GENDER - SENSITIVE HOUSING



FOR SHONATOLA VILLAGE

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P5 PRESENTATION - AR3AD105 Dwelling Graduation Studio

CHAPTERS

1. The Village
2. The Units
3. Building Technology
4. The Cluster
5. Urban Strategy
6. Water Management





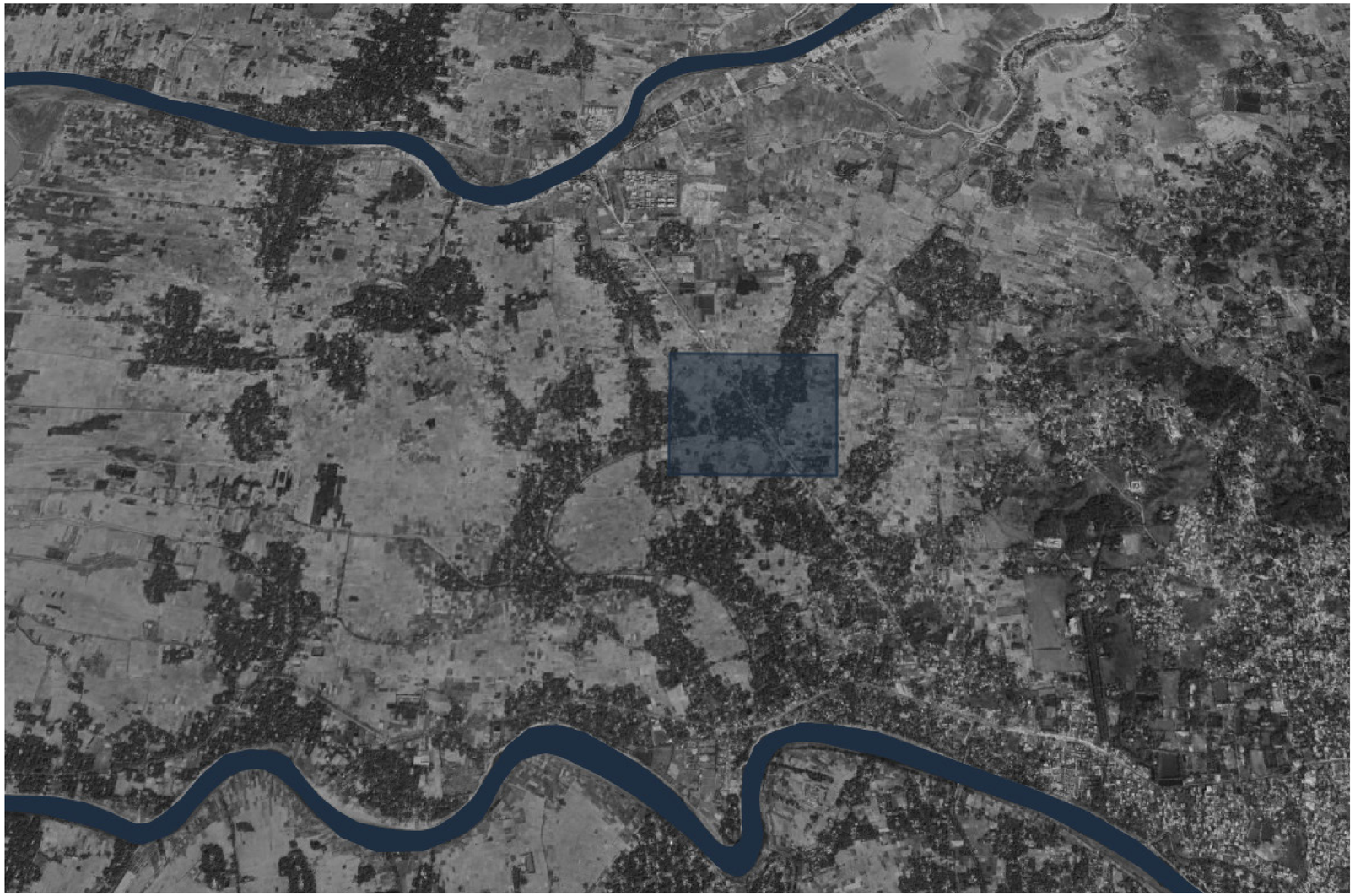
THE VILLAGE

THE VILLAGE



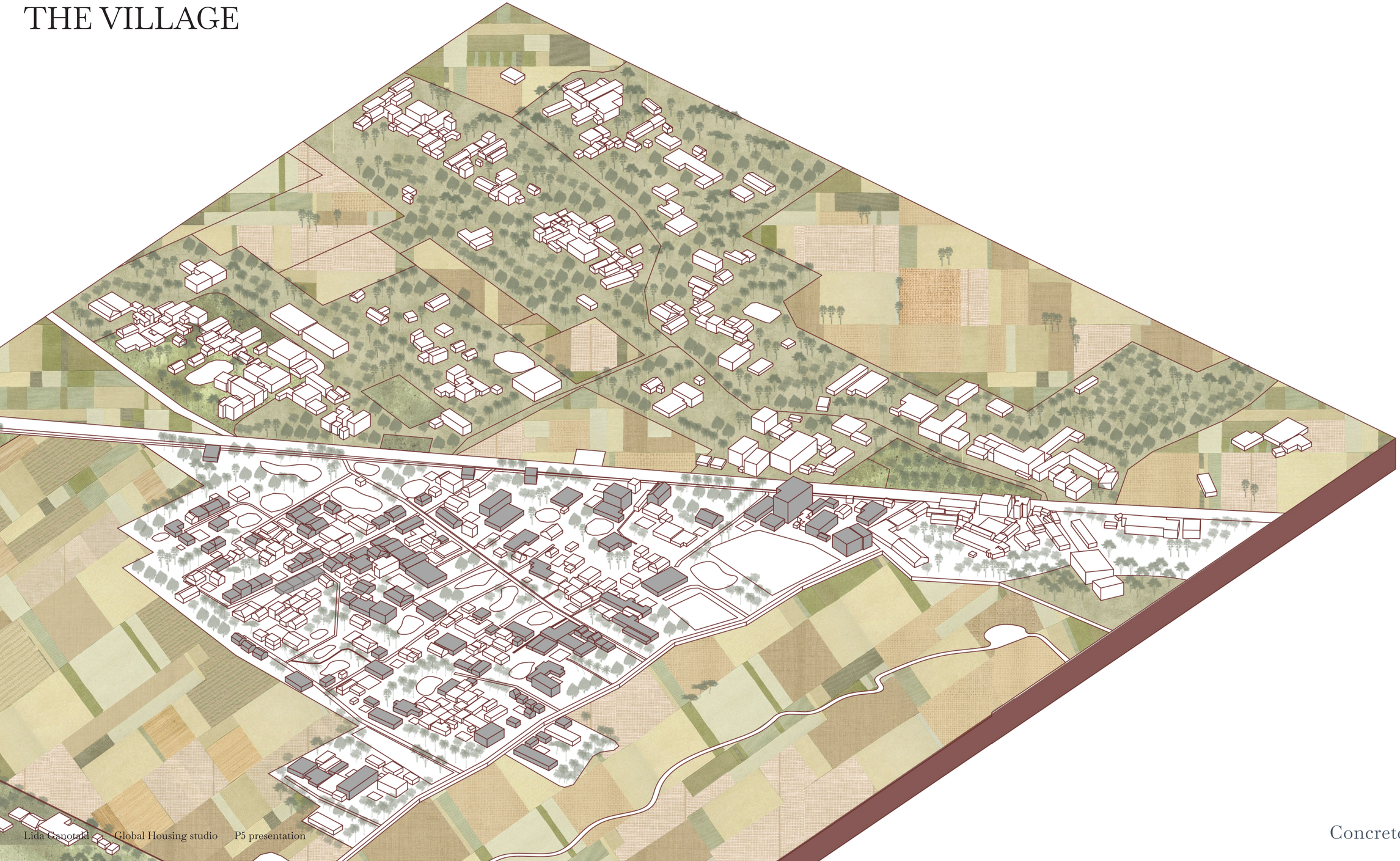
The Shonatola village in relation to Sylhet city

THE VILLAGE



Location of the village between two main rivers in the North-South axis

THE VILLAGE



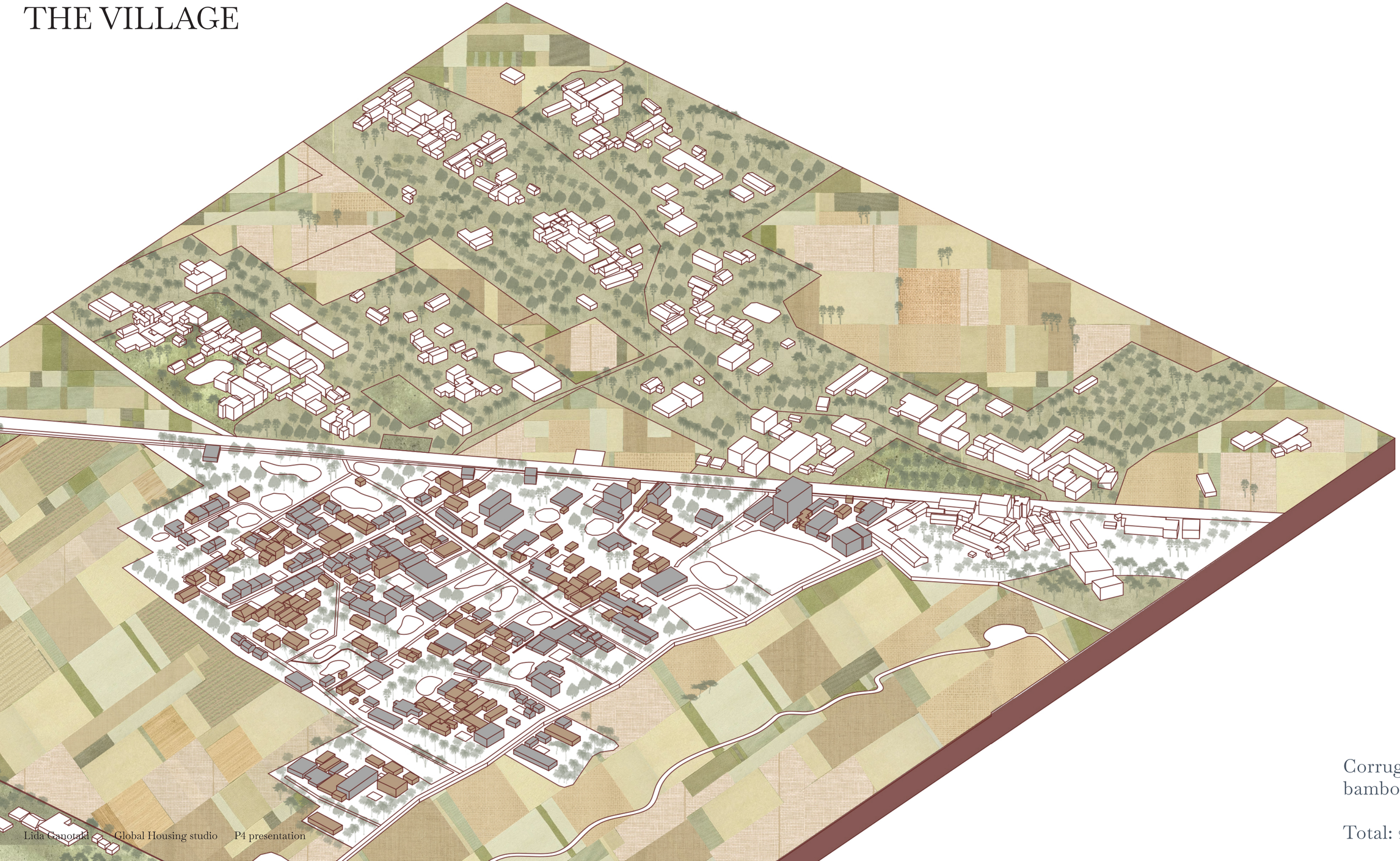
Concrete and brick houses

THE VILLAGE





THE VILLAGE



Corrugated metal,
bamboo and mud houses

Total: 284 houses

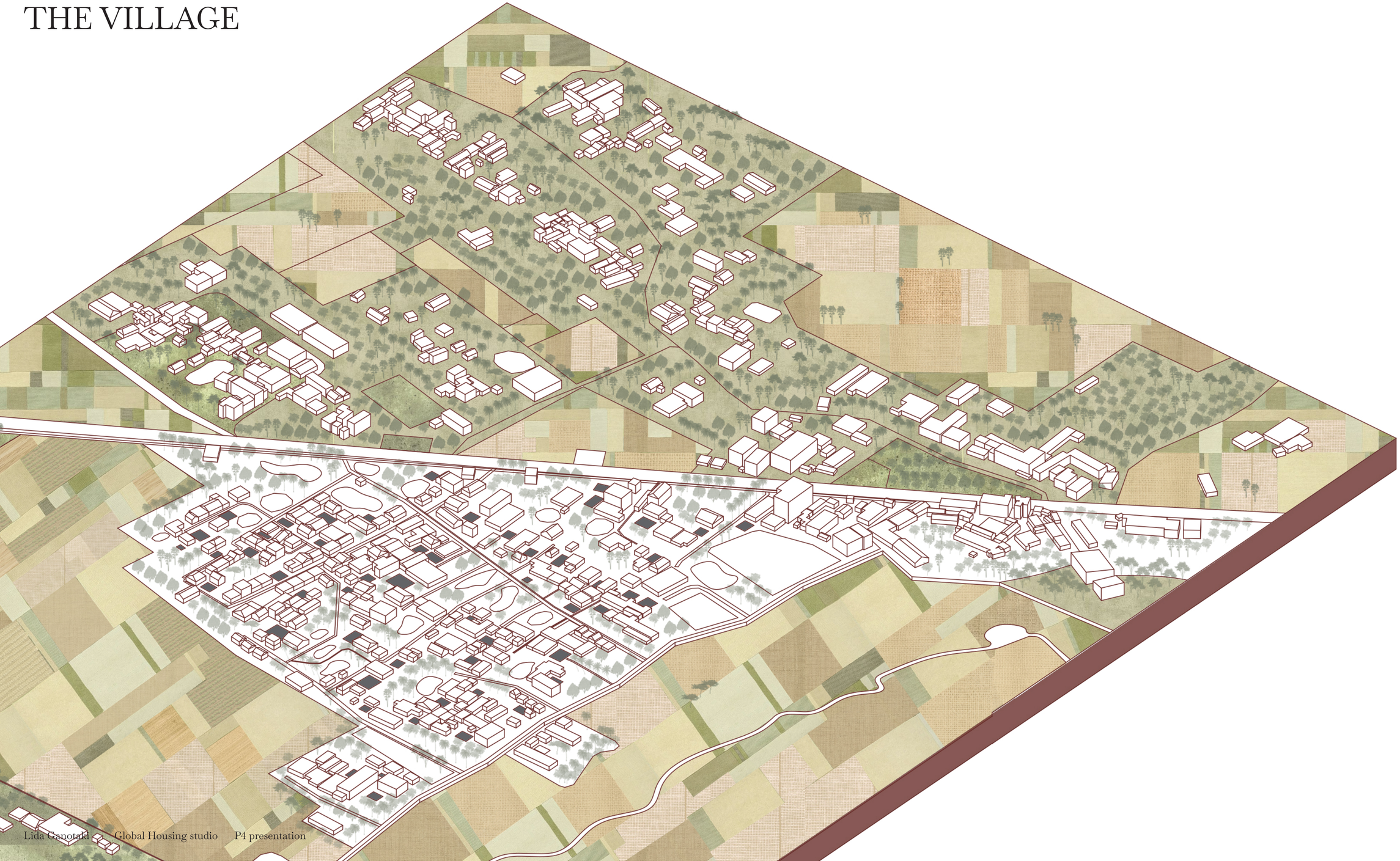
THE VILLAGE







THE VILLAGE



THE VILLAGE



THE VILLAGE



Ponds

THE VILLAGE



THE VILLAGE



THE VILLAGE



Amenities:

1. School
2. Mosque
3. Shonatola Bazar

THE VILLAGE





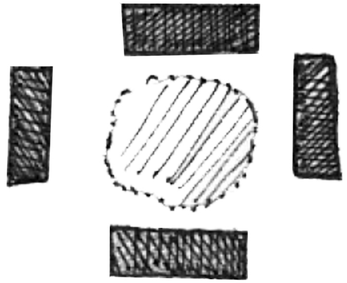
THE VILLAGE



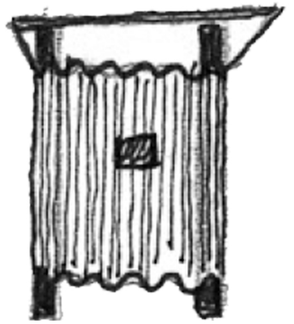
KEY ISSUES



Inadequate housing infrastructure



Lack of communal space



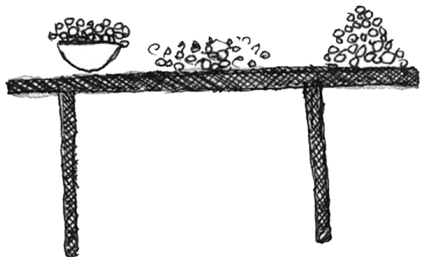
Inadequate sanitation facilities



Women need to commute for water when handpumps get damaged during floods



Limited opportunities for women’s income generation

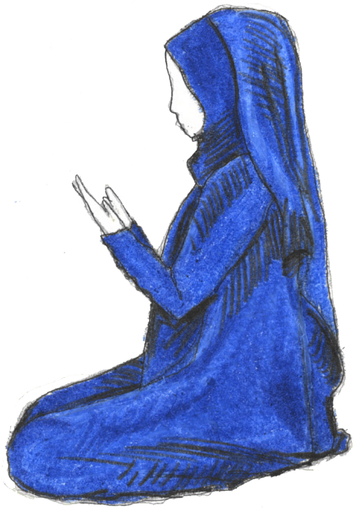


The Shonatola Bazar is underdeveloped

RESEARCH QUESTION

How can housing design, with the integration of water management systems, create safe and supportive environments that facilitate women's income generation and enhance their livelihoods?

