permanent temporality

mitigating housing insecurity for migrant naka workers in Ahmedabad

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part one

problem statement
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Introduction

1.1 Problem statement

In urban India, the distribution of housing shortage is highly unequal across income groups. Most of the shortage is concentrated in lower-income groups: 40.6 percent in Economically Weaker Section (EWS) 1 households, 56.8 percent in EWS 2 households, compared to 2.6 percent in LIG households and merely 0.04 percent in MIG and HIG housesholds (Roy & ML, 2020). This reveals a structural imbalance in which lower-income groups carry the burden of housing shortage.

In the rapidly urbanizing city of Ahmedabad, this inequality becomes visible in the living conditions low income migrant workers. Ahmedabad's economy has historically depended on migrant labor, first in the textile industry and currently in the construction sector. Despite their essential role in building the city, migrant workers are often excluded from formal housing systems. Many migrant workers live in squatter settlements, roadside camps or temporary constructions (Desai, 2024). The informal settlements they live in are often relocated, destroyed or at risk of eviction because of redevelopment projects. At the same time, formal housing remains costly, inflexible and poorly adapted to the evolving needs of migrant workers. The temporariness of these informal settlements creates a problem; it excludes residents from forming social networks, economic stability and leaves them unprotected against insects and environmental conditions such as extreme heat, flooding and monsoon (Desai, 2024).

Construction workers often live on worksites, on the roadside or in "illegal" Basti, which are settlements. Some of the settlements are fixed locations on crossroads, called "Nakas". The people that live here often wait for contractors to pick them up for work. In Ahmedabad there are around 100 Nakas. This type of work is not seasonal, but often the migrant workers have strong ties with their villages (Das, 2017).

Many migrant daily wage construction workers live on the construction site. The arrangement where workers live at their workplace is characteristic for Ahmedabad's informal industrial sector. In most factories living arrangements are segregated based on caste, ethnicity and language. Workers from the most marginalised groups are often given the hardest and most dangerous jobs in the factory and are kept isolated from the other workers (Kaushal & Nair, 2024).



Basti / settlement in Rajiv Nagar, Ahmedabad, India. Picture taken by author.



Naka. Rajiv Nagar, Ahmedabad, India. Picture taken by author.

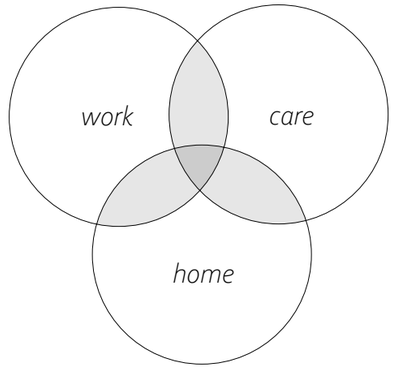


Kutcha.
Rajiv Nagar, Ahmedabad, India. Picture taken by author.

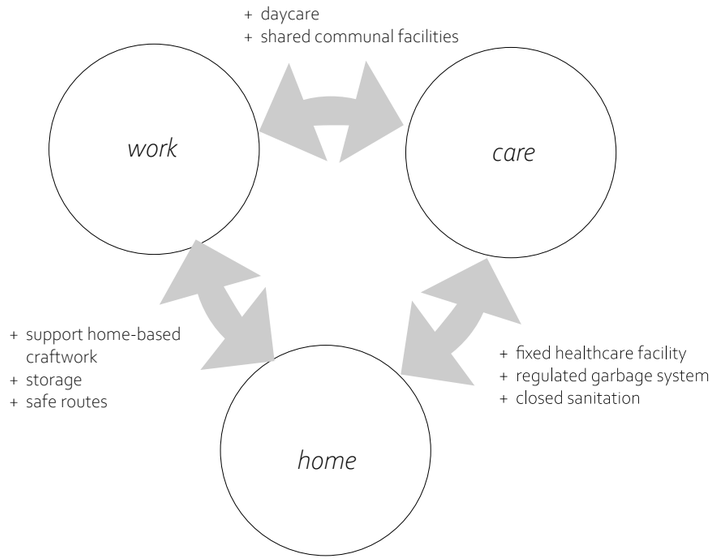
Circular migrant nakaworkers in Ahmedabad usually live in three main typologies: 48% in rental housing, 18% in squatter settlements and 14% in settlements in public spaces (Desai, 2024). This means that a large part of the nakaworkers deal with unstable housing situations since these settlements are often at risk of eviction. A survey held by Desai in 2018 showed that from the residents in these squatter settlements 85% lived in kutcha shelters and 15% lived in the open (Desai, 2024). The people that live in the open and do not have a shelter leave their belongings tied into a bundle before leaving for work. In this survey some migrants explained that they made kutcha shelters to avoid losing a larger investment in case of eviction and others that it was not allowed to build anything else than a kutcha shelter (Desai, 2024). Many of these settlements are not included in the list of identified slums of Ahmedabad Municipal Corporation and therefore lack basic services such as water, sanitation and electricity (Desai, 2020). This showcases how unstable and uncertain their living situation is.

The temporariness of these informal settlements creates a cycle of extreme housing insecurity, resulting in poor living conditions. The constant risk of eviction prevents residents from investing in improving their living situation. Therefore they are unprotected against environmental conditions, basic needs stay improvised and they stay excluded from forming long-term social networks and reaching economic stability. There is a lack of adequate, secure and flexible housing that suits the needs of migrant workers.

The absence of spatial structures that mediate between work, care and domestic life forces naka workers, especially women and children, to inhabit unsafe, undignified and unhealthy environments. Women often commute in groups to the naka pick-up point since it is not safe for them to go alone. Children often accompany their mothers to the construction site, as there is a lack of an affordable daycare system. Healthcare systems are often not accessible or temporary, as seen on the site where there was an ambulance on the naka pick up point funded by the government. Although this indicates that some regulations exist to provide care for naka workers, these interventions remain temporary. Moreover, they fail to address the underlying spatial and social conditions that create insecurity.



The absence of spatial structures that mediate between work, care and domestic life forces naka workers (especially women and children) to inhabit unsafe, undignified and unhealthy environments.



1.2 Research questions

To address these challenges, the central research question is:

"How can **flexibility** be used as a **design approach** to provide **secure** and **socially supportive living conditions** for **migrant households** in informal settlements?"

Goal: address housing insecurity and reduce risk of eviction
Target group: migrant households in informal settlements
Approach: flexible housing

Sub-questions include:

1. What are the spatial, social and economic **needs and conditions** of circular and permanent migrant households?

2. How can permanent structures allow incremental infill, household growth and changing users over time?

3. How can design **address housing insecurity** and reduce risk of eviction?

The aim of this project is to provide flexible and socially supportive housing for migrant households with different income levels and household structures, while reducing housing insecurity and the risk of eviction. The goal is to create a repeatable cluster that combines housing, shared facilities and public spacewithin a system that is resilient to change.

1.3 Relevance

This research is socially and professionally relevant. It addresses challenges related to rapid urbanisation, migration and housing insecurity in India. Migrant workers are essential to the economy of Ahmedabad, yet remain structurally excluded from formal housing systems. This reflects a wider global condition in which essentail labor is spatially segregated from adequate and secure living conditions.

Architecturally, this project challenges the idea that housing should be either permanent or temporary. It explores how long lasting frameworks can accommodate evolving and dynamic ways of living, developing spatial strategies relevant in contexts characterised by migration, climate stress and informal urbanisation.

Professionally, the research contributes to architectural and urban design concerning incremental housing, affordability anf adaptability. It questions how architects can operate within systems of uncertaincy and informality.

My personal motivation comes from my interest in social architecture and creating meaningful projects. From my prior history thesis on Housing the homeless in Amsterdam I learned that the built environment has a large im pact on the inclusion of vulnerable communities. This motivates me to explore design strategies that can intervene in the cycle of housing insecurity.

1.3 scope

The project focuses on migrant worker households living in informal settlements in Rajiv Nagar, next to a naka pick-up point where workers gather daily for employment opportunities. This context is characterised by housing insecurity, changing households and a strong dependency on proximity to work opportunities. These conditions inform the design approach, which seeks to accomodate short- and long-term occupation within the same spatial system.

The design proposes flexible housing clusters that can accomodate single workers, small families and larger households, while integrating shared facilities such as daycare, healthcare and communal spaces. These shared functions are are directly linked to the social and economic conditions of the naka-system, where care, work and waiting often overlap within the same environment.

The design addresses housing insecurity, exploring how spatial and architectural strategies can support safety, social interaction, adaptability and resilience.

The project incorporates a managerial strategy based on mixed-income occupation. Within this system, higher- and middle-income dwellings contribute to lower-income and EWS housing units. This cross-subsidy model enabels the integration of different income groups within the same housing clusters, while maintaining affordability and acces for more vulnerable households. This way, economic diversity becomes an integral part of the housing system .

The project is limited to architectural and spatial strategies, while acknowledging governance and policy factors as context.

part two

2.1 methods
2.2 theoretical framework
2.3 casestudies

Methods and theory

2.1 methods

This project follows a research by design approach, informed by theoretical research, site analysis and design exploration. The objective is to translate theoretical insights and observations into spatial and architectural strategies that respond to housing insecurity among migrant households.

The approach starts with analysis of the spatial, social and environmental conditions of the site; Rajiv Nagar. This analysis includes researching existing housing typologies, settlement patterns, street life and everyday practices. Through fieldwork and conversations with residents, the project investigates daily routines, mobility, care and safety, ensuring the design responds to lived experience.

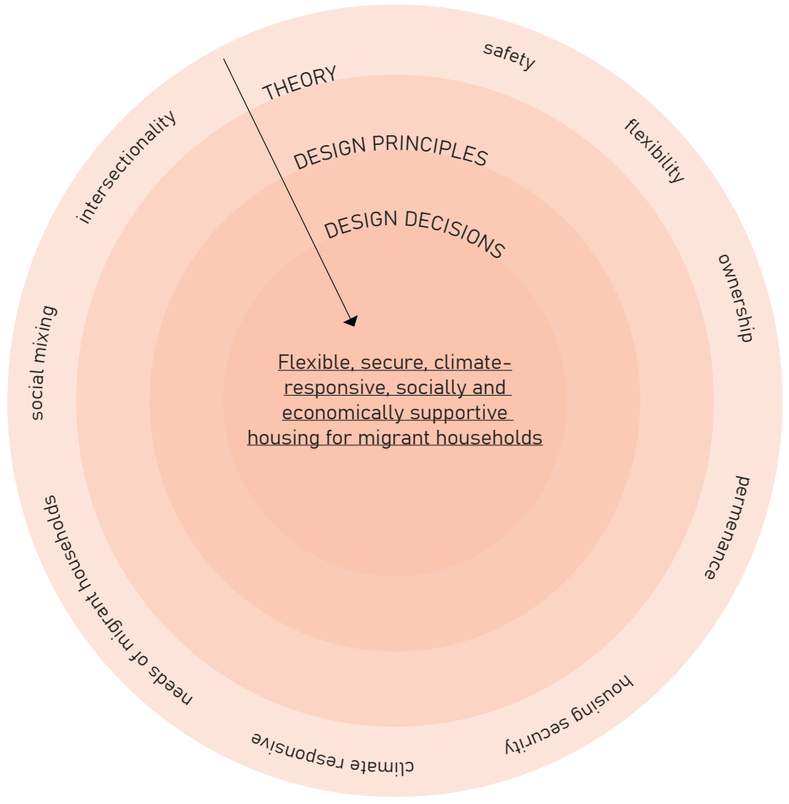
Literature on informal settlements, migrant housing, flexibility, environmental design and housing insecurity define the guiding spatial principles. The design phase translates these principles into a coherent architectural framework. Through drawings, diagrams and models configurations of typologies, thresholds, shared spaces, clusters and structural systems are tested and explored.

2.2 theoretical framework

This research builds a theoretical framework that learns from the often undervalued spatial and social qualities of informal settlements. Rather than viewing these settlements as unplanned or chaotic, the framework recognises that they often offer clear logics that support social life and economic activity.

By focusing on aspects such as ownership, flexibility, permanence, safety, migrant household needs, social mixing and housing insecurity, the framework provides insights into how housing design can respond to the realities of migrant life. Each theory adds to the understanding of how space is produced, used and negotiated over time. Together, they inform an architectural approach that treats housing not as a finished product, but as a structure that can be inhabited, adapted and combined through everyday life.

These insights are elaborated in the following section.



Theoretical framework: theory informing the design principles and decisions. Author (2026).

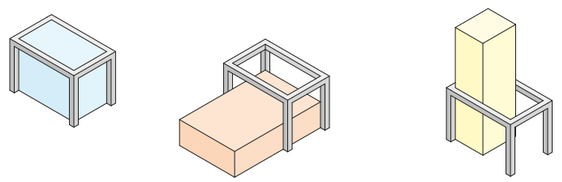
2.2.1 Ownership, Flexibility and Permanence

It is crucial to understand John Habraken's distinction between 'ownership' and 'possession' of housing. Habraken argues that legal ownership does not necessarily determine whether a space feels like home. He states: "A person self determines through its attendance what a house is. It is about the lived relationship people have with space and the ability to occupy, adapt and personalise it, while ownership is a legal condition" (Habraken, 1985). This distinction is relevant when designing housing for migrant workers, because they often lack formal tenure. Providing a more permanent structural framework that residents may not legally own but can inhabit and modify can offer a sense of control, identity and belonging. Flexibility becomes a tool for empowerment rather than a sign of temporariness.

Turner's work complements this perspective by framing housing as an ongoing process rather than a finished product (Turner & Fichter, 1972). Housing changes through use as residents adapt and reshape their dwellings in response to shifting needs and available resources. This reinforces housing as a process shaped by use.

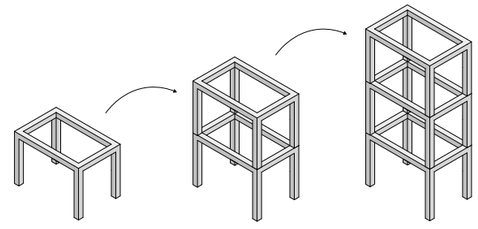
This process of continuous adaptation is visible in informal settlements, where housing evolves through small-scale interventions such as extensions, internal divisions and material changes (Kamalipour & Dovey, 2020). Through small changes, the overall form of the settlement is gradually shaped. The spatial structure remains stable, while individual dwellings are continuously modified over time.

Habraken, Turner and the incremental logic of informal settlements form an understanding of housing in which stability and change coexist. Habraken suggests that certain strucural conditions provide continuity while allowing adaptation through use and occupation. Turner argues that continuity is not in the building itself, but in the ongoing process of inhabitation. Combining these perspectives shows that housing operates through both structural persistence and continuous transformation. From this, the concept of Permanent Temporality emerges, describing housing as a condition in which continuity of use and change of form occur simultaneously.



occupation, change of use, flexible infill,
continuity of physical structure

Flexibility. Author (2026).



continuity in the ongoing process
of inhabitation

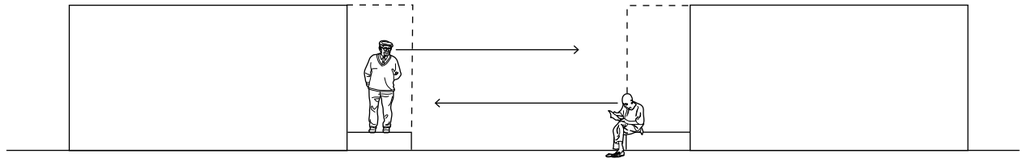
Continuity. Author (2026).

2.2.2 Safety

To increase safety on the streets, especially for women commuting to work daily, the concept of 'Eyes on the street' by Jane Jacobs can be applied (1961). Jacobs argues that safety is produced through the interaction of the built environment, everyday activities and the presence of people. Streets are safer when they encourage visibility, pedestrian movement, diversity of activities and interaction.

Research by Roy et al. (2024) builds further on this theory by distinguishing between visibility, vigilance and surveillance. Visibility is the ability to see and be seen, vigilance is when people pay attention to street life through routine activities and surveillance involves observing others with the intent to control or monitor. Creating visibility and vigilance in a neighborhood as Rajiv Nagar can increase the overall safety on the streets.

The research demonstrates that low- and middle- income neighborhoods often feel safer due to their spatial organisation. Buildings are close to the street, boundaries are permeable and space in front of the houses are uses for cooking, washing, working and socialising. These routine activities ensure vigilance. In contrast, higher income neighborhoods were perceived less safe due to high walls, large setbacks and less interaction on the street. The study states that safety depends on effective eyes on the street, not just presence. Moderate crowded streets, traffic movement, good lighting and strong connectivity all contribute to the chances of receiving help in unsafe situations (Roy et al., 2024). These theories highlight how everyday spatial practices can foster safety and form guidelines for the design of the project.

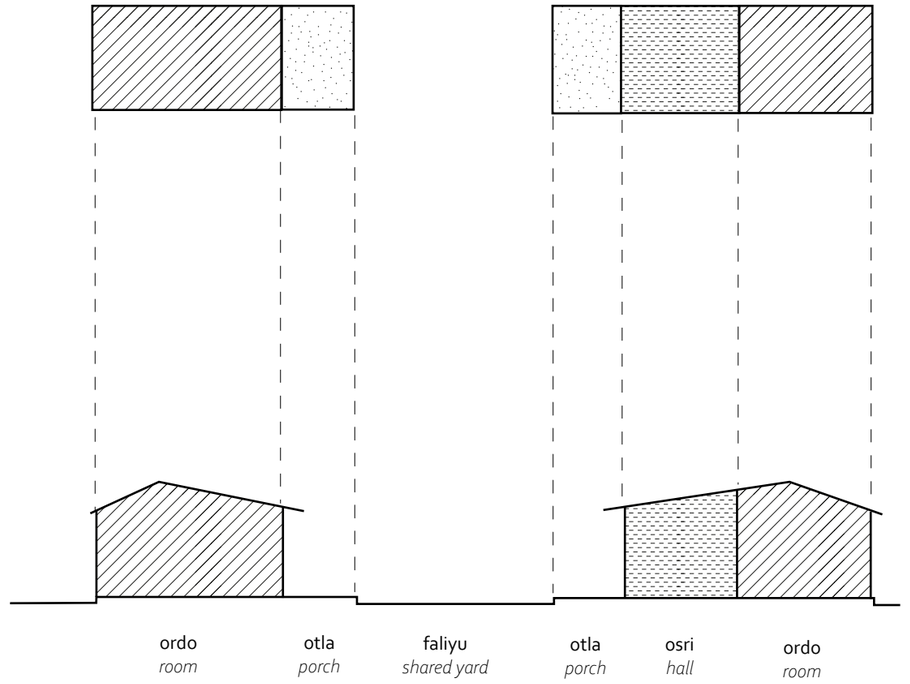


.Vigilance. Author (2026).

2.2.3 Needs of migrant households

Understanding migrant housing needs requires learning from research on rural housing traditions and how these are translated into informal urban settlements, since many migrant workers come from villages in Gujarat and Rajasthan. A study from Marnane and O'Rourke challenges the belief that informal settlements grow in an unplanned and ad hoc manner. It shows that dwellings are built incrementally but with architectural intent, often informed by rural building types (Marnane & O'Rourke, 2024).

The study found that migrant housing in urban settlements replicate spatial organisations from the rural villages the residents are originally from. These typologies share certain spatial sequences such as the typical mahelo plan. Design principles include incremental housing, vernacular continuity, clustering, shared spaces, and thresholds to support flexibility, cohesion, and identity (Marnane & O'Rourke, 2024).

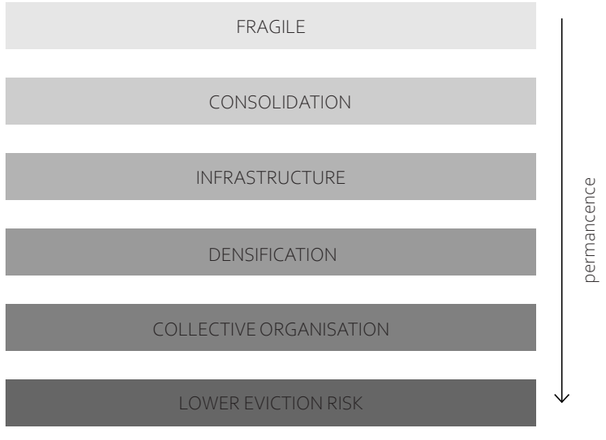


Mahelo plan. Author (2026). Information from Marnana & O'Rourke, 202.

2.2.4 Spatial strategies to address housing insecurity

This framework incorporates spatial strategies to reduce eviction risk based on research by Dekel (2020). According to Dekel, consolidation, infrastructure, densification, and collective organization reduce eviction risk and signal permanence to authorities. Making settlements physically and politically harder to remove increases their security.

Architecture also plays a symbolic role in addressing housing insecurity. Design that expresses permanence, order and collective presence can help gain recognition from authorities and the wider public. Collective organisation itself becomes a spatial strategy, as communities co-produce spaces that support everyday life and political visibility (Dekel, 2020). These strategies show how design can actively contribute to housing security by shaping space in ways that reduce the risk of eviction.



Reducing eviction risk. Author (2026).

2.2.5 Climate

The climate in Ahmedabad is characterised by high temperatures, strong sunlight and heavy rainfall during the monsoon season. Traditional Indian housing demonstrates how the climate has influenced the way of building in India. In hot and humid areas in India, buildings were historically spaced apart to promote air movement and natural ventilation. Open building forms also helped to reduce the heat (Lang et al, 1997).

To deal with heavy monsoon rains, several strategies were developed. This includes raised plinths, roof overhangs and elevated living spaces. These elements help protect houses from flooding and moisture (Lang et al, 1997).

Climate responsive design can also improve outdoor comfort. Trees provide shade, lower surface temperatures and create more comfortable public spaces. Courtyards and open circulation spaces support natural ventilation by allowing air to move through the neighborhood.

To manage rainwater, permeable pavement systems can be used in public spaces and along pedestrian routes. These pavements allow rainwater to infiltrate into the ground instead of flowing directly into the drainage system. This reduces surface runoff, supports groundwater recharge and contributes to sustainable drainage systems (Scholz & Grabowiecki, 2007). Combined with vegetation and open ground surfaces, permeable pavements can help reduce the impact of heavy monsoon rainfall.

2.2.6 Social mixing

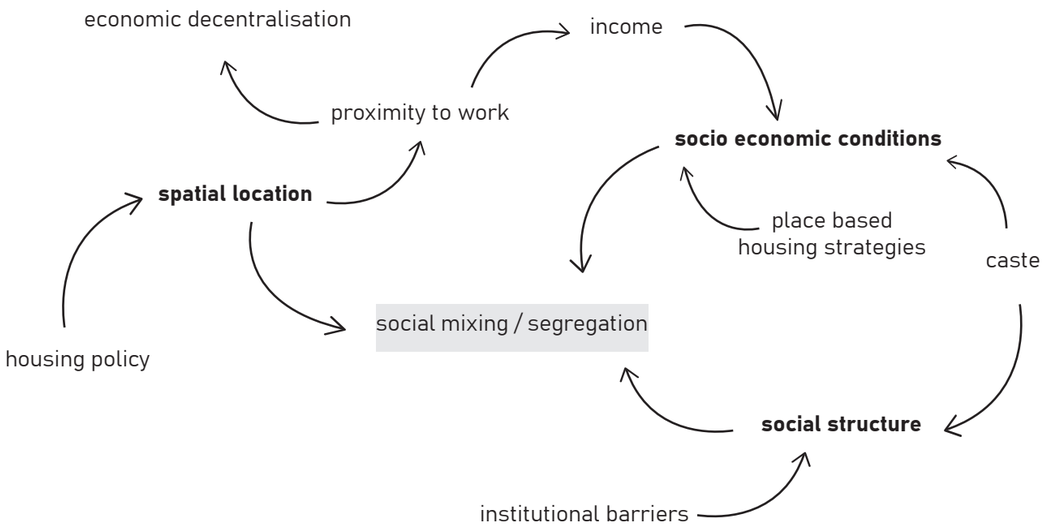
Social mixing in housing is influenced by spatial location, acces to employment and socio-economic structures. Research shows that top down housing policies often fail to address these local social dynamics (Sanga, 2021). Many housing programs focus on building a larger number of low-income dwellings, but do not consider the housing location well enough. Therefore, many residents are located far away from jobs and social infrastructure. As a result, many low-income households are pushed to the edges of the city and become spatially segregated (Sanga, 2021).

Economic decentralisation is therefore essential for balanced urban development (Payne, 1977). When housingis located closer to employment opportunities and urban infrastructure, different income groups are more likely to coexist within the same spatial environment. This proximity is relevant in contexts where domestic and informal labor creates interdependencies between income groups.
Research indicates that place-based housing strategies can support socioeconomic integration and income mixing (Sanga, 2021).

However, social mixing is not only an economic or spatial issue, but is also shaped by deeper social hierarchies. Research on spatial assimilation and place-stratification suggests that segregation is not determined by income alone, but also by institutional and social barriers (Bharathi et al., 2021). In India, the caste system is still deeply rooted in society and continues to influence social hierarchies and opportunities for improvement (Gast, 2007). Although the caste system was officially abolished, its effects remains visible in social and spatial strucures (Lang et al, 1997).

While urban migration can create opportunities for social mobility and resistance to these hierarchies (Bhoi & Gorringe, 2023), segregation remains strucurally embedded in spatial organisation.

Within this context, social mixing is understood not only as the coexistence of different income groups, but als the spatial organisation of conditions that enable interaction across social and economic boundaries. This informs the design approach by prioritising proximity to employments, integrated housing clusters and shared spaces that support everyday interaction between different user groups.



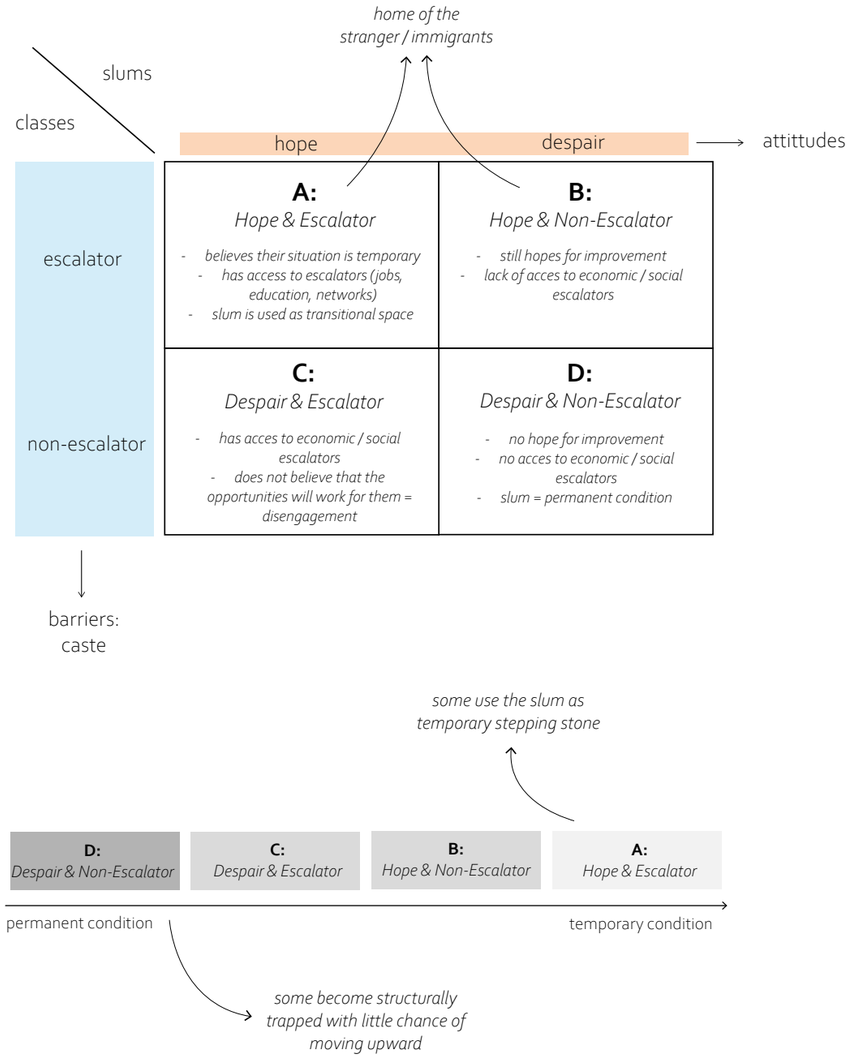
Social mixing. Author (2026).

2.2.7 Intersectional lens

This framework is supported by an intersectional perspective, recognizing that housing is experienced differently depending on gender, income, migration status, tenure and socially structured inequalities such as caste. How these conditions overlap determine how someone experiences safety, possesses space, participates in activities and faces housing insecurity. These differences influence the degree to which people are able to improve their living conditions.

This relates to the slum theory, that was introduced by Proffessor Robert Lampman. It states that exclusion from formal housing comes from multiple factors (Desai & Devadas Pillai, 1970). These factors include ability barriers, class, caste, migrant status, access to escalators and cultural background.These factors intersect, which results in different lived realities within the same slum. The diagram on the right page is an interpretation of the theory, shows that slum residents are not a homogeneous group. Even though this image gives a more intersectional perspective on the residents of informal settlements, it is still not considering all factors.

The intersectional lens is used to recognise that the migrant workers living in the settlement are not a homogeneous group. Therefore, the design should propose a flexible spatial framework that can accomodate different household structures, levels of affordability, degrees of permance of stay and forms of social support. This way the project can respond to the collective character of the migrant community and the inequalities that exist within it.



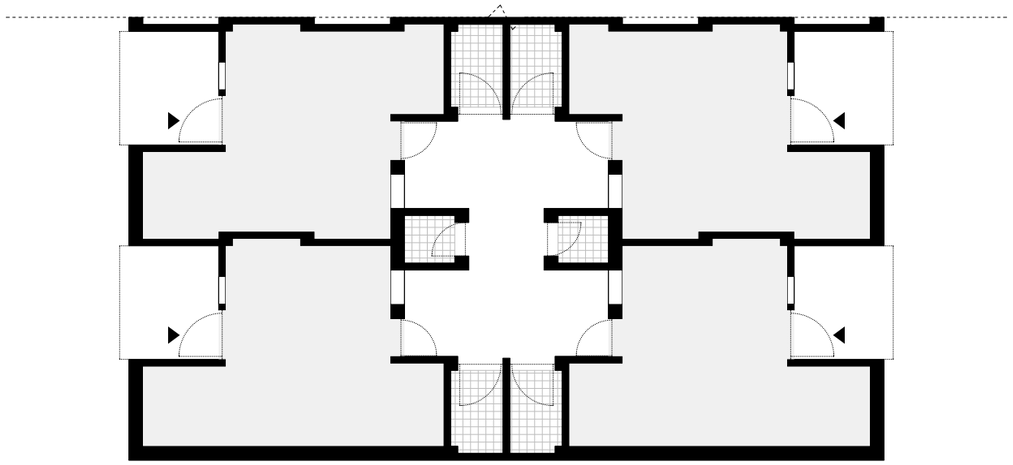
Interpretation of the slum theory. Author (2026).

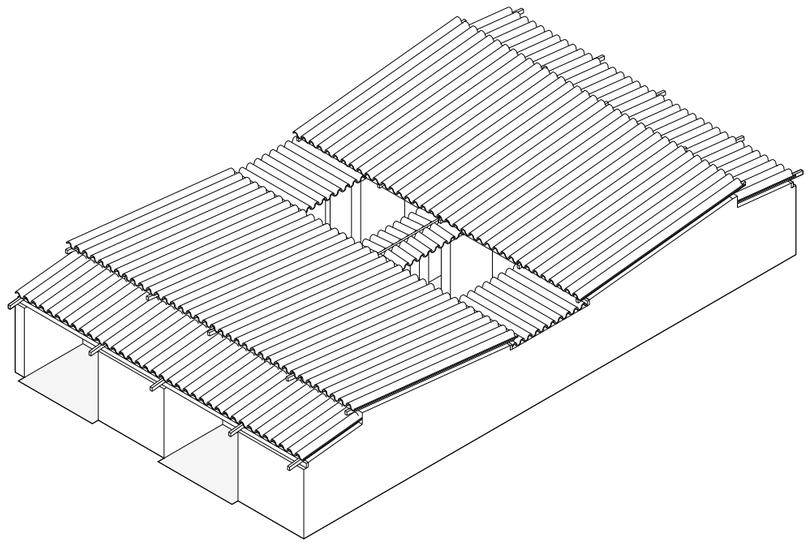
2.3 Case Studies

2.3.1 Vasna resettlement colony

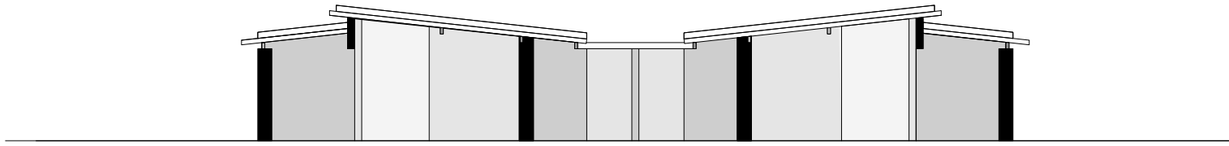
The casestudy Vasna resettlement colony showcases how a project can start relatively small with minimal functions and can grow over time.

