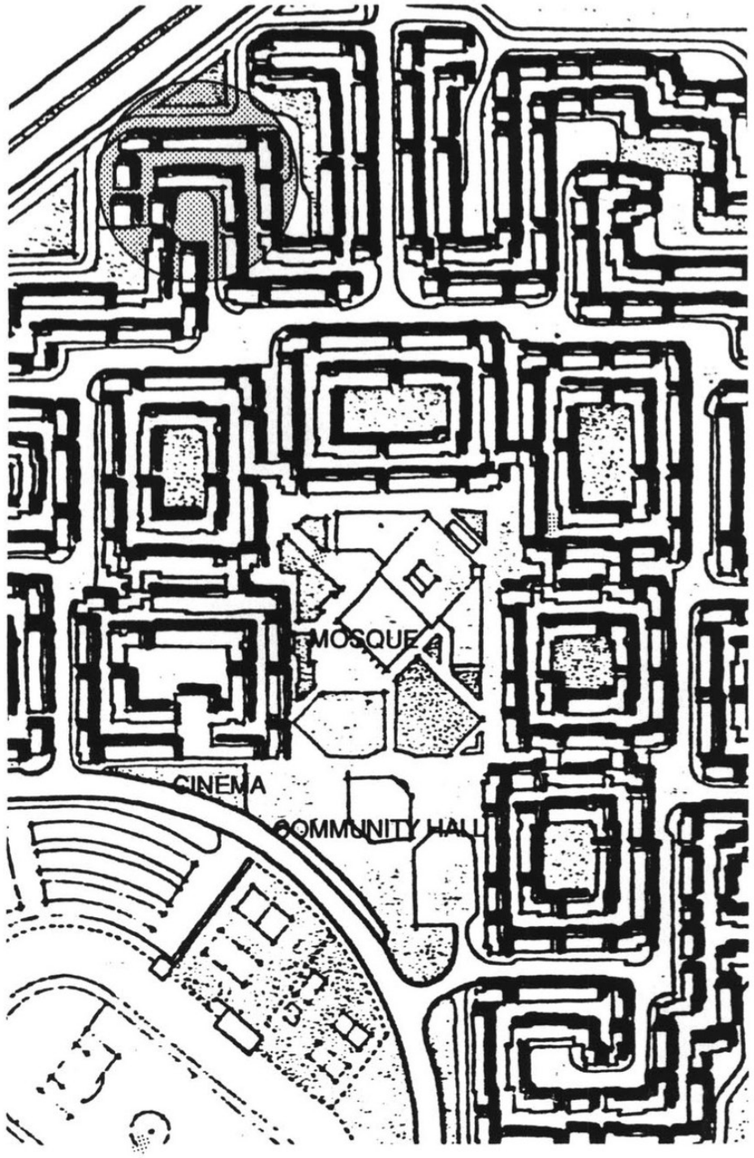
[Abderrahim Charai and Aziz Lazrak, 1983]

The Dar Lamane housing project in Casablanca serves as an exceptional architectural precedent for the Bimanagar plot. It demonstrates how a massive low-cost development can strike a balance between structural security and civic integration, successfully utilizing a “penetrable fortress” model to foster safety and community cohesion.

At first glance, Dar Lamane appears to follow a traditional defensive or “fortress” architectural envelope, which is often criticized for isolating neighborhoods. However, the project skillfully alters this typology by making the fortress completely porous, ensuring that safety is achieved through spatial layout rather than hostile containment (Maganga, 2025).

Fig. 28, Aerial view of Dar Lamane Housing Project in Casablanca, Morocco (Maganga, 2025)

The masterplan is organized around a cellular network of large, semi-private internal courtyards. Individual apartments do not open directly onto open, unmonitored land; instead, they wrap around these central squares. This layout acts as a protective buffer, grounding the domestic realm in a controlled, shared environment (Maganga, 2025).



3-5 Closeup of central area.

3-6 Plan and section of a typical cul-de-sac, with communal bath-house, local shops, and parking.
The diagonal stairs were added later in the design to narrow the street perspective.

Fig. 29, Close-up of central area, plan and section of a typical cul-de-sac in Dar Lamane Housing Project in Casablanca, Morocco (Maganga, 2025)

Rather than sealing the development with solid perimeter walls, the architecture features massive, monumental portals and open pedestrian arches. These entryways connect the protected internal squares to a vibrant, central public avenue running through the core of the development. This integration ensures that the project does not form an isolated enclave; instead, it seamlessly links Casablanca's outer suburbs to the internal community fabric (Maganga, 2025).

Fig. 30, Portal over a street in Dar Lamane Housing Project in Casablanca, Morocco (Maganga, 2025)

Fig. 31, Arched entrances on a commercial street in Dar Lamane Housing Project in Casablanca, Morocco (Maganga, 2025)

The design transitions smoothly from the highly public central market street, through the monumental gateways into semi-public residential courtyards, and finally up into private stairwells. For a vulnerable demographic, this explicit zoning provides clear spatial boundaries. It allows residents to naturally monitor access points without resorting to aggressive gating (Maganga, 2025).

Fig. 32, Top view of terraced roofs in Dar Lamane Housing Project in Casablanca, Morocco (Maganga, 2025)

Fig. 33, Children playing in the shared courtyards of Dar Lamane Housing Project in Casablanca, Morocco (Maganga, 2025)

Dar Lamane offers powerful architectural lessons that directly support my "Building Safety from Scratch" guidelines:

- **natural supervision of shared shresholds**: the scale of the apartment blocks (typically mid-rise, five-story structures) keeps windows, verandas and balconies in close physical proximity to the ground plane (this low-to-mid-rise density guarantees constant "eyes on the courtyards"; mothers can seamlessly manage domestic work inside the home while visually supervising children playing in the safe, protected squares below) (Maganga, 2025)

Fig. 34, Typical street in Dar Lamane Housing Project in Casablanca, Morocco (Maganga, 2025)

Fig. 35, Vending man with buyers on a street in Dar Lamane Housing Project in Casablanca, Morocco (Maganga, 2025)

- **economic integration and active paths:** the central public axis is deliberately designed to accommodate neighborhood shops, workshops, and markets (this commercial integration serves two critical safety functions: it keeps the main pedestrian paths busy and illuminated throughout the day and evening and it localizes financial and entrepreneurial opportunities; this reduces "time poverty" by allowing women to manage daily shopping and economic tasks right outside their doorsteps)

- **elimination of urban voids:** by strictly organizing the buildings around either the active commercial street or the collective residential courtyards, the plan leaves no room for leftover, unprogrammed spaces (the elimination of these blind spots directly reduces the risk of harassment)

(Maganga, 2025)

[Malagueira Quarter Housing Project, Evora, Portugal]

[Álvaro Siza, 1974-1997]

Typology: Perimeter Block

Land use type: Residential

Size: 1200 single-family housing units; 12-by-8-meter (39.4-by-26.2-foot) plots of land.

Population/density: 120 people/ acre

Gross floor area: 27 hectares (67 acres)

(Harvard University Graduate School of Design, n.d.)

The Quinta da Malagueira housing project offers an indispensable architectural paradigm for the Bimanagar plot. It demonstrates how a massive low-cost, high-density development can avoid the isolating, hazardous qualities of modern high-rise housing blocks. Instead, the project relies on a low-rise, grid-based courtyard matrix integrated by an elevated infrastructure network to establish continuous community sightlines and an inherent infrastructure of care (Harvard University Graduate School of Design, n.d.).

Fig. 36, View of the Malagueira Quarter Housing Project in Evora, Portugal
(Harvard University Graduate School of Design, n.d.)

Malagueira rejects the standard model of towers scattered across unprogrammed green fields, a spatial configuration that frequently creates dangerous, poorly monitored urban voids. Instead, Siza utilizes a continuous, low-rise, high-density matrix of courtyard houses that redefines the relationship between private domestic thresholds and public paths (Harvard University Graduate School of Design, n.d.).

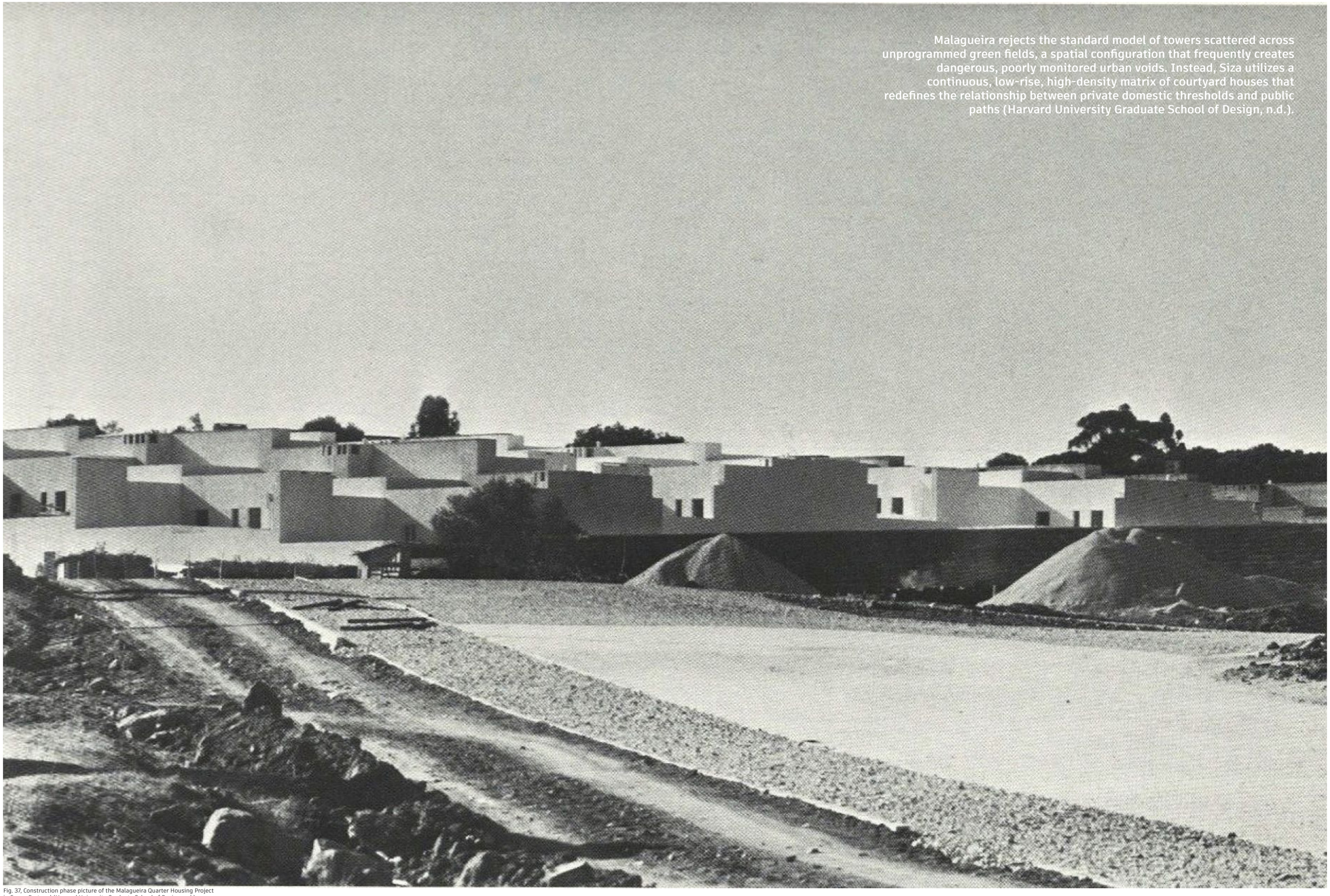


Fig. 37, Construction phase picture of the Malagueira Quarter Housing Project in Evora, Portugal (Harvard University Graduate School of Design, n.d.)

- **protective residential envelope:** the homes are organized as back-to-back L-shaped patio or courtyard dwellings walled off from the outer street but completely open to their internal private patios; this inward-facing typology creates a highly secure core for the family, preventing direct street vulnerability while maximizing natural light and ventilation within a protected domestic shell (Harvard University Graduate School of Design, n.d.)

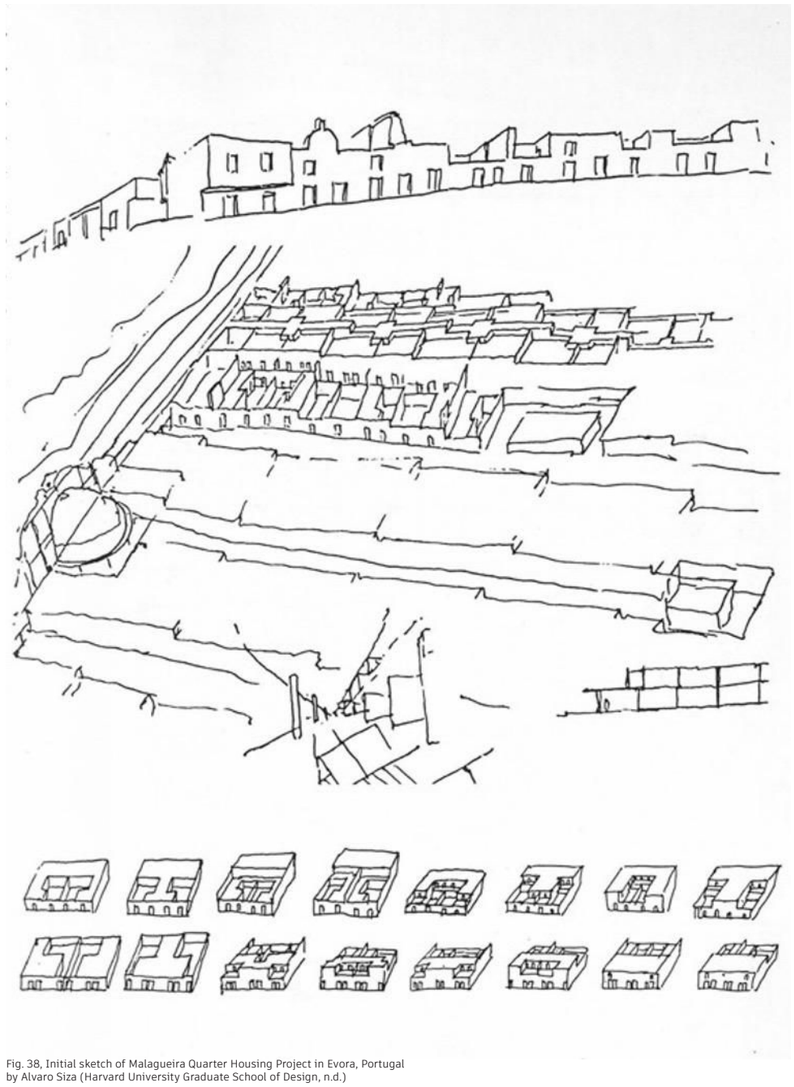


Fig. 38, Initial sketch of Malagueira Quarter Housing Project in Evora, Portugal by Alvaro Siza (Harvard University Graduate School of Design, n.d.)

Fig. 39, Masterplan of Malagueira Quarter Housing Project in Evora, Portugal (Harvard University Graduate School of Design, n.d.)

Fig. 40, Street view of Malagueira Quarter Housing Project in Evora, Portugal (Harvard University Graduate School of Design, n.d.)

- **elevated “conduit” network as an urban frame:** one of Malagueira’s most distinctive architectural features is its network of elevated concrete conduits (aqueduct-like structures) that carry the neighborhood’s surface-level utilities (water, electricity, and gas); beyond its primary functional purpose, this infrastructure acts as a powerful urban design tool (by elevating the infrastructure, it serves as a physical frame that defines the pedestrian paths, keeping the public ground plane completely clear, unobstructed, and highly legible) (Harvard University Graduate School of Design, n.d.)

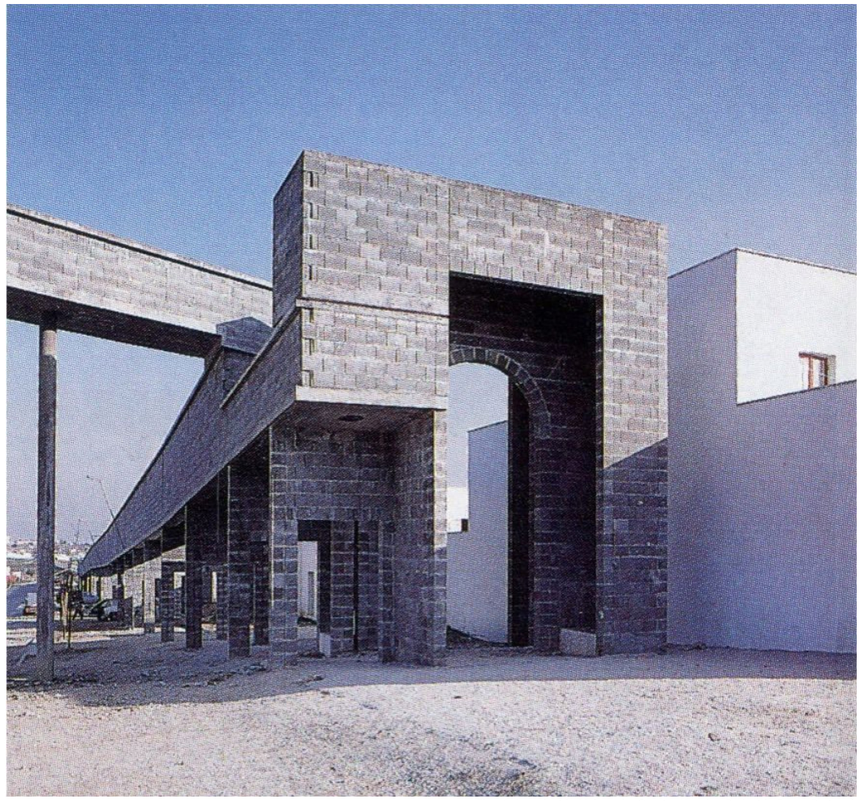


Fig. 41, Aqueduct in Malagueira Quarter Housing Project in Evora, Portugal (Harvard University Graduate School of Design, n.d.)

- **human-scales sightlines:** because the entire development is strictly capped at a low-rise profile (two stories), the physical connection between the domestic window threshold and the public pedestrian alleyway is never broken; this intimate scale ensures that anyone walking down the residential paths remains within the immediate calling and viewing distance of neighbors occupying upper terraces or adjacent entryways, generating a highly effective, natural form of "eyes on the street” (Harvard University Graduate School of Design, n.d.)

Fig. 42, Street view of Malagueira Quarter Housing Project in Evora, Portugal (Harvard University Graduate School of Design, n.d.)

PART 3

Results

[Fieldwork]

[Site analysis]

Bimanagar stands as an example of post-independence residential planning in western Ahmedabad. Primarily developed in the 1970s as an institutional housing project for the Life Insurance Corporation (LIC), the neighborhood serves as a physical manifestation of mid-20th-century public-sector urbanism. It embodies the ideals of social welfare and collective living, organized through a distinct morphology of low-rise blocks, intimate internal streets and integrated communal spaces.

Fig. 43, Location of Bimanagar plot highlighted on Ahmedabad's map (author's work, 2026)

Fig. 44, Streets around Bimanagar plot and points of interest in the area (author's work, 2026)

Bimanagar is surrounded by diverse streets in terms of their atmospheres. For instance, the intense activity of major arterial roads to the north, south, and west happens further away from the plot's immediate boundaries. In contrast, the streets framing the site are characterized by an almost "dead" atmosphere, being notably quiet and often empty of pedestrian life. Unfortunately, this lack of vibrancy is largely due to the absence of ground-floor commercial facilities, which fails to activate the streetscape.

While most of these latter streets experience only occasional vehicular traffic, a localized point of activity exists to the west, where a designated vending zone brings in an element of locat street trade. Aside from this specific area, the current street network remains a purely functional, silent infrastructure that reinforces the secluded residential nature of the neighborhood.

Fig. 45, Location 1: Pathway next to Bimanagar plot (private area owned by one family) (author's work, 2026)

Fig. 46, Location 2: Streetview of the Bimanagar plot (author's work, 2026)

Fig. 47, Location 3: Street bordering Bimanagar plot to the West (author's work, 2026)

Fig. 48, Location 4: Sign depicting the organization and the residents of a gated community close to Bimanagar plot (author's work, 2026,)

[Urban morphology and character]

The architectural fabric of Bimanagar is characterized by its planned cooperative development. Unlike the dense vertical growth seen in much of modern Ahmedabad, Bimanagar has preserved its original character:

- **scale:** a consistent low-rise typology that fosters a human-centric environment
- **green infrastructure:** the area is defined by a canopy of trees and central nodes like Bimanagar Garden, which anchor the community
- **connectivity:** while maintaining a secluded, calm atmosphere, the site is strategically positioned with high accessibility to the major hubs of Satellite, Ambawadi and Vastrapur

[Educational and research significance]

As a site of study, Bimanagar offers a longitudinal look at how institutional “staff housing” evolves over decades. It provides a unique lens through which to examine how fixed urban forms adapt to contemporary pressures.

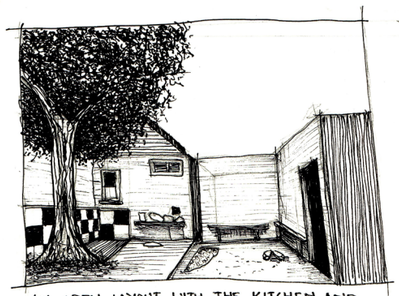
Bimanagar allows for the analysis of how early planned colonies absorb the complexities of modern urban life while retaining a stable, livable neighborhood identity amidst Ahmedabad’s rapid transformation.

Fig. 49, Location 5: Inner street of a gated community close to Bimanagar plot (author’s work, 2026)

The site mapping process began with an analytical documentation of the plot's perimeters. Initial environmental conditions were recorded on-site through photographs and sketches, which a collaborative team of TU Delft and CEPT University students later synthesized into 3 comprehensive base maps of the surrounding areas to the North, West and South of Bimanagar.

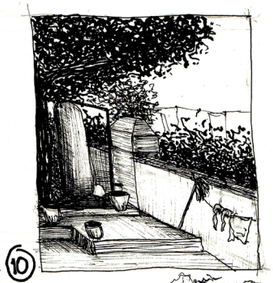
BIMANAGAR SITE

NORTH



AN OPEN LAYOUT WITH THE KITCHEN AND LIVING AREAS DESIGNED AS SEMI OPEN SPACES. (11)

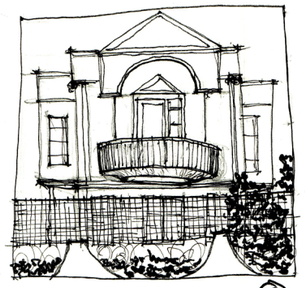
A CLEAR SEPERATION BETWEEN TOILETS AND BATHROOMS ENABLES USERS AT DIFFERENT TIMES.