A DAY IN THE LIFE OF A WOMAN IN SHONATOLA (morning to afternoon)



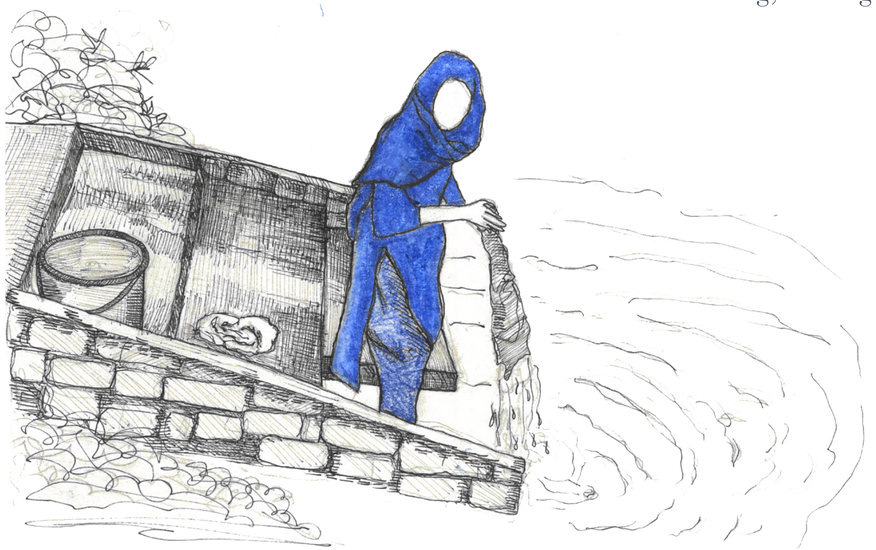
Prayer (one to three times per day)



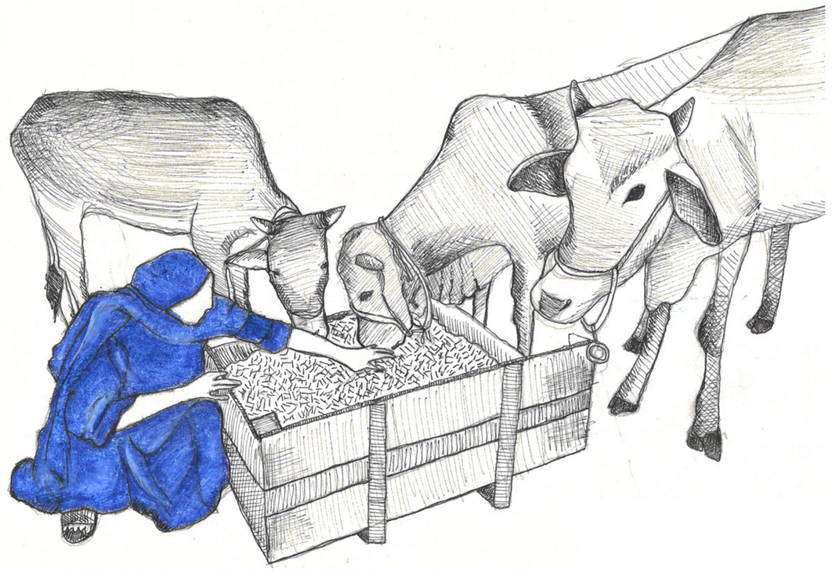
Visit to the hand pump to fetch water for cleaning, cooking and bathing



Cooking for the family (two to three times per day)



Washing dishes and clothes in the pond



Feeding livestock

A DAY IN THE LIFE OF A WOMAN IN SHONATOLA (morning to afternoon)



Cleaning the house and yard



Maintaining homegardens



Taking care of the children



Partaking in agricultural activities

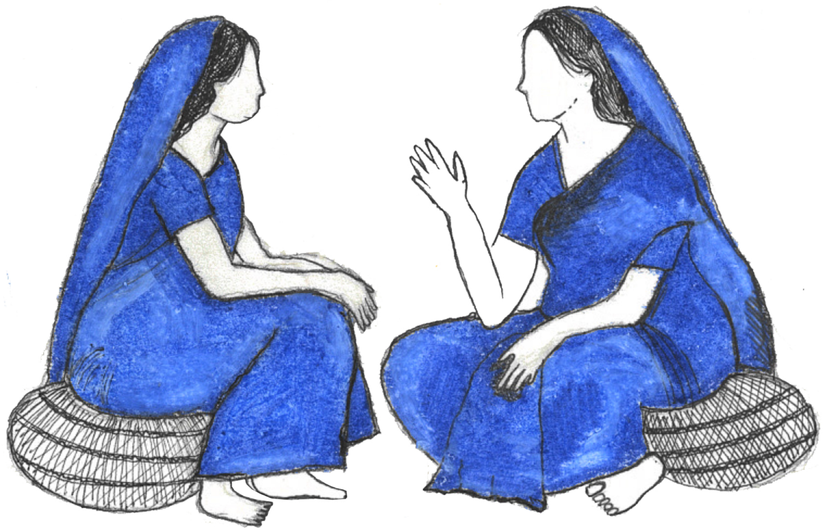


Making cow dung sticks for fuel

A DAY IN THE LIFE OF A WOMAN IN SHONATOLA (afternoon to evening)



Engaging in activities such as sewing, weaving and handicrafts



Visiting other women to socialize in a more intimate setting

Conclusions:

1. Water is not just as a basic necessity, but also a unifying and social element that fosters connection among women.
2. There is a need for a a variety of spaces that cater to both intimate gatherings and larger, more casual social interactions.
3. Women need more opportunities to engage in activities which offer the potential to generate income from their work.

THE MEN OF SHONATOLA



Prayer (one to three times per day)



Working in the fields



Selling produce at the market



Working in construction

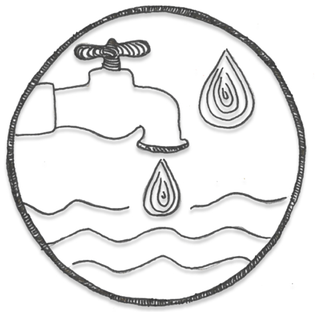


Working as carpenters

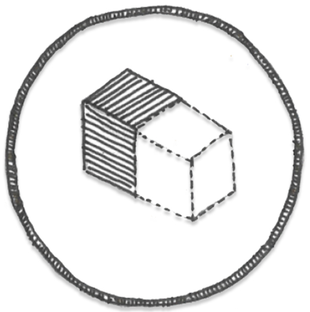
DESIGN PRINCIPLES



Flood Resilience



Water Management



Incrementality



Women’s Income Generation

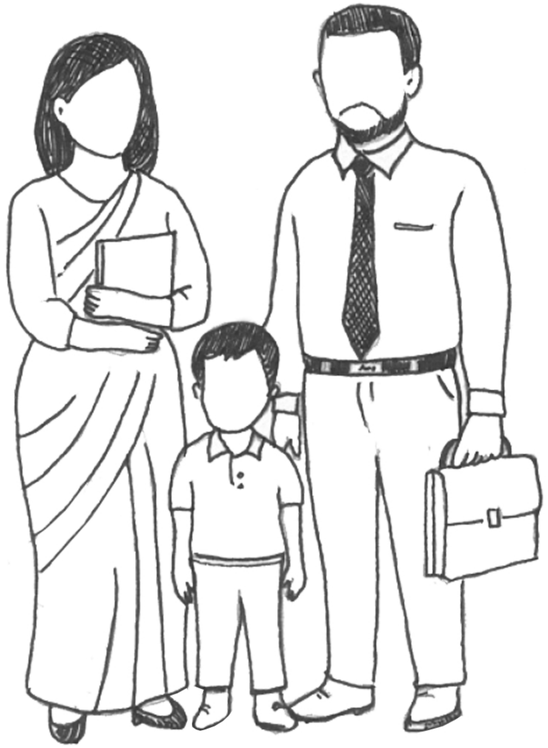


Mixing Incomes

TARGET GROUPS



Women of Shonatola and their families (low-income)



People working in the city and their families (middle-income)

THE UNITS

THE UNITS - Type A (low income / one storey home)



THE UNITS - materiality

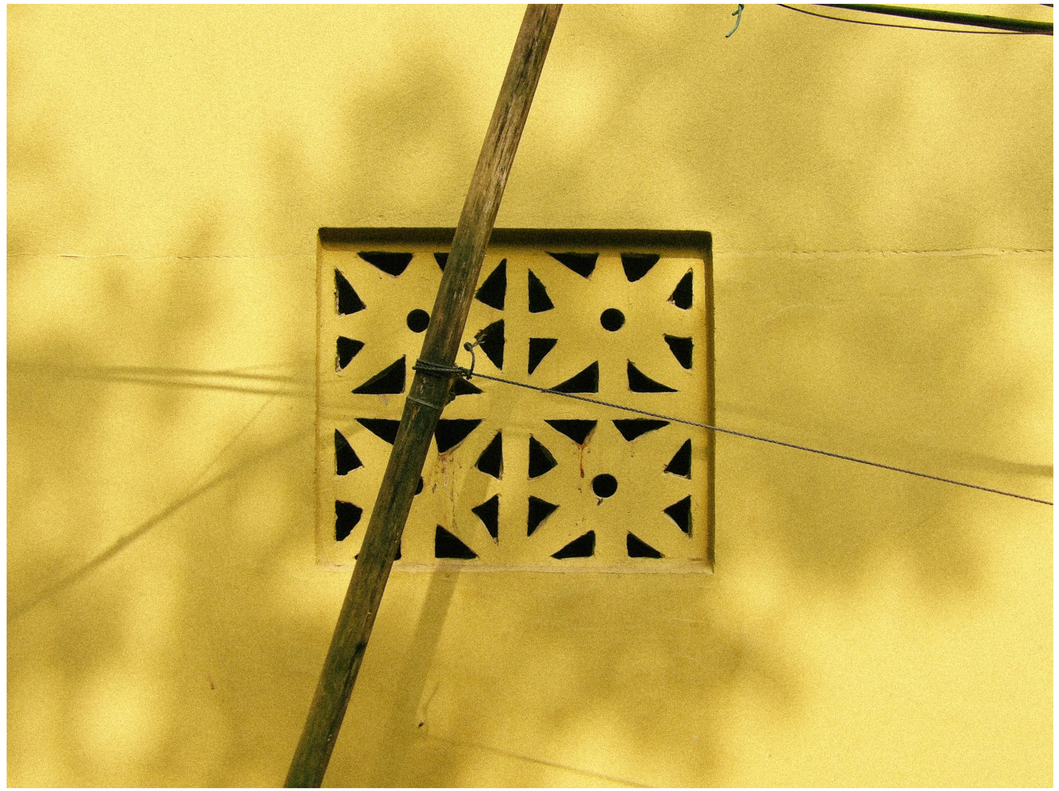


THE UNITS - materiality

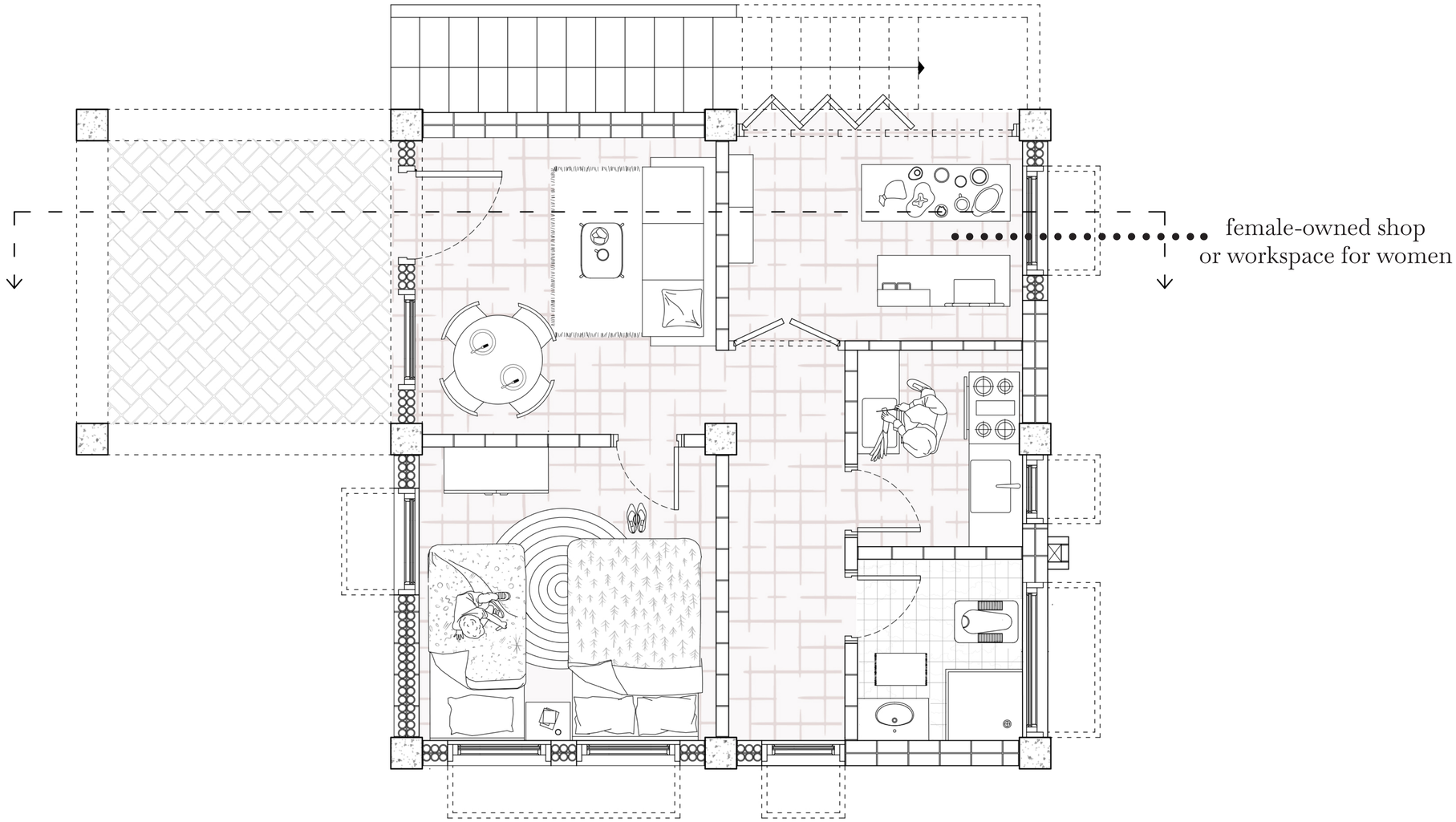


THE UNITS - materiality





THE UNITS - Type A (low income / one storey home)



Ground Floor Plan

THE UNITS - Type A (low income / one storey home)

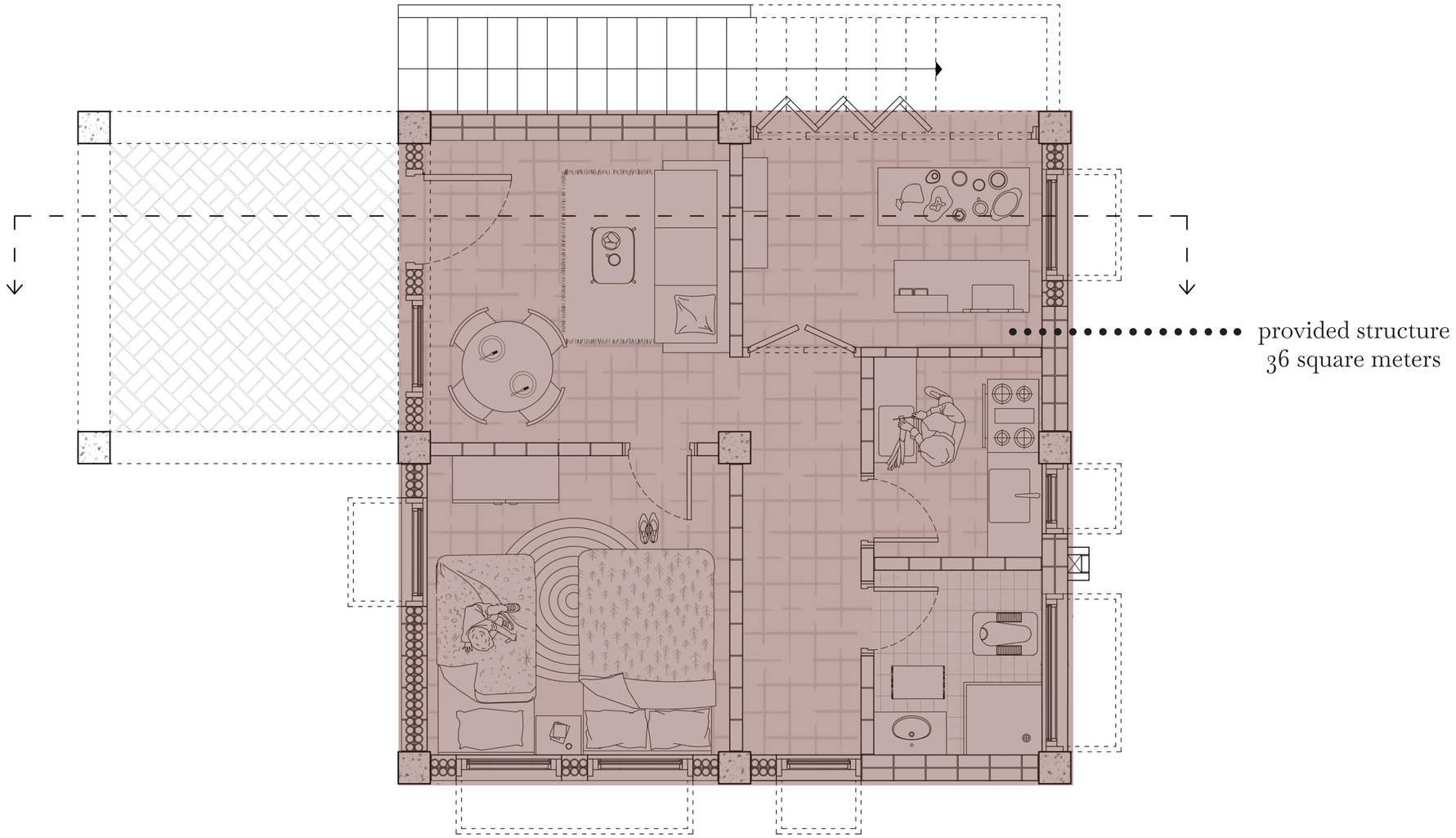


Female - owned shop

THE UNITS - Type A (low income / one storey home)



