Connecting edges

Calico Mills



Connecting Edges

Graduation Thesis Report 2025-2026

Author
Name: R. Han
Student Number: 61680
Delft University of Technology
Faculty of Architecture and the Built Environment
Master of Architecture, Urbanism and Building Sciences
Architecture Track
MSc4 Global housing graduation studio:
Dwelling in Ahmedabad (AR4GH010)

Teaching team
Design mentor: *Dr. Nelson Mota* Research mentor: *Dr. Brook Teklehaimanot Haileselassie* (

Prof. Marina Tabassum
(
Prof. Dick van Gameren
(
Dr. Rohan Varma
(
Ir. Frederique van Andel

Collaboration with CEPT University, Ahmedabad, India

GLOBAL HOUSING

TU Delft Delft University of Technology

This graduation project at TU Delft is driven by the architectural and academic research to create spatial and social connections that allow the Calico Mills residents to remain part of the neighbourhood and become more deeply intertwined with its existing urban fabric. The project explores how dwelling can act as an urban connector and not only as a place to live, but as a means to strengthen different relationships between people, neighbourhoods, and the city. It is dedicated to my family and friends, and to the residents of the Calico Mills, whose hospitality, warmth, and strong neighbourhood bonds form the foundation of this research.

Abstract

This graduation project investigates how housing can act as an urban patching strategy within the fragmented context of the Calico Mill neighbourhood in Ahmedabad, India. Ahmedabad's urban development has been strongly shaped by textile industrial growth, labour migration, informal urbanization and later on industrial decline, which produced complex relationships between work, housing, infrastructure and urban transformation.

This project responds to this condition through the concept of Connecting Edges. Instead of approaching the site as an empty land for new development, the design begins with what is already present: the existing tree canopies, open and neglected spaces, informal settlement edges, former mill remnants throughout the site and infrastructural disconnections.

A specific grid is placed on top of the site and aligned with the direction of the Sabarmati riverfront to insert hierarchy and an ordering system within the project. This grid creates spatial coherence, but is adapted around the existing trees, which are treated as spatial anchors rather than obstacles.

The existing trees play an important role in the formation of the masterplan. The trees are therefore not added after the architectural design, but are used from the beginning to shape routes, courtyards, green pockets and public spaces inbetween housing typologies and clusters. Where large trees are located, the housing grid offers openings, which creates spatial gaps between units, row houses, collective open spaces or landscaped patches.

This project integrates different income groups and hierarchies by using a mixed-income strategy framework. It responds to different densities and site conditions that are all living together on the same site. Mixed-income housing is understood here not as a guarantee of social integration, but as a spatial and typological strategy that can combine different housing forms within one shared urban framework and make it work together.

Incremental row houses accommodate lower-income households and allow adaptation over time, drawing on theories of dweller control, supports and incremental housing. Collective mid-rise housing provides a transition between lower and higher dwelling masses while these typologies stagger into the landscape.

Reading Guide

This report is structured in four parts that guide the reader through the project.

Part I introduces the project and defines the main problem. It begins with the broader context of housing, informality and urban transformation in Ahmedabad, before focusing on the Calico Mill neighbourhood as the main site of investigation. The reading of Ahmedabad as a city shaped by textile labour, industrial decline and informal urban processes is supported by literature on Ahmedabad's working-class history and urban informality.

This part explains the problem statement, research questions, relevance, objective and the scope and limitations of the project. It introduces the main argument that the site should not be treated as empty land, but as a fragmented patchwork of settlements, trees, open spaces, former industrial structures and infrastructural edges that need to be connected through design.

Part II explains the research framework. This part describes the methodology, theoretical framework and case study research and approach. The methodology combines fieldwork, mapping, analysis, case studies, typology research and design testing. The use of layered mapping and environmental constraints is put as a design input.

Part III shows the methodology from part II with the combined fieldwork mapping and site analysis, typology research and design testing. The use of layered mapping and environmental constraints is put as a design input.

Part IV is the final chapter of this graduation report where different closing statements are being written like the conlusion, implications, reflection, appendices, bibliograhpy and the final acknowledgements.

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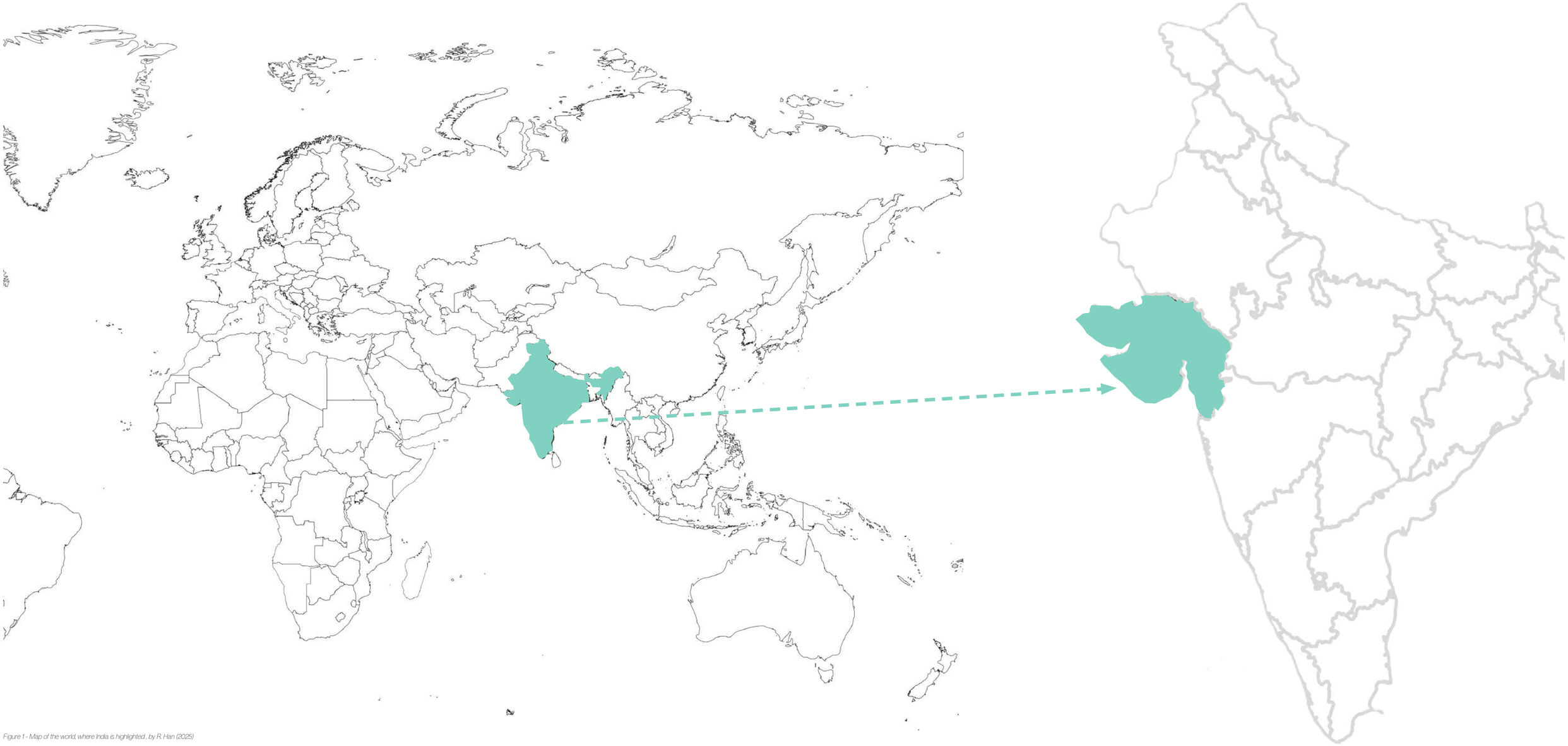
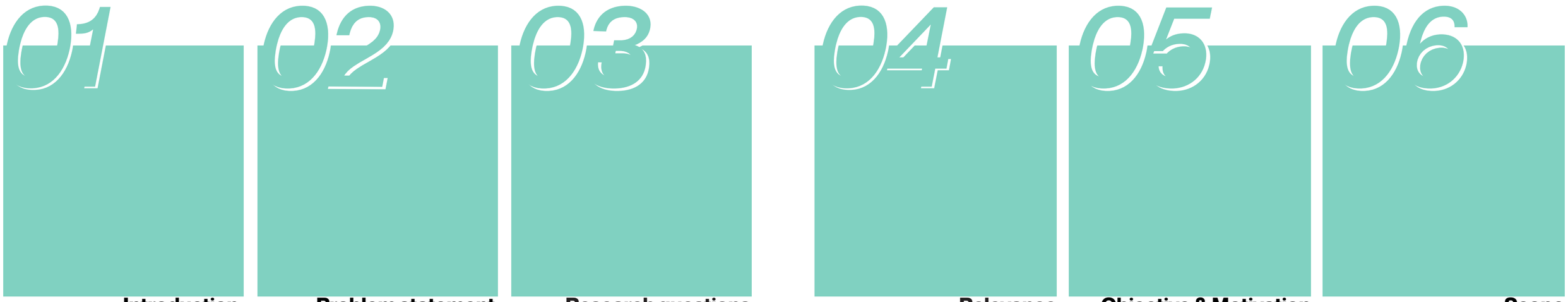


Figure 1 - Map of the world, where India is highlighted , by R. Han (2025)

Part I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Scope

01
Introduction



Figure 2- Satteilte picture of the Calico Mills settlement (2025)

Timeline
History Calico

11th century
Calico material originated in Calicut, Kerala

17th century
Europeans used to trade with Indians for the calico material

18th century
The first establishment of the Calico Mills (by Sheth Karamchand Premchand)

1930
Under the leadership of Ambalal Sarabhai it became one of the most modern and diverse base stamp in the Indian cotton industry

1946
The Calico Mills Museum in Ahmedabad was built by the order of Gautam Sarabhai, the young chairman of Calico mills and Gira Sarabhai which was his sister.

1947
They started making chemicals for manufactures of Caustic Soda, Chlorine and other related products

1974
Calico Mills commissioned its Polyester Fibre Plant

1983
As the collection grew, the museum was shifted to the Sarabhai House in Shahibaug
-
The Calico Mill was then shutdown

2010
The land, plant and machinery were sold in a public auction.

Figure 3 - History timeline Calico, work from R. Han (2025)

The Calico Mill settlement in Ahmedabad has been through a lot of changes throughout the years and can be understood within the history of this citiy's textile industry. Ahmedabad has been called the "Manchester of India" because it became one of India's major textile centres during the eighteenth century The Calico Mills formed part of this industrial textile industry growth and attracted many workers from nearby rural areas as well as from older parts around the city. As employment opportunities expanded around the mills, workers settled close to their workplace and created a dense working-class neighbourhood shaped by labour, migration, and proximity to industry (Bobbio, 2015; Spodek, 2011).

The settlement developed largely through informal and incremental processes rather than through formal urban planning. The dwellings were often self-built and organised around the Calico Mill workers. This form of industrialised urbanisation meant that the neighbourhood functioned as an extension of the workplace. Shared spaces such as streets, water collection points, religious places and buildings and small open areas supported everyday life and created forms of cooperation among residents with limited resources (Breman, 2004).

However, the decline of Ahmedabad's textile industry in the late twentieth century disrupted this social and economic structure. The closure of mills led to a lot of job losses, financial insecurity for the former workers, and a gradual shift from stable industrial employment toward informal and service-based livelihoods. As a result, the Calico Mill settlement became increasingly fragmented, with abandoned industrial remaints of the factory buildings around the area and a clear segregation in the form of a vacant plot where animals claimed shelter (Breman, 2004; Barua, 2022).



Figure 4 - Satellite picture from the site, with the open plot and settlement, edited by R. Han (2025)



02
Problem Statement

Inadequate housing conditions and social separation take a huge toll on many vulnerable groups around the city. Particularly, children and the elderly are being affected by these different circumstances (Ernst et al., 2016). Children living in these low-income informal settlements face increased health risks, limited access to safe outdoor environments where they can play and learn, and restricted opportunities for social development in Ahmedabad to uplift their living conditions (Mahadevia, 2011).

Architecture contributes to specific housing problems. It debates housing as a socio-spatial framework rather than a purely functional typology that's black or white. Rather than treating dwellings as isolated objects, this project positions them as an urban element that's capable of mediating between these fragmented plots, landscapes, and communities. When the focus is on these themes of in-between spaces, the community experiences and collective memories, it challenges these conventional housing models into how architecture can really foster this coexistence between human relationships, existing nature and its surroundings.

The main problem in the Calico Mill neighbourhood is the lack of spatial continuity between the many fragments that define the site. The area contains existing housing clusters, former industrial structures, dense vegetation, vacant land, informal paths and infrastructural edges. These fragments each have their own character, but the transitions between them are often weak, undefined or disconnected. This challenge can be understood as a patchwork without a clear stitching system. Urban theory has long questioned the idea that cities should be designed as total, uniform compositions, instead arguing for urban structures that can accommodate different fragments and partial systems (Rowe & Koetter, 1978).

Former industrial areas represent these critical urban conditions where historical layers, informal settlement dynamics, and socio-religious diversity intersect. This site shows both the failures of past informal housing approaches and the potential for a new masterplan where context sensitive design strategies work with existing communities and environments rather than displacing or demolishing them. In the Calico Mill context, the challenge is not to erase fragmentation completely, but to create a framework that allows different fragments to relate to each other spatially. The existing settlements are dense and incremental, while the green vacant plot is open and undefined.

A single housing typology would not respond adequately to the different income groups, site edges, densities and spatial conditions present in Calico Mills (Talen, 2008). Lower-income groups require affordable and adaptable housing that can respond to changing household needs over time. Incremental housing theory argues that residents should have some degree of control over the growth and adaptation of their dwelling environment (Habraken, 1972/1999; Turner & Fichter, 1972). Middle-income groups can be accommodated through collective mid-rise housing that provides shared space and moderate density (Talen, 2008). Higher-income groups can support denser vertical typologies, but these typologies must remain connected to the public realm rather than becoming isolated enclaves (Fraser et al., 2013; Joseph et al., 2007).

The architectural challenge is therefore to develop a housing framework that patches together different fragments, densities and income groups. This framework must create connections without erasing the specific qualities of the site. The existing trees are especially important in this process. Instead of removing them to create a clean development plot, the design preserves them and uses them to shape the urban structure. This approach is supported by landscape based planning methods in which natural features are understood as design constraints and opportunities (McHarg, 1969; Yang & Li, 2016).

Calico Mills
Site Analysis



Figure 5 - Site analysis diagram from Calico Mills, by R. Han (2025)

03
Research Question

Beacuse the challenge lies in the framework to develop a housing structure that patches together different connections without erasing the specific qualities of the site, it leads to the following main research question:

"How can mixing different income groups and housing typologies operate as a spatial and social mediator to reconnect fragmented sites and nature into a cohesive urban fabric in the Calico Mill neighbourhood?"

And the following sub-questions will further explore and elaborate on how this can be achieved and its effectiveness throughout the project:

"How can different housing typologies and layouts reconnect fragmented sites and different elements while establishing continuous relationships between public, semi-public, and private spaces?"

"How can public space, landscape and circulation connect these different typologies into one integrated neighbourhood?"

"How can different housing typologies respond to different income groups, densities and edge conditions?"

"How can incremental and participatory housing strategies enable community-led growth, strengthen a sense of belonging, and improve living conditions over time?"

04
Relevance

This project is relevant because many urban housing developments are still based on strategies that treat land as an empty plot for newer constructions. In such cases, existing landscape structures, informal patterns, and very site-specific qualities can be reduced to obstacles that need to be removed or demolished, rather than understood as design resources (McHarg, 1969; Roy, 2005; Yang & Li, 2016). That is why in the case of Calico Mills, such an approach would risk erasing the unique elements that give the site its specific character: existing trees, open spaces, settlement edges, industrial memory and layered urban fragments.

And that is why this project proposes an alternative approach based on a patching framework. Patching means working with what is already there and creating new connections between existing elements. This is related to the idea of the city as a collage, where different urban fragments can coexist within a broader spatial composition rather than being absorbed into one total plan (Rowe & Koetter, 1978).

For Calico Mills, this means that the existing settlements, trees, open spaces, former mill structures and new housing typologies are treated as parts of one connected urban framework. The project is also relevant because it explores mixed-income housing as a spatial and typological strategy. Mixed-income development is often discussed as a way to reduce concentrated poverty or create more diverse neighbourhoods without segregating anybody, but research also shows that mixed-income housing does not automatically produce social integration or economic mobility (Fraser et al., 2013; Joseph et al., 2007). This project therefore approaches mixed-income housing carefully, and to not take it for granted that this mixing is automatically the social solution, but rather works as a spatial framework in which different income groups can be accommodated through different housing typologies while sharing routes, public spaces and landscape structures.

The 5 by 5 meter grid adds another layer of relevance. It shows how architectural order can be introduced without ignoring existing nature. By aligning the grid with the Sabarmati riverfront and adapting it around existing trees, the project creates a structure that is both urban and site specific. The trees are not treated as landscape decoration, but as spatial anchors that influence the placement of buildings, courtyards and public routes.

05
Objective and Motivation

The objective of this graduation project is to develop a housing framework that operates simultaneously at the architectural and urban masterplan scale, enabling spatial continuity across fragmented sites while improving living conditions for economically weaker sections. The project aims to design housing that supports existing daily routines, fosters intergenerational interaction, and create a mixed-income housing neighbourhood that patches together the fragmented elements of the Calico Mill site.

The project aims to connect existing settlements, open green spaces, former industrial remains, public routes and new housing typologies through one coherent spatial framework. The first ambition is to respect the existing landscape. Ecological planning theory argues that design should begin with an understanding of existing environmental layers, constraints and potentials (McHarg, 1969; Yang & Li, 2016). In this project, the trees on the site are preserved as much as possible and become active elements in the design.

The 5 by 5 meter grid is placed over the site, but the grid is adapted around the trees to create openings, courtyards and green patches. The second ambition is to connect different fragments. The site currently consists of separated elements, but the design uses public routes, courtyards, landscape patches and housing edges to stitch them together. This is informed by patchwork and collage-based urban thinking, where the city is understood as a composition of different fragments rather than a single uniform system (Rowe & Koetter, 1978).

The third ambition is to combine different income groups through typological diversity. Incremental row houses are used for lower-income households, collective mid-rise and staggering towers for higher-income residents. This approach is supported by literature that links housing diversity, urban form and social mix, while also acknowledging the limitations of mixed-income development as a purely social policy tool (Fraser et al., 2013; Joseph et al., 2007; Talen, 2008).

The motivation for this project comes from the idea that housing can do more than provide units and interest in how architecture can engage with socially complex environments without erasing their surrounding qualities.

The Calico Mill neighborhood represents a very layered and unique urban environment shaped by labor migration, industrial history, religious community diversity, and incremental growth within a very rich place. Rather than replacing these conditions, the project seeks to work within them, using housing as a mediating structure that embraces nature, memory, and everyday life.

06
Scope

The project is located in the Calico Mill neighbourhood in Ahmedabad, India. The main design area is the green vacant plot between existing settlements, former industrial structures and the Sabarmati riverfront. The project focuses on the design of a mixed-income housing framework. It does not propose one repeated housing block, but a combination of typologies that respond to different income groups and site conditions. This approach is supported by research on housing diversity and mixed-income urban design, which emphasizes that variation in housing types can support more diverse urban environments when connected by a coherent public framework (Fraser et al., 2013; Talen, 2008).

At the neighbourhood scale, the design focuses on patching together fragmented site elements through a grid, public routes, landscape connections and housing edges. At the typological scale, the project investigates how incremental row houses, collective mid-rise housing and staggering towers can coexist within one coherent masterplan. Incremental row houses are supported by theories of dweller control and adaptability, while collective and higher-density typologies respond to the need for density and typological variation (Habraken, 1972/1999; Talen, 2008; Turner & Fichter, 1972). At the dwelling scale, the project explores adaptability, privacy, shared space and the relationship between individual units, existing trees and collective outdoor areas.

The existing trees form an important boundary condition within the scope of the design. The project does not treat the site as empty, but as a landscape with existing anchors. The 5 by 5 meter grid is therefore not only a construction or planning tool, but also a method to negotiate between built form and existing nature (McHarg, 1969; Yang & Li, 2016).

Calico Mills
The total site

1: 3000
250.000 m2

N



Figure 6-Existing site plan of Calico Mills, by R. Han (2025)

Calico Mills

Traffic | Main roads

1: 3000

250.000 m2

N



Figure 7 -Existing site plan of Calico Mills, by R. Han (2025)

Calico Mills

Traffic |

Secondary roads

1: 3000

250.000 m2

N



Figure 8 -Existing site plan of Calico Mills, by R. Han (2025)

Calico Mills
Neighborhoods

1: 3000
250,000 m2

N



Figure 9 -Existing site plan of Calico Mills, by R. Han (2025)

Calico Mills

Section through the site

1: 3000

N



Figure 10 -Existing site plan of Calico Mills, by R. Han (2025)

Calico Mills

Section through the site

1: 3000

N

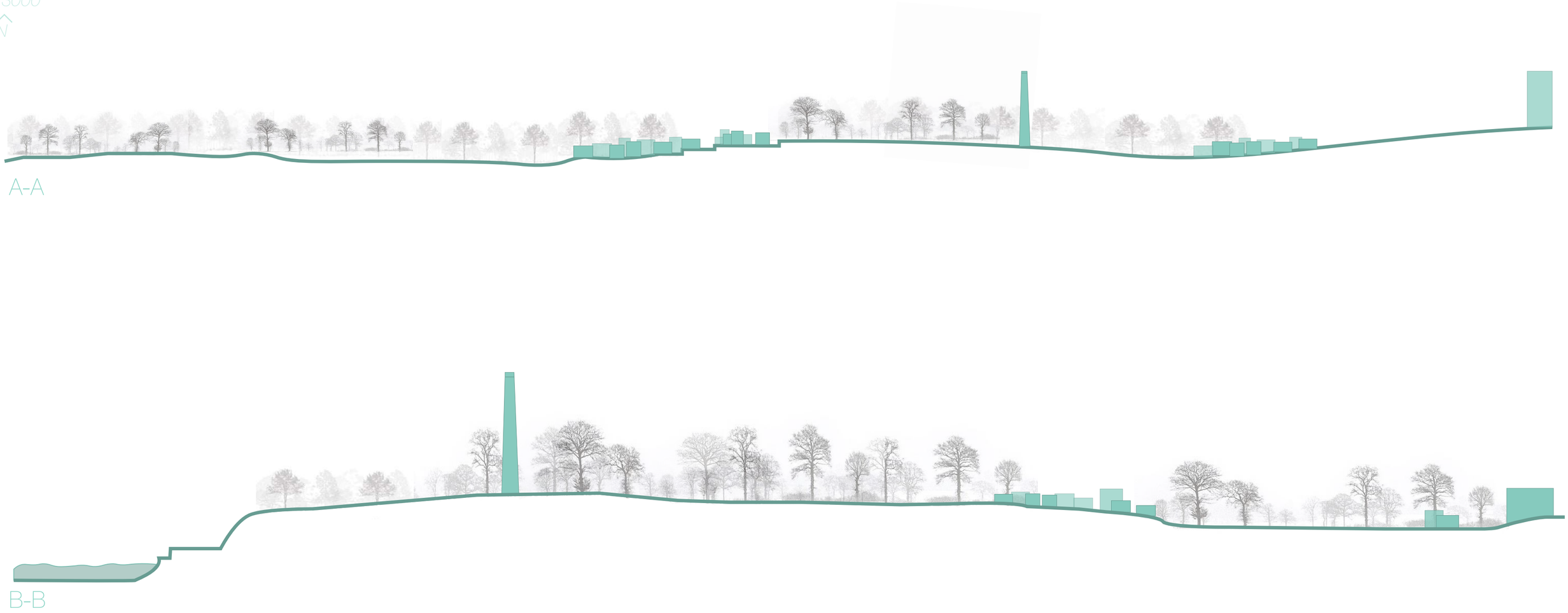


Figure 11 -Existing section plan of Calico Mills, by R. Han (2025)

Part II

01 Methodology

02 Theoratical framework

03 Case studies

01
Methodology

This project follows a research-by-design methodology. Research-by-design is used here as an iterative process in which fieldwork, mapping, theoretical research, case study analysis and design testing inform one another. The method combines site specific observations with theoretical frameworks on ecological planning, incremental housing, mixed-income housing and urban patchwork (Fraser et al., 2013; Habraken, 1972/1999; McHarg, 1969; Rowe & Koetter, 1978).

The first step is fieldwork observation. The Calico Mill neighbourhood is documented through photographs and sketches, infrastructural routes and spatial observations. Attention is given to existing trees, informal paths, settlement edges, open spaces, mill remnants and the relationship between the site and the riverfront. The folowing step after the inital analysis is the mapping. The site is analysed through maps of existing fragments, trees, routes, edges, built structures and open spaces. Mapping is used not only to represent the site, but also to identify which elements should be preserved, connected or transformed.

The maps are then used for the grid testing. A specific grid is placed over the site and aligned with the direction of the Sabarmati riverfront. The grid is then tested against the existing tree positions. Where trees are located, the grid is interrupted, opened or adapted. This process helps define where housing can be placed and where open space should remain for the existing trees. Different housing types are also studied and developed in relation to income groups and site conditions. Incremental row houses, collective mid-rise towers with a staggering volume are tested as different patches within the same framework. This method is supported by literature on incremental housing, supports and housing diversity (Habraken, 1972/1999; Talen, 2008; Turner & Fichter, 1972).

The last step is design synthesis. The grid, tree structure, public-space network and housing typologies are combined into one masterplan. The design is evaluated according to how well it connects fragments, preserves existing nature and creates a mixed-income neighbourhood.

02
Theoratical Framework

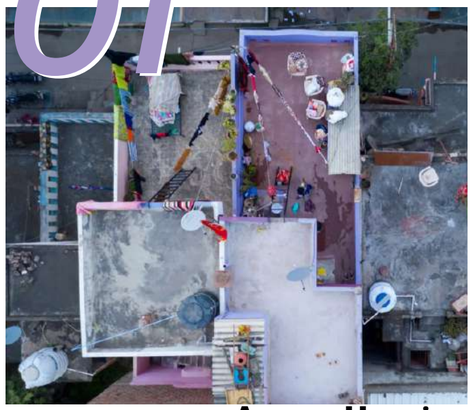
The case studies are used to support the project and its design decisions. They are not treated as models to copy directly, but as references from which specific spatial principles can be extracted. The focus is on how housing projects organize density, connect public and private space, allow adaptation, respond to landscape and create relationships between different housing typologies.

Staggered and terraced housing references are used to understand how higher-density housing can reduce massing through setbacks, terraces and stepped forms. These references inform the staggering tower typology, where vertical density is combined with openness, views, light and landscape connection.

The Calico Mill site itself is treated as the most important case study. Existing trees, settlement edges, informal paths, open spaces and former industrial remnants provide direct design input for the project The design therefore translates both external precedent knowledge and site-specific observations into one masterplan strategy.

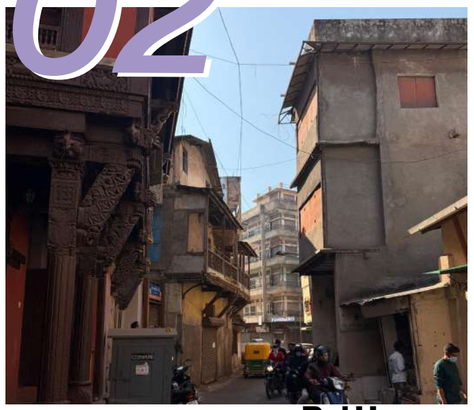
03
Case studies

01



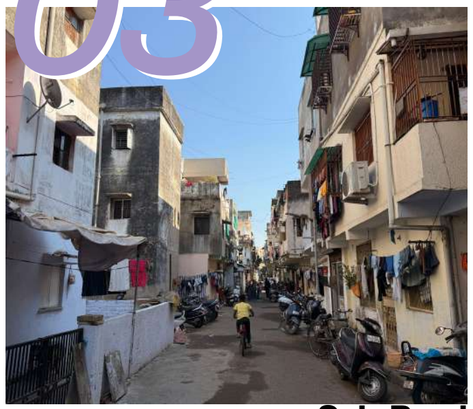
Aranya Housing

02



Pol Houses

03



Sola Road

04



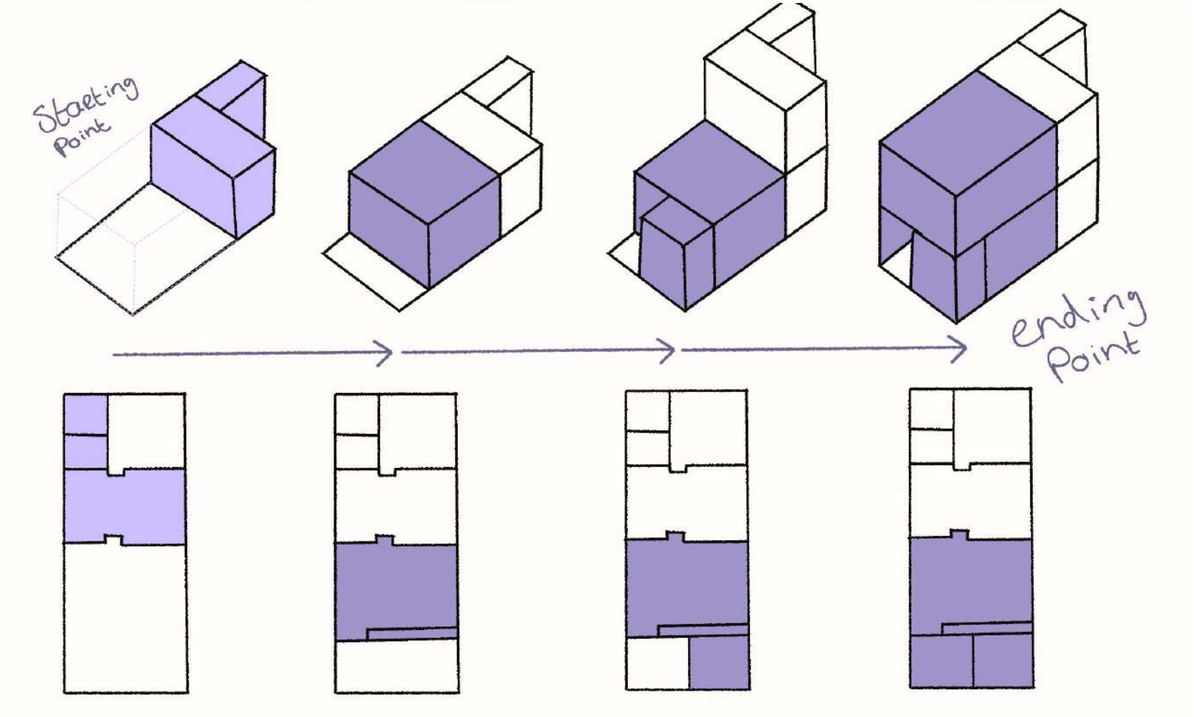
Ricardo Bofill

Aranya Housing
ews units



Figure 12 - Awasarkar, M. (n.d.). Aranya low-cost housing by B.V. Doshi: Low-cost urban housing. Rethinking The Future.





Aranya housing by B.V. Doshi is one of the examples on how incremental growth can produce different unique housing typologies, even though they all start with the same base stamp.

Doshi designed the low-cost housing unit with growth and resident adaptation in his mind, so he provides a framework that allows the users to expand and transform their homes over time, which relates to theories of dweller control and incremental housing (Habraken, 1972/1999; Turner & Fichter, 1972).

Doshi put a clear grid on top of the site so that people knew what the building boundaries were and till what point they could expand. He designed a compact base unit with all the necessities such as the kitchen, wetrooms and living area which had direct access to the outside space so that it could always be naturally ventilated, no matter how the residents expanded.

Figure 13 - Awasarkar, M. (n.d.). Aranya low-cost housing by B.V. Doshi: Low-cost urban housing. Rethinking The Future.

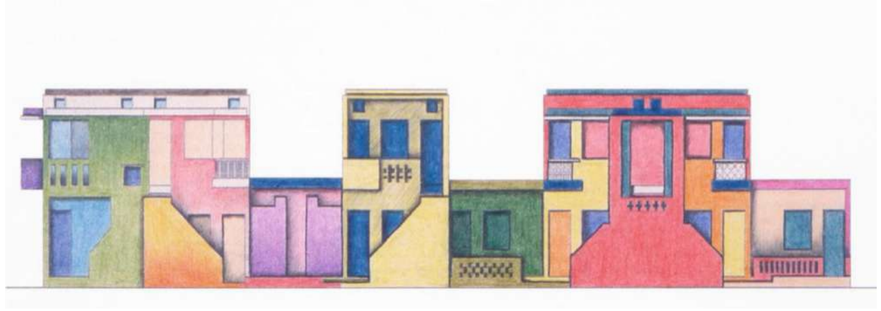
Figure 14 - Aranya schematic built up incrementality, by R. Han (2025)

Figure 15 - Awasarkar, M. (n.d.). Aranya low-cost housing by B.V. Doshi: Low-cost urban housing. Rethinking The Future.