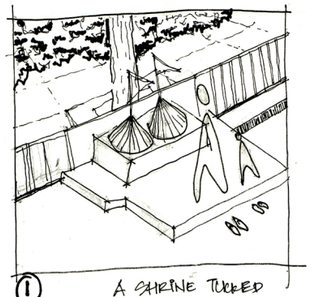
(10) A SHARED WASHING AREA.

(9)

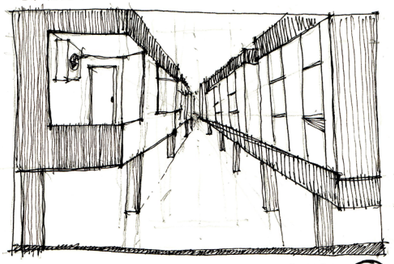
COMMERCIAL EDGE IS ACTIVE WITH EPHEMERAL ACTIVITIES.



VARIOUS ARCHITECTURAL STYLES PLAY WITH MATERIALS. (8)



(1) A SHRINE TUCKED AWAY AT THE CORNER OF THE STREET.

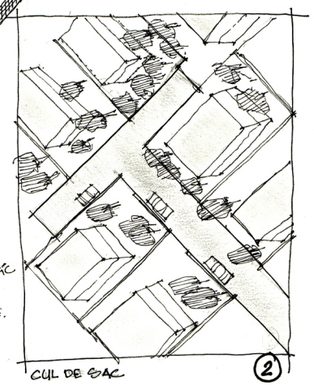


BALCONY OPENS INTO THE TOILET DUCTS. (12)

A FAMILY WITHOUT SHELTER OCCUPYING A STREET CORNER

GARBAGE LEFT ON THE SITE OBSTRUCTS THE FOOTPATH, MAKING IT DIFFICULT TO WALK.

A CALM, TREE LINED RESIDENTIAL ROAD WITH LOW TRAFFIC GENTLE BIRD CHIRPS AND A SMALL SHRINE TUCKED IN SIDE. (1)

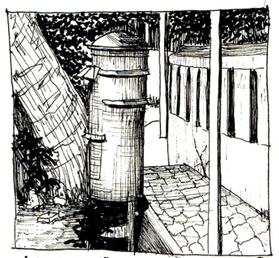


CUL DE SAC (2)

OH LOOK! SO MANY PEACOCKS!!

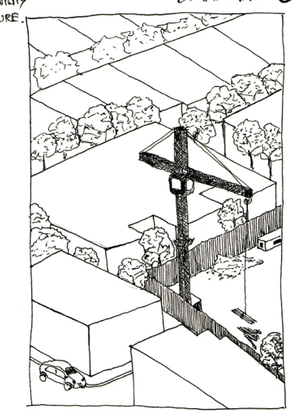
→ SCATTERED SINGLE STOREY BUILT FORM.
→ EXTREMELY QUIET ENVIRONMENT
→ SHARED SPACES AMONG FIVE FAMILIES.
→ OPEN LAYOUT.
→ ATMOSPHERE OF TRANQUILITY HARMONY WITH NATURE.

MAP SHOWING THE LAYOUT OF BIMANAGAR. (7)



A LONE POST BOX AT THE CORNER OF THE ROAD (3)

ABANDONED HOUSE AT ONE OF THE CUL DE SACS (6)



(5)

WHILE ONE CORNER OF THE STREET IS MARKED AS A VENDING ZONE (4)

GROUP MEMBERS : ANDREA DRAGHI, ADITI CHOWDHURY, NIHAN MATHEW, KANNU.P

Fig. 50, Northern area of Bimanagar plot analysis (TuDelftxCEPT students' work, 2026)

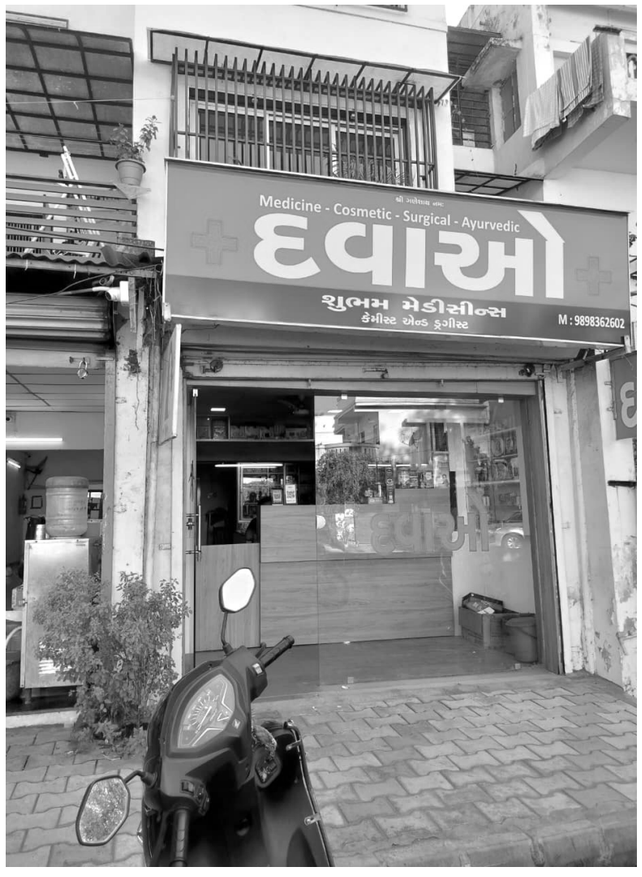


Fig. 51, Location 6: Main road to the North of Bimanagar plot (author's work, 2026)

The Northern boundary of the Bimanagar plot is defined by a predominantly residential edge, anchored by a large, established gated community. This perimeter serves as the neighborhood's primary service source, hosting a dense concentration of essential amenities including a pharmacy, a supermarket, a kindergarten and a laundry service.

Moreover, the architectural character is defined by a consistent low-rise typology that maintains a strong, interactive relationship with the street level. Within the blocks, the design prioritizes collective life through a series of internal courtyards and shared open spaces that facilitate high levels of social interaction among residents. However, this established physical fabric also indicates a limited capacity for further density or vertical growth, preserving the area's intimate scale at the cost of future expansion.

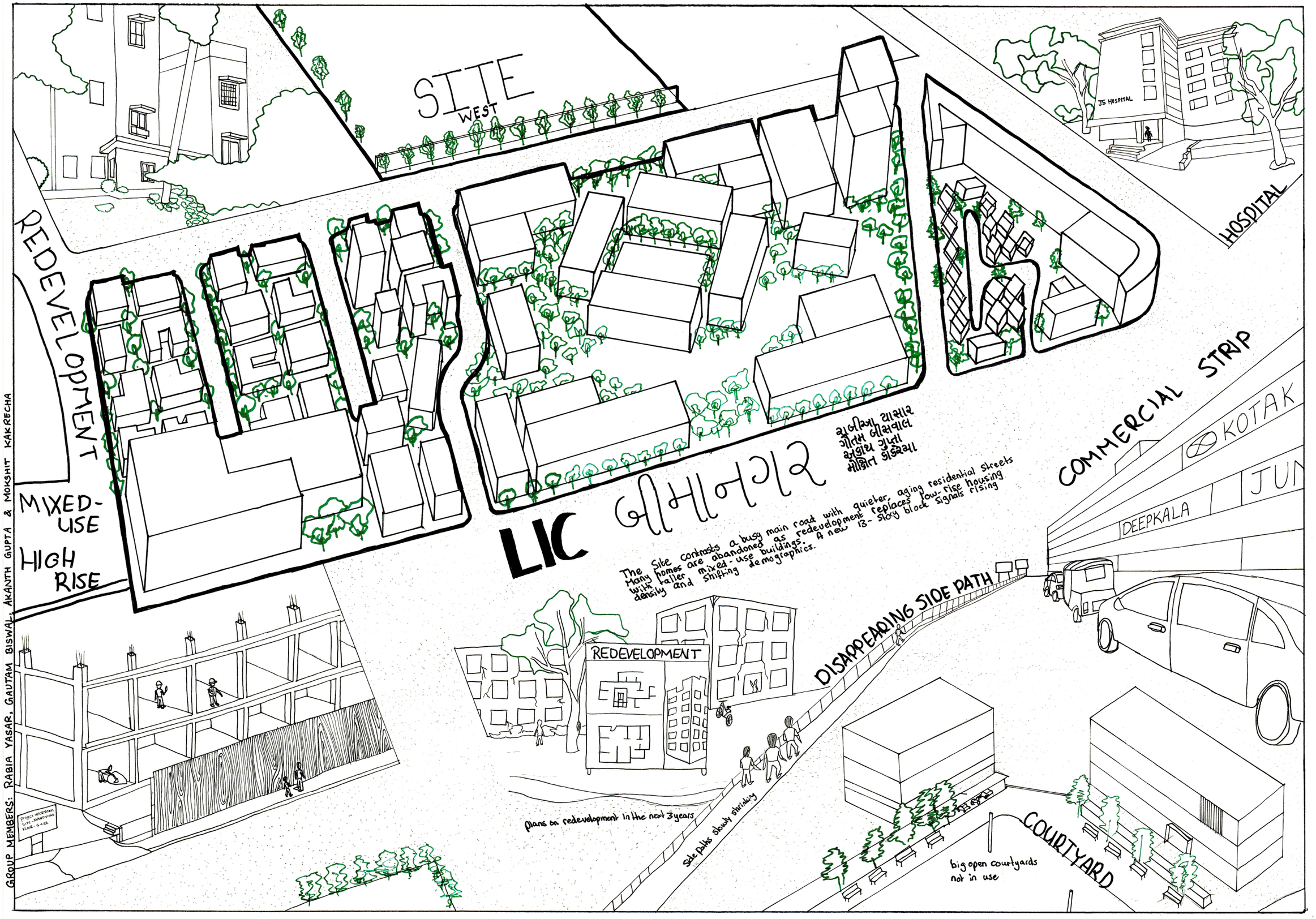


Fig. 52, Western area of Bimanagar plot analysis (TuDelftxCEPT students' work, 2026)

Fig. 53, Location 7: Road to the West of Bimanagar plot (Rabia Yasar, 2026)

To the West of Bimanagar, the urban fabric shifts toward a more contemporary and vertical profile, characterized by a mix of medium and high-rise residential developments. The architectural volume and polished aesthetic of these buildings suggest a demographic of high-income residents, marking a clear socio-economic transition from the older cooperative blocks.

This Western edge also contains a notable contrast in land use: while it houses the only hospital in the immediate vicinity, providing a critical healthcare anchor, it also contains a significant abandoned plot that breaks the continuity of the built environment.

BIMA NAGAR HOUSING SOCIETY SOUTH

HIGH RISE

પરિશ્રમ એપાર્ટમેન્ટ
PARISHARM APARTMENT
IS SET FOR REDEVELOPMENT WITHIN 3-4 MONTHS, OCCUPANTS MUST CLEAR THE BUILDING, ALLOWING THE DEMOLITION PROCESS TO START SOON AFTER.

GATED COMMUNITY

THE LIC SITE, NOW A BARREN FENCED LAND, IS STILL BEING MISUSED BY PEOPLE WHO CONTINUE DUMPING GARBAGE THERE, TURNING THE NEGLECTED PLOT INTO AN UNHEALTHY AND UNPLEASANT SPOT FOR THE SURROUNDING COMMUNITY.

PUBLIC NOTICE:
LIFE INSURANCE CORPORATION IS THE SOLE OWNER OF THIS PROPERTY AND NOBODY IS ALLOWED TO ENTER WITHOUT PERMISSION.

SECURITY

NEGOTIATIONS

GROUND FLOOR - 77 SQ.M.
FIRST FLOOR - 63 SQ.M.
SECOND FLOOR - 43 SQ.M.

LIC
EMPTY GROUND

WE VISITED BIMANAGAR HOUSING, MET HARSHIT BHAI (SECRETARY AND OWNER), AND UNDERSTOOD THE AREA AND PROPERTY PRICES.

THE FRUIT-SELLING LADY NEAR THE COLONY DRAWS STEADY CUSTOMERS NEARBY RESIDENTS AND PASSERBY. WITH NO STORE AROUND SHE BECOMES THE GO-TO VENDOR, EARNING A RELIABLE AND GROWING INCOME

HOSPITAL

"VACATING APARTMENT"

- INDIVIDUALS EXPERIENCING HOMELESSNESS
- MIGRANT WORKERS
- THOSE ESCAPING UNSAFE SITUATIONS
- FAMILIES IN CRISIS
- TEMPORARY REFUGE ELDERLY INDIVIDUALS

HOMELESS SHELTER

"HOMELESS" PEOPLE SHELTER

AUDA GARDEN

A PANIPURI CART SELLER AND A RICKSHAW WERE STANDING ON THE FOOTPATH, CAUSING SMALL CONGESTION AND BLOCKING PEDESTRIAN MOVEMENT.

SHIVRANJANI CROSS ROADS

THOUGH IT'S A GATED SOCIETY, CHILDREN DAILY ENJOY CYCLING AND THE PARK, WHILE ELDERS RELAX IN THE SEATING AREAS.

HONK

DONOT CROSS

LIC - 1978/81

LAVINA M.V, WIKTORIA UKRAN, JAIVIK SHAH, KAVAN SHAH

COMMERCIAL AREA | MAIN ROAD | BRTS LANE | MAIN ROAD | WALKWAY | PARK | SERVICES | ROAD (INSIDE) | OPEN GROUND (MULTIPURPOSE AREA) | CHILDRENS PLAY AREA | ROAD | PUBLIC SEATING (LIC) | ROAD (INSIDE) | ROAD/ACCESS (OUTSIDE) | LIC OPEN PLOT

N

Fig. 54, Southern area of Bimanagar plot analysis (TuDelftxCEPT students' work, 2026)

Fig. 55, Location 8: Road inside LIC (Rabia Yasar, 2026)

As the area moves further South toward the main arterial road, the character becomes increasingly commercial, catering to the high-traffic flow and providing a vibrant, yet busier, edge to the otherwise residential district.

Moreover, to the South of the Bimanagar plot lies the LIC Housing Complex, a strictly residential gated community that presents a distinct atmosphere from the surrounding urban fabric.

This area is characterized by a series of low-rise buildings defined by highly repetitive typologies, reflecting an institutional approach to housing design. While the layout demonstrates efficient land use with a notably high Floor Space Index (FSI) and increased vertical density compared to its neighbors, the spatial configuration leans toward privacy rather than community.

The emphasis on maximizing residential units within a secured perimeter has resulted in a more insular environment, leading to significantly reduced social interaction between its residents and the rest of the city.

Fig. 56, Satellite view and size of Bimanagar plot (author's work, 2026)

In the broader context of Ahmedabad's evolving urban fabric, Bimanagar presents itself as a "missing piece of the puzzle," offering a strategic opportunity to restore the harmony among the contrasting residential typologies surrounding it. The following design intervention will prioritize a low-rise architectural language meant to preserve the human scale, while ensuring that a strong visual sconnection to the street is maintained across all levels. Moreover, rather than creating a sharp boundary between the public and private realms, the project aims to introduce shared spaces at multiple levels, encouraging communal interaction and collective ownership of the environment.

This approach is based on a gradual transition from the bustling street to the intimacy of the dwelling, utilizing intermediate zones and semi-private thresholds to soften the experience of entry. By integrating these multi-level social nodes, the development seeks to restore the neighborhood's historical focus on community living while adapting it to contemporary urban needs, ultimately creating a more permeable and socially cohesive residential block.

[How do women use spaces and move through the city?]

Fig. 57, Women and their children in a slum in Ahmedabad (author's work, 2026)

Women are predominantly seen navigating the public realm in groups or accompanied by family members, rarely traversing the city entirely alone.

Fig. 58, Sketches depicting the way women travel the city in groups (author's work, 2026)

For daily transit, women heavily rely on either motorized three-wheelers (auto-rickshaws/tuk-tuks) or personal two-wheelers (scooters).

Fig. 59, Family of three travelling on a scooter (author's work, 2026)

Fig. 60, Modes of transportation for women (rickshaws and personal scooters) (author's work, 2026)

As darkness falls, the demographic balance of the street shifts rapidly, with a visible and drastic reduction of women in the public eye after dark.

This nocturnal absence highlights a pattern of forced avoidance and rigid behavioral adjustments, where a lack of street activation and poor lighting render public spaces hostile territories for women at night.

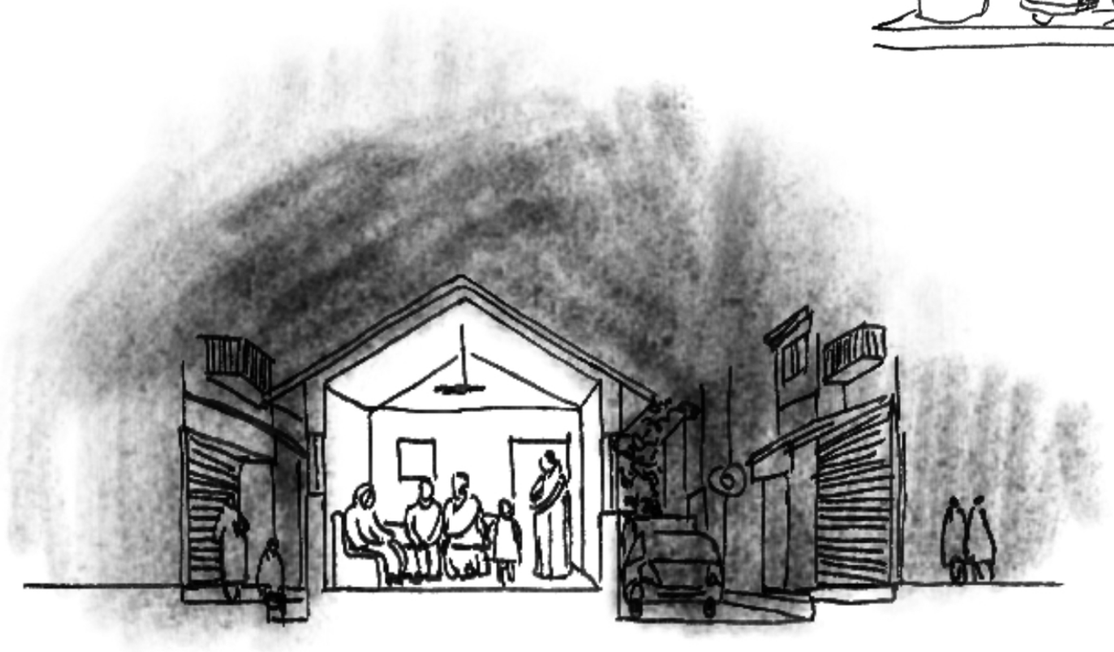


Fig. 61, Sketch depicting women staying inside at nighttime (author's work, 2026)

Fig. 62, Sketch depicting women's use of *otlas* (author's work, 2026)

Front porches and raised entrance platforms (*otlas*) are highly active spaces during the day, where women gather to cook together, converse with neighbors, and perform household chores.

The *otla* serves as a crucial porous threshold, a semi-private extension of the home where private domestic labor is brought into the public realm, naturally facilitating community interaction and organic "eyes on the street."

[Design Strategy]

[Designing through research]

In order to balance important socio-spatial trade-offs, the proposed design for the Bimanagar plot favors a low-to-mid-rise, high-density neighborhood structure instead of high-rise vertical structures. This way, the physical built form shifts from reactive monitoring to a proactive infrastructure by scaling design decisions across the urban, neighborhood, cluster and dwelling layers.

Moreover, by addressing the precise sub-questions driving this research, this design logic directly addresses the unique home, financial and transit realities of low- to middle-class women living in Ahmedabad.

[Urban Scale]

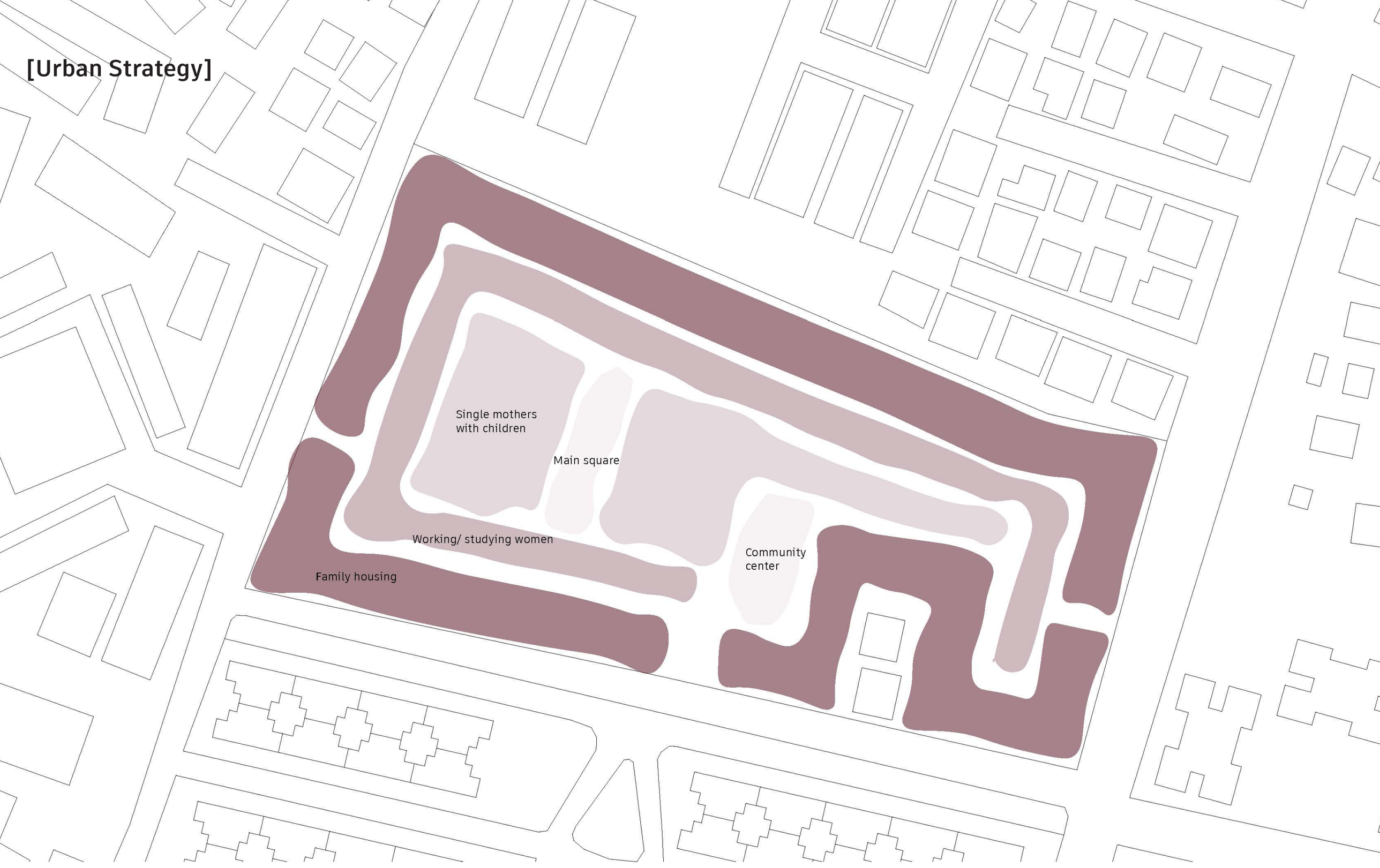
Which specific spatial qualities most influence women's sense of safety?