In the floorplan and section is visible that the units are relatively small. It is one multifunctional room with a private otla and a small kitchen. Sanitary functions are shared and accessible via the courtyard that is shared with 3 other dwelling utis.



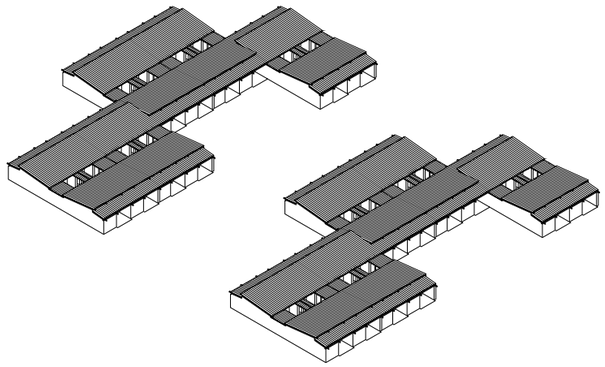


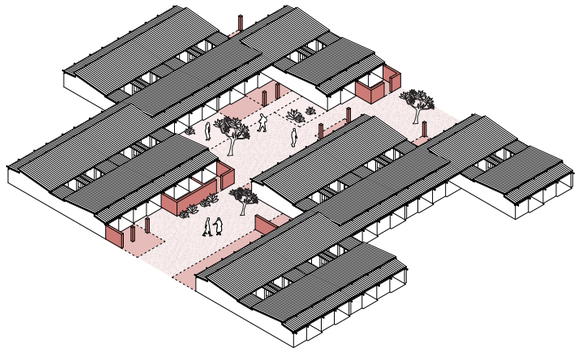
Vasna resetllement colony. M. Sehmehmedovic & Author (2025).



Vasna resetllement colony. M. Sehmehmedovic & Author (2025).

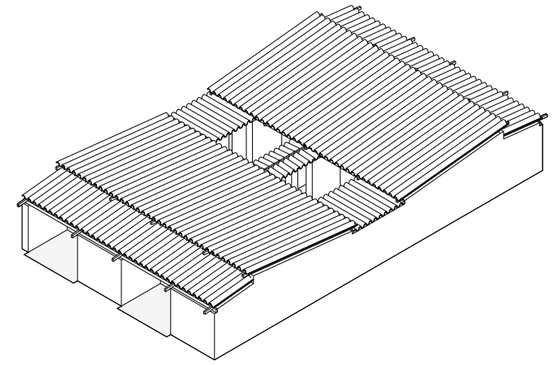
In the images below is illustrated how an outside space slowly can be taken over by residents and transformed into a neighborhood.

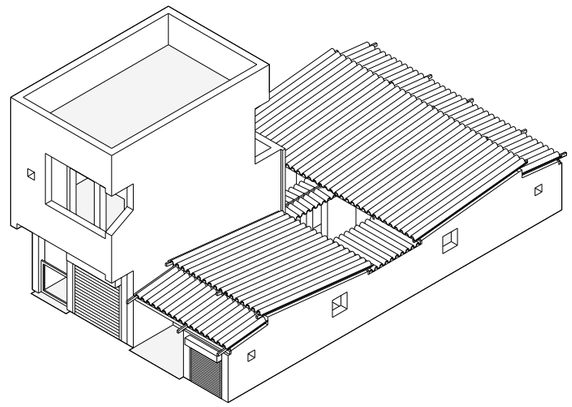




Vasna resetllement colony. M. Sehmehmedovic & Author (2025).

These drawing show how the original housing scheme looked like and an example of what a unit could look like nowadays. It is important to notice the desire of people to extend and change their dwellings to their needs.
 vertically and horizontally





Vasna resetllement colony. M. Sehmehmedovic & Author (2025).

2.3.2 Socio-economic groups and spatial characteristics

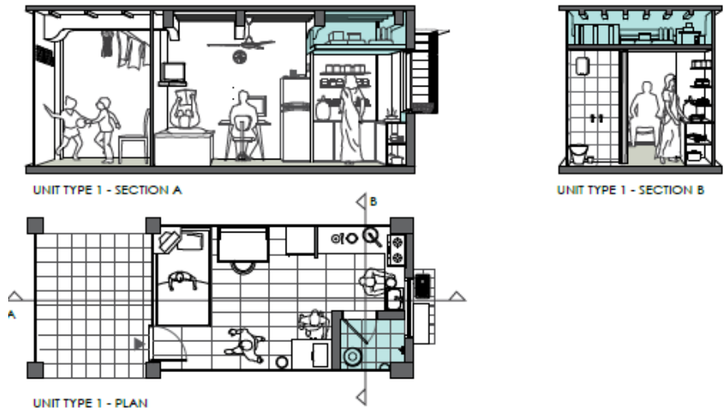
Housing in India is stongly divided by income groups. Based on annual household income, four main categroies can be distinguished: Economically Weaker Sections (EWS) with annual income below INR 300,000; Low-Income Groups (LIG) earning between INR 300,000-600,000; Middle-Income Groups (MIG) earning between INR 600,000 and 1,200,000; and High-Income Groups (HIG) with annual household incomes over INR 1,200,000 (Sengupta et al., 2022). These categroies are associated with different housing needs, spatial characteristics and levels of privacy.

Since the project will not only focus on low-income migrant households, but also middle- and higher-income groups, it is relevant to know how housing needs and spatial preferences differ between these groups.

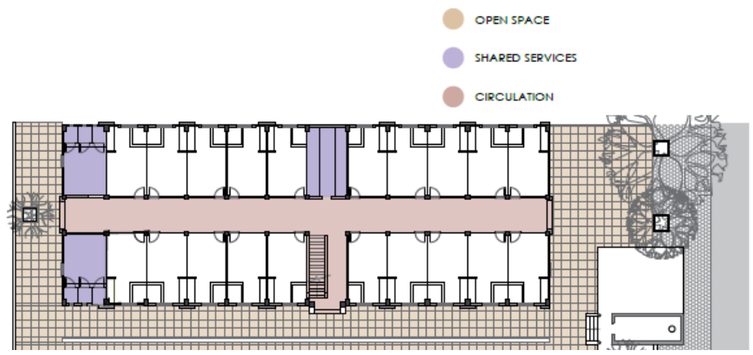
Housing prefecerences and spatial organisation in India are influenced by social and cultural factors. For example, many upper caste households prefer the presence of a central courtyard, which provides cooling and ventilation but also supports their need of having a private outdoor space (Lang et al, 1997).

Most housing demand is experienced among lower-income groups, who face overcrowding and often rely on incremental ways of building and improving their homes. In contrast, higher-income groups generally experience fewer housing shortages (Sengupta et al., 2022). This shows that housing need is shaped by economic inequality, resulting in different living conditions for EWS, LIG, MIG and HIG groups. Architecture can express and reinforce these social differences. In a study by Amarendra, tea plantation bungalows in Assam illustrate how spatial organisation, materials and landscape are shaped by and reinforce social hierarchy (Amarendra, 2021). Housing operates as a structuctured system, in which economic inequality is spatially organised and expressed. This is visible in the distinct conditions and needs of different income groups (Amarendra, 2021; Sengupta et al., 2022).

The following case studies examine how these socio-economic distinctions are translated into housing typologies for different income groups.



000. Source: Padoran (2020)



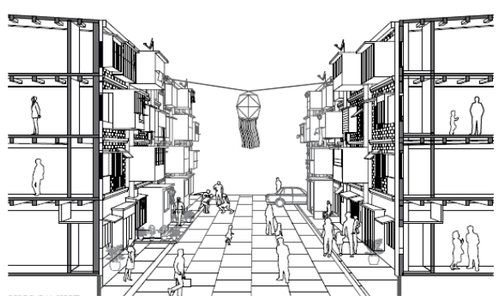
000. Source: Padoran (2020)

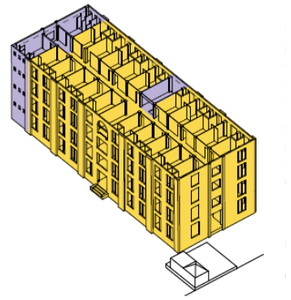
CASESTUDY I: EWS / LIG

Reference low-income housing
BBD Chawls, Mumbai
By Worli, 1925

The BDD chawls consist of small one room dwellings that are accesible through shared corridors. Each room functions as the living, sleeping and storage space and often cooking for a household. Sanitary functions are shared by multiple households. Eliminating private bathrooms allows for a larger amount of units to be accomodated in the project. Each floor has 20 units and units are around 16 m^2 (Padora, 2020). Some dwellings are on the ground floor, pointing out that this group is not characterised by a high level of privacy.

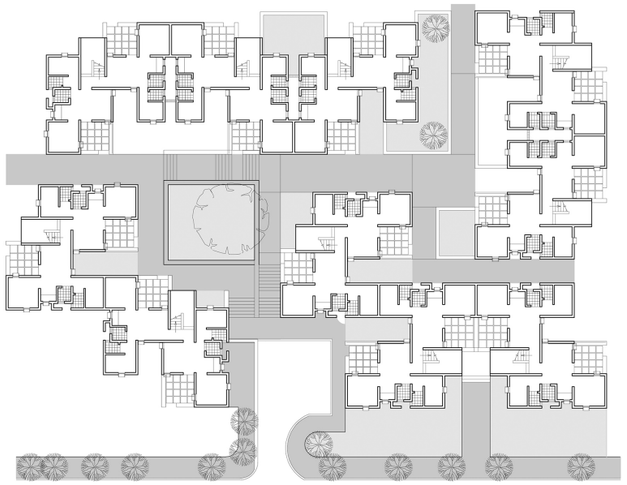


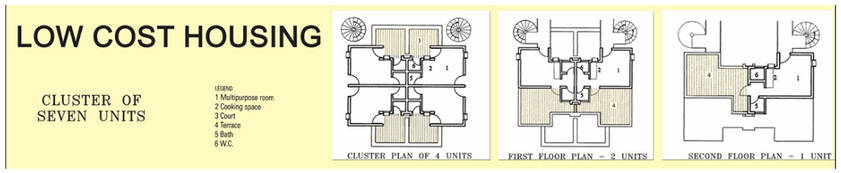






Source all images above:: Padora (2020)





Source: Architecture History

CASESTUDY II: EWS / LIG

Reference low-income housing
CIDCO Housing, New Mumbai
Raj Rewal

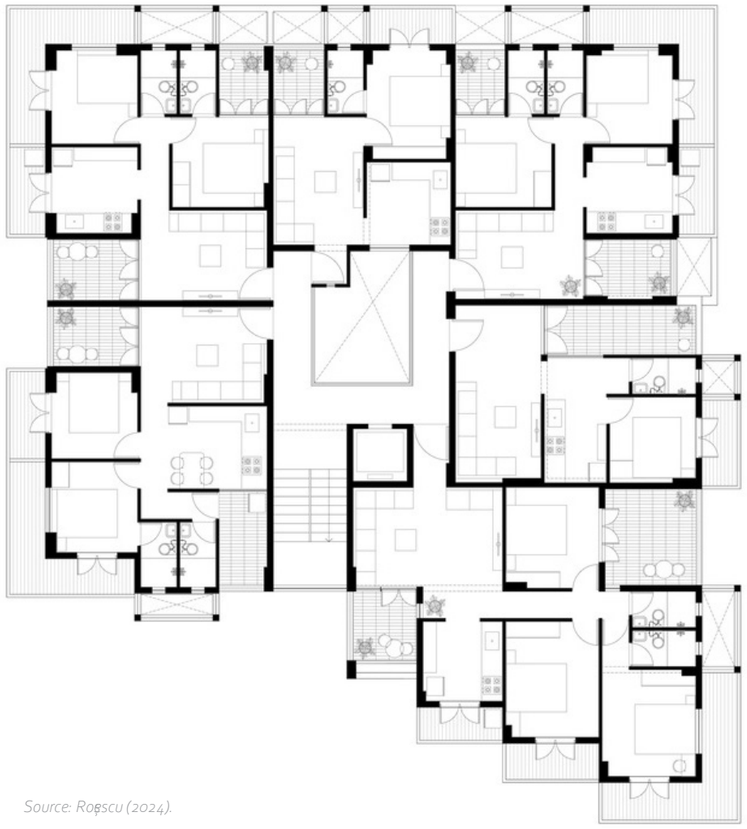
Characterisic for this project is how the dwellings of low income units are organised around shared open spaces.

The units are connected through pedestrian pathways rather than vehicular roads. The cluster layout shows a transition from private dwellings, to semi private courtyard and larger communal spaces. This allows different forms of social interaction. The project demonstrates that collective outdoor spaces can compensate for small dwelling sizes in affordable housing.





Source : Architecture History



Source: Roșcu (2024).

CASESTUDY III: MIG

Reference middle-income housing
Housing Apartment at Badade Nagar
By Studio Frozen Music

This reference shows one elevator and one staircase with a shared entrance to the dwellings. Units have 2-3 bedrooms and not always a private bathroom.
No servant room.

Every bedroom has its own balcony, so this is more likely to be upper-middle class housing.



Source: Roșcu (2024).



ND:

Source: ArchDaily (2025).

CASESTUDY IV: HIG

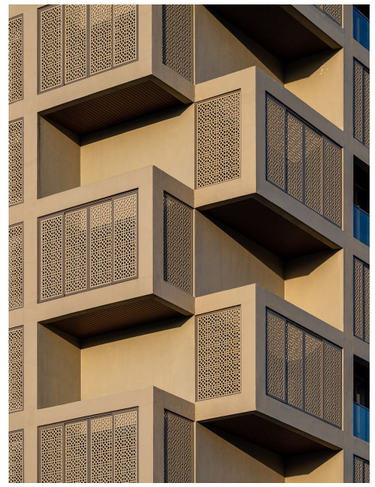
Reference High Income
Screen 504, Udaipur, India
Sanjay Puri Architects

This reference shows one elevator and one staircase with a shared entrance to the dwellings. Units have 4 bedrooms each and always a private bathroom.

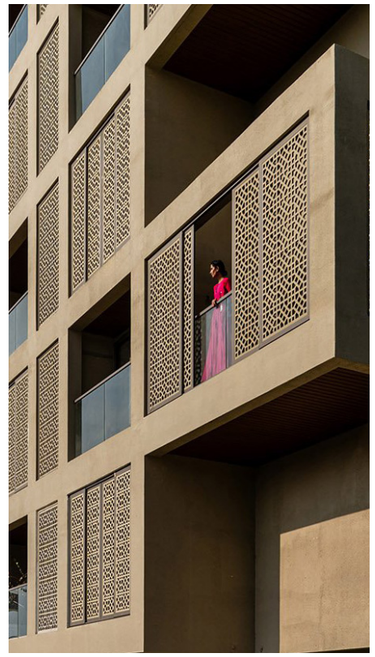
Each apartment has a servant room with bathroom that has a seperate entrance from the apartment.

Each bedroom has either a balcony or semi outside space that is a buffer between inside and outside.

Almost all spaces are buffered from direct sunolight by a balcony or small shadow space.



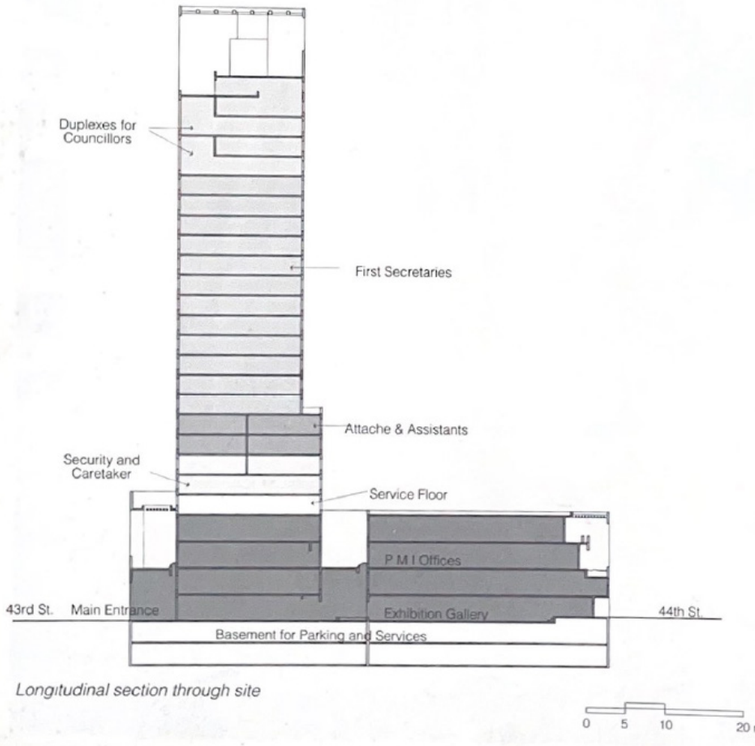








Source: ArchDaily (2025)

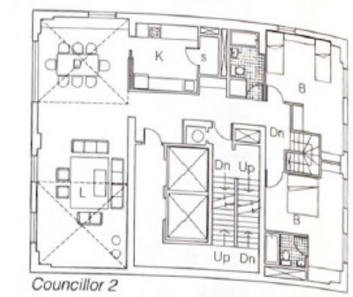


Correa, C., & Frampton, K. (1996).

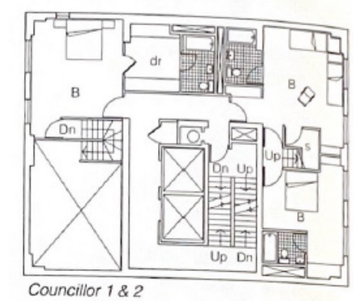
CASETUDY V: HIG

Reference high-income housing
Permanent Mission of India to the UN, New York
By Charles Correa

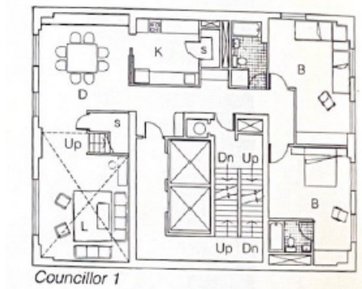
This project represents a high-income housing typology through its clear spatial hierarchy and generous dwelling sizes. Public functions and offices are concentrated in the lower levels, while the residential units are located above. The floor plans include multiple bedrooms, private sanitary facilities, and separate living and dining spaces, reflecting a high level of residential comfort.



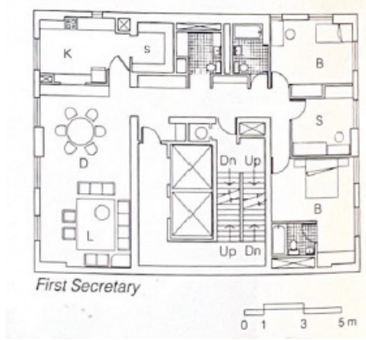
Councillor 2



Councillor 1 & 2



Councillor 1



First Secretary

Correa, C., & Frampton, K. (1996).

part three

3.1 fieldwork
3.2 site analysis
3.3 approach and feasibility
3.3 design



Map Ahmedabad. Google Earth (2026).

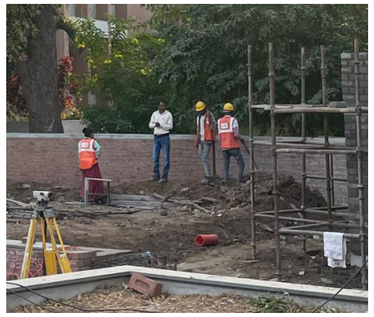
3.1 Fieldwork

The fieldwork conducted in India was crucial for understanding the cultural, spatial and social conditions of housing in India. Through impressions, the site visit, workshops at CEPT university, conversations with local residents valuable insights were gathered The following pages show some first impressions of the Ahmedabad.





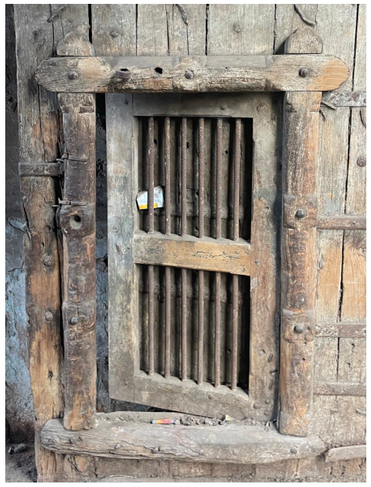
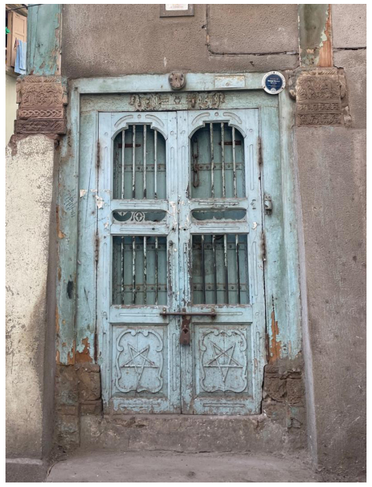
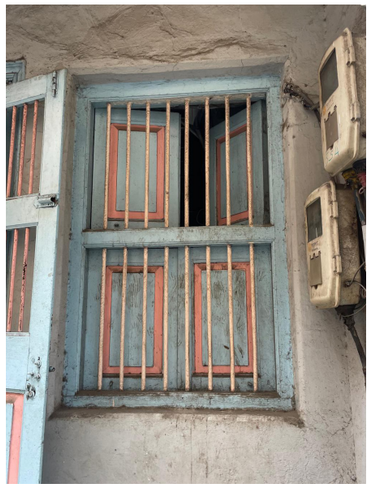
India under constant construction.



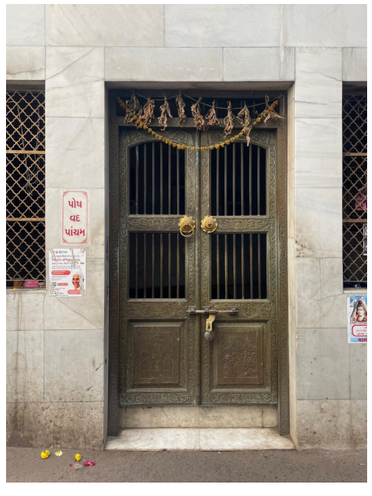




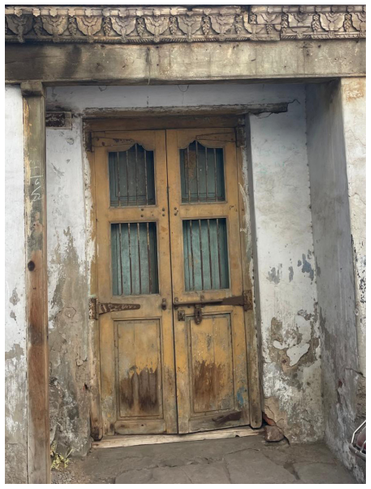








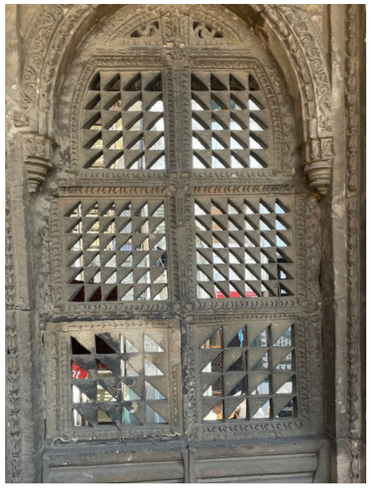


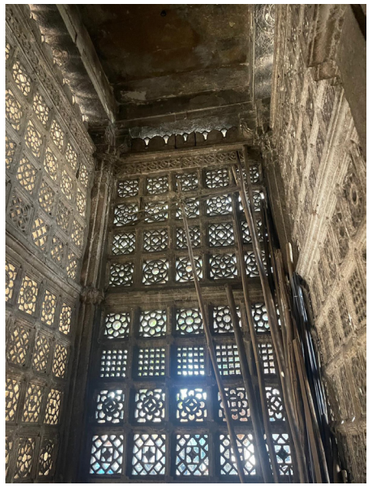


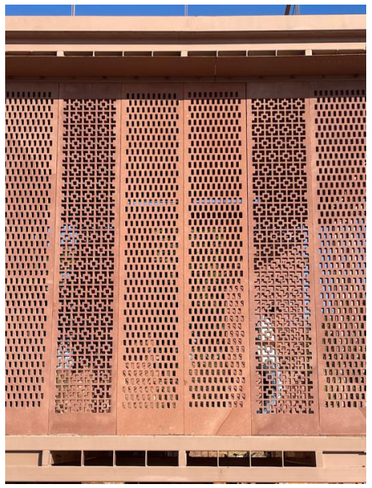


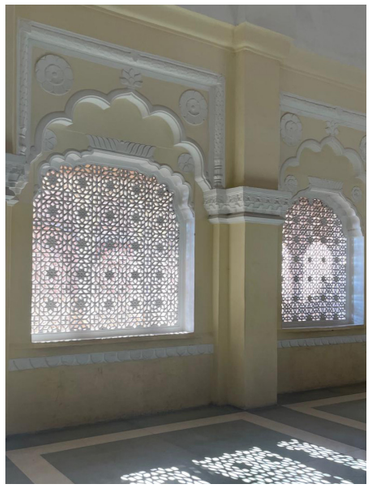
To deal with the heat in Ahmedabad the design of openings in the facade is crucial. The traditional way to ventilate the homes is to make doors that have two layers; the steel frame that lets air through and the front part that decides on which height the air flow can come into the house. These pictures are mostly from the city center in Ahmedabad and show different configurations of this traditional cooling system.

Traditional Indian doors providing ventilation on multiple heights.





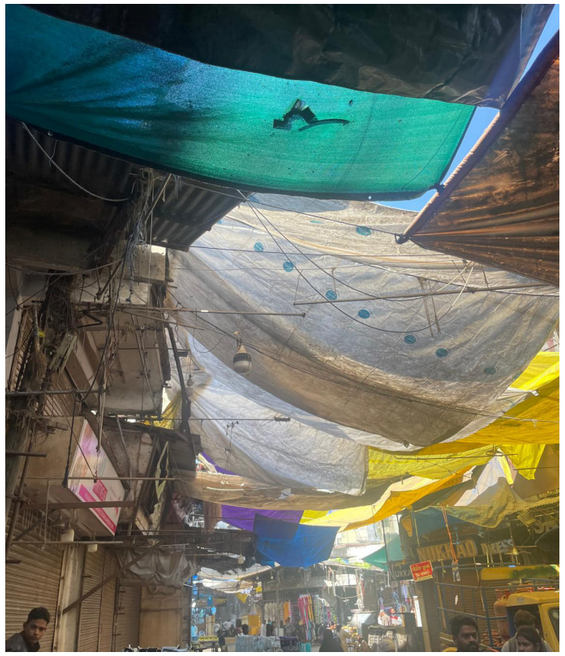






Jaali for cooling and ventilation, creating beautiful light fall.





improvised sun sail

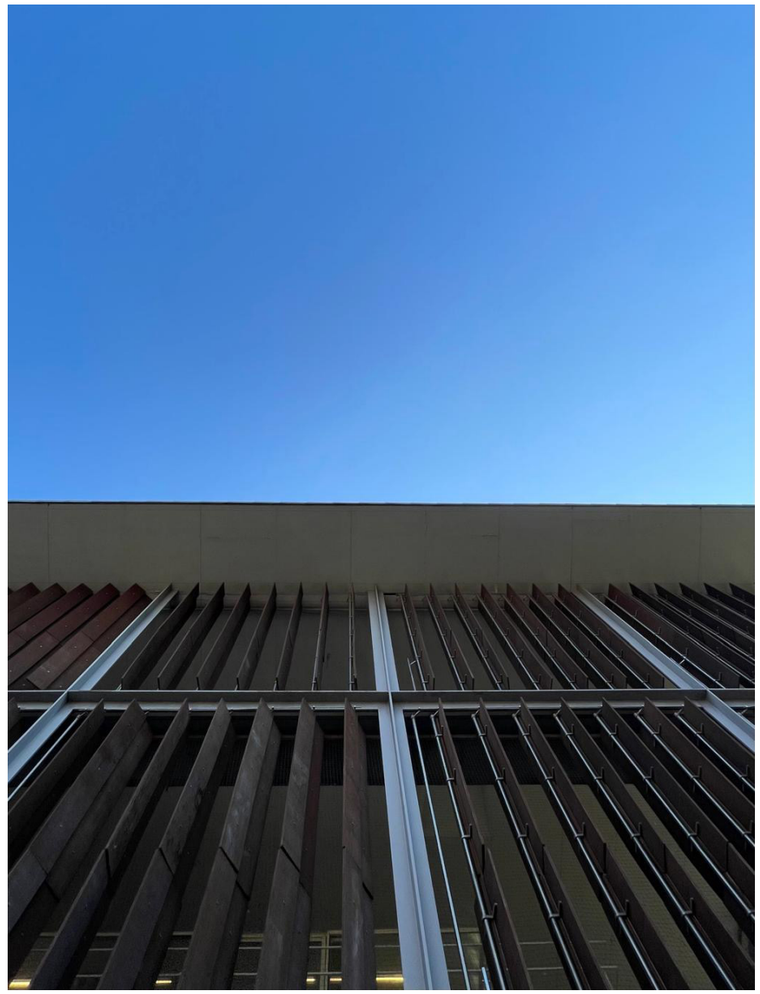


narrow streets

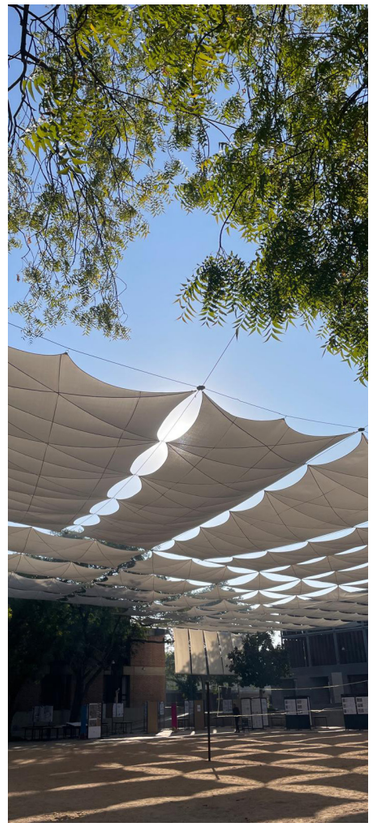


sheets

Different ways of providing shadow in the city.



facade design



designed sun sail

3.2 Site analysis

The site is located next to the newly build metro station in Rajiv Nagar, Ahmedabad, India. The site offers great accesibility due to its location in the middle of a network of mobility options. On the images on the right, the transporation roads are shown, including metro, vehicular roads and the train track. This means that the location is able ideal for housing since the residents can easily commute to work. Acces to employment and infrastructure strongly influence housing choices. In this context, the design location in Rajiv Nagar offers advantages due to its proximity to the metro, train and road connections.

The metro station is quite new, it was built in the last decade. This could be a reason why there is not yet a formal housing schema on the plot; the location of the site will probably become more expensive in a couple of years since the metro station is a great feature for many.