Figure 16 - Awasarkar, M. (n.d.). Aranya low-cost housing by B.V. Doshi: Low-cost urban housing. Rethinking The Future.







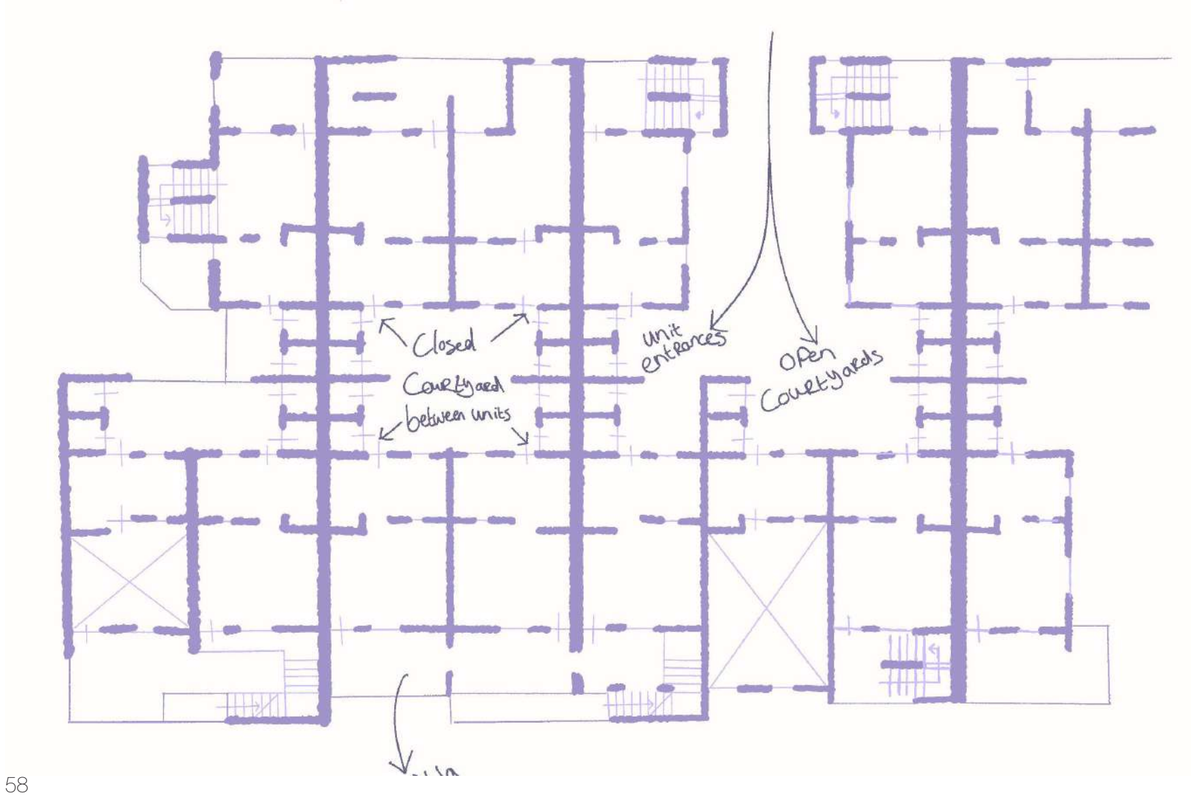
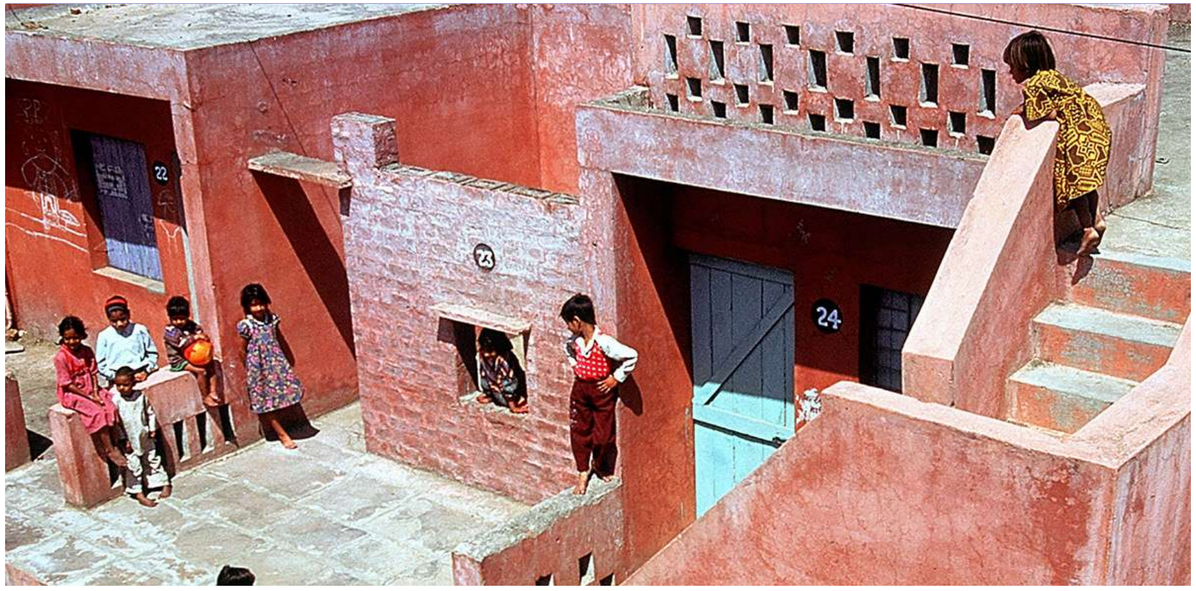


Figure 17 - Awasarkar, M. (n.d.). Aranya low-cost housing by B.V. Doshi: Low-cost urban housing. Rethinking The Future.

Figure 18 - Aranya floorplan built up incrementality, by R. Han (2025)

Figure 19 - Awasarkar, M. (n.d.). Aranya low-cost housing by B.V. Doshi: Low-cost urban housing. Rethinking The Future.

Figure 20- Awasarkar, M. (n.d.). Aranya low-cost housing by B.V. Doshi: Low-cost urban housing. Rethinking The Future.





Pol Housing
Street

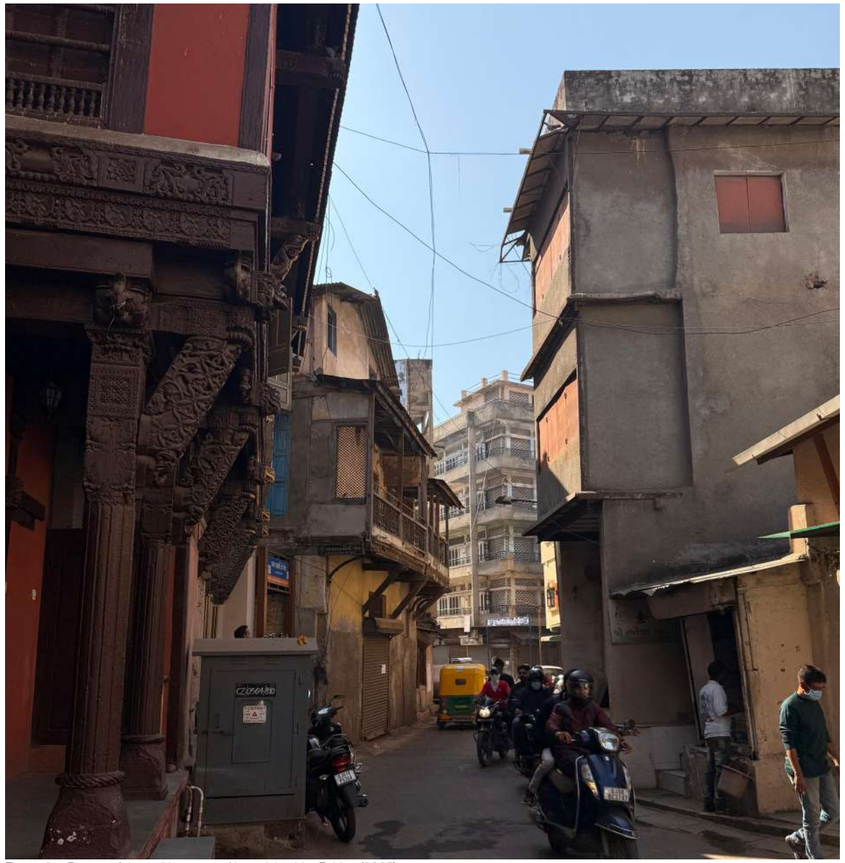


Figure 21 - Picture of the poll houses in Ahmedabad, by R. Han (2025)





The case study for pol housing is analysed from the fieldwork trip to Ahmedabad and the Global Housing design studio analysis. It is used because it explores the relationship between small footprints and higher density frameworks.

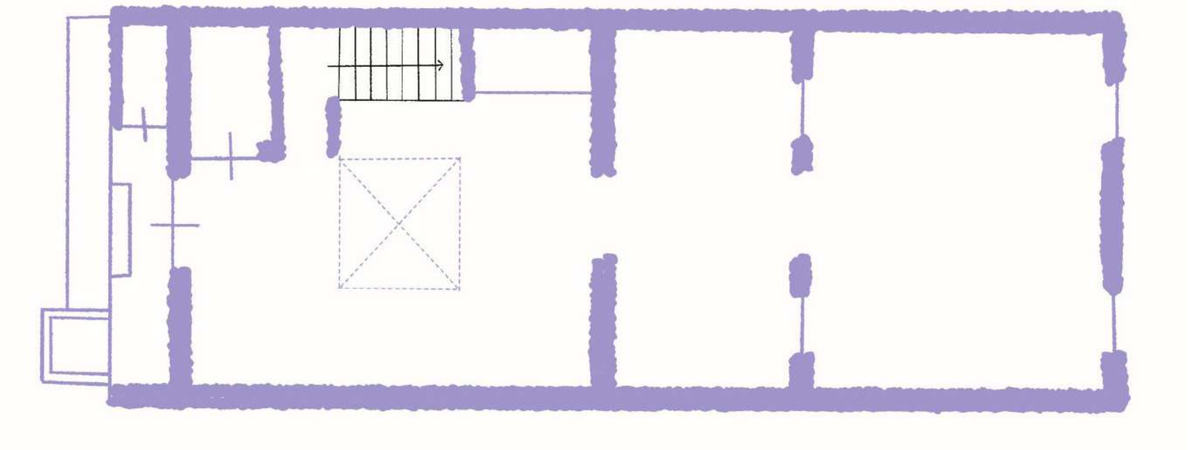
Poll houses are very unique to Ahmedabad and its housing typology. It shows how housing can be conceived as a long-term incremental process rather than a fixed object because they have room for vertical growth, which supports the incremental row-house strategy used in this project (Turner & Fichter, 1972), while maintaining natural ventilation and light with the usage of internal courtyards.

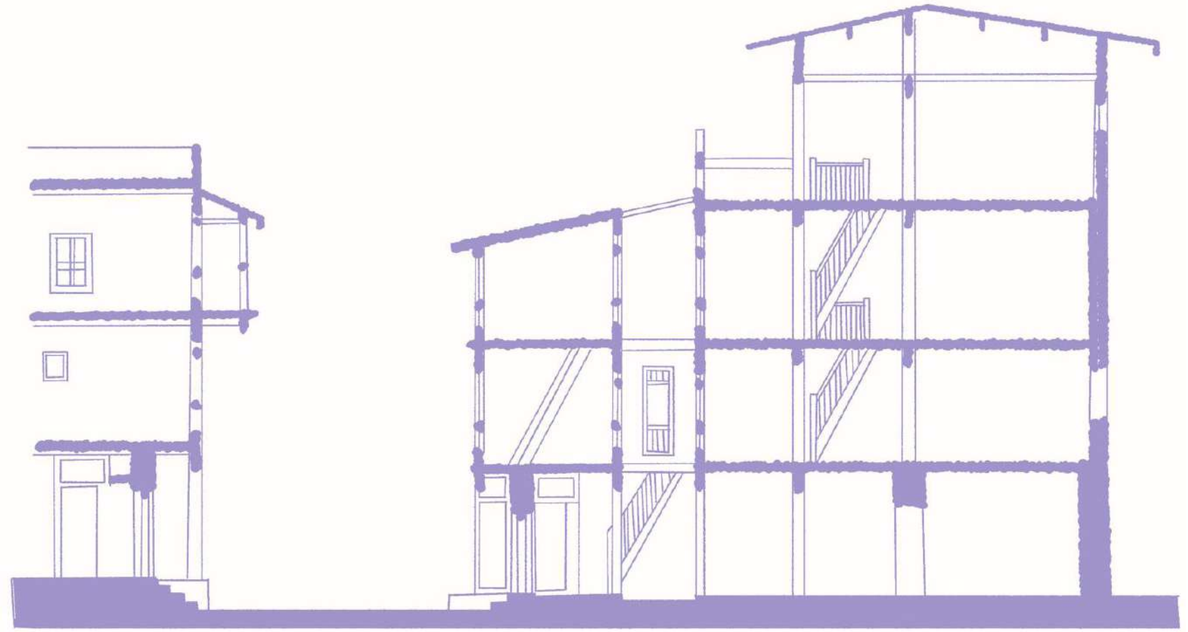
Figure 21 - Picture of the balcony of a poll house in Ahmedabad, by R. Han (2025)

Figure 22 - Picture of the in-between-street of a poll house in Ahmedabad, by R. Han (2025).

Figure 23 - Floorplan drawing of a poll house in Ahmedabad, by R. Han (2025).

Figure 24 - Elevation drawing of a poll house in Ahmedabad, by R. Han (2025).

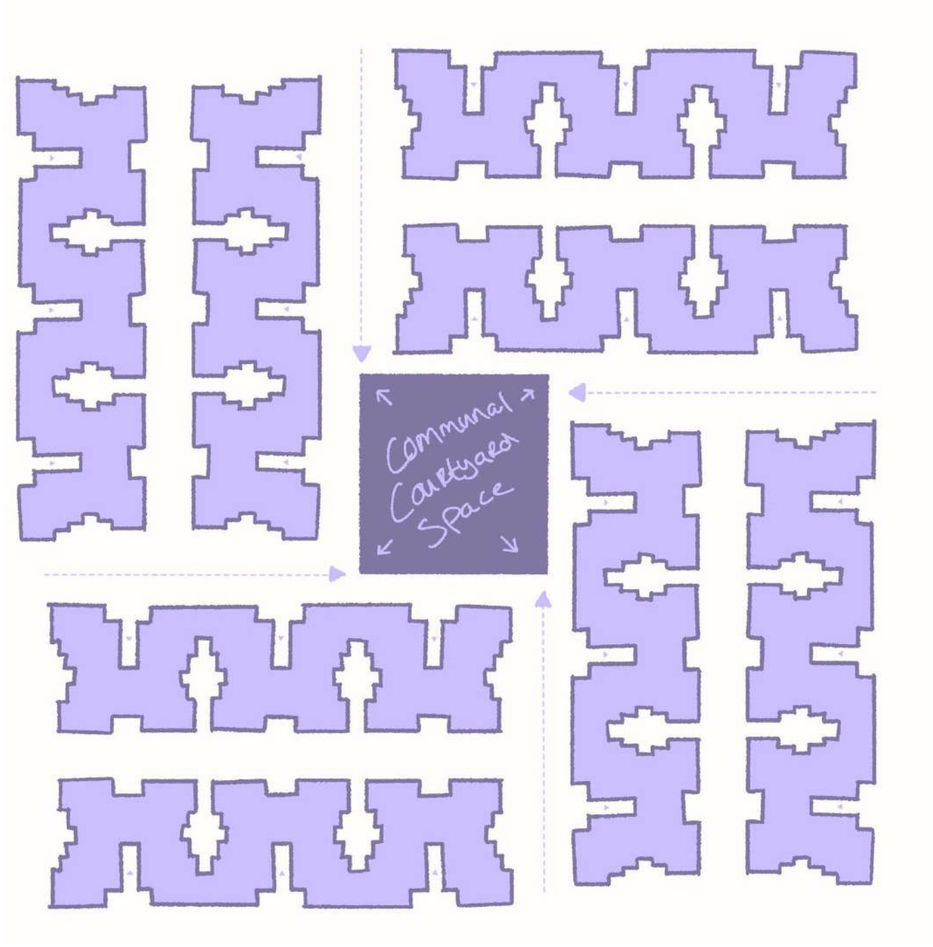




Sola Road
Cluster scale



Figure 25 - Picture of the Side road of Sola Road in Ahmedabad, by R. Han (2025)





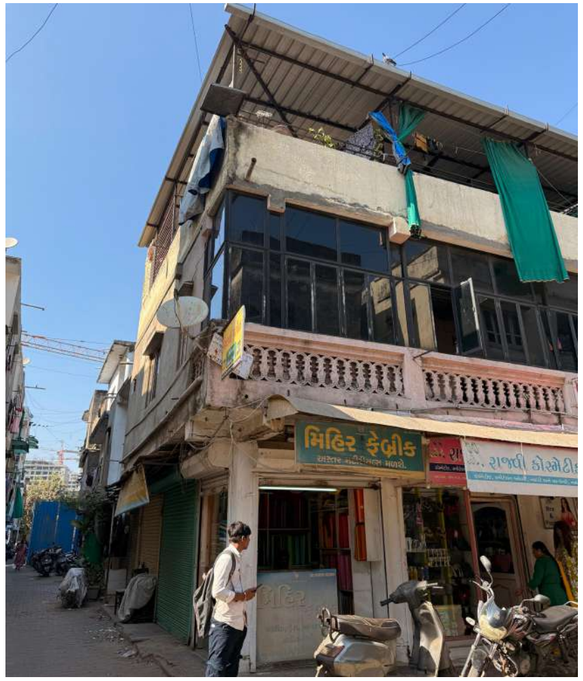


Figure 26 - Picture of the communal courtyard of Sola Road in Ahmedabad, by R. Han (2025)

Figure 27 - Floorplan drawing of the communal courtyard of Sola Road in Ahmedabad, by R. Han (2025)

Figure 28 - Picture of the incrementality and additions of Sola Road in Ahmedabad, by R. Han (2025)

Figure 29 - drawing of the Ground floor shops of Sola Road in Ahmedabad, by R. Han (2025)



Sola road is another case study that the Global Housing studio has analysed and is being used for its unique cluster stamp. The cluster is based on a windmill pattern that repeats itself throughout the whole site. The windmill is formed out of 4 rows of housing blocks, which then combine in the middle where a cenral courtyard is created.

This courtyard can be used for different community functions, such as a religious celebration site, additional parking for their two-wheelers or rigshaws and even for community events like a cricket game where different ages gather together to watch the games.

The stamp is being repeated on the whole cluster and each stamp has 4 apartment units connected to it. The residents of Sola Road have turned some ground floor units into their own shops or stores to generate incomes, while others have expanded their balconies or made an extra room in their homes on these balconies to adjust it to their growing households. It shows that incrementality will always play a big role in these housing projects in Ahmedabad.

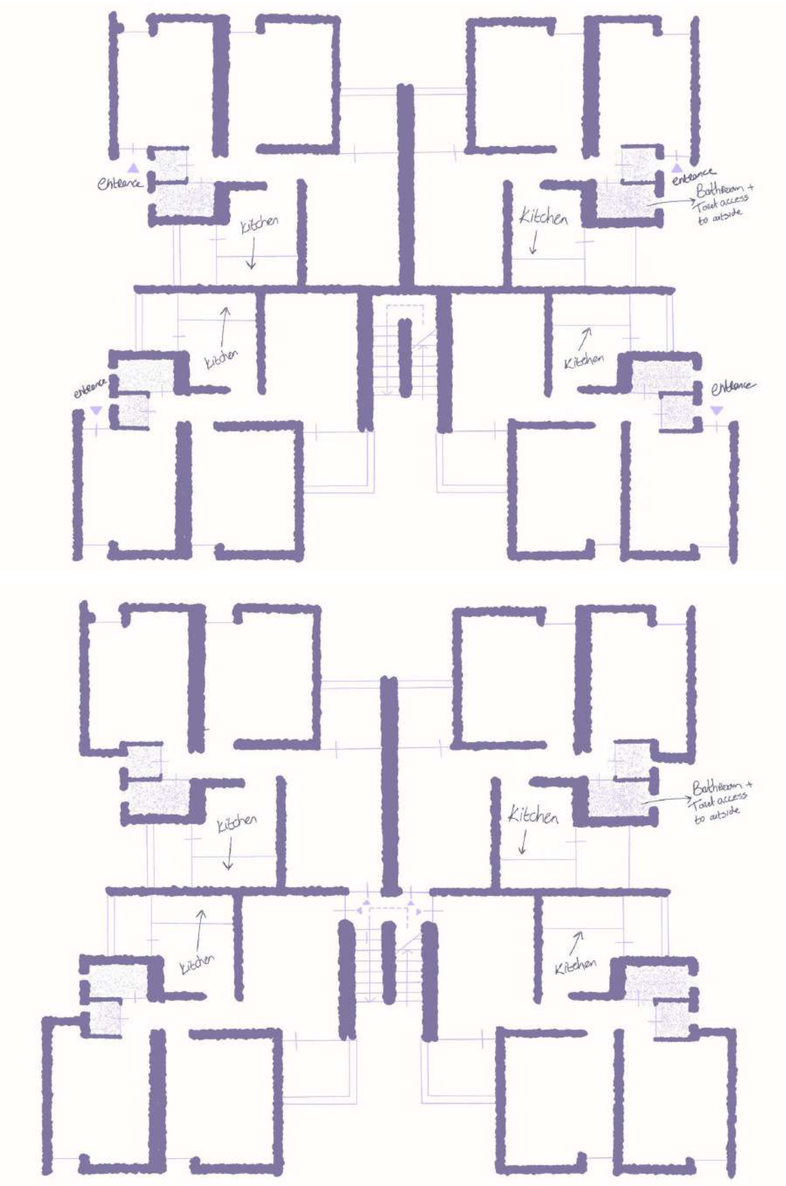
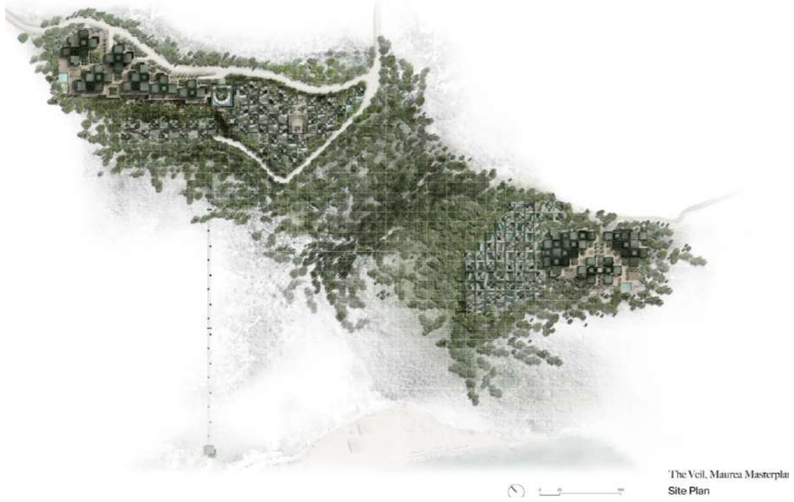


Figure 30 - Floorplan drawing of the Ground floor and first floor of a dwelling in Ahmedabad, by R. Han (2025)

Bofill- The veil & Sol Resort

Tower scape / Landscape





The Veil, Maurea Masterpla
Site Plan

The case study for staggered and terraced housing are used to understand how higher-density housing can reduce massing through setbacks, terraces and stepped forms. These projects show the staggering tower typologies, where vertical density is combined with openness, views, light and the most important aspect of it all; landscape connection.

The projects that are being used are called The Veil and Red Sol Resort (Bofill Taller de Arquitectura, n.d.) and is used as a reference for the higher income typologies where these buildings create different illusion of dissapearing into its landscape with its volume and materiality. The height of the dwellings is being absorbed by its natural landscape and background, which create these unique softening of the green mountain terrain.

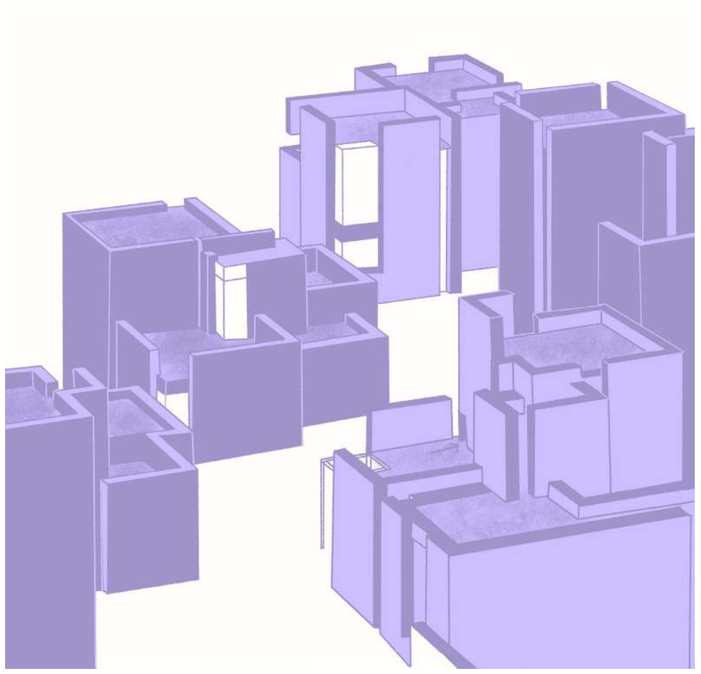
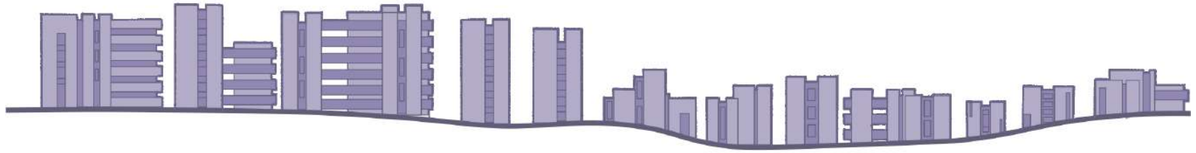




Figure 31, 32, 33 - Bofill Taller de Arquitectura. (n.d.). Bofill Taller de Arquitectura, 2026

Figure 34- Drawing of the facades of the veil, by R. Han (2026)

Figure 35 - Drawing of the landscape section of the veil, by R. Han (2026)





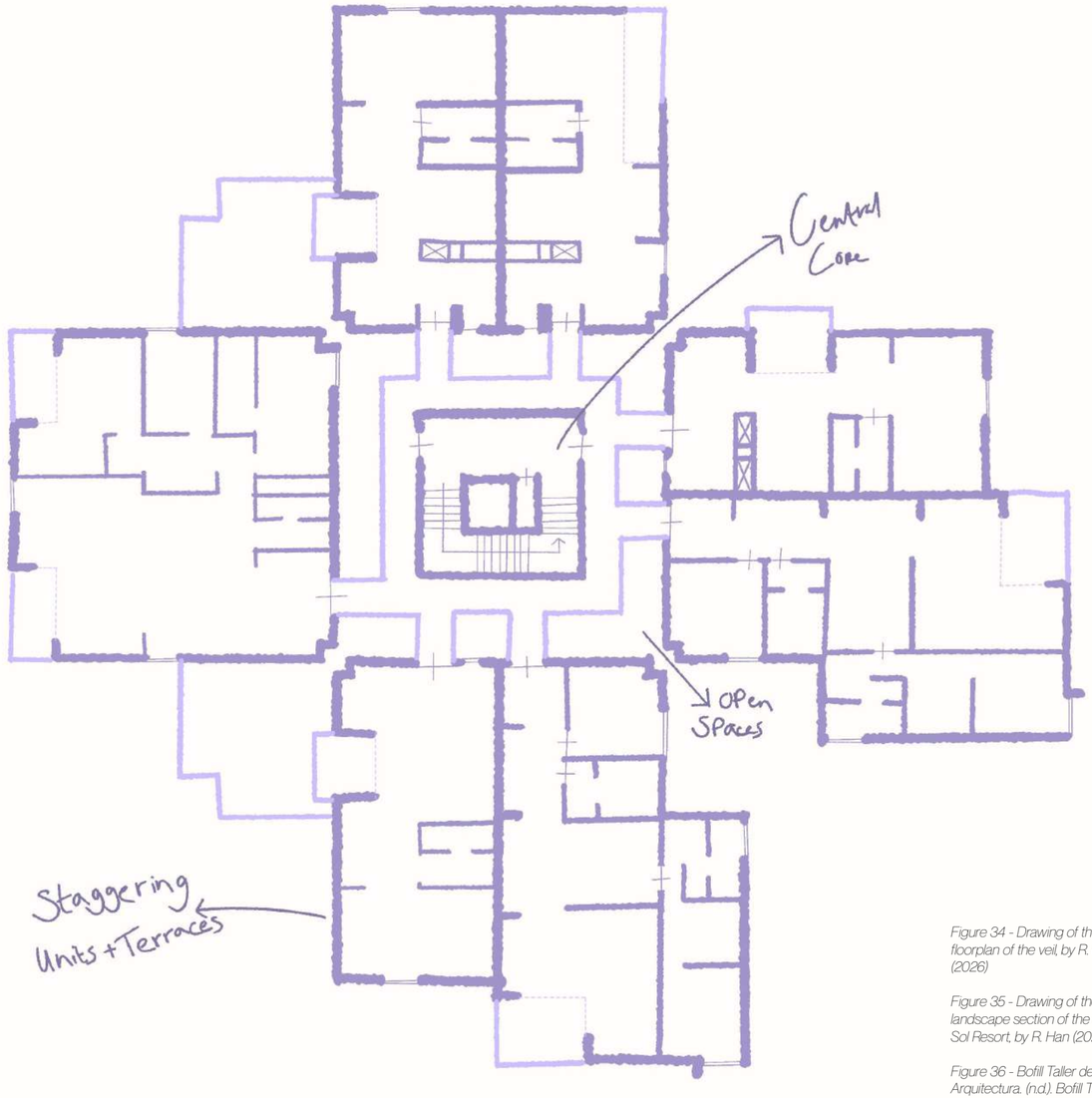


Figure 34 - Drawing of the first floorplan of the veil, by R. Han (2026)

Figure 35 - Drawing of the landscape section of the Red Sol Resort, by R. Han (2026)

Figure 36 - Bofill Taller de Arquitectura. (n.d.). Bofill Taller de Arquitectura, 2026

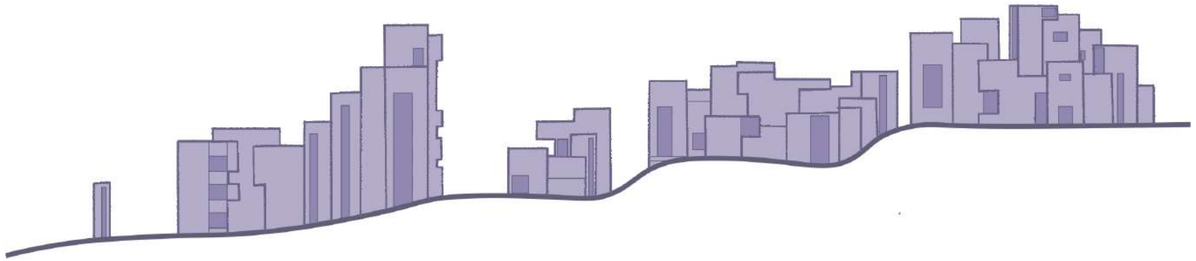


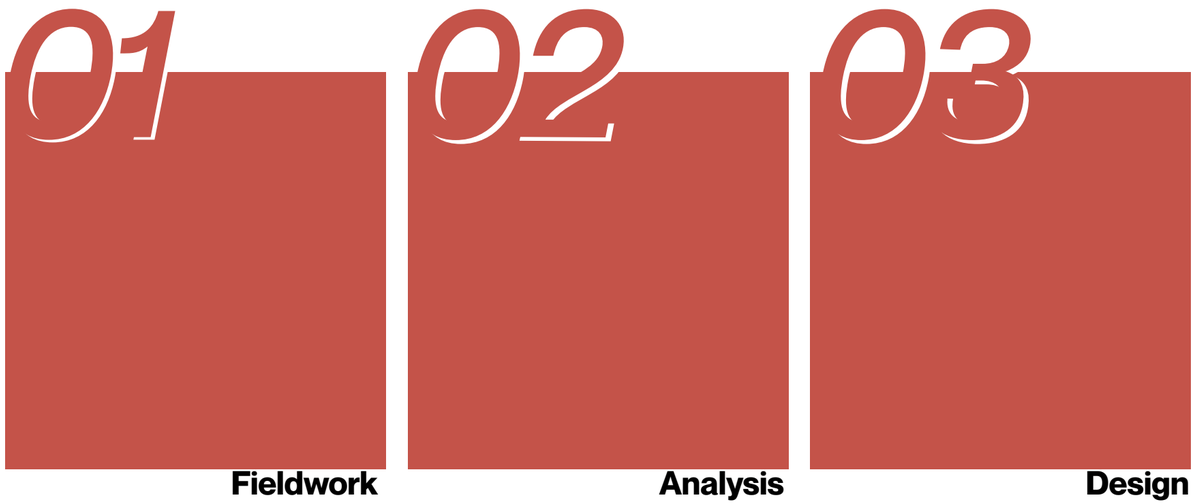


Figure 36,37 - Bofill Taller de Arquitectura. (n.d.). Bofill Taller de Arquitectura, 2026





Part III

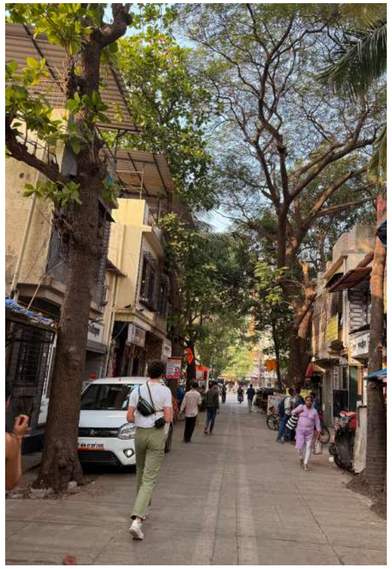


01
Fieldwork

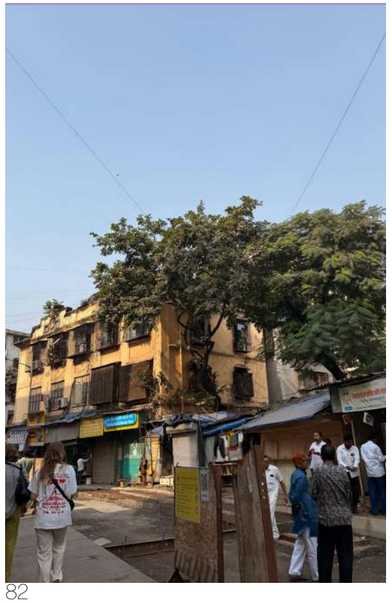


Figure 38 - Front page, fieldtrip in Mumbai, made by R. Yasar (2025)















The fieldwork started in Mumbai where The field trip began in Mumbai, where we visited several types of chawls, including the Bhatia Chawl. This visit provided a direct experience of everyday life within the housing block, characterized by a a lot of social and spatial dynamics that become apparent upon entering the semi-private dwelling spaces.