At **urban scale**, the masterplan focuses on the primary spatial qualities of environmental legibility and active frontage to eliminate dead streets and, thus, transit risks within the neighborhood perimeter.

In this sense, the boundary of the plot is transformed into an active street edge integrated with local shops, pharmacies and small vending spaces. This layout promotes constant pedestrian presence and uniform lighting along outer pathways, replacing the quiet, monotonous current streets with a vibrant civic atmosphere.

Moreover, by maximizing visibility and activating the street level, the spatial qualities of the perimeter ensure safe travel for women during late-night hours and naturally integrate Bimanagar into the surrounding city fabric.

[Urban Strategy]



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1:1000

Fig. 63, Masterplan zoning diagram (author's work, 2026)

The resulting layout is structured as three concentric bands that encapsulate one another, a configuration designed to establish a robust, protective exterior while nurturing a soft, more vulnerable core. This strategy seeks to create a modernized iteration of the gated communities, one that moves away from isolation and instead prioritizes social interaction and women's safety as the primary drivers of every design decision.

1.93
FSI

45%
GSI

~55.300
m² built

N

1:1000

Fig. 64, Masterplan (author's work, 2026)

[Access Principles]

N

1:1000

Fig. 65, Access on the plot (author's work, 2026)

To enhance the sense of security and community, the majority of streets between the three residential bands are relatively narrow, fostering a feeling of closeness and intimacy.

Furthermore, the masterplan strategically places primary entrances on the West, South and East elevations.

Fig. 66, View of Western gate during daytime (author's work, 2026)

Fig. 67, View of Western gate during nighttime (author's work, 2026)

[Car Access]

N

1:1000

Fig. 68, Car accessibility on the plot (author's work, 2026)

Vehicular access is strictly pushed to the perimeter, leaving the internal streets entirely pedestrian-oriented, with street widths narrowed to enhance intimacy, though fully accessible for emergency vehicles like police and ambulances.

[Neighbourhood Scale]

[Amenities]

Fig. 69, View of main square as playground and events space (author's work, 2026)

The central community square serves as the fundamental social pillar of the entire masterplan. This core is aimed to be used as a medium for collective resilience, providing a dedicated stage for the cultural, domestic and social events that are essential for fostering a deep-rooted sense of community.

It is positioned securely within the immediate vicinity of the residential units in order to operate as a highly visible, naturally monitored zone that directly decreases transit risks.

The square acts as a "soft core" that brings daily public life to the heart of the plot. It offers a secure environment where women can safely run micro-vending stalls, look after children playing in the park and build mutual aid networks. By prioritizing these communal interactions, the architecture ensures a vibrant, lived-in space that actively protects and sustains the safety, independence and identity of its inhabitants.

Fig. 70, View of main square as market space (author's work, 2026)

[Neighbourhood Scale]

[Amenities]

A key component of the project is the community hub, which serves as a safeguarded social infrastructure intended to directly respond to the locals' social , cultural and medical needs. By grouping these diverse services into a centralized building, the architecture of the plot minimizes travel times and risks experienced by women in their daily activities.

To provide a comprehensive network of support, the community hub integrates a diverse array of essential facilities:

- **healthcare and personal care:** the inclusion of a dedicated women's clinic and an on-site pharmacy ensures that residents have safe, immediate access to medical support and essential pharmaceuticals without needing to leave the secure boundary of the plot

- **childcare and education:** by incorporating a daycare and a children's school directly into the residential fabric, the design provides single mothers and working families with reliable, close-proximity childcare, allowing them to balance daily employment or domestic tasks with peace of mind

- **social and cultural growth:** a communal library, a multi-functional social hub and a community event hall offer shared platforms that foster a deep-rooted sense of belonging, collective resilience and mutual aid under a safe environment

- **economic empowerment:** dedicated spaces for skills development workshops are embedded within the hub, providing low-income women with accessible, on-site training and entrepreneurial opportunities to enhance their financial independence

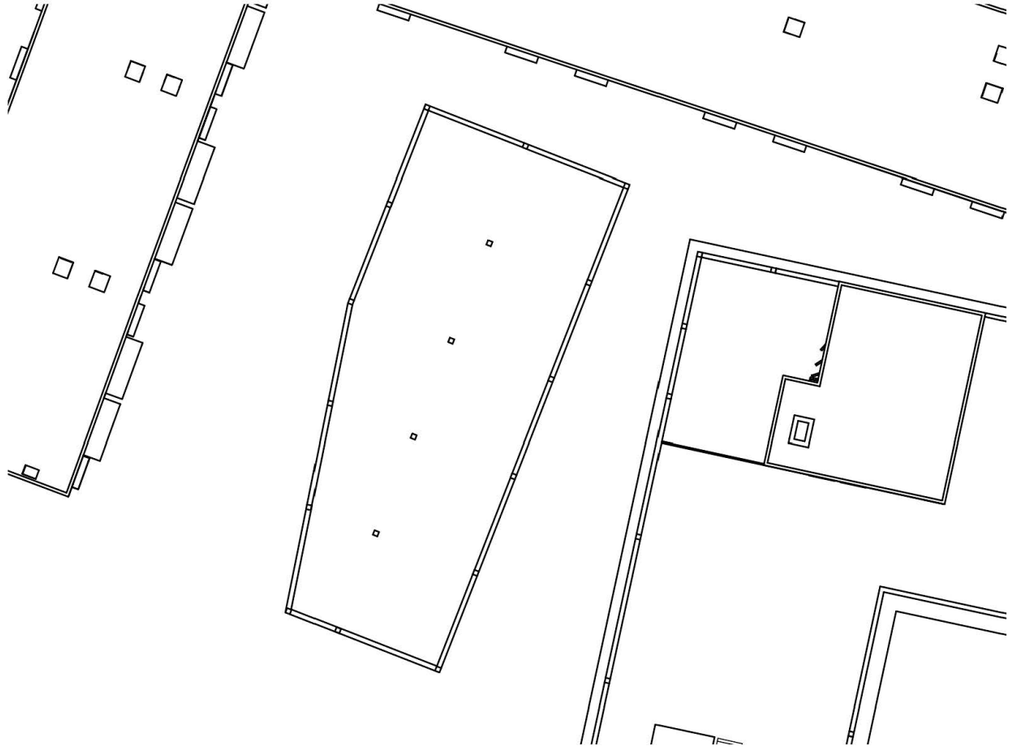


Fig. 71, Community hub in masterplan (author's work, 2026)

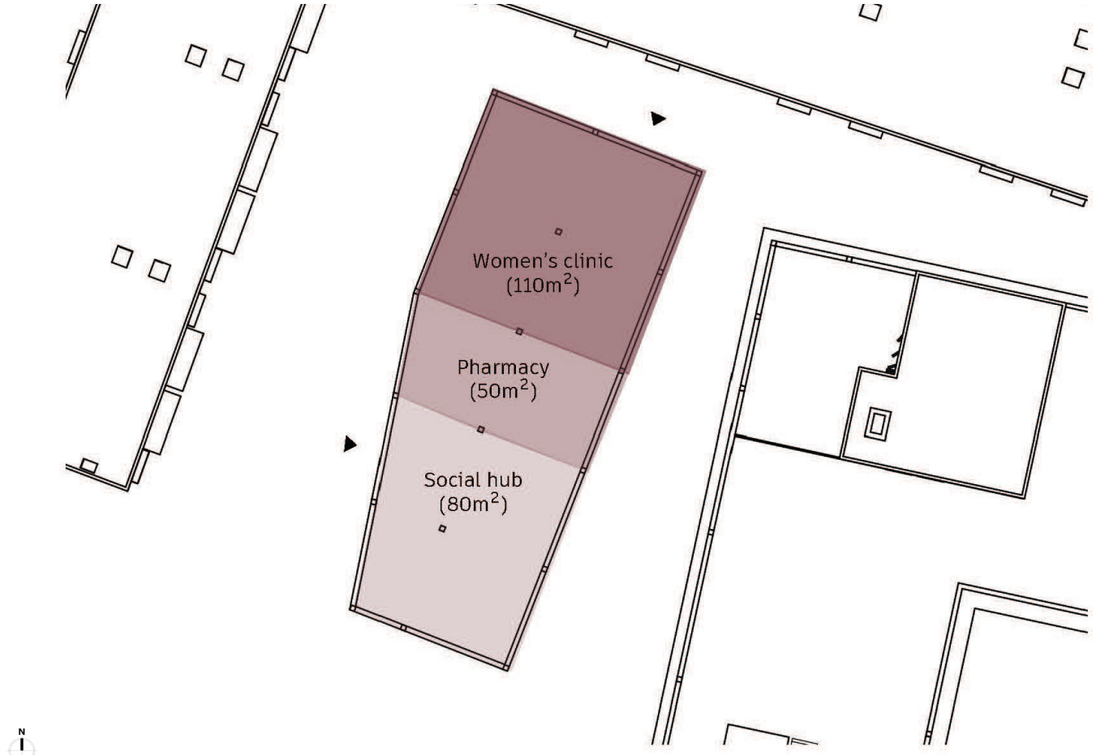


Fig. 72, Proposed community hub groundfloor (author's work, 2026)

Fig. 73, Proposed community hub first floor (author's work, 2026)

Fig. 74, Proposed community hub second floor (author's work, 2026)

Fig. 75, Proposed community hub third floor (author's work, 2026)

Ultimately, by centering these daily interactions within the close vicinity of the housing units, the community hub ensures that the heart of the project remains a vibrant, lived-in environment that actively sustains and empowers its inhabitants.

[Cluster Scale]

What building design principles can decrease risk and increase visibility?

At the **cluster scale**, risk reduction and visibility are achieved by embedding two core building design principles into the fabric: natural surveillance and the purposeful grouping of social infrastructure.

The residential blocks are strictly limited to a low-to-mid-rise profile, preserving human-scale sightlines between private windows and the public ground floor. Every building, regardless of its typology, is equiped with a dual public-private facade featuring porous balconies and open verandas (*otlas*), ensuring that residents maintain clear, unobstructed view-lines over shared thresholds.

These clusters are segregated and grouped by specific housing typology and immediate vicinity, creating a close-knit and supportive network across the site. By clustering identical housing models together, the design allows for the purposeful integration of specialized social infrastructure tailored to the immediate neighbor groups.

[Dwelling Scale]

How do women navigate and modify unsafe housing environments, both in informal and formal neighborhoods?

At the **dwelling scale**, the architectural response directly supports the tactical ways women assert agency, navigate spatial limitations and modify their environments to resist structural insecurity. Because low-income women frequently encounter rigid, unsafe housing stock that fails to accommodate home-based industries or multi-generational living, the masterplan introduces a variation of housing typologies taylored to the three target groups of the project: 20m^2 micro-studios for young studying or working women, 30-to-45m^2 studios equipped for single mothers and thier children, as well as a larger apartments building optimized for multi-generational family housing.

[Family Housing Apartments]

The family housing building is strategically positioned along the outer edges of the plot, functioning as a protective “hard shell” for the more vulnerable interior bands. This peripheral placement allows the G+4 structure to act as a buffer while maintaining a human scale that avoids the isolation of typical high-rise developments.

A critical social objective of this ownership model is to provide housing security, ensuring that women-led households have a permanent legal claim to their environment and cannot be displaced.

~350
apartments

~3000
m^2 commercial zones

~45.000
m^2 in total

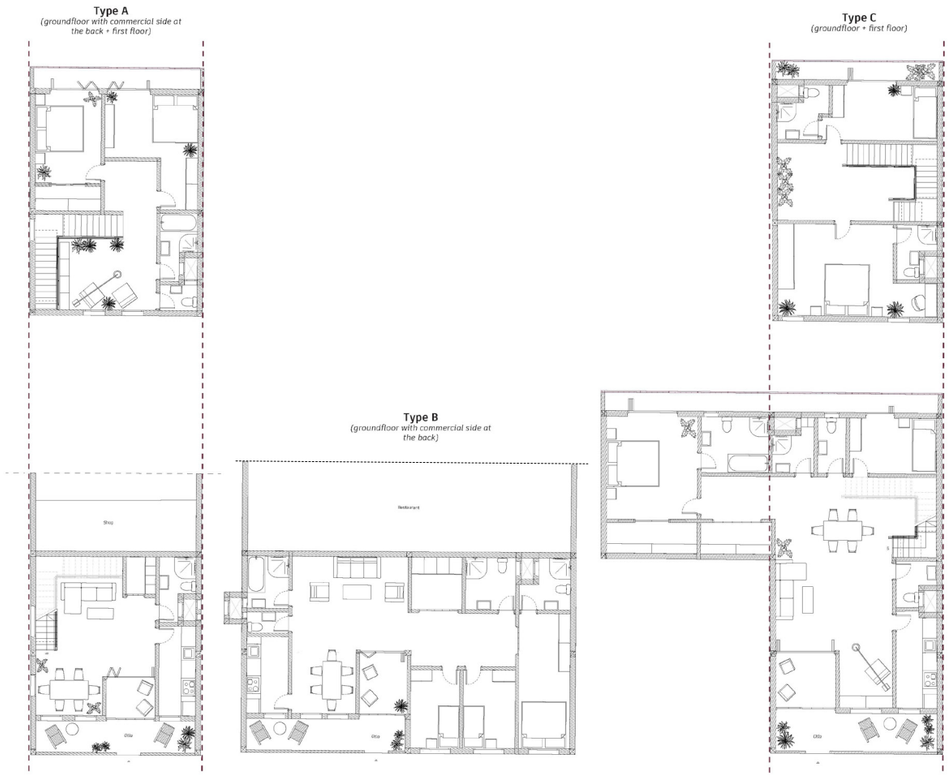


Fig. 76, Apartment catalogue of family housing (author’s work, 2026)

In this building, residents purchase an independent wet core and a permanent structural frame at basic construction cost, providing them with absolute tenure security. By leaving the interior infill completely customizable, the architecture gives these women-led families the structural autonomy to modify, expand or subdivide their private spaces over time. This built-in flexibility allows them to safely integrate home-based economic activities and adapt their dwellings to shifting familial needs without facing financial displacement or compromising domestic privacy.

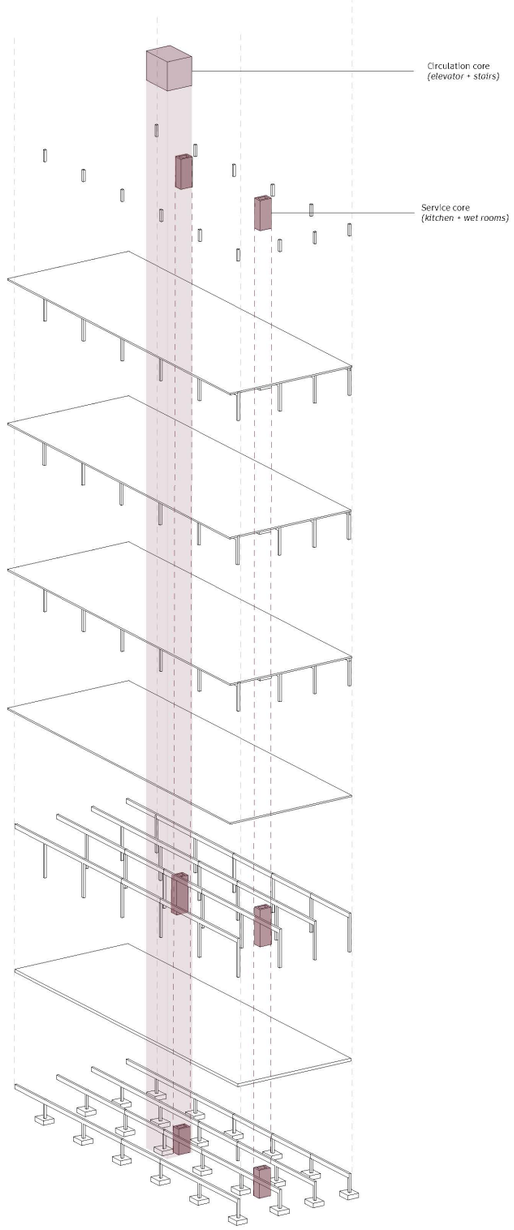


Fig. 77, Structural scheme of the building (author's work, 2026)

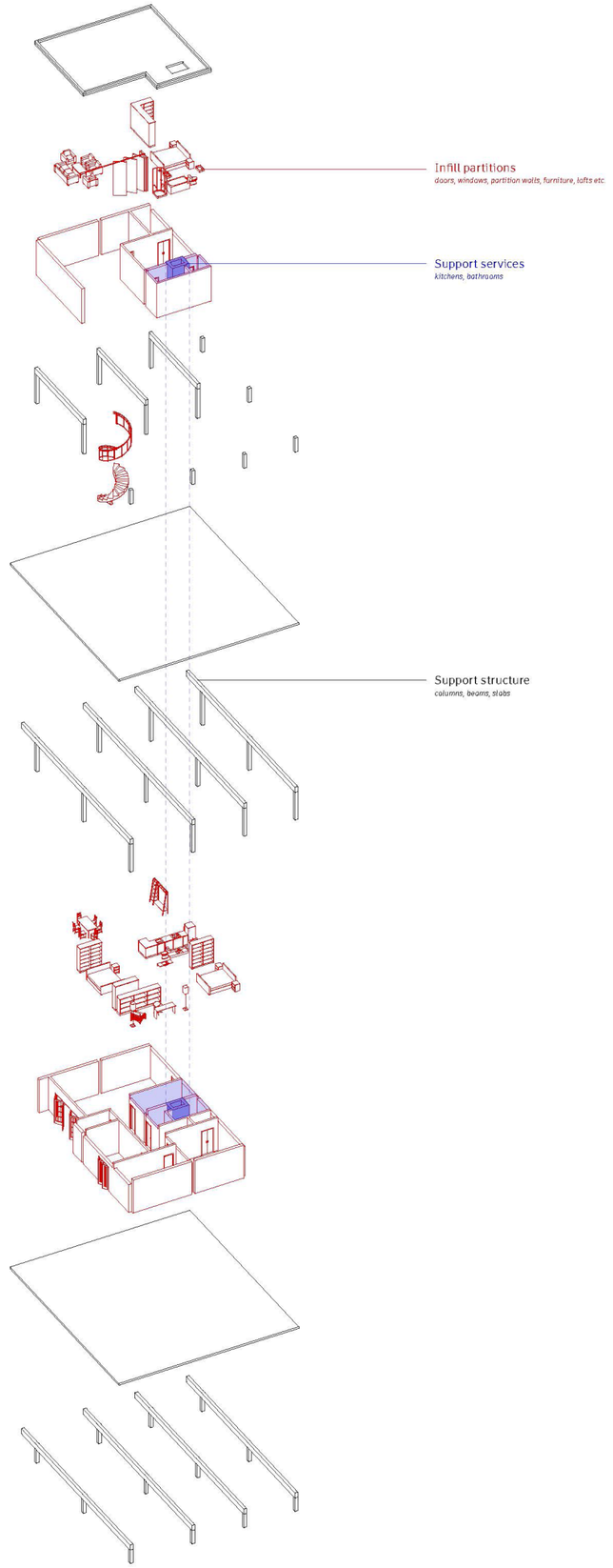


Fig. 78, Support & infill strategy explained through the exploded axonometry of one two-floor apartment (author's work, 2026)

[Type A]

[130m^2]

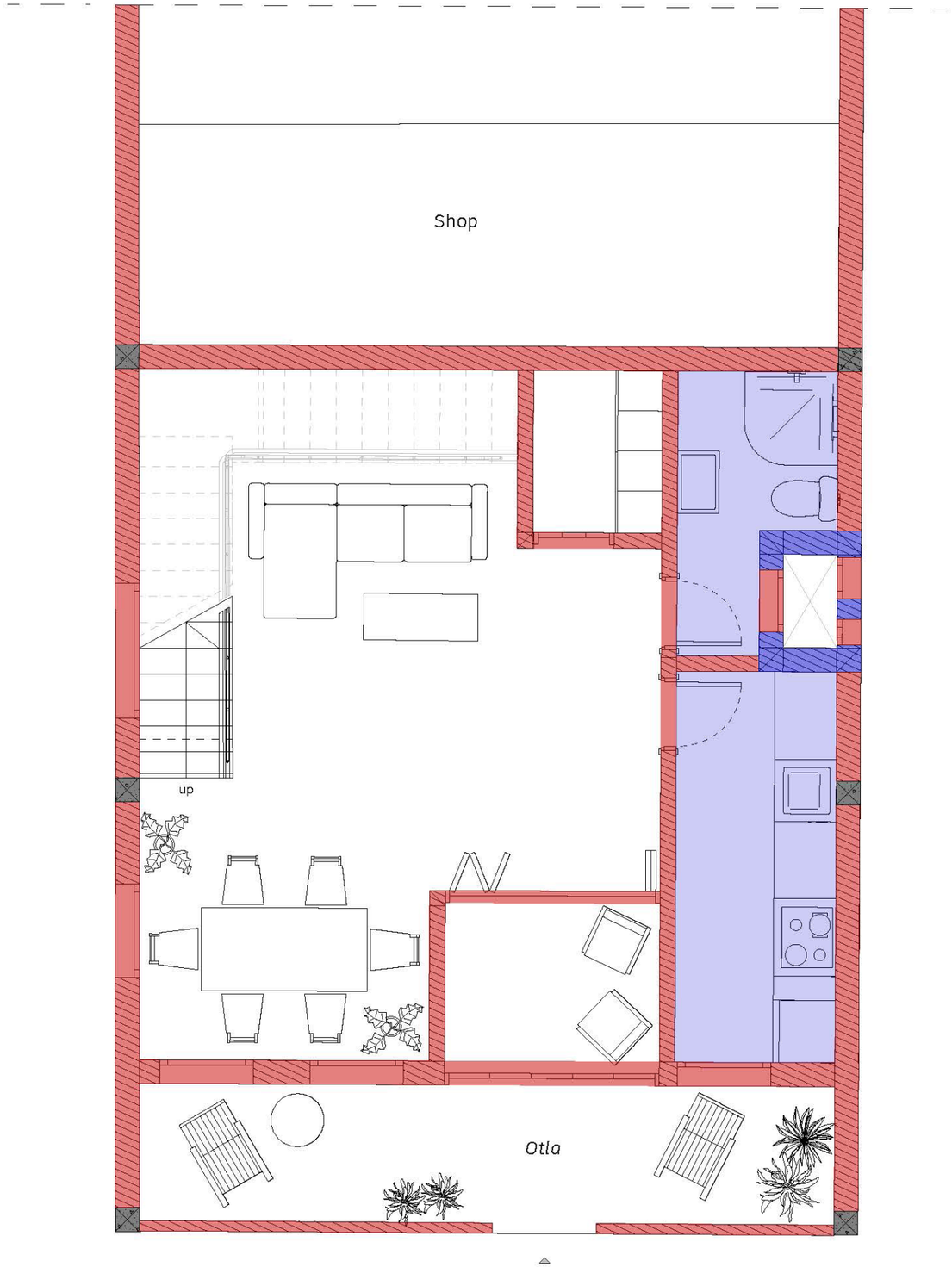


Fig. 79, Groundfloor of a type A apartment (author's work, 2026)