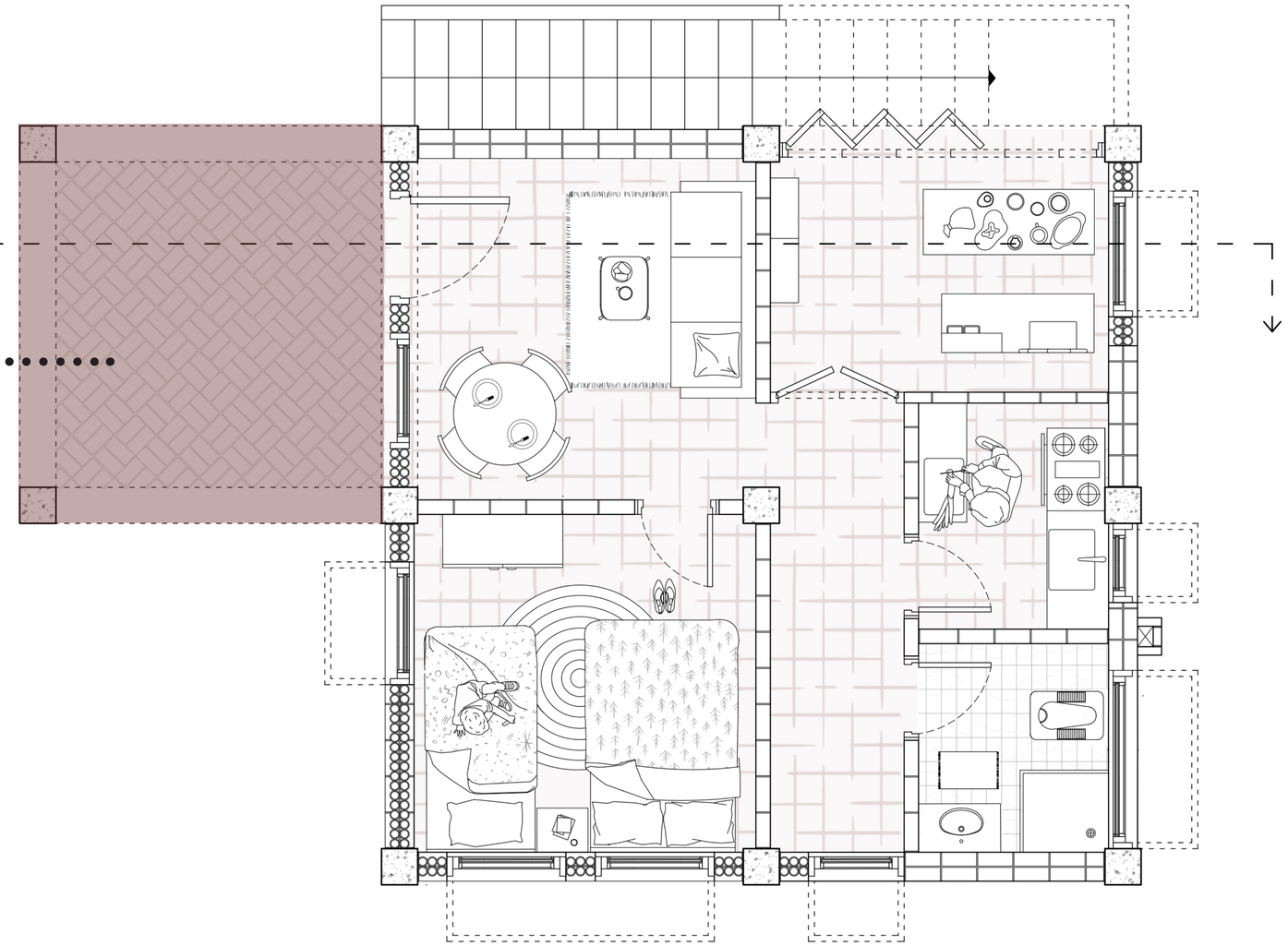
THE UNITS - Type A (low income / one storey home)



Ground Floor Plan

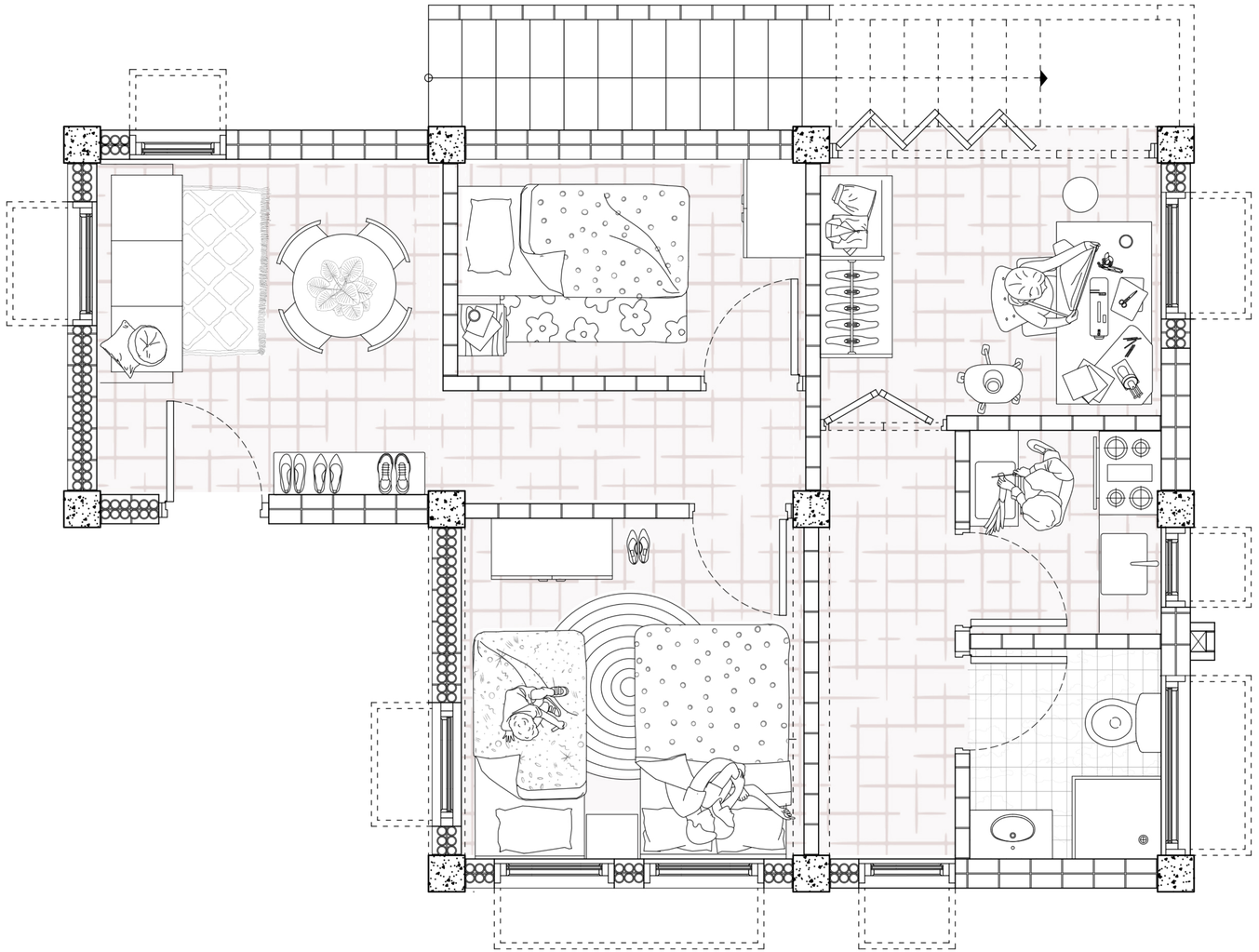
THE UNITS - Type A (low income / one storey home)

space for incremental expansion
9 square meters



Ground Floor Plan

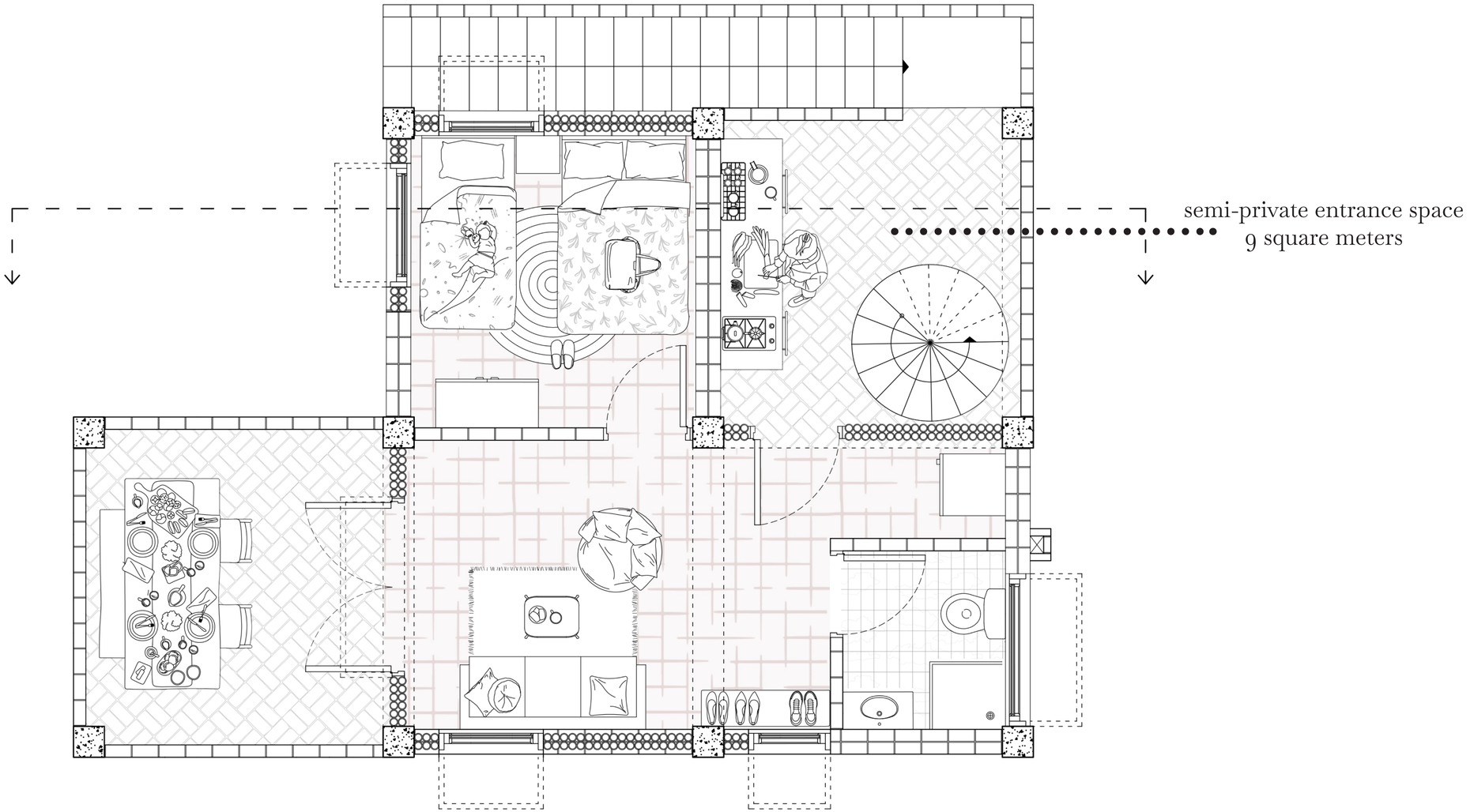
THE UNITS - Type A (low income / one storey home)



THE UNITS - Type B (low income / two storey home)

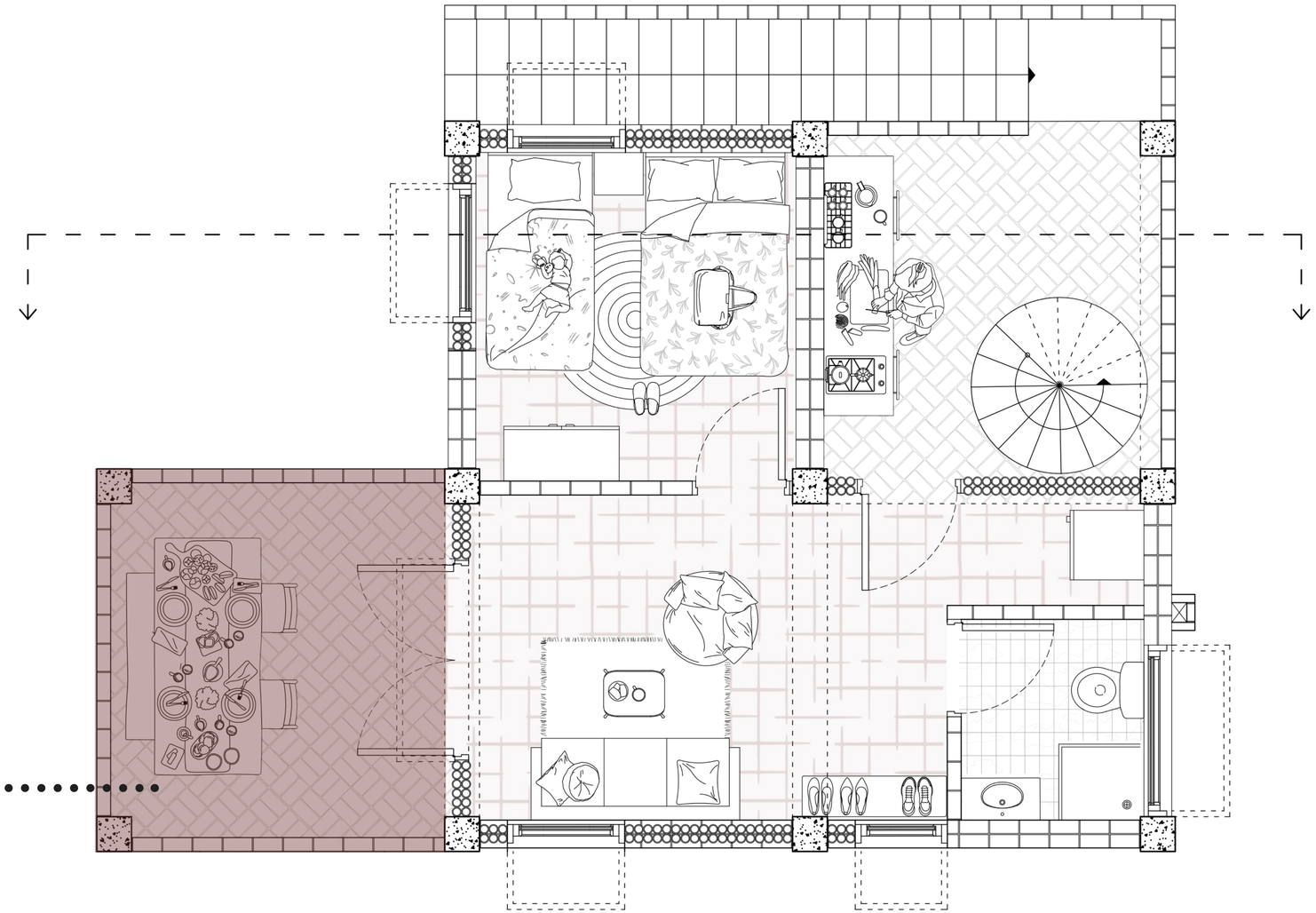


THE UNITS - Type B (low income / two storey home)



First Floor Plan

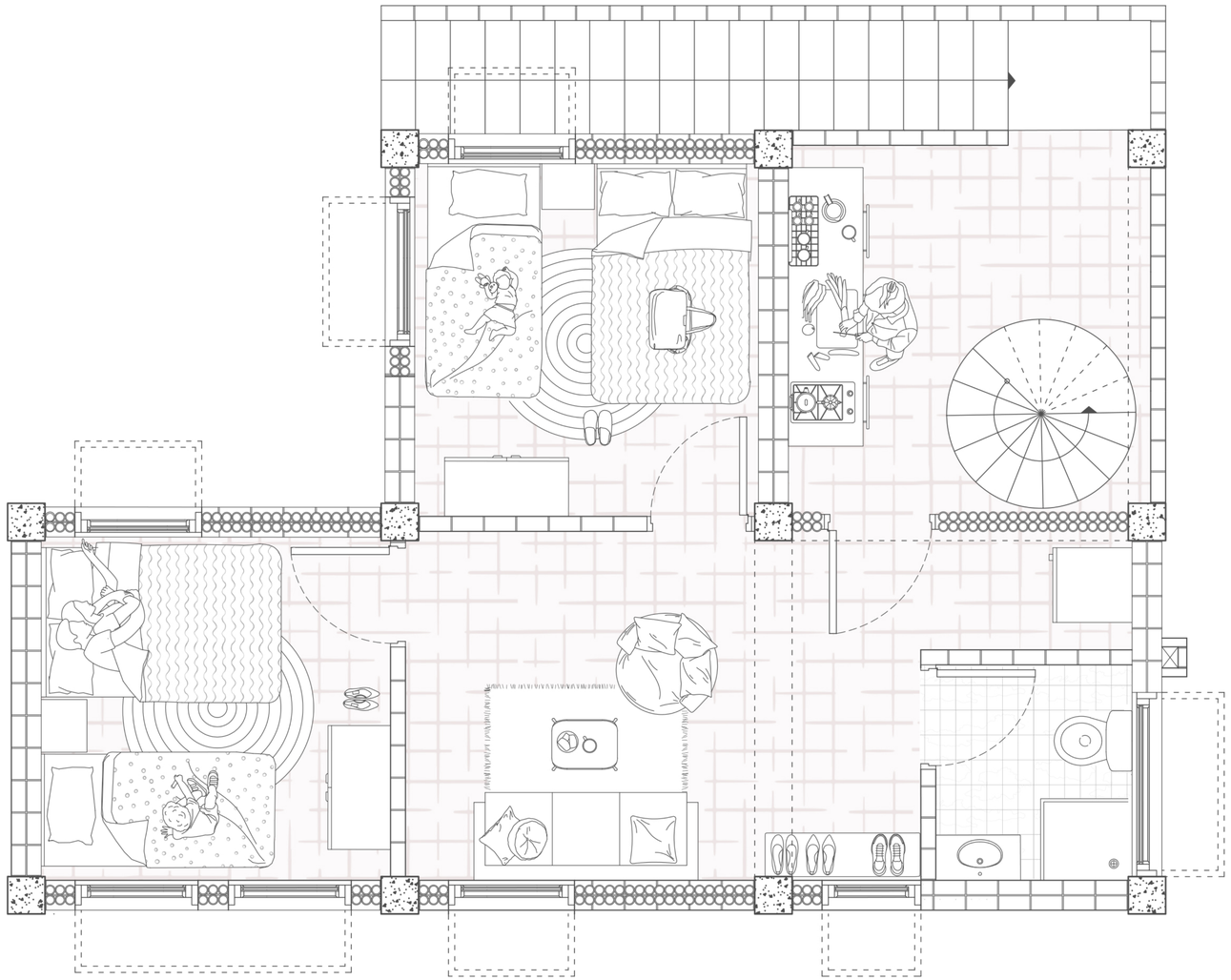
THE UNITS - Type B (low income / two storey home)



space for incremental expansion
9 square meters

First Floor Plan

THE UNITS - Type B (low income / two storey home)