Visitors are often welcomed by a communal courtyard, which is a multifunctional space in between these enclosed blocks that accommodate a wide range of activities, such as religious celebrations, preparations for different kind of festivals or wedding ceremonies.

These courtyards function as important collective spaces that are actively appropriated and maintained by local residents. Observing how these spaces are continuously shaped by everyday practices highlights their social significance within the chawl typology.

These neighborhoods are surrounded by different kinds of vegetation, which is perceived as a valued environmental element because the greenery provides shade in the hot weathers, improves thermal comfort, and contributes to a cooler microclimate, enhancing the overall quality and usability of the shared outdoor spaces.

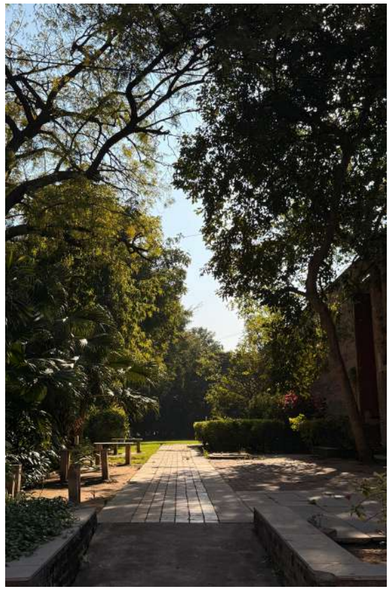
Figure 38 - Front page, fieldtrip in Mumbai, made by R. Yasar (2025)

Figure 39 - Fieldtrip inspiration from Mumbai and Ahmedabad, made by R. Han (2025)









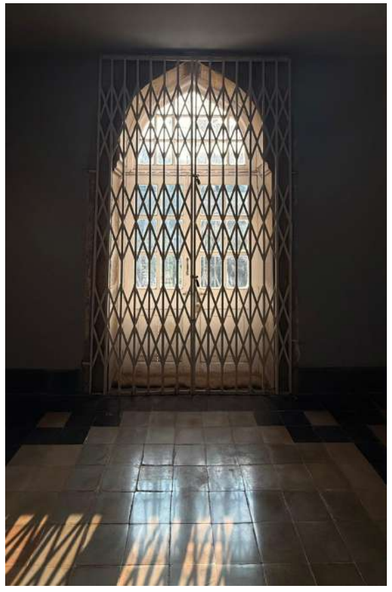



Figure 40 - Fieldtrip inspiration from Mumbai and Ahmedabad, made by R. Han (2025)

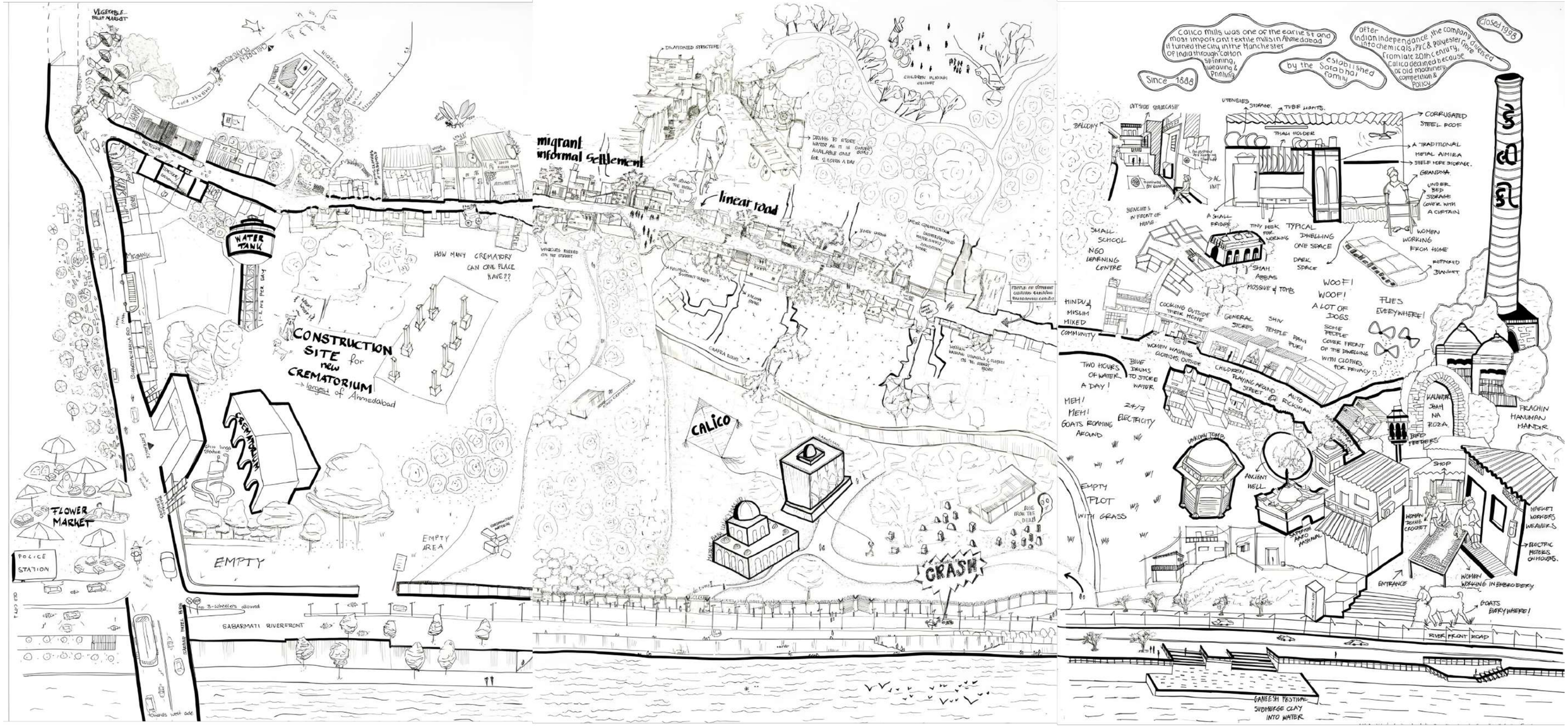
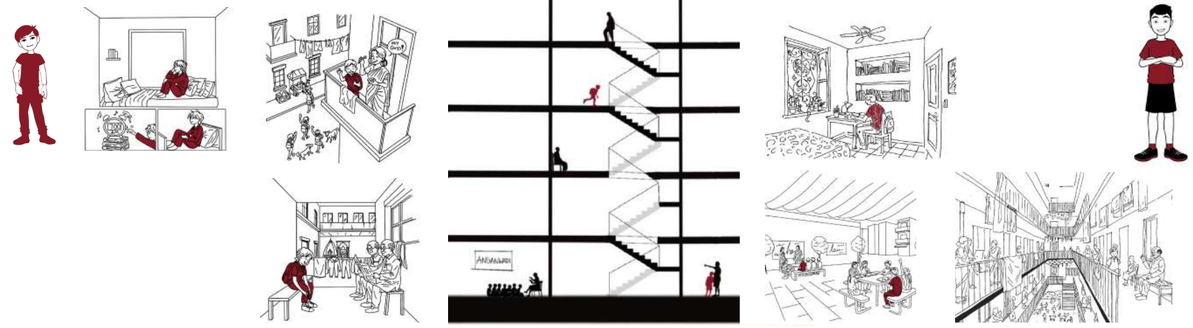
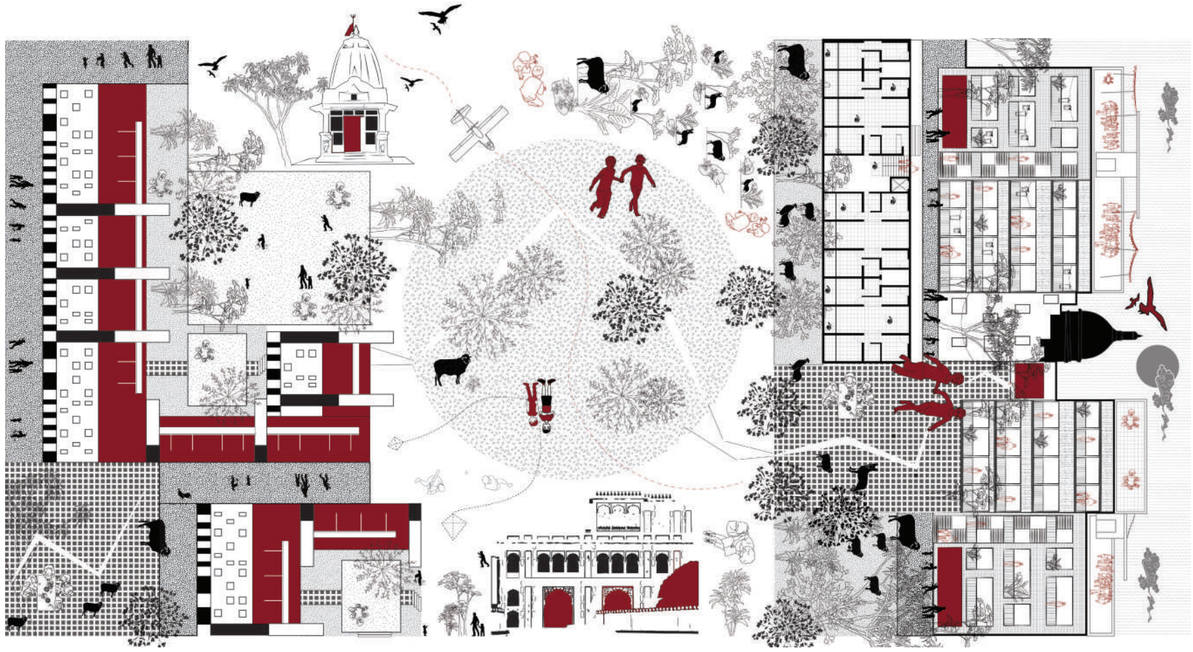


Figure 41 - Analysis from the open plot site made with the CEPT students, edited by R. Han (2025)

FAIZAAN



ISHAAN



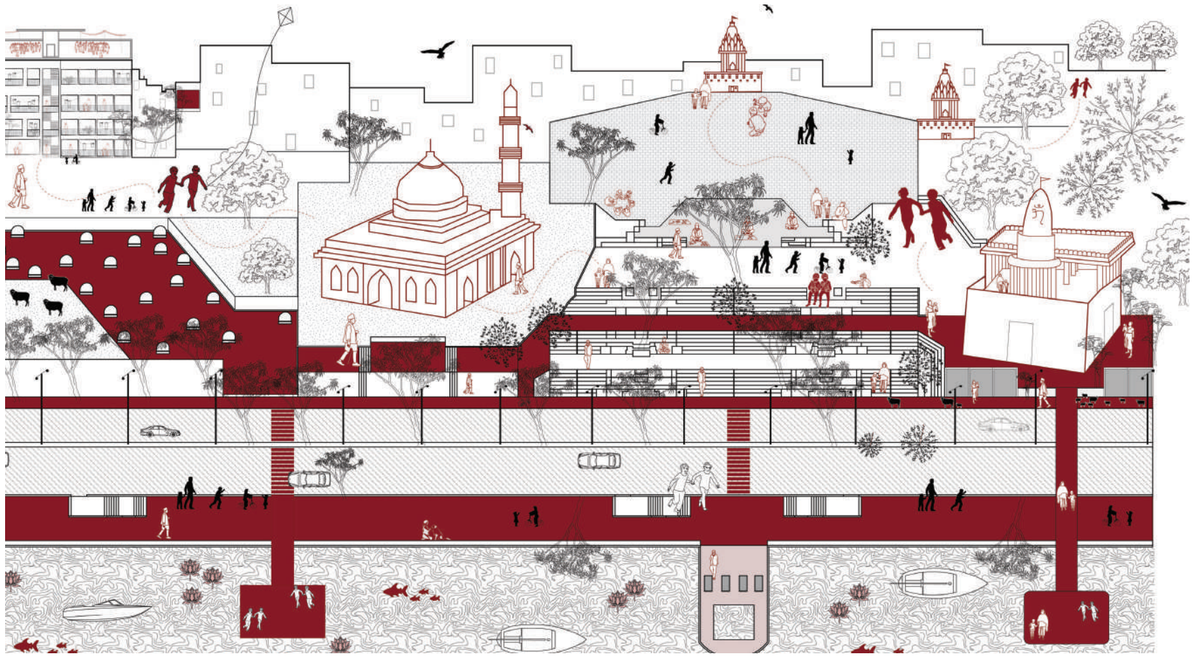


Figure 42 - Conceptual drawing of how to implement connection to the site made with the CEPT students, edited by R. Han (2025)

The fieldwork focuses on understanding the Calico Mill site as an existing patchwork of natural, built and social elements. The site is not approached as empty land, but as a layered condition with existing trees, informal routes, settlement edges, open spaces and mill remnants.

During the fieldwork particular attention is given to the social gatherings. The trees define shade, atmosphere, informal gathering points and spatial boundaries. Urban tree research shows that tree cover can influence thermal comfort and the quality of outdoor environments, which makes existing vegetation an important
design resource in dense urban contexts and heat(Panagopoulos, 2019; Ren et al., 2022). The tree positions also interrupt the possibility of a simple building layout. Rather than seeing this as a limitation, the project uses the tree positions as input for the design. This approach relates to ecological design methods in which existing environmental conditions guide the spatial organization of a project (McHarg, 1969; Yang & Li, 2016).

The direction of the riverfront is also important. The Sabarmati riverfront gives a clear orientation to the larger urban context of the site. By aligning the 5 by 5 meter grid with this direction, the project connects the internal organization of the site to the broader urban landscape. The fieldwork therefore produces three main design inputs: the existing tree structure, the fragmented site elements and the riverfront orientation. These three inputs become the basis for the masterplan.

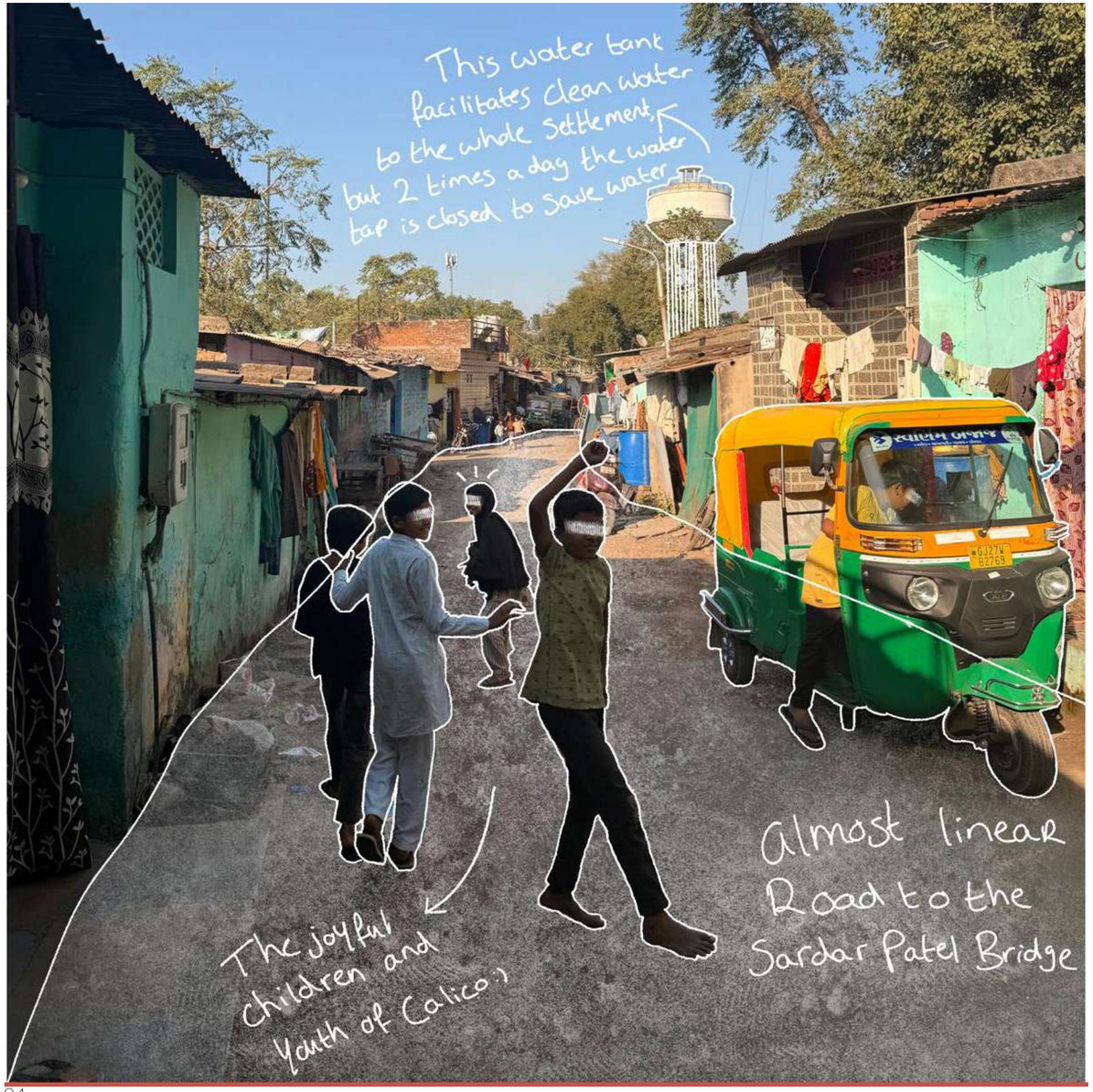
02
Analysis

The fieldwork analysis is used to really dive in depth into how the residents use the streets, their creative freedom and forms of expressing themselves on their streets and houses. While walking around Calico I noticed a lot of unique incremental outcomes that I wanted to annotate and highlight. The analysis is used to guide the readers into the site and really get an in-depth understanding of what restriction, problems and inspirations the site is dealing with.

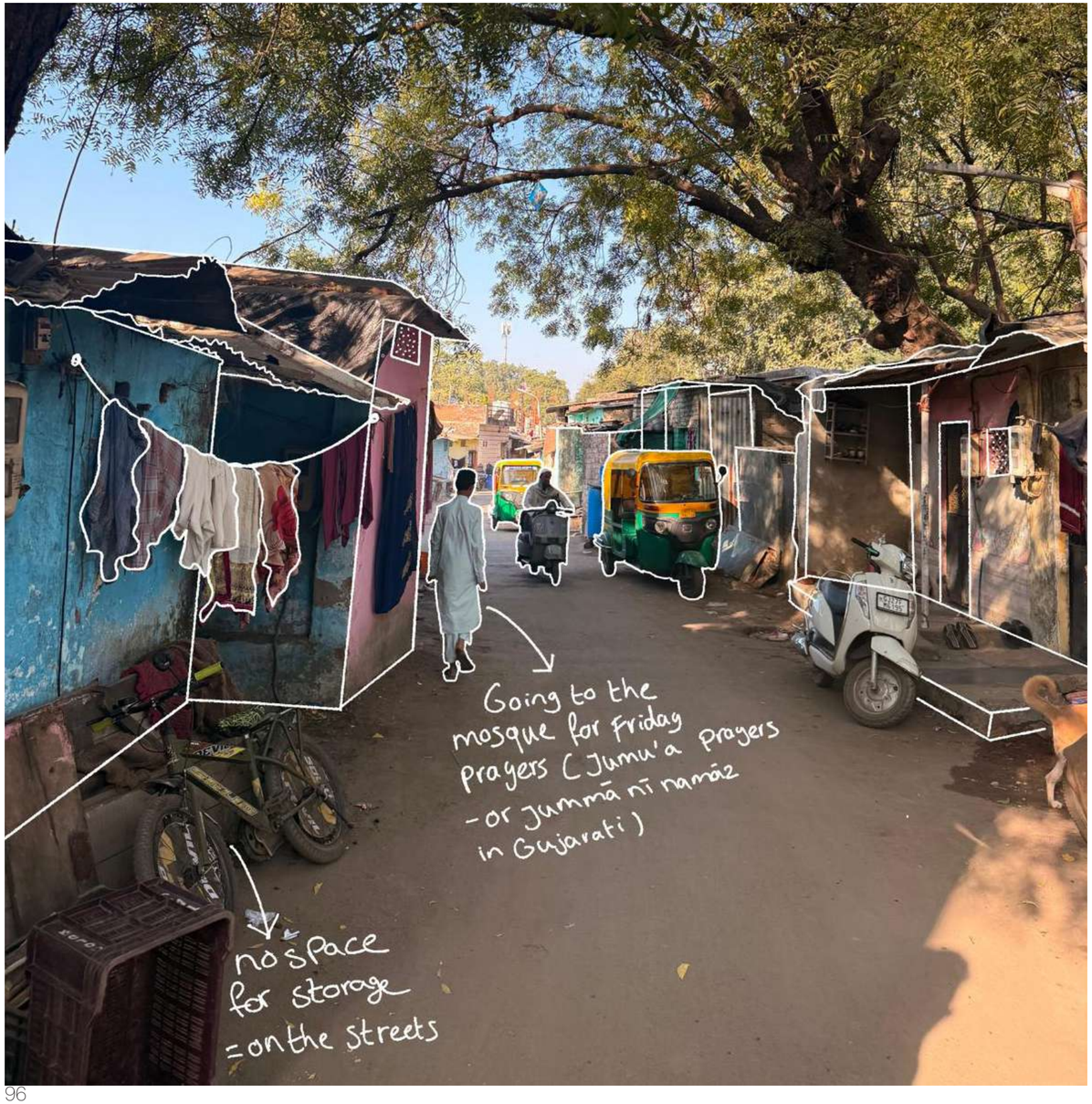
Figure 43 - All of the site analysis pictures and analysis drawings are made by the author, R. Han (2025)


Courtyard
Toilets
Daybed
Load bearing masonary wall
Otla
Height difference Riverfront → Calico


Sabarmati Riverfront
Ventilation screen
Corrugated Sheets as Roofs → cheapest option
Open entrance
Otla
Daybed
Plastered masonary walls in different vibrant colours all around the settlements!
Sightline to the Sabarmati Riverfront


This water tank facilitates clean water to the whole Settlement, but 2 times a day the water tap is closed to Save water
The joyful children and Youth of Calico
Almost linear Road to the Sardar Patel Bridge


Staggering Volumes
Plastered Brick wall
Multiple balconies
G+2
Otla


Going to the mosque for Friday prayers (Jumu'a prayers - or Jummā nī namāz in Gujarati)
no space for storage = on the streets

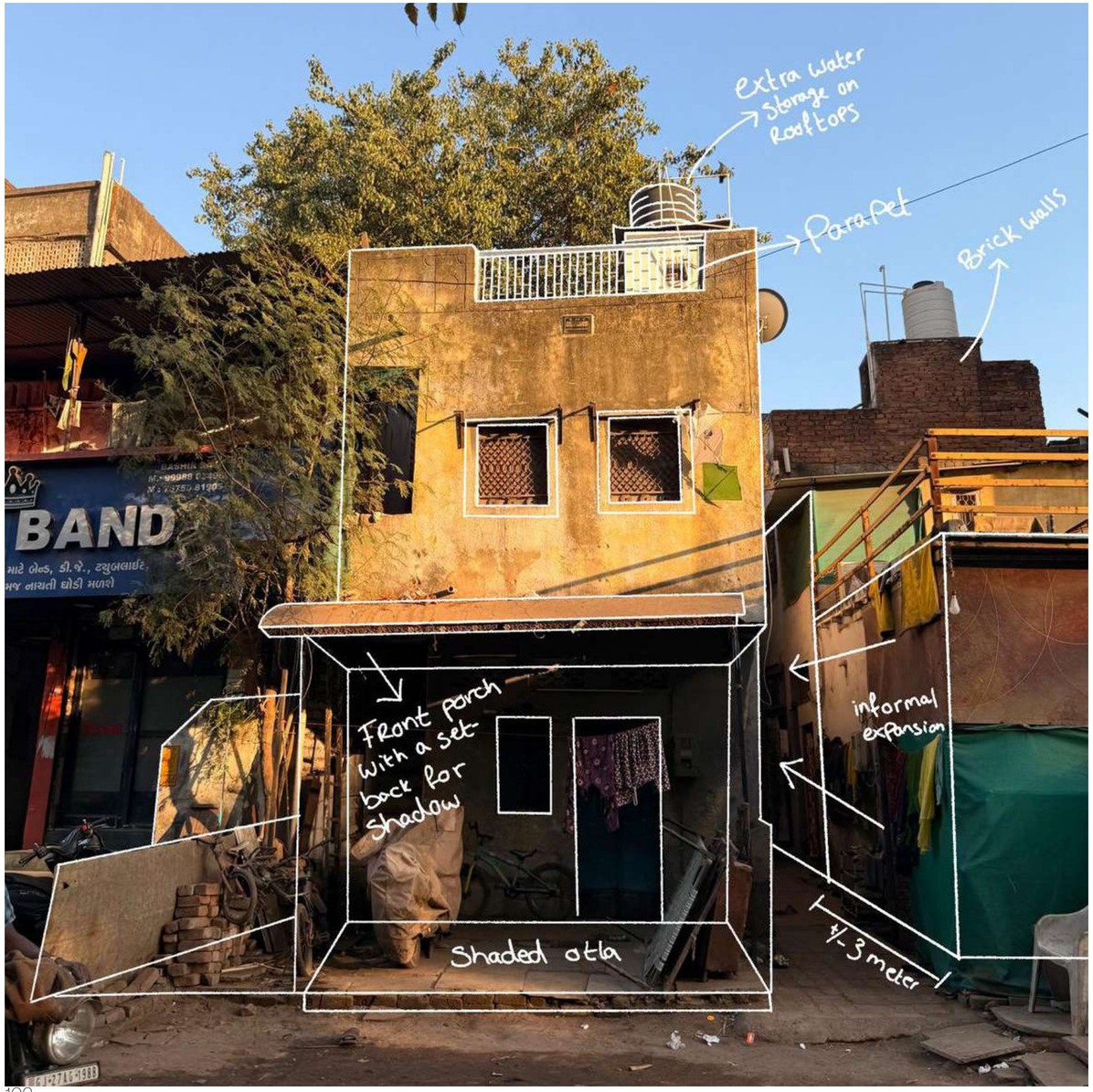

The calico residents have a very fond bond with different animals (a lot of different pets!)
Raised entrance to the dwelling because of the floods, which automatically creates a distinctive otla


G+2
new family
apartments
Concrete Slabs
+
masonary walls
the whole building
is Rented out or
used as shops
RAMIZA
WELLNESS ZONE
ZAITUN


informal expansion
Creates a staggering
and playfull Street view
(G+1 → G+2)


G+2
Rooftop
Water tank
Plastered concrete walls
Water tank


Ventilation openings
Day-bed
Otla

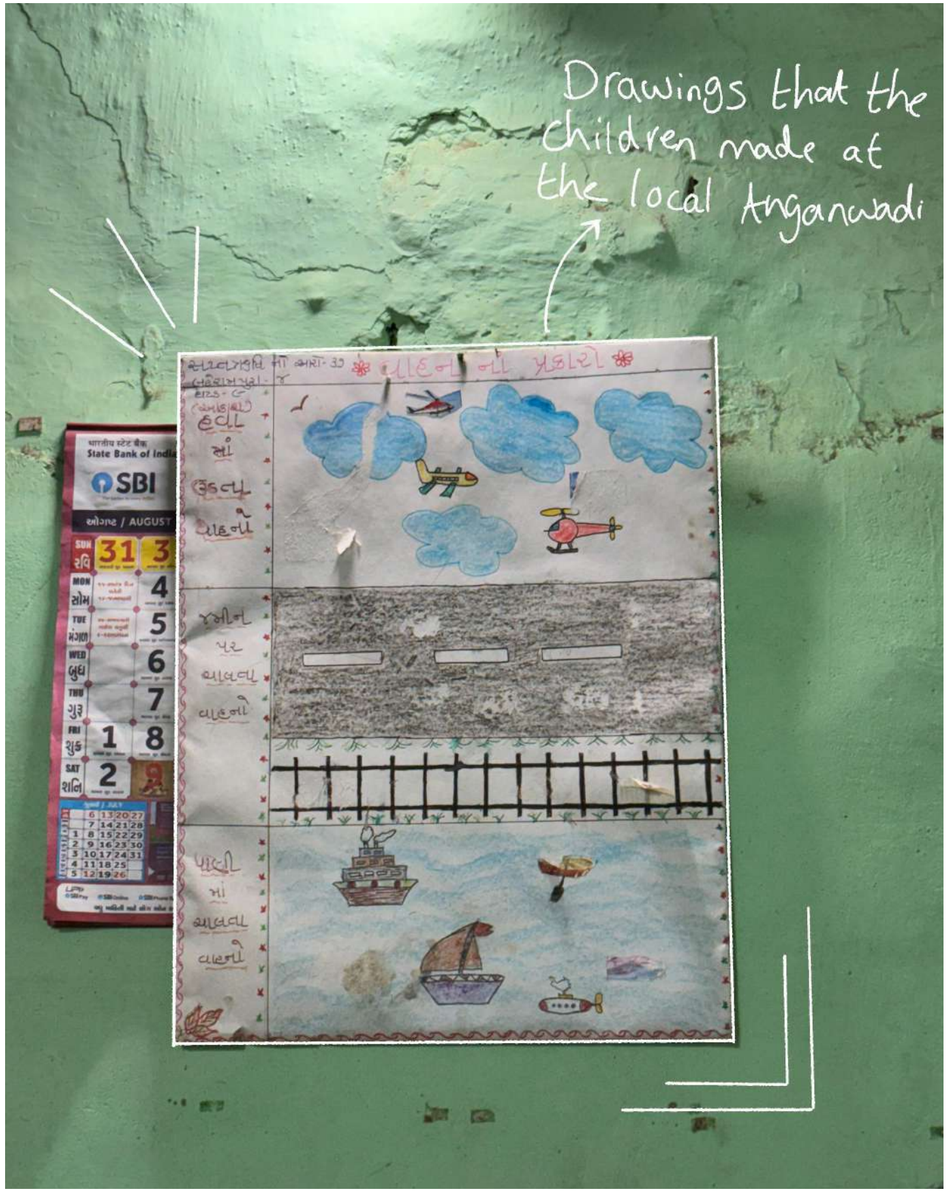

Extra Water Storage on Rooftops
Parapet
Brick walls
Front porch with a set-back for shadow
Informal expansion
Shaded otla
+/- 3 meter