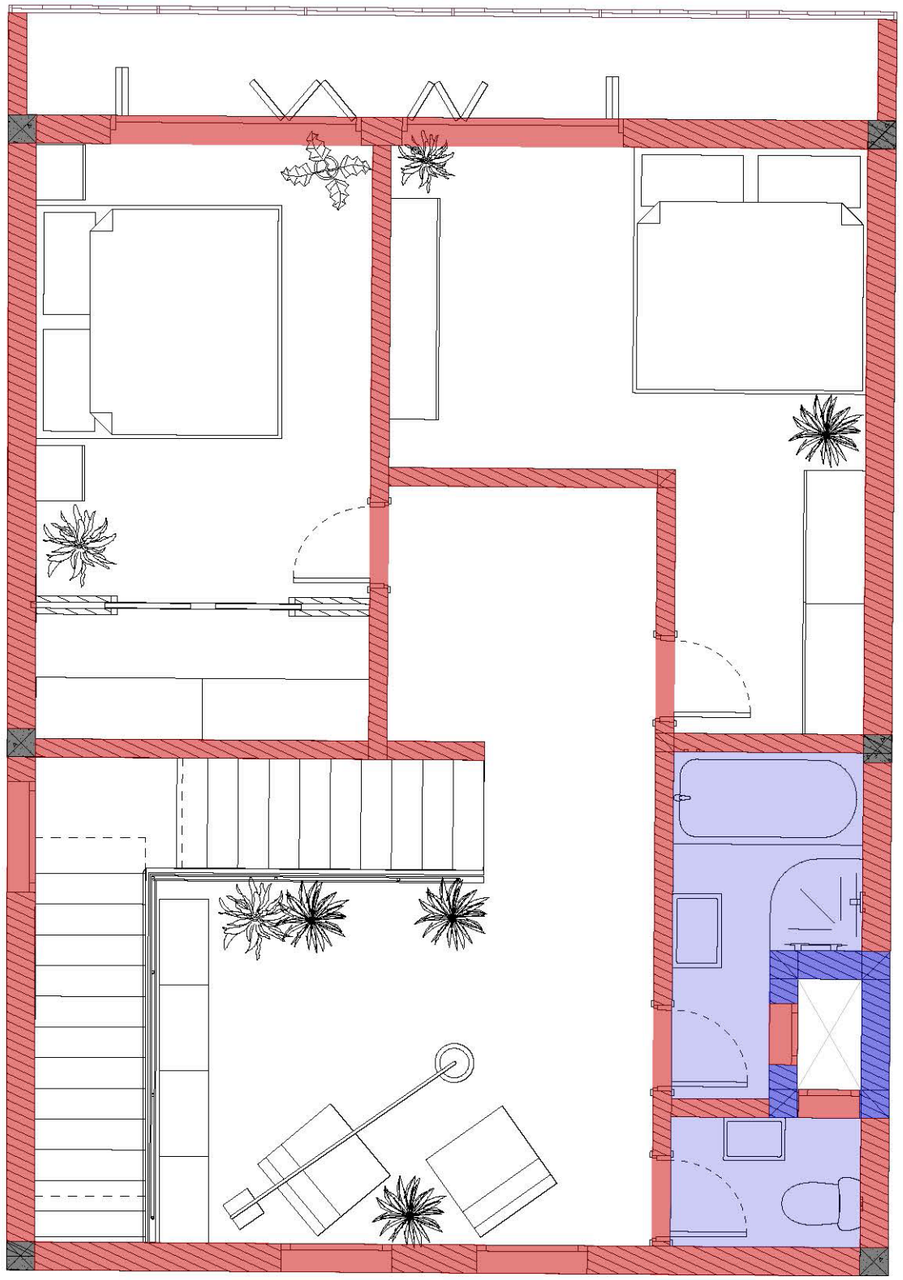


Fig. 80, First floor of a type A apartment (author's work, 2026)

[Type B]

[120m^2]

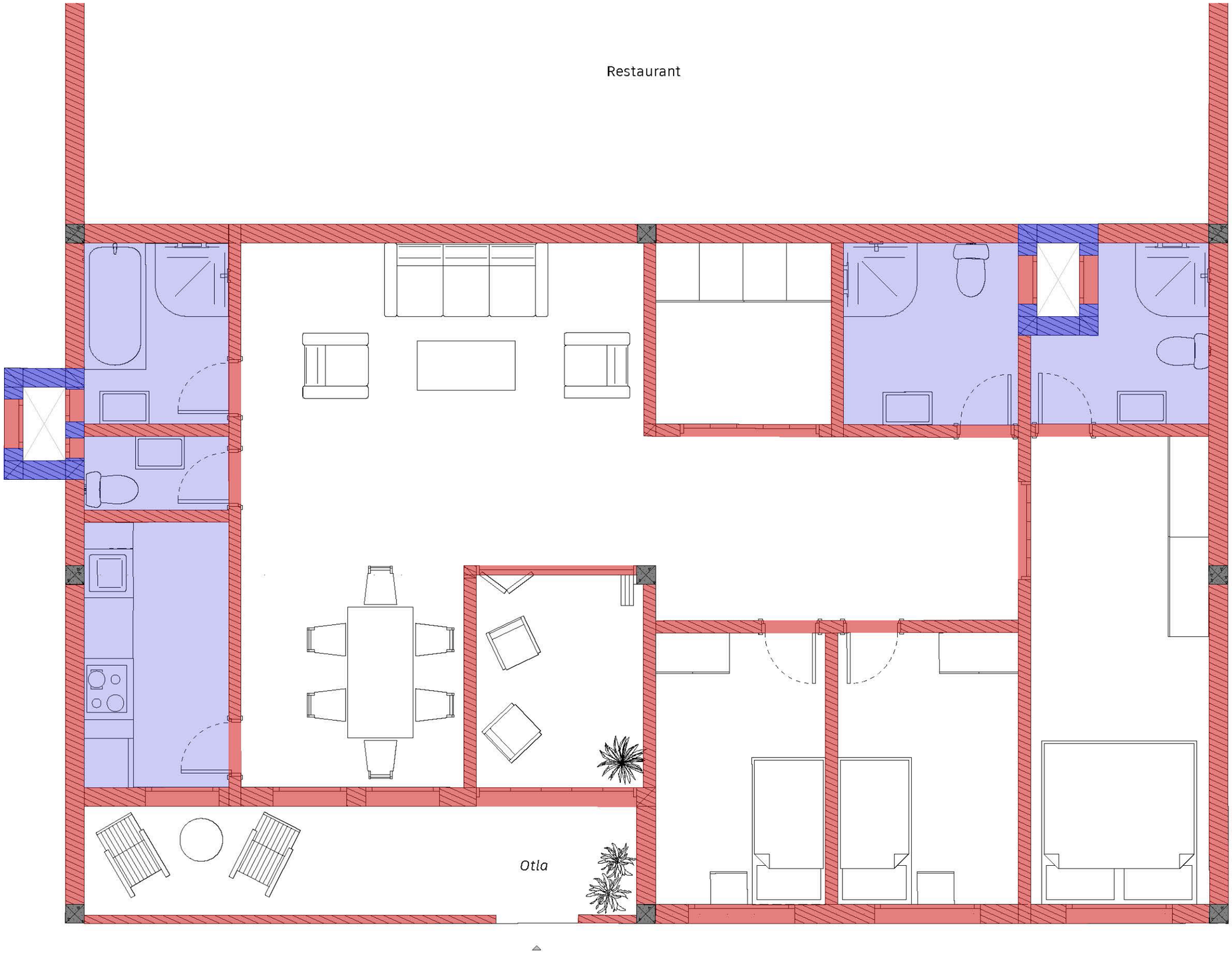


Fig. 81, Groundfloor of a type B apartment (author's work, 2026)

[Type C]

[210m^2]

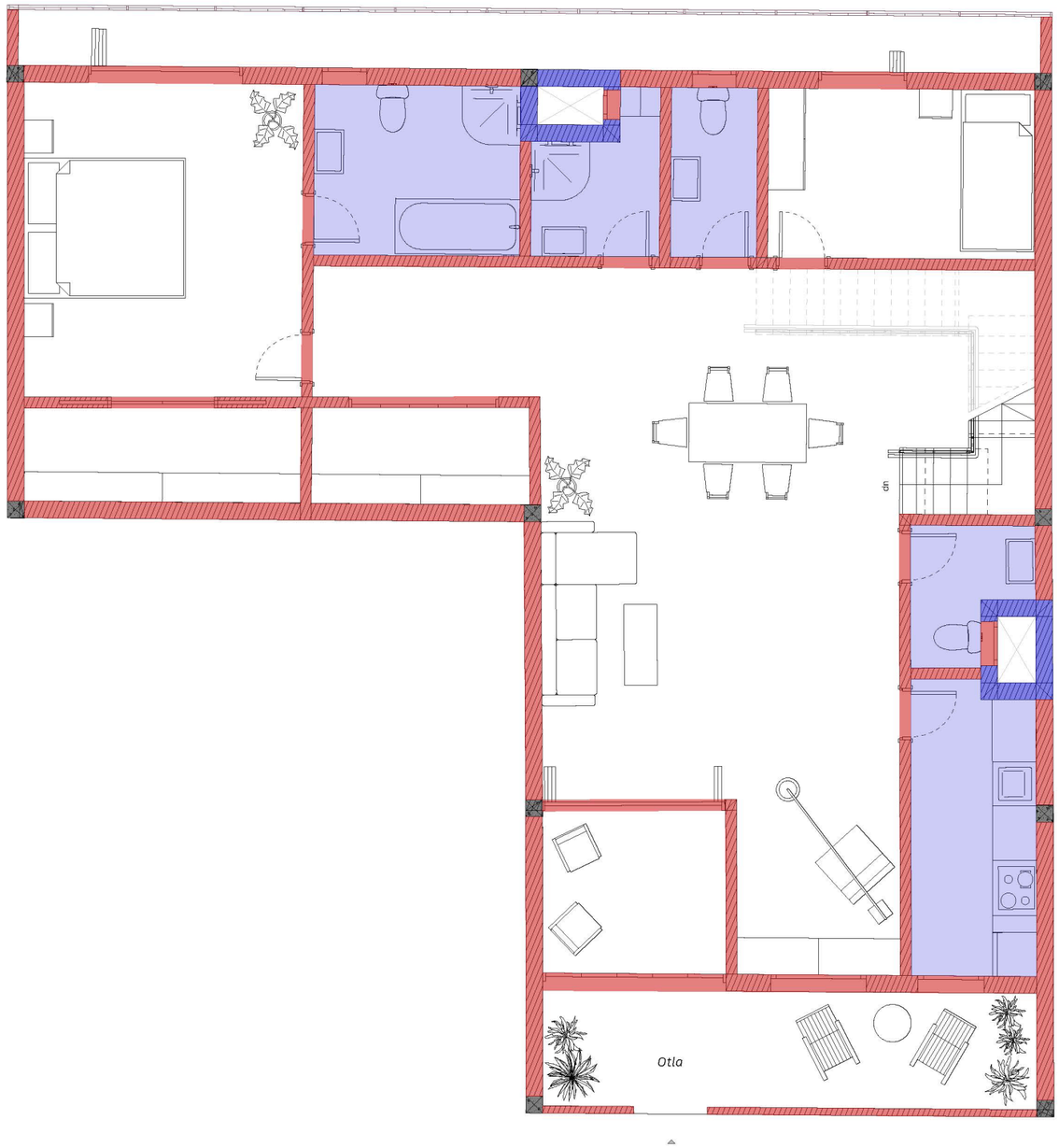


Fig. 82, Groundfloor of a type C apartment (author's work, 2026)

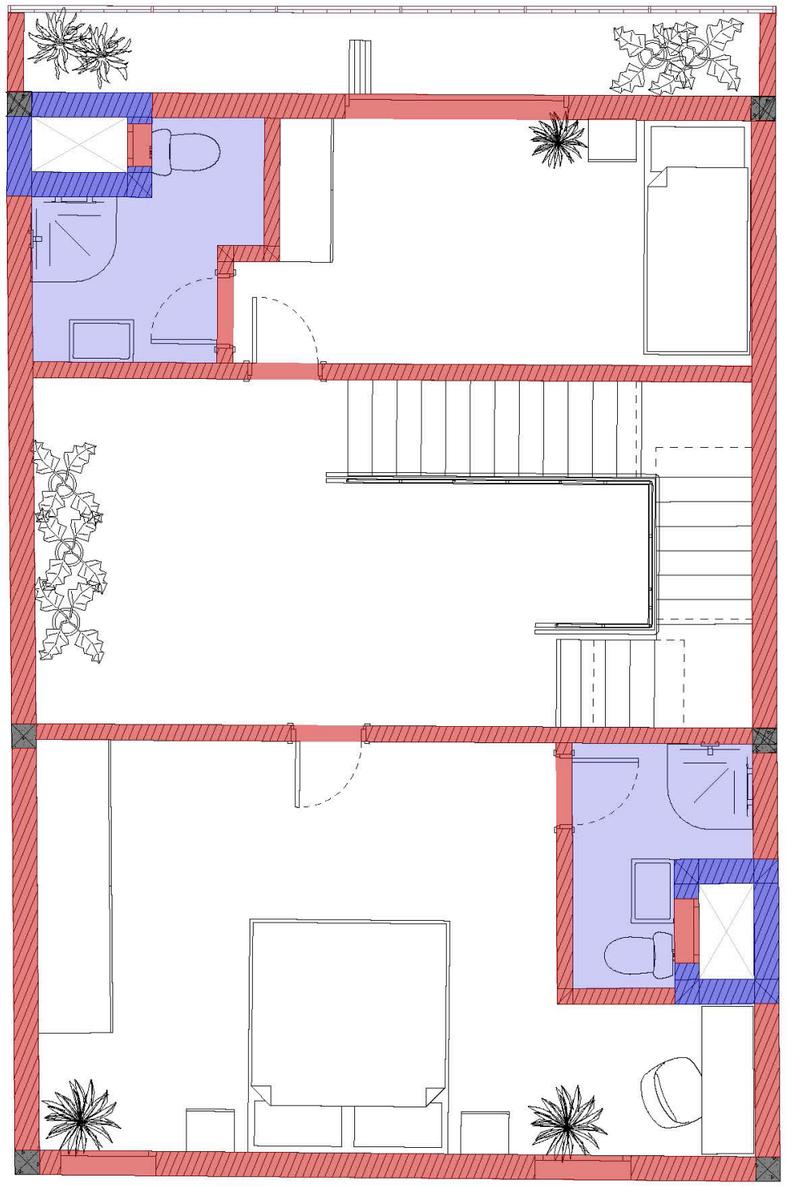


Fig. 83, First floor of a type C apartment (author's work, 2026)

[Type D]

[140m^2]

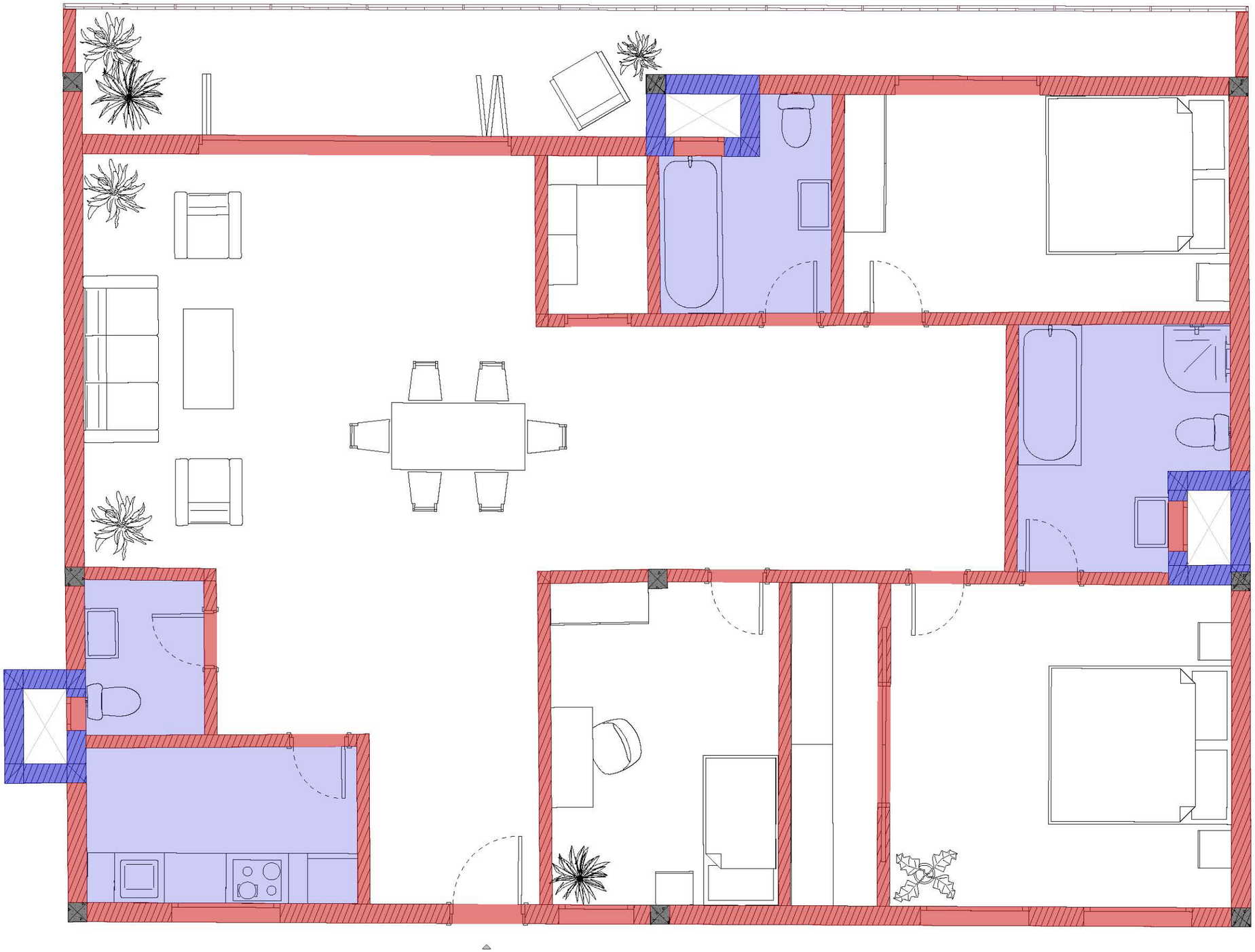


Fig. 84, Groundfloor of a type D apartment (author's work, 2026)

[Type E]

[210m^2]

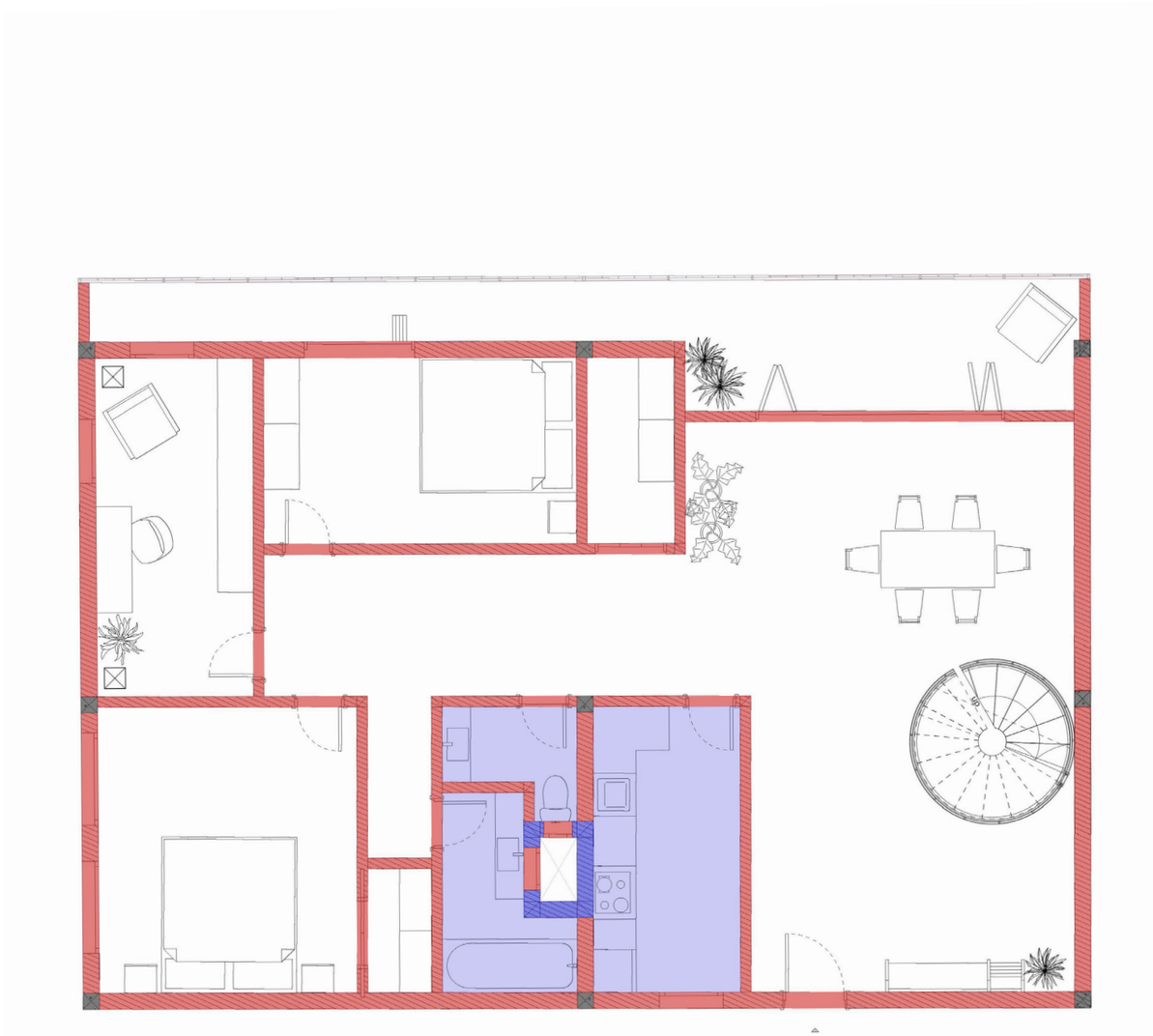


Fig. 85, Groundfloor of a type E apartment (author's work, 2026)