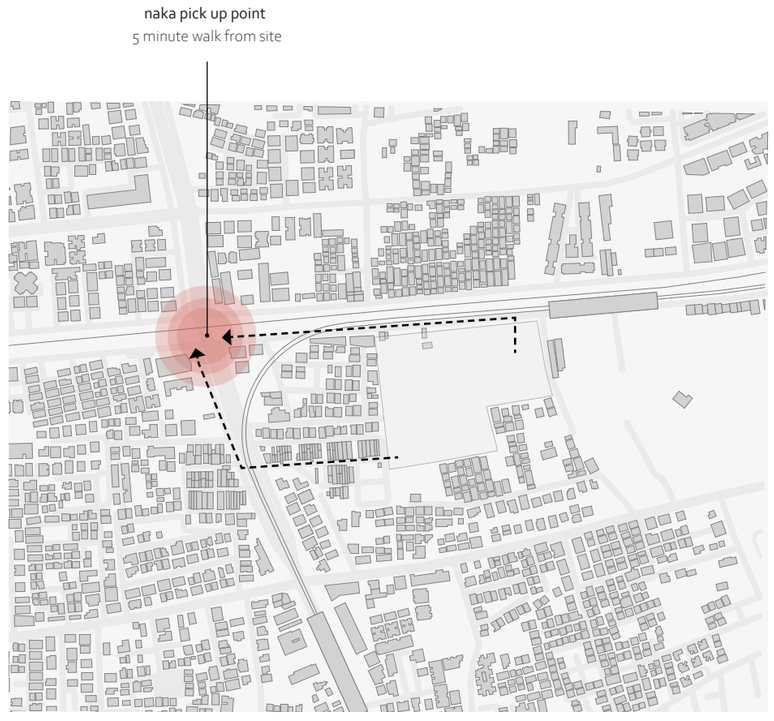


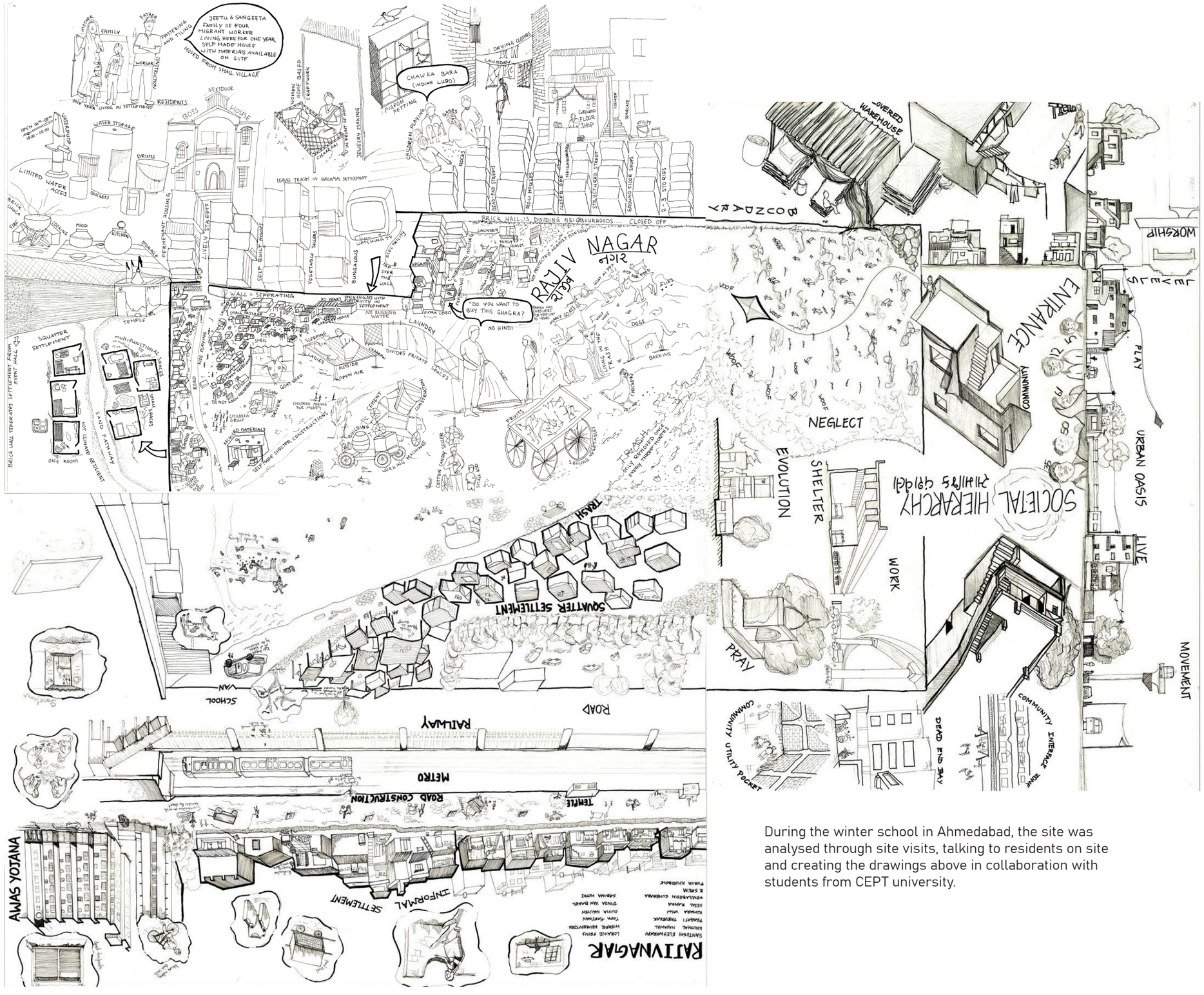







most walked route through site
200 m
neighborhood that is most
interacting with residents on site


naka pick up point
5 minute walk from site
200 m

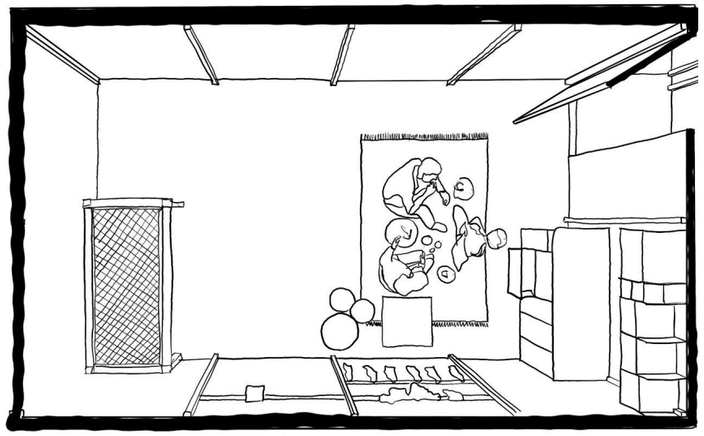


During the winter school in Ahmedabad, the site was analysed through site visits, talking to residents on site and creating the drawings above in collaboration with students from CEPT university.

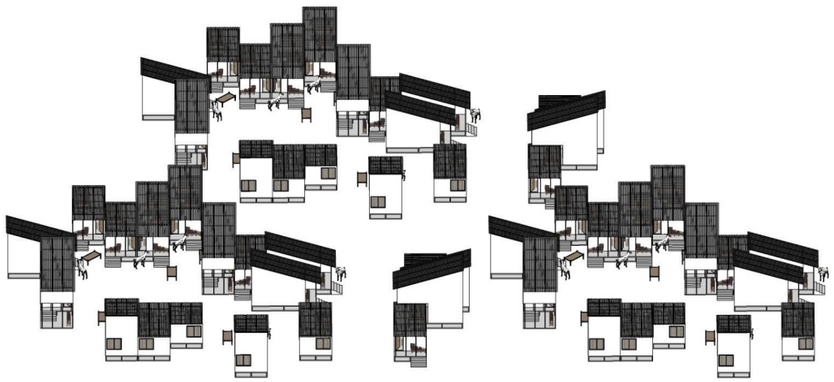
Writing the site, analysis rajiv nagar with CEPT students. K. Alluru, S. Ranka, L. Prins & Author (2025).

RAJIV NAGAR
राजीव नगर

MOTHER
FAMILY
FATHER
WORKER
CONSTRUCTION
PLASTERING AND TILING
ONE YEAR LIVING IN SETTLEMENT
RESIDENTS
JEETU & SANGEETA
FAMILY OF FOUR
MIGRANT WORKER
LIVING HERE FOR ONE YEAR
SELF MADE HOUSE
WITH MATERIALS AVAILABLE ON SITE
MOVED FROM SMALL VILLAGE
NEXTDOOR
BOSS
HOUSE
WOMEN HOME BASED CRAFTWORK
CHAAR PAI
IN FRONT OF HOUSE
JEWELRY MAKING
PIGEON PETTING
CHAWKA BARA (INDIAN LUDO)
CHILDREN PLAYING
GAMES
ROCKS
DRYING CLOTHES
LAUNDRY
GROUND FLOOR SHOP
COLUMN
STAIRCASE
UTILITY
DEAD-END STREETS
ROW HOUSES
CLOSED OFF
NEIGHBORHOOD
STRUCTURED STREET
GROUND FLOOR SHOPS
2 - 3 STORIES
OPEN 06:00 - 08:00 AND 18:00 - 20:00
WATER PUMP
WATER STORAGE
DRUMS
LIMITED WATER ACCES
BUCKETS
BRICK CHULA
FIRE
COOKING
FOOD
KITCHEN
STORAGE
TEMPLE
LEAVES TRASH IN INFORMAL SETTLEMENT
PERMANENT HOUSING
LIVELY STREETS
SELF BUILT HOUSES
VEGETABLE SELLERS
BUNGALOWS
WATCHING TV
ELECTRICITY
TAP OVER THE WALL
BRICK WALL IS DIVIDING NEIGHBOURHOODS.... CLOSED OFF
LAUNDRY
FAMILY HOUSES
INCREMENTAL HOUSING
NALA WORKERS
NOT PROTECTED AGAINST FLOW SOON
UPGRADE
EXPANDING
WALL = SEPERATING
70 YEARS ONLY HOUSES WITH ELECTRICITY IN SETTLEMENT
NO RUNNING WATER
EXTRA LEVELS
"DO YOU WANT TO BUY THIS GHAGRA?
NO HINDI
SKIRT
LAUNDRY
DIVIDES PRIVATE SPACES
GOAT AS PET
NOT FOR FOOD
FLIES
FAMILY HAS LIVED HERE FOR THE LAST 90 YEARS
MANY GOATS
woof woof
DOGS
BARKING
LIVING IN THE TRASH....
CHICKEN
SQUATTER SETTLEMENT
BRICK WALL SEPERATES SETTLEMENT FROM EVENT HALL
multifunctional SPACES
SMALL SPACES
ONE ROOM
NOT CLIMATE RESILIENT
SAND PATH WAY
TEMPLE
BATHROOM
LAUNDRY
SMALL PASSAGE
LARGER HOUSE
PLASTIC
SMELL
SLEEPING
LADIES
OUTSIDE
CHAARPAI
OPEN AIR
KIDS PLAYING
DEWS
OPEN DEFECATION
DO NOT KNOW NEIGHBOR
GOAT SHED
ROAD
RICKSHAW DRIVER
CHILDREN ASKING FOR MONEY
CHILDREN GROUP
RECYCLED MATERIALS
BAMBOO
TRASH
SLOPED ROOFS FOR RAIN
SELF MADE SHELTER CONSTRUCTIONS
CEMENT
CONSTRUCTION
BUILDING
WORKING MACHINES
COTTON CANDY SELLER
SMALL KID
FRUITS
SELLING VEGETABLES
TRASH ONLY REMOVED ONCE EVERY THREE MONTHS

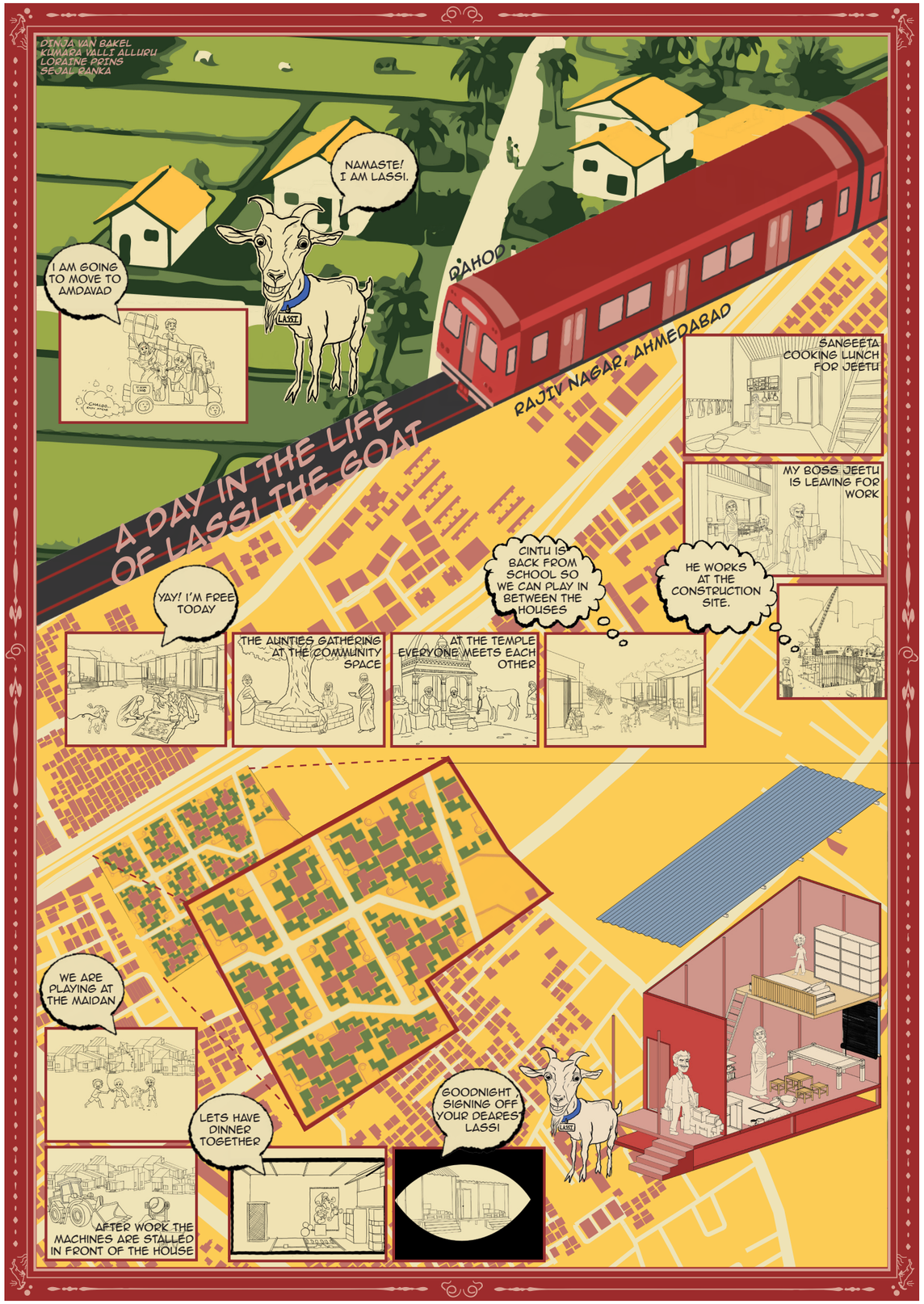


. Writing the site, Rajiv Nagar with CEPT students. K. Alluru, S. Ranka, L. Prins & Author (2025).



Writing the site, Design proposal and story line in Rajiv Nagar with CEPT students. K. Alluru, S. Ranka, L. Prins & Author (2025).

The images show the design proposal made for the site Rajiv Nagar from the workshop 'Writing the Site' at CEPT university.



. Writing the site, Design proposal and story line in Rajiv Nagar with CEPT students. K. Alluru, S. Ranka, L. Prins & Author (2025).



female naka workers

Multiple visits to the naka pick up point next to Rajiv Nagar revealed a consistent pattern in the organisation of daily labor activities. Female workers typically stayed together in groups of women only, sometimes accompenied by their children. The groups of women arrived overall earlier at the naka point then the men workers. Observing this pattern and talking to people here made it clear that women and their children experience unsafety. Also the lack of daycare became evident. As result, young children often accompany their parents to the construction sites, exposing them to unsafe environments.

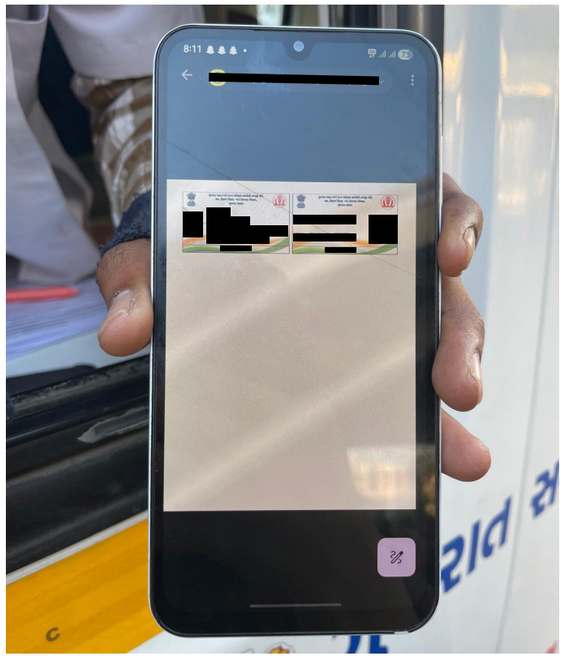


young workers waiting together



male naka workers





E-Nirmann card

During one of the visits to the naka pick up point close to Rajiv Nagar, many naka workers in line for healthcare. Talking to the medical workers from ambulance made it clear that this healthcare solution was provided by the municipality. To be able to receive healthcare people needed to have an E-Nirmann card, which costs a small fee. This situation shows there is a need for healthcare under these naka workers. Even though this is a good intervention, it is still a tempory solution.



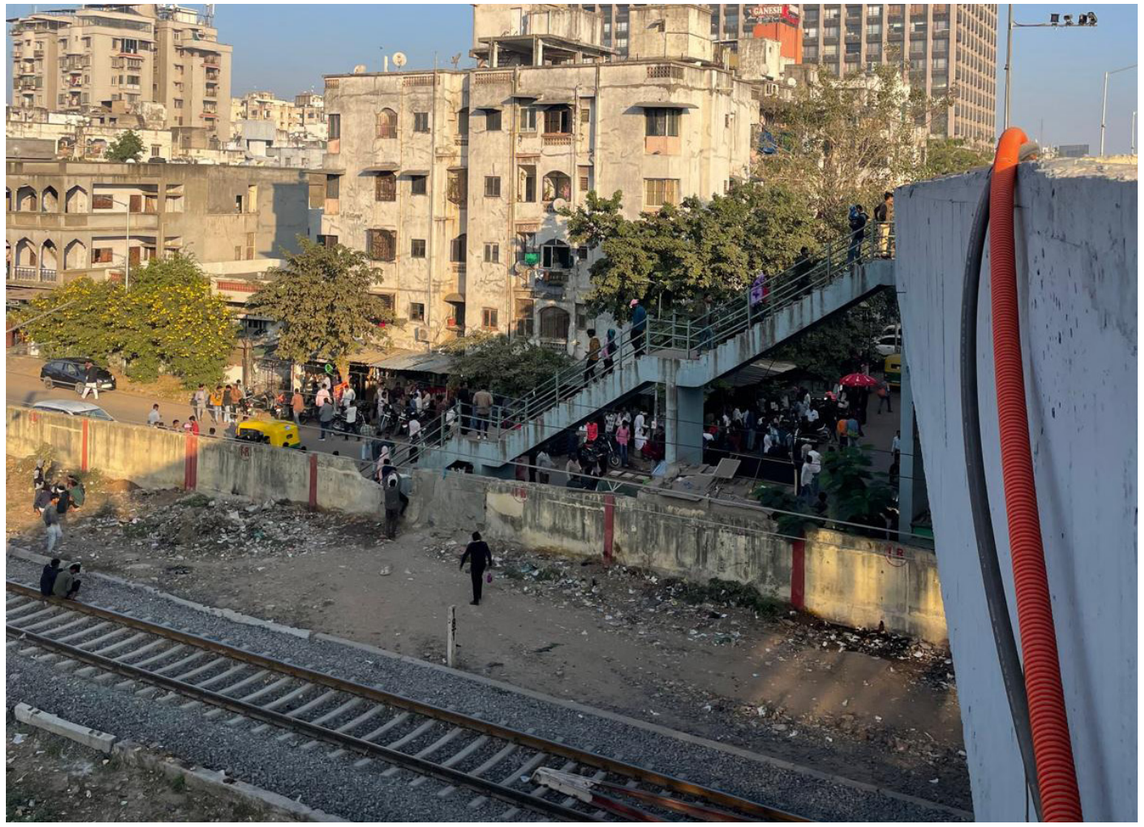
temporary healthcare solution provided by the municipality

Another facility at the naka pick up point was the distribution of food. Here homeless, naka workers and other people come together to eat. Some workers bring a prepared lunch box from home.





breakfast and lunch

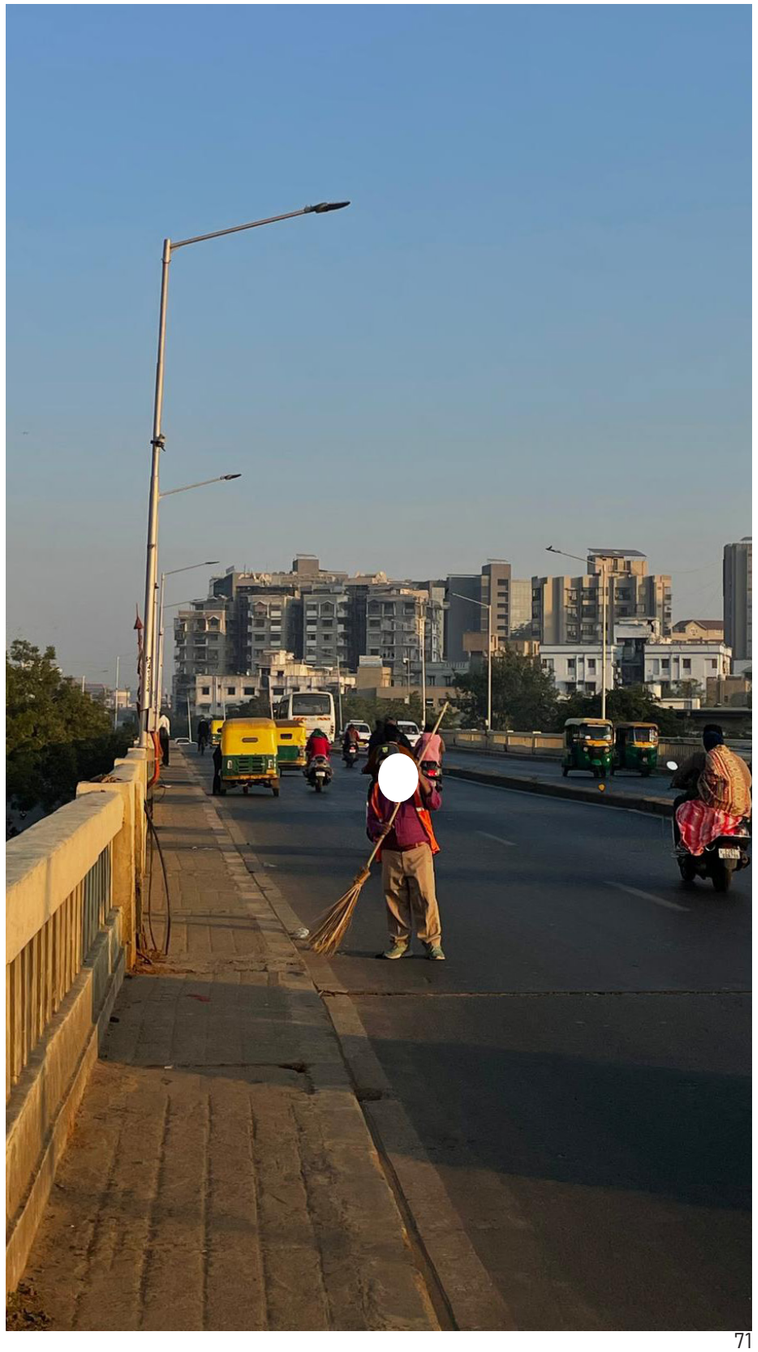


above the bridge



naka pick up point

many naka workers arrived by rikshaw on this highway

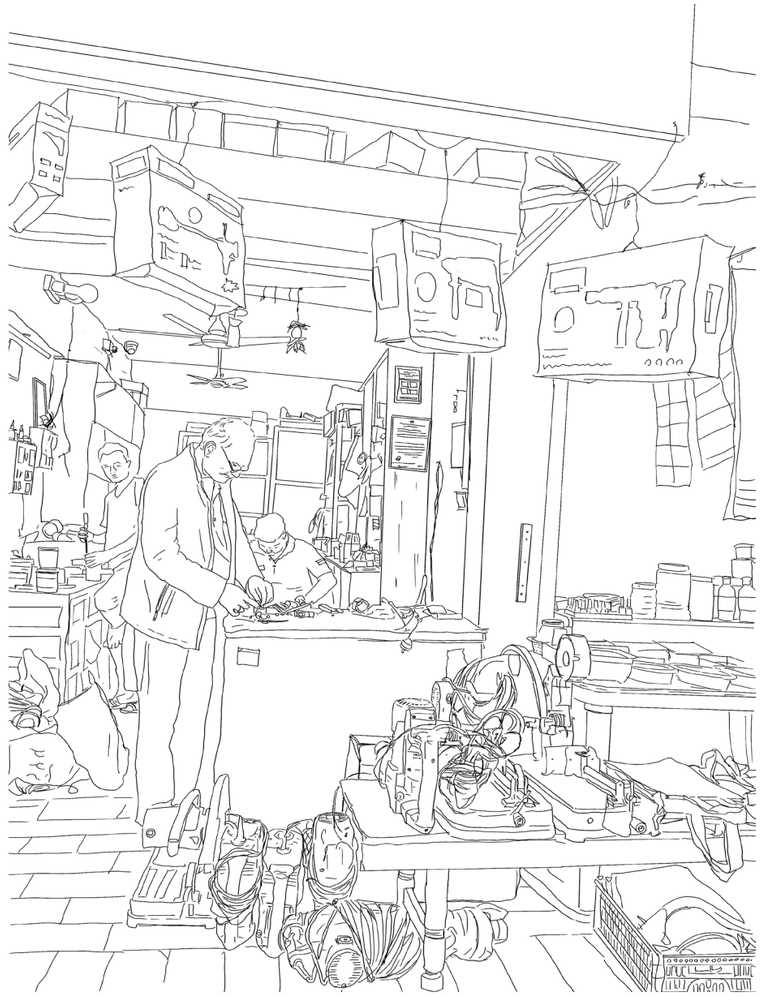


fieldwork



under the bridge





hardware store next to the bridge



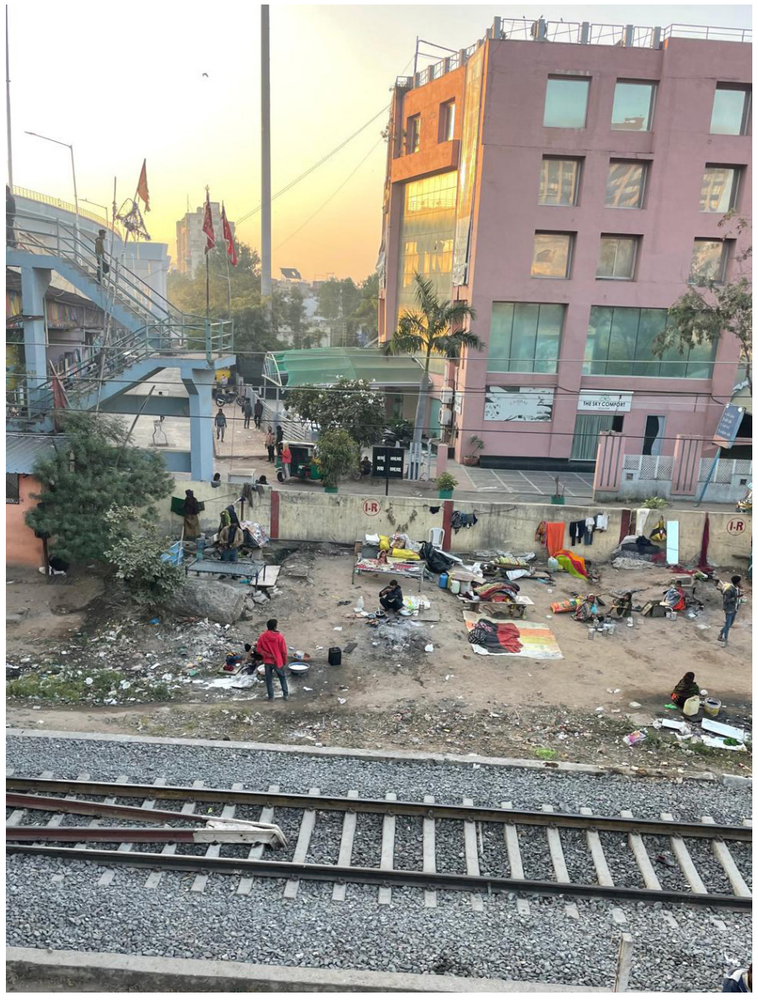
homeless shelter under the bridge
next to the naka puck up point



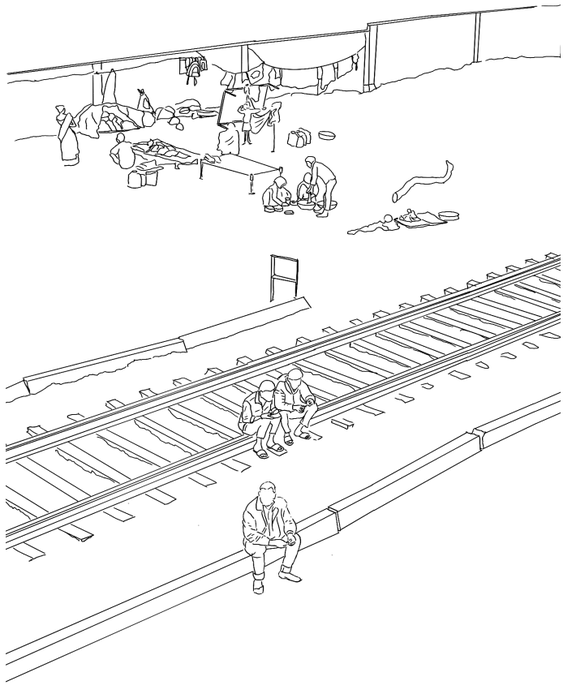








squatting on the train track



naka pick up point



fieldwork



the walls around the site are more permanent than the dwellings in the settlement



the walls around the site, seperating the settlement from the surrounding neighborhoods,



one year old self built home from leftover materials for a family of four



father is a naka construction worker but did not get employed this day



mother stays at home for children

otla use in the streets next to the site



laundry



craftwork

otla in the settlement in site



otla marked by stones and storage buckets



otla marked by roof and door that functions as seperation wall

dwellings on site









To summarise some of the most important findings on site the table on the right was constructed. This gives a clear overview of which aspects were considered for the synthesis of the design.