Plastered masonary walls
Health facilities on the ground floors of the dwellings
Dr.SHAIKH'S DENTAL CLINIC
DENTAL SURGEON & SPECIALIST IN DESEASES OF GUMS
Masonary walls
otla
Rickshaw Parked on the Main Road


tree kept inside the house!
786

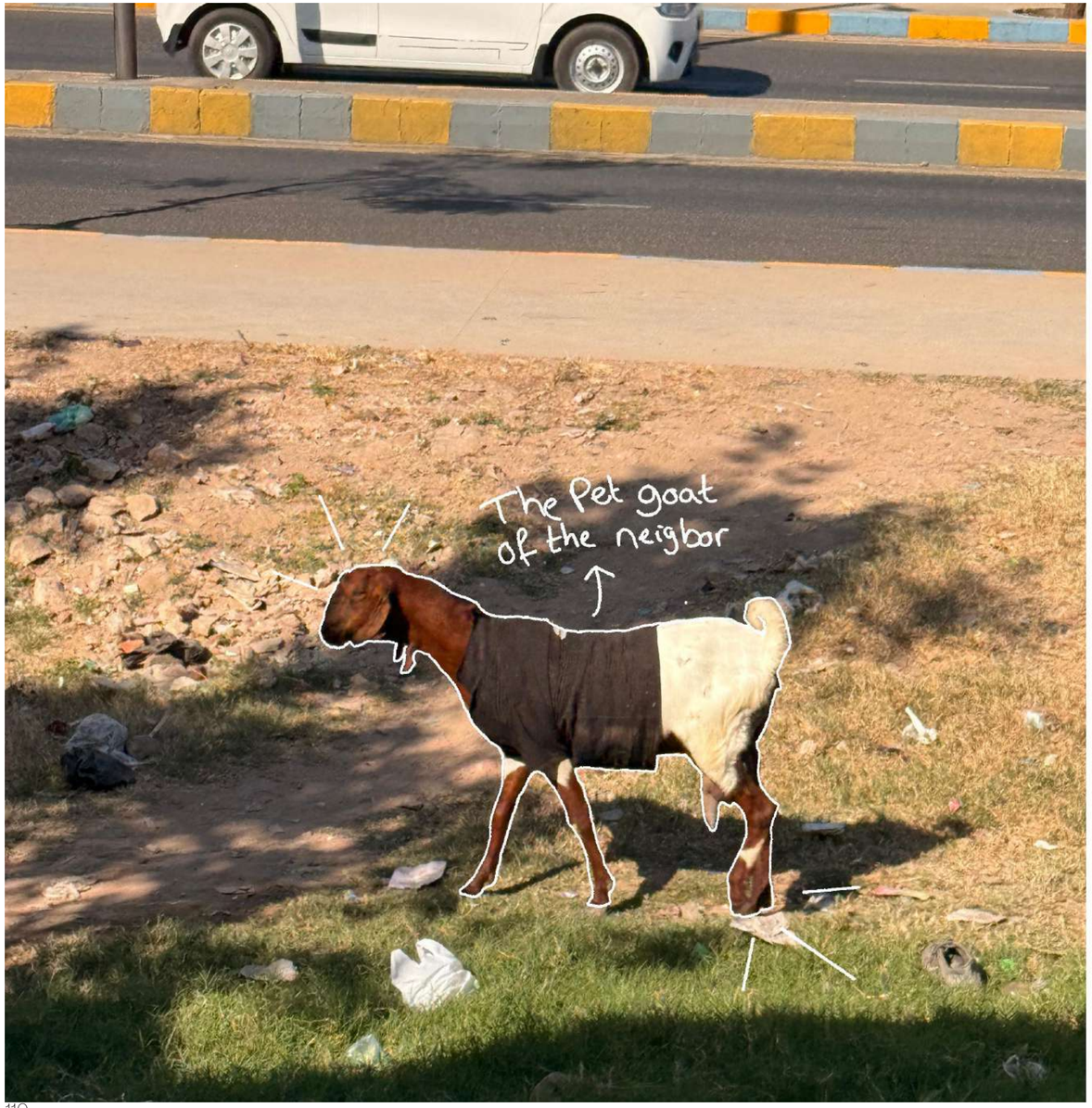

Wooden storage box used as bed


Youth + elderly Participation
Otla used as an outdoor kitchen to prepare food to sell in the city with the women of the Calico Settlement

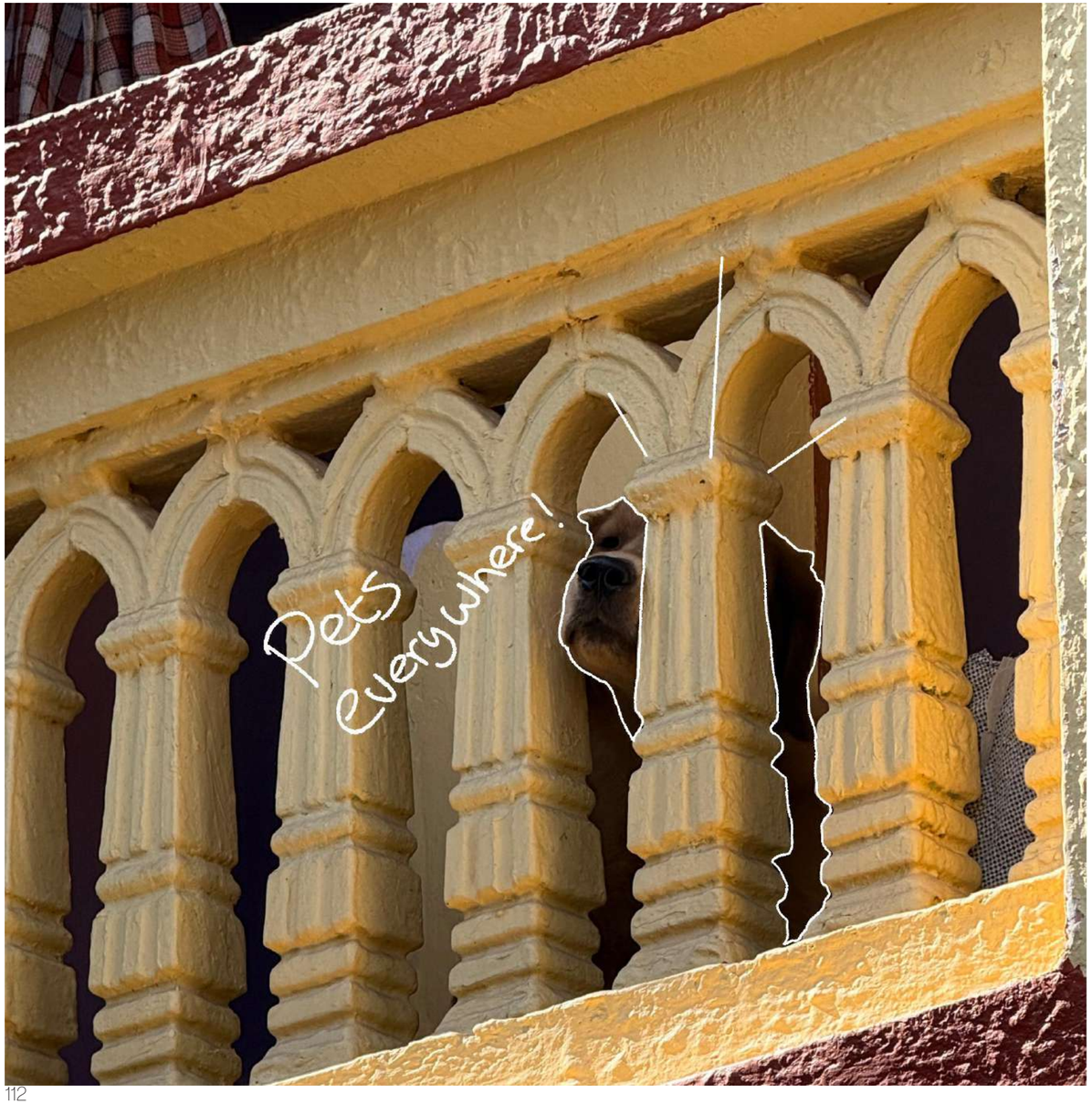

Drawings that the children made at the local Anganwadi


The neigborhoods Pug
from the village
head master


Animals roam
around freely
on the streets


The Pet goat
of the neigbor


Home based work
area on the roof


Pets
everywhere!


Painted
Masonary
Brick


Ventilation shafts
Pet Goat


every house choses a different colour to represent their household

Material analysis
Facades

The materials for the facades are inspired by the colorful dwellings of the Calico Mill Settlements. The residents built their houses from red brick and later on decided to paint straight over it in different colours that represented their own household. This inspired me to use it in my own design as well, not just as a colour, but also as a way of navigating through the site.

While I was walking through Calico the roads seem never ending and I could not figure out exactly where I was at certain points because all of the houses all had their own colors and sometimes there would be a few dwellings next to each other with the same colour, while the others were again a totally different colour.

That is how I designed the clusters in color coordination. Each cluster base has their own calico inspired plastered base color so it will still be recognisable even if they later on grow and expand. It doesn't matter what they build on top of that because the base will still be the same, even if they decide that the upper floor that they are going to build will be a totally different color. The neighborhood is still recognisable by its base colors.

The plastered exterior walls are then combined with glazed tiles on the inner parts of the otla, to create extra depth and cooling in the hot climate in Ahmedabad. Tiles are also low maintnance and can be easily cleaned by throwing water on the ground or swiping with a broom. This material is low in maintnance and easily replacable, in case a tile gets broken.

The same goes for the higher income housings. The towers will have a plastered facade with a Tile covered core that is extruding into the facade. this creates extra depth in the facades and creates a glistering transition between light- openness, and dark- private.

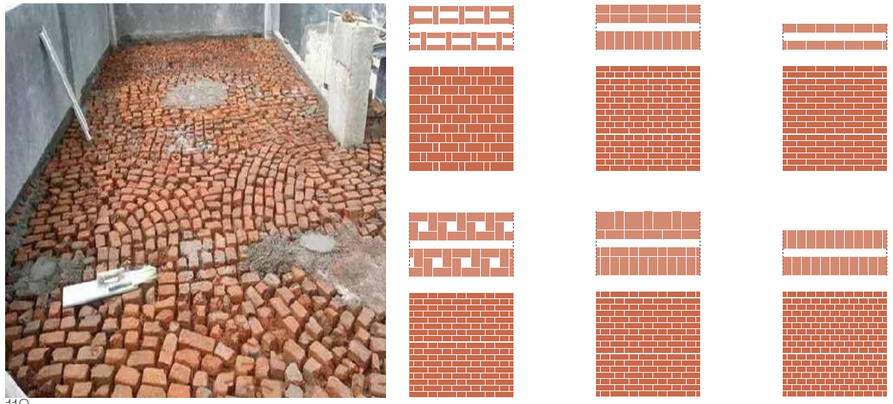


Material Analysis
LIH Masonary Brick

Ahmedabad is known for its diversity in architectural dwelling styles, From the locally known pol houses made from brick and wood to its modernist buildings which are made out of concrete and brick. The Calico Mill settlement is made out of load bearing brick walls and concrete slabs, and that is why the research about materials will also include those 2 specific elements. For the lower income housing these 2 materials are being used as well as different techniques.

For the ground floor there will be concrete slabs on top of a concrete foundation. The foundation will be laid ready for the house owners to later on use for their load bearing concrete columns while they are expanding. The floor slabs will have a layer of brick and concrete, also known as brick bat coba, poured on top of it as well to cool the houses and make them waterproof.

The load bearing walls as well as the internal wallings will be from brick, the load bearing walls are placed in a rat trap bound pattern because the cost is lesser compared to the other patterns. It requires 25% less bricks and 40% less mortar, which makes it very doable for the lower income housing units.



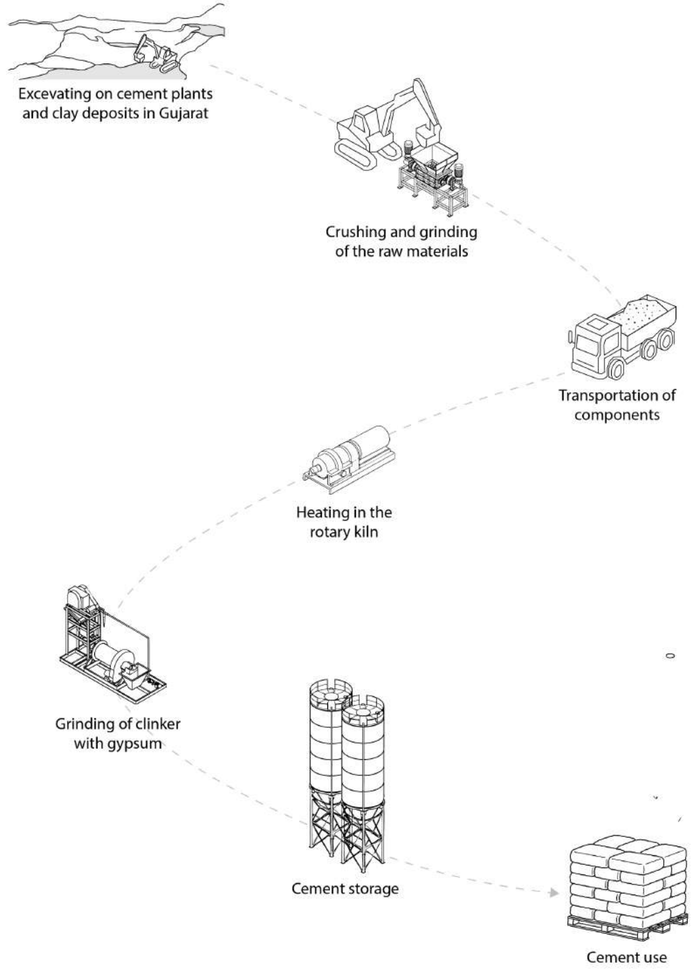


Figure 44 -All images are from the Global Housing Material case study booklet, ((2025)

Material Analysis
LIH + HIH RCC Columns

The columns and slabs are made from concrete for the lower and higher income housing typologies. for the lower income concrete is used in the floor slabs as well as the columns and beams. As mentioned before the foundation is placed for the lower income with the anchor points fixed on the plot to locate where the columns should be placed later on. This way they can create even more flexible layouts and floorplan configuration the more they incrementally expand.

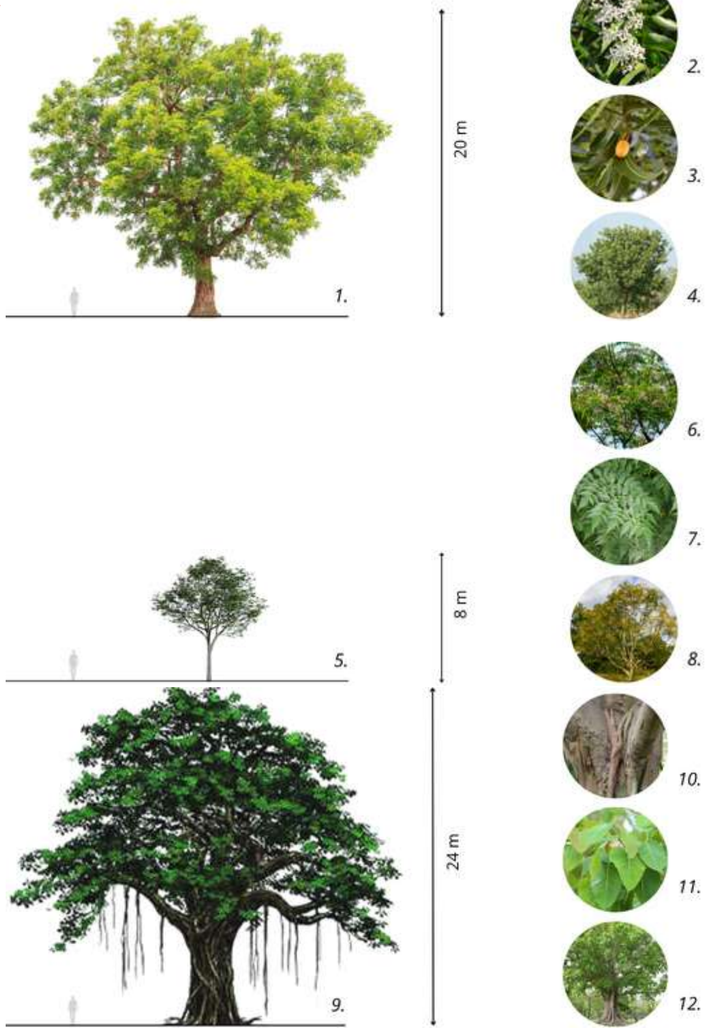
For the higher income housing the same construction is used, but instead of load bearing brick walls the internal circulation core will be from load bearing concrete walls and columns around it, to also create a more open and flexible floorplan that can be adjusted to their changing needs.

Calico Mills

Tree Analysis with different vegetations on the site

1: 3000

N



A cacia catechu
Growth rate: 8 to 15 meters
Blooming: Spring
Exposure: Full sun
Water: Every 2 weeks

Melia azadarach
Growth rate: 9 to 12 meters
Blooming: Summer
Exposure: Full sun
Water: Moderate

Ficus religiosa
Growth rate: 18 to 30 meters
Blooming: Winter
Exposure: Full/partical sun
Water: Average

Figure 45 -Tree analysis diagram, R. Han (2025)

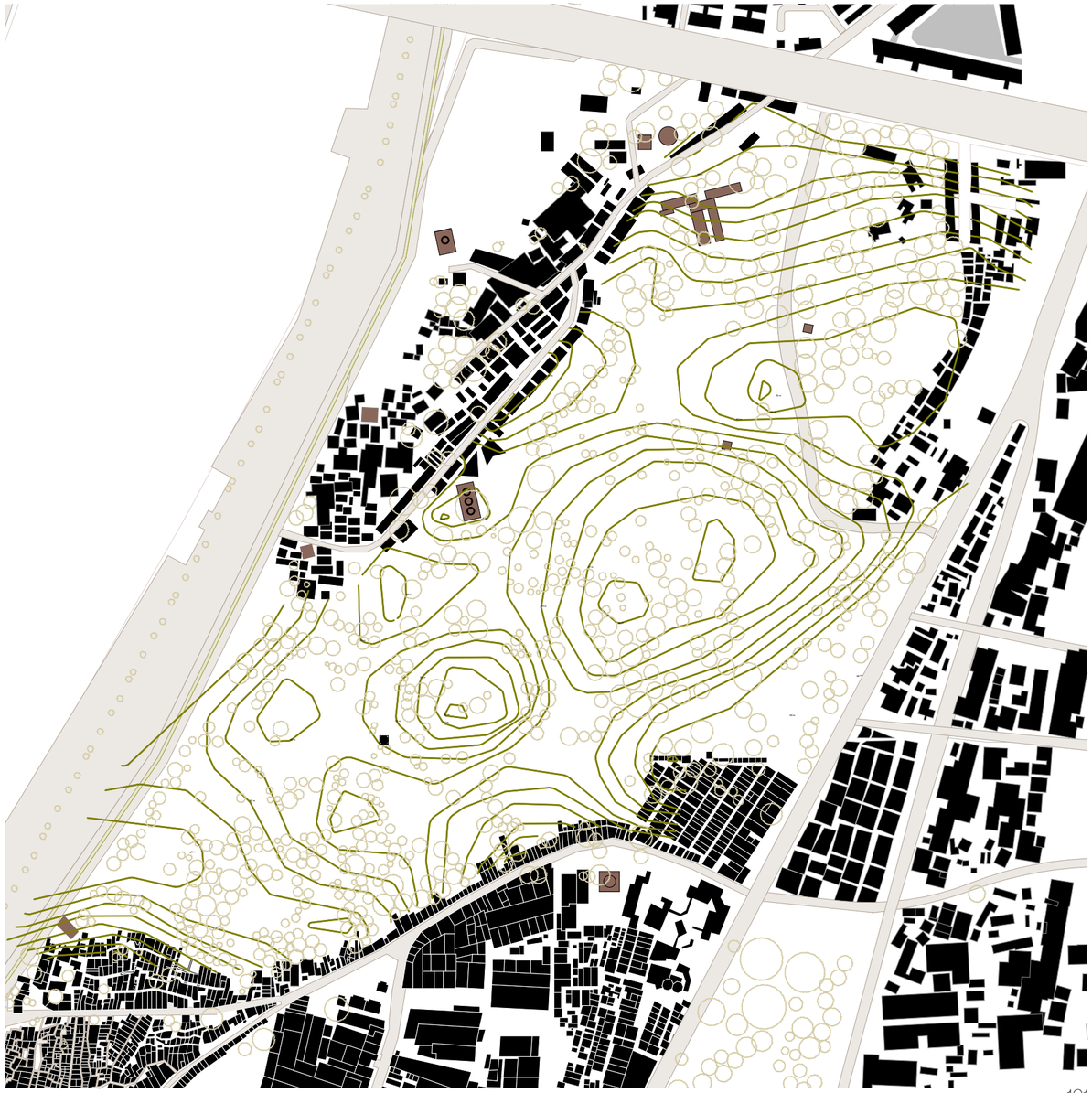


Figure 46 -Existing site plan of Calico Mills, by R. Han (2025)

5 x 5 Meter Grid
North oriented

1: 3000

N

The grid is placed on top of the site to test out how the site reacts to its new structural system. With the North orientation the edges of the riverfront seem to cut off at irregular moments which create a lot of loose space which is inneficient.

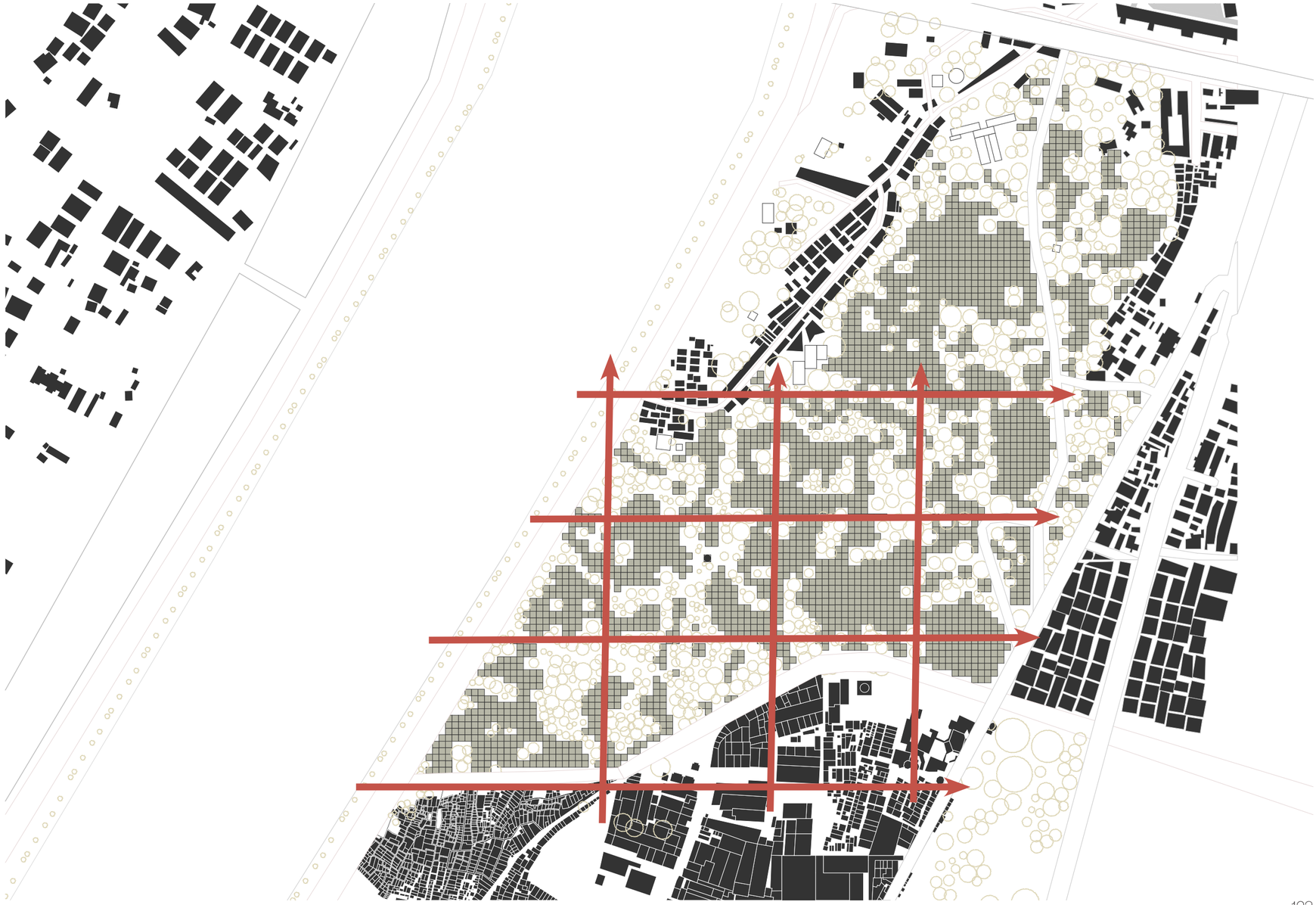


Figure 47 -Site plan with the north oriented grid on Calico Mills, by R. Han (2025)

5 x 5 Meter Grid
Riverfront oriented

1: 3000

N

The grid is now turned 31 degrees to the right to align with the existing riverfront road structure. This immediately creates a sense of direction and bigger usuable and build-able zones in this 5x5 meter grid.

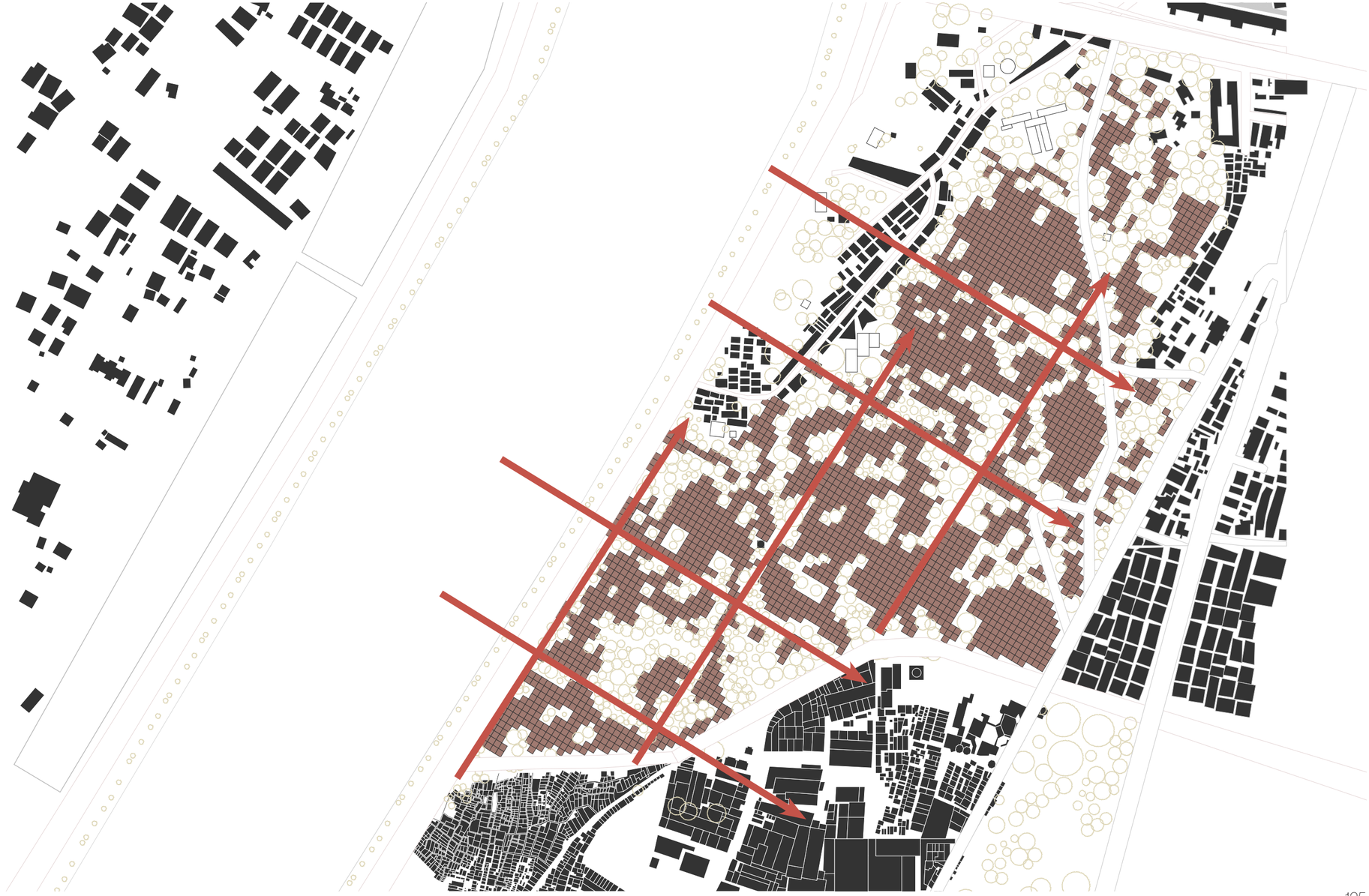


Figure 48 -Site plan with the riverfront oriented grid on Calico Mills, by R. Han (2025)

Manegerial Strategy
Building phases

1: 3000

N

The site is then divided into 3 development phases. The first one is in the middle to immediately connect the main infrastructural roads to the centre of the site. This way it creates a passage from the calico settlement all the way to the other side of the forest in a linear path.

It is financed by the riverfront development plan, where the mixed income housing will be facilitated to different income groups. The Government will also facilitate all of the infrastructural processes while the site is getting developed. The towers will be built first and then the plan will slowly develop more into the urban infrastructural zones. The lower income starts with a base unit with all of the essential elements in it. The fixed spaces are already put in place for incremental growth in the future. the Calico residents can slowly expand their houses with the monet they can save throughout the years. The higher income supports the lower income groups this way and that creates a balanced urban planning.

Phase 2 and 3 will later on develop on the site in the same way as phase 1 did, because the design elements are replicable, it is easier to use the design elements and move the components around the site in different ways and adjusted to its new zones.



Figure 49 - Site strategy diagram on Calico Mills, by R. Han (2025)

03
Design

The design proposes a mixed-income housing masterplan based on a 5 by 5 metre grid aligned with the direction of the Sabarmati riverfront. The grid gives structure and coherence to the fragmented Calico Mill site, but is not used as a rigid system. Instead, it is adapted around the existing trees.

Where large trees are located, the grid opens up and creates green pockets, courtyards, breaks between housing rows or shaded public spaces. This approach follows ecological planning principles, in which existing landscape conditions are used as active design input rather than treated as obstacles (McHarg, 1969; Yang & Li, 2016).

The project uses housing as a patching strategy. The site consists of several disconnected fragments: existing settlements, open green areas, former mill remnants, vacant land, informal routes, infrastructural edges and the riverfront orientation. Rather than replacing these fragments with one uniform plan, the design connects them through housing typologies, public space and landscape. This relates to the idea of the city as a composition of fragments that can coexist within a broader spatial framework (Rowe & Koetter, 1978).

The masterplan is organized through four layers: the existing tree structure, the 5 by 5 metre grid, the public-space network and the housing typologies. Together, these layers form a mixed-income neighbourhood where landscape, density, affordability and typological diversity are connected.

Patching as Urban Strategy

Patching is the central concept of the project. The Calico Mill site is made up of fragments: existing settlements, open land, trees, mill remains, informal paths, infrastructure and surrounding development. Patching means creating relationships between these elements without making them all the same.

This approach is related to the idea of the city as collage. Rowe and Koetter (1978) criticize totalizing planning models and instead propose an urban understanding that can accommodate different fragments, systems and partial orders. In this project, the site is therefore not treated as a blank slate, but as a patchwork that requires a connecting framework. Housing becomes the main patching tool. Different housing typologies are used to connect different site conditions. Row houses patch the project into the scale of existing settlements. Mid-rise towers patches the transition between low-rise and into the larger urban scale of the site.

Grid as Ordering System

The 5 by 5 metre grid provides an ordering structure for the project. It gives rhythm, direction and coherence to the masterplan. Because the grid follows the direction of the Sabarmati riverfront, it connects the internal organization of the project to the larger urban geography of the site.

However, the grid is not rigid. It is modified by the existing trees. This creates a more site-specific order, where nature interrupts the built structure. This method relates to ecological planning approaches in which environmental features are not treated as secondary, but as primary design constraints and opportunities (McHarg, 1969; Yang & Li, 2016).

Trees as Spatial Anchors

The existing trees are treated as spatial anchors. They determine where buildings stop, where openings appear and where public or collective spaces emerge. In some places, a tree creates a gap between two rows of houses. In other places, a group of trees becomes a courtyard, green patch or shaded public route.

Urban trees contribute to shade, thermal comfort and the quality of outdoor space (Panagopoulos, 2019; Ren et al., 2022). Because Ahmedabad's climate makes shade and outdoor comfort important design considerations, preserving trees is not only an ecological decision but also a spatial and climatic strategy.