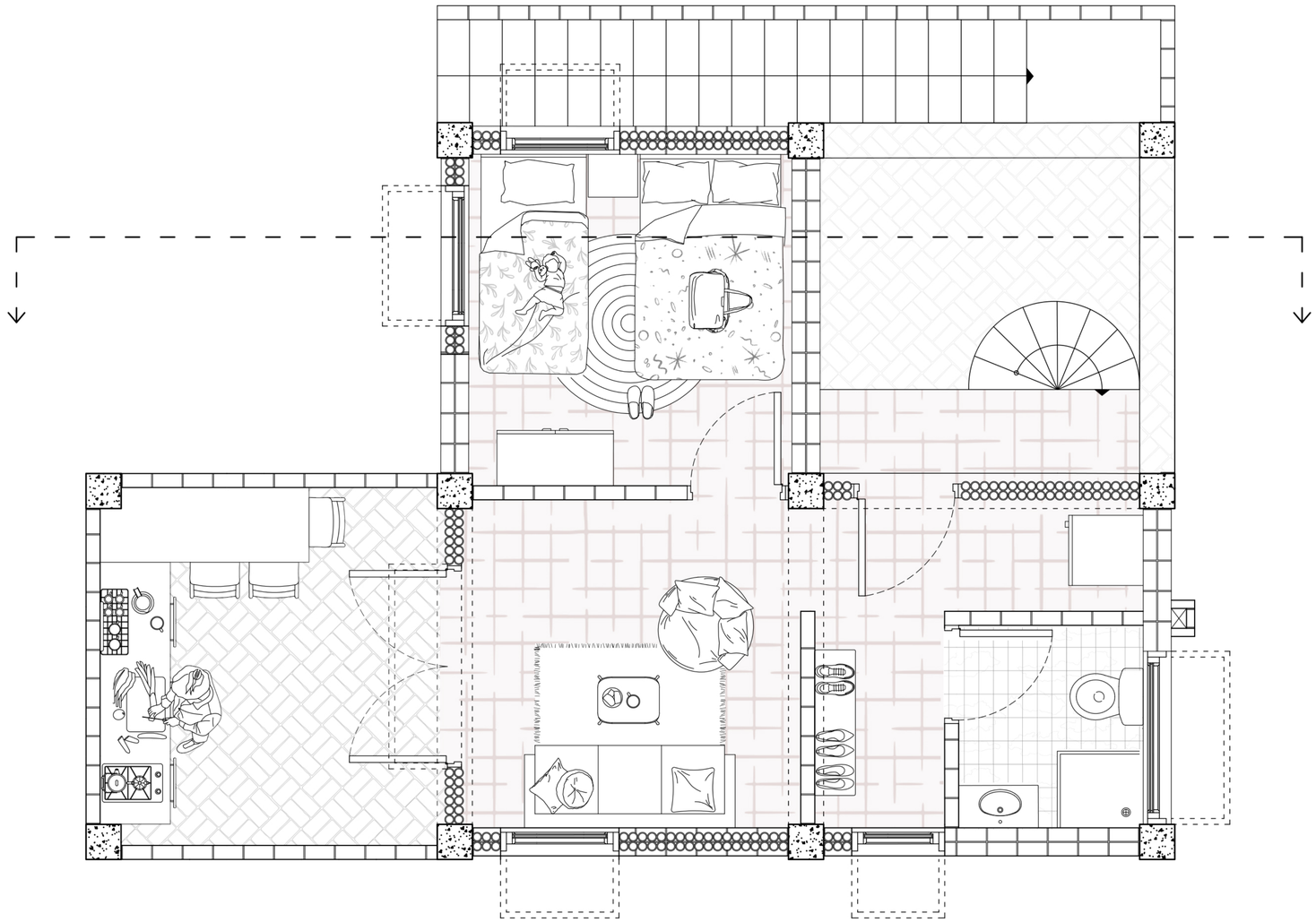


Expanded Unit, First Floor

THE UNITS - Type C (low income / three storey home)



THE UNITS - Type C (low income / three storey home)



Second Floor Plan

THE UNITS - Incrementality (different scenarios)



THE UNITS - Incrementality (different scenarios)



THE UNITS - Incrementality (different scenarios)



THE UNITS - Incrementality (different scenarios)



THE UNITS - Incrementality (different scenarios)



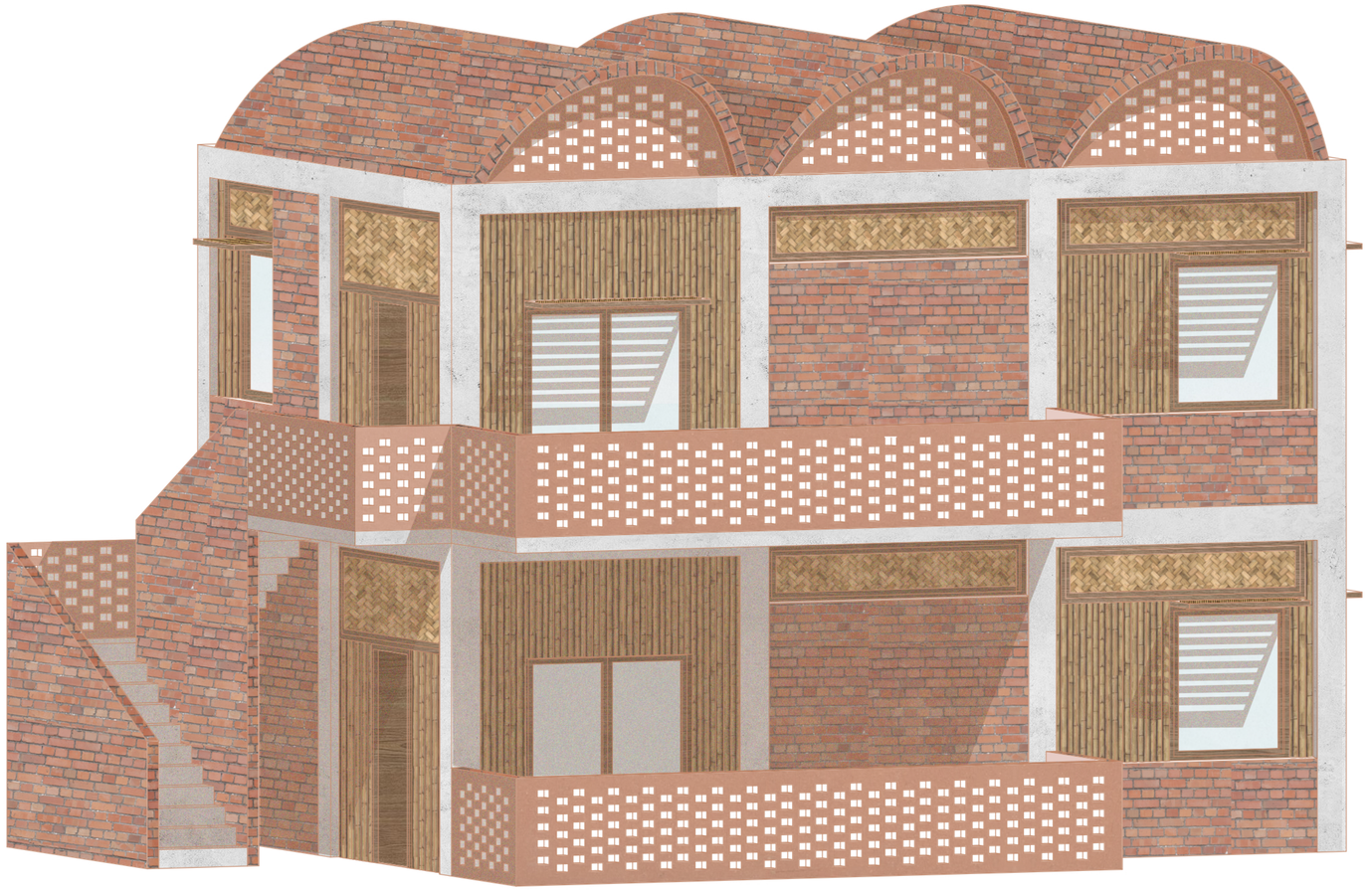
THE UNITS - Incrementality (different scenarios)



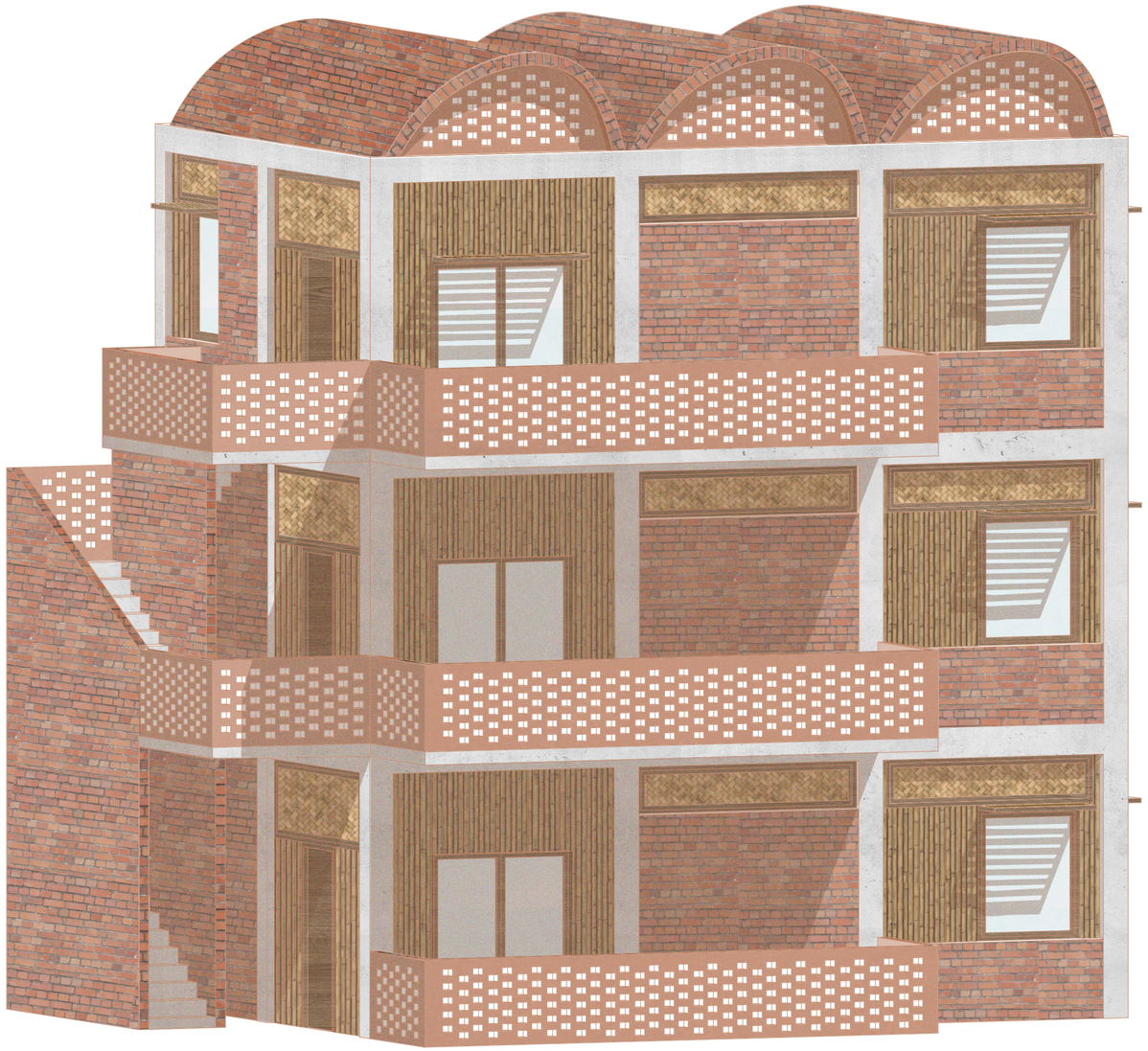
THE UNITS - Incrementality (different scenarios)



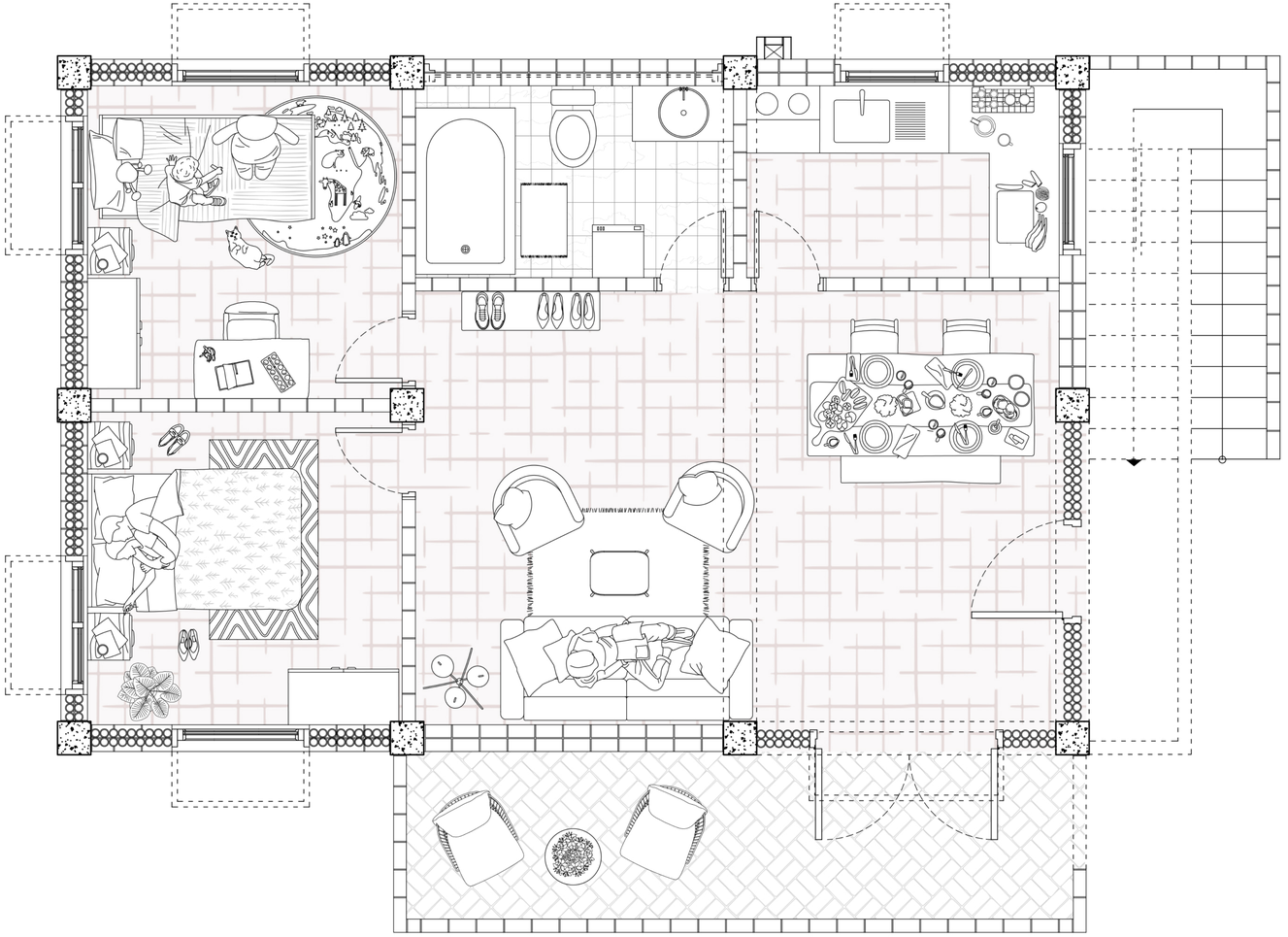
THE UNITS - Type D (middle income / two storey home)



THE UNITS - Type E (middle income / three storey home)