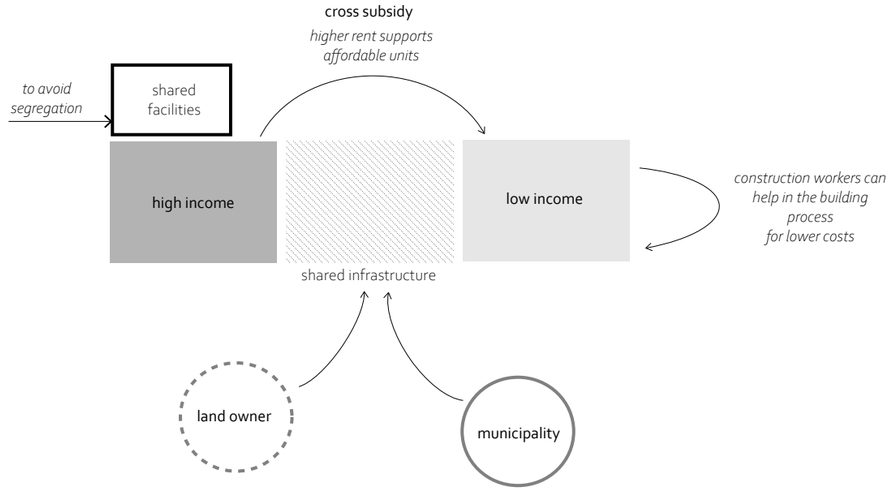
Site Insight / observation	**Design Response**	**Scale**
Daily movement to the naka is unsafe	Safe pedestrian route connecting housing, naka and amenities. Walking paths with active plinths, visibility and vigilance	Urban
Informal otla use	Reinterpreting otla as flexible thresholds	Unit
Strond physical boundaries surroun-fing the site: brick wall	Create permeability through connection of streets in surrounding neighborhoods	Urban
Lack of public services	Accessible healthcare and daycare units	Cluster
Settlement faces eviction risk	Increase density and consolitidation to create recognition	Urban
Harsh transition from Metro, train, road along site to living on site	Building height higher towards this site, less permeable than site borders next to other dwellings	Urban
Lack of privacy in settlement dwellings	Clear hierarchy of spaces: public - semi public - private	Unit
Dwellings are vulnerable to extreme heat and monsoon	Provide shadow and lifted dwellings (extra research)	Unit
Households change over time: for example naka worker to family	Dwellings designed for incremental growth, integrate flexibility that allows change	Unit
No safe communal space for children	Shared courtyards within micro neighborhoods	Cluster
Informal housing adapts quick but lacks durability	Combine adaptability with durable construction	Unit
Incrementality means loss of architectural control	Accept that loss of control is ownership of residents	Unit
High income groups value privacy	Segregated domestic spaces	Cluster
Residents do not invest in improving living situation due to fear of eviction	Permanent structure enables feelings of permanence / ownership	Unit
Residents in settlement have strong ties with their villages (like Dahod)	Learn from vernacular Gujarati architecture to meet user needs	Cluster / Unit
Temple on site: religious practice is part of domestic life	Shared temple space	Cluster
Water collection and sanitation is limited / improvised	Infrastructure	Urban
Temporary migration = fast change of inhabitation	Units designed to combine, divide, reassign	Unit
Room (Ordo) has multipe uses	No assigned bedroom of living room, but flexible living spaces	Unit
Economic growth changes housing needs	Low income units can grow into middle income units over time	Unit
Residents depend on proximity to naka	Gives priority to this project over formal hosuing	Urban
No storage space for construction machines, left on site	Assigned storage space for machines	Urban
Lack of greenery	Green main pedestrian route, green courtyards in every microneighborhood, trees that provide shade	Urban

3.3 Feasibility: managerial strategy

Since this project proposes housing for daily wage migrant households with low and insecure incomes, the feasibility of the project is a crucial consideration. Therefore, architectural and spatial strategies are needed to operate under conditions of tenure insecurity and limited resources.

The aim of the project is to use a repeatable framework that is adaptable to accommodate different users. Using a repeatable structural system reduces construction complexity and costs. Since many construction workers live on site, the use local labour can be easily implemented. Phased development reduces risk and allows current residents to relocate on site.

Cross-subsidisation is explored through shared infrastructure and clusters of mixed income groups, combining EWS and low-income migrant households with middle-income residents and high-income residents within the same building plot. This reduces the costs per unit for lower-income groups. While this increases the financial feasibility, it also creates the challenge of avoiding segregation. For the project to succeed the different needs of the socio-econimc groups need to be fulfilled. A strategy that will be explored is vertical differentiation for higher-income groups to attraAct them with better views and privacy. However, it is still of importance that the mixed income groups share facilities and collective space to support interaction and create a socially integrated neighborhood.



Feasibility through cross-subsidisation. Author (2025).



1.2000

3.3 Design

The urban masterplan consists of repeatable clusters that all act differently according to their border situations.

The courtyards in the heart of each the cluster provide greenery, community activities and a semi-public space. In the middle of the plot is one larger square that connects people from different clusters, this is a public space. Here activities such as larger festivals can be hosted and visitors from outside the site can use this space too.

The buildings are arranged in a way that permeable boundries are created that connect the existing structures to the site. The north part that faces traffic is less permeable but still allow people to walk into the neighborhood,



1.2000

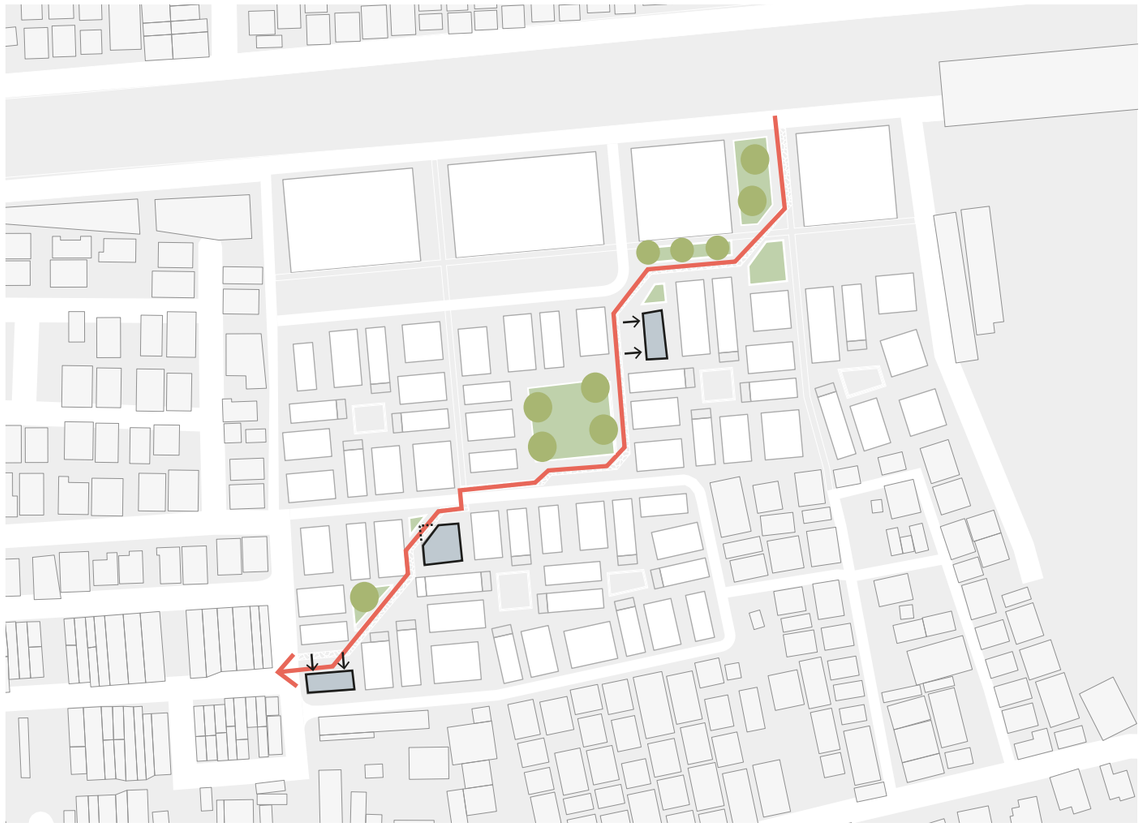
The north side of the plot borders a busy road with train, metro and vehicular roads. To deal with this, in terms of privacy and noise pollution, the buildings on the north of the masterplan are eight floors tall. In comparison, the other buildings in the masterplan have 3 to 6 floors. Also is the north side of the plot less permeable through bigger block sizes, this allows for a more guided infrastrucutre of where people walk into the neighborhood. The placement of these tall and wide buildings reduces noise pollution for the other dwellings on site.



1.2000

The main walking route is shown by the red arrow in the image above. Pedestrian routes are mostly guided around the clusters through a wider pavement. Within the clusters are also pedestrian roads, however these are a it smaller to provide a sense of semi-privacy.

There are two main car roads through the site that make dwellings reachable by car, shown with a grey arrow in the image above. These vehicular roads are one way to prevent heavy traffic from coming into the site. These roads are not crossing the plot since this would create more traffic, since they could be used as short cuts.



1.2000

The location of the main pedestrian is based on an existing route that is already used to move trough the site. Its use demonstrates the importance and necessity of this connection for the neighborhood. To emphasise the route, the adjacent housing clusters are adapted to provide a spacious and attractive pedestrian pathway. The route goes through two courtyards, that therefore have a more public character then the other courtyards. Several buildings are reduced in size to provide sufficient space, accessibility, visibility and social interaction along the way.



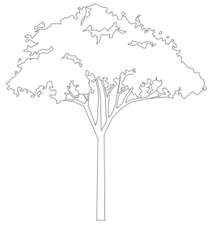
1.2000

false ashoka tree | high, tall, dense | height = 10-18 m | width = 2-4 m

neem tree | high, wide profile | height = 12-20 m | width = 10-15 m



false ashoka



neem tree

Because of the semi permeable paving system that is used over the whole site, the spaces are quite green.

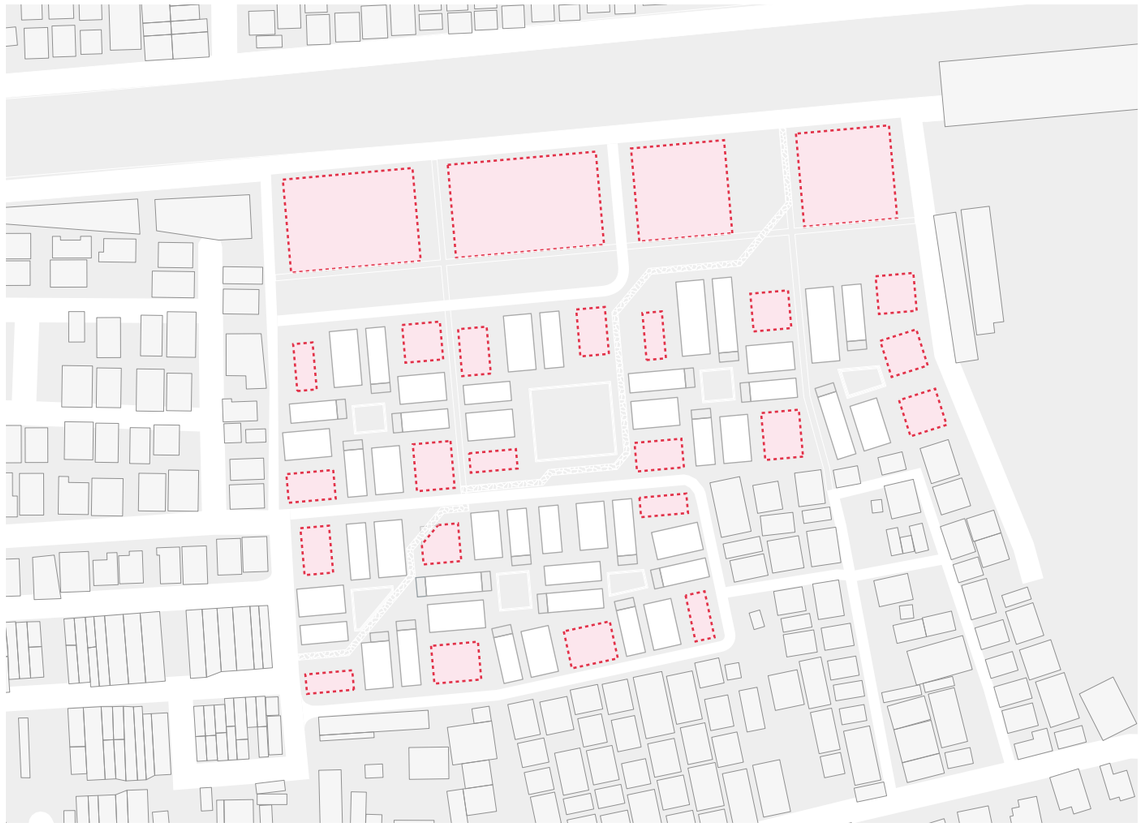
In the courtyards and larger green spaces are neem trees located. The trees grow well in ahmedabad since they can handle a hot and dry climate well. This tree had a wide profile and therefore provides a lot of shadow.

On the north side of the masterplan a row of false ashoka trees are placed. These trees are tall, dense and have a very small profile. The density of the leaves filter out a bit of the noise coming from the street.



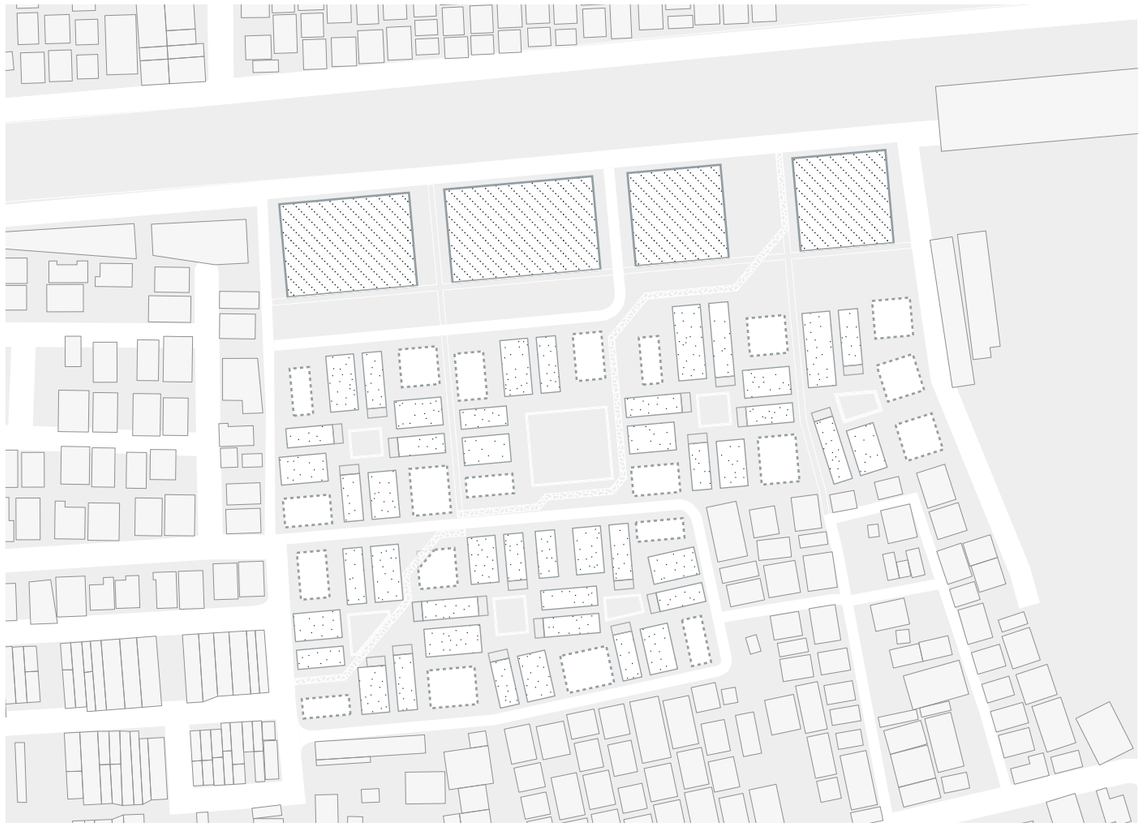
1.2000

The dotted arrows in the site plan show the visibility from each heart of a cluster to another one. This way the clusters are visually connected, creating more eyes on the street.



1.2000

The marked buildings show where public functions such as daycare, healthcare and commerce are located in the masterplan.



1.2000

Total site area = 32 618 m²
Built footprint = 13 468 m²
GSI = 0.41

Total floor area = 44 795 m²
FSI = 1.37
189 units / ha

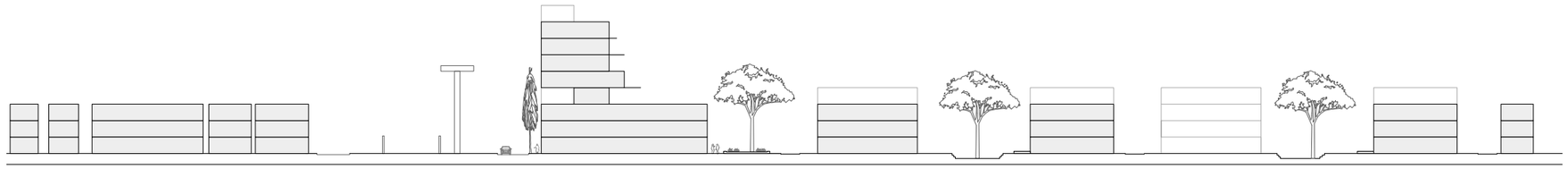
EWS / LIG
615 dwelling units

MIG
115 dwelling units

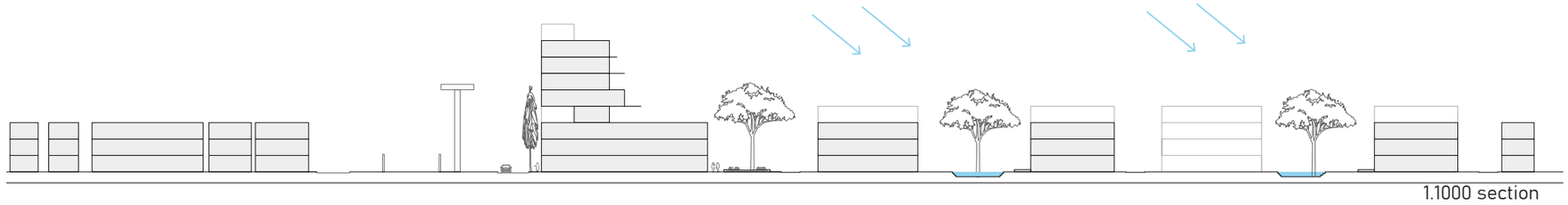
HIG
54 dwelling units

The masterplan achieves a residential density of approximately 189 dwellings per hectare. This can be considered as a high-density housing model, while still providing enough space for communal courtyards, shared facilities and accesible public space. The project therefore aims to balance density with liveability and social interaction.


1.1000

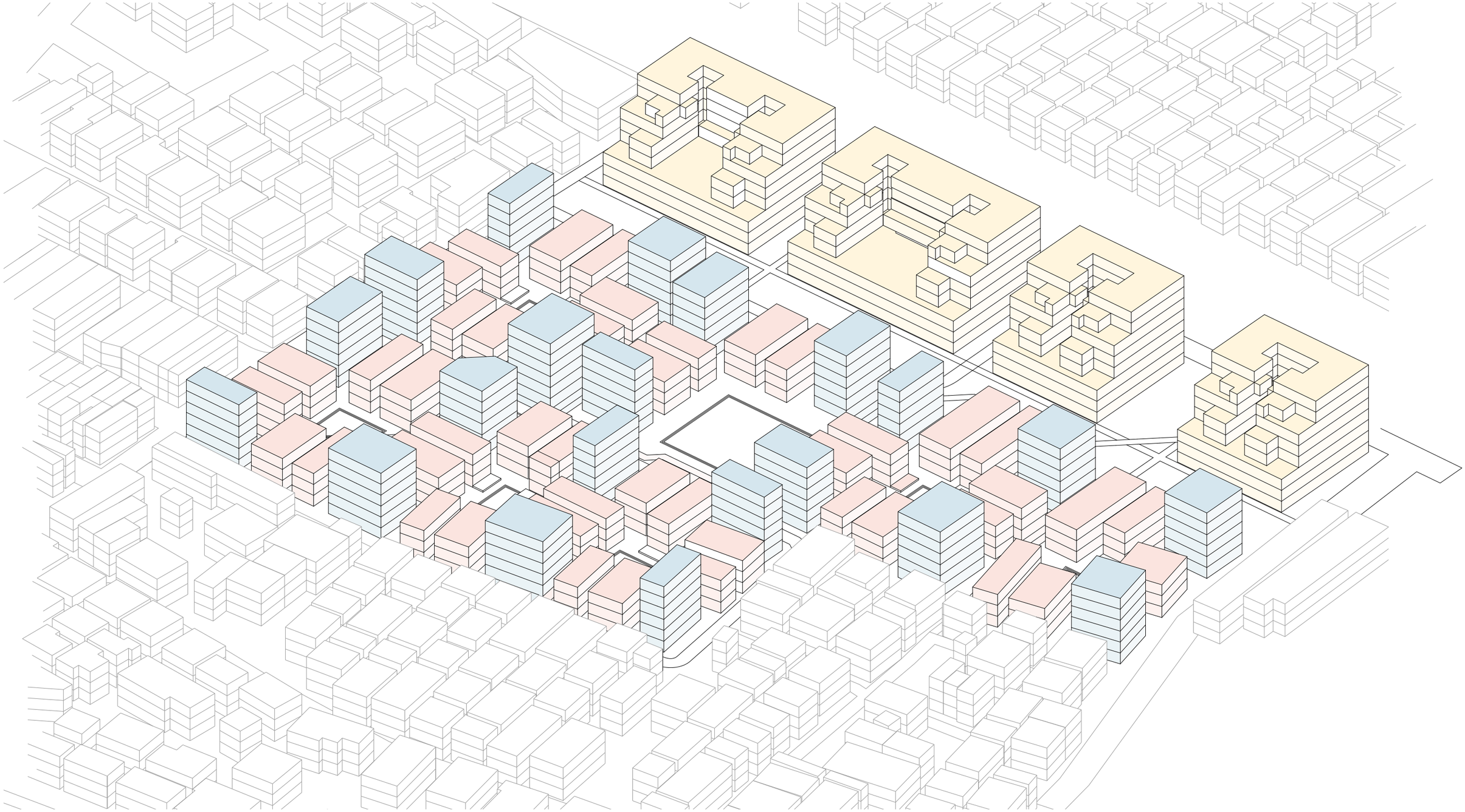


1.1000 section



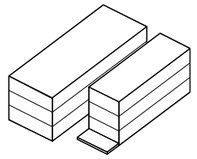
1.1000 section

The stepped courtyards in the heart of each cluster is not only there to provide a shaded social space, but also to store excess water during heavy monsoon rainfall.

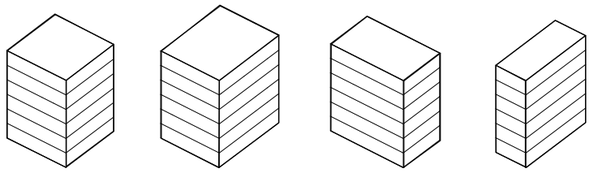

HIG
MIG
EWS / LIG

On the scale of the cluster all building typologies come together. The cluster is organised around pedestrian streets and shared open spaces that connect housing, facilities and public functions. Commercial functions are locates in the MIG and HIG buildings, providing daily amenties within walking distance of each residential building. Among functions in the cluster are daycare and healthcare facilities. In the heart of the cluster is a stepped courtyard located. A large Neem tree hangs over this courtyard to provide shadow and a nice atmosphere. Here the community of the cluster comes together. While the main routes serve a wider public, the smaller internal streets create a more intimate residential environment. This hierarchy of public, semi-public and private spaces contributes to community formation and residential privacy.

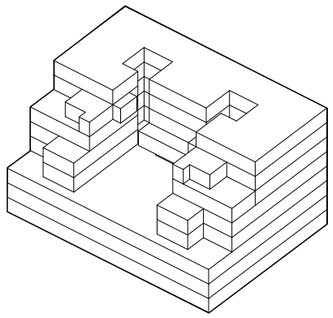




EWS + LIG units



MIG units

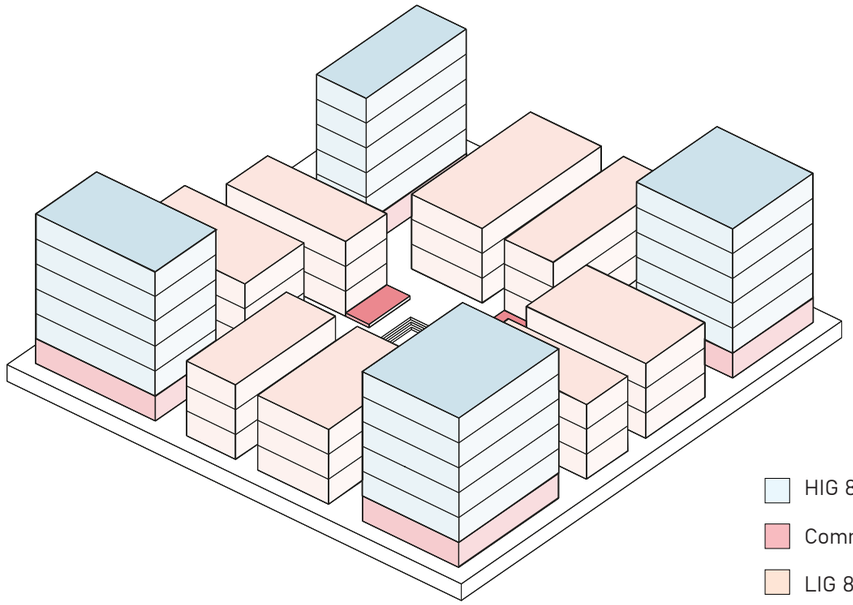


HIG units

TARGET GROUP MATRIX

GROUP	INCOME (INR)	M² (exl. outdoor space)	SPATIAL QUALITIES
EWS + LIG	< 600,000	8 - 16 (start)	- otla (private) - connection to the street - multifunctional space - possibility to expand / grow - ownership and security - flexibility - shared outside space
MIG	600,000 - 1,200,000	66-144	- privacy; no dwelling on the street - small private outdoor space - multiple bedrooms - elevator - public and private parts of the house are seperated
HIG	> 1,200,000	145 - 310	- seperate servant room - entrance by elevator - large private outdoor space - public and private parts of the house are seperated - multiple bedrooms with bathroom ensuite - parking in the building - privacy; dwellings start at the 4th floor

There are three main typologies in the masterplan. Each income group has its own spatial needs. In the matrix above is written down what qualities are taken into account in the design.

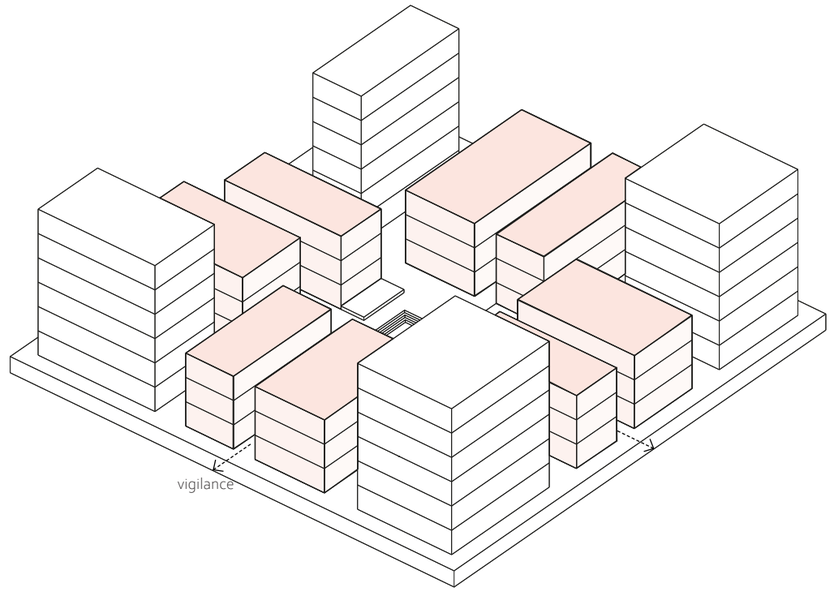


HIG 80-120 m²

Commerce / community

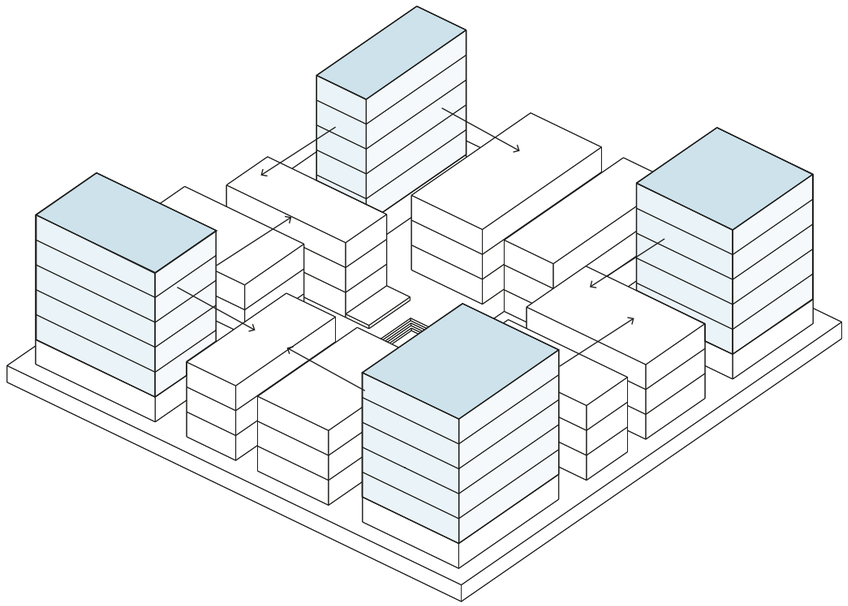
LIG 8-12 m²

In the cluster a mix of functions, income groups and typologies are inctroduced. This way income groups are still seperated on building level but share facilities and infrastructure within the cluster. This promotes social interaction among different social groups.

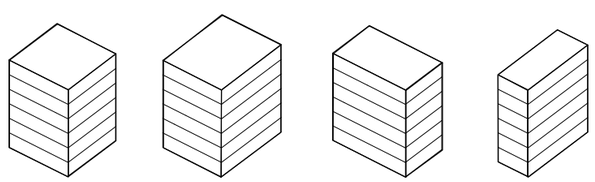


The lower-income units are always placed in pairs of two small buildings. Both of the long sides are activated through otlas to keep the streets that they create safe and alive. Each building consists of three floors with around five to six dwellings per floor. The units start around 10 m².

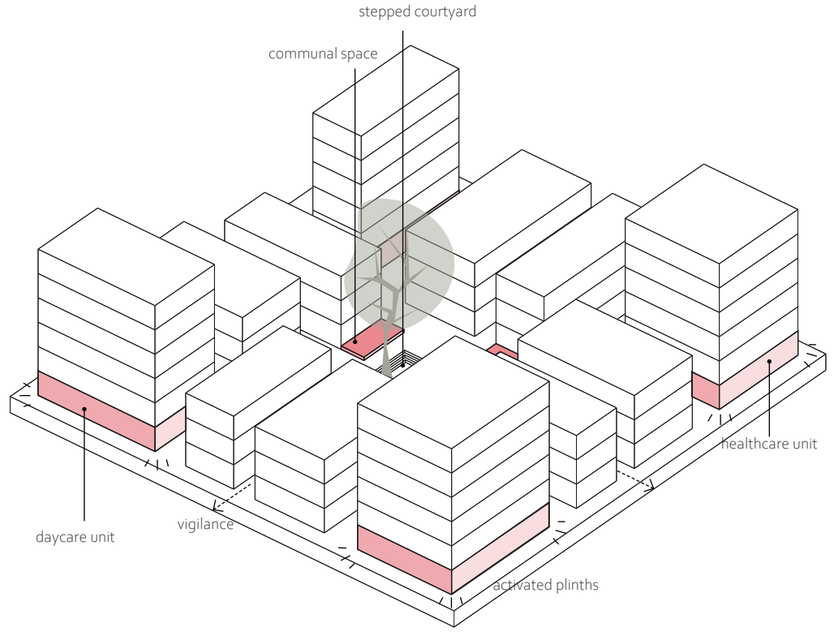
To keep costs low and the units easy to build, there is a set of 4 types that can be arranged in multiple configurations. The buildings are always 6000 or 9000 mm wide and can be 6000 or 9000 mm long. This makes that different lengths such as 6000, 9000, 12000, 15000, 18000 mm can be configurated, accordingly to what is needed for the cluster.



The middle income buildings are located in the corners of the cluster. The MIG buildings consist of a public ground floor with facilities such as shops, healthcare and daycare, and the five floors above are dwellings. This gives a nice view from the top 3 floors of the MIG buildings, since the LIG units are only 3 floors tall. Also the roof is accesible. There are four types of MIG buildings. The sizes of the plot differ because of two reasons. One reason is that it makes the cluster adaptable to fit different border conditions. Secondly, it creates different sizes of apartments, since each floor is one apartmment only. This creates appartments from 66, 106, 116 and 144 m^2. These dwelling sizes all fall within the middle-income groups but recognises that within the MIG, there are different levels to cater for.