Mixed-Income Typologies

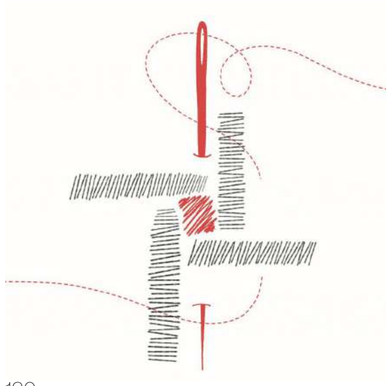
Different income groups are accommodated through different housing forms, but these forms are connected through the same public-space and landscape framework. Incremental row houses provide flexibility and affordability for lower-income households. Staggering mid-rise towers provide higher-density housing for higher-income groups while maintaining openness through setbacks, terraces and an open ground floor.

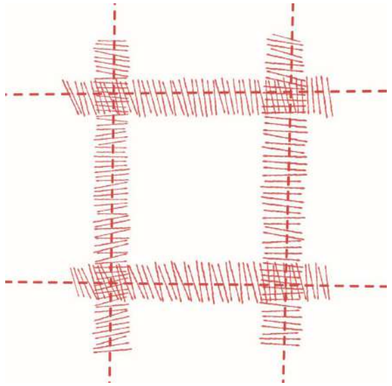
Incrementality and Supports

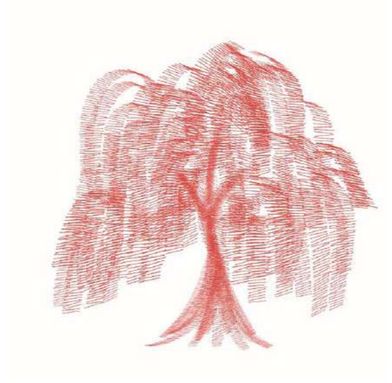
Incremental housing is especially relevant for the lower-income row-house typology. Turner and Fichter (1972) argue that housing should be understood as a process in which dwellers can participate and adapt their environment over time. Habraken's theory of supports similarly distinguishes between the larger support structure and the adaptable infill controlled by users (Habraken, 1972/1999). In this project, incrementality is controlled rather than unlimited. The row houses provide a base unit, a structural logic and a defined expansion zone. This allows growth while protecting light, ventilation, circulation, tree spaces and collective areas.

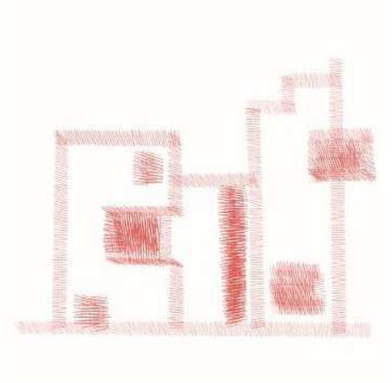
Public Space as Connector

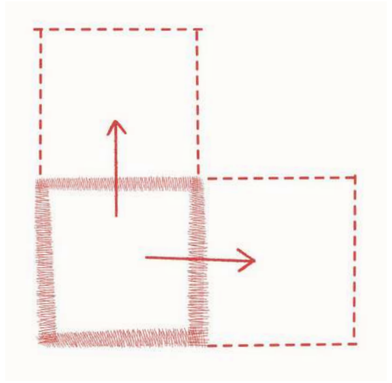
Because the project contains different typologies and income groups, public space becomes the element that holds the project together. Public space is not treated as leftover space between buildings, but as the connective tissue of the neighbourhood. The public-space network connects row houses, mid-rise blocks, towers, trees, courtyards and existing site fragments.









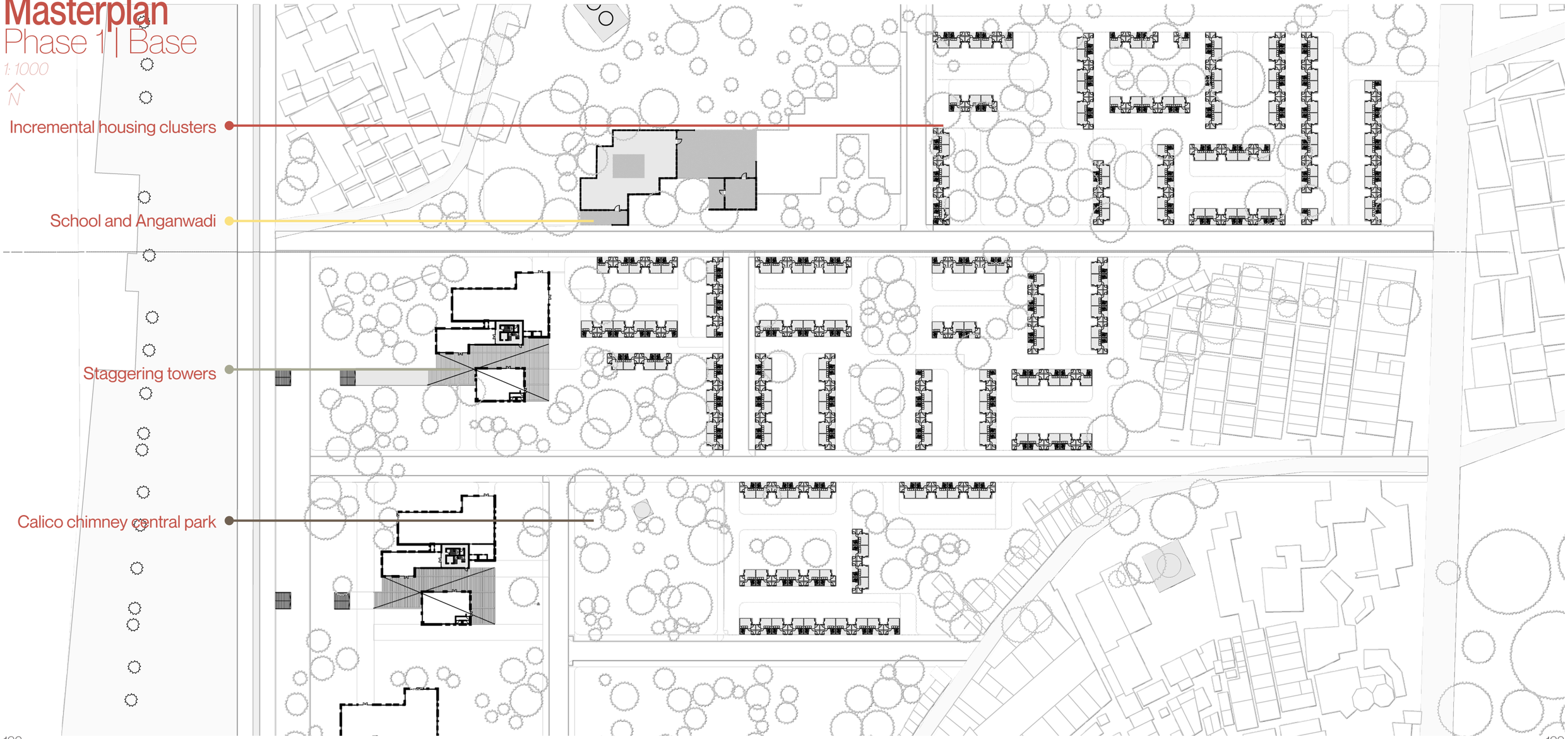




Masterplan
Phase 1 | Base

1: 1000

N



Masterplan
Phase 1| Landscape

1: 1000



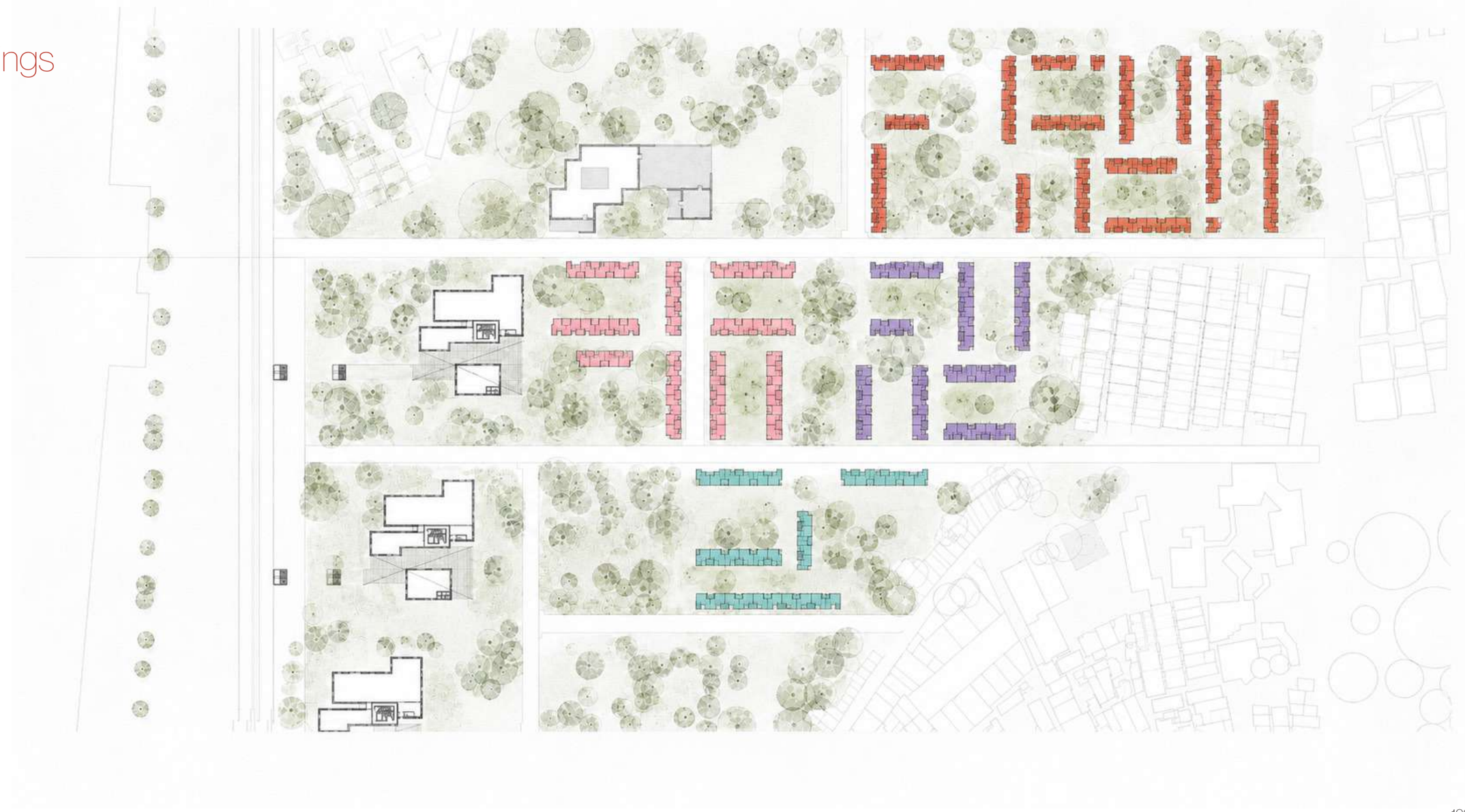
Masterplan
Phase 1| Roads

1: 1000



Masterplan
Phase 1| Dwellings

1: 1000



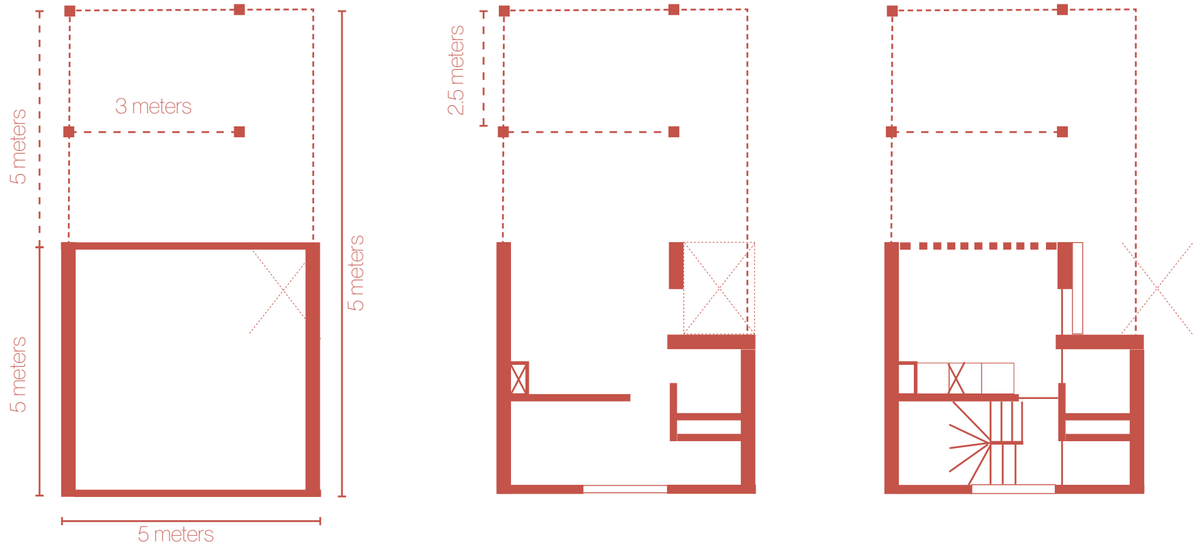
Masterplan
Phase 1| Total expansion base unit
1: 1000



Lower Icome Housing
Floorplan Grid

The incremental row houses are designed for lower-income households and are placed near the scale of the existing settlement edges. They connect the new masterplan to the low-ris and works as a mediator of the surrounding fabric. This typology is based on the idea that housing should not be a finished object, but a framework that can grow over time according to residents' changing needs and financial capacity (Habraken, 1972/1999; Turner & Fichter, 1972).

Each dwelling starts with a 5 by 5 meter base unit containing the essential facilities for immediate occupation: living space, sleeping space, kitchen, sanitation core, circulation core and access to the street, from both sides. Behind this base unit, an additional 5 by 5 meter expansion zone is reserved along the rear façade. Together, the base unit and expansion zone form a potential 5 by 10 meter footprint. The columns are placed in a span of 3 meters, so that the courtyard in the centre of the 2 units could always stay open for daylight and ventilation.

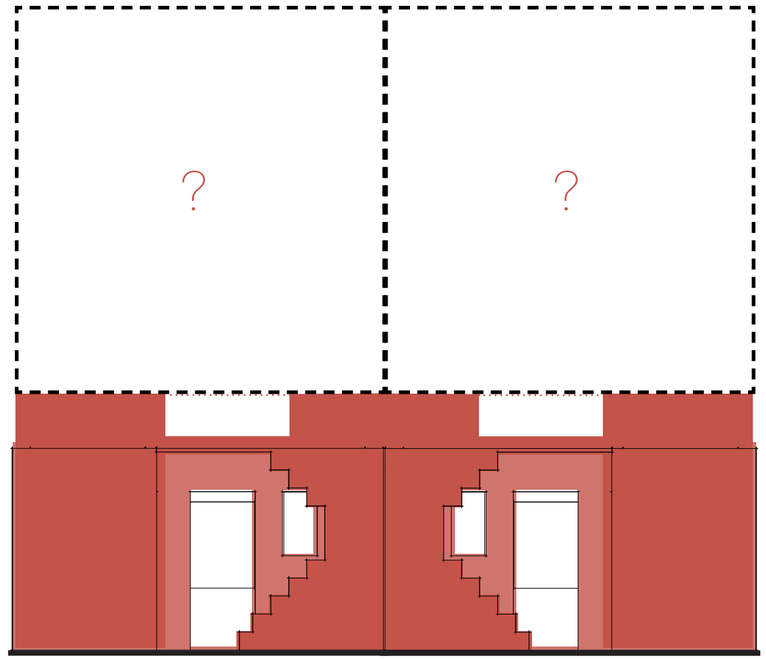


Lower Icome Housing
Incrementality in the facade

1: 100

Residents can expand horizontally into the rear zone and vertically within the same footprint. The maximum height is limited to G+3. This limit is defined by the existing tree structure: beyond G+3, the houses would enter the green canopy zone and compromise the landscape strategy, daylight, ventilation and collective green spaces. In some location the trees may vary from height so in some cases the dwelling stays at the ground floor level or can maybe add only 1 story extra.

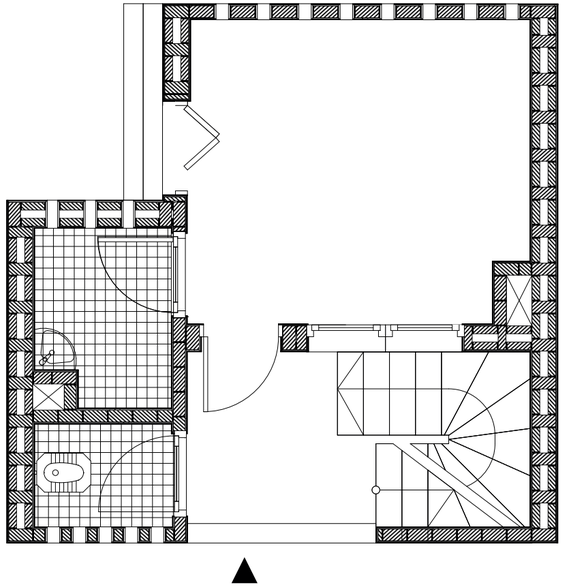
This system allows one family to grow within the same house over time. A household can start with the compact base unit and gradually add rooms, extra floors, storage, workspace or a small shop when family size or financial capacity changes. In many low-income urban contexts, domestic space often supports income-generating activities, making the possibility of shop or workspace conversion important (Breman, 2004; Chen et al., 1999; International Labour Organization, 2021).

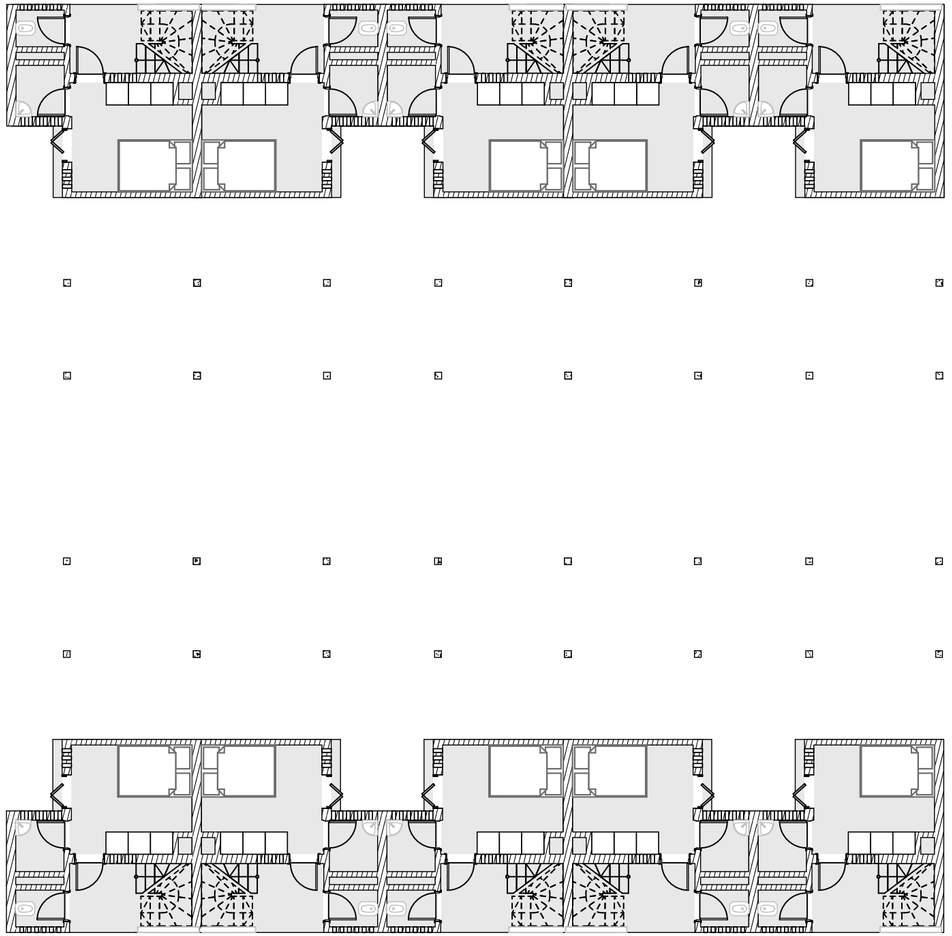


Lower Icome Housing
Built up block

1: 100

The row-house system balances flexibility and control. Residents can adapt their homes, but only within a defined envelope that protects circulation, daylight, trees and collective space. The four growth stages are: base unit, horizontal expansion, vertical growth, and maximum G+3 envelope.

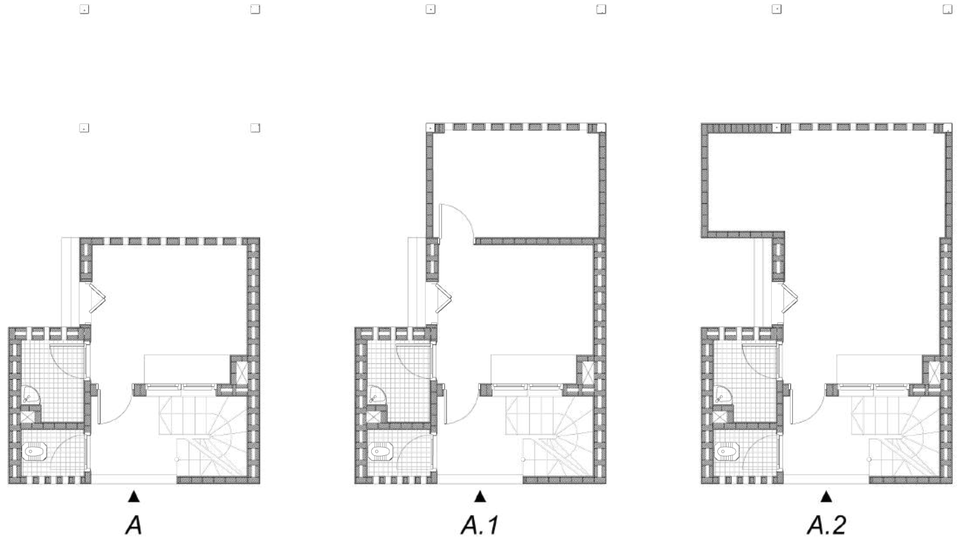


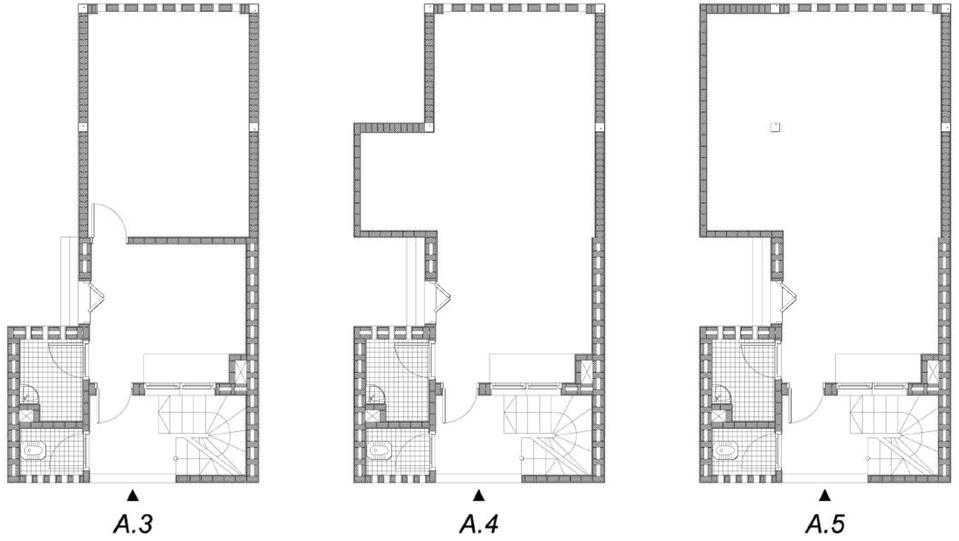


Lower Icome Housing
Incremental floorplan typologies

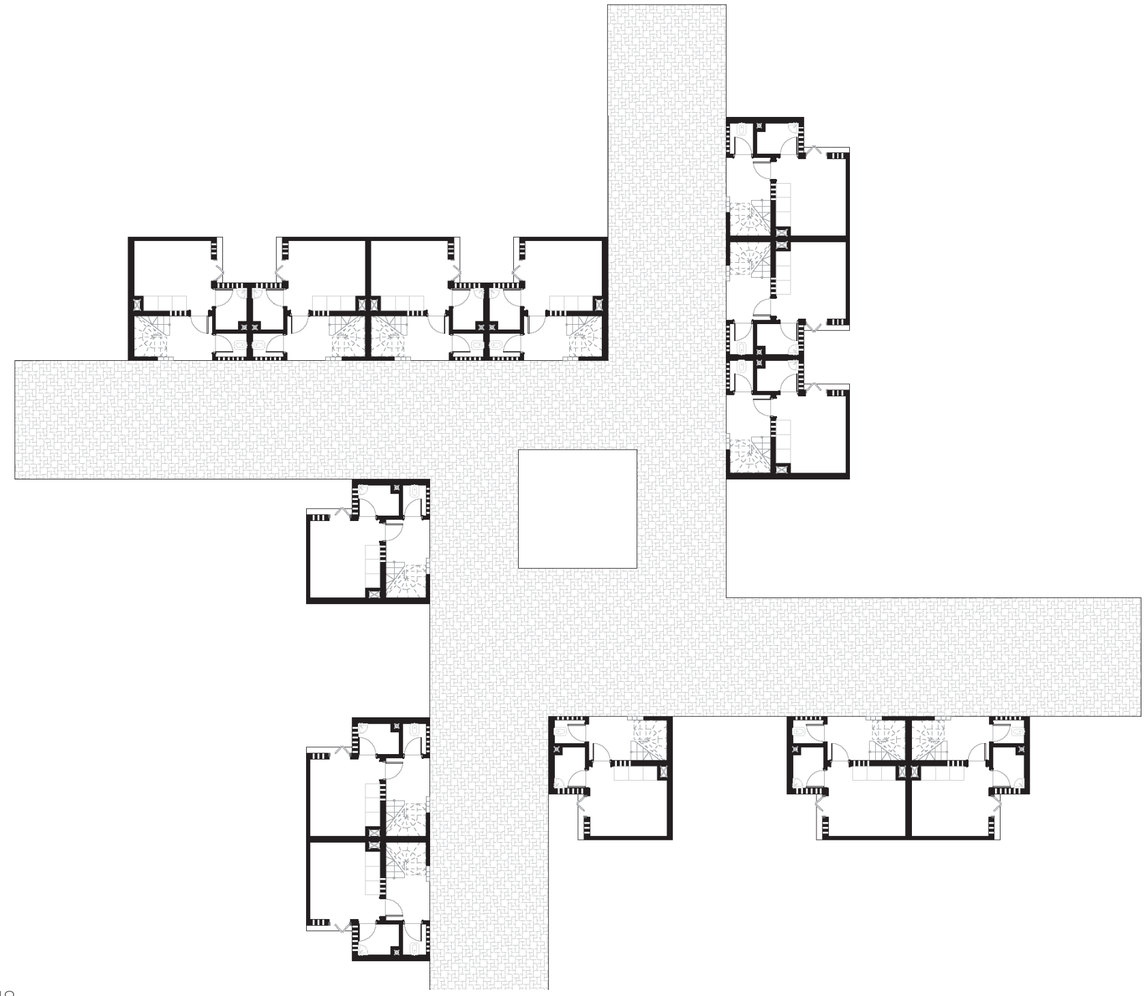
1: 100

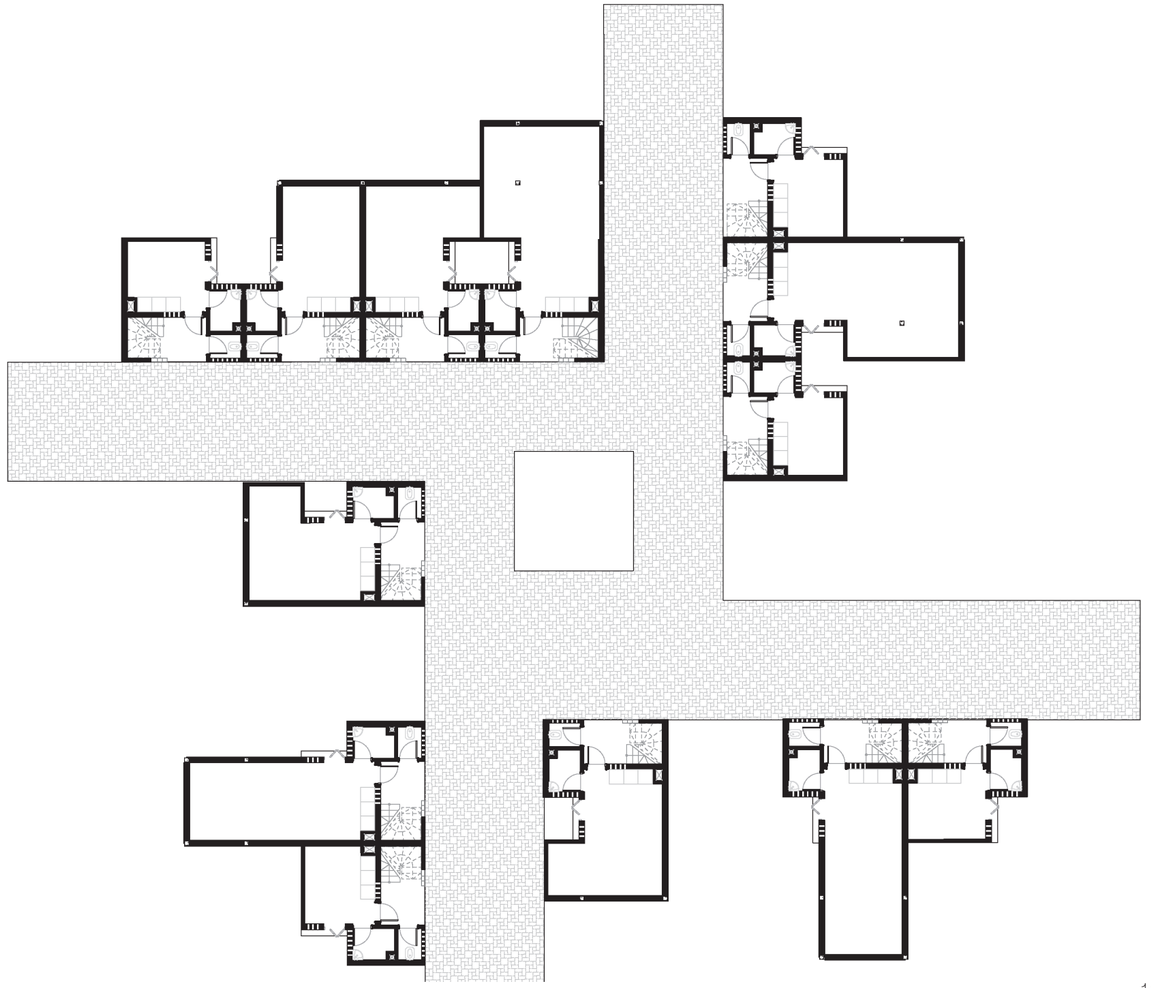
These are some example units that the residents can chose from after the base unit is built. The redidents with more financial stability can use these layouts as a guide-line on how they can expand their dwelling unit. They have the creative freedom to do whatever they want with the other floors that they built, the only regulation that they need to adhere to is that the ground level must not be changed by its facade, back nor front, to maintain unitity and recognisability.