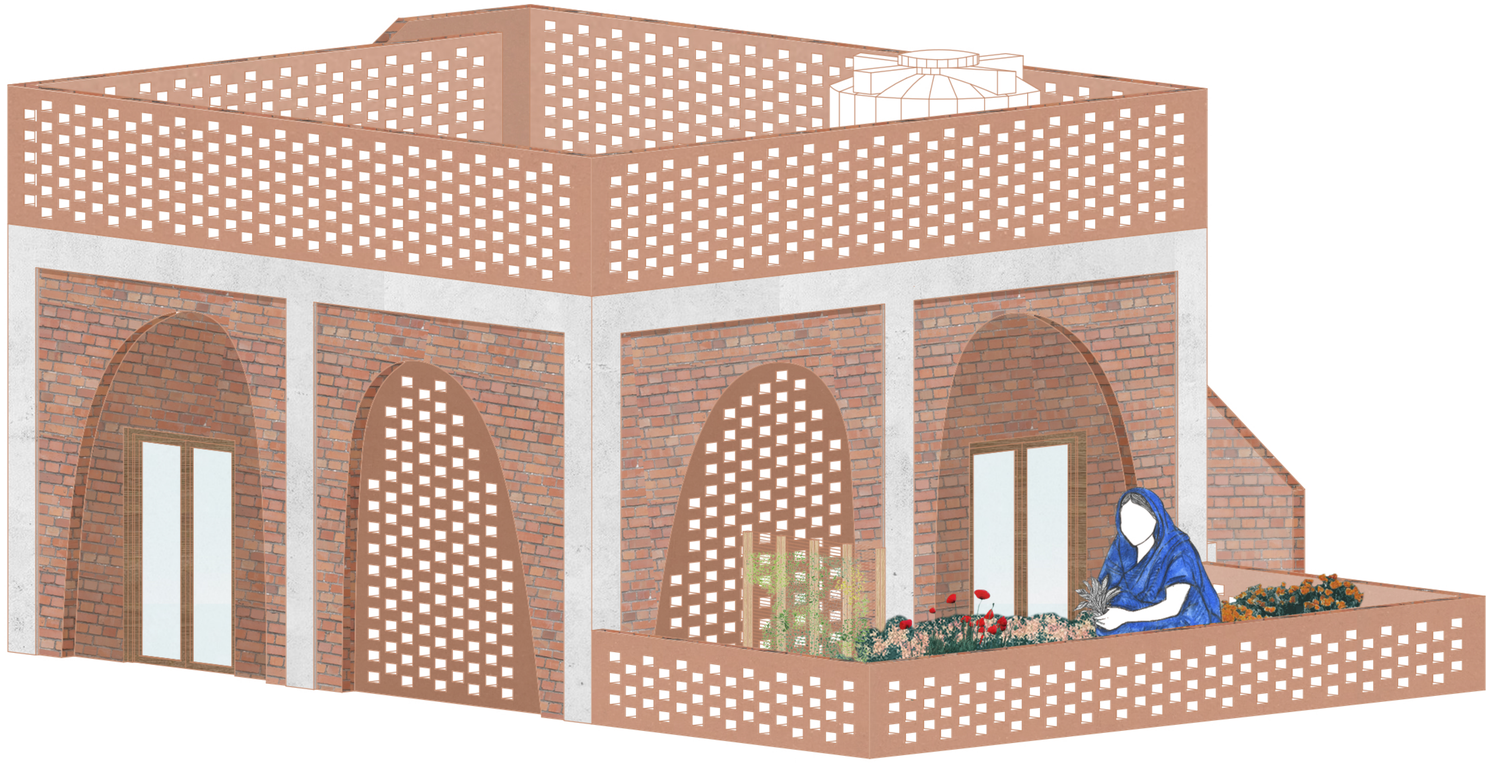


THE UNIT - Type D & E

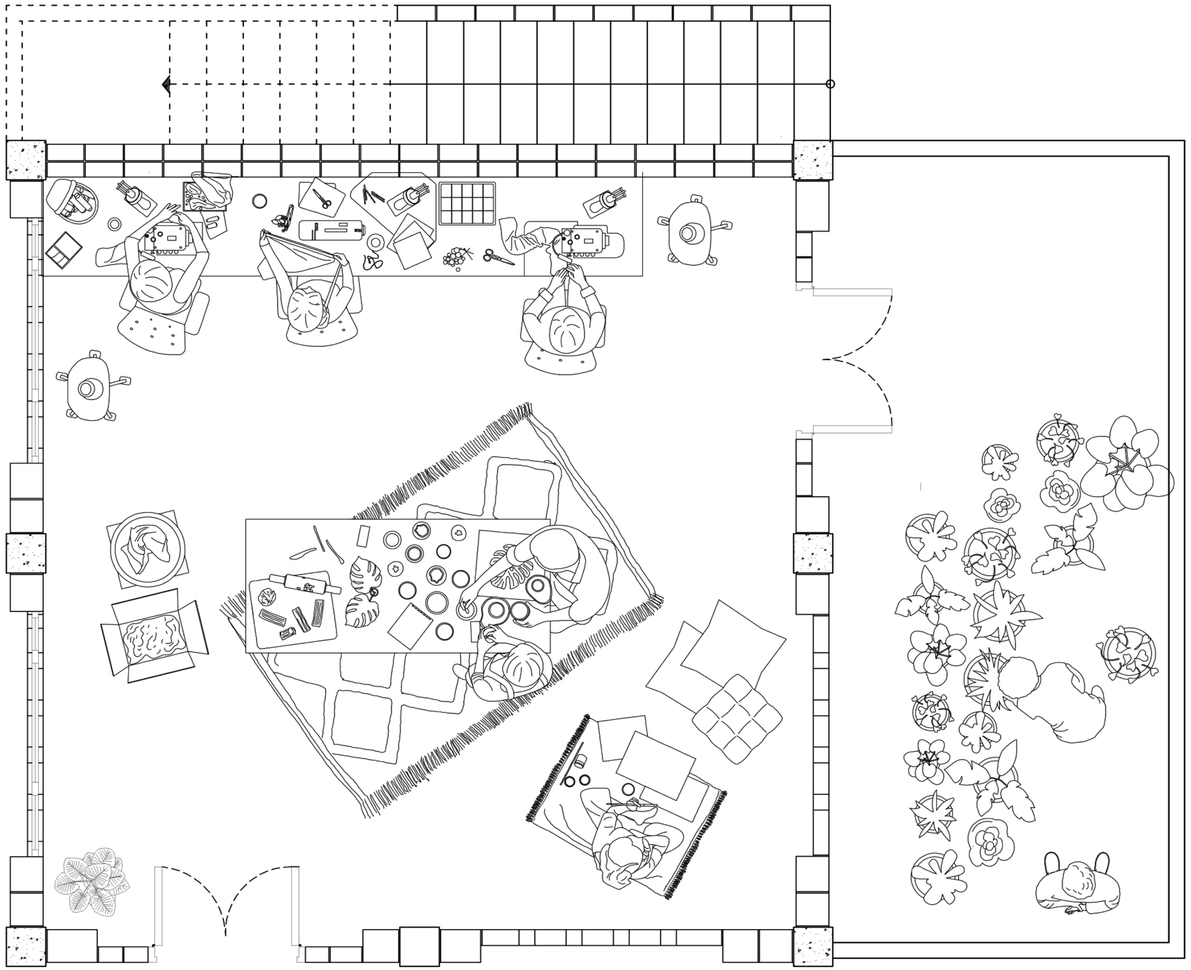


Typical Floor Plan

THE UNITS - Type F (communal building for women)



THE UNITS - Type F (communal building for women)

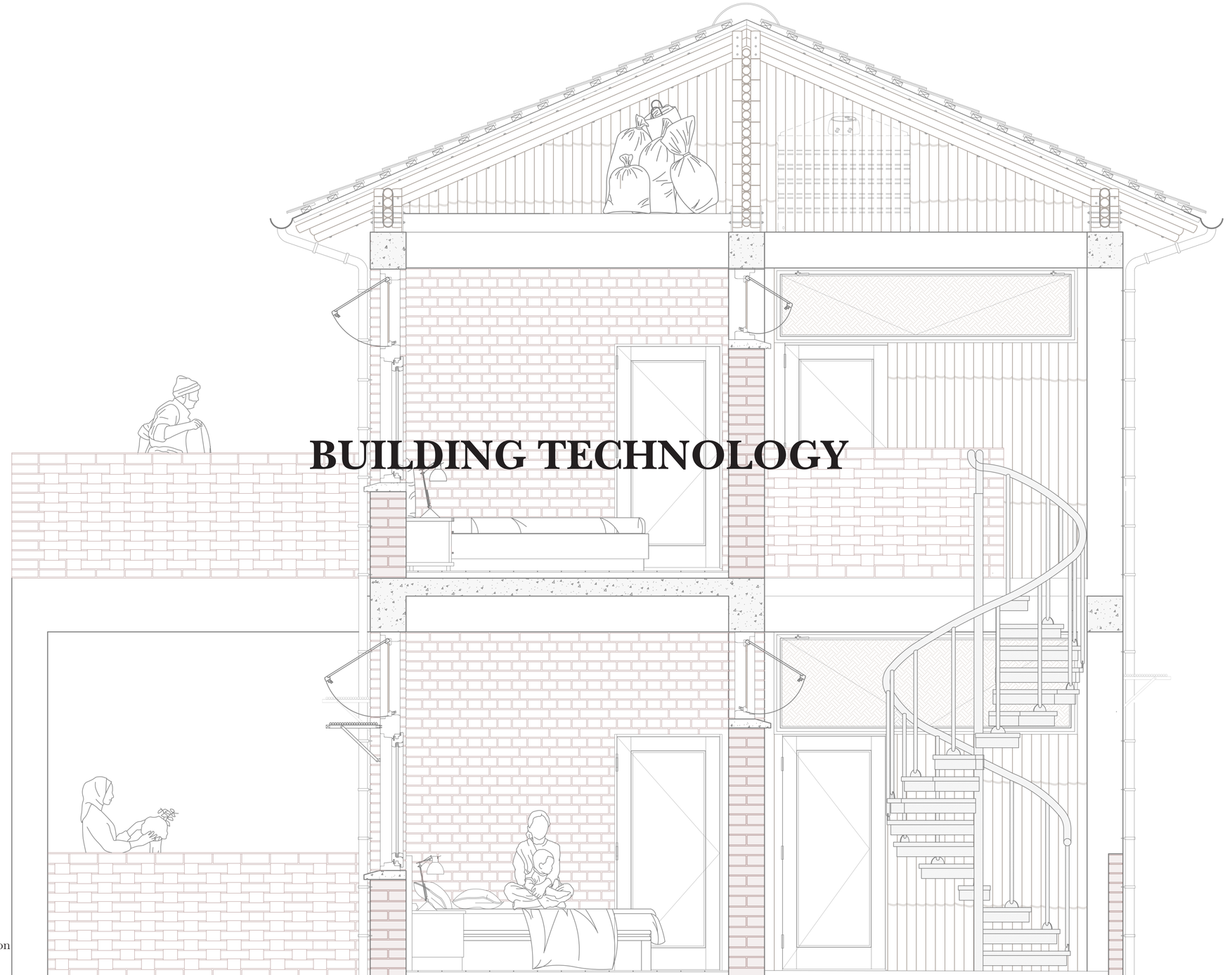


Floor Plan

THE UNITS - Type F (communal building for women)