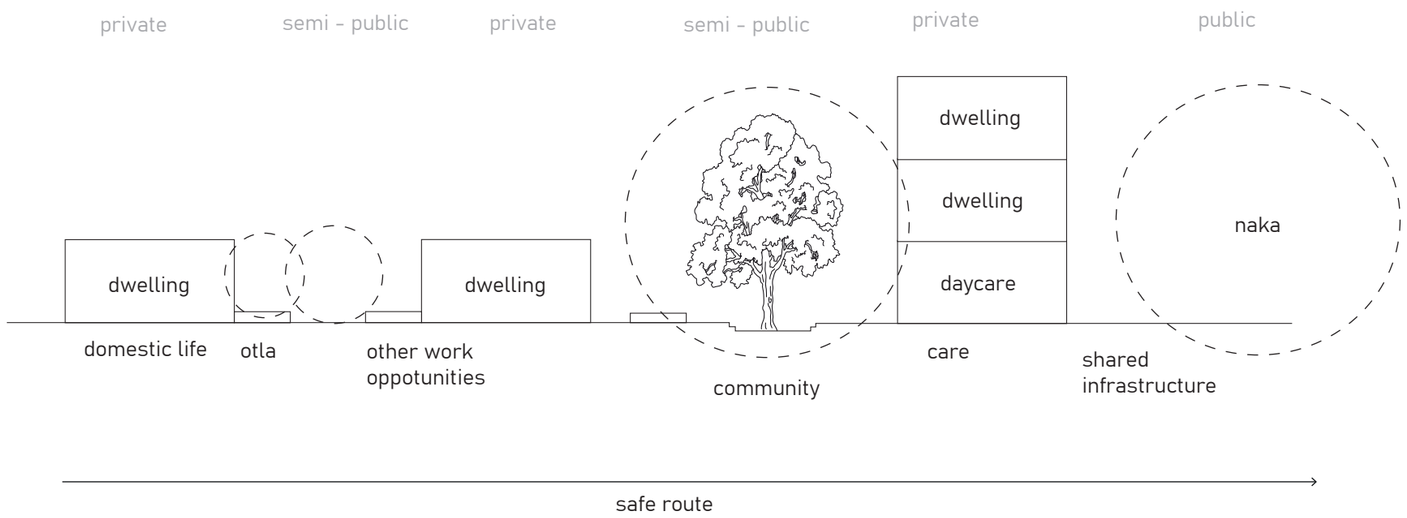


12000 x 12000 12000 x 15000 15000 x 9000 6000 x 15000

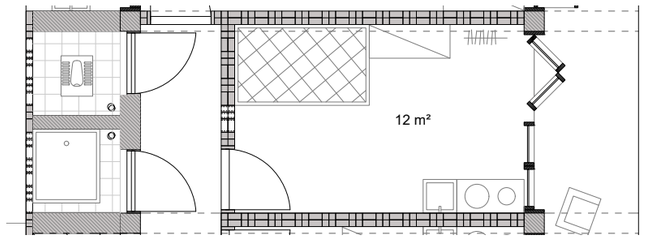


To provide safety and lively streets, it is important that the plinths are not only activated by presence of people on otlas, but also by commercial and community functions on the ground floor. Therefore, each cluster has a center with space for greenery and communal activities. In the heart of the cluster are lifted platforms placed, where people can meet, socialise, play, practice religion or work. It is up to the community what happens there. This way it suits the residents living in the cluster. The cluster provides activities, safety and social cohesion within the semi-public space of the cluster.

It is of importance that the activities in the cluster are diverse to provide safety. The analysis of the site and the naka pick up point concluded that there was a lack of daycare and healthcare facilities. Because the middle income groups ask for more privacy then the lower income groups, the ground floor of these units can be used for commerce, healthcare and daycare functions. This also provides an activated plinth.

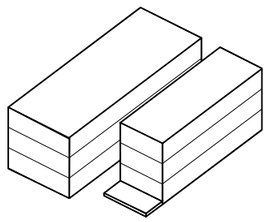

private
semi - public
private
semi - public
private
public
dwelling
dwelling
dwelling
dwelling
daycare
naka
domestic life
otla
other work
oppotunities
community
care
shared
infrastructure
safe route



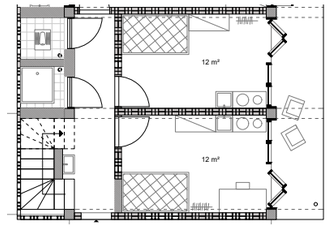


typical unit 1.100

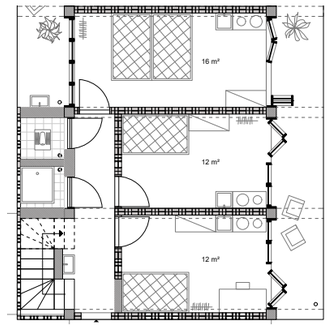
EWS / LIG



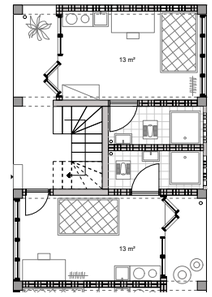
One of the main characteristisc of the LIG units are the flexibility and the opportunity to grow. Units start with dwellings from 8m^2, which is very small. Residents share their toilets and showers to save space. These units offer just enough space to function, sleep, cook and store basic needs for single or a couple of migrant workers. The idea is that when these daily wage workers have a stable home, they get the chance to grow stability economically as well. Once they save enough money, they can expand and personalise the space to their needs. This demands flexibility and is why the structure is made out of columns instead of fixed walls. Fixed elements such as toilets, bathroom and circulation space are placed on the edges of the building to give as much freedom and flexibility as possible to the space that is left.



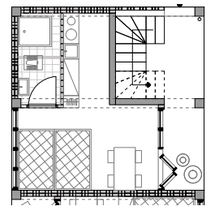
6000 mm (length) x 9000 mm (wide)



9000 mm (length) x 9000 mm (wide)



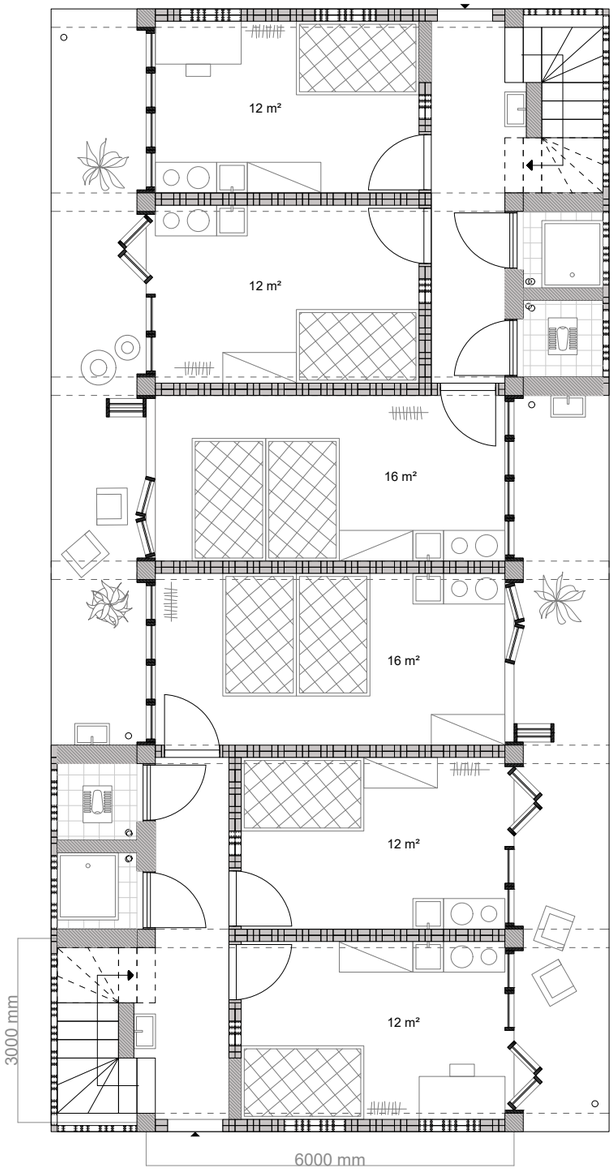
9000 mm (length) x 6000 mm (wide)

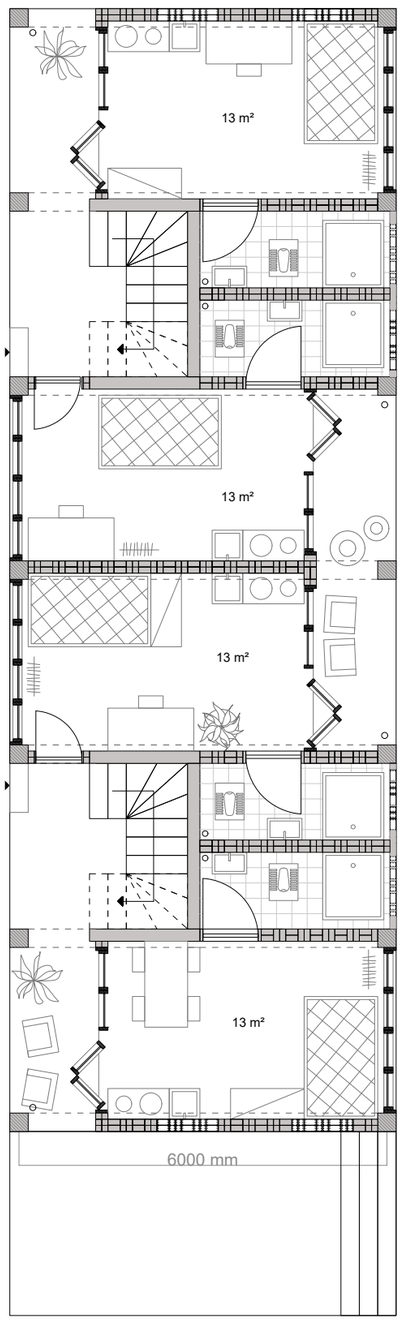


9000 mm (length) x 6000 mm (wide)

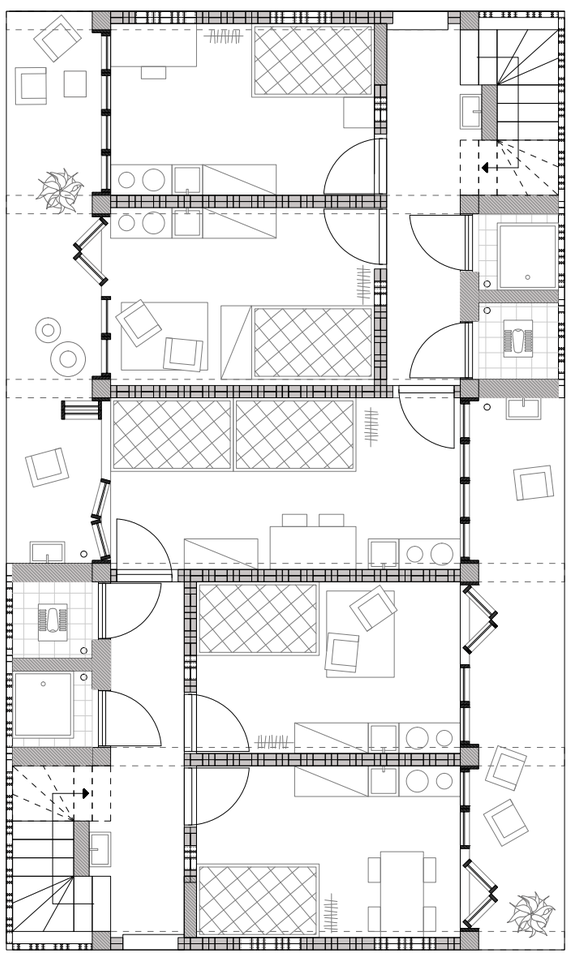
The low income units are always placed as two buildings next to each other. To keep costs low and the units easy to build, there is a set of 4 types that can be arranged in multiple configurations. The buildings are always 6000 or 9000 mm wide and can be 6000 or 9000 mm long. This makes that different lengths such as 6000, 9000, 12000, 15000, 18000 mm can be configurated, accordingly to what is needed for the cluster.

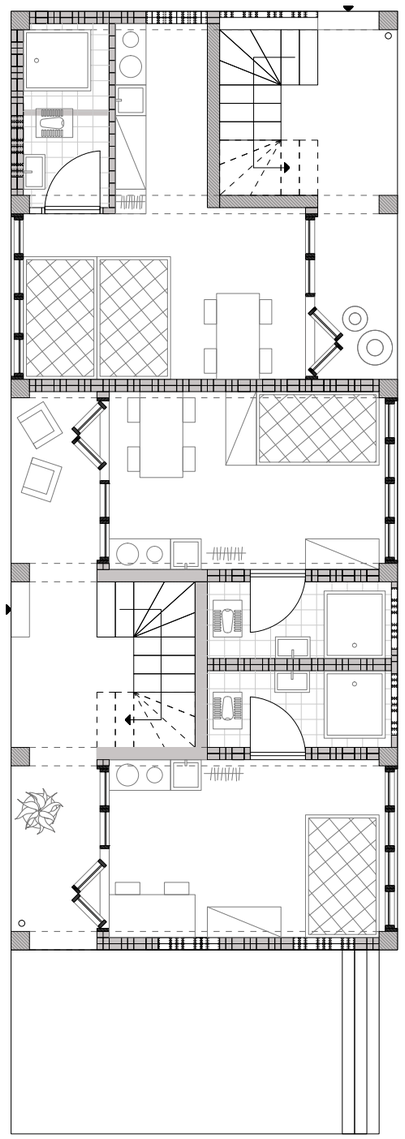
This way the cluster model remains flexibile for adaptations.





Typical building: 9000 x 18000 and 6000 x 18000 mm. 1.100





Typical building: 9000 x 15000 and 6000 x 15000 mm. 1.100



From conversations held with residents on the site, it became clear that a sense of ownership and the possibilty to expand the house are important values. The units can expand until the otla, to enjoy more inside space. The most growth of the units comes from combining units.

The floorplans on the right show how units can adapt, combined and grow over time. These floorplans are speculative, since it is up to the residents themselves if and how they want to change their unit.

Phase 1 shows the maximum amount of dwellings per floor, ranging from 8 m^2 to 12 m^2. These are the smallest units from the masterplan.

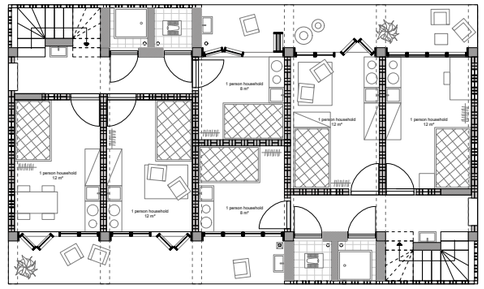
In phase 2 the two smallest units from 8 m^2 are combined into one units that can ben inhabited by an extra person.

In phase 3 two other units are combined and form a unit of 25 m^2. This dwelling is now suitable for a couple or small family. Also does this create the suggestion of having two rooms, while it is still one space.

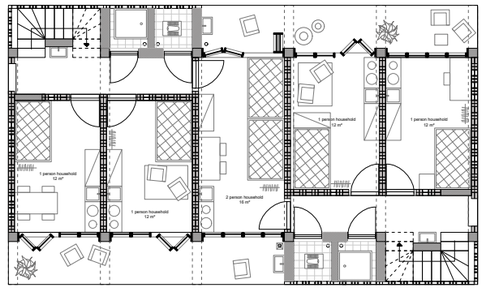
Phase 4 shows the 2 units combining again from 12 to 25 m^2. But also the middle unit expanding their unit to one of the two otla spaces. This creates a space of total 20 m^2. The unit on the left also expands from 25 to 33 m^2, which means the toilet and shower have become private for these residents.

This is just an example of how the units could evolve. 33 m^2 is not the maximum, when the circumstances are right the one dwelling could take over the whole ground floor.

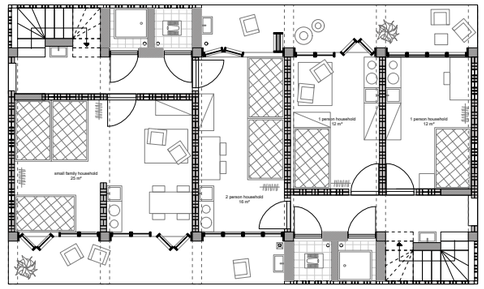
phase 01.
6 units per floor
8-12 m^2



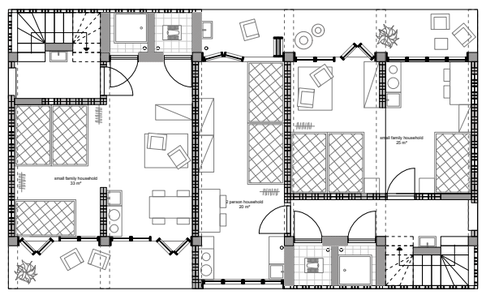
phase 02.
5 units per floor
12-16 m^2



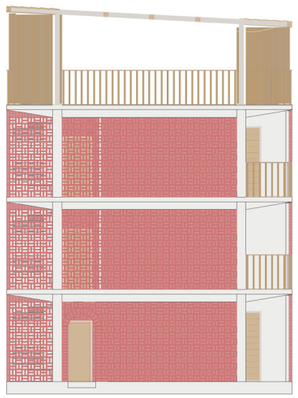
phase 03.
4 units per floor
12-25 m^2

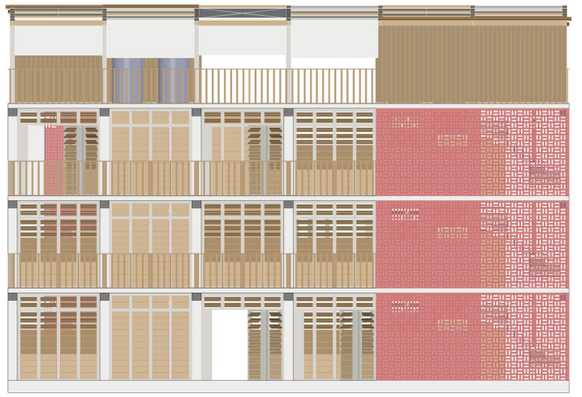


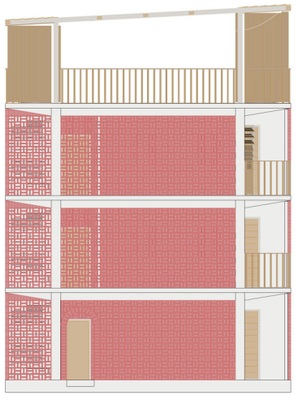
phase 04.
3 units per floor
20-33 m^2





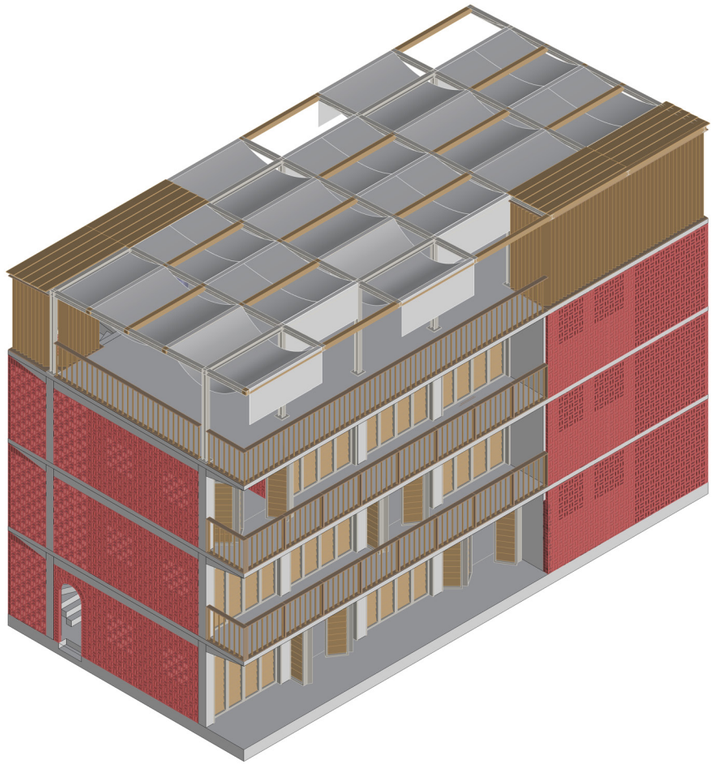








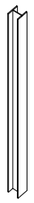
The roof of the building functions as a collective space for residents of the building. Here they can sleep during warm nights, hang their laundry, play and socialise.







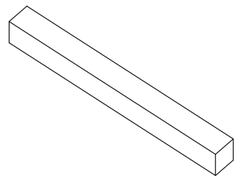




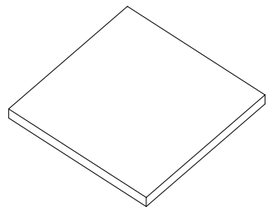
HEB 200
Steel column and beams
H = 200 mm
B = 200 mm
T = 15 mm
S = 9 mm



Column
Concrete
300 x 300 mm
Height = 3000 mm



Beam
Concrete
300 x 400 mm

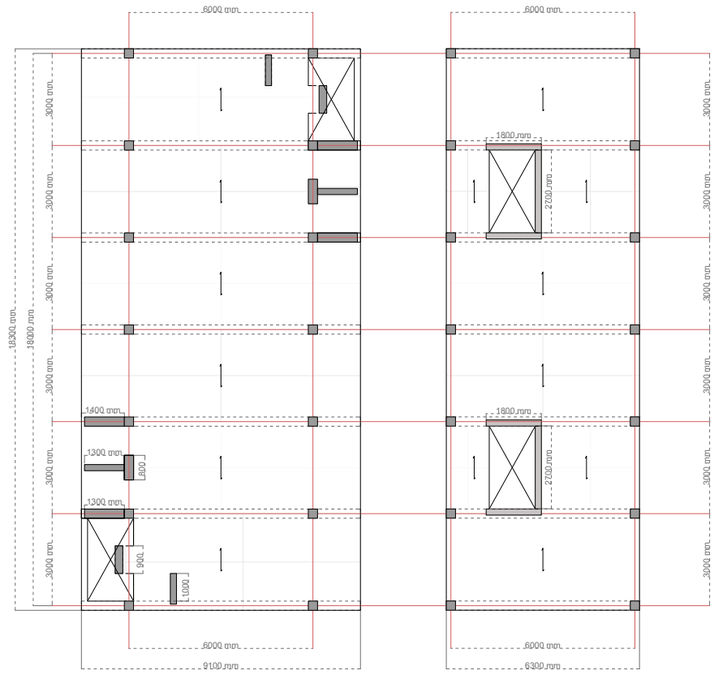


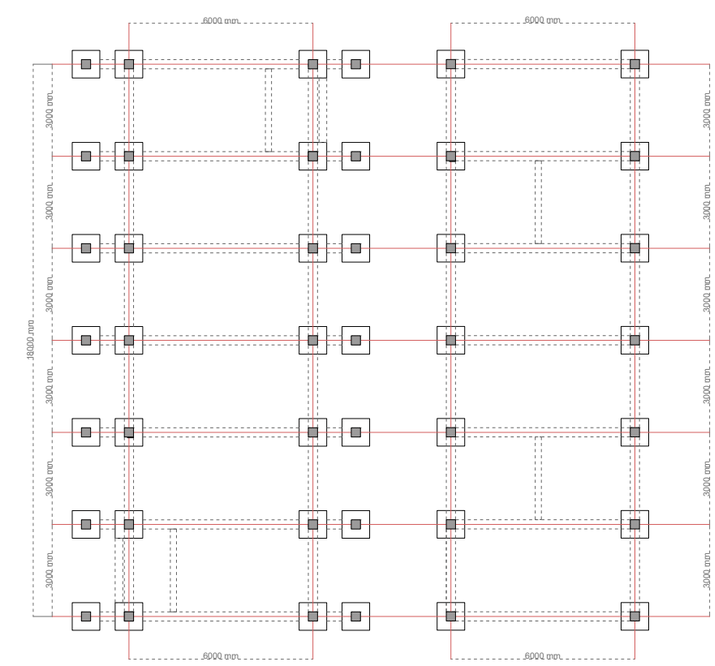
Floor slab
Concrete
Thickness = 150 mm

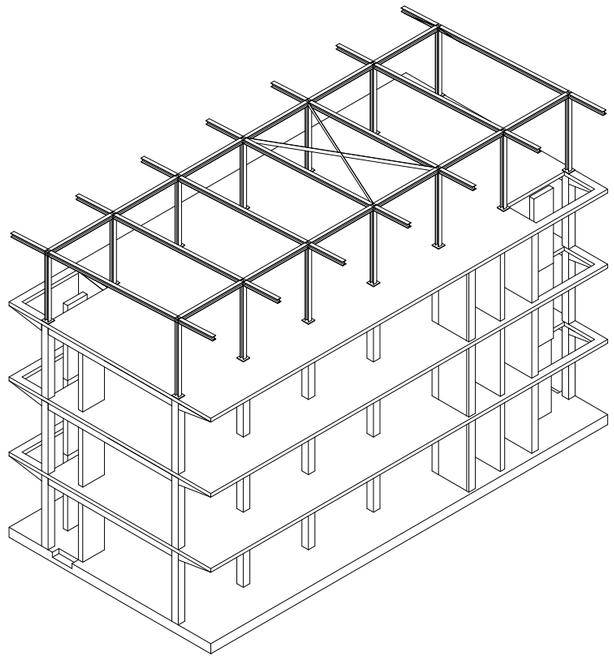
The construction of the building is made out of reinforced concrete. The structural system is designed to support flexibility over time. This means a colums system was used and the load bearing walls are located near the fixed elements such as the toilets, bathrooms and stairs, since it is not likely that these elements will change quickly.

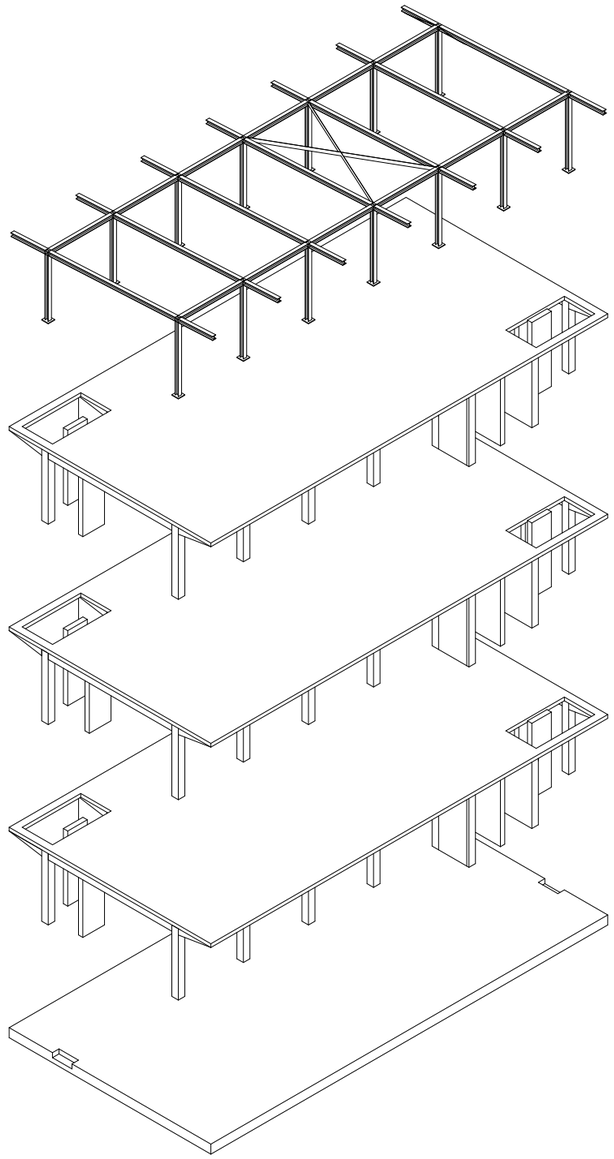
The colums have a thickness of 300 x 300 mm and are 3000 mm high. The beams are 400 mm high and 300 mm wide. The concrete floor has a thickness of 150 mm. Above the 3 floors of dwellings a light steel construction is located.

A small span of 3 metres is used instead of a larger span around 6 metres to reduce the thickness of the floor. This reduces material use and construction costs.