Lower Icome Housing
Incremental floorplan cluster
1: 200

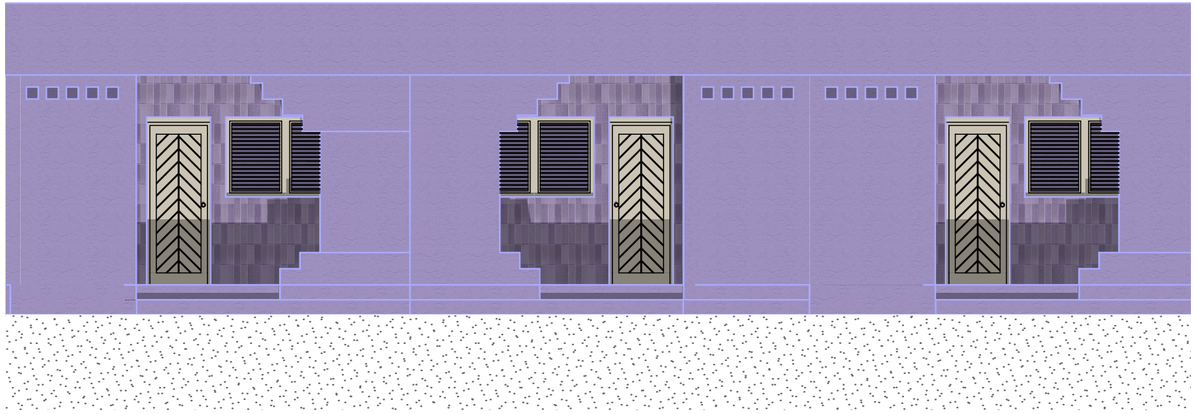


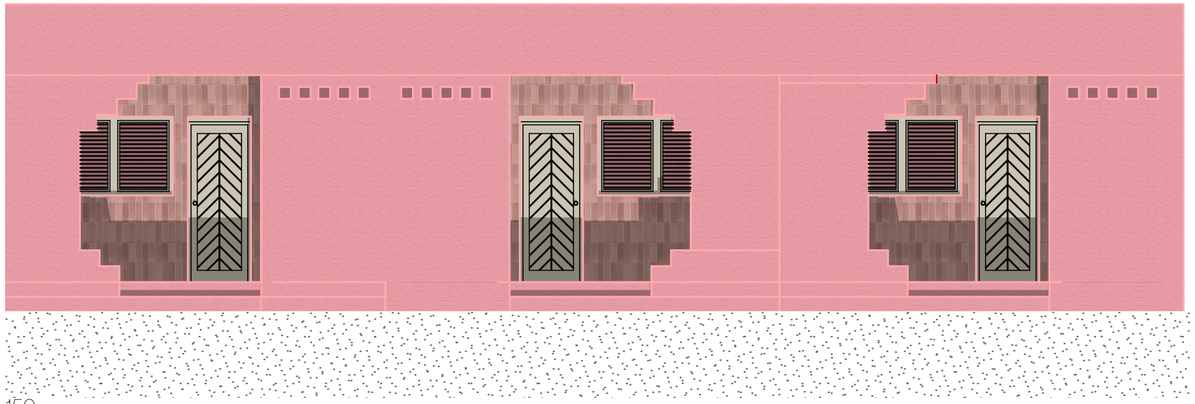


Lower Icome Housing
Facade materiality

1: 100

The incremental row houses are designed by specific colors that are essential to navigate easily around the whole site, as it is quite big and dense in vegetation, these colors immediately stand out wherever you walk and are a clear indication where you are located in the forest. These facades are an indication on how the different Calico colors of the plastered brick walls and tiled otla's look like.







Lower Icome Housing
Facade materiality
1: 100



Lower Icome Housing
Elevation Built Units Base
1: 100



Lower Icome Housing
Elevation Built Units
1:100



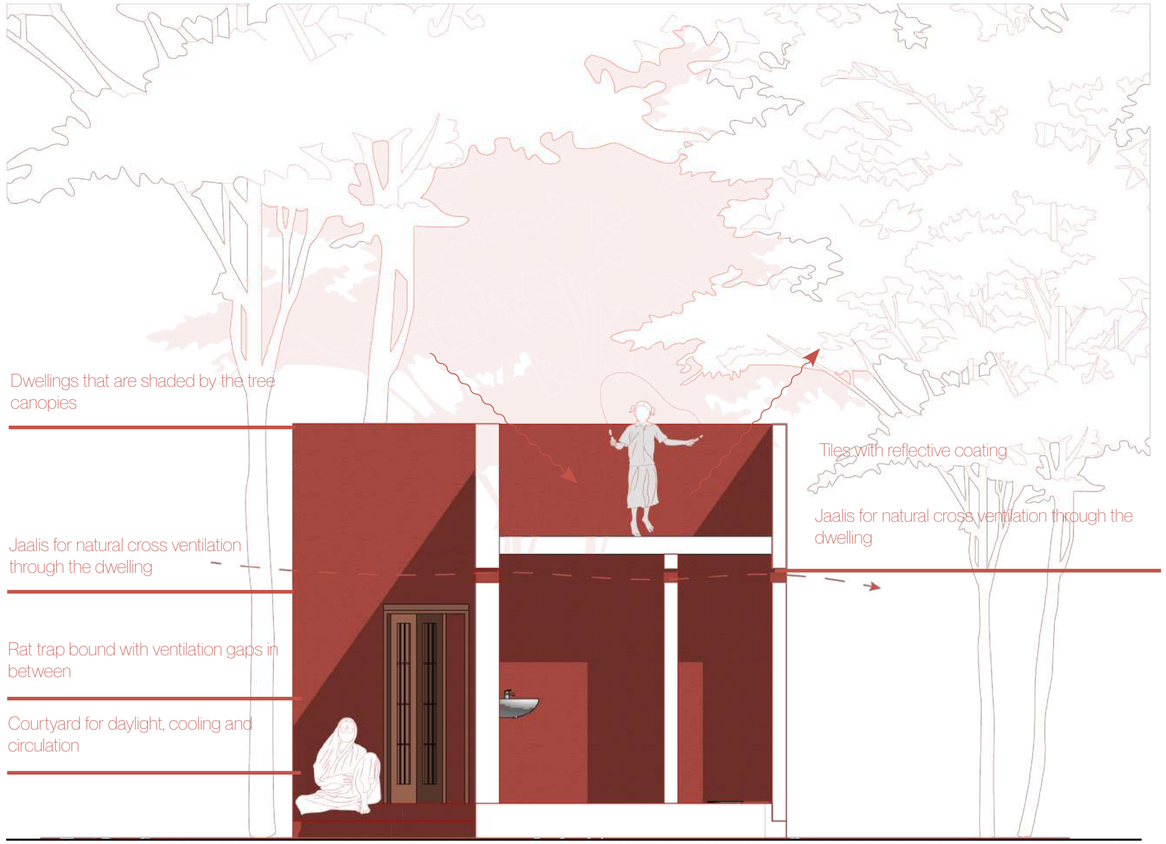
Lower Icome Housing
Elevation Built Units Base
1:100



Cluster LIH
Elevation and Section
1: 100



Lower Icome Housing
Climate section
1: 50



Cluster LIH
Impression



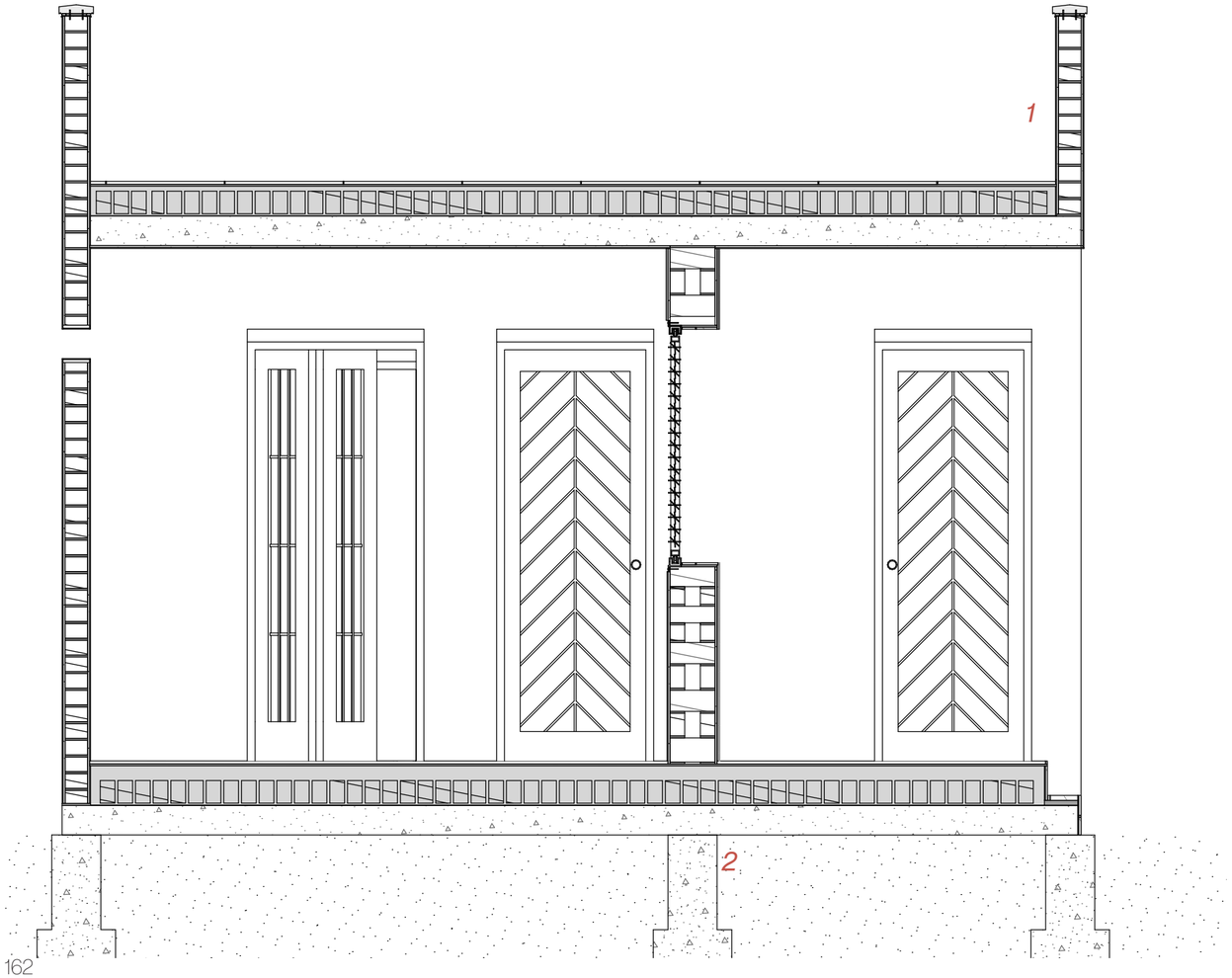
Masterplan

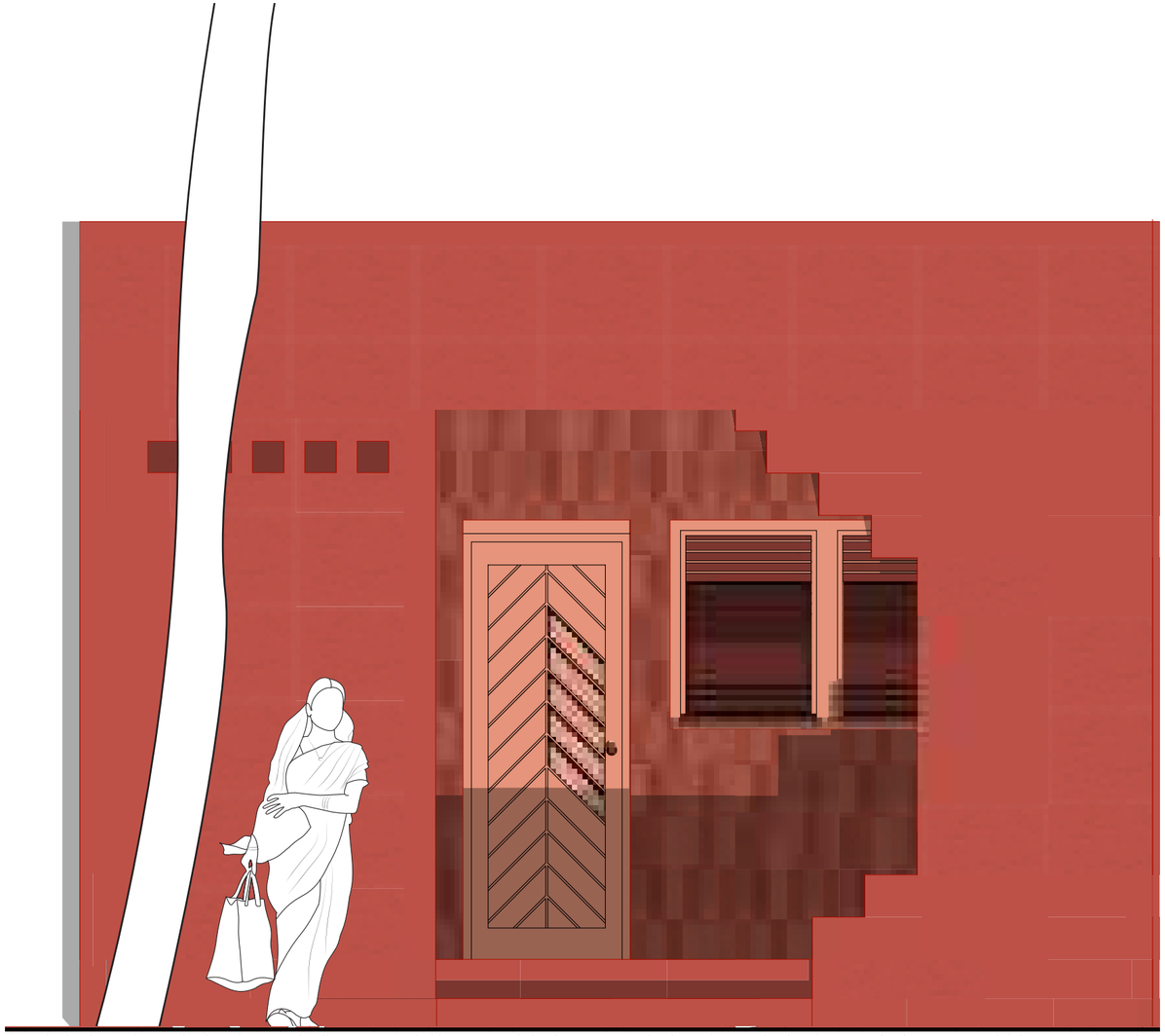
Phase 6 | Total expansion after 5 years

1: 1000



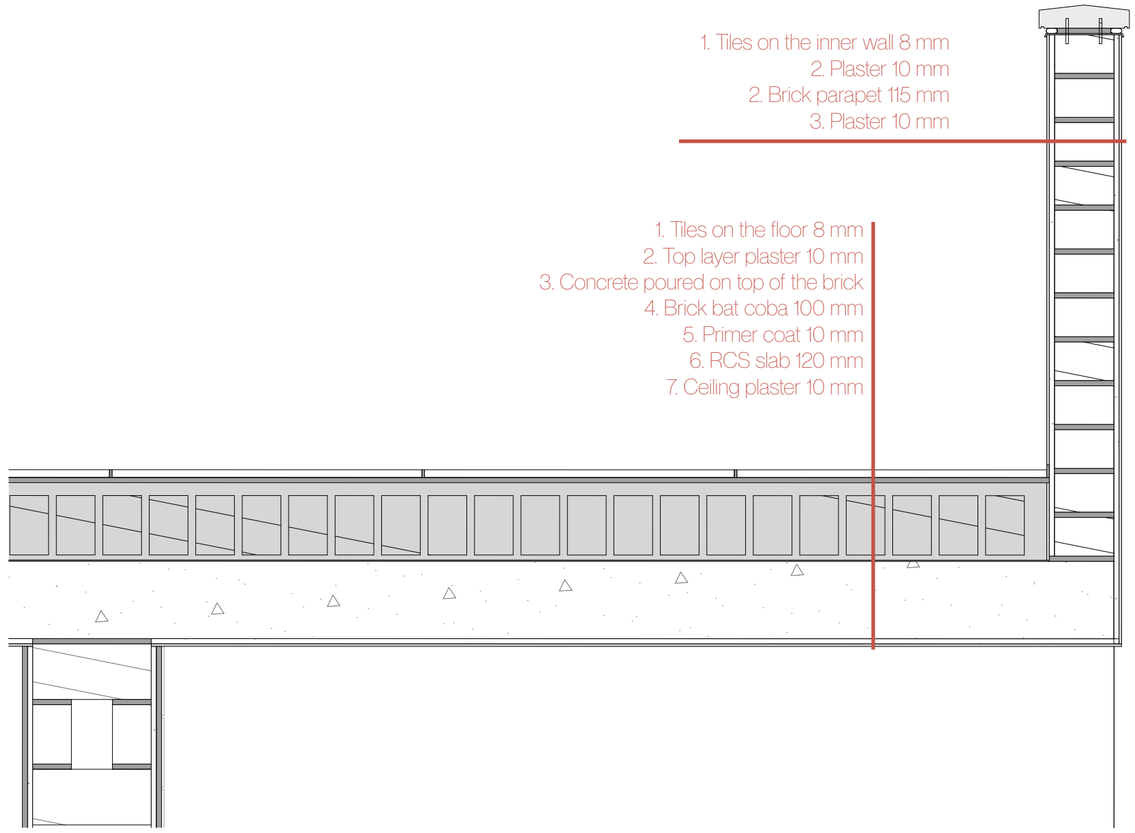
Fragment
Section and facade
1: 20





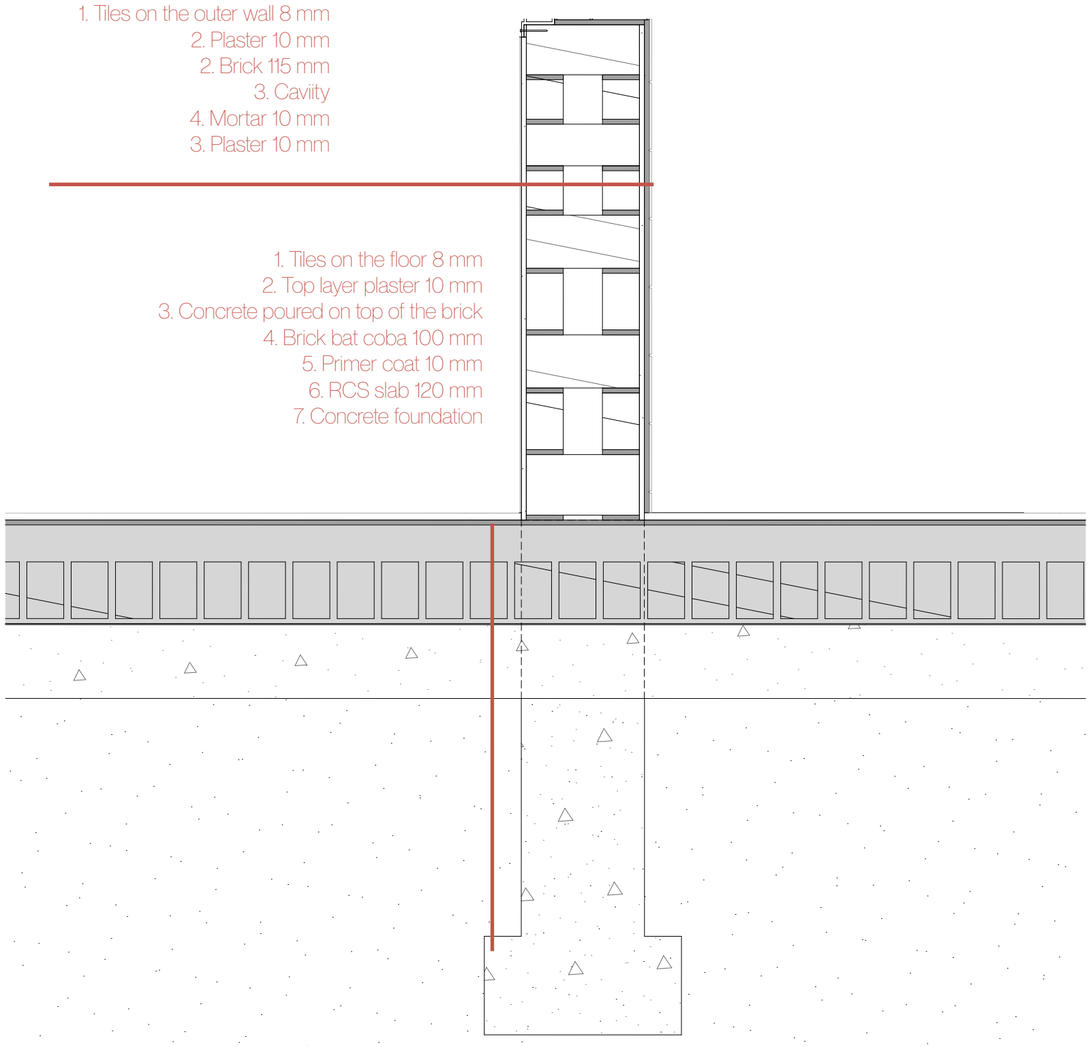
Details
1. Roof

1: 10



Details
2. Ground level

1: 10



Construction
Axonometry

Concrete columns (Rcs)

Bepaling dimensies betonkolom (globaal)

- de groene cellen dienen ingevuld te worden op basis van het eigen ontwerp -

Bepaling belasting in kolom:

		lengte			breedte			rekenwaarde				
afdragend vloeropp.												
opp.vl	dak	0	[m]	x	0	[m]	x	14	[kN/m²]	=	0	[kN]
opp.vl	4e verd	0	[m]	x	0	[m]	x	0	[kN/m²]	=	0	[kN]
opp.vl	3e verd	5	[m]	x	3	[m]	x	10,5	[kN/m²]	=	157,5	[kN]
opp.vl	2e verd	5	[m]	x	3	[m]	x	10,5	[kN/m²]	=	157,5	[kN]
opp.vl	1e verd	5	[m]	x	3	[m]	x	10,5	[kN/m²]	=	157,5	[kN] +
								kolombelasting:		**$F_{c;d}$ =**	**472,5**	**[kN]**



Materiaaleigenschappen:

	C30/37	beton	
rek. waarde druksterkte	$f_{c;d}$ = 20	[N/mm²]	
elasticiteitsmodulus	Ec,d = 27500	[N/mm²]	

Minimaal benodigde afmetingen:

$A_{ben} = F_{c;d}/f_{c;d}$ =	23625	[mm²]
bij vierkant profiel d =	154	[mm]
$I_{z\ ben}$ =	6,82E+07	[mm⁴]

Afmetingen:

	b = 170	[mm]	
	h = 170	[mm]	
oppervlakte	A= 28900	[mm²]	
traagheidsmoment	I_z = 6,96E+07	[mm⁴]	***let op sterke/zwakke richting***
kniklengte	l_{cr} = 2,8	[m]	

Controle op druk:

UC = **0,82** **Voldoet**

Controle op knik:

F_{cr} = 2410 [kN]

UC = **0,98** **Voldoet**

Concrete Beams

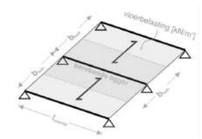
Bepaling dimensies betonligger (globaal)

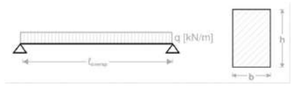
- de groene cellen dienen ingevuld te worden op basis van het eigen ontwerp -

	$l_{overspan}$ =	5	[m]
	b_{hoh} =	3	[m]
	$q_{d;tot}$ =	10	[kN/m²]
op ligger	q_{UGT} =	30	[kN/m]
	$q_{d;kar}$ =	2,5	[kN/m²]
op ligger	q_{BGT} =	7,5	[kN/m]

Afmetingen en eigenschappen van betonligger:

breedte	b =	400	[mm]
hoogte	h =	400	[mm]
weerstandsmoment	W_z =	10666667	[mm³]
traagheidsmoment	I_z =	2133333333	[mm⁴]
sterkteklasse beton		C20/25	
rekenwaarde buigsterkte	$f_{m;0;d}$ =	13,3	[N/mm²]
elasticiteitsmodulus	Ecm =	30000	[N/mm²]



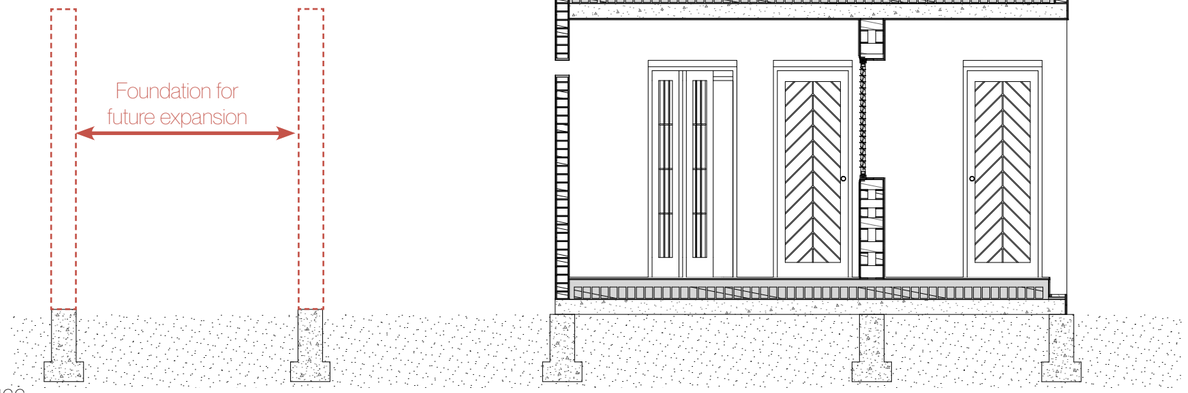


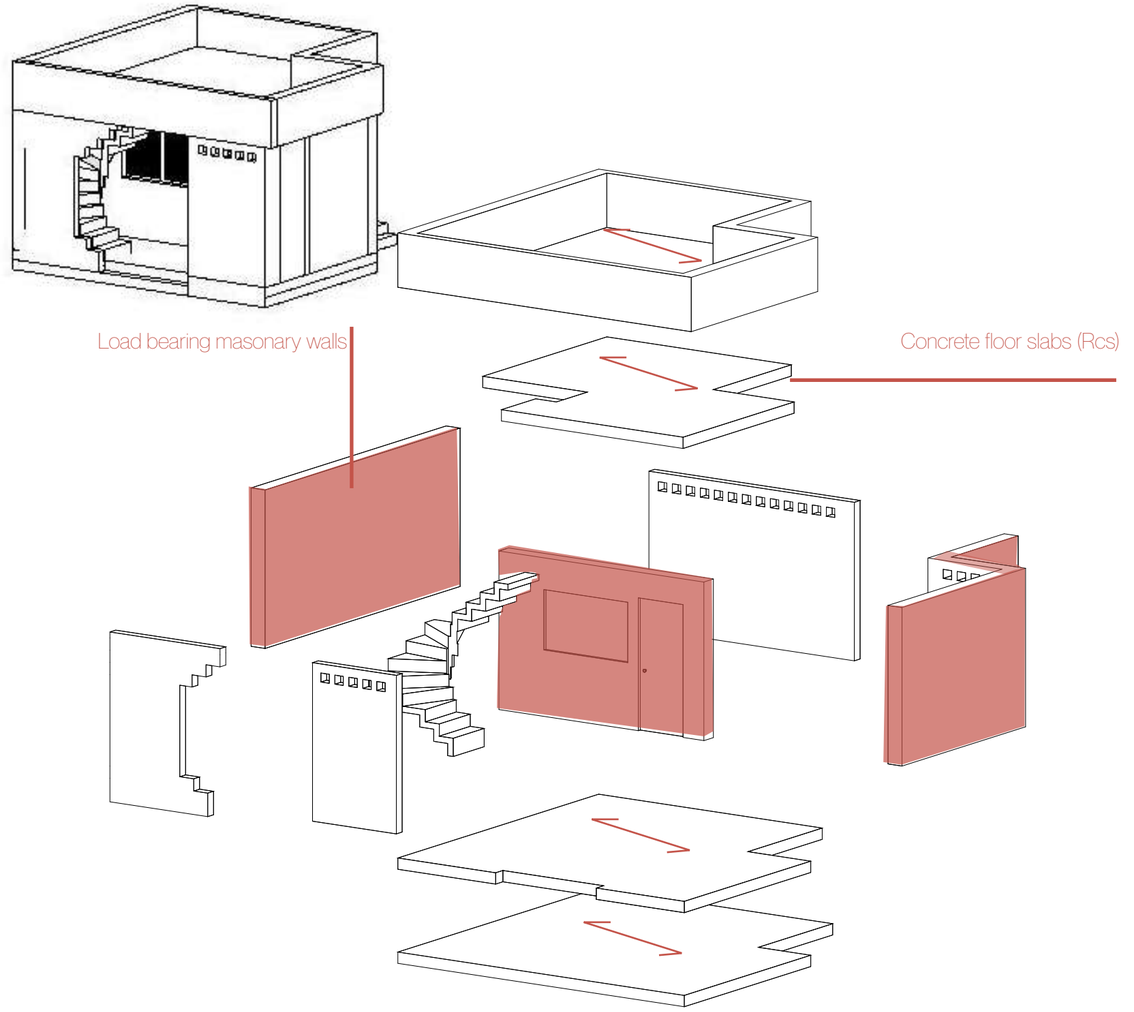
Controle betonsterkte:

UGT	M_{vold}	93750000	[Nmm]	σ_m =	8,8	[N/mm²]
	UC =	**0,66**	**Voldoet**	$W_{g;benodigd}$ =	7048872	[mm³]

Controle stijfheid: met k= 3

BGT	$q_{BGT\ kruip}$ =	63,0	[kN/m]	$w_{bij\ norm;vloer}$ =	15,00	[mm]	0,003 x L
	w_{bij} =	8,96	[mm]	($w_{bij\ norm;vl-wand}$ =	10,00	[mm]	0,002 x L
	UC vloer =	**0,60**	**Voldoet**	$I_{z;benodigd}$ =	1274956597	[mm⁴]	
	(UC vl.wand =	0,90	**Voldoet**	$I_{z;benodigd}$ =	1912434896	[mm⁴])	

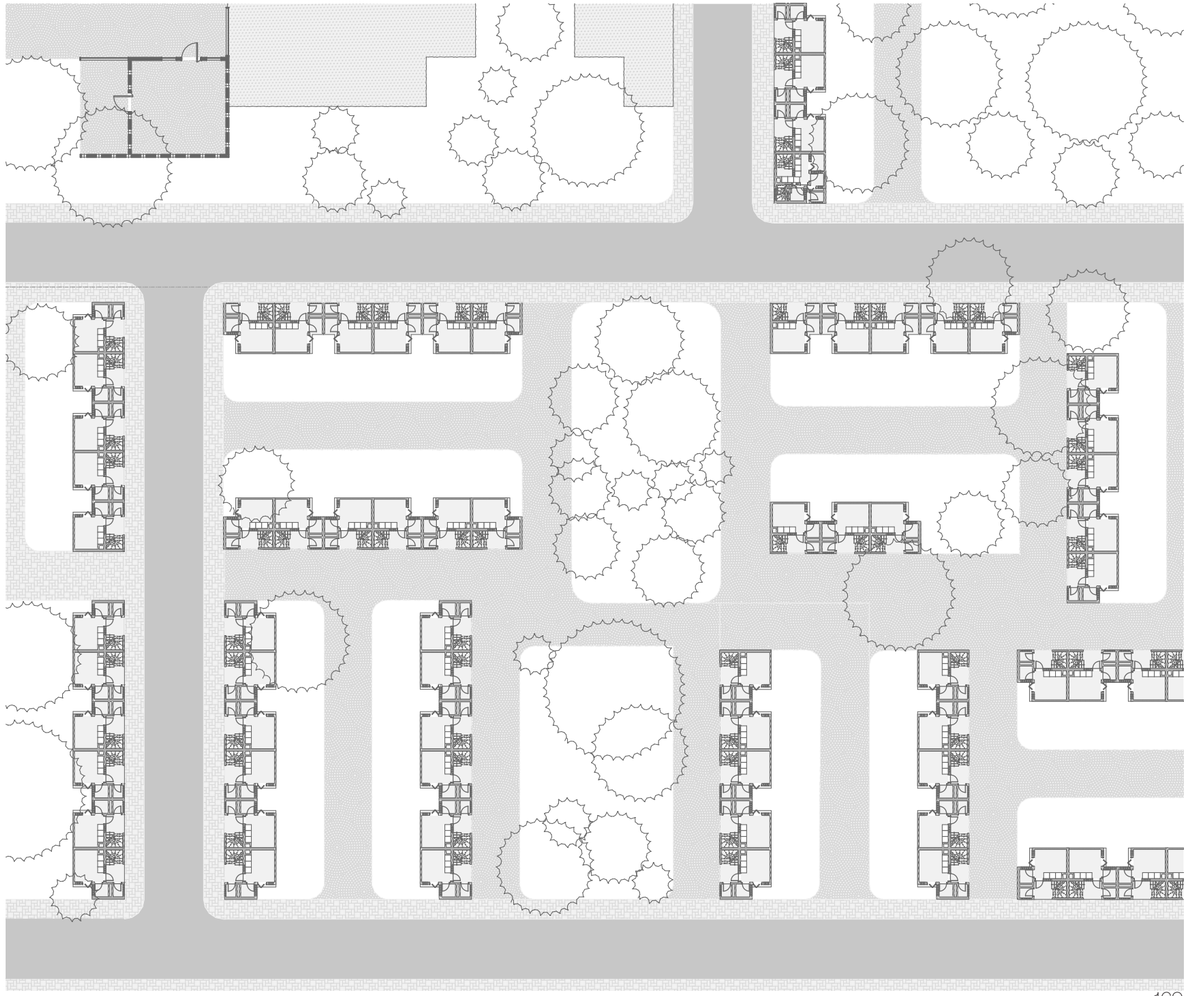




Cluster LIH
Zoomed out
1: 200



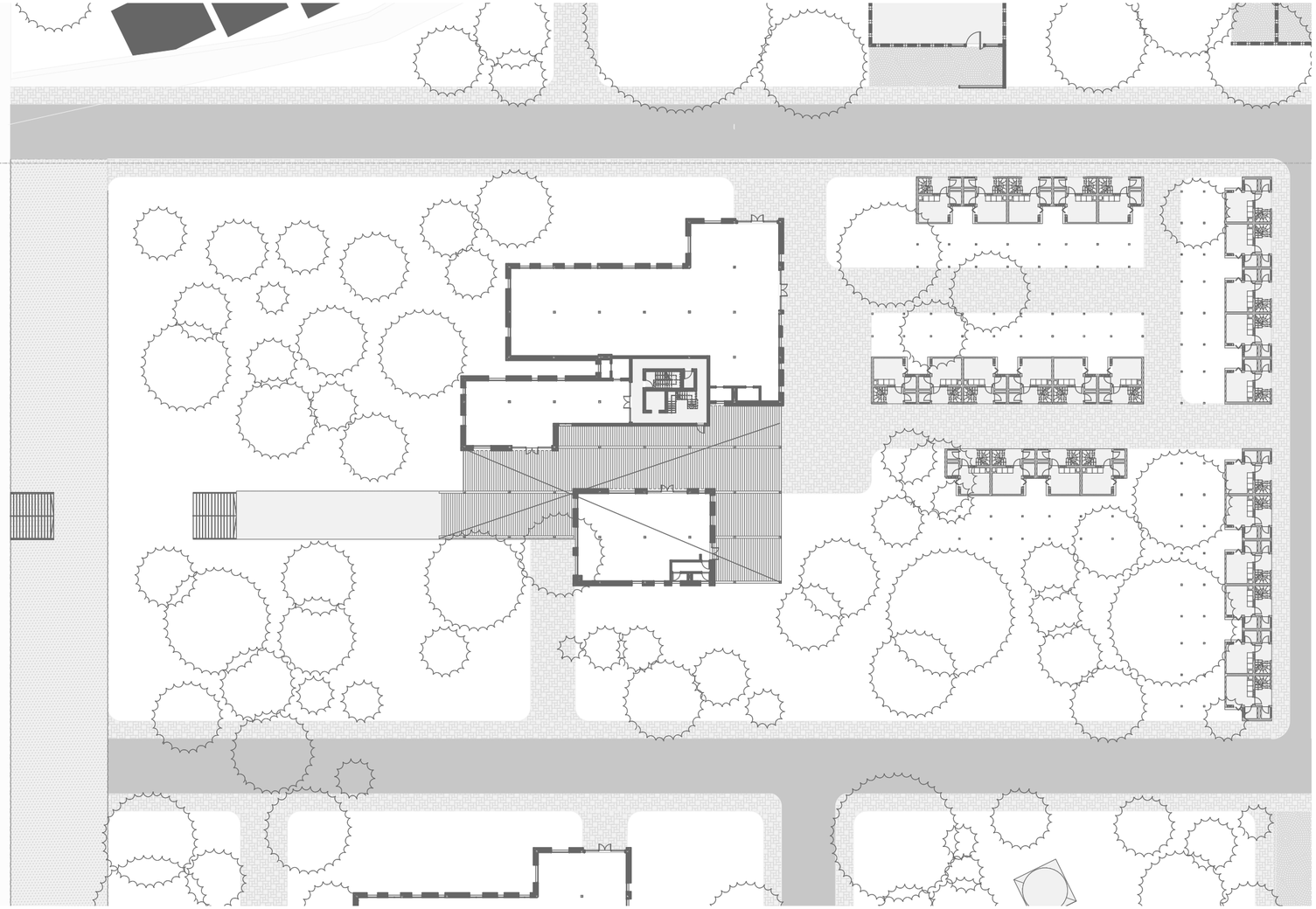
Zoom-out on clusters
Internal roads
1: 500