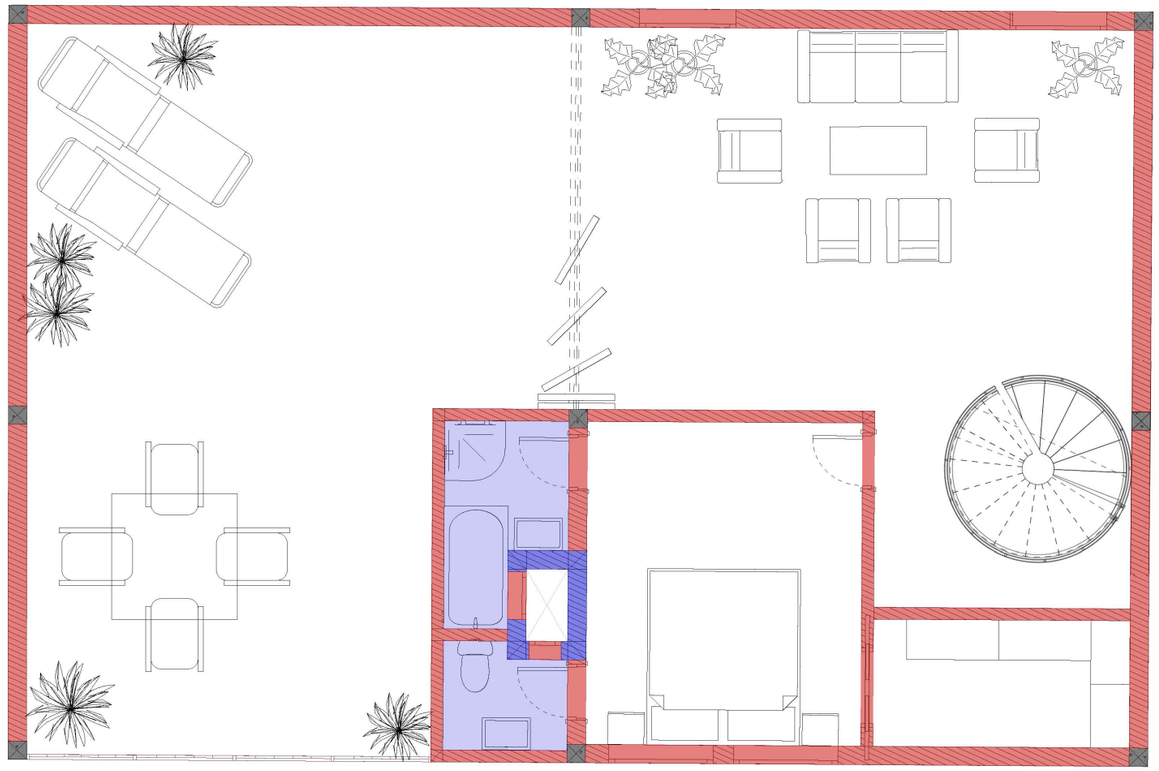


Fig. 86, First floor of a type E apartment (author's work, 2026)

[Type F]

[140m^2]

Fig. 87, Groundfloor of a type F apartment (author's work, 2026)

Fig. 88, View inside family housing building (author's work, 2026)

The architectural massing of this building generates a series of elevated shared spaces. These communal areas serve as essential social platform, extending the living environment beyond the individual dwelling and into the collective realm.

By distributing these “pockets” of interaction throughout the height of the building, the design ensures that residents are never more than a few steps away from a shared seating area. This three-dimensional approach to open space not only maximizes the utility of the building’s footprint but also significantly strengthens the community bond by fostering frequent, informal encounters across all demographic layers.

Fig. 89, Possible alternation of apartment types on the groundfloor of the family housing building (author’s work, 2026)

Fig. 90, Communal area view (author's work, 2026)

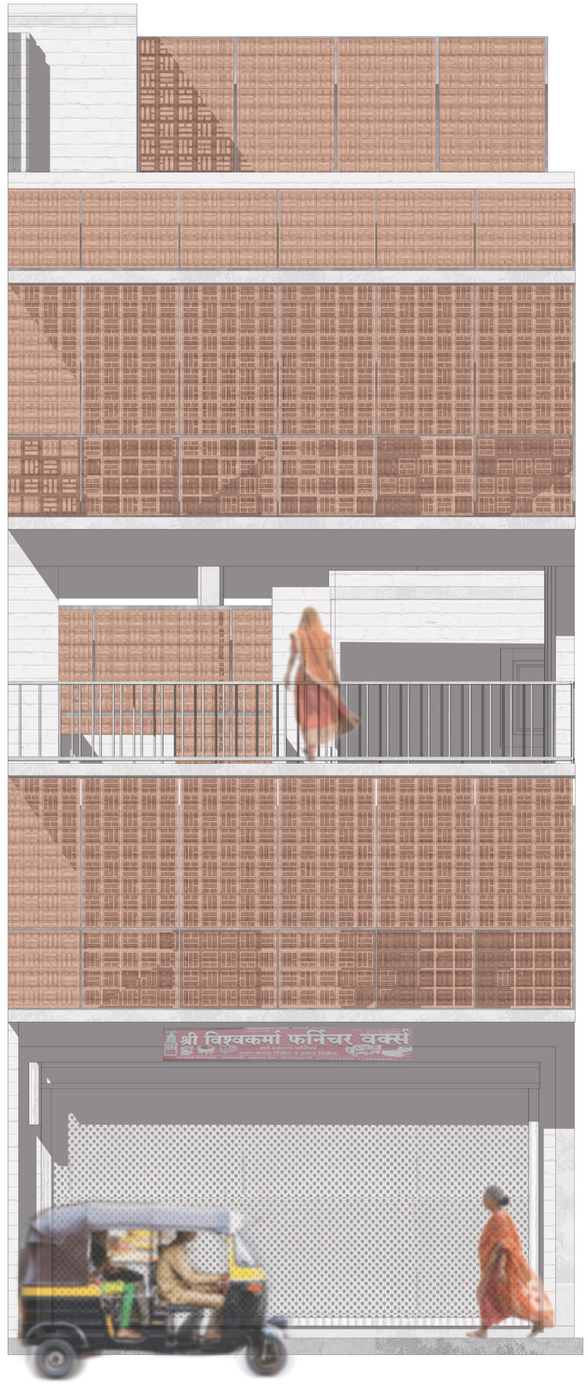


Fig. 91, Elevation showing the commercial strip and apartment floors above (author's work, 2026)

The architectural language of the three building typologies is unified through the prominent use of the *jali*, a traditional perforated screen that serves as the central motif of the project. This choice is deeply rooted in the Indian architectural context, reinterpreting a vernacular element to foster both climatic responsiveness and cultural identity.

In this sense, the elevation drawing illustrates a strategic materiality designed to balance longevity with resident confort. It consists of brickwork plastered in white, an intentional choice that allows inhabitants to customize the color of their dwellings over time, reflecting the project's focus on personalization and ownership. In contrast, the *jali* screens are constructed from terracotta, providing a durable and aesthetically consistent frame for the facade.

While this material palette is utilized across all buildings on the site, the application varies slightly between typologies to signal their distinct functions and social hierarchies.

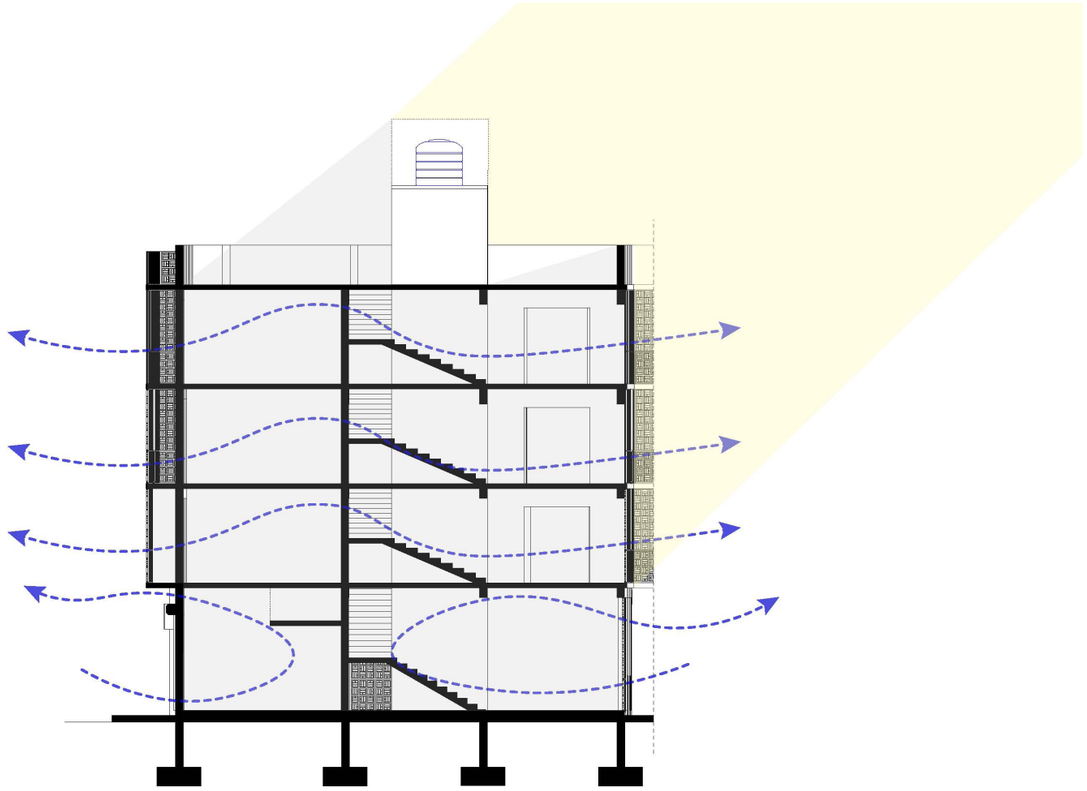


Fig. 92, Climate managemement scheme (author's work, 2026)

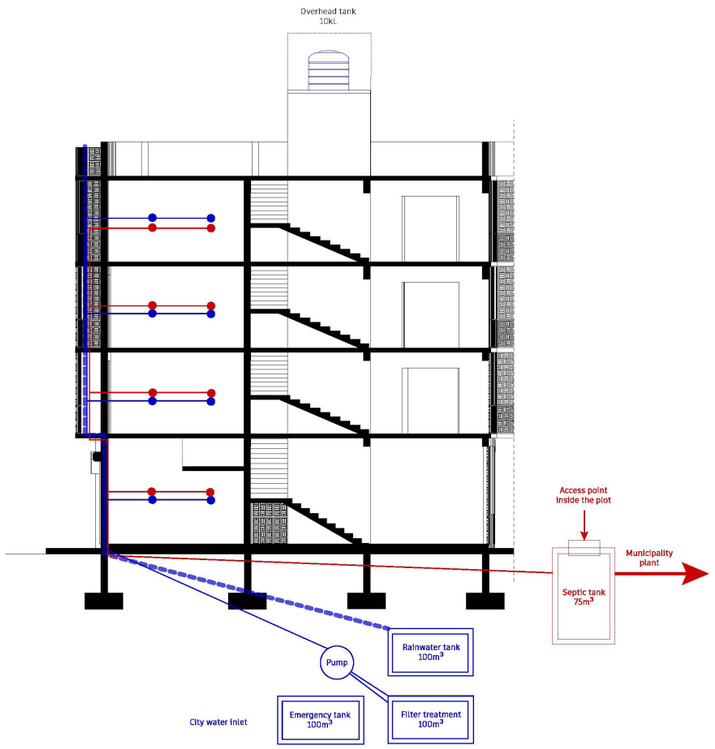


Fig. 93, Water managemement scheme (author's work, 2026)

[Climate]

Functionally, the facade is engineered to address the specific environmental and social needs of the residents:

- **natural ventilation:** strategic openings in the facade and the porous nature of the *jali* promote constant airflow, essential for passive cooling in Ahmedabad's climate
- **the second-skin:** the *jali* acts as a functional "second-skin" in front of the exterior walls, creating a protected, balcony-like buffer zone
- **privacy and utility:** this intermediate space provides shade and privacy, allowing women to utilize the balcony for domestic tasks, such as hanging clothes, while remaining shielded from the public eye
- **mechanical integration:** the double-skin envelope seamlessly conceal exterior air conditioning (AC) compressor units placed on the terrace spaces; by shielding these units behind the *jali* screen, the design preserves the architectural integrity of the facade while protecting mechanical equipment from direct solar radiation

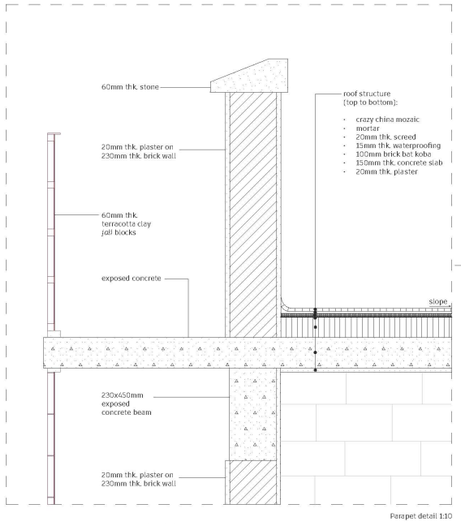
By layering the facade in this manner, the design ensures that the family housing units remain environmentally permeable and socially secure, reinforcing the building's role as a protective shell for the community.

[Water management]

The design also integrates a closed-loop down-feed water distribution system to ensure a constant, reliable and hygienic supply across all apartment typologies in the building:

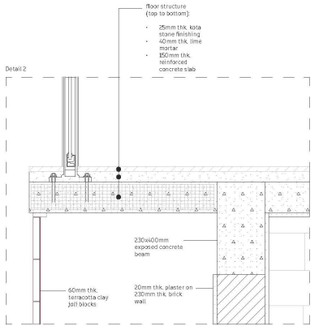
- **source and suction stage:** water is initially received from the municipal water network of Ahmedabad and collected at the ground level within a centralized underground tank
- **elevated pumping and gravity distribution:** from the underground tank, water is mechanically pumped upward into heavy-duty, food-grade overhead water tanks securely positioned on the building roof; these elevated tanks utilize a gravity-feed hydrostatic system, distributing water downward through a segregated vertical pipe network (this configuration uses gravity to naturally generate sufficient dynamic pressure to feed household fixtures, toilets and kitchens across all levels without requiring continuous electrical pumping)
- **disposal and sewage integration:** once utilized for domestic tasks, the wastewater is collected via a separate gravity-fed drainage stack; greywater and blackwater are directed securely into the city's municipal sewage system, preventing backflow and ensuring a clean, disease-free environment for the community

Detail 1



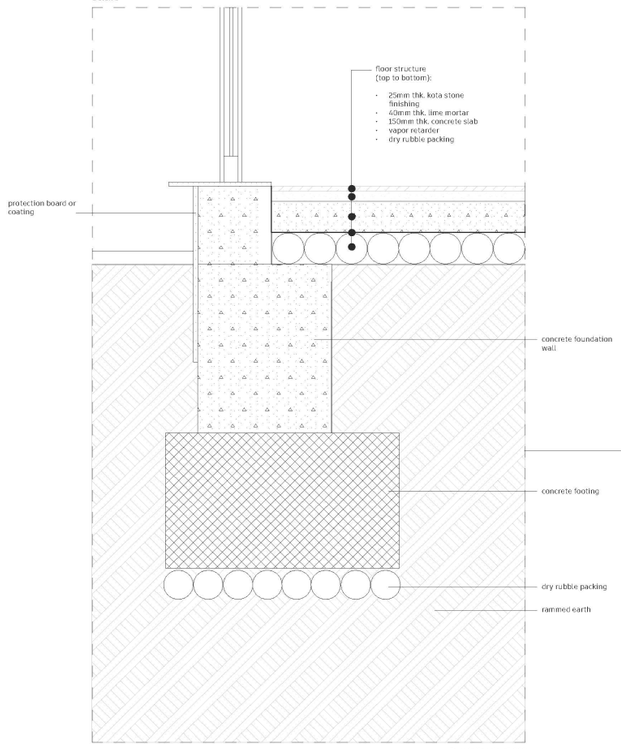
Perapet detail 1:10

Detail 2

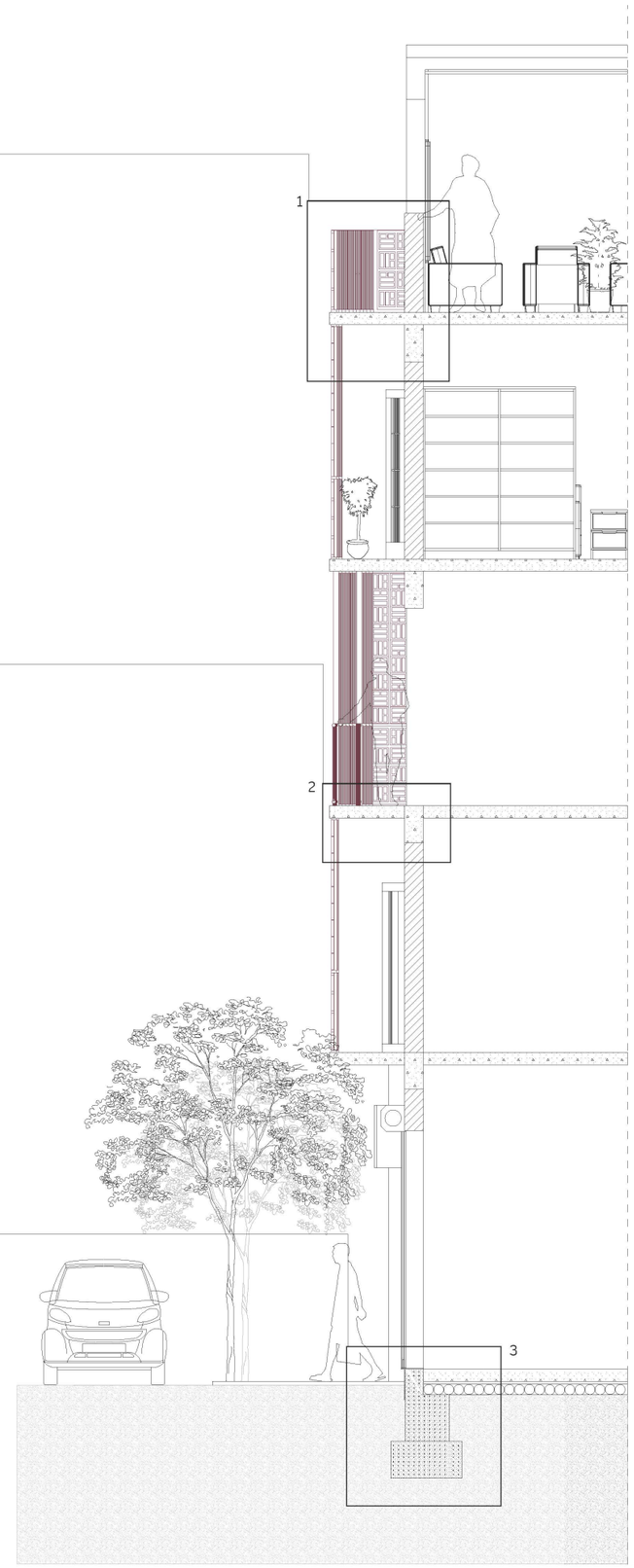


Terrace detail 1:10

Detail 3



Foundation detail 1:10



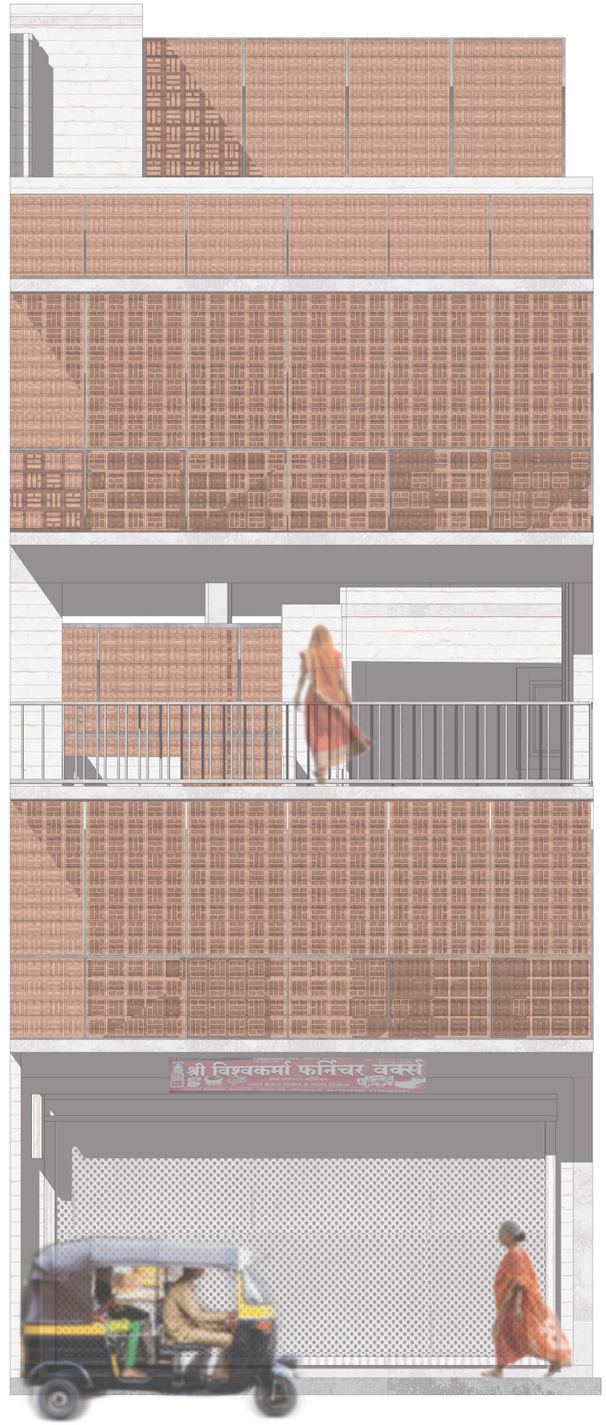


Fig. 94, Combination drawing (author's work, 2026)

[Working women studios]

Positioned within the second band of the masterplan, the studios for young working women serve as a critical component of the project's affordable housing strategy.