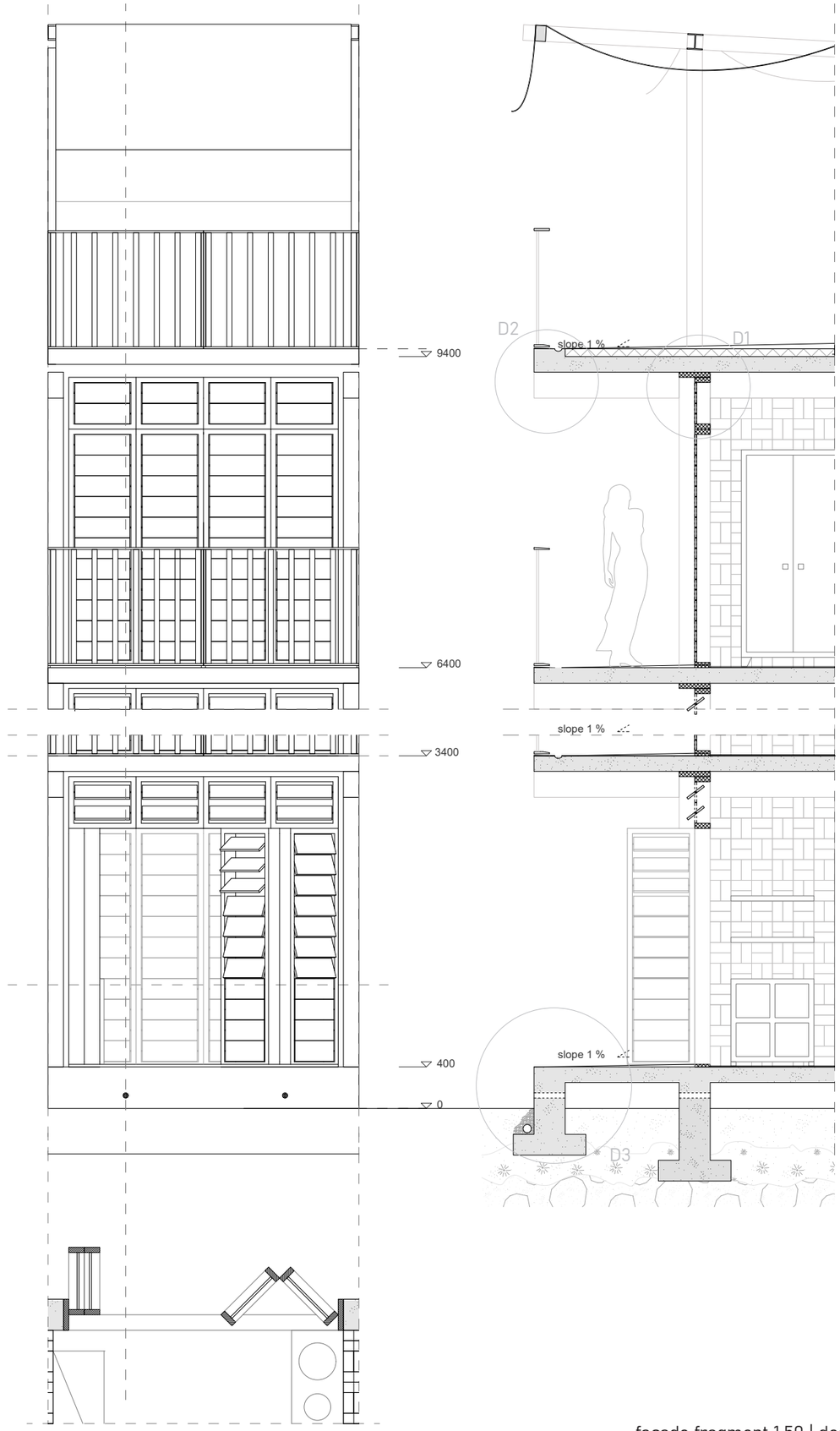


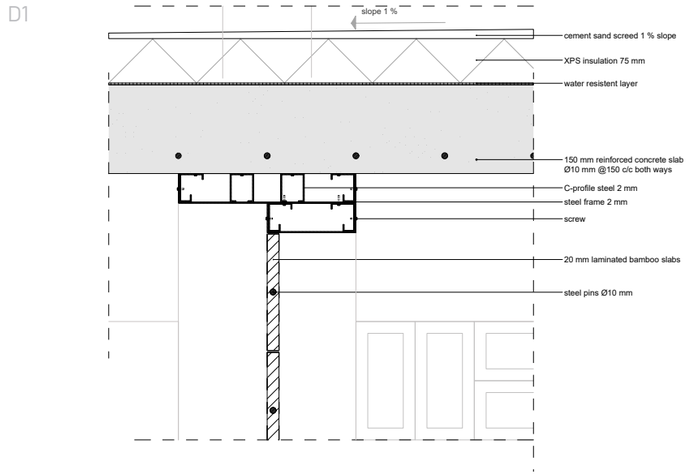


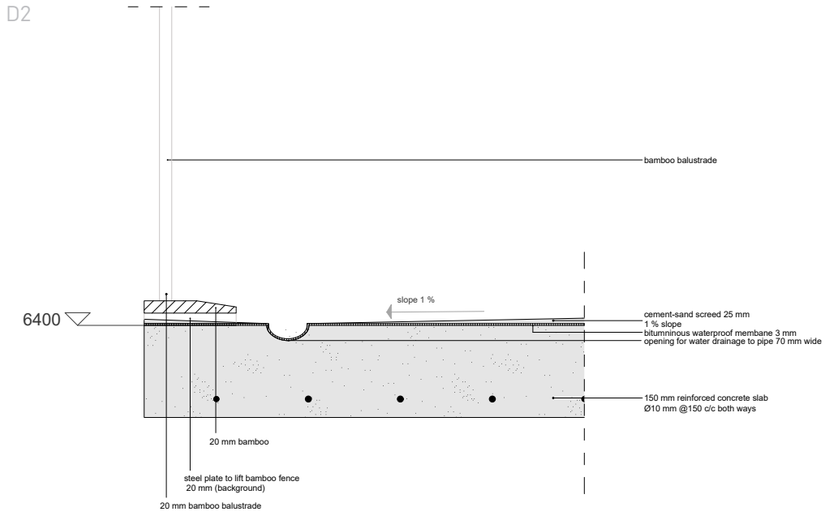



9400
6400
3400
400
0

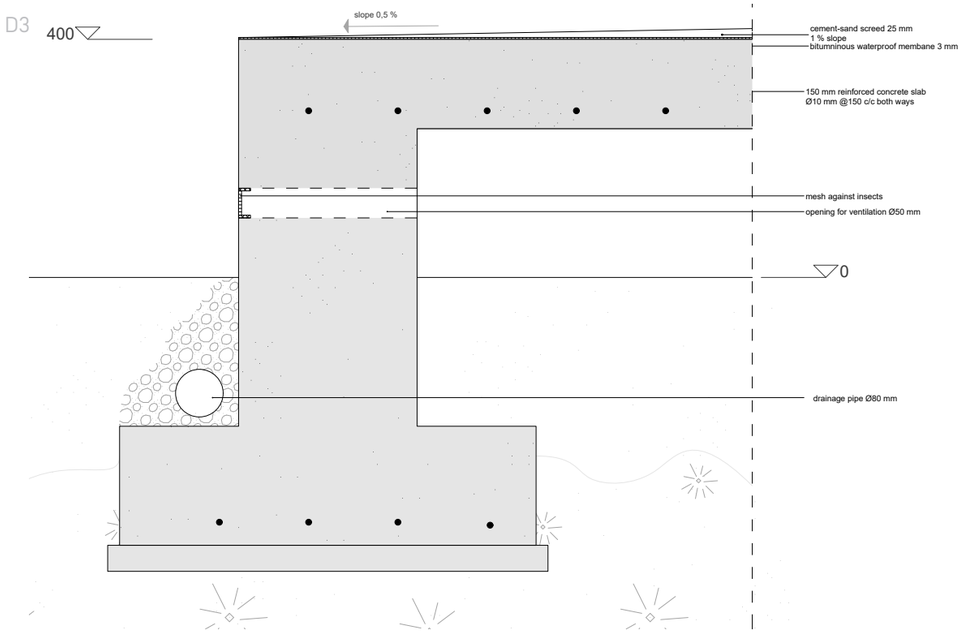



9400
6400
3400
400
0
D2
D1
slope 1 %
slope 1 %
slope 1 %
D3

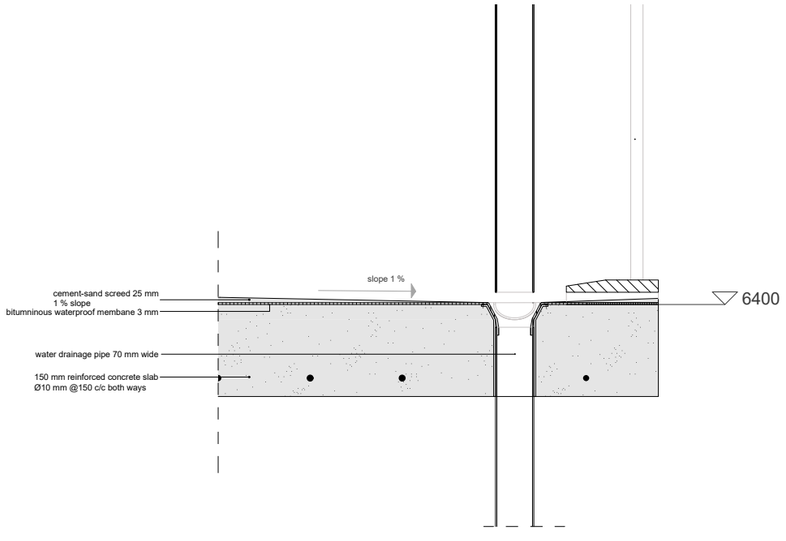

D1
slope 1 %
cement sand screed 1 % slope
XPS insulation 75 mm
water resistent layer
150 mm reinforced concrete slab
Ø10 mm @150 c/c both ways
C-profile steel 2 mm
steel frame 2 mm
screw
20 mm laminated bamboo slabs
steel pins Ø10 mm

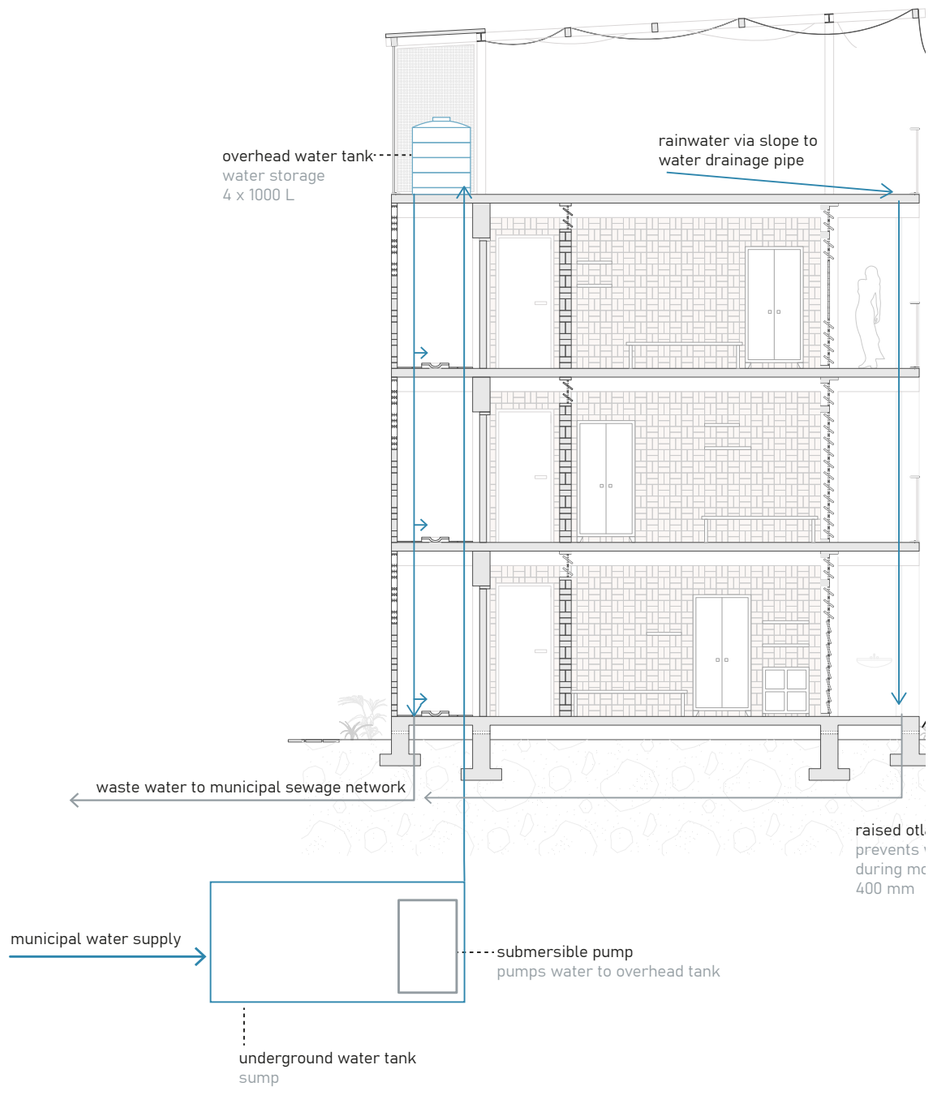

D2
bamboo balustrade
6400
slope 1 %
cement-sand screed 25 mm
1 % slope
bitumninous waterproof membane 3 mm
opening for water drainage to pipe 70 mm wide
150 mm reinforced concrete slab
Ø10 mm @150 c/c both ways
20 mm bamboo
steel plate to lift bamboo fence
20 mm (background)
20 mm bamboo balustrade

D3

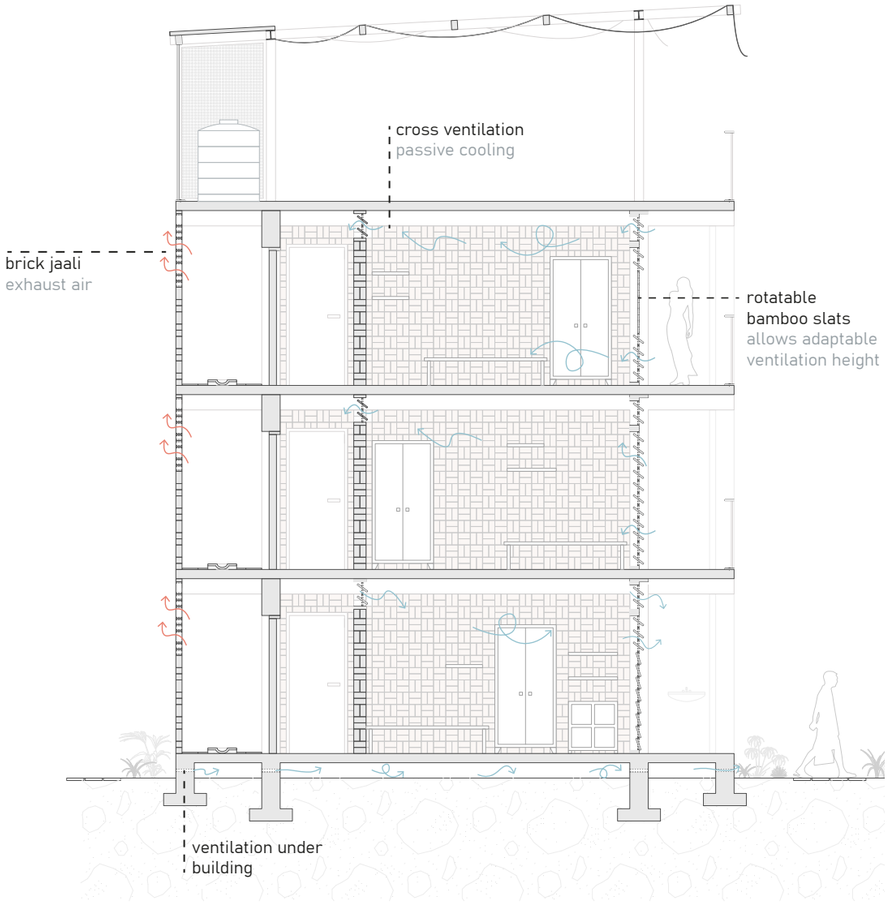

400
slope 0,5 %
cement-sand screed 25 mm
1 % slope
bitumninous waterproof membane 3 mm
150 mm reinforced concrete slab
Ø10 mm @150 c/c both ways
mesh against insects
opening for ventilation Ø50 mm
0
drainage pipe Ø80 mm

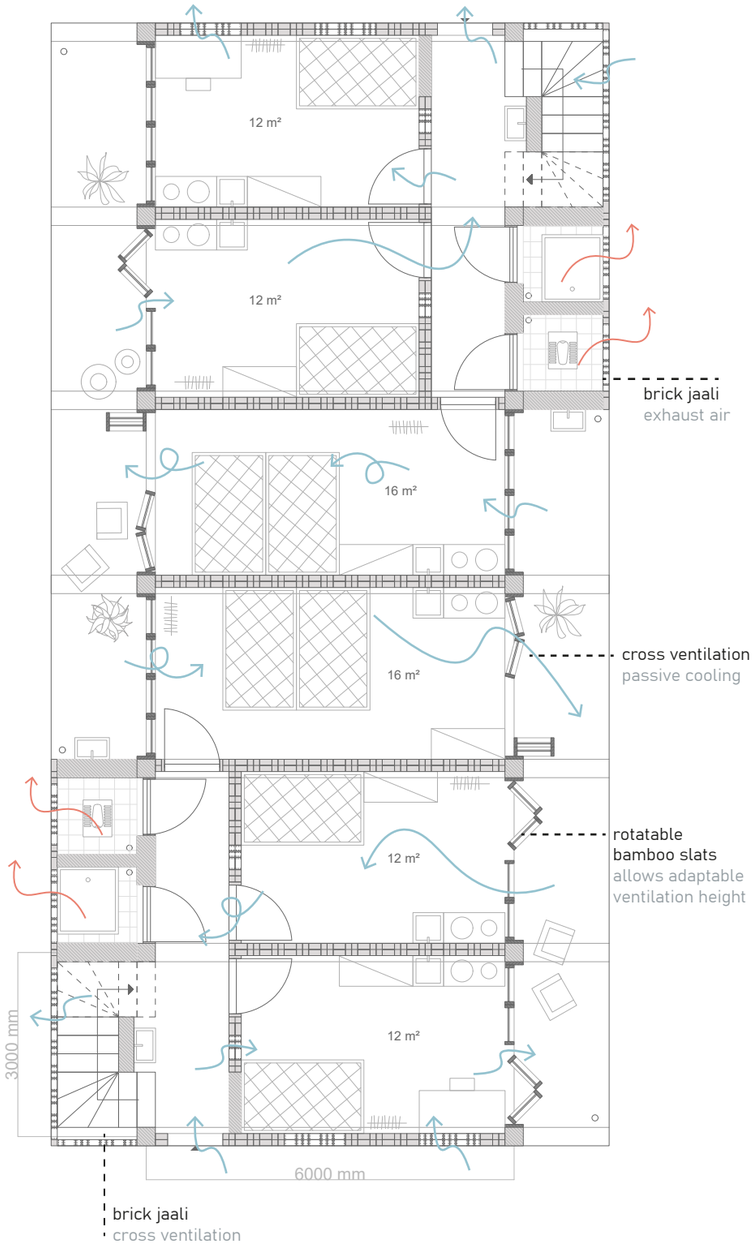
D4

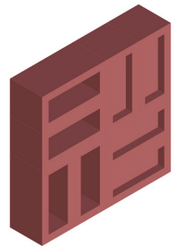

slope 1 %
cement-sand screed 25 mm
1 % slope
bitumninous waterproof membane 3 mm
water drainage pipe 70 mm wide
150 mm reinforced concrete slab
Ø10 mm @150 c/c both ways
6400


overhead water tank
water storage
4 x 1000 L
rainwater via slope to
water drainage pipe
waste water to municipal sewage network
raised otl
prevents
during mo
400 mm
municipal water supply
submersible pump
pumps water to overhead tank
underground water tank
sump

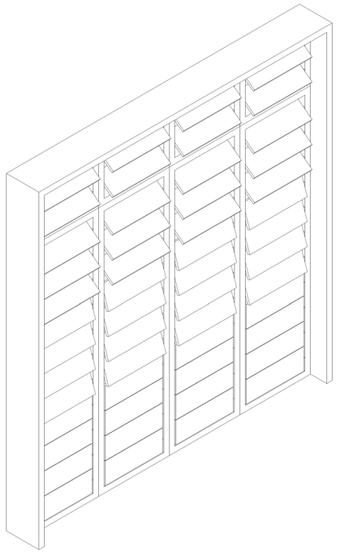

white cloth
attracts minimal heat
and provides shadow
brick jaali
less direct sunlight
in the dwelling
balconies provide
shadow
less direct sunlight
in the dwelling
small street profile
2800 mm
providing shadow


cross ventilation
passive cooling
brick jaali
exhaust air
rotatable
bamboo slats
allows adaptable
ventilation height
ventilation under
building





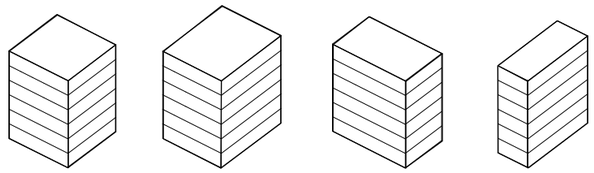
There are two types of brick used in the project. One jaali brick and one standard. The sizes of the brick are 190 x 190 x 90, with 10 mm mortar in between. The openings in the brick work allows ventilation into the dwellings.



The rotatable bamboo slats are an interpretation of the traditional Indian door, that allows ventilation on multiple heights. These doors can be shut and opened on the parts were its needed. When cooking, the slats on top can be openened or even the whole door. But when sleeping, it might be nicer to only enjoy some low air flow while maintaining privacy.







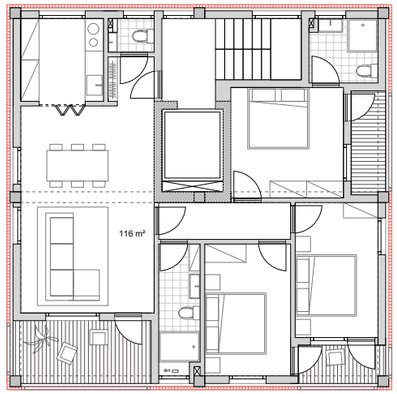
12000 x 12000 12000 x 15000 15000 x 9000 6000 x 15000

MIG buildings

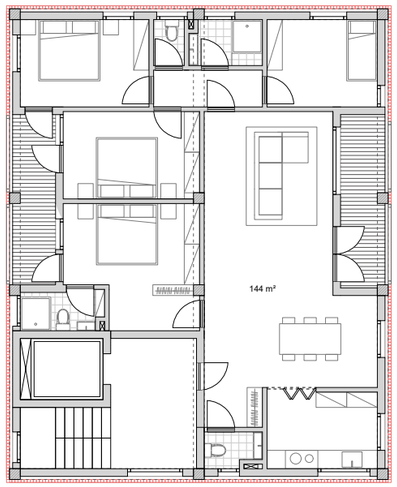
In each cluster, multiple middle-income (MIG) buildings are located at the corners. Through their public plinths, they define the edges of the cluster. To enable the cluster to adapt to varying border conditions within the masterplan, four MIG building types have been developed. These types follow the same architectural principles but differ in scale.

This differentation serves two purposes. On the one hand it allows the cluster to remain flexible and fit into different border situations. But also, it allows for a broader socio-economic range within the middle-income group. For households progressing economically from the lower-income group (LIG), the higher segments of MIG apartments are not immeadiatly accesible. The four dwelling types of 66, 106, 116 and 144 $m^{2.}$ form a gradual housing sequance, functioning as a litral ladder of upward mobility. This progression ranges from two-bedroom apartments with a small loggia to larger four-bedroom units with more generous outdoor spaces.

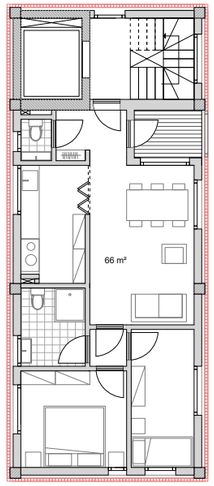
All MIG buildings are all six stories high. The ground floor accomodates a seperate entrance to the dwellings above, while also hosting public functions such as healthcare, daycare and retail. This seperation between residential and public functions is expressed in the facade design and materiality. The ground floor has a concrete facade that plays with lightfall through angles surfaces. The dwellings above are wrapped in a secondary facade made of jaali brickwork. This allows light to come in while still providing shade and privacy.



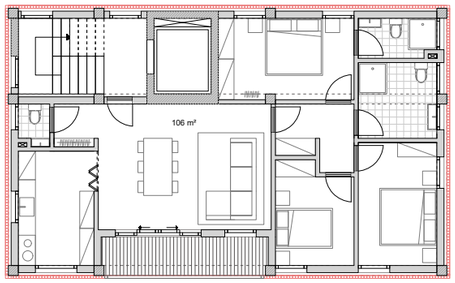
I. 12000 x 12000 mm - 116 m^2



II. 12000 x 15000 mm - 144 m^2



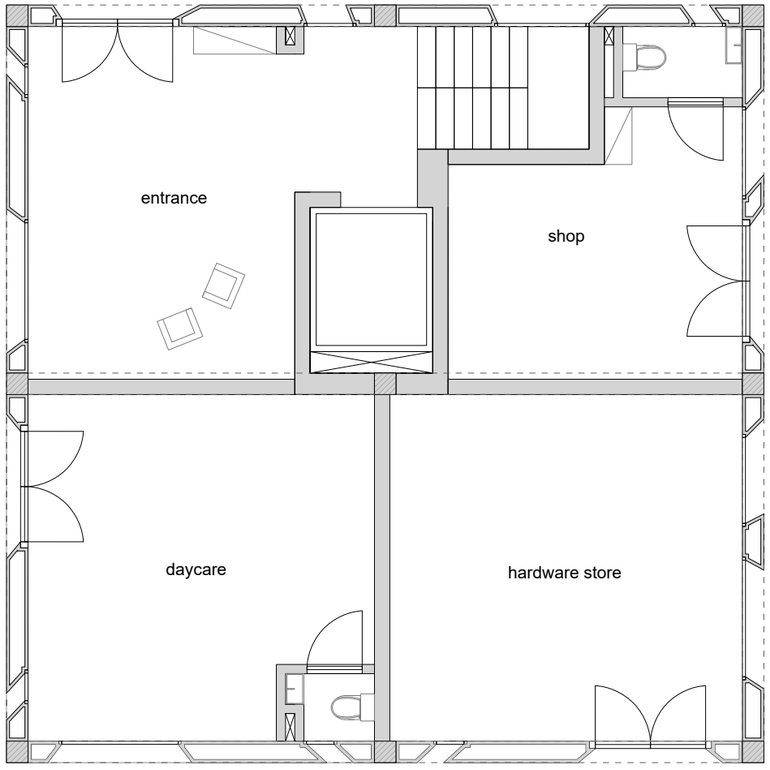
III. 6000 x 15000 mm - 66 m^2



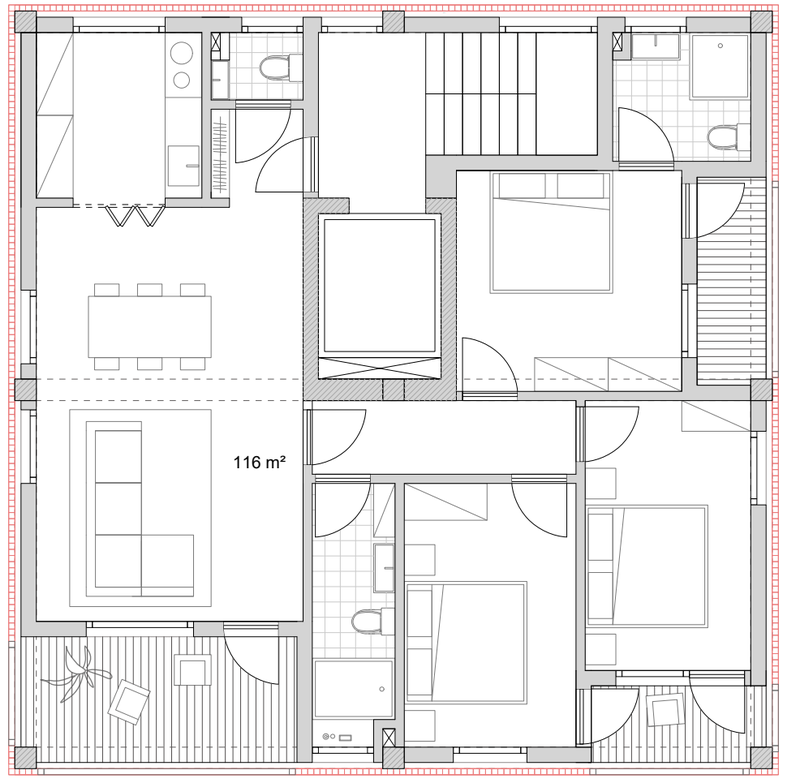
IV. 9000 x 15000 mm - 106 m^2

The circulation route through the dwelling units is always characterised by the same sequence of spaces; an entry space with storage and s toilet, followed by the kitchen, then the living room and finally the more private spaces such as bedrooms and bathrooms, which are always buffered by a hallway. This way, the public and private domains are seperated through a gradual spatial transition.

All the dwellings have at least one loggia, providing a shaded outdoor space. These loggias also function as thermal buffers, minimalising the heat that enters the dwelling.