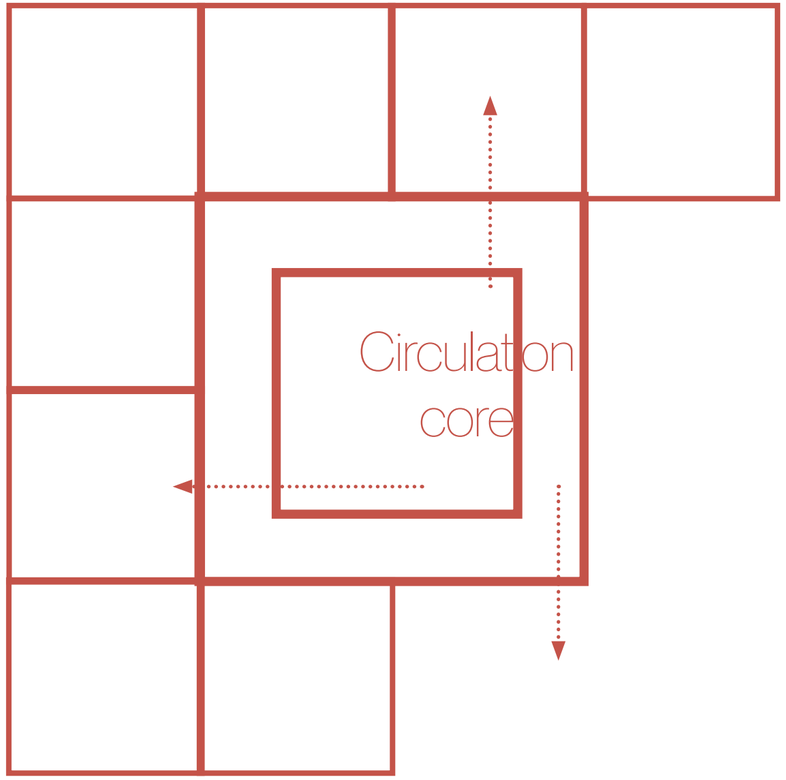
Riverfront zoom-in

Towers

1: 500



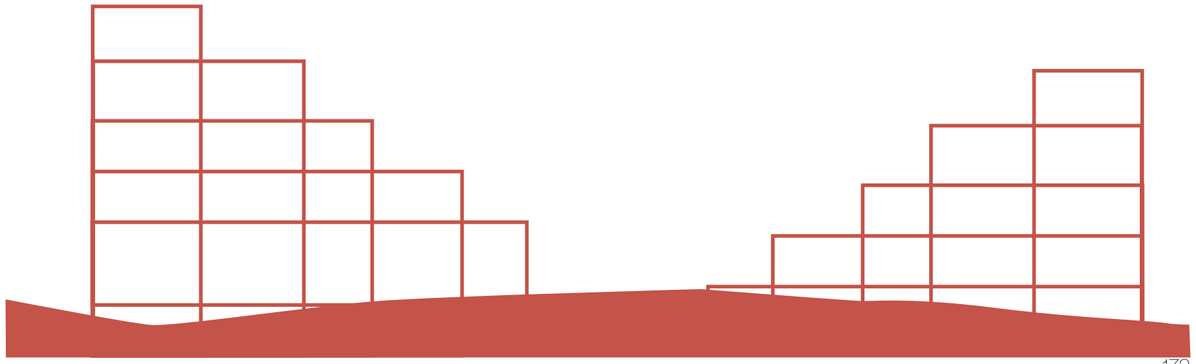
Grid
5x5 meter



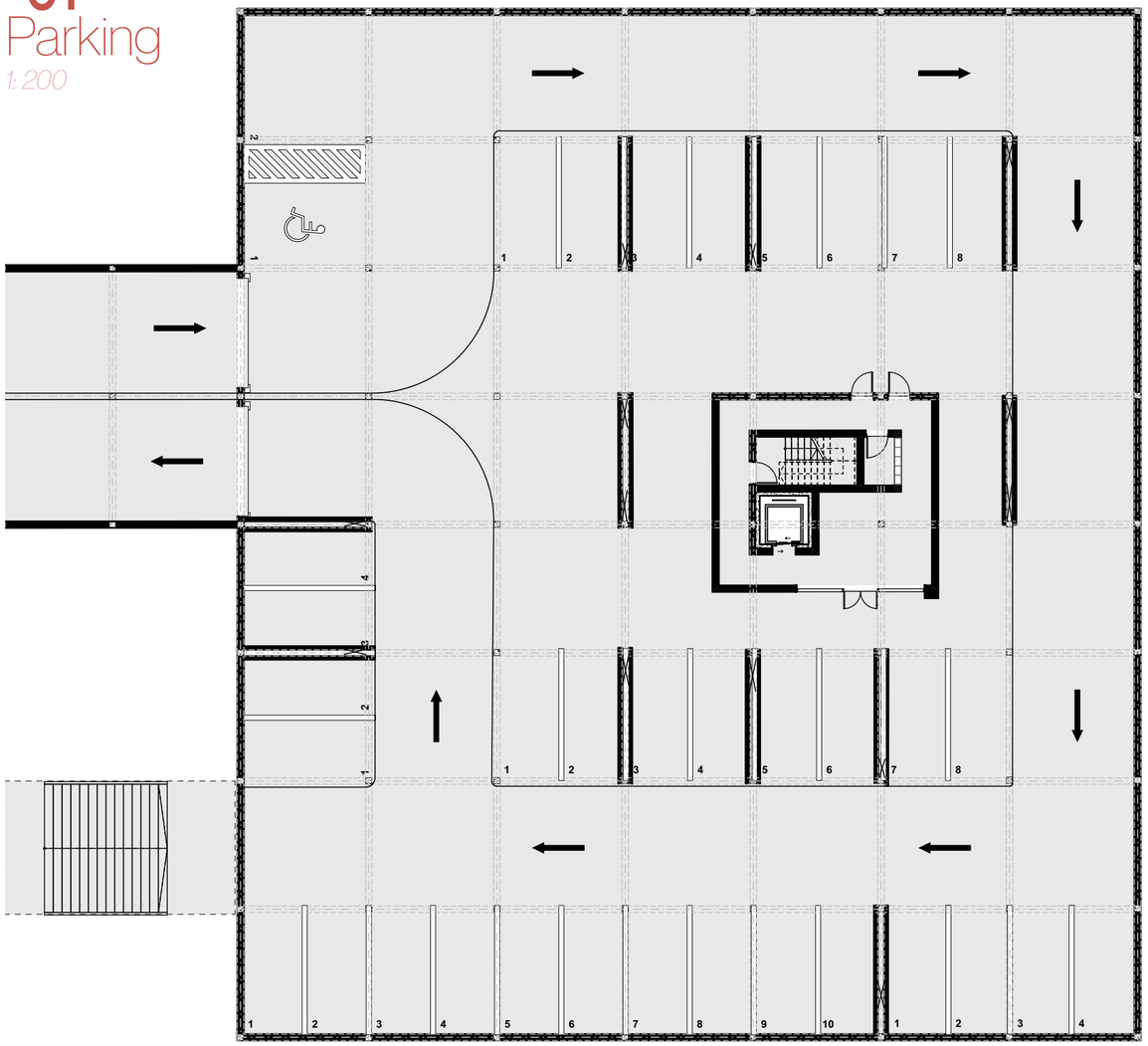
Towerscape
Staggering height lines across the site

The staggering towers are designed for higher-income households and introduce greater density into the masterplan. Their stepped form reduces mass, creates terraces, improves light and ventilation, and maintains visual and spatial connections to the landscape. It forms a transition between the low-rise row houses and the taller towers. The blocks create medium density and are organized around nature, collective circulation and semi-public thresholds. This typology is less individually expandable than the row houses, but offers stable unit layouts, shared facilities and collective outdoor spaces. It helps patch together different scales, income groups and landscape conditions within the masterplan.

The towers are positioned carefully so they do not become isolated vertical enclaves. Their ground floors remain connected to public routes with open pavilions with a walkable route from the riverfront up into the landscape and then through the open public plinth. Since mixed-income housing does not automatically create social integration through proximity alone, public space, landscape and circulation become the main connective elements between income groups (Fraser et al., 2013; Joseph et al., 2007).

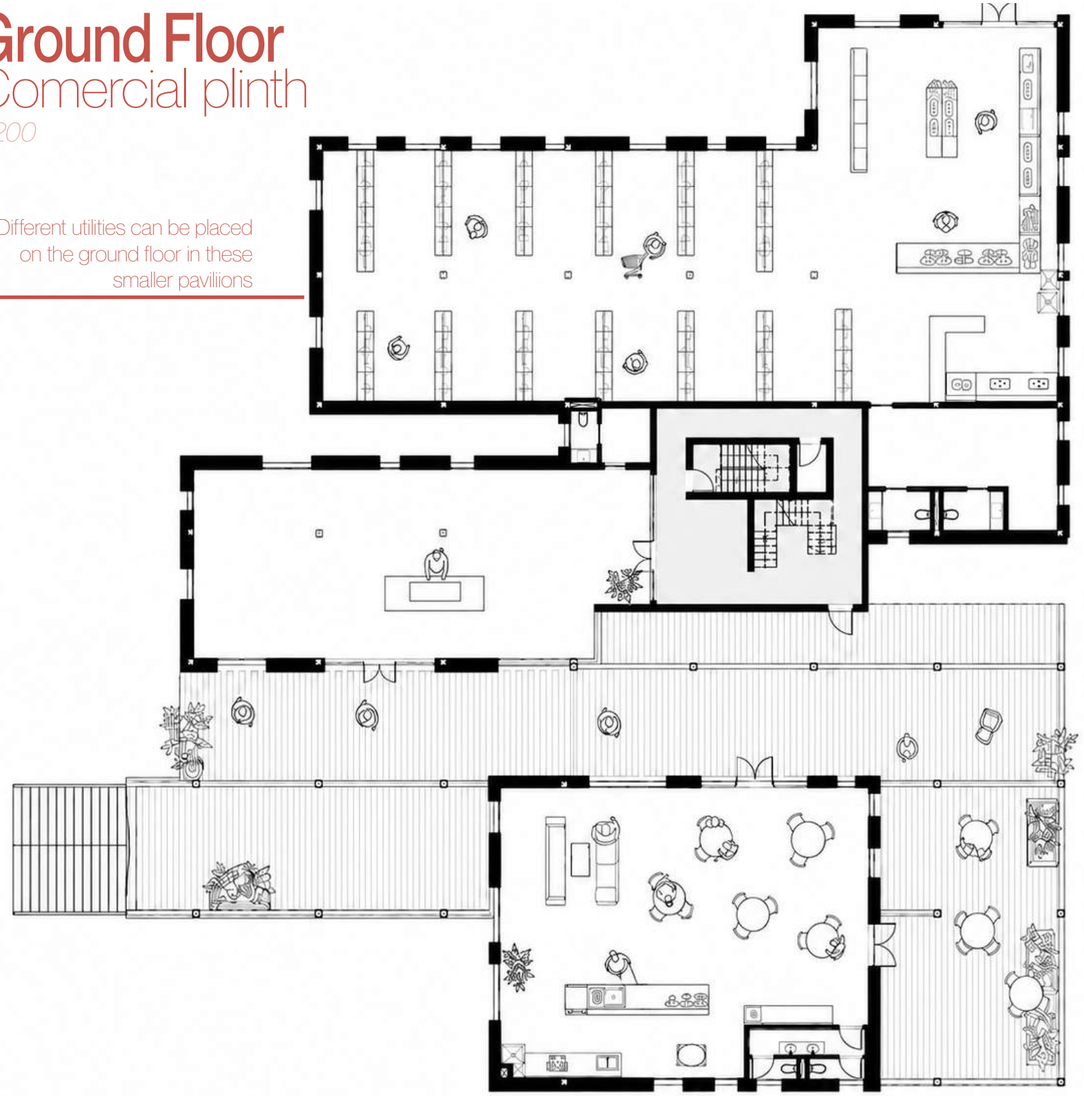


-01
Parking
1: 200



Ground Floor
Comercial plinth
1: 200

Different utilities can be placed on the ground floor in these smaller paviliions