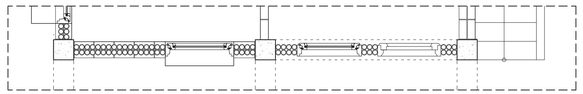
BUILDING TECHNOLOGY



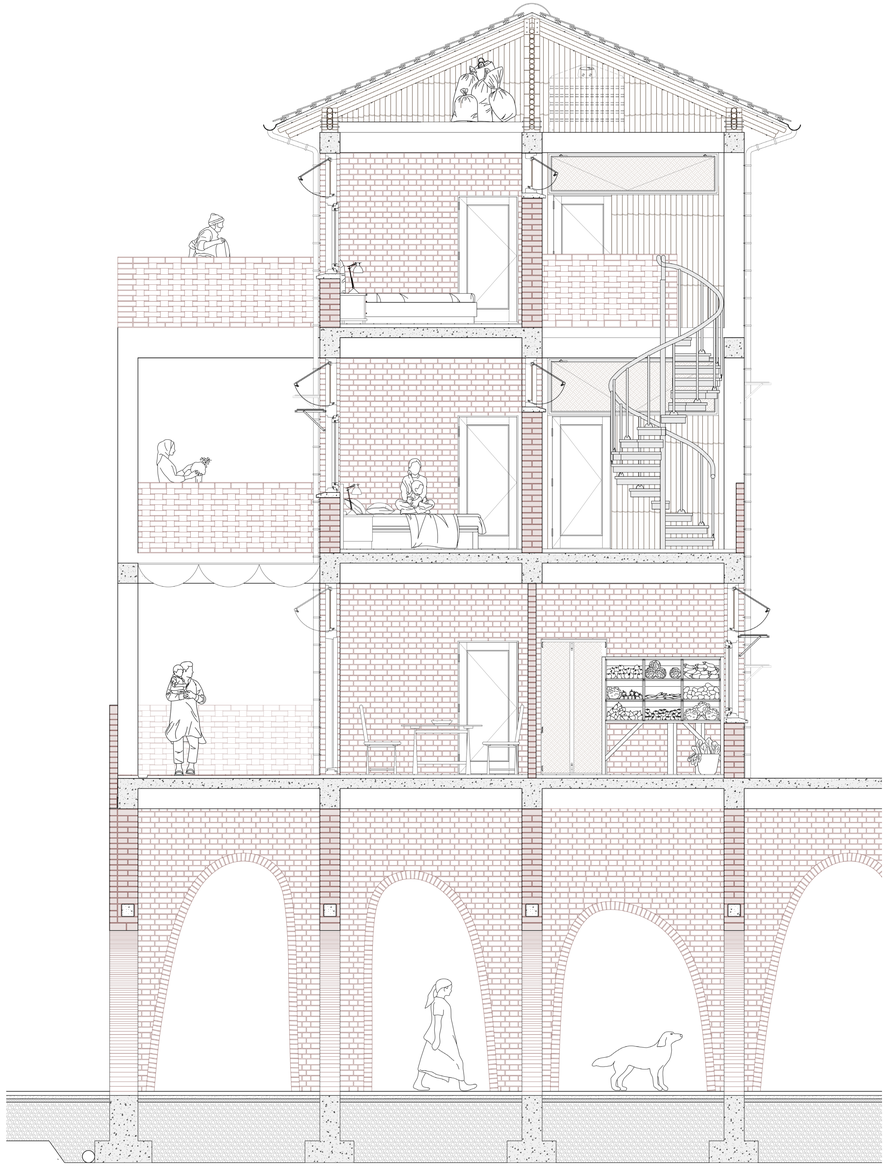
FRAGMENT - Type C



Elevation

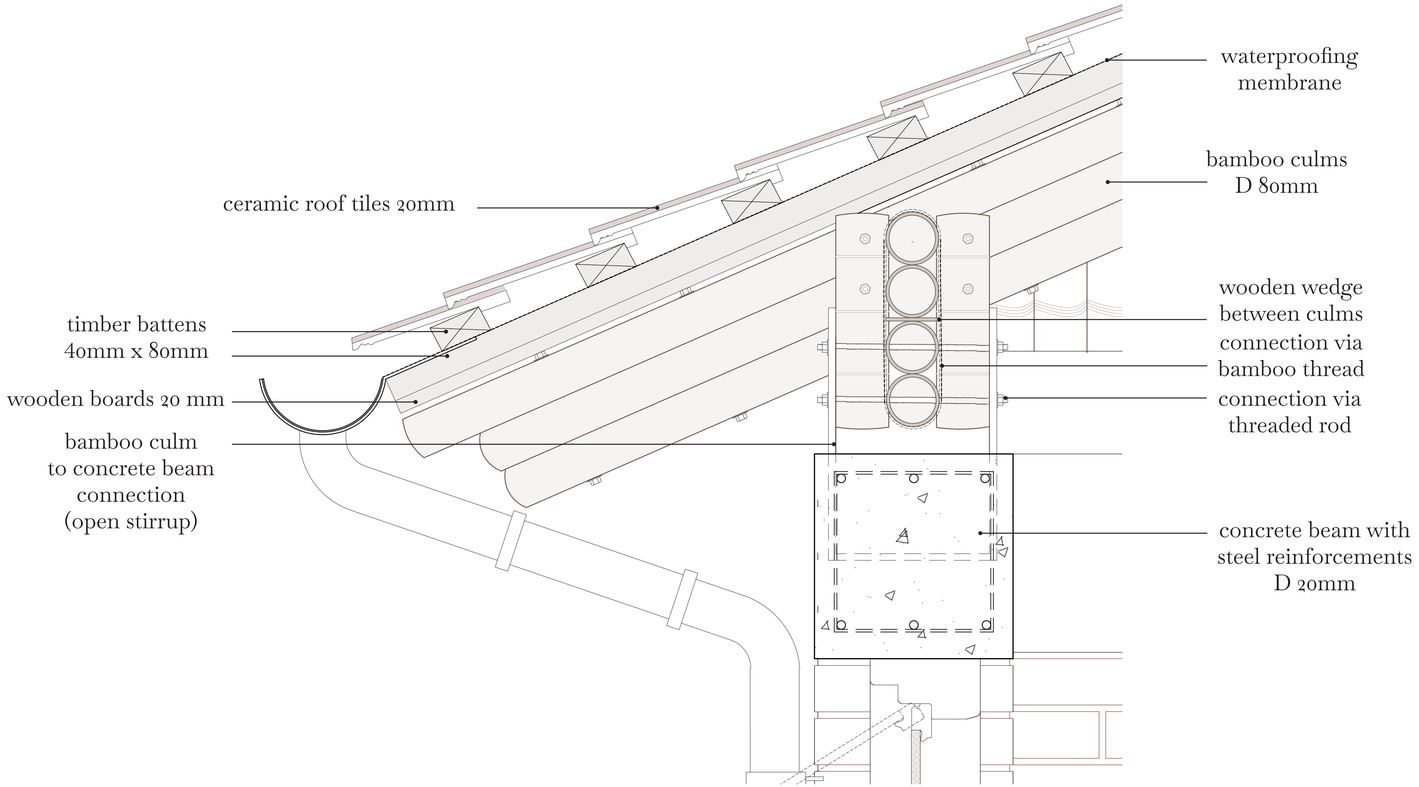


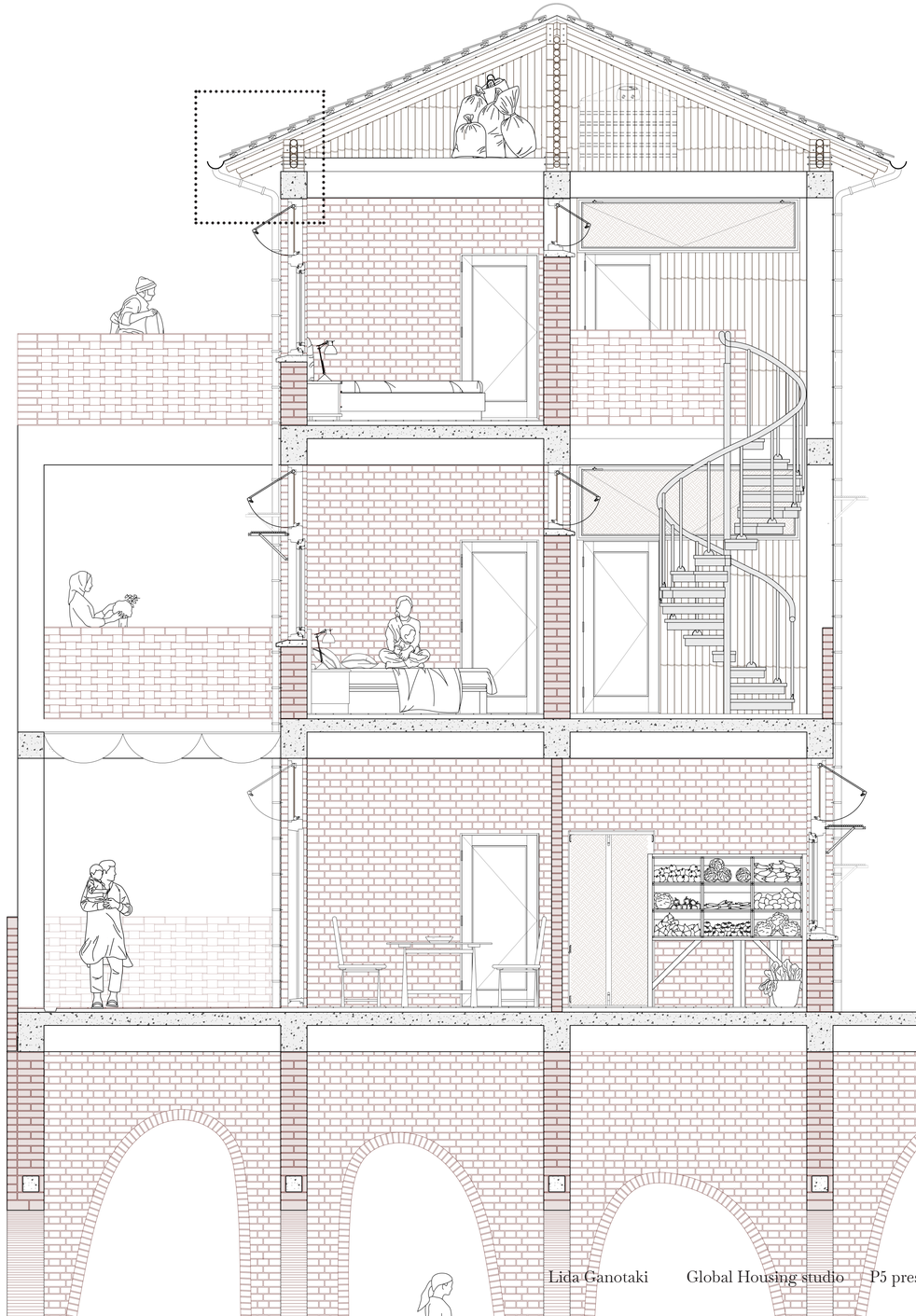
Plan



Section

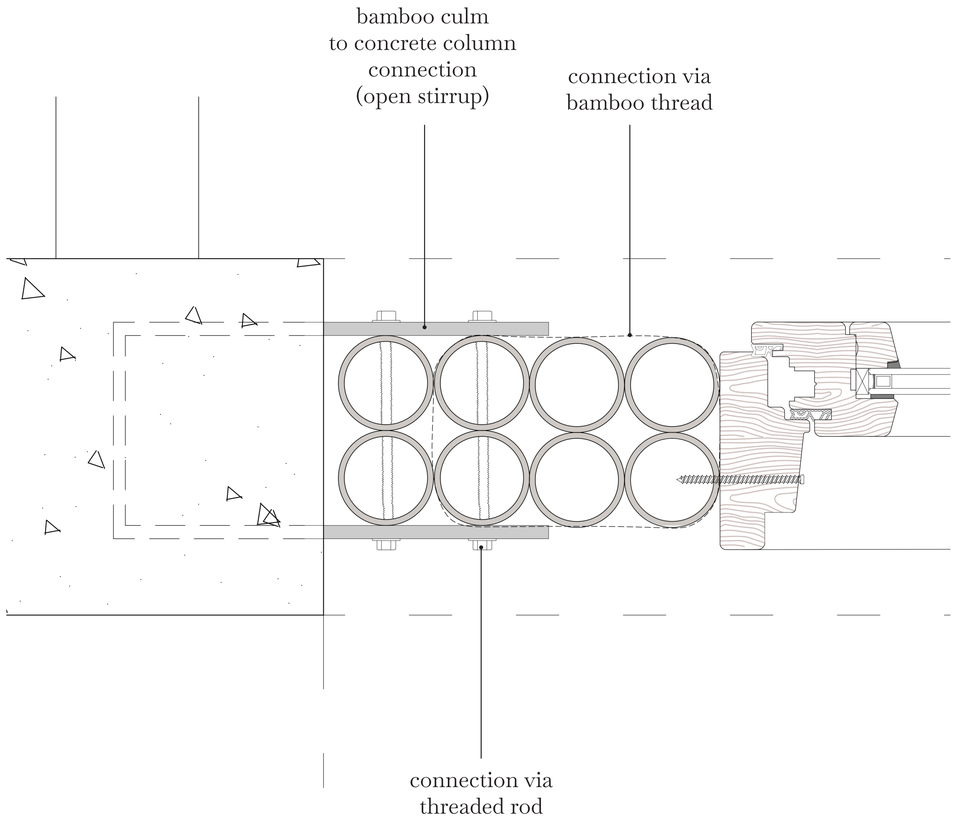
FRAGMENT - Details

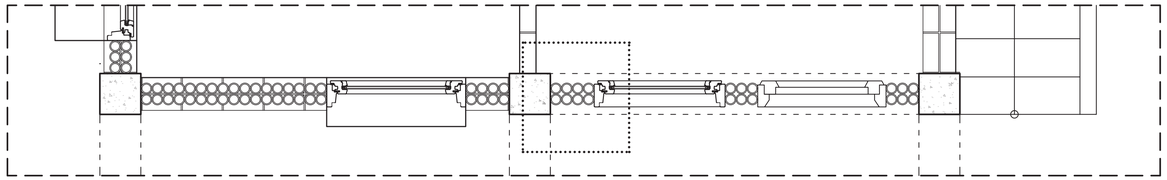




Roof Detail

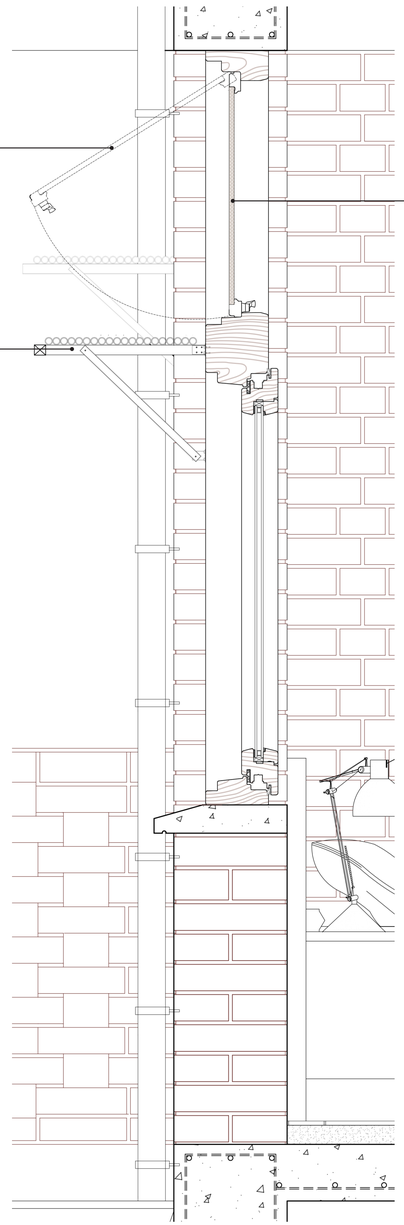
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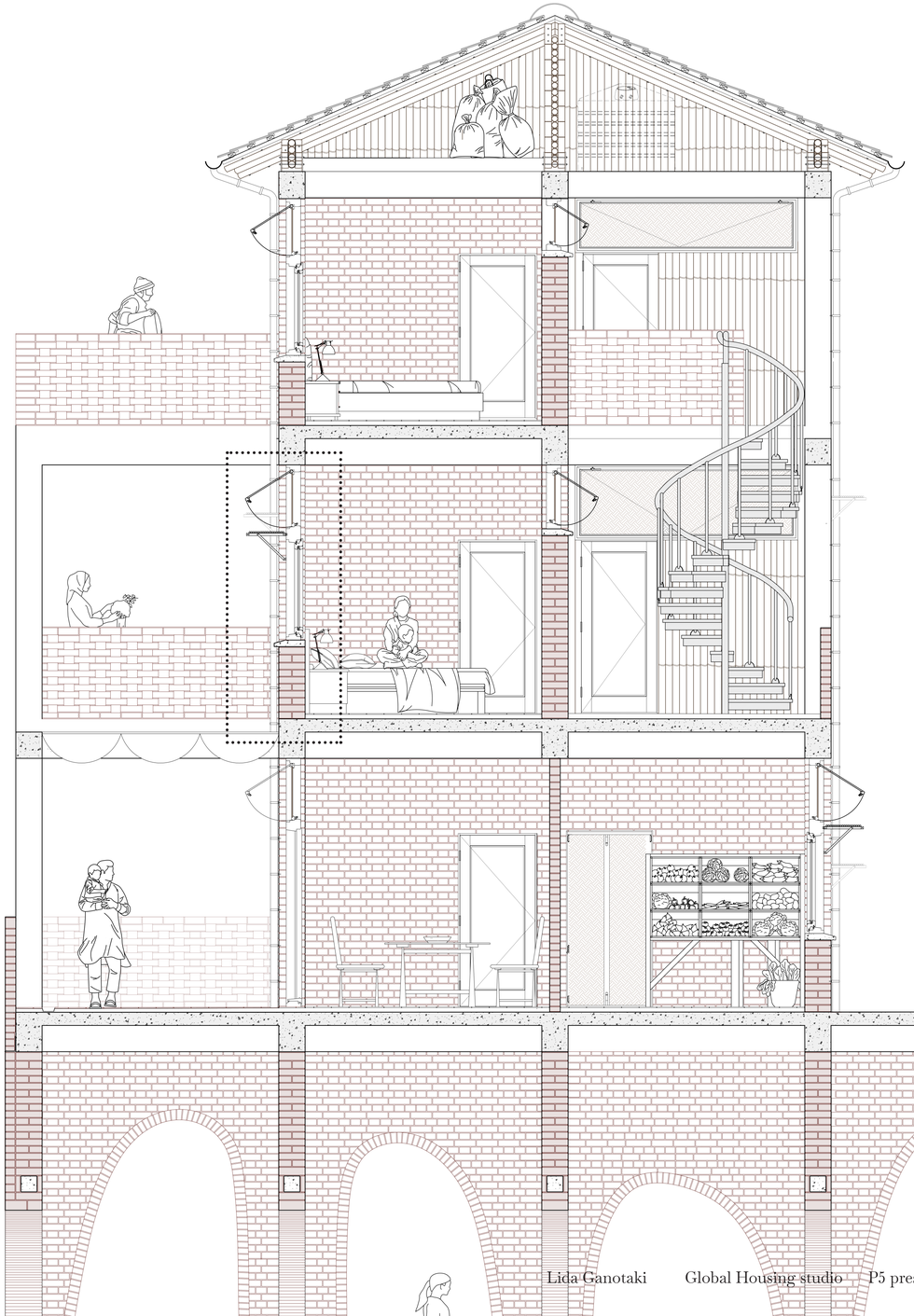