These units are specifically designated for low-income women and are intended to be government-subsidized and rented, providing a secure and accessible point of entry into the city's residential fabric.

To accommodate the needs of a single woman, each studio maintains a fixed measurement of 20m^2, ensuring typological consistency and efficient vertical density.

172
units

20
m^2 per unit

3440
m^2 in total

Fig. 95, Longitudinal section (author's work, 2026)

Fig. 96, Exterior view of working women units (author's work, 2026)

Vertical movement within the working women's residential band is organized through dedicated staircases positioned in between the housing clusters. These stairs facilitate a direct connection between all three levels, effectively linking the gallery walkways and communal terraces into a seamless network of shared circulation.

In this sense, this spatial arrangement supports the design's goal of fostering neighborhood vitality through integrated circulation, allowing for spontaneous social encounters along the upper-level paths.

Fig. 97, Building elevation (author's work, 2026)

Fig. 98, Groundfloor cluster plan (author's work, 2026)

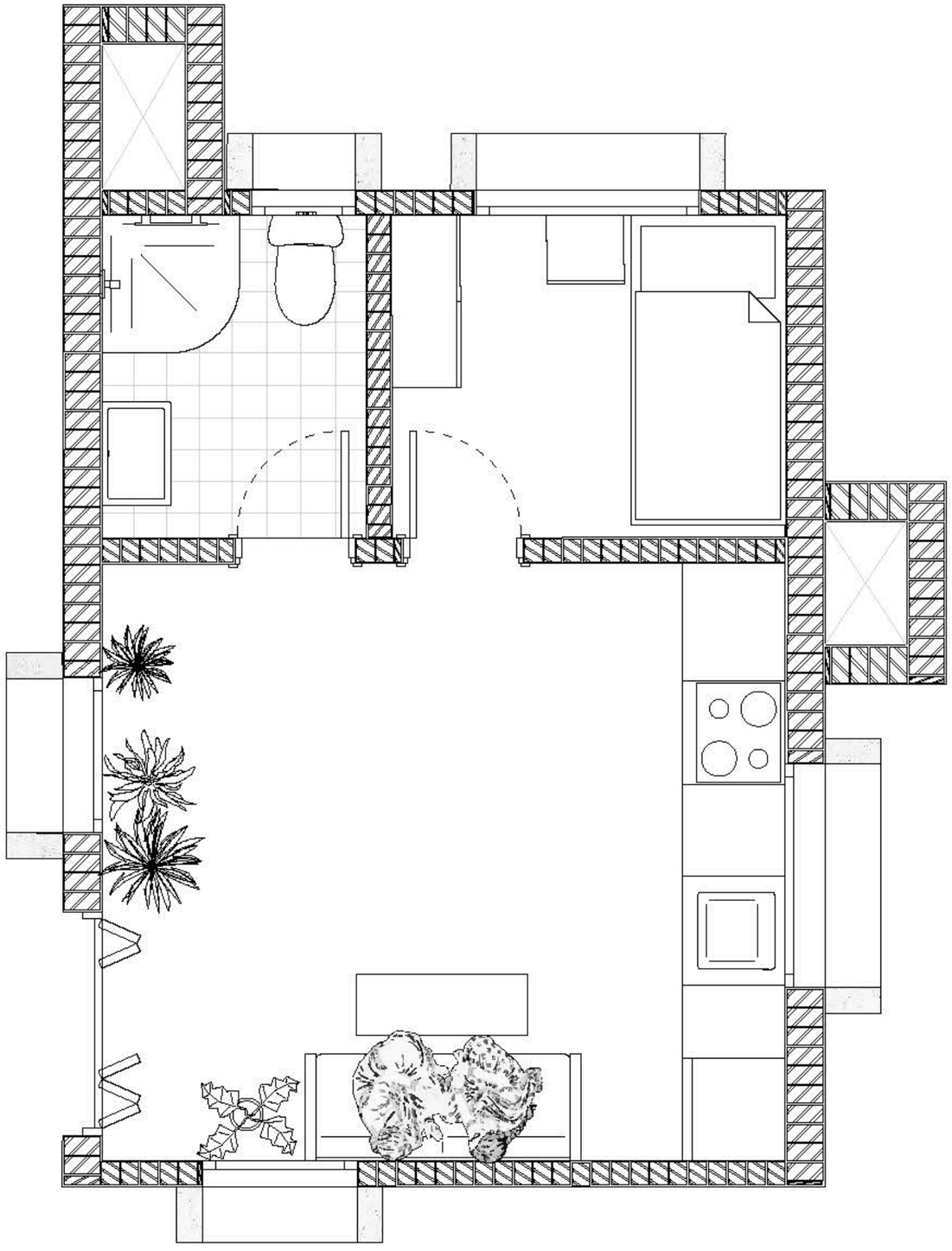


Fig. 99, Typical groundfloor unit (author's work, 2026)

Despite the compact footprint, the internal organization remains comprehensive, featuring a bathroom, a bedroom, a combined living and dining area and a kitchen area, to facilitate diverse domestic routines.

The architectural design of the first and second floors prioritizes social permeability through an expansive gallery system.

This circulation space is intentionally designed to ensure more than simple access, incorporating communal terraces where residents can gather, socialize and engage in collective activities.

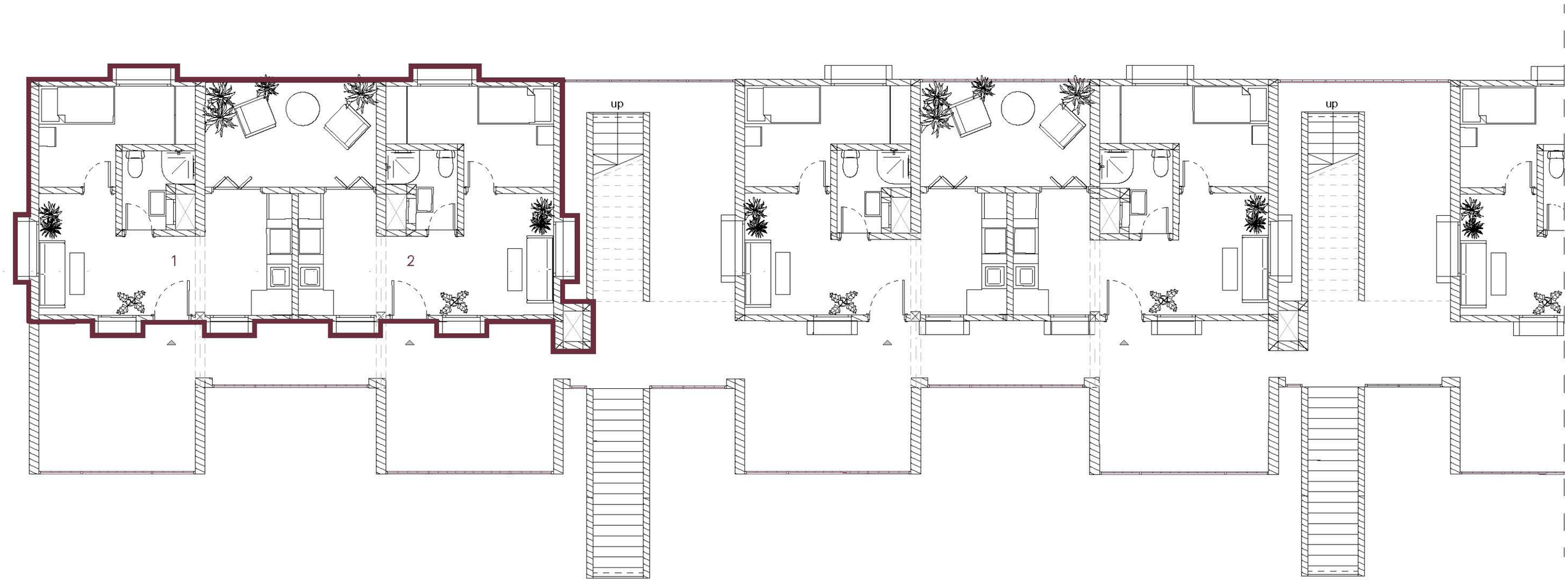
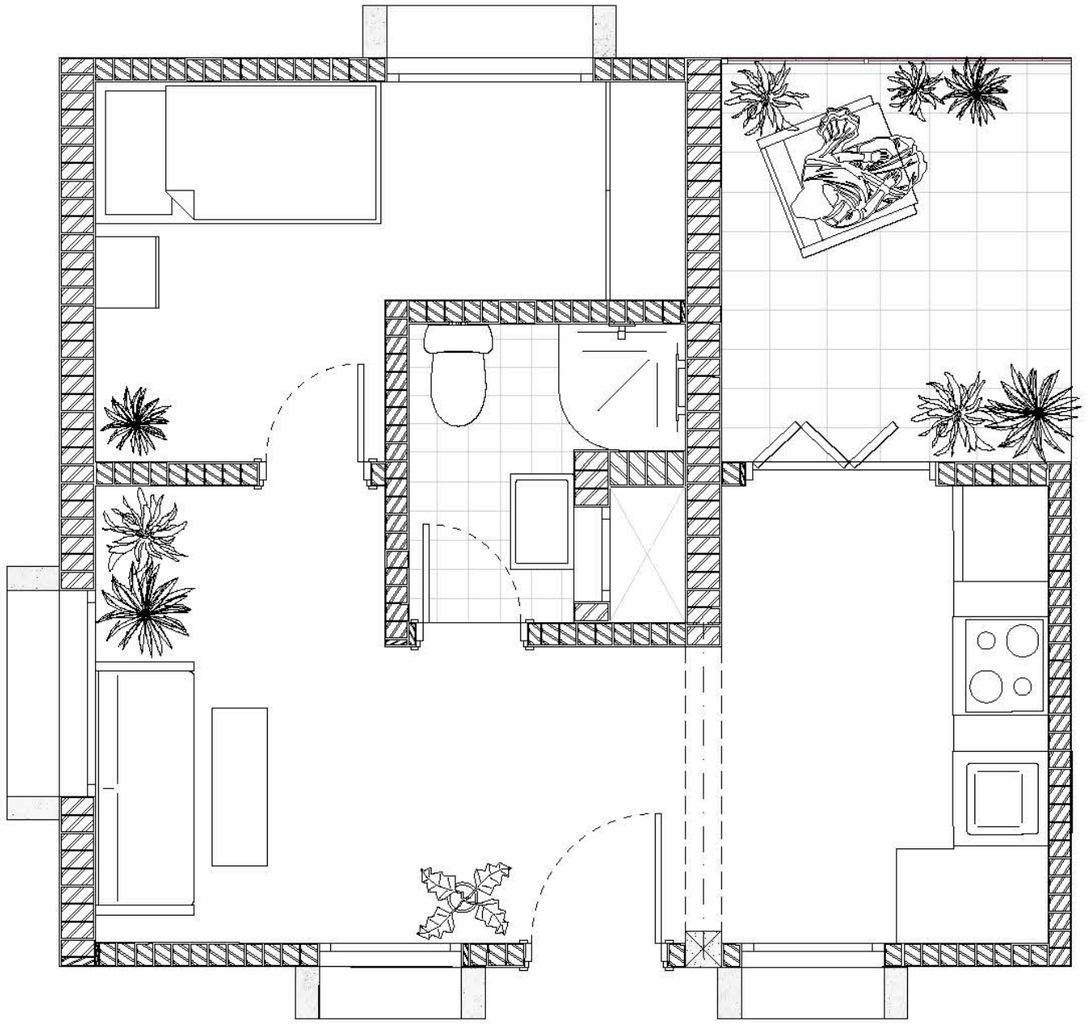


Fig. 100, First floor cluster plan (author's work, 2026)



To balance this communal focus with individual agency, units are coupled by smaller shared terraces, fostering a localized sense of ownership between pairs of neighbors.

These outdoor areas are shaded by pergolas and have terracotta *jali* screens, which provide natural ventilation and a high degree of privacy, allowing the women to occupy these semi-public spaces comfortably.

Fig. 101, Typical first and second floor unit (author's work, 2026)

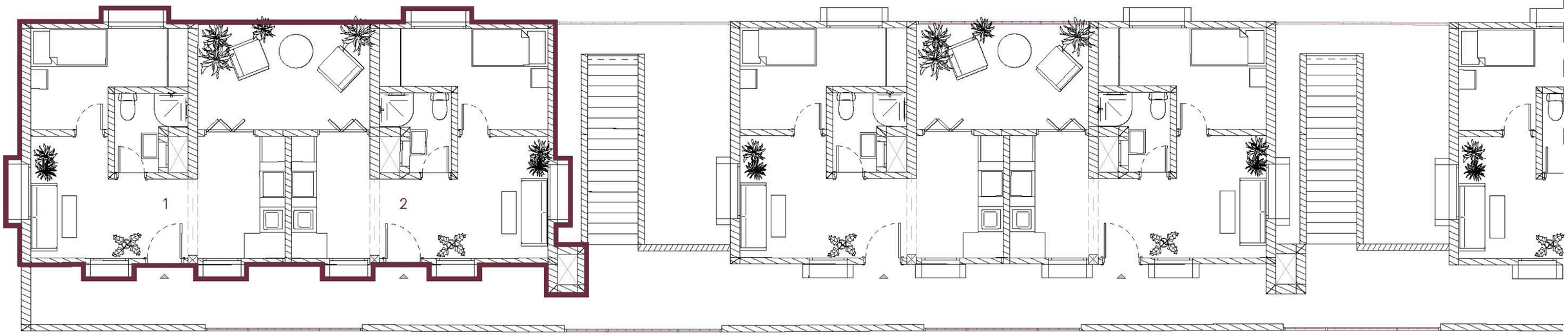


Fig. 102, Second floor cluster plan (author's work, 2026)

Fig. 103, Terrace view (author's work, 2026)

[Single-mother studios]

The innermost band of the masterplan is specifically reserved for single mothers and their children, placing this vulnerable demographic at the center of the “soft core” to ensure maximum protection and social support.

These units are designed with modularity in mind, offering larger studios of 30m^2 or 45m^2 that scale according to the number of children in each household.

61
30m^2 units

61
45m^2 units

4575
m^2 in total

Fig. 104, Exterior view of single-mother units (author’s work, 2026)

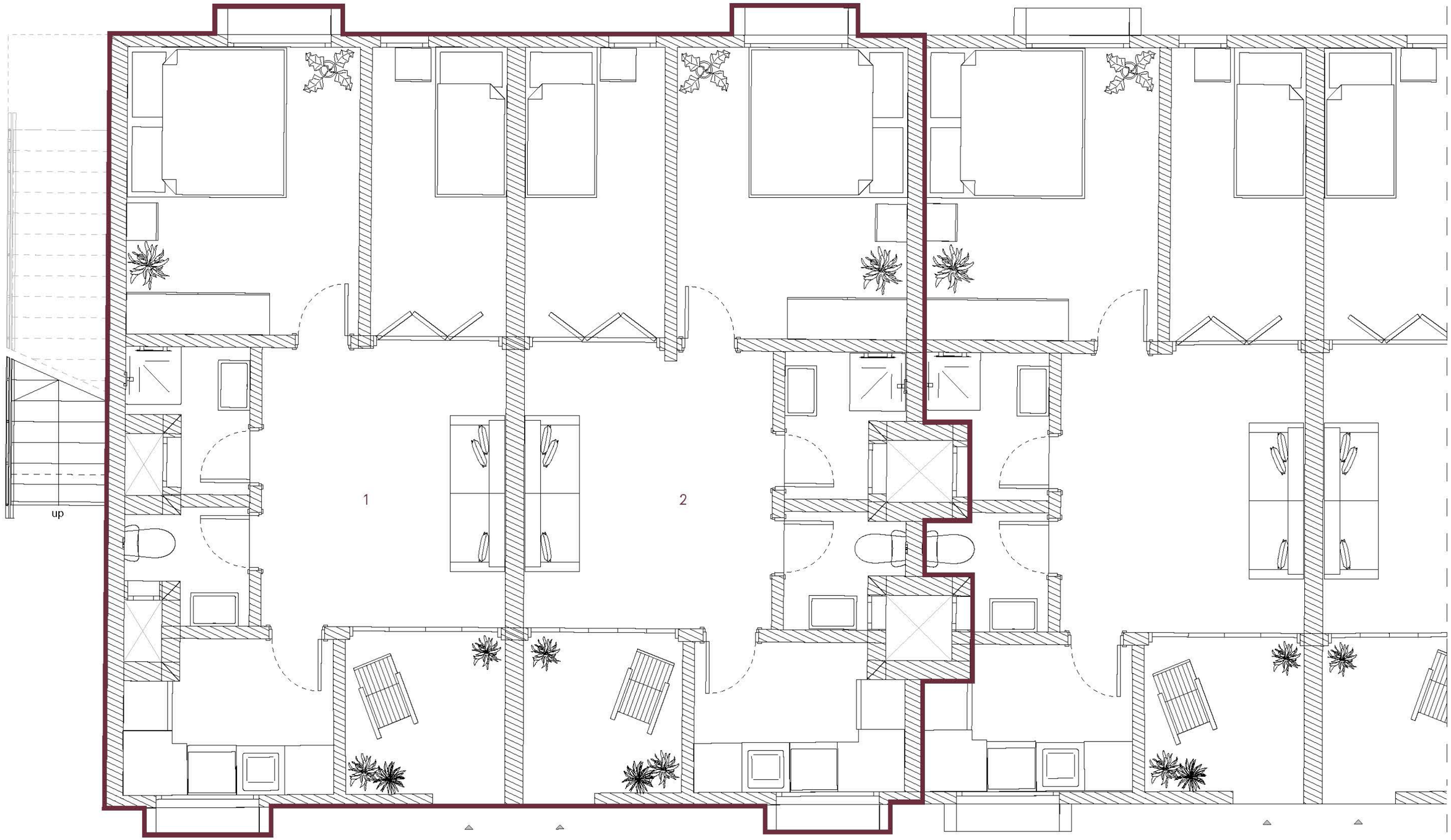
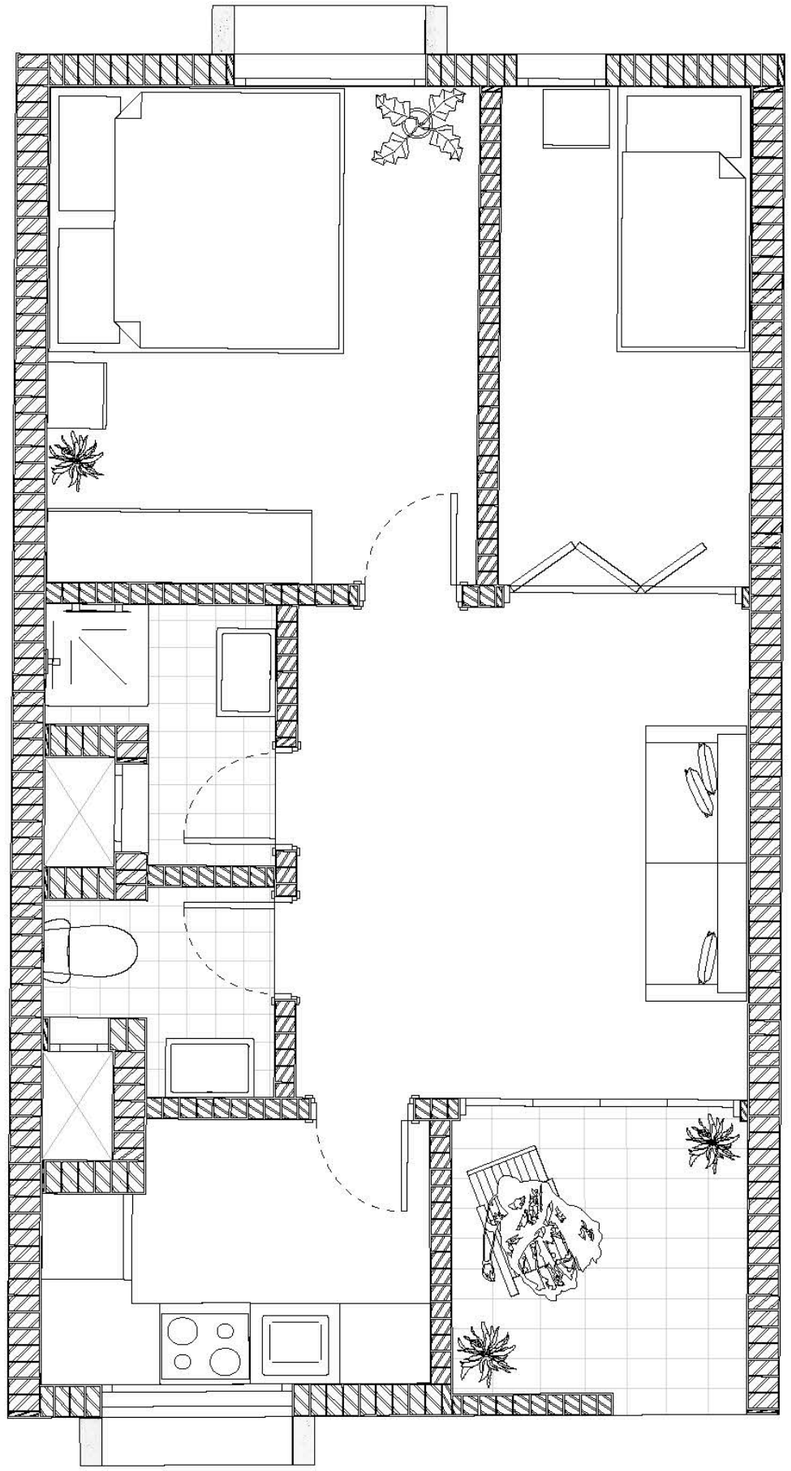


Fig. 105, Groundfloor cluster plan (author's work, 2026)



The 45m^2 units are situated on the ground floor to provide enhanced spatial capacity for larger families, featuring more spacious kitchens, bedrooms and living/dining areas, as well as a small private *otla*.