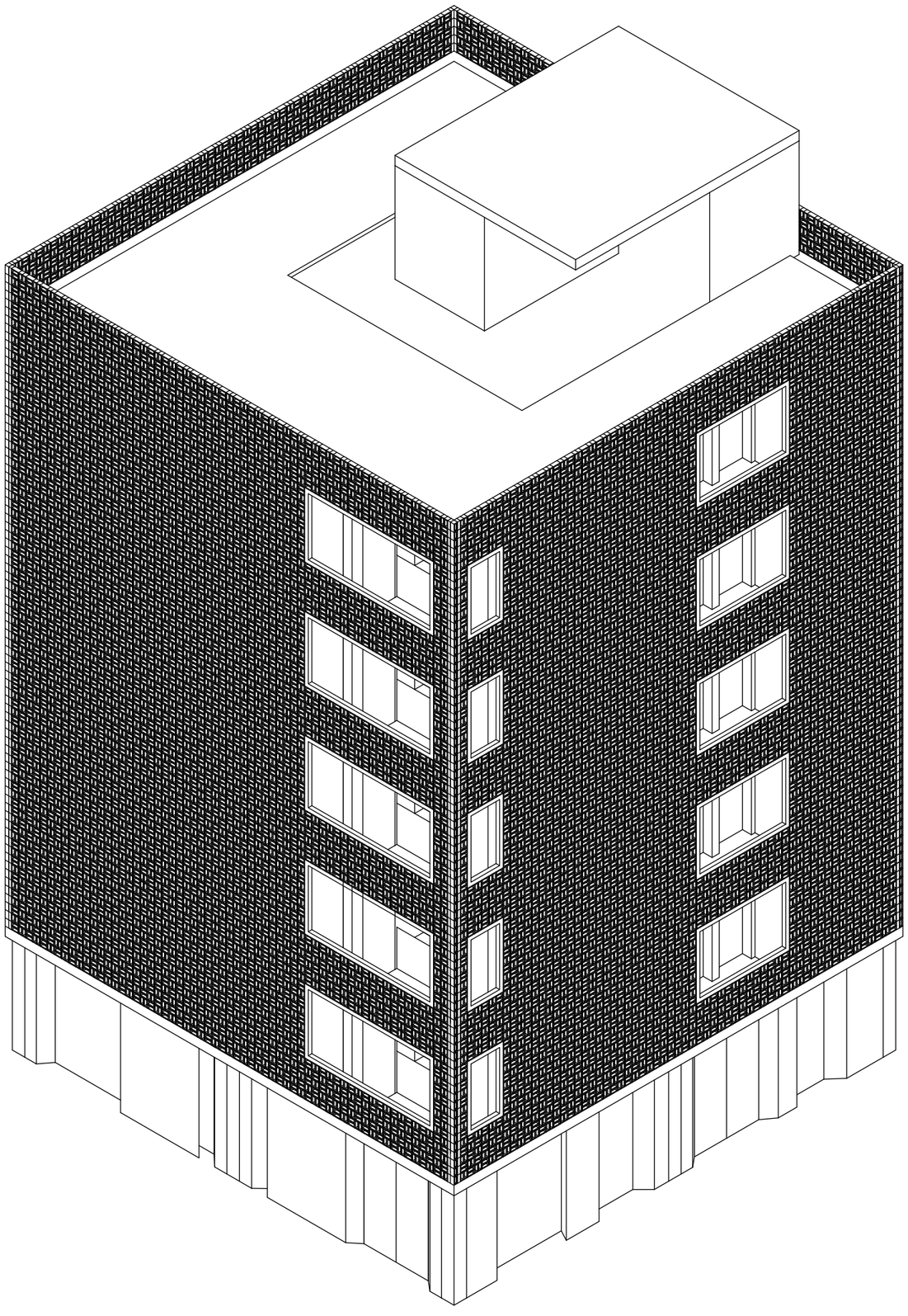
groundfloor 1.100

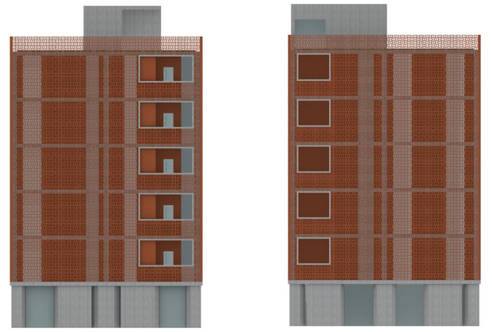


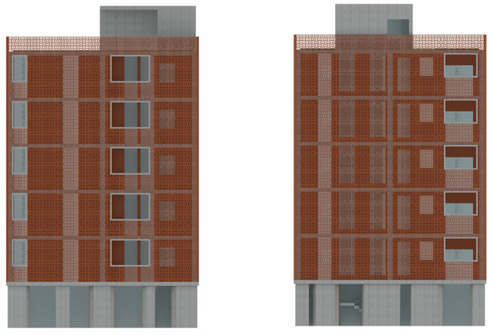
floor 01 - 05 1.100

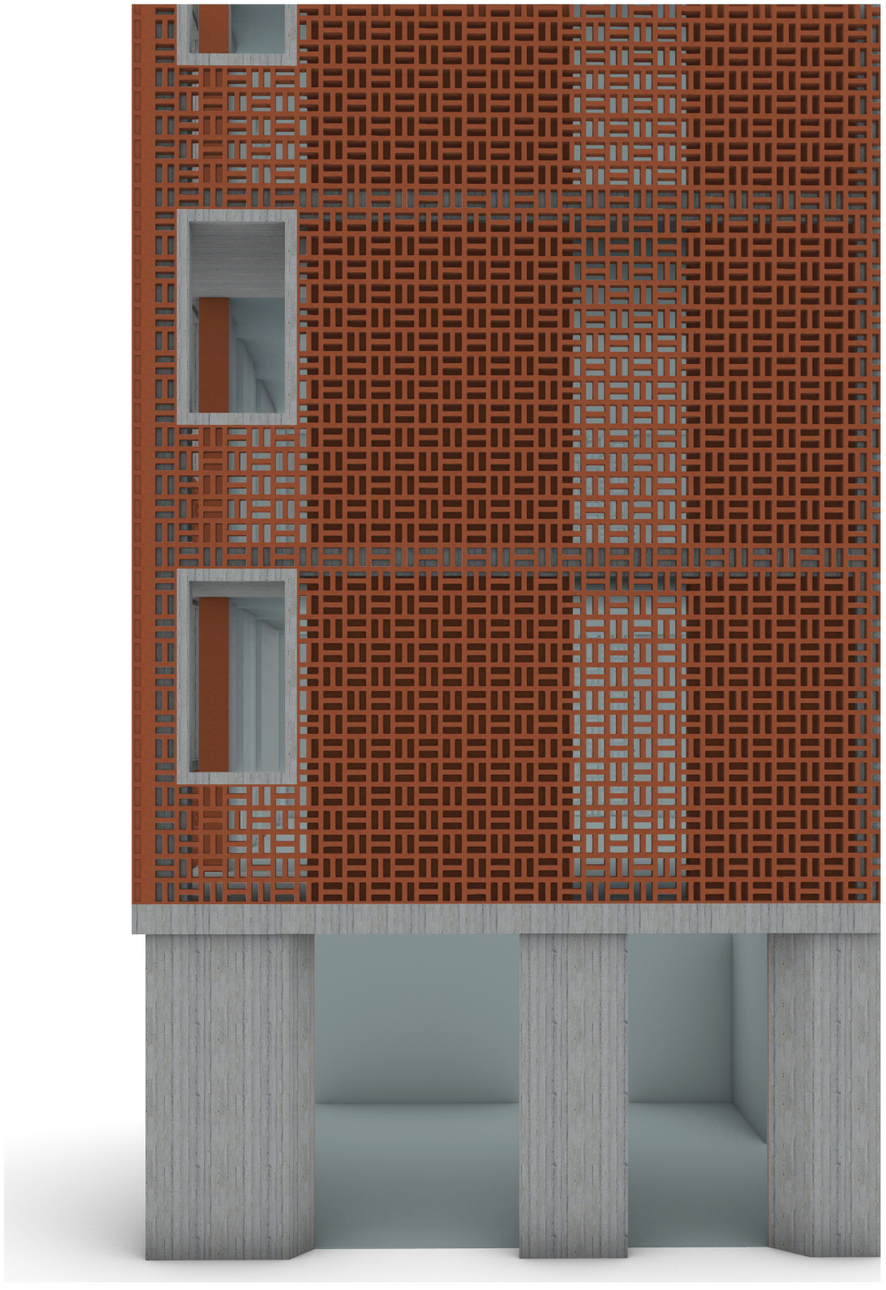
MIG I
12000 x 12000 mm
116 m²

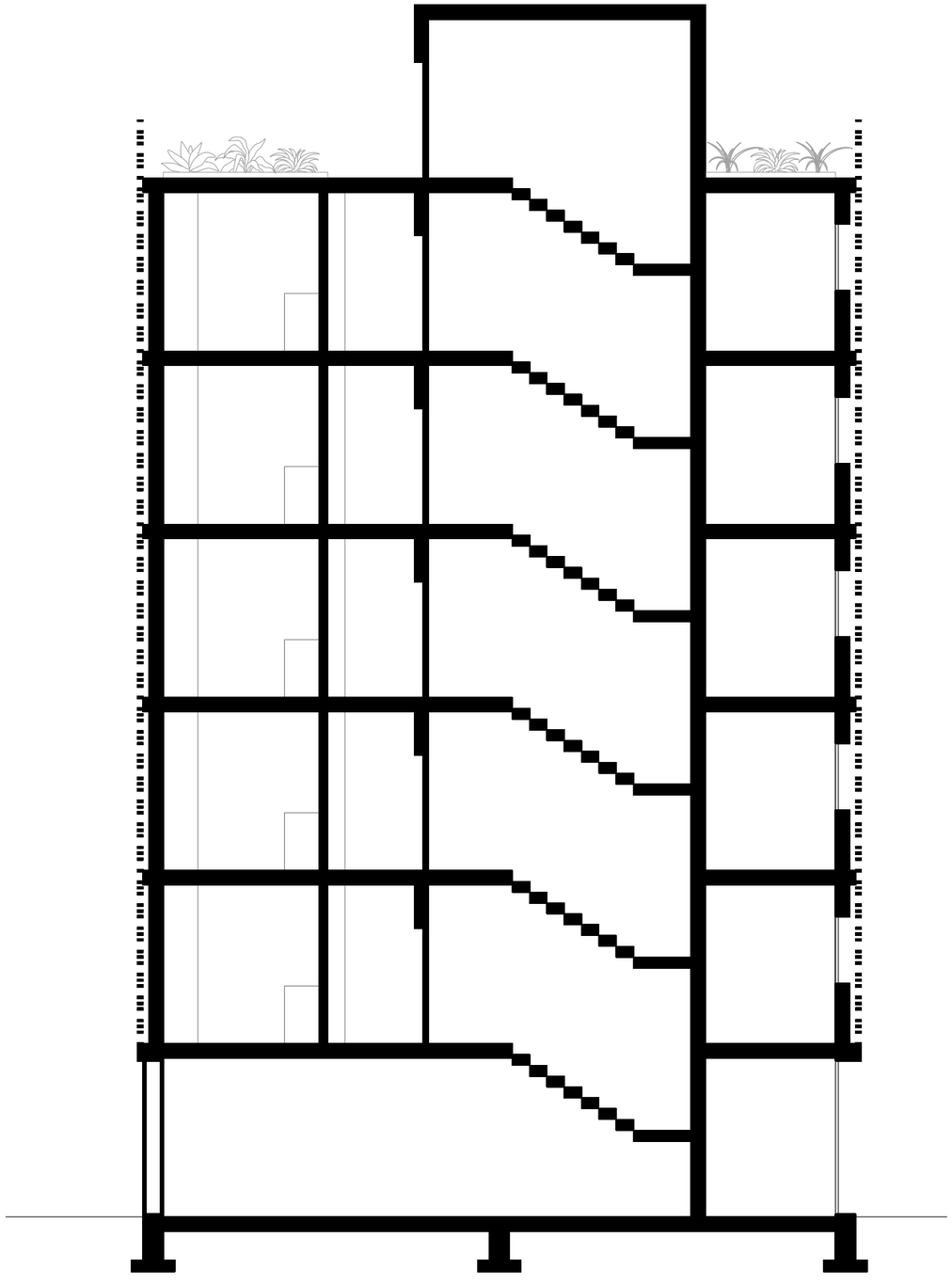
The apartments in MIG building I are 116 m² and have 3 bedrooms. There is one larger loggia connected to the living room and two smaller loggias next to the bedrooms. There are two bathrooms, one shared by 2 bedrooms and one private ensuite.



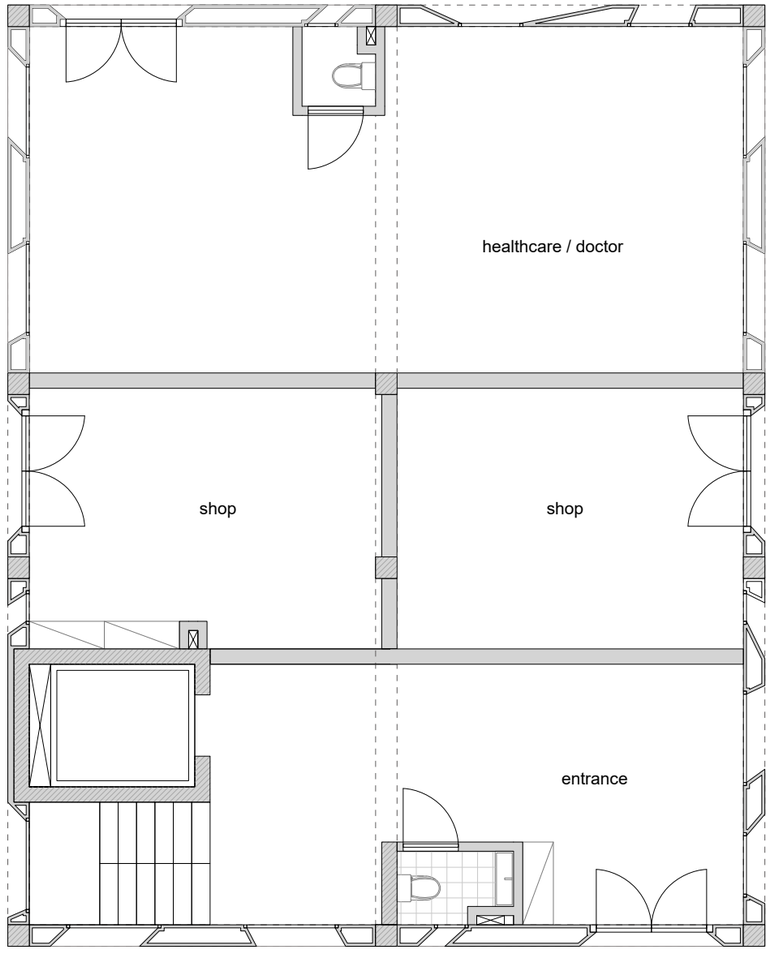




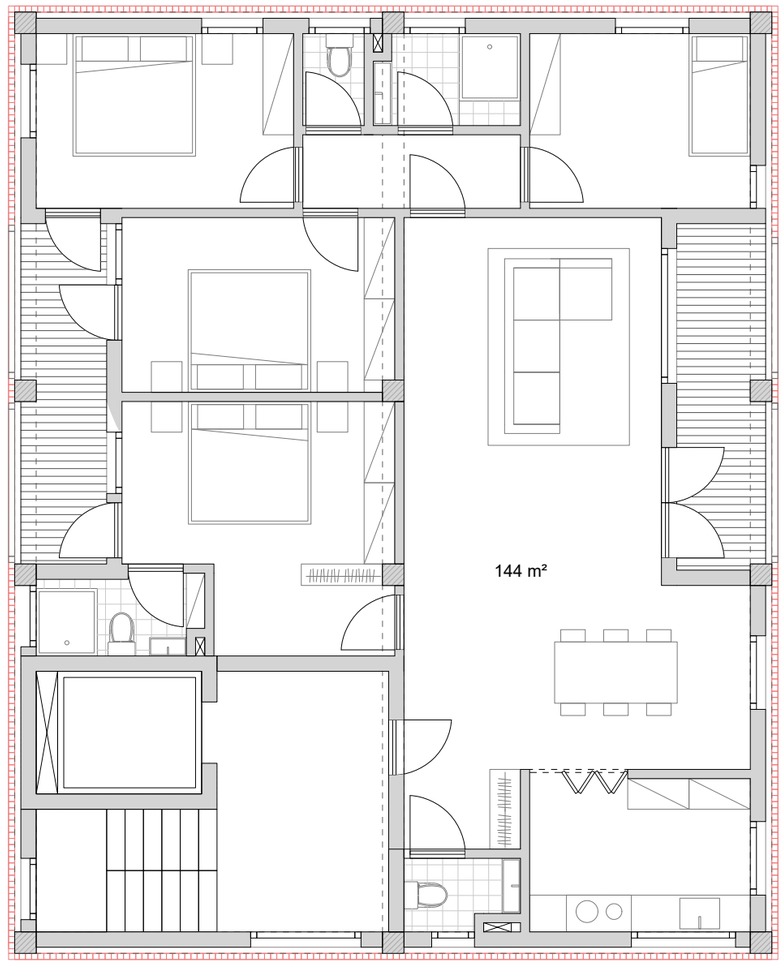








groundfloor 1.100

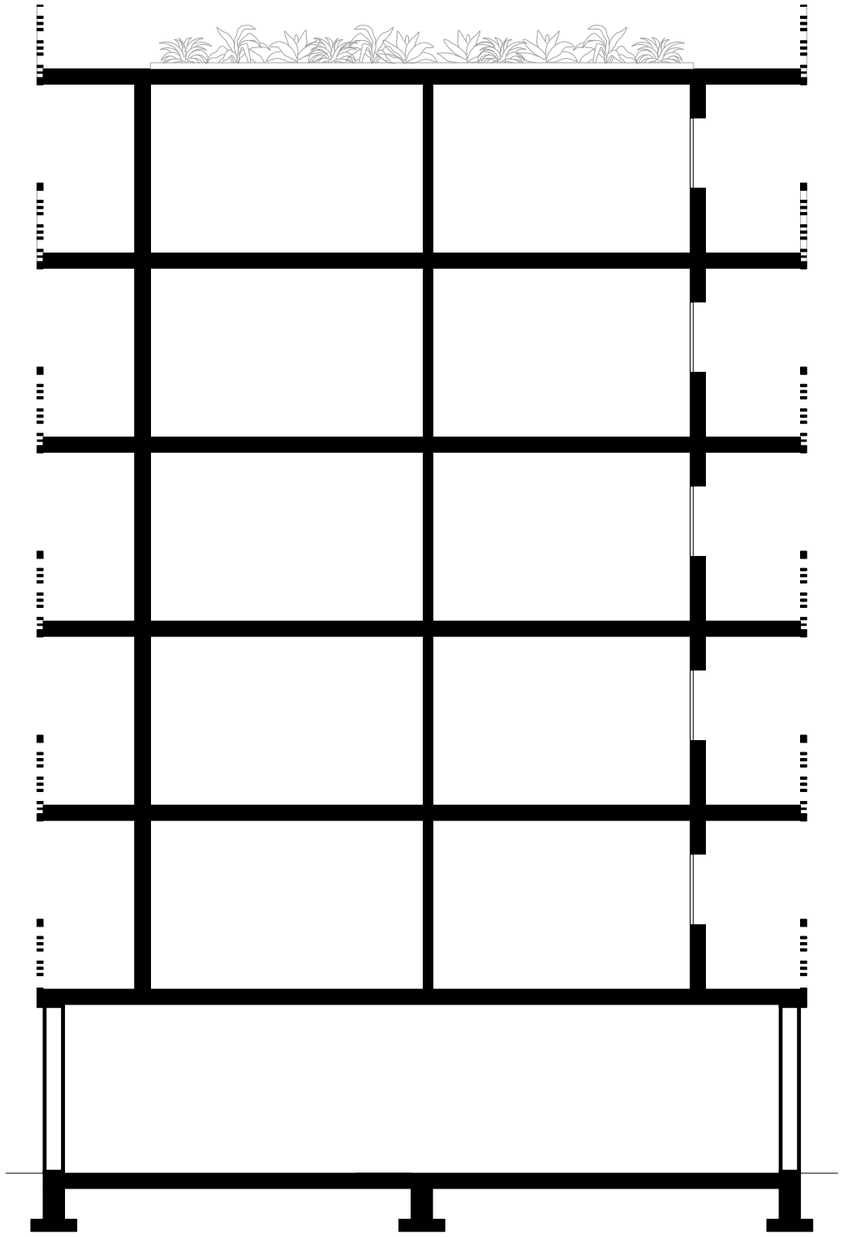


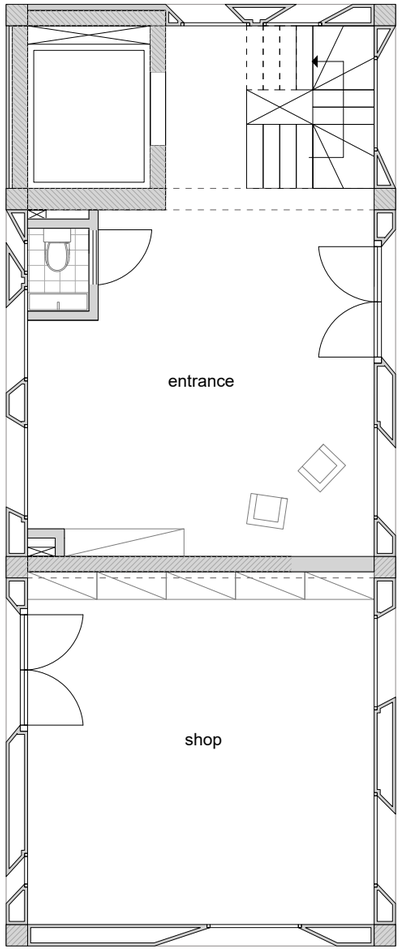
floor 01 - 05 1.100

MIG II
12000 x 15000 mm
144 m²

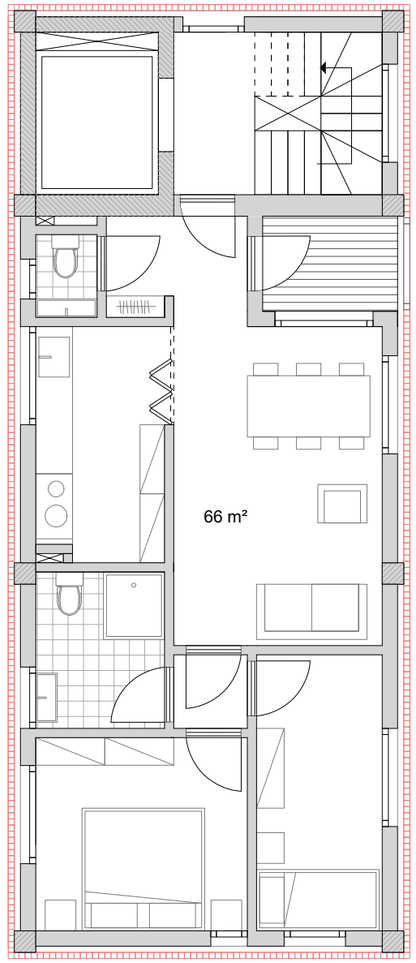
From all the MIG buildings in the plan, this building contains the largest apartments. The apartments are 144 m² and have 4 bedrooms. 3 bedrooms share a seperate toilet and bathroom, and the master bedroom has a bathroom including toilet ensuite. There are two loggias, one with a more private character bordering 3 bedrooms and a more public one next to the living room.







groundfloor 1.100

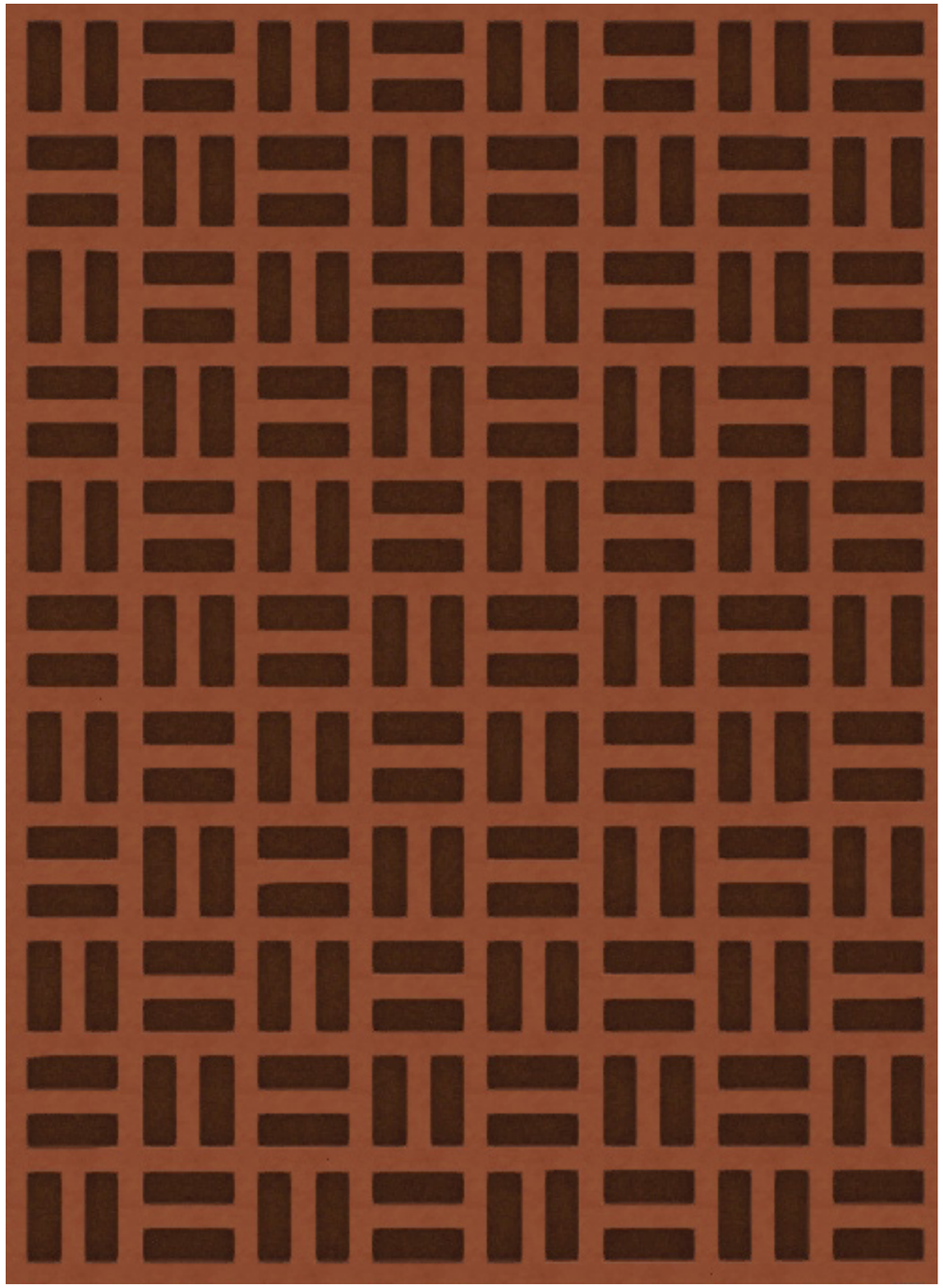


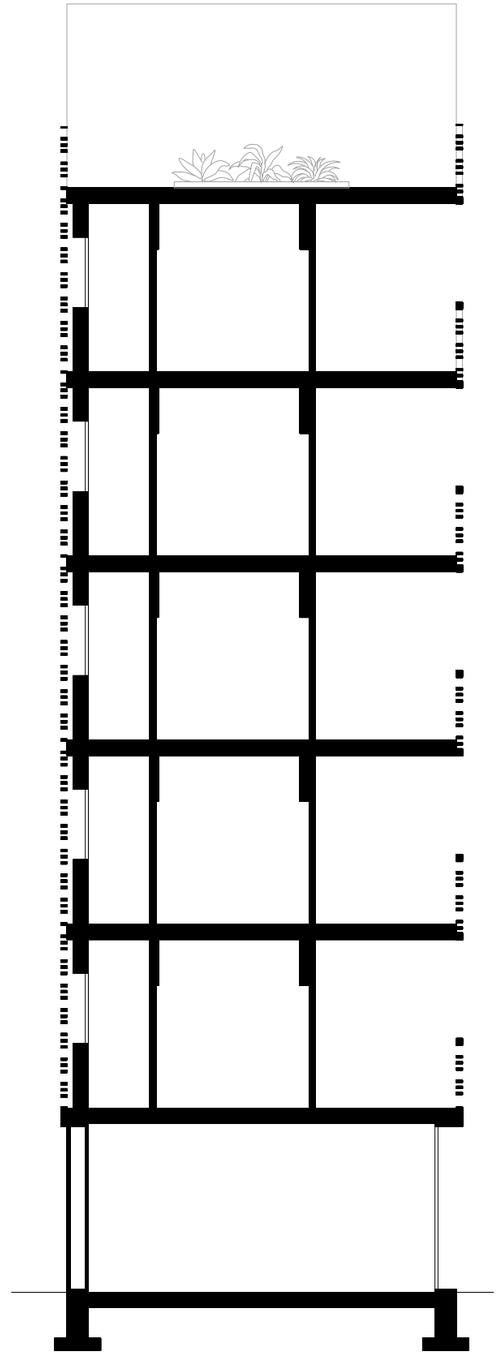
floor 01 - 05 1.100

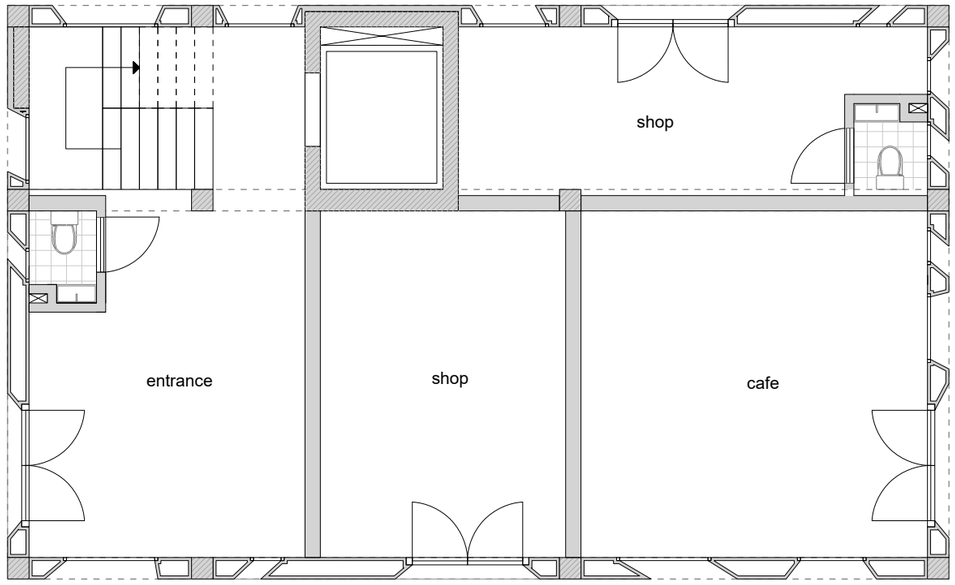
MIG II
6000 x 15000 mm
66 m²

This is the smallest building among the MIG buildings in the masterplan with a width of 6000 mm. .

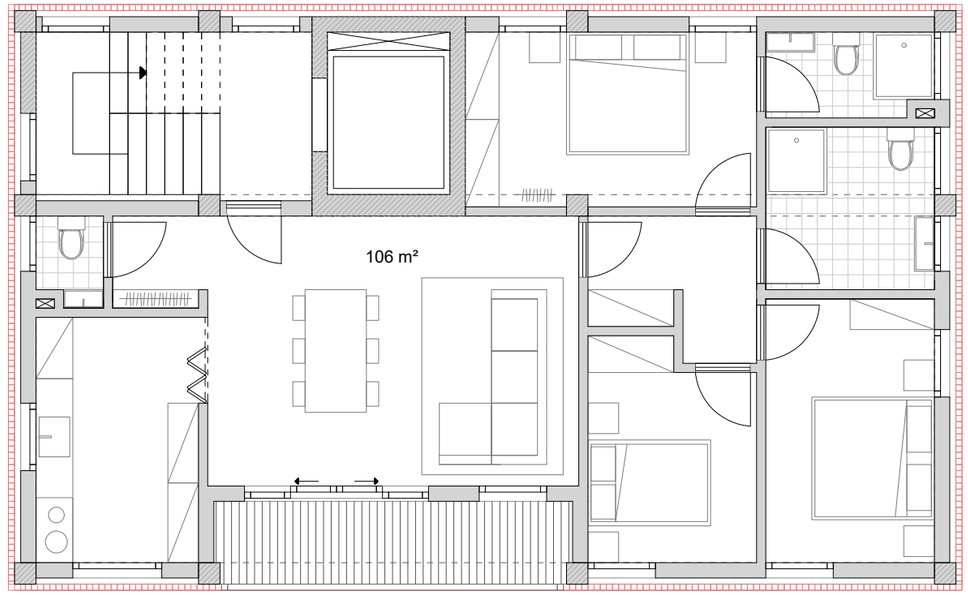
The apartment is 66 m² and contains two bedrooms that share one bathroom. There is one loggia next to the living room







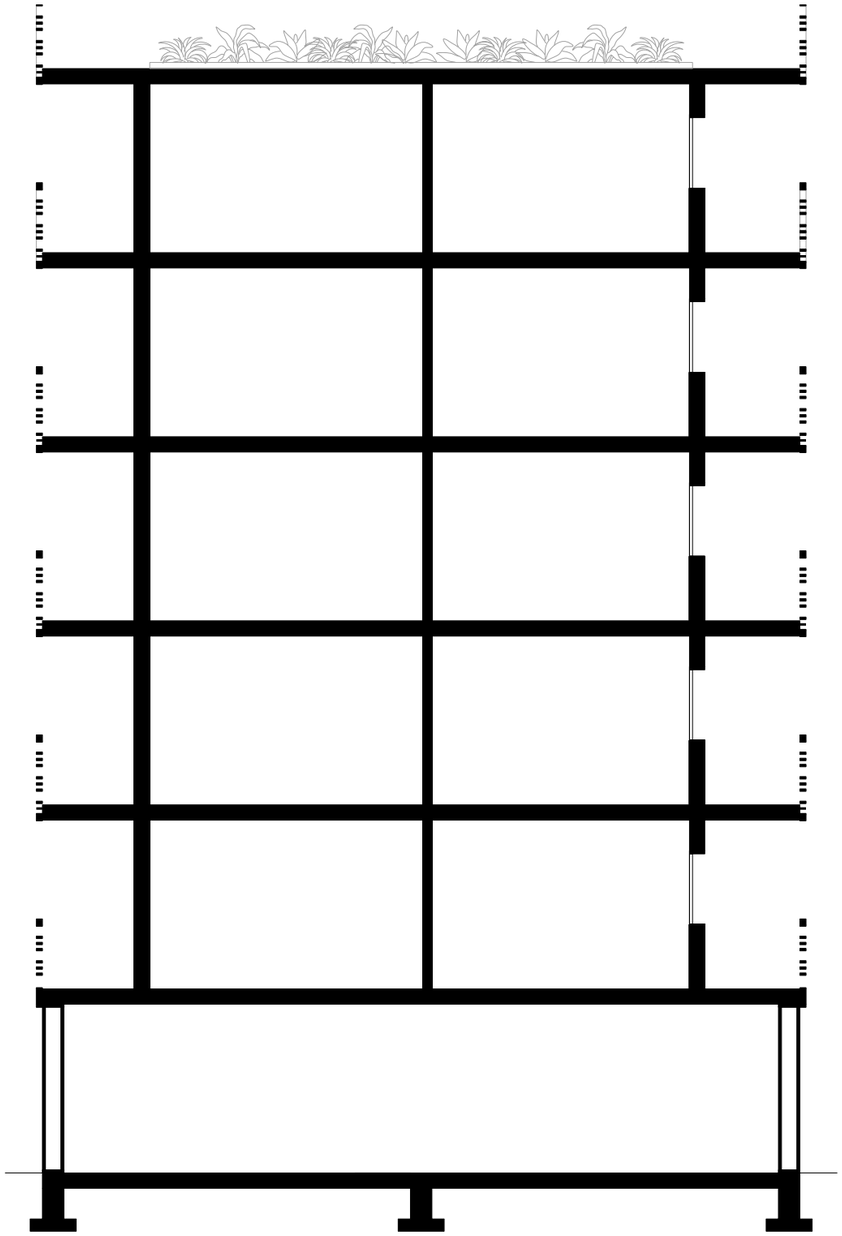
groundfloor 1.100

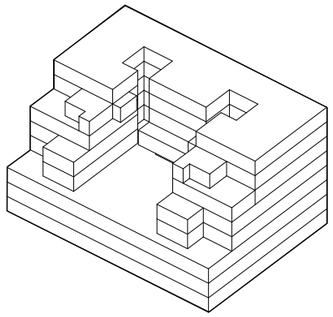


floor 01 - 05 1.100

MIG IV
12000 x 15000 mm
106 m²

The apartments in building IV are 106 m² and contain 3 bedrooms. 2 bedrooms share a bathroom, and the master bedroom has a bathroom including toilet ensuite. There is one large loggia connected to the living room.

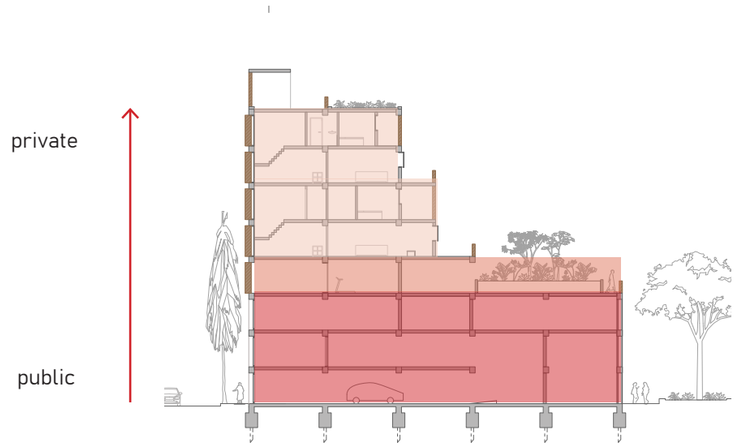




HIG

The HIG buildings consist of a stepped mass, creating generous private terraces for each dwelling. These outdoor spaces are characteristic for higer-income housing, provide outdoor living space and enhance residential quality. The stepped form of the building acts as a spatial transition between the traffic roads on the north side of the plot and the low-rise residential neighborhoods to the south.