Window Connection Detail

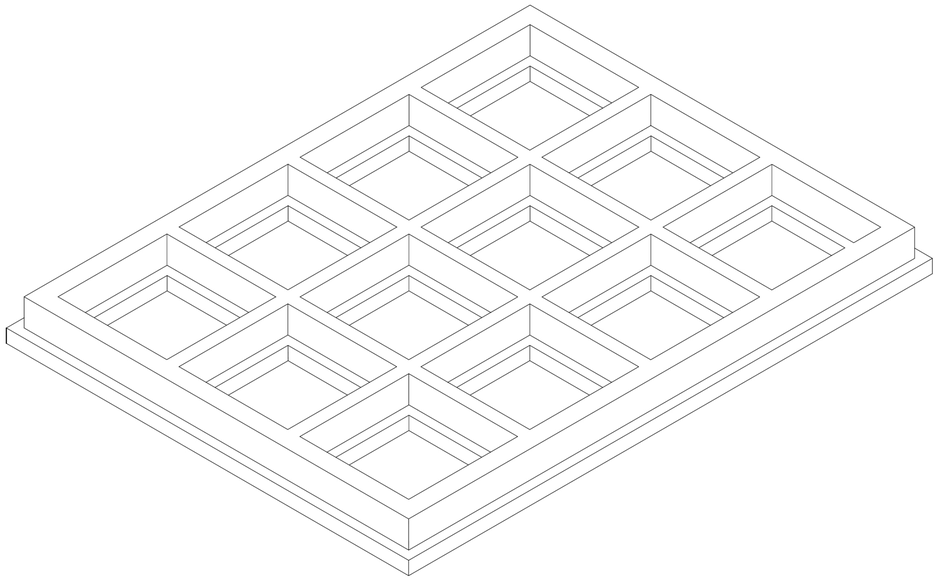
FRAGMENT - Details



Window Detail

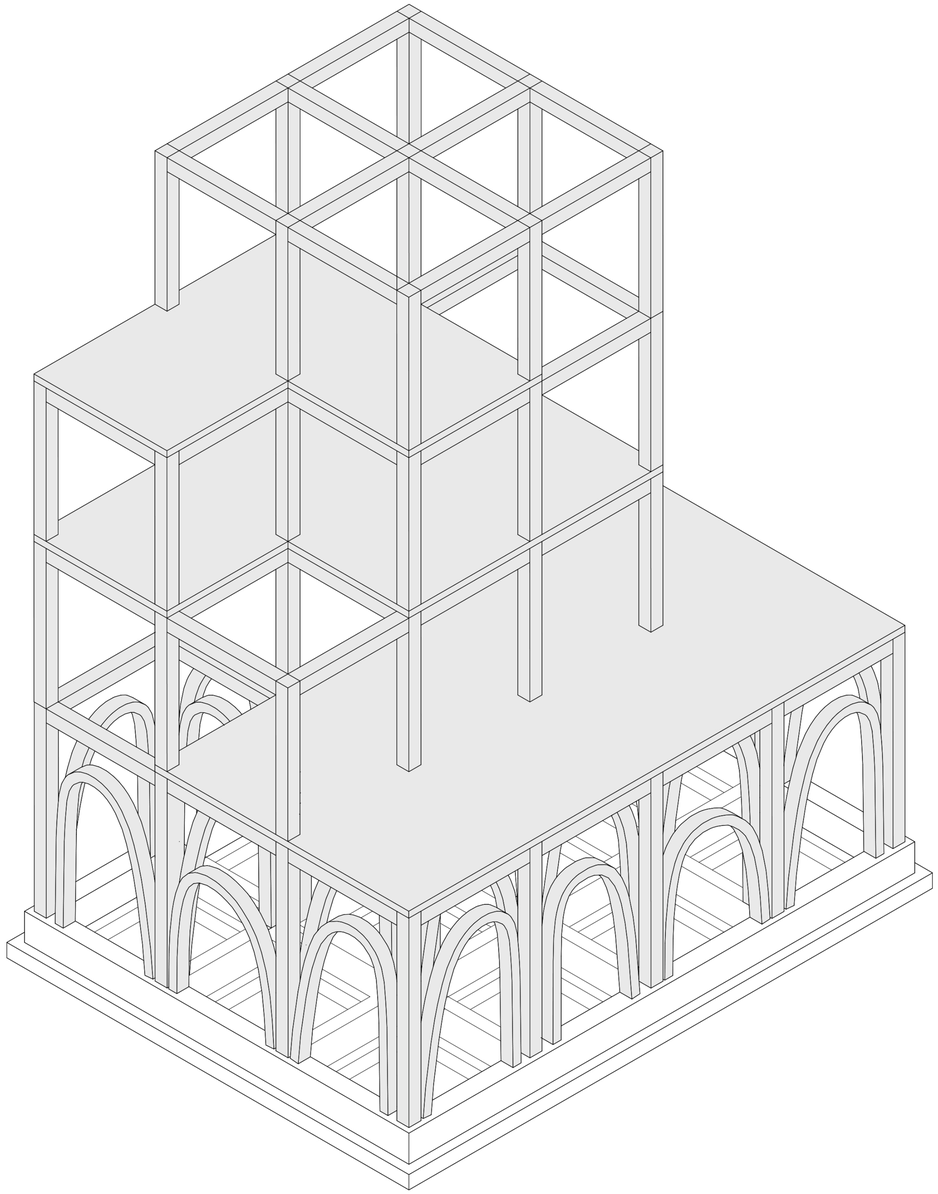


CONSTRUCTION PROCESS

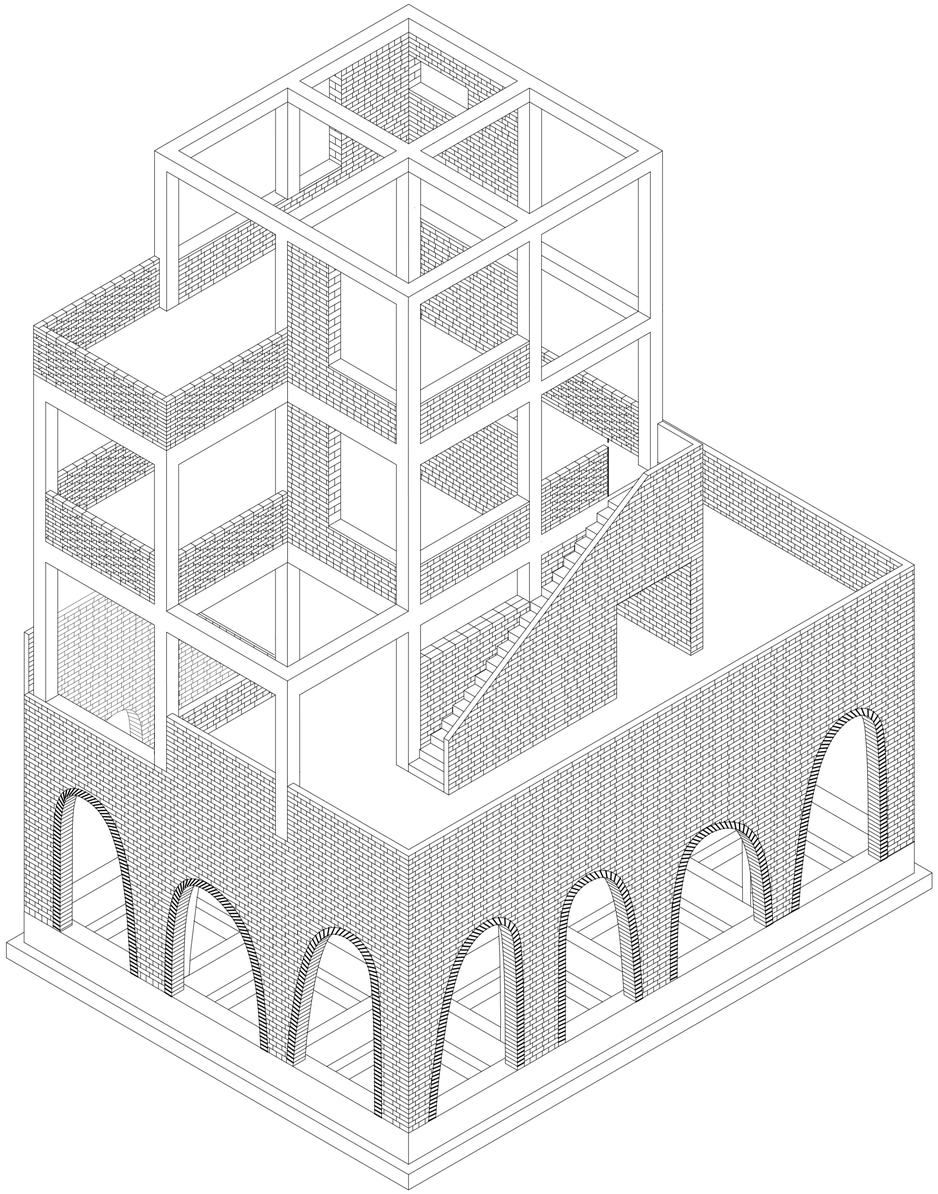


Concrete Foundation

CONSTRUCTION PROCESS

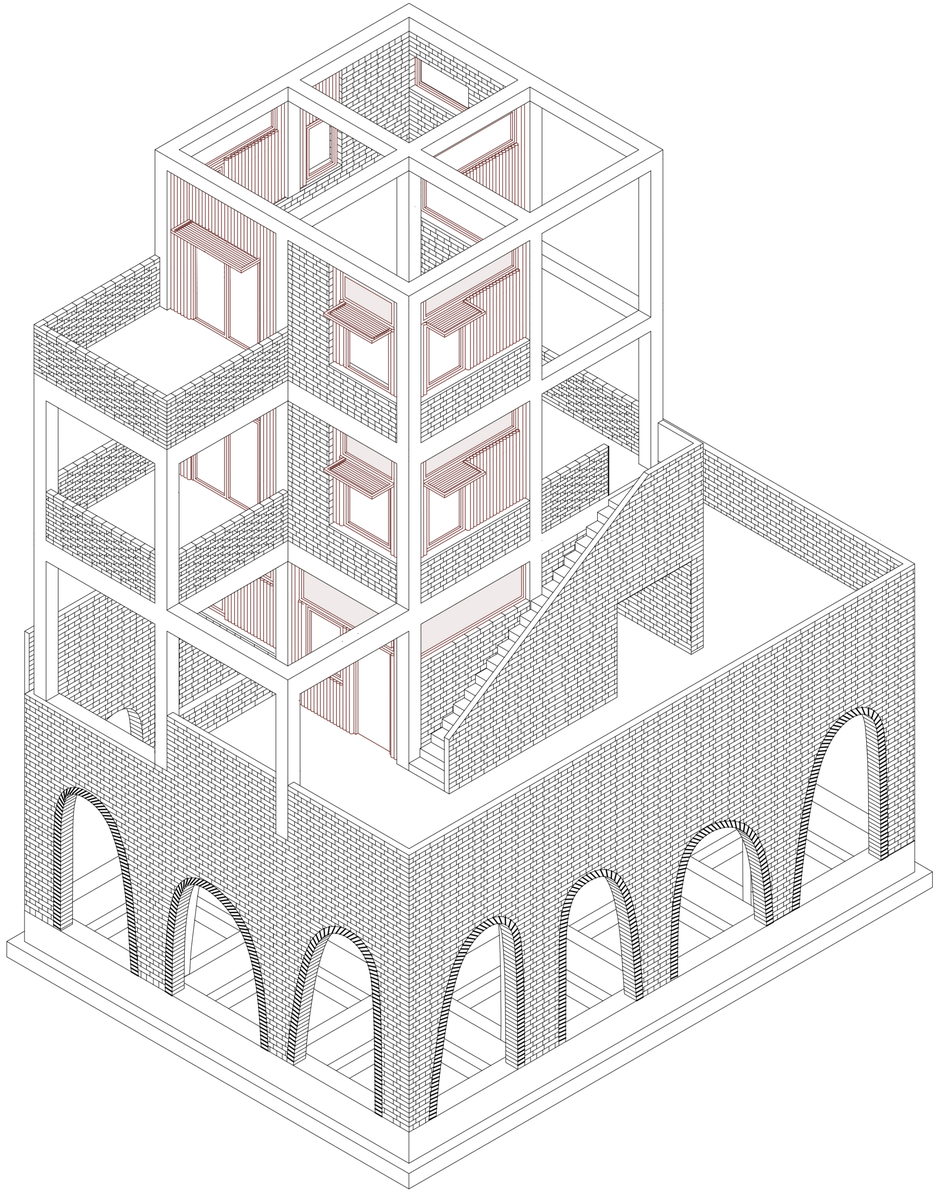


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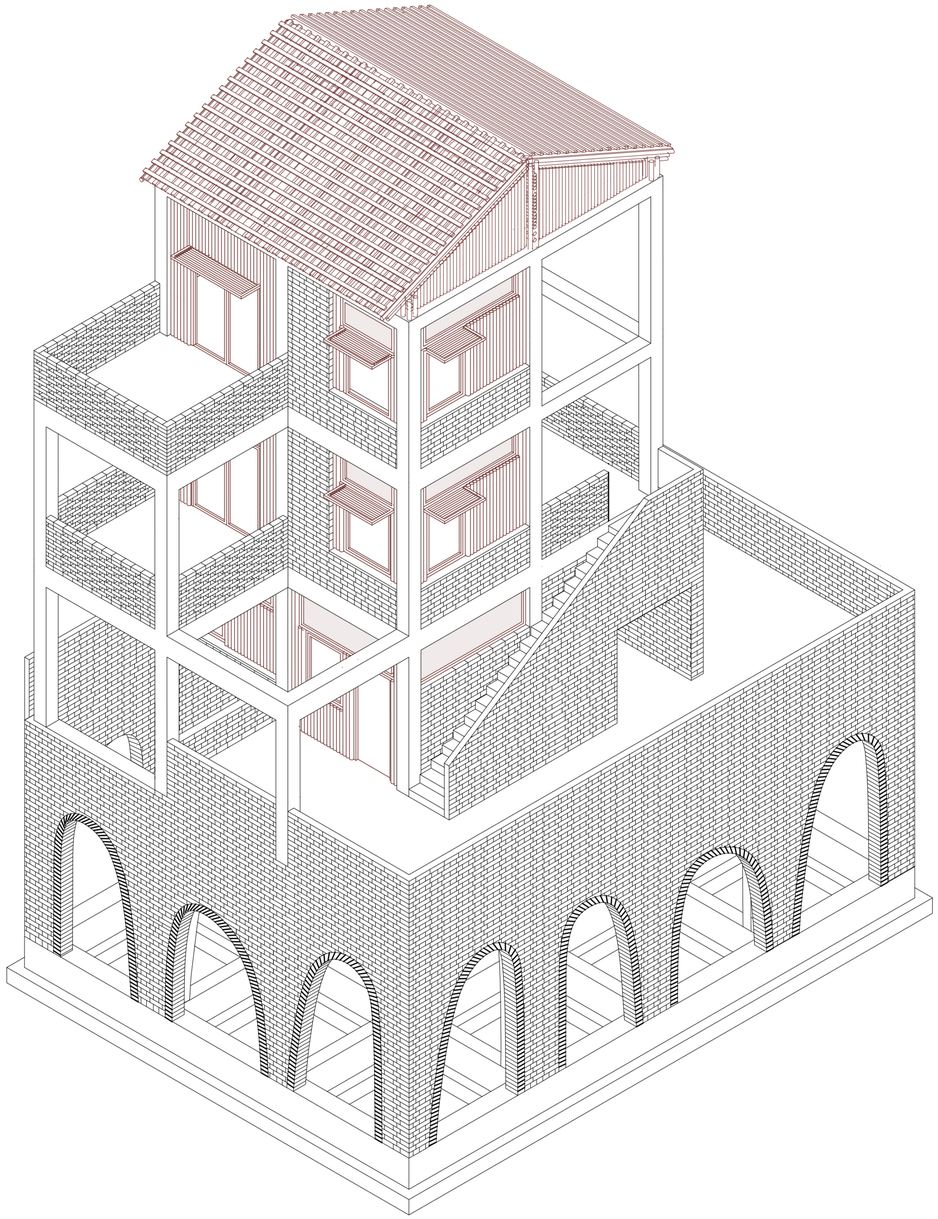


Brick Infill

CONSTRUCTION PROCESS

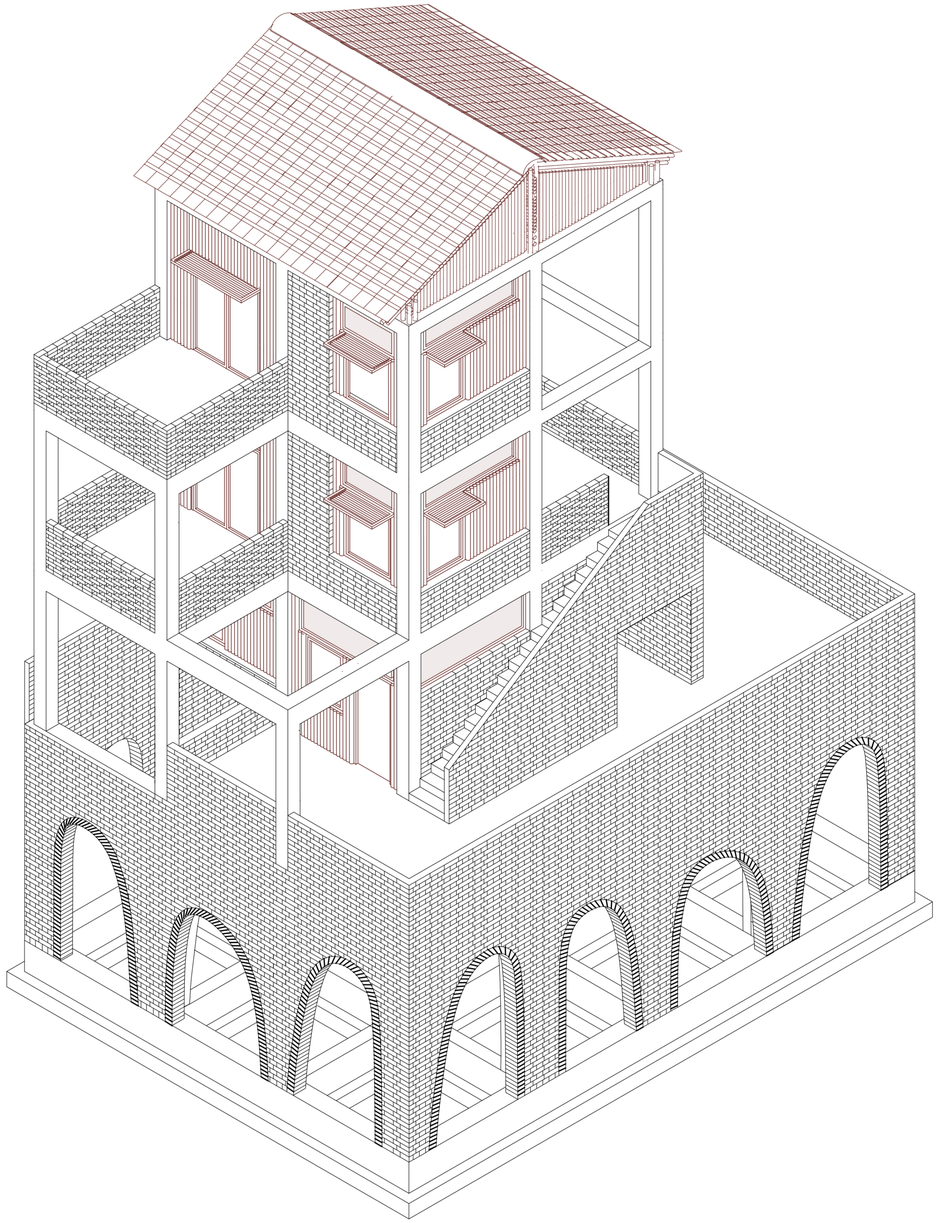


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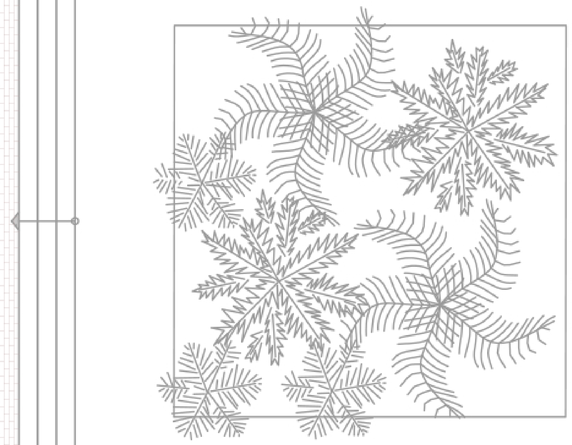