Fig. 106, Typical groundfloor unit (author's work, 2026)

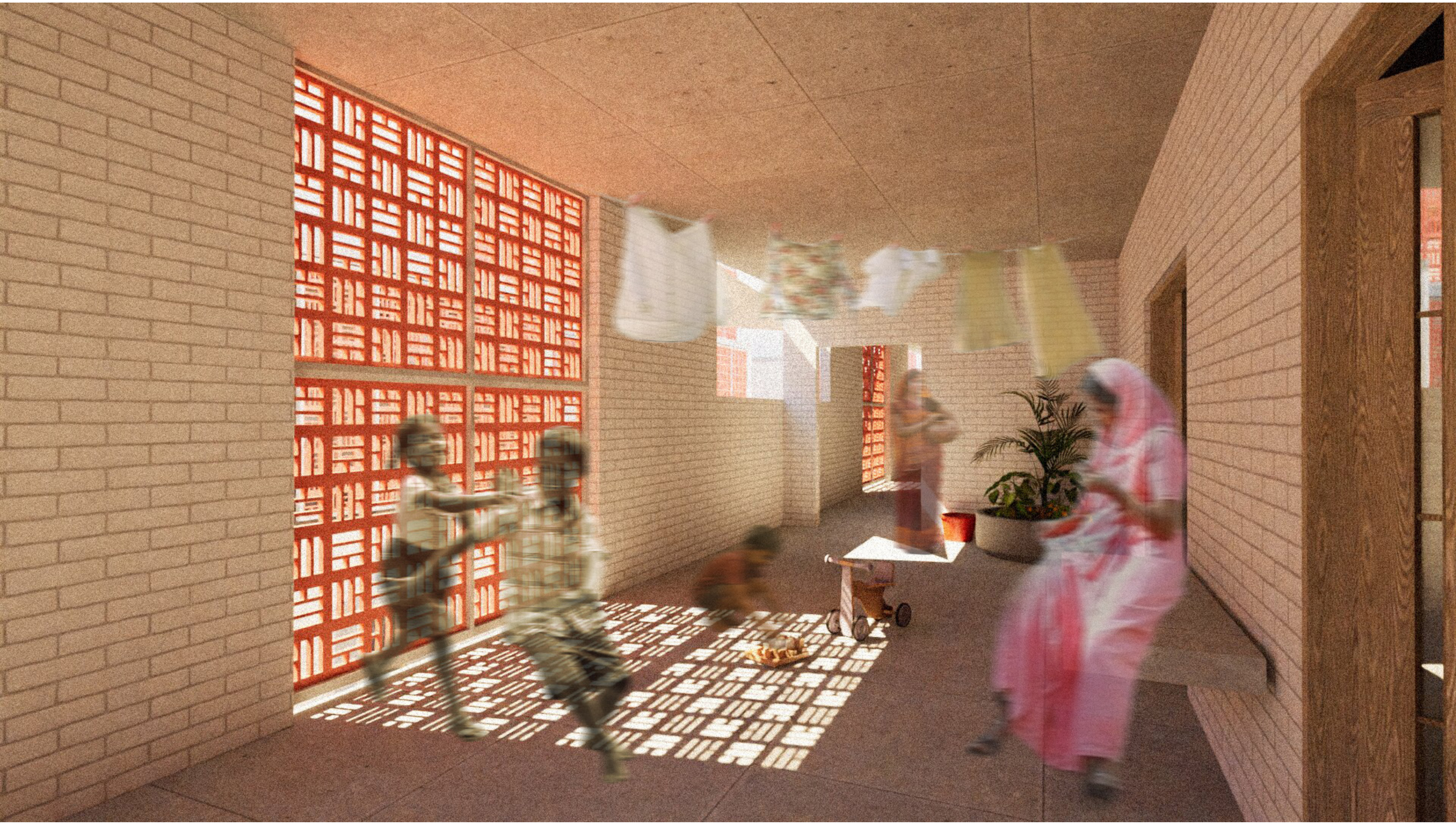


Fig. 107, Circulation corridor view (author's work, 2026)

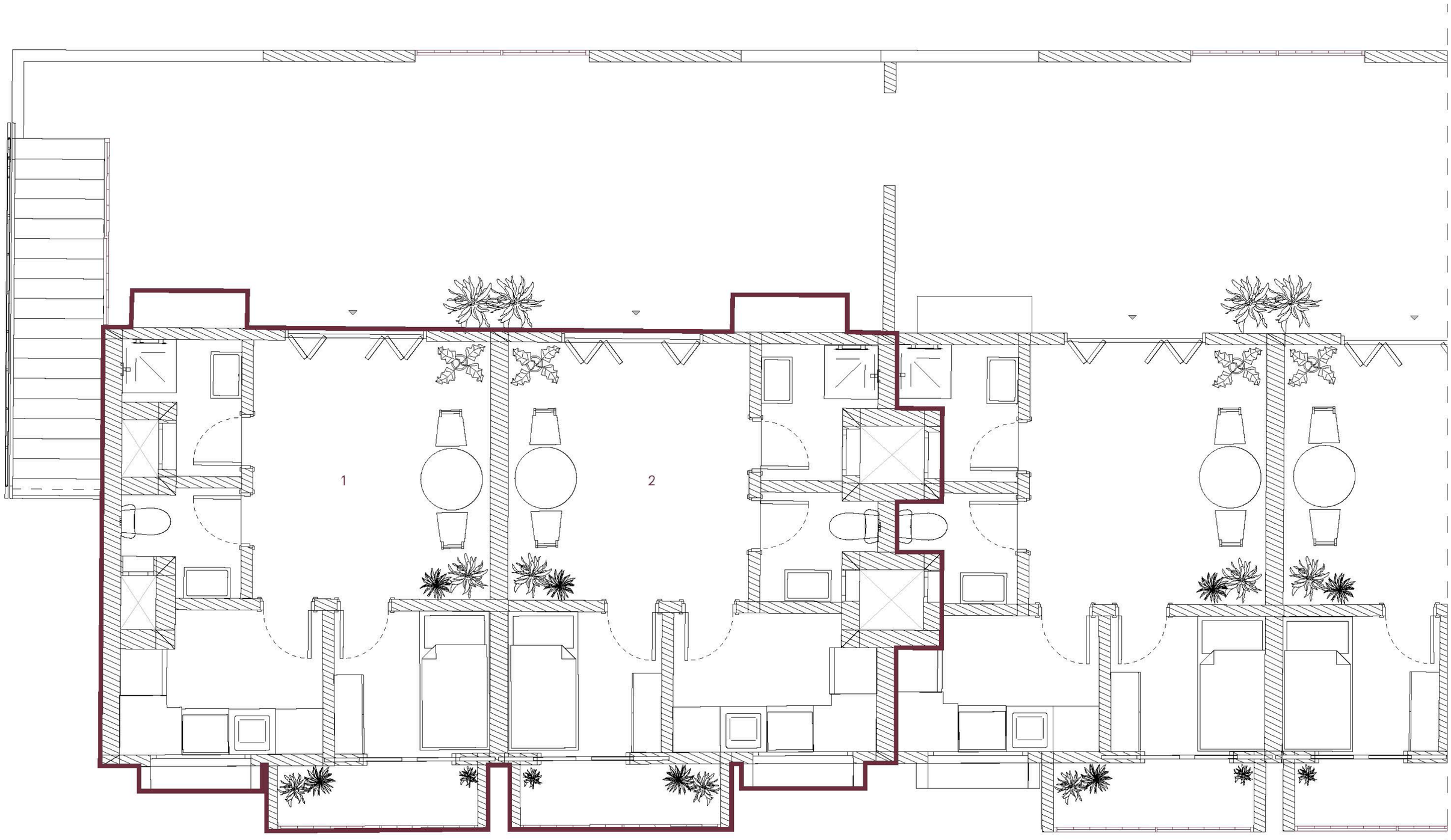


Fig. 108, First floor cluster plan (author's work, 2026)

The 30m^2 units occupy the first floor, which is reachable by a system of staircases located at each end of the building.

This shared vertical circulation not only provides rapid access but also functions as a hangout area, strengthening the immediate social bonds between the neighboring families.

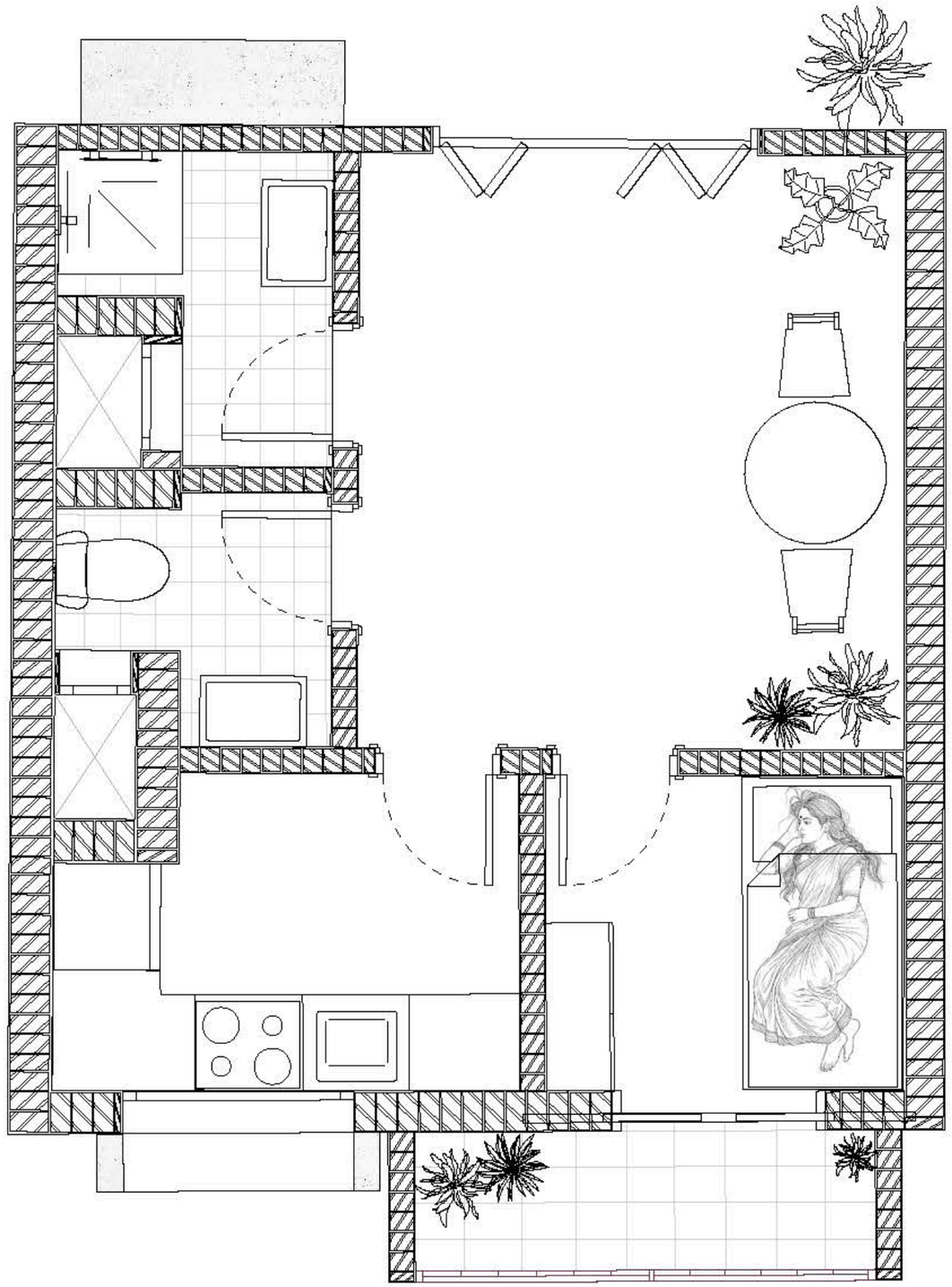


Fig. 109, Typical first floor unit (author's work, 2026)

The materilaity of this building further refines the project's architectural language of safety and surveillance. Here, the terracotta *jali* is again used strategically to balance natural ventilation and privacy while granting mothers a continuous way to maintain visual surveillance over their children in the courtyard-like spaces created in between the buildings of this cluster.

In keeping with the project-wide materiality, white plastered brickwork provides a canvas for resident personalization, while windows are encapsulated to provide passive shading.

Fig. 110, Building elevation (author's work, 2026)

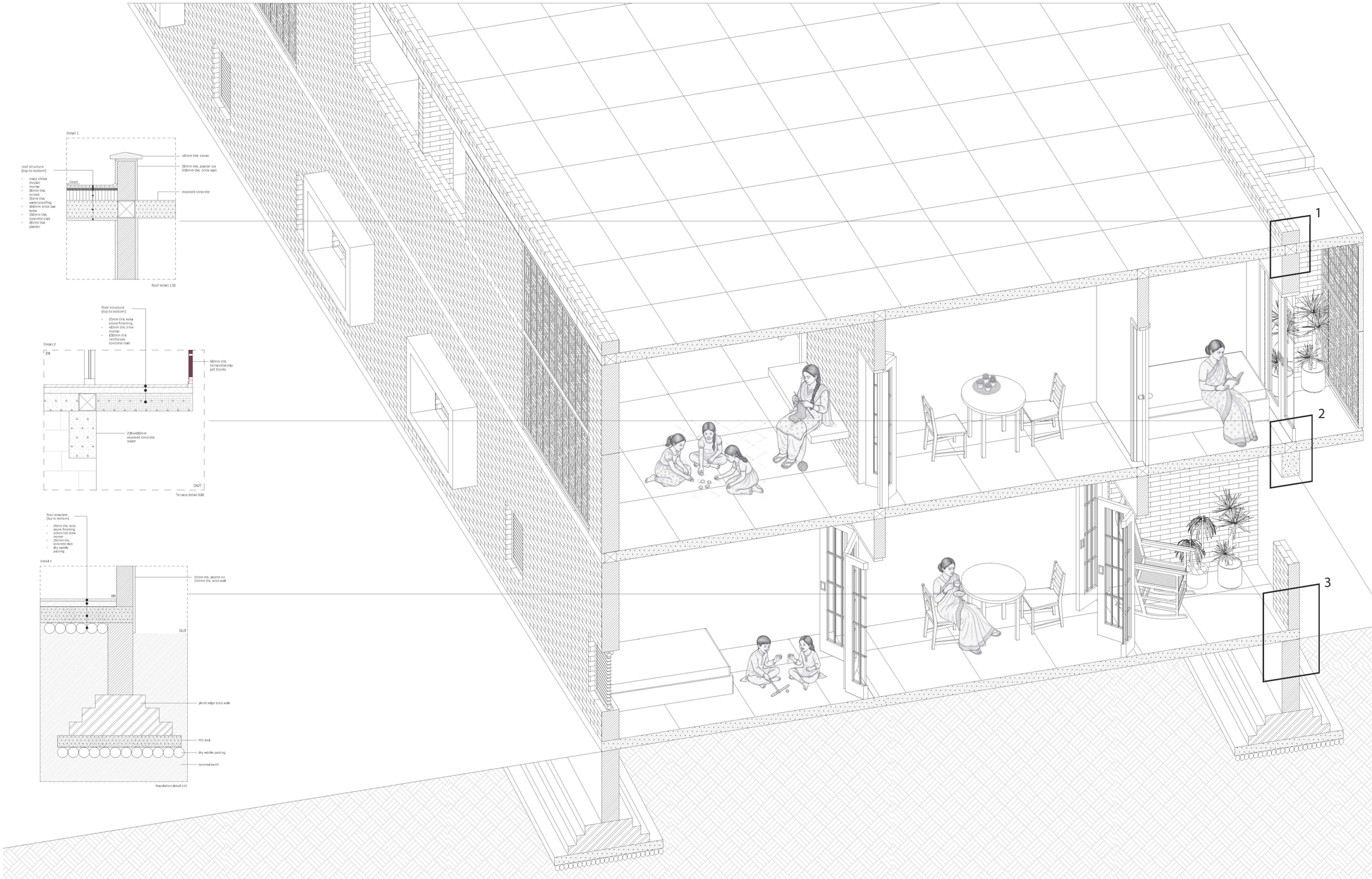


Fig. 111, Combination drawing (author's work, 2026)

PART 4

Conclusion and discussion

[Conclusion]

This dissertation, titled *Building Safety from Scratch*, has investigated the critical intersection of residential urban form and daily security of women in the context of a rapid densification of Ahmedabad, India. The study has directly confronted the paradox that high rates of economic growth reconfigure rather than erode gendered exclusion and has demonstrated that real safety cannot be achieved by reactive technological surveillance, retrofitted policing or isolating perimeter walls. Instead, security must be built into the architectural DNA of housing design and neighborhood planning.

Moreover, three foundational sub-questions were successfully answered in this project through a mixed-methods approach on the Bimanagar plot:

- **specific spatial qualities:** qualitative, hands-on architectural and sociological fieldwork confirmed that the most significant spatial parameters affecting women's sense of safety are environmental legibility, continuous illumination and an active, porous ground frontage; a lively commercial base prevents dead edges, turning neighborhood perimeters into safe transit corridors instead of anxiety-generating places

- **gendered spatial navigation and adaptability:** the project established that absolute legal tenure security in the form of homeownership provides a critical defense against systemic displacement as vulnerable groups navigate inflexible, exclusionary neighborhoods; for instance, the development of an incremental layout of "support and infill" enables women-led families to have the structural autonomy to change, subdivide or expand their homes over time; this template is flexible, enabling women to safely introduce home-based economic industries and to adjust to changing generational structures without financial displacement

- **risk reduction and visibility design principles:** at the cluster level, risk is reduced by strictly maintaining a low-to-mid-rise density matrix that maintains human-scale sightlines between private window thresholds and public sidewalks; the integration of dual public-private facades with perforated terracotta *jali* screens strikes a compromise between the contextual requirement for shade and seclusion and natural surveillance; furthermore, grouping distinct residential typologies by proximity and connecting them via upper-level structural bridges allows for continous movement through the entire plot which strengthens the sense of community this project aims for

Lastly, the resulting design intervention takes the Bimanagar site from a "missing urban puzzle piece" to a self-sustaining ecosystem in which the built environment actively redistributes women's mental weight of alertness. By demonstrating that gender-sensitive design creates a safer commons for all people, this project shifts the architect's responsibility from producing attractive forms to mediating social justice, transforming a survival landscape into an enduring infrastructure of care.

[Implications and/or recommendations]

The methodology and design choices executed in the Bimanagar masterplan offer vital spatial, financial and policy implications for future high-density affordable housing schemes in developing contexts. To scale and replicate this template effectively, the following recommendations are proposed for municipal authorities, real estate developers and architects:

1. Policy reforms: mandate gender-responsive development control regulations

- **de-incentivize gated complexes:** current institutional frameworks in Ahmedabad incentivize high-rise, restricted gated communities that utilize high compound walls; local planning bodies, such as the Ahmedabad Urban Development Authority (AUDA) and the Ahmedabad Municipal Corporation (AMC) should reform zoning policies to promote porous edge conditions; in addition, municipalities should offer density bonuses or incremental Floor Space Index (FSI) allocations to developers who replace blank perimeters with publicly accessible, commercially active plinths

- **low-to-mid-rise human-scale density:** to provide organic, natural surveillance over the public domain, affordable housing programs should place a vertical threshold cap on residential blocks in inner-neighborhood zones; maintaining structural heights at a low-to-mid-rise scale (maximum G+4 to G+6) ensures that a functional visual connection between private domestic balconies and public walkways is never structurally broken

2. Financial strategies: institutionalize cross-subsidization in Public-Private Partnerships (PPP)

- **concentric economic model:** financial plans should utilize revenue captured from premium commercial frontages along the active street edge and the outright sale of low-to-middle-income family housing units to absorb the upfront capital requirements of social infrastructure; this internal cash flow successfully funds and subsidizes long-term, low-cost rental units for high-risk groups, such as young working women and single mothers, without relying on unsustainable state grants or external charities

- **core-shell tenure security:** financial engines like the Pradhan Mantri Awas Yojana (PMAY) should explicitly back the "support and infill" model; state funding must prioritize providing permanent, un-evictable land titles and basic fixed utility cores (sanitation and wet service shafts) to women-led households at base construction cost, leaving non-structural internal partitions open to low-cost, incremental customization

3. Architectural design guidelines: transition to proactive infrastructures

- **group and localize specialized social infrastructure:** civic amenities must be structurally clustered in the immediate vicinity of their target housing models; grouping these programs into highly visible, naturally monitored civic hubs minimizes trip-chaining distances, addresses everyday time availability, and completely secures vulnerable interior zones

- **layer facades for climatic and social security:** double-skin facades serve a dual technical and socio-spatial purpose; traditional perforated elements, such as the terracotta *jali* used in this project

provide essential shading and passive cooling in hot climate areas like Ahmedabad, while simultaneously granting women a private, shielded domestic buffer zone for household chores, allowing them to maintain visual surveillance over adjacent spaces

- **multi-level circulation networks:** masterplans should utilize structural overhead bridges and open gallery walkways to link distinct residential blocks above the ground plane; elevating pedestrian paths establishes secure, cross-demographic circulation routes that bypass street-level traffic and blind spots, oferring the possibility for spontaneous informal encounters and reinforcing a resilient peer support network between residents

[Reflection]

[Introduction and initial positioning]

Choosing the Global Housing graduation studio was a deliberate decision to push the boundaries of my architectural education. I sought to step outside the familiar comfort zones of Eurocentric urban planning and immerse myself in a context defined by rapid densification, complex socio-spatial layers and deeply-rooted gender vulnerabilities. Before our studio travelled to India, much of my understanding of Ahmedabad was shaped by local registries, remote mapping and desk research on the urban spatial challenges of South Asia.

However, conducting intensive fieldwork in Ahmedabad, done in close collaboration with faculty and students from CEPT University, fundamentally reoriented my perspective. Witnessing the physical reality of the city's streets and observing the clear infrastructural divisions brought me a necessary sense of grounded realism to the project. The site visit revealed that designing for vulnerable demographics is not an exercise in romanticized or idealized architectural forms; rather, it requires a rigorous, value-based problem-solving approach that addresses real-world systems of survival and care.

[Project context and relation to the MSc track]

The Global Housing track emphasizes socially and environmentally responsible housing practices within complex international frameworks. My project, *Building Safety from Scratch*, directly responds to this direction by placing low- to middle-income women at the absolute center of the architectural intervention. Designing within the Bimanagar plot meant developing a cohesive spatial plan that successfully navigates severe overlapping urban crises: acute tenure insecurity, systemic public harassment, forced spatial containment and extensive "transport deserts" that disproportionately strip women of economic mobility and time.

The true architectural challenge of this graduation studio lays in executing a masterplan that functions seamlessly in repetition across four deeply interconnected scales: the urban, the neighborhood, the cluster and the dwelling.

- At the **urban scale**, the project looks at and adapts the common "fortress architecture" paradigm of sealing low-income developments behind hostile, unyielding compound walls. Thus, it positions an active street edge along the plot's perimeter, transforming the boundary into a public civic corridor lined with shops, pharmacies and micro-vending spaces. This provides continuous illumination and natural, self-regulating pedestrian flow into the surrounding streets, directly ensuring safe travelling for women navigating their residential neighborhood.