The building accomodates public functions in the building and while maintaining a high level of privacy for the residents. This is done by the organisation of functions. The first to floors are for seperate entrances to the residential area, commerce, and parking spaces. The third floor contains office spaces, which is already a bit less public then the commercial spaces. The fourth floor accomodates two appartments and in a shared space for residents only. Here, a private gym, a shaded terrace space and a garden full of plants and small trees are located. The four floors above are dwellings only. The roof is accesible and contains a great view over the site.



section 1.500

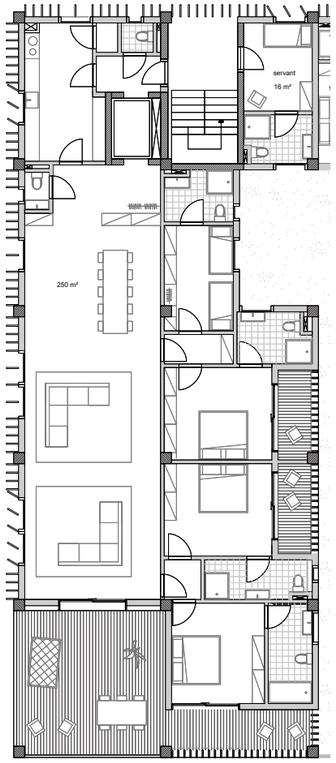








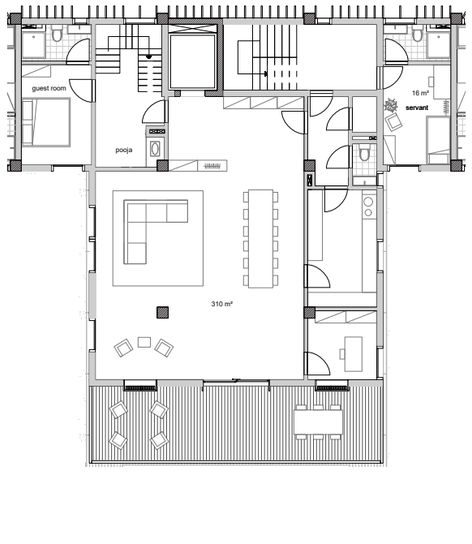


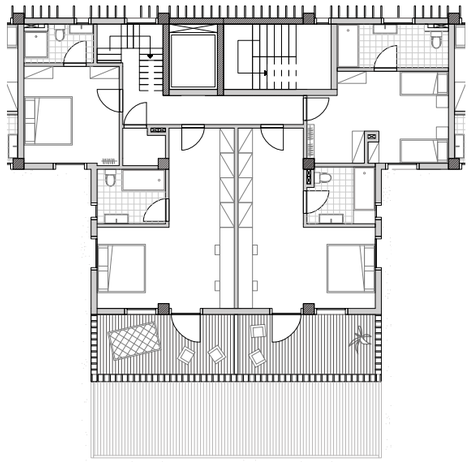


Since the HIG building is stepped, every floor has a different layout but apartments share the same spatial design. The 250 m² high-income apartment can be entered by an elevator that goes directly to the dwelling. An extra entrance is added for the servant. The servant has a seperate small living unit next to the apartment. The servant unit is 16 m² and contains a private bathroom.

The floorplan is organised in a way that the most important spaces for the resident, such as the bedrooms and living room are never placed on the North side of the building to minimalise the noise from the street traffic. In the dwelling unit for the HIG buildings is a clear spatial division between the private and public domain of the house. The sequance of spaces is for every dwelling in this building the same; entry with toilet and storage space, entering the living room with a nice long view to the terrace, after that the small corridor as a transition space to the private bedrooms that all have a bathroom ensuite.

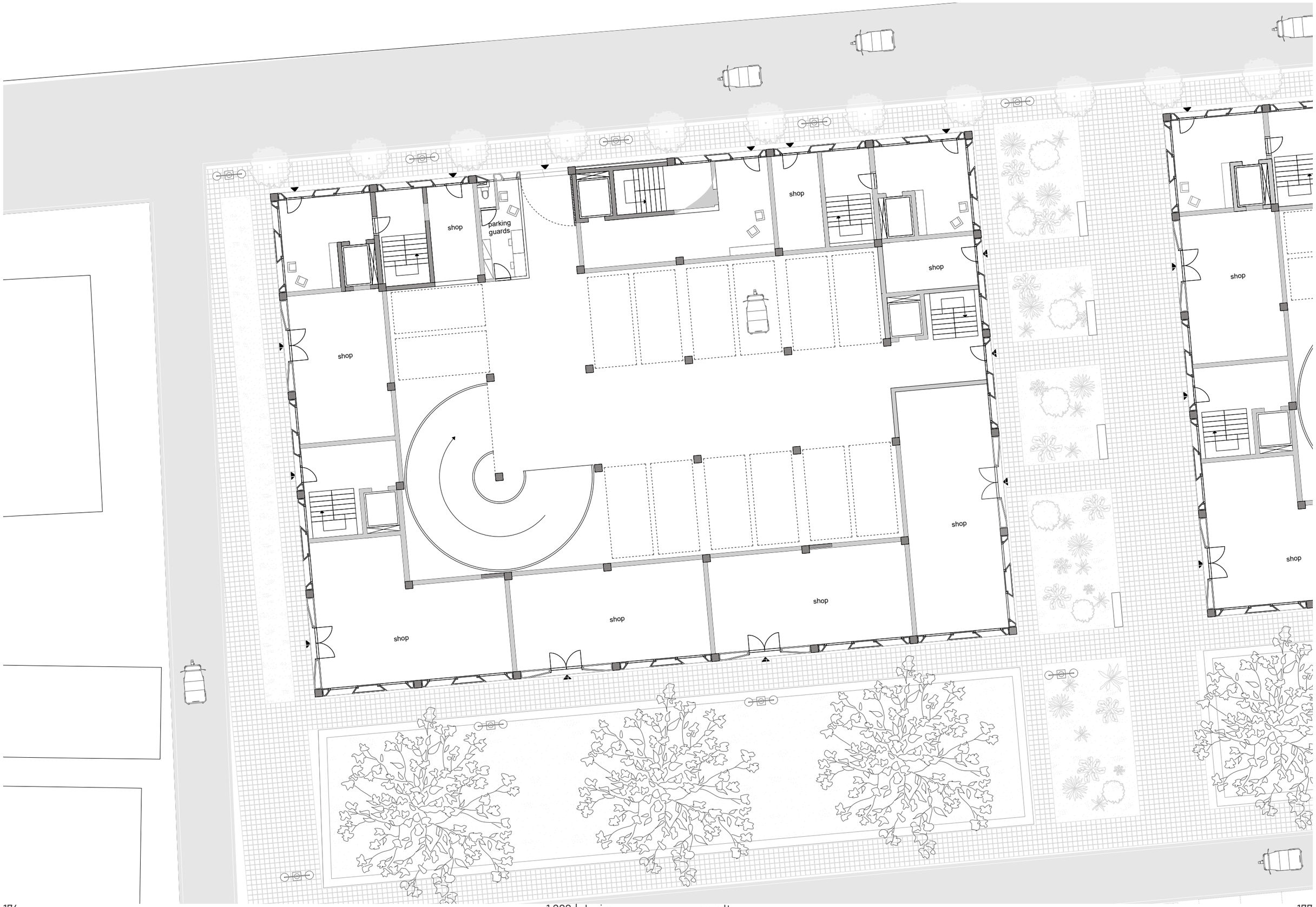
Most bedrooms have their own loggia, which is not only a nice private outdoor space, but also acts as a buffer for direct sunlight. This way daylight comes into the bedroom, but the incoming heat is minimilised.





The apartments in the center are always two floors per dwelling instead of one. The dwelling shown above is with 350 m² the largest apartment of the building and contains 5 bedrooms. It follows the same principles as the other apartments in the building.

On the North, East and West side is an second facade placed made out of timber slats. These slats exist in two types; fixed and movable. The movable slats are located in front of the windows, so they can be adjusted to the sun.


shop
parking guards
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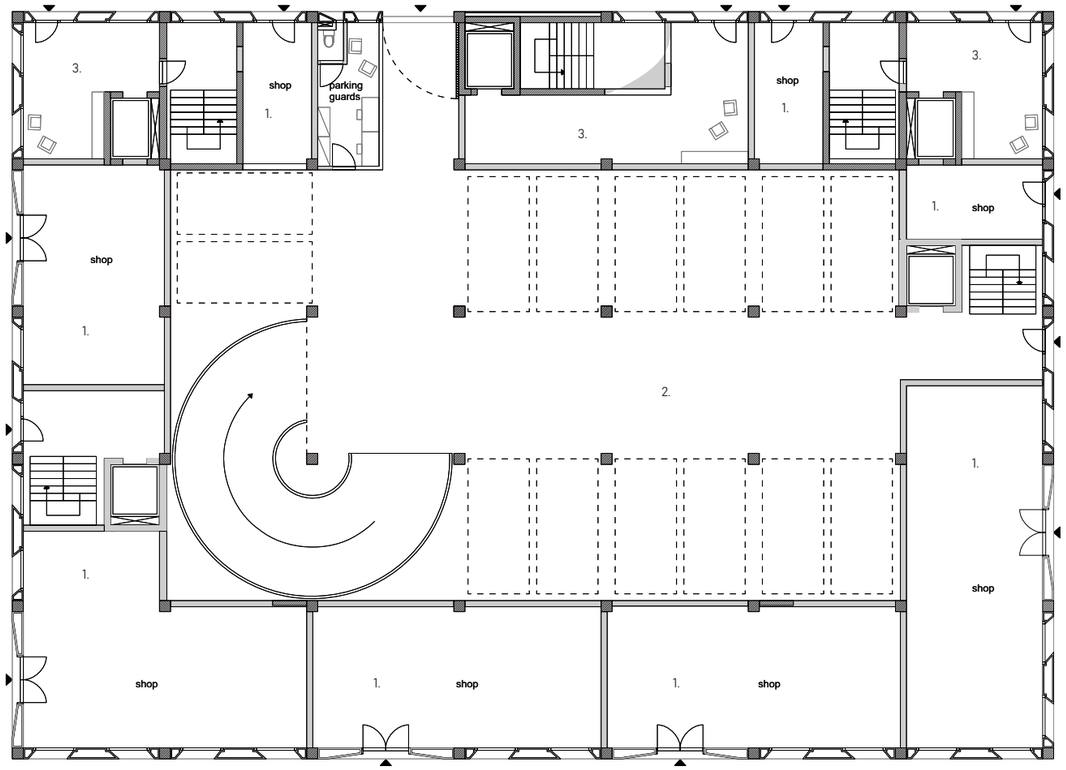
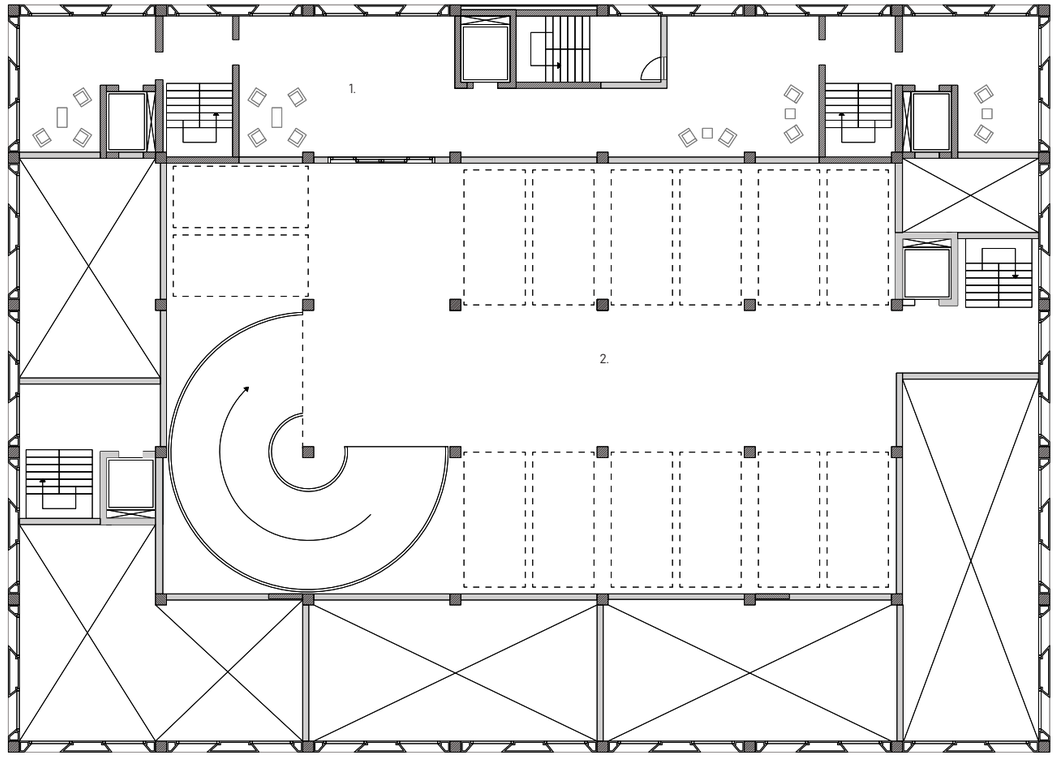
shop
shop



groundfloor 1.250

-

1. commerce
2. parking garage
3. residential entrance



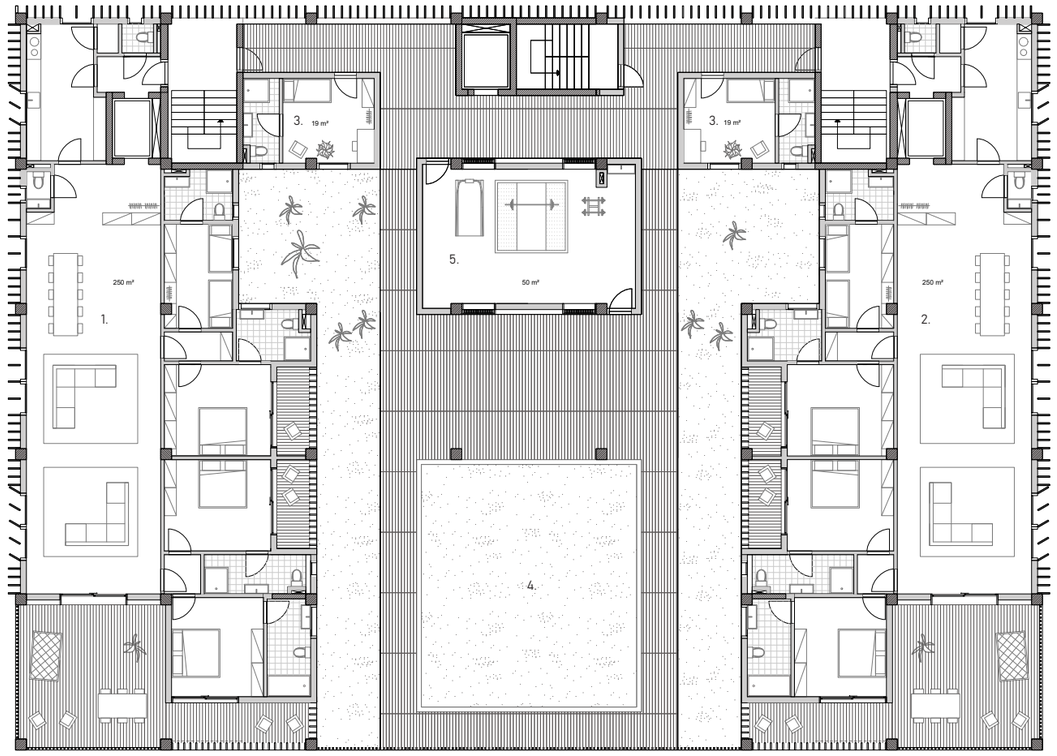
first floor 1.250

1. lobby
2. parking garage



second floor 1.250

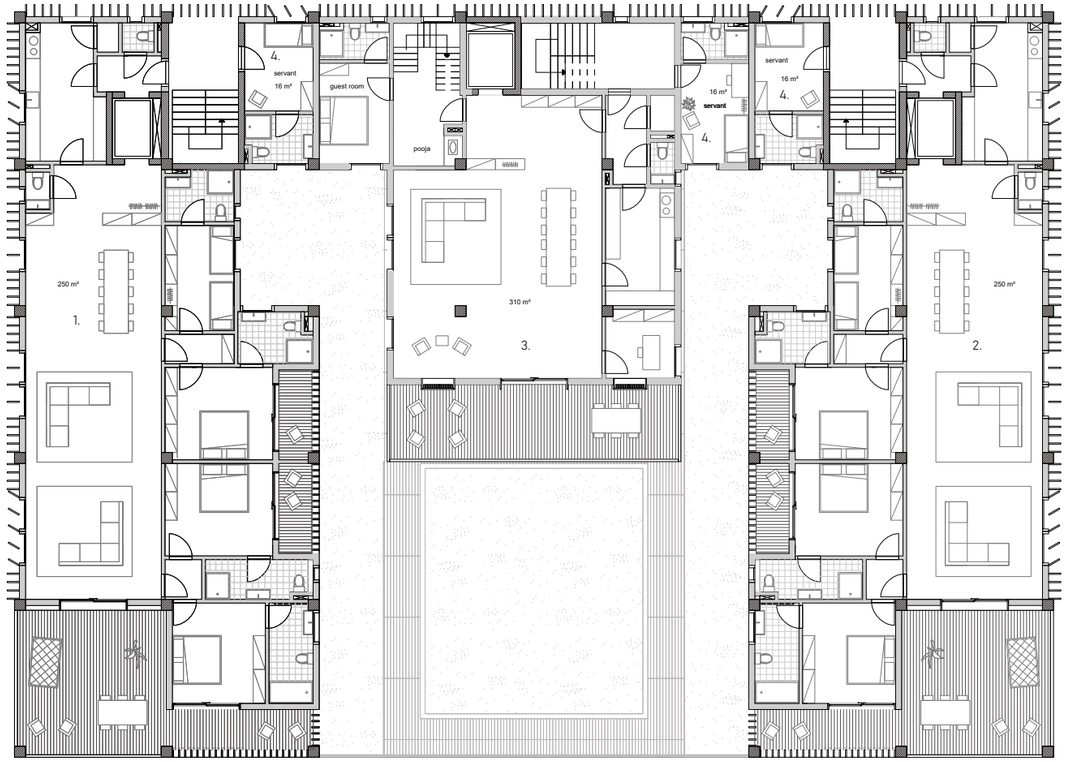
1. office
2. corridor



third floor 1.250

1. dwelling A1 250 m²
2. dwelling A1' 250 m²
3. servant room
4. collective garden
5. private gym

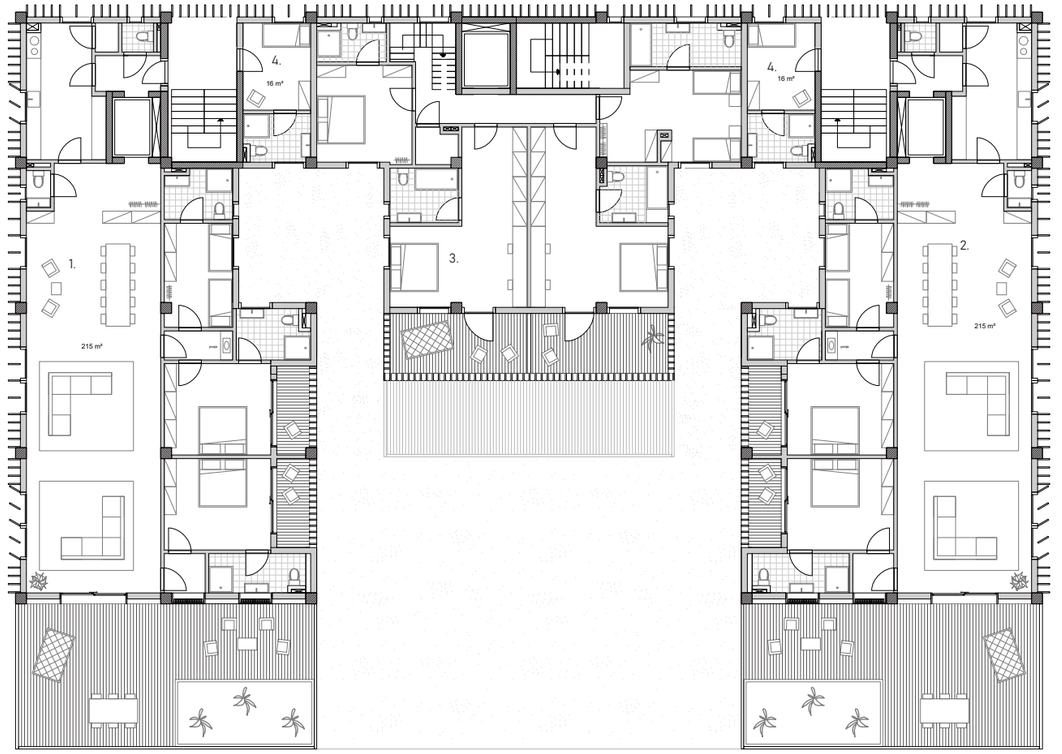




fourth floor 1.250

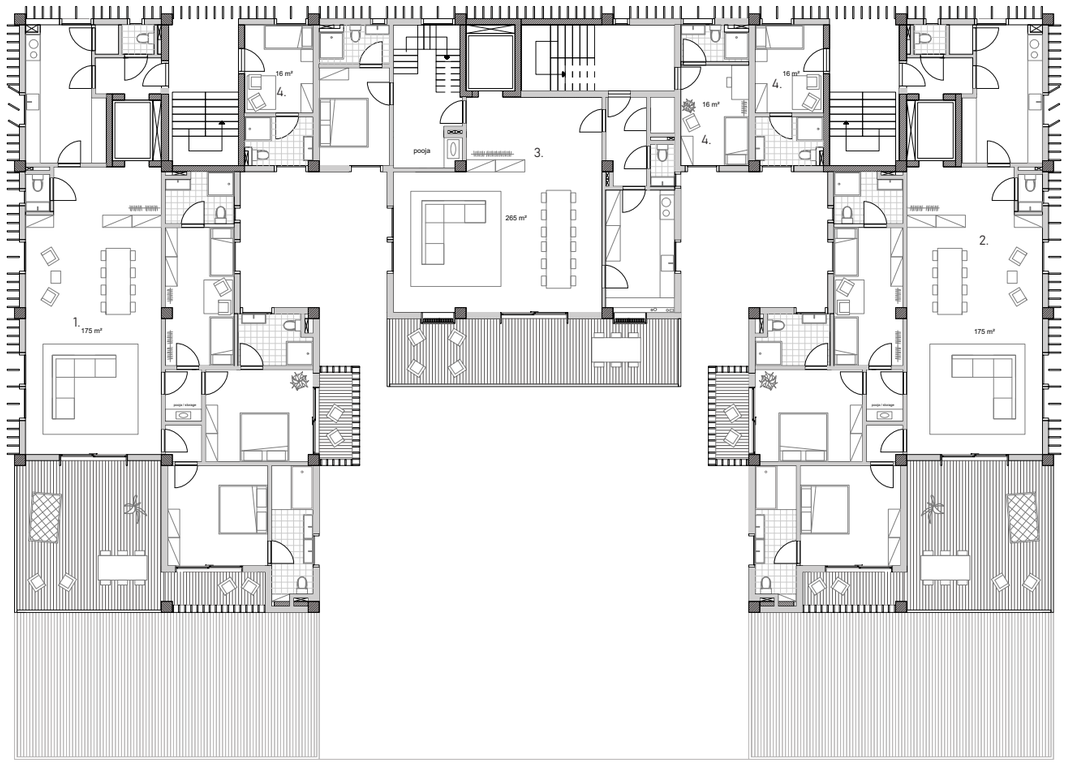
-

1. dwelling A1 250 m²
2. dwelling A1' 250 m²
3. dwelling B1 maisonette 310 m²
4. servant room



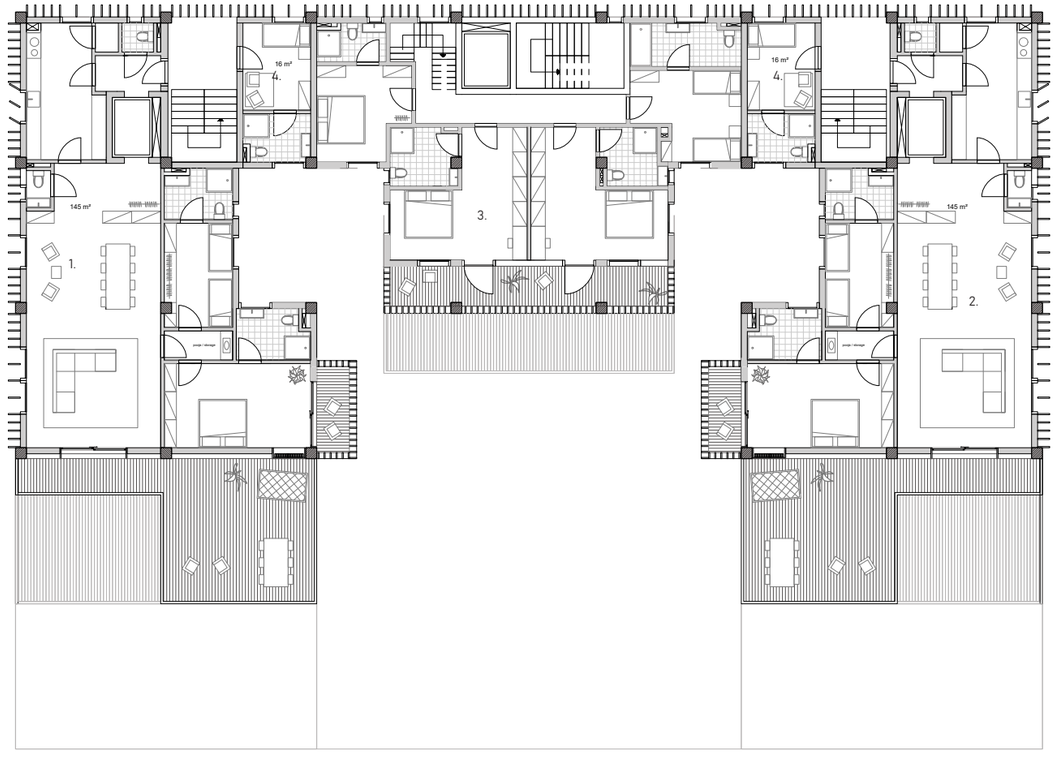
fifth floor 1.250

1. dwelling A2 215 m²
2. dwelling A2' 215 m²
3. dwelling B1 maisonette 310 m²
4. servant room



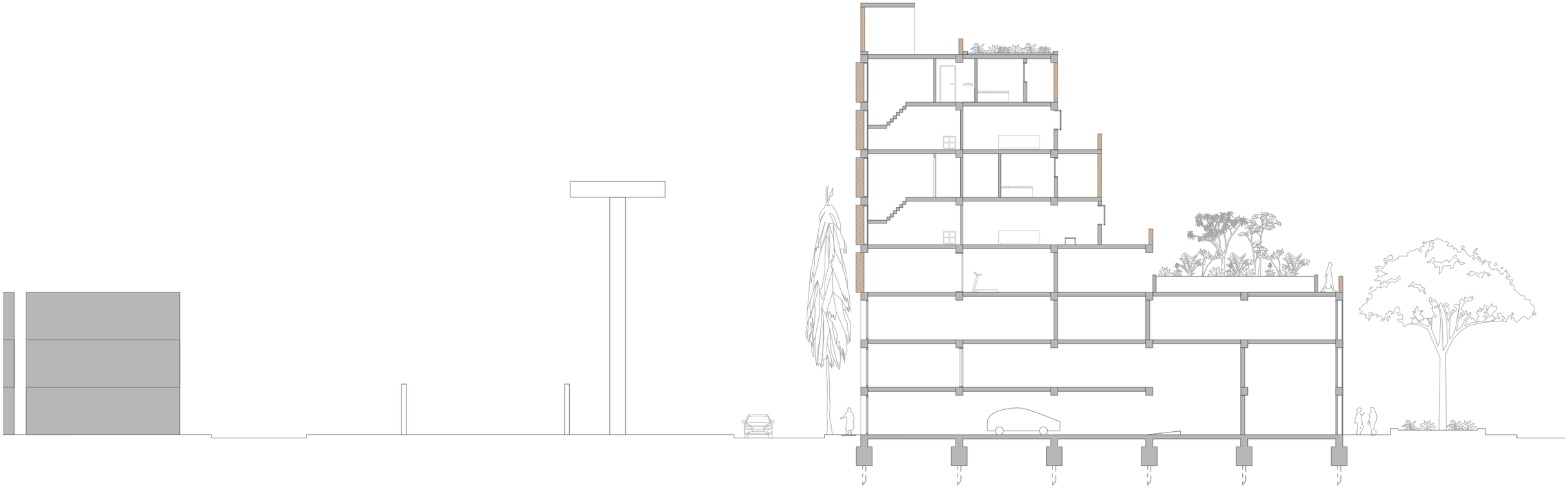
sixth floor 1.250

1. dwelling A3 175 m²
2. dwelling A3' 175 m²
3. dwelling B2 maisonette 265 m²
4. servant room



seventh floor 1.250

1. dwelling A4 145 m²
2. dwelling A4' 145 m²
3. dwelling B2 maisonette 265 m²
4. servant room







part four

4.1 conclusion
4.2 discussion
4.3 bibliography

4.1 Conclusion

This project researched how flexibility can be used as a design approach to provide secure and socially supportive living conditions for migrant households in informal settlements. The findings show that migrant households cannot be addressed through a single housing solution. Household structures, income levels and duration of stay change over time, resulting in housing needs that evolve thoughout the migration process. Housing must be able to accomodate both temporary and long-term forms of occupation.

This research contributes to the discussion on migrant housing by proposing a housing model that can change together with its residents. Rather than designing for a fixed household type, the proposal introduces small units that can accomodate changing users and evolving household compositions. Initially, these units provide affordable accomodation for individual migrant workers, while adjacent units can later be combined to support larger households in the future. Flexibility is therefore embedded not only in the dwelling itself, but also within the wider neighborhood structure. As households become more economically secure, they can move into larger dwellings without leaving the neigborhood, allowing social networks and community ties to remain intact.

A second contribution of the project is the integration of housing, shared facilities and public space within a repeatable cluster. The research shows that communal courtyards, shared sanitary and collective infrastructure can support both affordability and social interaction. These shared elements compensate for the limited size of indiviual dwellings and create opportunities for community formation among residents from different social and economic backgrounds. Furthermore, the project questions the common seperation of income groups in housing developments. By carefully responding to different spatial needs, particularly in terms of privacy and acces to shared space, the proposal explores how a mixed-income neihborhood can be organised.

The project suggests that housing insecurity can be addressed through adaptability within a stable spatial framework. Rather than relying on temporary shelters or fixed housing models, the project proposes housing that can accomodate change without requiring demolition, relocation or displacement. In this way, flexibility becomes a strategy for increasing resilience to social, economic and demographic change.

While the design is developed for Rajiv Nagar in Ahmedabad, the underlying principles are applicable to other contexts facing similiar challenges of migration, informality and housing insecurity. The combination of adaptable units, shared facilities and a cluster based organisation provides a framework that can be adjusted to different sites, densities and user groups. The main contribution of this research is therefore not a single housing prototype, but the development of a flexible and repeatable housing system capable of responding to changing needs while stengthening housing security over time.

4.2 Discussion

Although the project demonstrates the potential of flexibility as a strategy for migrant housing, several limitations should be acknowledged. Housing insecurity is not solely a spatial problem. Factors such as land tenure, governance, housing policy and aconomic inequality continue to influence the long-term security of residents. While architectural design can support housing stability, it cannot fully address these broader structural conditions..

In addition, the project assumes that households will gradually adapt their living situation over time. Residents can move into larger dwellings as their economic situation improves while remaining in the same neighborhood. However, whether this process would occur in practice depends on affordability, management structures and housing allocation policies. Future research could investigate how such a flexible housing system could be implemented and managed over time.

Finally, the project explores the integration of different income groups within one neighborhood. While the project aims to reduce social segregation through shared facilities and collective spaces, social interaction cannot be guaranteed through spatial design alone. The succes of a mixed-income neighborhood depends also on social and organisational factors.

These limitations highlight a broader challenge for architecture. While housing is often designed as a fixed product, migrant households experience continious change. The project suggests taht architecture can support this process by providing a framework for adaptation, but it cannot fully determine how residents, communities and institutions will shape the neighborhood over time.



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Appendix

The 3D models are made with Rhino, then rendered in Twinmotion and lastly rendered with Interstitial AI. In the following pages are the images from twinmotion placed next to the output of Interstitial AI.