01. First Floor

1: 200

225 m2

3 master bedrooms
3 ensuite bathrooms

1 servant room
1 ensuite bathroom



01. First Floor
Apartment 1 | zoom in

1: 100



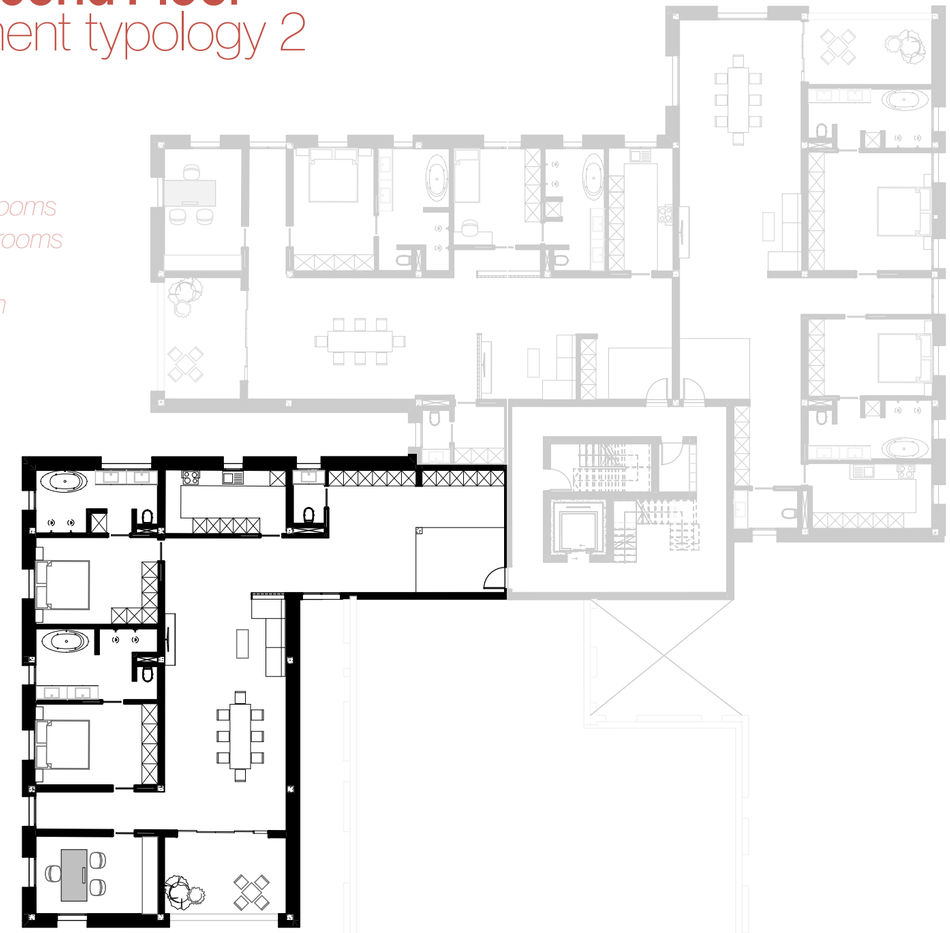
02. Second Floor
Apartment typology 2

1: 200

209 m2

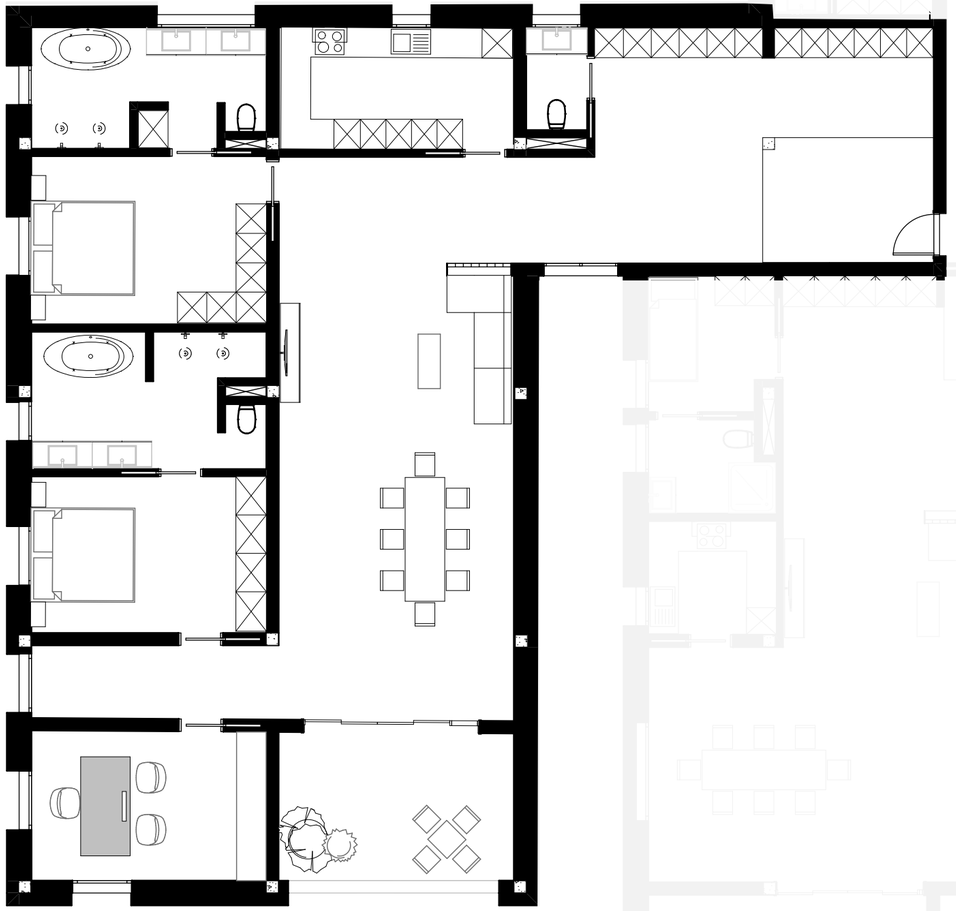
2 master bedrooms
2 ensuite bathrooms

1 drawing room



02. Second Floor
Apartment 2 | zoom in

1: 100



03. Third Floor
Apartment typology 3

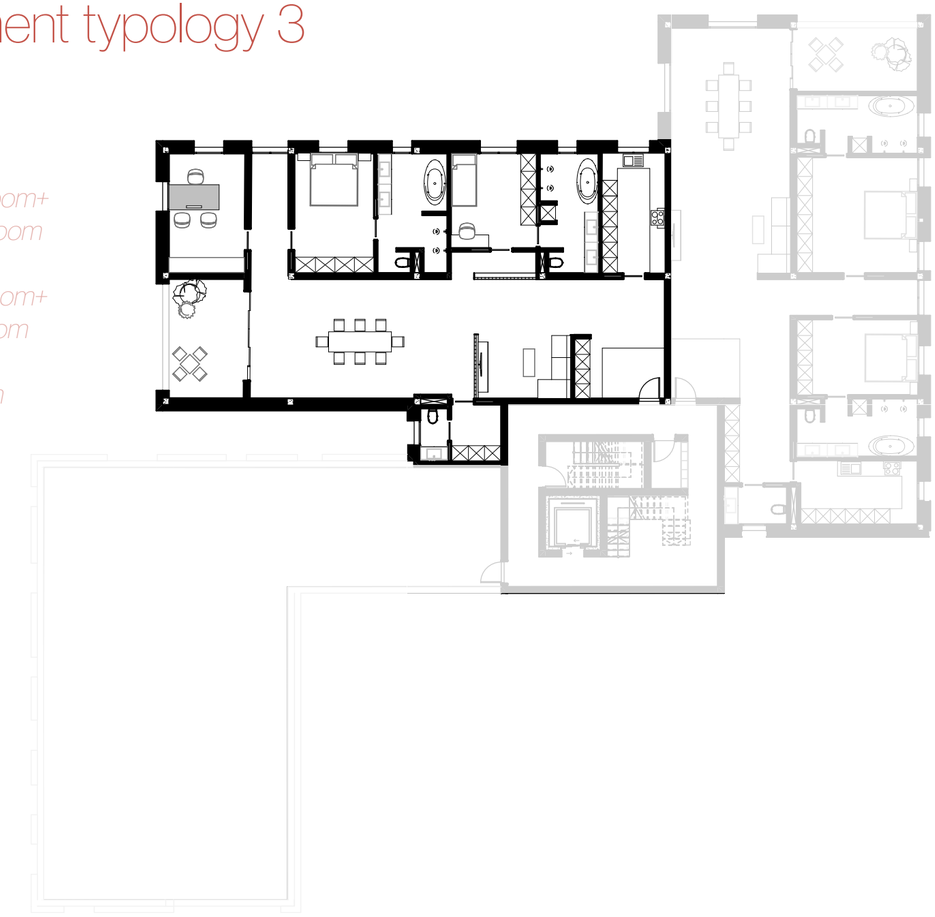
1: 200

209 m2

1 master bedroom+
1 ensuite bathroom

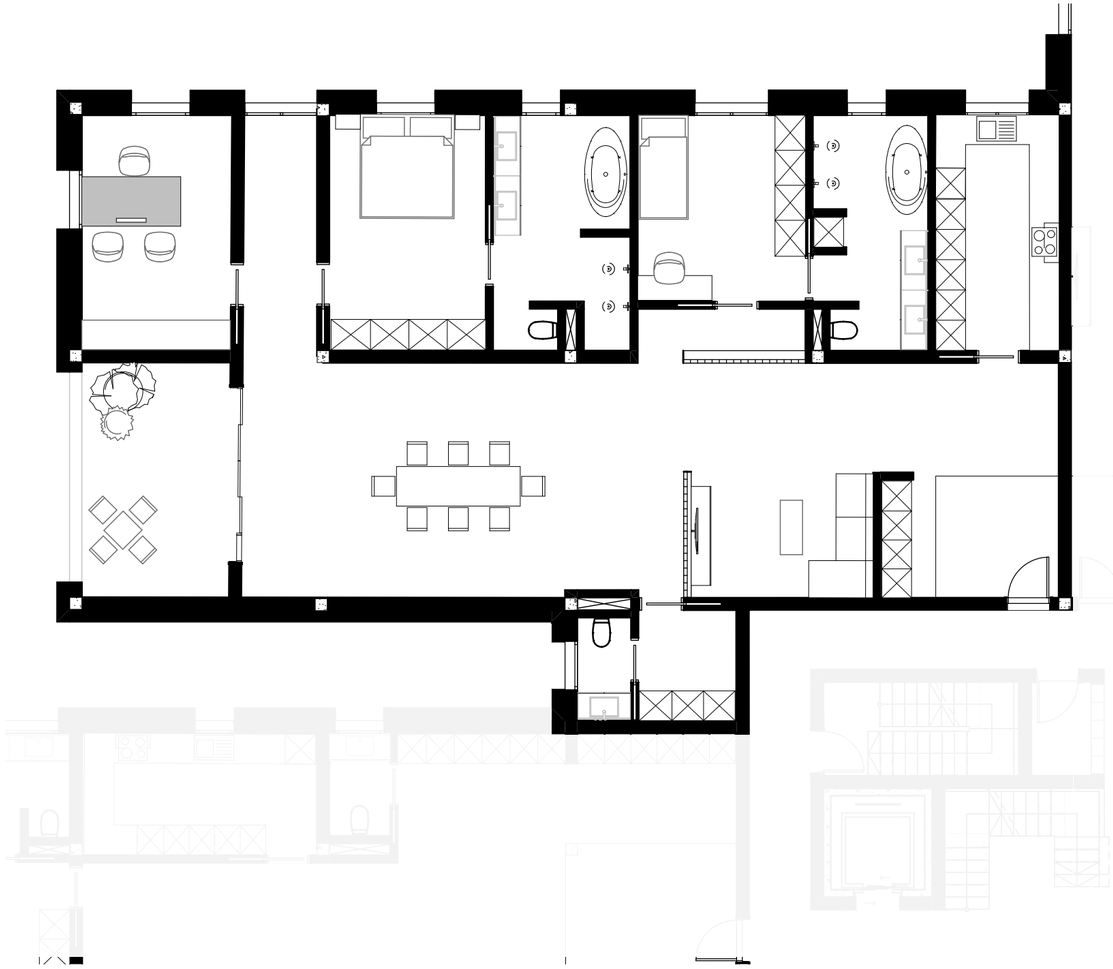
1 regular bedroom+
ensuite bathroom

1 drawing room



03. Third Floor
Apartment 3 | zoom in

1: 100

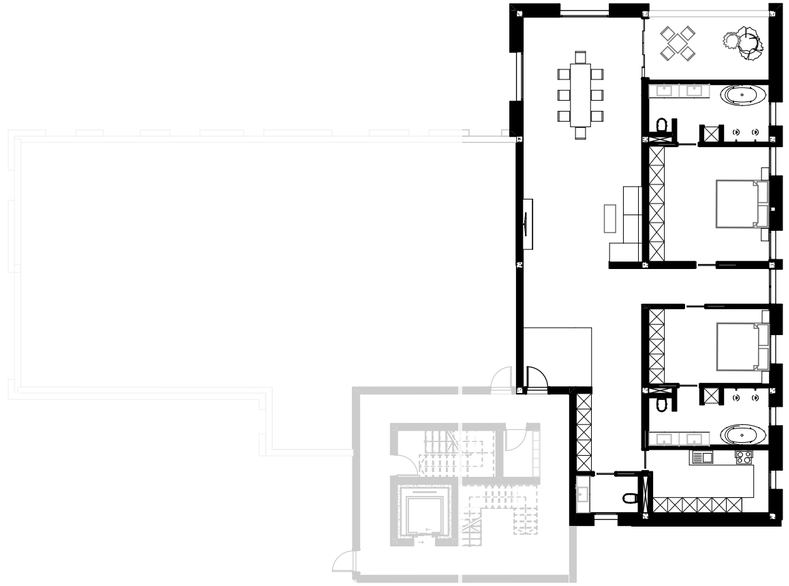


04. Fourth Floor
Apartment typology 4

1: 200

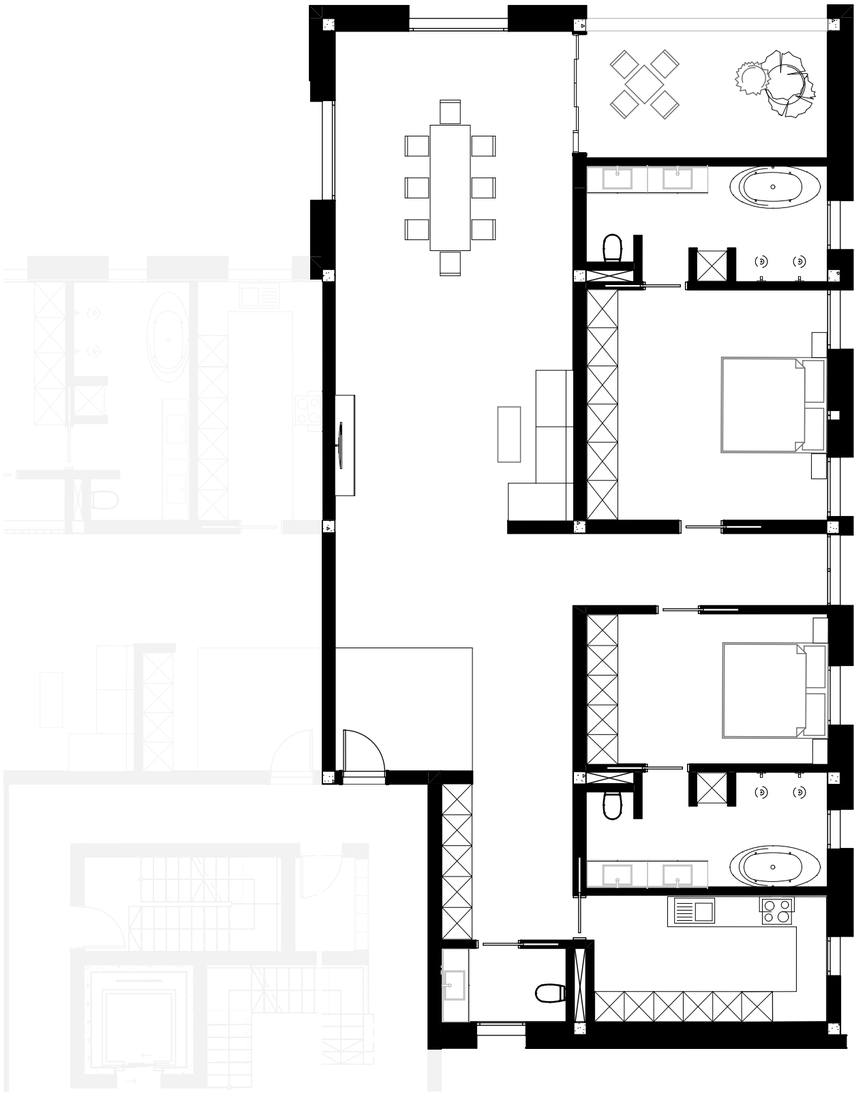
183 m2

2 master bedroom+
2 ensuite bathroom



04. Fourth Floor
Apartment 4 | zoom in

1: 100



Elevation
North Facade
1: 200



Elevation
East facade
1: 200



Elevation
South Facade
1: 200



Masterplan Model

1: 1000



Unit Model

1: 100





Unit Model

1: 100





Unit Model

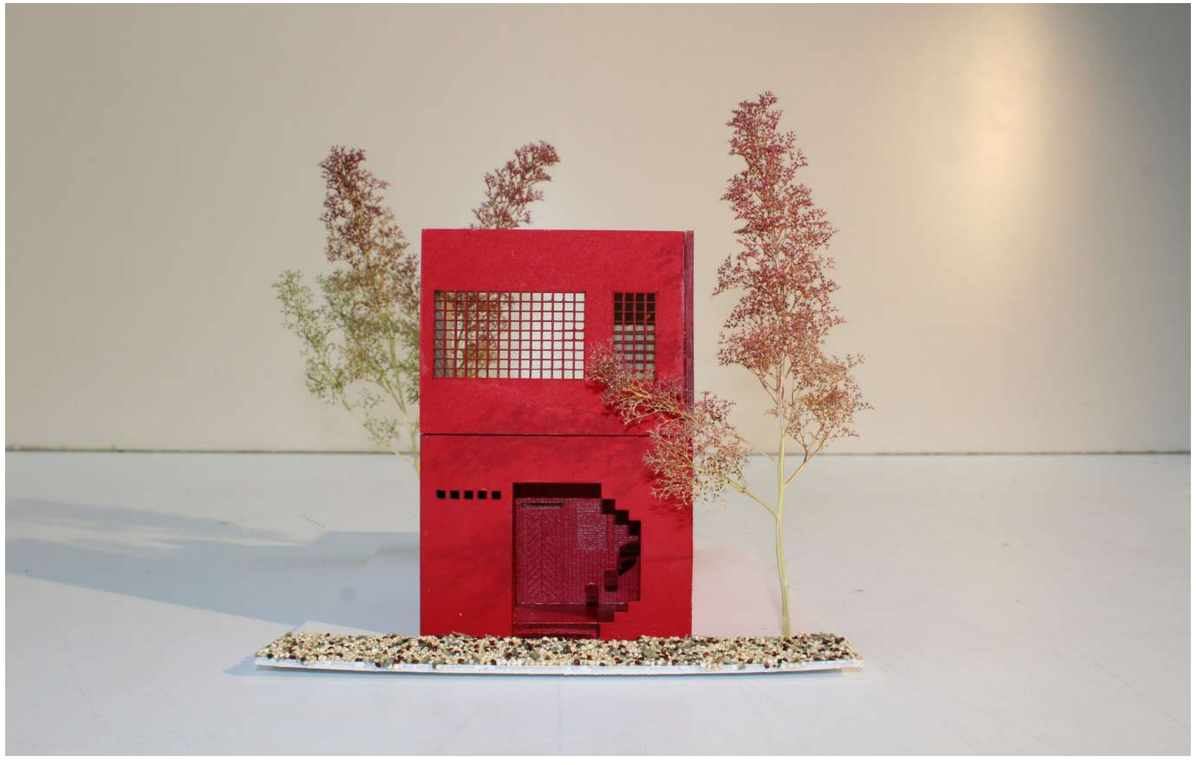
1: 100

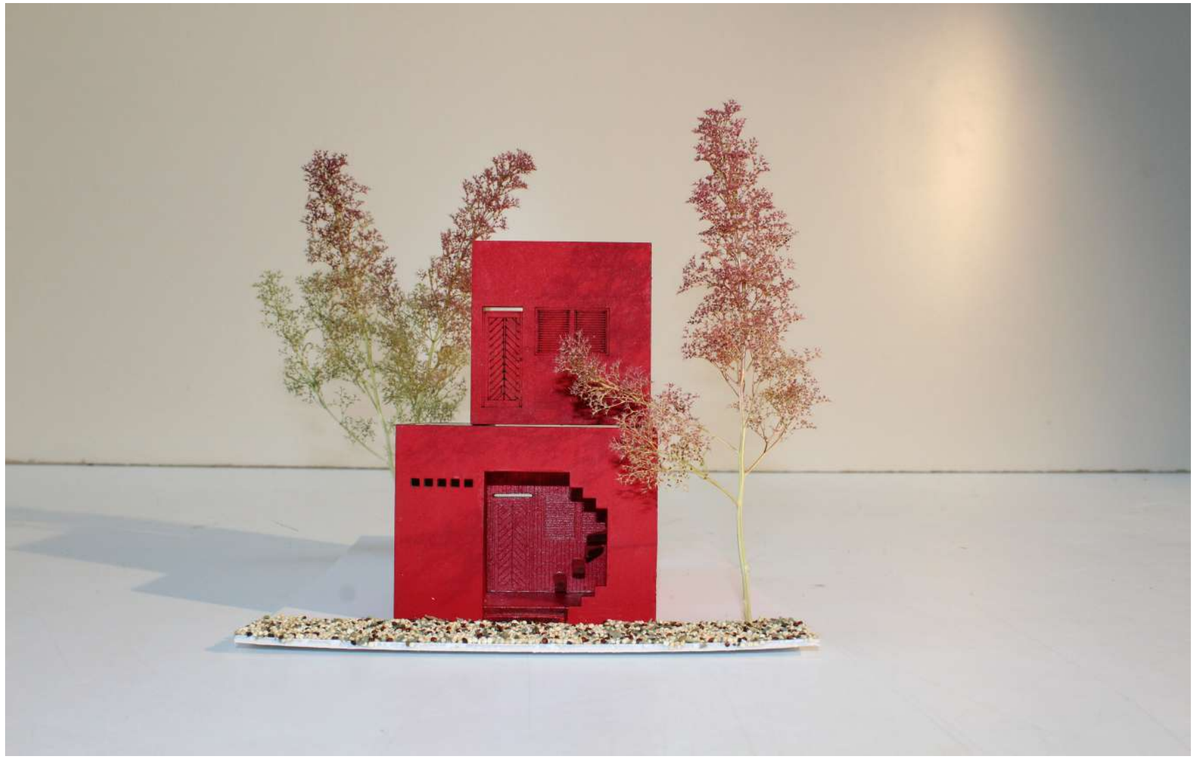




Unit Model

1: 50





Unit Model

1: 50















Unit Model

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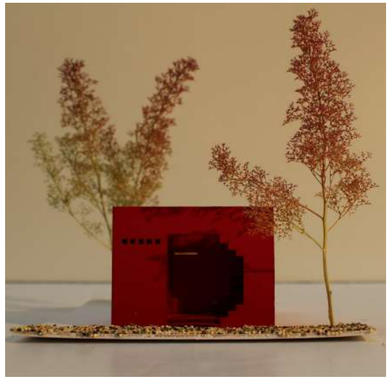
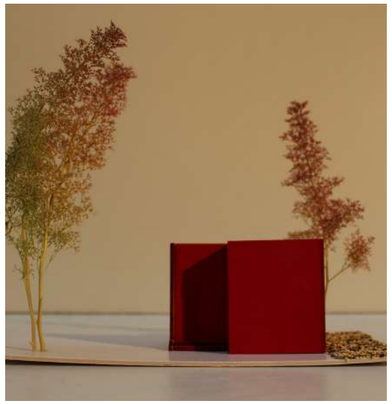













Part IV

01 **Conclusion**

02 **Implications**

03 **Reflections**

01
Conclusion

This project explored how mixed-income housing can patch together the fragmented elements of the Calico Mill neighbourhood. The site is defined by existing settlements, open land, mill remnants, trees, infrastructural edges and the orientation of the Sabarmati riverfront. Rather than replacing these fragments with one uniform plan, the project uses them as the basis for the design. The trees become spatial anchors that shape the placement of buildings, routes, courtyards and openings. Even within the housing, gaps appear between row houses where existing trees are preserved.

The project combines incremental row houses, collective mid-rise housing and staggering towers within one framework. Each typology responds to a different income group and spatial condition. The row houses support lower-income households through adaptability, the mid-rise blocks support middle and high-income housing through collective space and greater density.

Together, these typologies do not form separate zones, but a connected patchwork. Public space, landscape and circulation stitch the different parts together and therefore demonstrates that housing can be more than a collection of units. It can become an urban patching strategy that connects nature, density, income diversity and fragmented site conditions.

02
Implications

The project suggests that future housing development in Ahmedabad does not need to choose between density and landscape preservation. By using the existing trees as design anchors and combining them with a clear grid system, new housing can be structured around existing natural qualities. It also shows that mixed-income housing can be organized through typological diversity. Different income groups do not need to live in identical housing forms, but they should be connected through shared public space, routes and landscape structures.

For Calico Mills, this means that redevelopment should not erase the existing site conditions. Instead, it should build on them. The project proposes a method in which trees, fragments, grids and typologies work together to create a more connected neighbourhood. It contributes to architectural discussions on housing as an urban framework rather than only as a collection of dwellings.

03
Reflections

The project began with the idea of connecting open spaces in the Calico settlement, which then turned into stitching these fragmented parts of the whole Calico Mill neighbourhood. At first the unknown site took me off guard because I didn't know a lot about lhow to work with a landscaping project. During the design process I tested out a lot of different strategies of existing projects on the site but they didn't really seemed to fit and felt very forced. Then came the biggest challenge of the size of this project. it went from only the riverfront to the whole forest which is 250.000 m2 so I felt a lot of pressure to design the whole site with all these difficulties that came into the picture.

It created this fear of the unknown and anxiety of what has yet to come which is the reason why I had a staggering stop to my process in a way, beacuse I felt very intimidated of this huge responsibility that I had put on top of my shoulders. But the more i started to work things out, little by little, the more precise it went. The grid gave the project clarity and structure, while the trees challenged the rigidity of that structure. This tension became one of the most important and challenging qualities of the design. It forced the housing to adapt to the site at very specific points to not remove any unnecessary elements of the existing landscape.

The mixed-income strategy also developed through the design process. Instead of using one housing type for all residents, the project uses one base unit that can be adjustable to each household with different typologies which repsonse to different income groups and densities. This made the project more complex, but also more realistic for a layered site like Calico Mills. I tried to focus on shared public space, landscape structure and typological relationships between these built areas as one of the main connective devices.

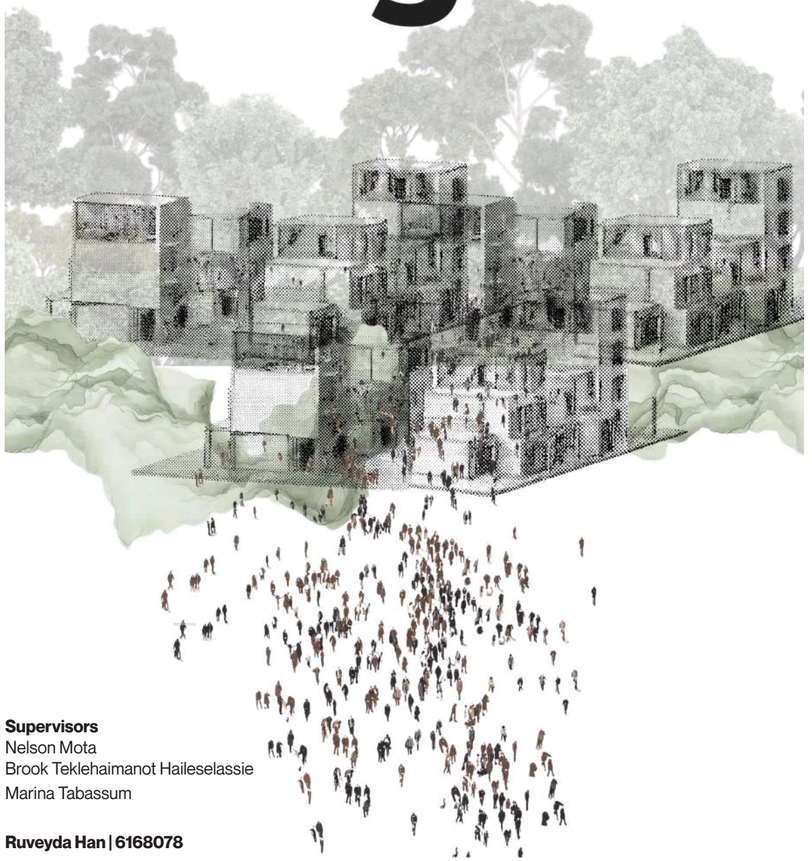
The main lesson of the project is that connection does not have to mean uniformity. The strength of the design lies in patching together different elements while allowing them to remain different.

Appendices

A2

Connecting edges

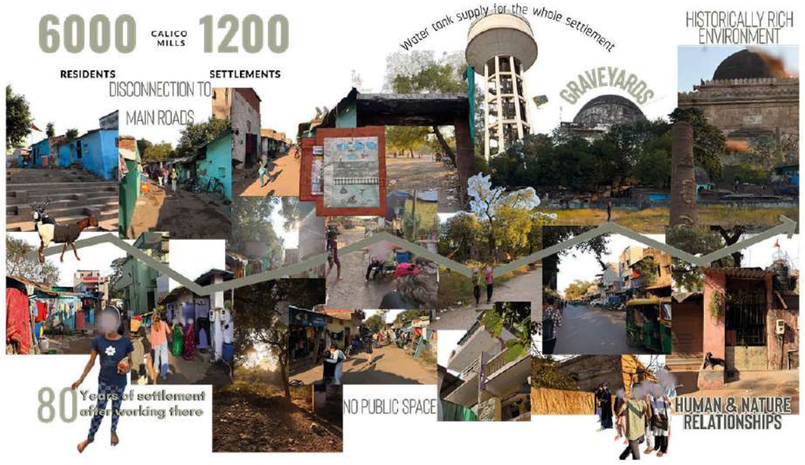
Cadico Hills



Supervisors
Nelson Mota
Brook Teklehaimanot Haileselassie
Marina Tabassum

Ruveyda Han | 6168078

Site analysis Calico Mill, Ahmedabad, India



Inadequate housing conditions and social separation take a huge toll on many vulnerable groups around the city. Particularly, children and the elderly are being affected by these different circumstances. Children living in these low-income informal settlements face increased health risks, limited access to safe outdoor environments where they can play and learn, and restricted opportunities for social development in Ahmedabad to uplift their living conditions.

Rather than treating dwellings as isolated objects, this project positions them as an urban element that's capable of mediating between these fragmented plots, landscapes, and communities. When the focus is on these themes of in-between spaces, monumentalities as lived community experiences and collective memories, it challenges these conventional housing models into how architecture can really foster this coexistence between human relationships, existing nature and its surroundings.

The motivation for this project lies in an interest in how architecture can engage with socially complex environments without erasing their surrounding qualities. The Calico Mill neighborhood represents a very layered and unique urban environment shaped by labor migration, industrial history, religious community diversity, and incremental growth within a very rich place. Rather than replacing these conditions, the project seeks to work within them, using housing as a mediating structure that embraces nature, memory, and everyday life.

This further develops into the following main research question:

"How can housing operate as a spatial and social mediator to reconnect fragmented sites, different communities and nature into a cohesive urban fabric in the Calico Mill neighbourhood?"

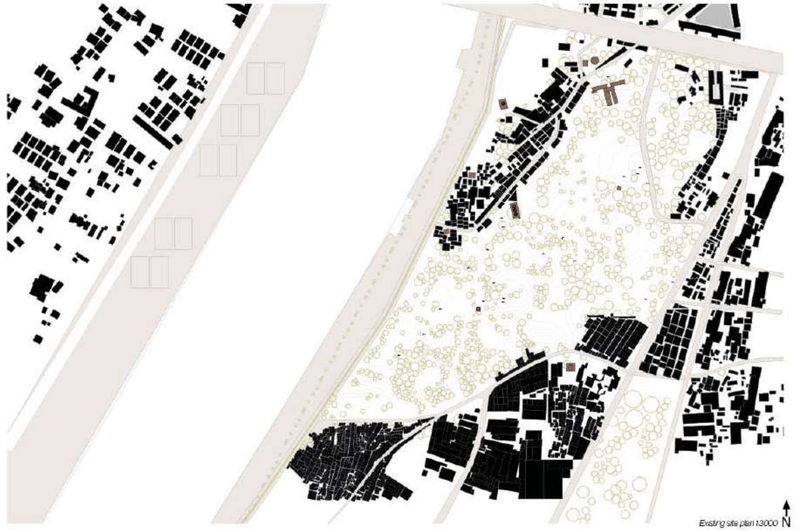
Sub questions

"How can different housing typologies and layouts reconnect fragmented sites and heritage elements while establishing continuous relationships between public, semi-public, and private spaces?"

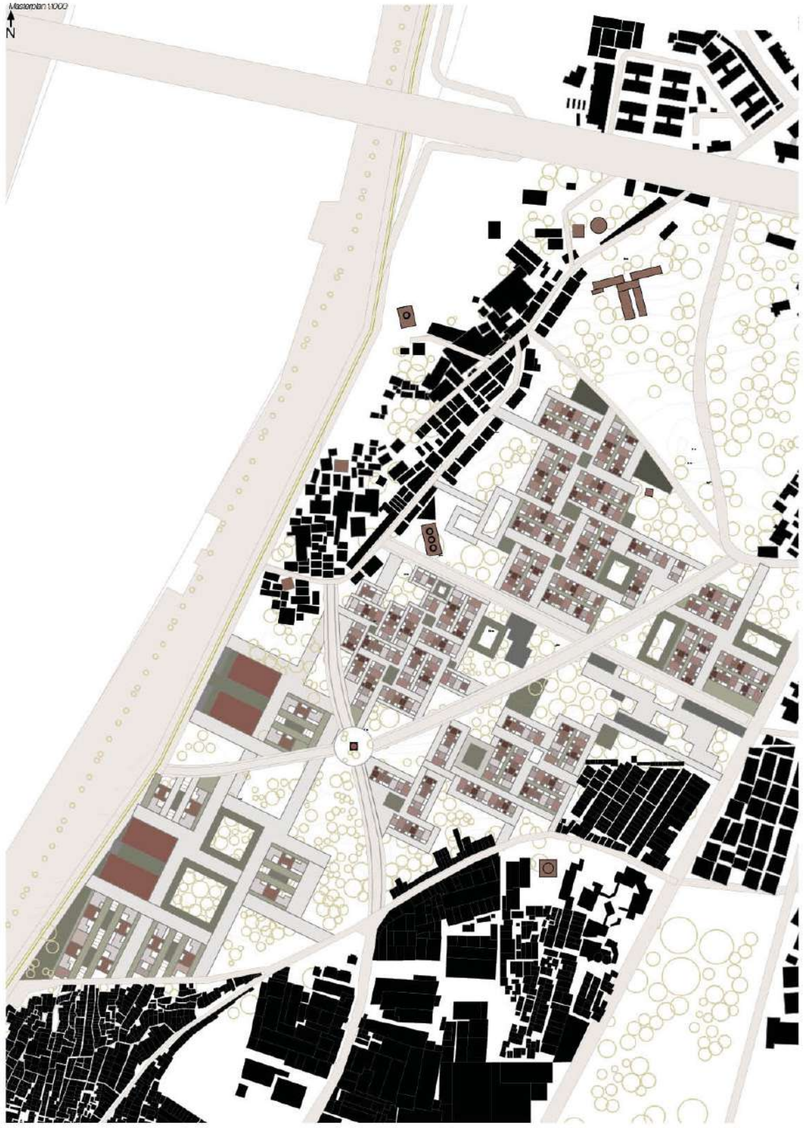
"How can housing design support existing daily routines and foster interaction between different community groups, particularly elderly residents and children?"

"How can incremental and participatory housing strategies enable community-led growth, strengthen a sense of belonging, and improve living conditions over time?"

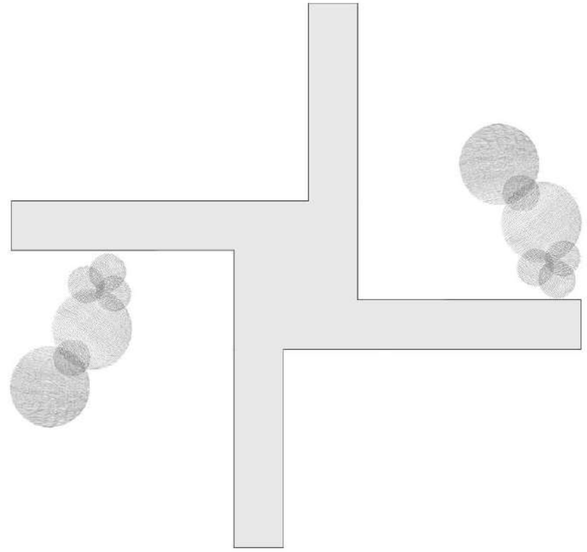




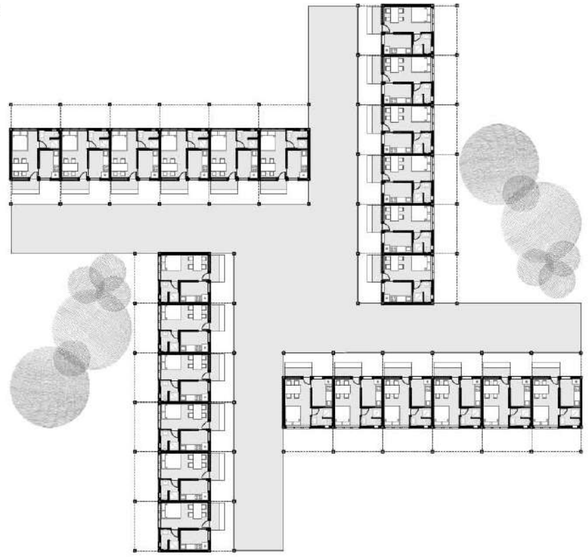




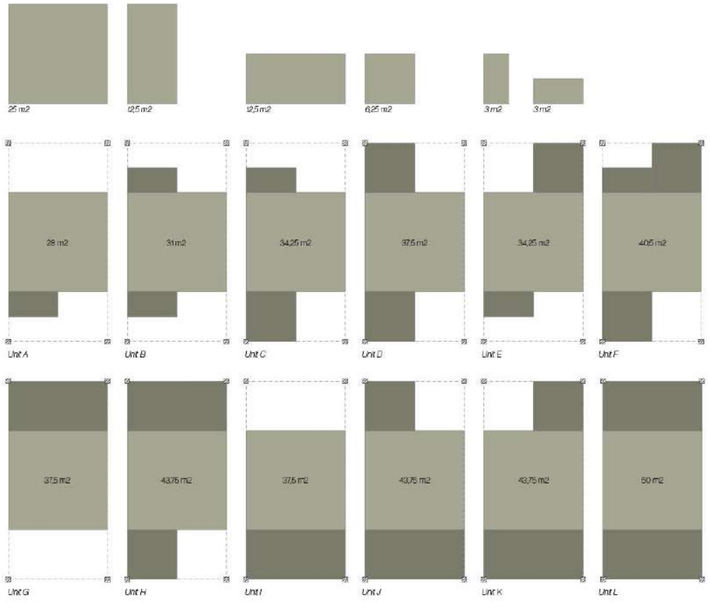
Cluster windmill road 1:200



Cluster windmill base units 1:200



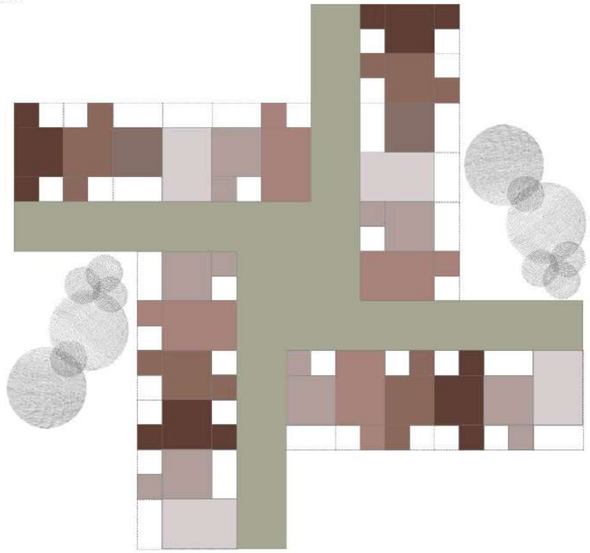
Unit stamp typology 1:100



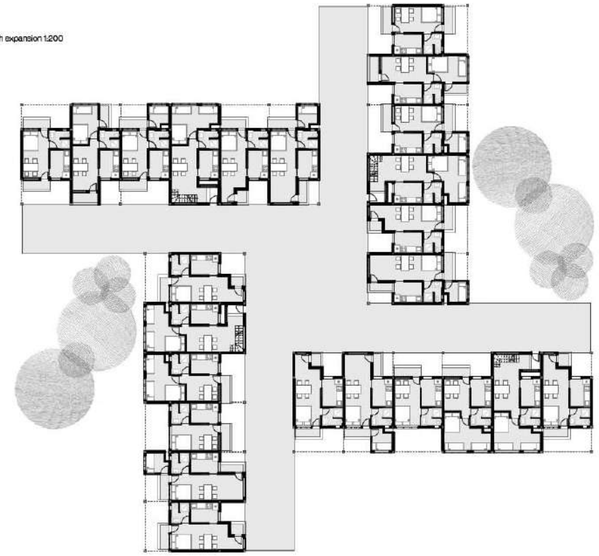
Unit floorplans expansions 1:100



Cluster windmill with expansions 1:200

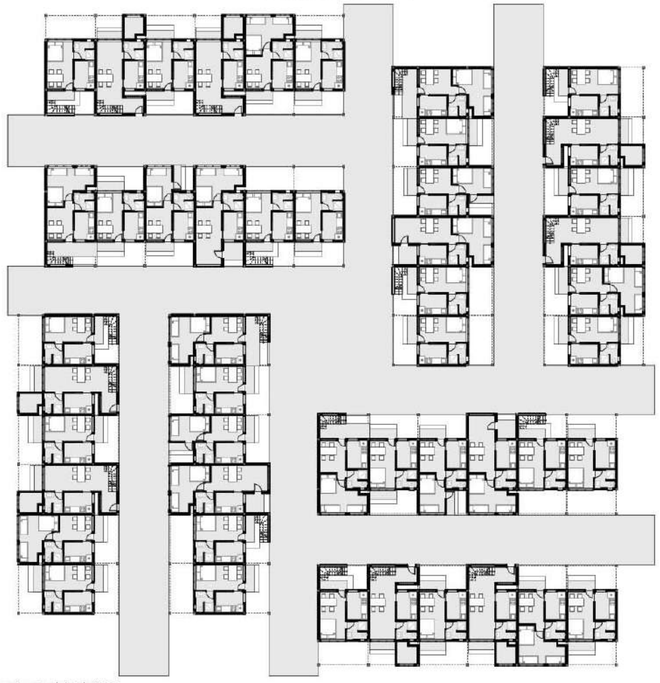


Cluster windmill base units with expansion 1:200



Elevation street 1:100





Unit floorplans expansions extended windmill 1:100

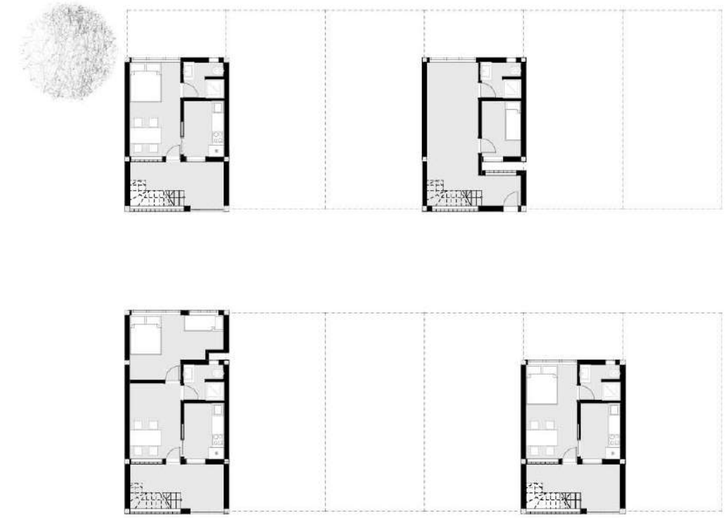
Floorplan ground floor 1:100



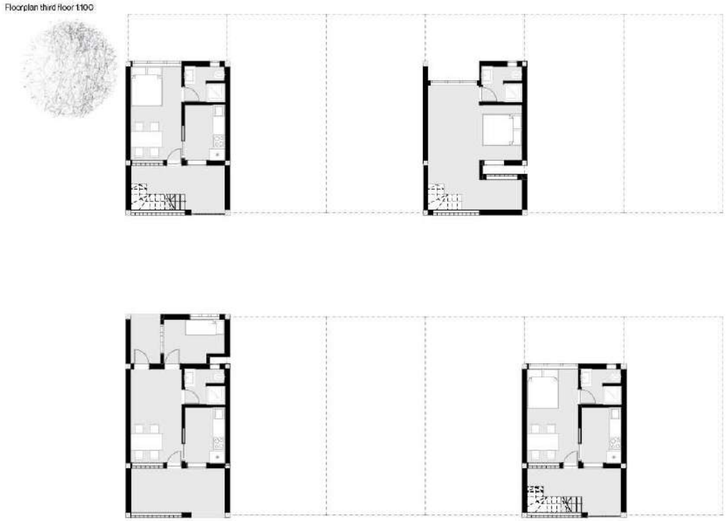
Floorplan first floor 1:100



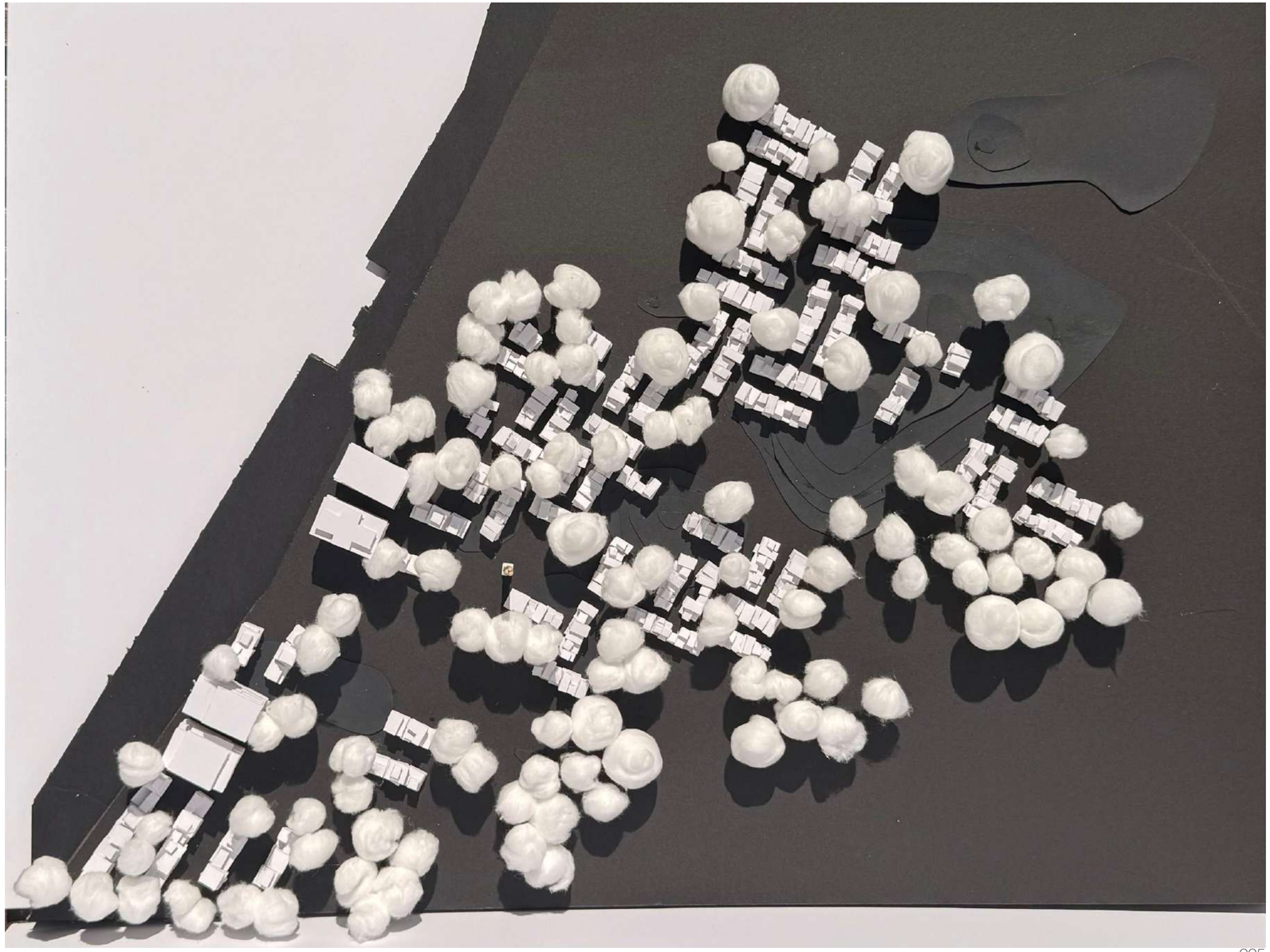
Floorplan second floor 1:100



Floorplan third floor 1:100







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