- At the **neighborhood and cluster scales**, the building blocks are organized and segregated by housing typology and immediate vicinity rather than a generic layout. This spatial grouping allows for the purposeful integration of specialized social infrastructure, such as an on-site daycare, a women's healthcare clinic, a children's school and skills development workshops directly into the neighborhood fabric. Capping the density at a low-to-mid-rise Floor Space Index (FSI) of 1.93 preserves intimate, human-scale sightlines. Moreover, every building cluster is designed with a dual public-private facade, using porous balconies and *jali* screens to maximize natural surveillance ("eyes on the street") over shared areas and communal pathways.

- At the **dwelling scale**, the design addresses varying financial capacities and family structures by introducing thre different typologies of housing ranging from 20m^2 studios to 120+m^2 family apartments. This layout empowers womens with the spatial autonomy to modify or expand their homes over time to safely accommodate home-based industries or shifting generational needs without risking financial displacement regardless of their social context.

[Interaction between research and design]

Throughout my graduation journey, a rigorous relationship was maintained between empirical research and project design. My early investigation into the spatial parameters influencing gendered safety revealed that traditional, reactive security measures (such as closed gating or high walls) frequently worsen urban isolation, creating hostile blind spots for female pedestrians. This research directly justified my decision to implement an open, highly porous masterplan layout that leverages natural community vigilance.

Furthermore, analyzing successful local precedents, such as the Mahila Housing SEWA Trust's (MHT) community-led revitalization of Dhal ni Pol in Ahmedabad's old city, offered significant lessons on the power of women's civic agency. Witnessing how organized local women could actively govern parking, manage waste and reclaim public squares from illicit activities proved that architecture is most resilient when paired with community implication. This research outcome heavily informed my stakeholder matrix, embedding institutional advocacy partners like SEWA into the operational management of Bimanagar's micro-vending stalls and skills workshops.

[Financial feasibility and replicability]

A critical limitation often found in socially-driven architectural proposals is an over-reliance on unsustainable charity or scarce government grants. To ensure that Bimanagar remains highly realistic and financially self-sustaining, the masterplan deploys a diversified cross-subsidization framework.

The upfront development costs of the social infrastructure and the state-subsidized rental housing units (designated for single mothers and young working or studying women) are absorbed by the capital generated from the low- to middle-income family housing block. Because women-led families buy their core structural shells at construction cost and self-build their infill layers, this sector serves as an internal economic engine for the plot. Backed by state municipal initiatives like the "Safe City" protocols, this model secures long-term tenure stability while the commercial rent collected from the active street edge creates ongoing revenue for long-term building maintenance and generates immediate, local job opportunities for the residents of the plot.

[Methodological reflection and academic value]

Reflecting on my methodology, my approach focused heavily on localized spatial mapping, field observation sketches and case study analysis of precedent initiatives both in the Indian context and outside of it. Embracing the challenge of a high-density, multi-story masterplan forced me to make difficult, value-based decisions where criteria like affordability, climate comfort, structural durability and spatial safety often conflicted.

The introduction of technical integrations, such as a closed-loop down-feed water management system utilizing overhead water tanks connected to the city network and using the double-skin *jali* facade to seamlessly hide AC compressor units, demonstrates that safety and climate comfort must be detailed directly into the building services, not treated as afterthoughts.

[Concluding remarks and moving forward]

This dissertation offers a scalable, interdisciplinary groundwork for future students and urban researchers at TU Delft who seek to examine the political, social and gendered dimensions of architecture. By combining qualitative fieldwork, stakeholder cross-subsidization and rigorous multi-scaled housing design, *Building Safety from Scratch* proves that housing and public space should never be a source of anxiety or fear for marginalized social groups.

Ultimately, this project affirms my core belief that architecture must serve as a catalyst for social empowerment, transforming a landscape of survival into an enduring infrastructure of care.

DATA MANAGEMENT CHECKLIST

Instruction

This checklist is relevant for all graduation projects of the Master AUBS. The form is intended to highlight common aspects of graduation projects that require particular attention with regard to planning the research and data management. Relevant information and supplementary sources regarding each question are provided below each question.

With this checklist, the faculty wants to avoid that students unexpectedly find themselves in complex and stressful situations, in which ethical or privacy matters and/or other laws and regulations become an issue. In projects involving humans, certain types of data processing increase the risks to the human participants: planning such projects requires additional evaluations and advice from university staff before ethical approval can be received and the project can begin. In the case of a graduation project, obtaining additional advice or permits may delay the project with an extra education period or semester. To avoid this, it is recommended that students set up a graduation project with a low level of risk. Therefore, all students have to check their risk, by completing this checklist before their A1.

The first section of the checklist (A) should be completed by all students, together with their supervisor, during the planning of the graduation project, before the A1. It does not need to be submitted to anyone for review or approval. Please consider questions 1 to 3 carefully in relation to the intended graduation project, and answer with 'yes' or 'no'.

The second section of the checklist (B) should only be completed if the graduation project involves working with data from human participants. In that case, the student and their supervisor must apply for and receive ethical approval from the Human Research Ethics Committee (HREC) before the project can begin (see the paragraph 'Explanation and follow-up' after the questions). The student can submit the application to the HREC, but the supervisor is responsible for making sure that the project is compliant with relevant privacy regulations and ethical policies.

Section A. General considerations	yes	no
1. Is the graduation project conducted as part of an internship (at a company), or as part of a research project at TU Delft? If a student's graduation project is conducted at a company or as part of a research project at the university, questions of data ownership and intellectual property rights need to be addressed in a written graduation or internship agreement before the project begins. Students and their supervisor should consult the Intellectual Property Rights of Students webpage. Additional information can also be found in the Extended Personal Research Data Workflow.		✓
2. Does the project involve conducting (part of) the research outside the Netherlands? Students who intend to travel abroad (even to other EU countries) for study, exchange, research, internship, or graduation project purposes need to follow the Travel Safety Protocol. This includes attending a mandatory Travel Safety Training Session: see the Disclaimer.	✓	
3. Will the research involve processing data from humans, such as running a survey, conducting interviews or workshops, collecting data through social media or internet forums, or re-using existing datasets about humans provided by a third party? (If 'yes', see follow-up questions 4 to 13 in Checklist B.) Students who work with data from human participants must complete the next section and apply for and receive ethical approval from the Human Research Ethics Committee (HREC) before conducting the research.		✓

Section B. Extended risk factors (only if question 3 has been answered with 'yes'.)	yes	no
4. Will the project involve participants who may be considered vulnerable, such as the elderly, refugees or asylum seekers, ethnic minorities, patients, or people with disabilities? Participants who may suffer very adverse consequences (for instance, due to discrimination) if their personal data became publicly available can be considered vulnerable.		✓
5. Will the project involve participants who cannot themselves give informed consent for taking part in the project, but for whom consent must be obtained from a legal guardian? Participants who cannot give informed consent can include, for instance, children or participants with intellectual disabilities, mental disorders, or dementia. Such participants are also considered vulnerable in the context of the General Data Protection Regulation (GDPR).		✓
6. Will the project involve processing any of the special categories of personal data below? - Race - Ethnicity - Criminal offence data - Political opinion - Union membership - Religious or philosophical beliefs - Sex life and/or sexual orientation - Health data (including measurements such as heart rate) - Biometric or genetic data (including fingerprints, iris scanning, facial recognition) The General Data Protection Regulation (GDPR) defines a stricter rules for processing special categories of personal data. If it is necessary to process these data in a project, it is it is important to provide additional safeguards.		✓
7. Will the project involve processing personal data that could be considered sensitive, such as the ones listed below? - Information about a person's income, debts, or other payments - Information about a person's (un-)employment status - Information about a person's performance at school or work - Information about relationship problems or (gambling) addiction - Information about poverty, domestic violence, or youth welfare/social work involvement Some types of personal data are considered sensitive, because they can have a high impact on the privacy of the data subject if other persons gain access to these data. Sensitive personal data should only be processed if necessary: in such cases, additional safeguards need to be put in place.		✓
8. Will the project involve processing video-recordings, or photographs of participants? TU Delft considers photographic and video-materials of research participants to be sensitive personal data. If such data need to be processed, additional safeguards must be put in place.		✓

Section B. Extended risk factors (only if question 3 has been answered with 'yes'.)	yes	no
9. Will the project involve sharing or transferring personal data between multiple partners or collaborating organisations involved, such as between TU Delft and an internship company? According to privacy law, sharing personal data between organisations requires a privacy agreement to be in place: setting this up takes time, and requires support from additional university staff. Furthermore, personal data sharing can potentially expose research participants to different types of risks: these risks must be considered in the ethical application.		✓
10. Will the project involve deception, or covert observation of participants? In some types of research, obtaining informed consent for processing participants' personal data is not an option: for instance, if the research involves deception, or the research is covert (conducted without participants knowing about it). In such situations, the steps to mitigate risks to participants are important, and an alternative legal basis for processing the participant's data needs to be established with the help of additional support staff.		✓
11. Will the project involve working with social media data? Social media data are personal data, but since it is usually not possible to ask for informed consent for processing social media data, another legal basis for processing the participant's data needs to be established. Processing of social media data also involves legal considerations related to terms of use of data from third-party platforms: therefore, research with social media data requires expert support on privacy, ethics, and legal matters.		✓
12. Will the project involve using learning algorithms or other AI to analyse, combine, or otherwise process data from participants? The use of AI in research involves many considerations in terms of data protection, ethics, security, and intellectual property: for more information, see TU Delft's Instructions for use of Generative AI.		✓
13. Will the project involve participants who are based in a country or countries outside of the EU? Students affiliated with TU Delft must comply with Dutch and EU regulations of personal data processing (GDPR). Furthermore, the student and their supervisor must make sure that the research complies with local (privacy) legislations of any foreign destinations. Additional support from an external (local) expert may be required.		✓

Explanation and follow-up

If you have answered 'no' to all questions 4 to 13, your project is likely to be considered low or minimal-risk: see the paragraph 'Projects with minimal or low-risk' on the next page.

If you have answered 'yes' to one or more of the questions 4 to 13, your research likely involves extended or high risks to participants, according to the General Data Protection Regulation (GDPR) and TU Delft's privacy and ethical policies: for information regarding such projects, see the paragraph 'Projects with extended or high-risk' on the next pages.

Projects with minimal or low-risk

If you have answered 'no' to questions 4 to 13, your project is likely to be considered low-risk. This does not mean that the project involves no risks at all, but suggests that these risks can likely be addressed by the student and supervisor in the application to the Human Research Ethics Committee (HREC) within the timeline for a graduation project and without need for additional support.

Compiling the HREC application:
An application to the HREC generally involves a Data Management Plan (DMP), a risk-identification and mitigation checklist, and informed consent materials. Master's students at ABE who intend to compile a HREC application are advised to make use of the following support documents:

- the student guide
- the Example Data Management Plan for MSc projects

The graduation supervisor is responsible for the student's project and ethical application, and must provide support for compiling the HREC application documents.

Additional support
For low-risk student graduation projects, compiling of the HREC application documents should be done by the student in consultation with the supervisor. The Faculty Data Steward can be contacted for individual questions at datasteward-BK@tudelft.nl: however, the Data Steward does not provide detailed feedback on student DMPs for low-risk HREC applications.

Additional resources
The HREC has guides available for completing the checklist and for compiling informed consent materials. Additionally, the Guide to the Extended Personal Research Data Workflow has been created to help researchers and students who work with human participants comply with both GDPR principles and TU Delft's policies on Data Management and Human Research Ethics.

Timeline
Minimal or low-risk HREC applications are generally processed faster than extended or high-risk applications (see the paragraph below). Nevertheless, the initial evaluation by the HREC usually takes approximately 2 weeks, and may take longer during busy periods or holiday: see the HREC website for up-to-date information. Additionally, the application may require revisions before final approval is granted. If you do not receive an initial response about your ethical application after 4 weeks from the time of submission, you may follow up with the HREC to enquire about an update.

Projects with extended or high-risk

If you have answered 'yes' to one or more of questions 4 to 13, there are potential increased risks related to how data from human participants will be processed in your project. These risks will need to be addressed in consultation with the Data Steward and other relevant support staff before submitting the ethical application to the Human Research Ethics Committee (HREC).

Compiling the HREC application
An application to the HREC generally involves a Data Management Plan (DMP), a risk-identification and mitigation checklist, and informed consent materials. Master's students at ABE who intend to compile a HREC application are advised to make use of the following support documents:

- the Ethical Approval & Data Management Planning Student Information
- the Example Data Management Plan for MSc projects

The graduation supervisor is responsible for the student's project and ethical application, and must provide support for compiling the HREC application documents.

Additional support
Once the DMP has been compiled and reviewed by the supervisor, feedback should be requested from the Data Steward via DMPonline. After this, any other necessary support staff will need to be contacted. Crucially, if the project involves one or multiple ways of personal data processing that could result in high-risk to the participants according to the GDPR, the TU Delft Privacy Team must be consulted to establish whether or not a Data Protection Impact Assessment (DPIA) is required.

Additional resources
The HREC has guides available for completing the checklist and for compiling informed consent materials. Additionally, the Guide to the Extended Personal Research Data Workflow has been created to help researchers and students who work with human participants comply with both GDPR principles and TU Delft's policies on Data Management and Human Research Ethics.

Timeline
It can take a long time to compile a complete research plan and HREC application for projects involving extended risks. DMP feedback from the Data Steward usually takes around 2 weeks, but can take longer during busy periods or holidays. Receiving additional support from other staff, such as the Privacy Team, can take anywhere from a few days to multiple weeks, depending on the project and capacity of university staff. If a DPIA is deemed necessary, it can take anywhere from 4 weeks to several months.

It is important to note that advice from the Privacy Team or other support staff, as well as any additional documents (such as necessary contracts, or a DPIA, if needed) must be in place before the application is submitted to the HREC. The initial evaluation by the HREC can be processed in 2 weeks, but may take longer during busy periods or holidays: see the HREC website for up-to-date information. Additionally, the application may require revisions before final approval is granted. If you do not receive an initial response about your ethical application after 4 weeks from the time of submission, you may follow up with the HREC to enquire about an update.

Considering the limited time available for students conducting their graduation projects, students working with data from human participants are strongly advised to prioritise low-risk research projects. If a student project necessitates processing data in ways that are considered extended or high-risk, both student and supervisor need to be aware of the extended processing times involved in obtaining ethical approval and beginning the graduation project.

[References]

[Figures]

Fig. 1: Fleck, A. (2023, November 24). *The economic cost of Gender-Based Violence against women*. Statista Daily Data. Retrieved from: https://www.statista.com/chart/31331/share-of-societal-costs-of-gbv-against-women-in-the-eu-27/
Fig. 2: Buchholz, K. (2025, November 25). The countries that are safe & unsafe for women. Statista Daily Data. Retrieved from: https://www.statista.com/chart/31858/georgetown-institute-women-peace-and-security-index/
Fig. 3: Sharma, D., Kiran, T., Goel, K., Junaid, K. P., Rajagopal, V., Gupta, M., Kaundal, H., Sharma, S., & Bahl, A. (2022). *Comprehensive assessment of age-specific mortality rate and its incremental changes using a composite measure: A sub-national analysis of rural Indian women*. Frontiers in Medicine, 9, 1046072. Retrieved from: https://doi.org/10.3389/fmed.2022.1046072
Fig. 4: Gaudiaut, T. (2025, November 26). *Domestic violence against Women: India's persistent crisis*. Statista Daily Data. Retrieved from: https://www.statista.com/chart/35517/statistics-about-domestic-violence-against-women-in-india/
Fig. 5 and 6: AcidCow. (n.d.). Ahmedabad at Night (16 pics). AcidCow. Retrieved from: https://acidcow.com/pics/16451-ahmedabad-no-life-last-night-v-silent-india.html
Fig. 7-17: author's work, 2026
Fig. 18: Viswanath, K., Kapoor, A., Mandal, R., Mehrotra, S. T., & Vyas, S. (2022, November). *She RISES a framework for caring cities*. Safetipin. Retrieved from: https://safetipin.com/report/she-rises-a-framework-for-caring-cities/
Fig. 19: author's work, 2026
Fig. 20 - 24: CityCollab. (2023). *Impact Assessment of Public Area Improvement of Dhal ni Pol, Ahmedabad*. HDFC. Retrieved from: https://www.hdfc.com/content/dam/housingdevelopmentfinancecorp/pdf/about-us/impact-assessment-reports/2023/public-area-improvement-dhal-ni-pol.pdf
Fig. 25 - 27: Nandi, T., & Abraham, A. (2020). *TURNING SPACES INTO PLACES IN MUMBAI*. In The City At Eye Level Asia. Retrieved from: https://thecityateyelevel.com/app/uploads/2020/10/TURNING-SPACES-INTO-PLACES-IN-MUMBAI_Tina-Nandi-Anca-Abraham-Love-Your-Parks-Mumbai.pdf
Fig. 28 - 35: Maganga, M. (2025, 1 September). *The City Outskirts: Suburbia and Low-Cost Housing*. ArchDaily. https://www.archdaily.com/977864/the-city-outskirts-suburbia-and-low-cost-housing
Fig. 36 - 42: Harvard University Graduate School of Design. (n.d.). *Malagueira Quarter housing project*. Urban Design Case Study Archive. Retrieved from: https://udcsa.gsd.harvard.edu/projects/3
Fig. 43 - 49: author's work, 2026
Fig. 50: TuDelftxCEPT students' work, 2026
Fig. 51: author's work, 2026
Fig. 52: TuDelftxCEPT students' work, 2026
Fig. 53: Rabia Yasar, 2026
Fig. 54: TuDelftxCEPT students' work, 2026
Fig. 55: Rabia Yasar, 2026
Fig. 56 - 111: author's work, 2026

[Text]

1. Bansal, K., & Bali, A. (n.d.). *Empowering Women: Enhancing urban safety in modern cities*. National Institute Of Urban Affairs. Retrieved from: https://niua.in/blogs/empowering-women-enhancing-urban-safety-modern-cities#:~:text=Thus%2C%20creating%20safe%20cities%20for,%2C%20especially%20women%2C%20feels%20secure

2. CityCollab. (2023). *Impact Assessment of Public Area Improvement of Dhal ni Pol, Ahmedabad*. HDFC. Retrieved from: https://www.hdfc.com/content/dam/housingdevelopmentfinancecorp/pdf/about-us/impact-assessment-reports/2023/public-area-improvement-dhal-ni-pol.pdf

3. Cornago Bonal, I., & Desai, J. (Eds.) (2020). *Ahmedabad Cross Section*. CEPT University Press

4. DD News. (2024, 13 August). *MOSPI's 'Women and Men in India 2023' reveals progress and gaps in gender equality*. DD News. Retrieved from: https://ddnews.gov.in/en/mospis-women-and-men-in-india-2023-reveals-progress-and-gaps-in-gender-equality/#:~:text=The%20Ministry%20of%20Statistics%20and,insights%20for%20policymakers%20and%20researchers

5. Gupta, C. U. (2025, 10 December). *Section 135 CSR Compliance: Mandatory contributions, committees & reporting*. TaxGuru. Retrieved from: https://taxguru.in/company-law/section-135-csr-compliance-mandatory-contributions-committees-reporting.html

6. Harvard University Graduate School of Design. (n.d.). *Malagueira Quarter housing project*. Urban Design Case Study Archive. Retrieved from: https://udcsa.gsd.harvard.edu/projects/3

7. Kaushik, H. (2024, 6 March). *Six women raped every day in Gujarat in FY23*. The Times Of India. Retrieved from: https://timesofindia.indiatimes.com/city/ahmedabad/six-women-raped-every-day-in-gujarat-in-fy23/articleshow/108249785.cms

8. Maganga, M. (2025, 1 September). *The City Outskirts: Suburbia and Low-Cost Housing*. ArchDaily. https://www.archdaily.com/977864/the-city-outskirts-suburbia-and-low-cost-housing

9. Mahadevia, D., Bhatia, N., & Bhatt, B. (2018). *Private sector in affordable housing? Case of slum rehabilitation scheme in Ahmedabad, India*. Environment and Urbanization ASIA, 9(1), 1–17. Retrieved from: https://doi-org.tudelft.idm.oclc.org/10.1177/0975425317748449

10. Ministry of Housing and Urban Affairs. (2021). *Pradhan Mantri Awas Yojana (Urban) - Housing for All: Mission Guidelines*. Government of India. Retrieved from: https://pmay-urban.gov.in/

11. Nandi, T., & Abraham, A. (2020). *TURNING SPACES INTO PLACES IN MUMBAI*. In The City At Eye Level Asia. Retrieved from: https://thecityateyelevel.com/app/uploads/2020/10/TURNING-SPACES-INTO-PLACES-IN-MUMBAI_Tina-Nandi-Anca-Abraham-Love-Your-Parks-Mumbai.pdf

12. Observer Research Foundation. (2023, 23 May). *Rethinking the Challenge of Women's Safety in India's Cities*. ORF. Retrieved from: https://www.orfonline.org/research/womens-safety-in-indias-cities?utm_source

13. Sandhir, M. (2025, 2 April). *Gender, Mobility, and Social Equity: Lessons from Ahmedabad's Streets*. PRIA. Retrieved from: https://www.pria.org/blog/democracy-for-all/gender-mobility-and-social-equity-lessons-from-ahmedabad-s-streets/3213

14. SEWA Bharat. (2023). *Advocating for Women's Right to the City: Housing and Infrastructure*. SEWA Bharat. Retrieved from: https://sewabharat.org/our-work/housing/

15. Sharma, M. (2024, 1 September). *Women's safety in building plans a must, say design experts*. Hindustan Times. Retrieved from: https://www.hindustantimes.com/cities/delhi-news/womens-safety-in-building-plans-a-must-say-experts-101725214775377.html

16. The Global Goals. (2024, 23 January). *Goal 5: Gender equality*. The Global Goal. Retrieved from: https://globalgoals.org/goals/5-gender-equality/

17. Thinkwithniche. (2025, 25 September). *Top 10 cities in India by GDP in 2025 | India's economic powerhouses*. Thinkwithniche. Retrieved from: https://www.thinkwithniche.com/blogs/details/top-10-cities-in-india-by-gdp-in-2025-indias-economic-powerhouses

18. UN Women. (2025, 19 November). *Facts and Figures: Ending Violence against women*. UN Women. Retrieved from: https://www.unwomen.org/en/articles/facts-and-figures/facts-and-figures-ending-violence-against-women#:~:text=Global%20scale%20of%20violence%20against%20women%3A%20An%20estimated,per%20cent%20of%20women%20aged%2015%20and%20older%29

19. UN Women. (n.d.). *Global database on Violence against Women and Girls*. UN Women Data Hub. Retrived from: https://data.unwomen.org/global-database-on-violence-against-women

20. Viswanath, K., Kapoor, A., Mandal, R., Mehrotra, S. T., & Vyas, S. (2022, November). *She RISES a framework for caring cities*. SafeTipin. https://safetipin.com/report/she-rises-a-framework-for-caring-cities/

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