Roof Structure

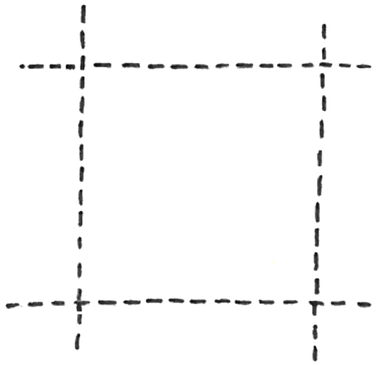
CONSTRUCTION PROCESS



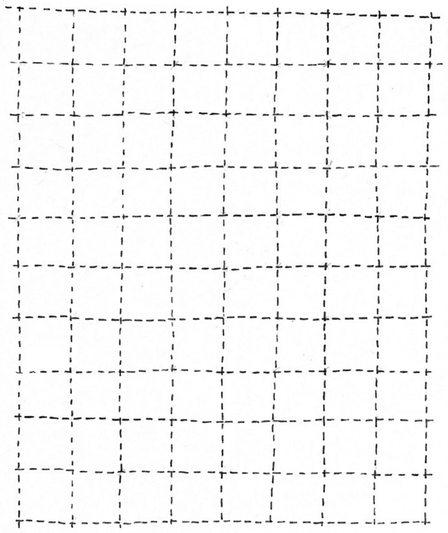
THE CLUSTER

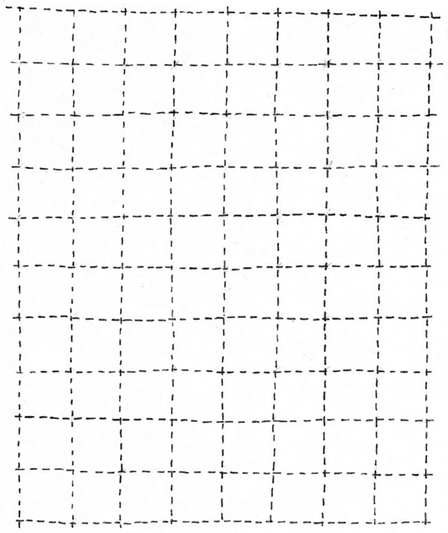


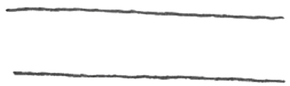
THE CLUSTER



Grid of 3m x 3m

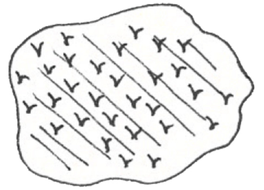






Road to Sylhet City -
Middle income housing

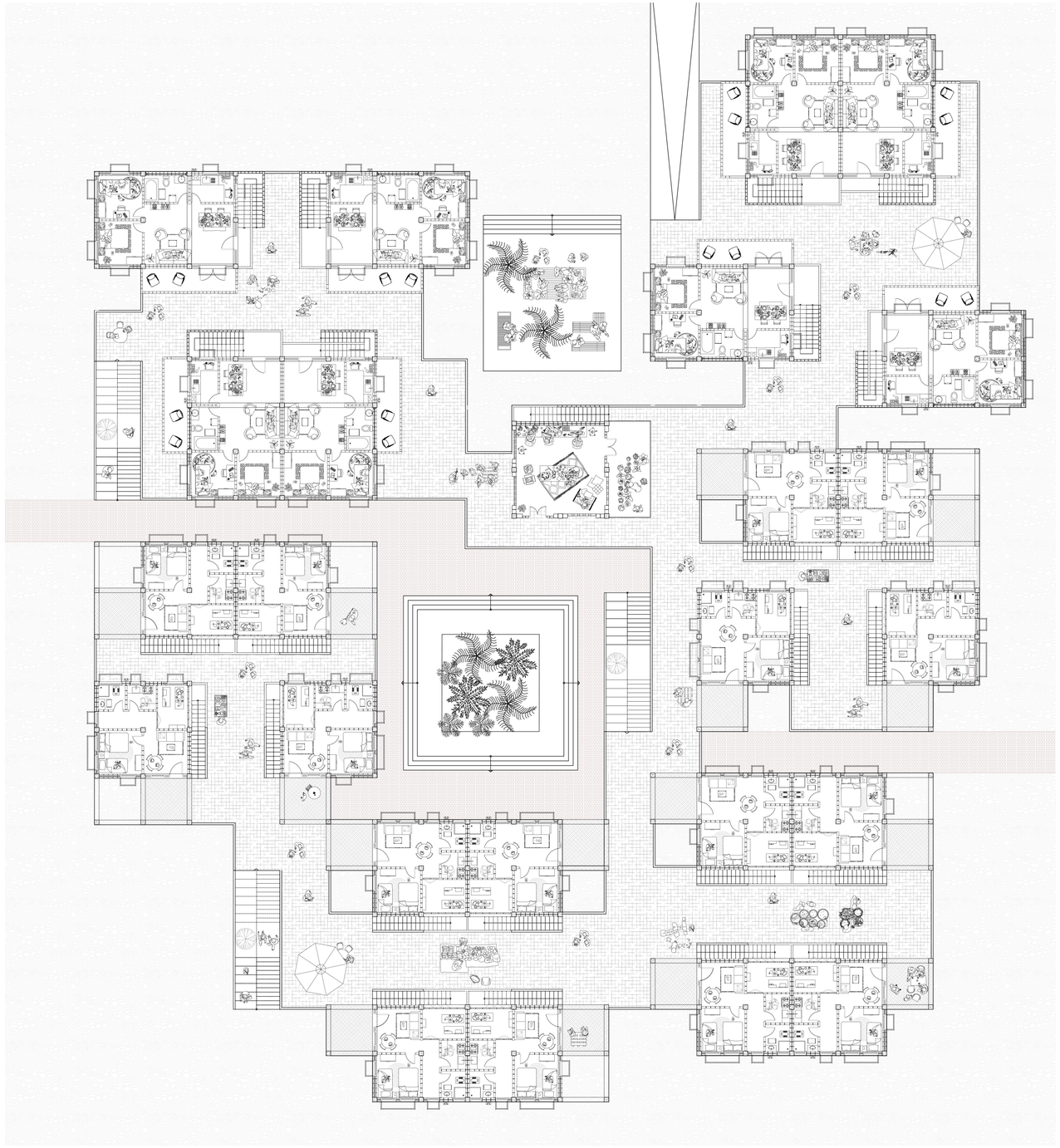




Paddy fields -
Low income housing

Position along the North-South axis

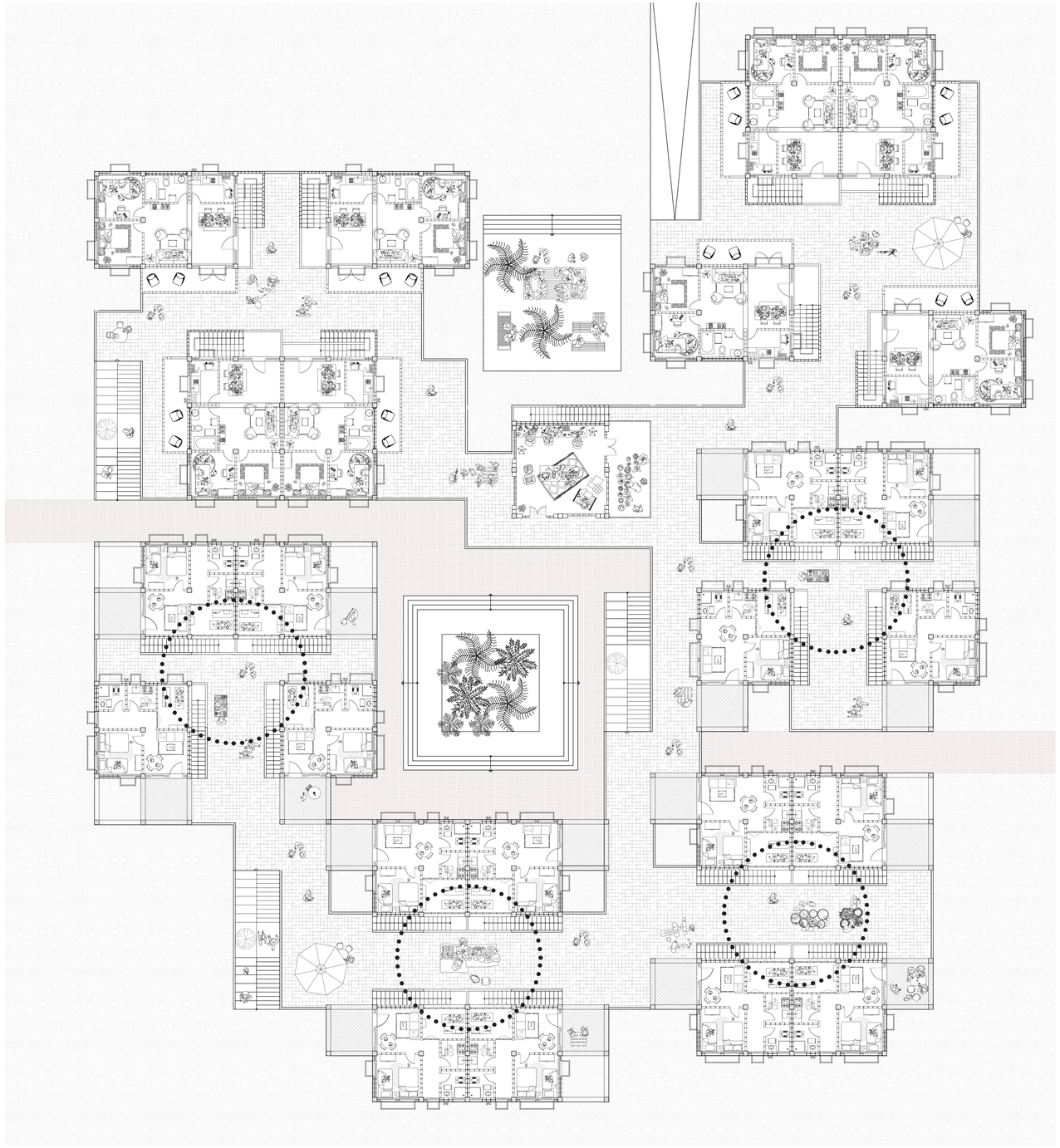
THE CLUSTER



N

Platform Floor Plan

THE CLUSTER



N

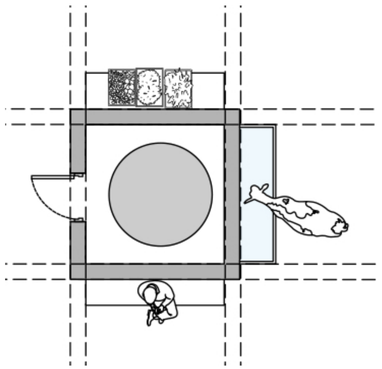
Platform Floor Plan

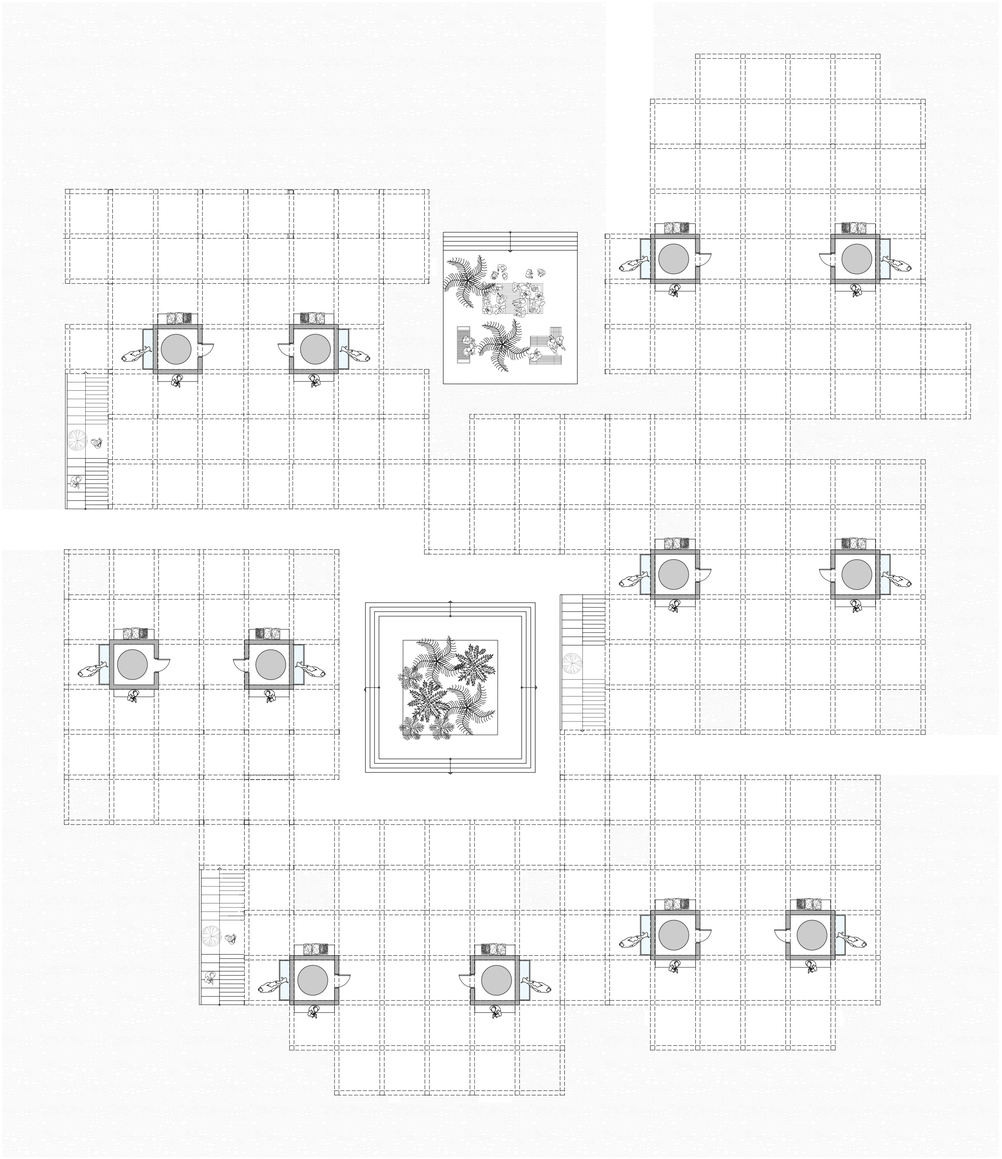
THE CLUSTER



THE CLUSTER - Ground Floor







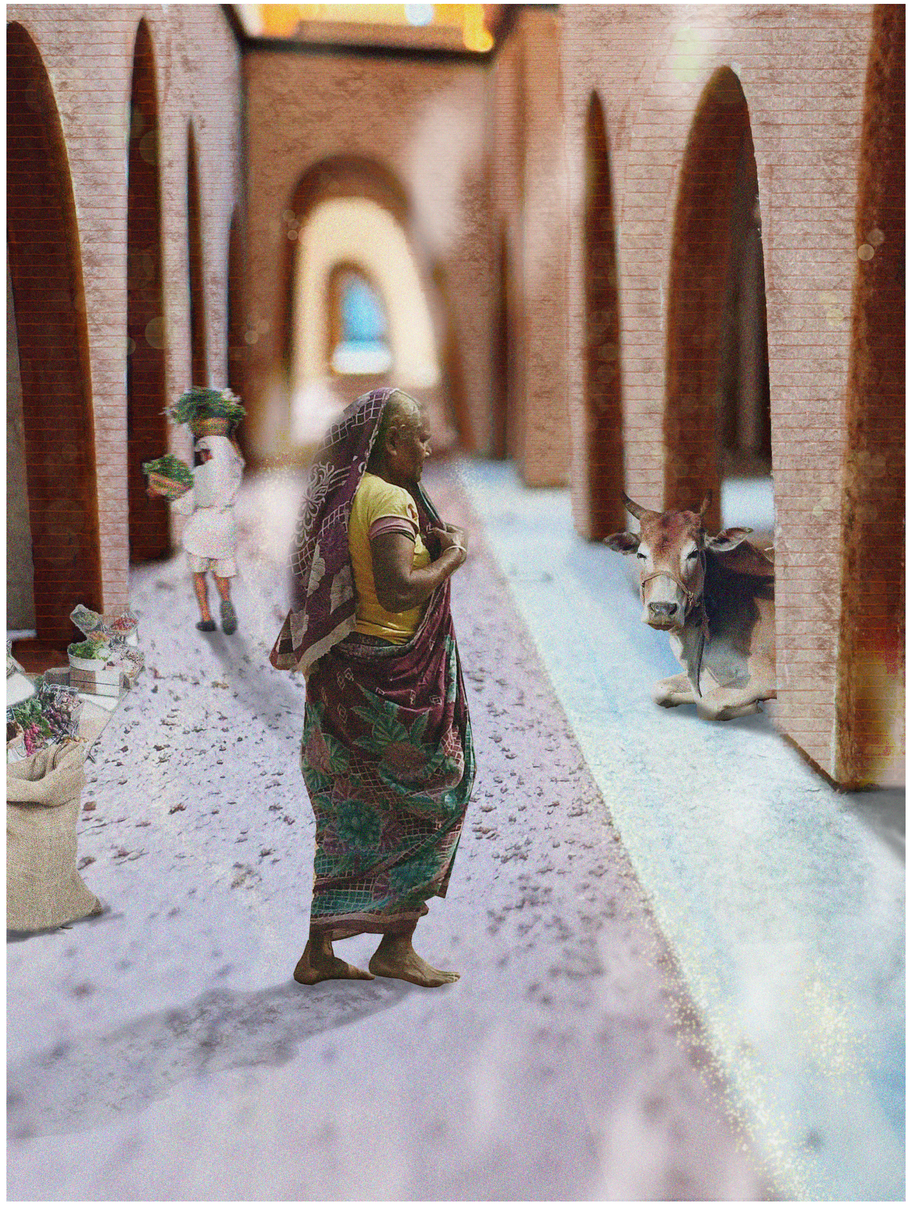


Ground Floor plan

THE CLUSTER - Ground Floor



THE CLUSTER - Ground Floor



URBAN STRATEGY

URBAN STRATEGY



Location of the village

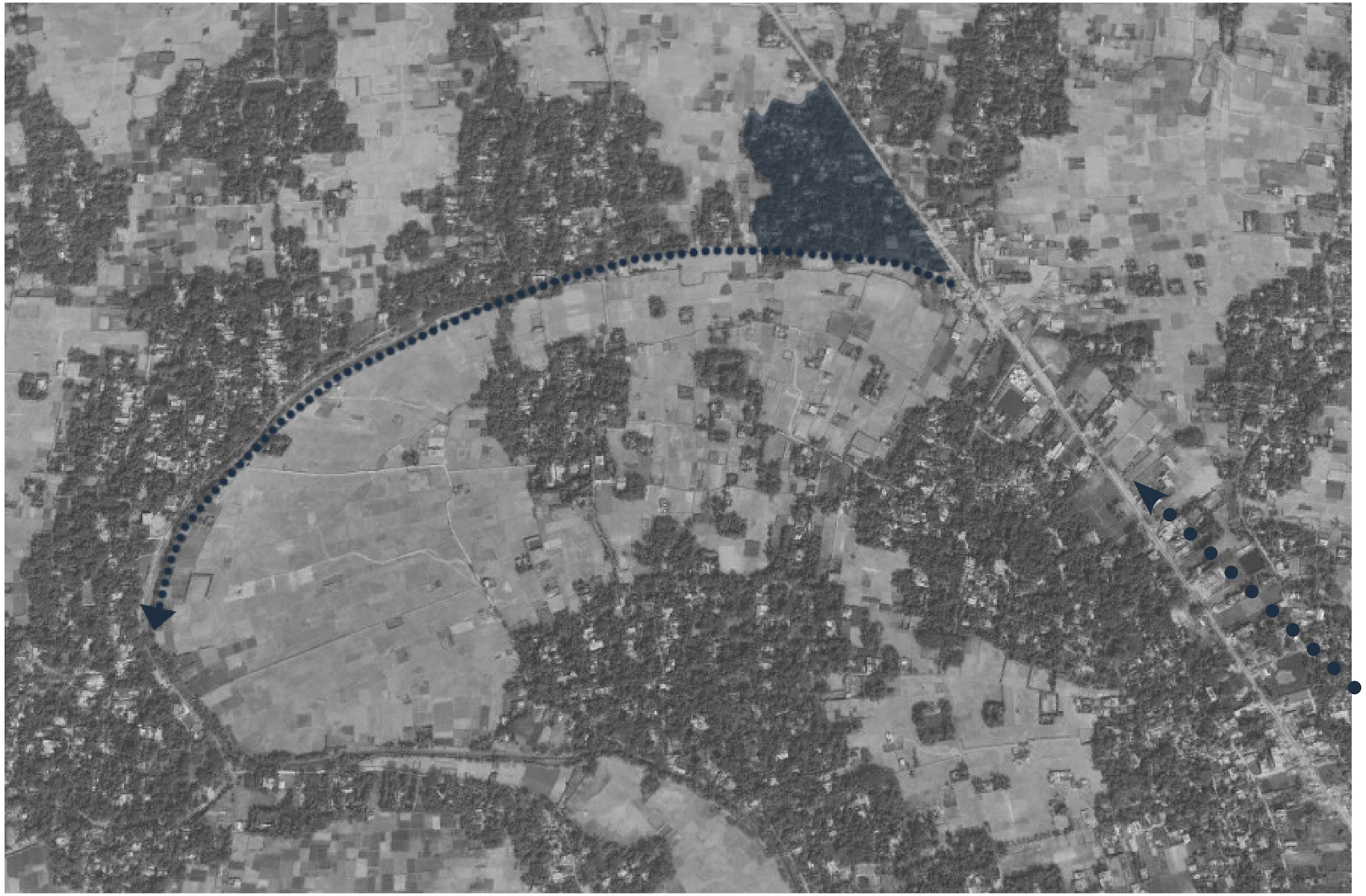
URBAN STRATEGY



area: 4 Ha
2.5 meters lower
max. flood level: 3.5 meters

Project Site

URBAN STRATEGY



Development of villages along curved path

URBAN STRATEGY - managerial scheme



Women of Shonatola
& their families

Middle - income
housing

helps subsidize
low-income housing



People working
in the city nearby

Land Acquisition

Government
Agencies

Private-public
partnership

Private Developers
& Contractors

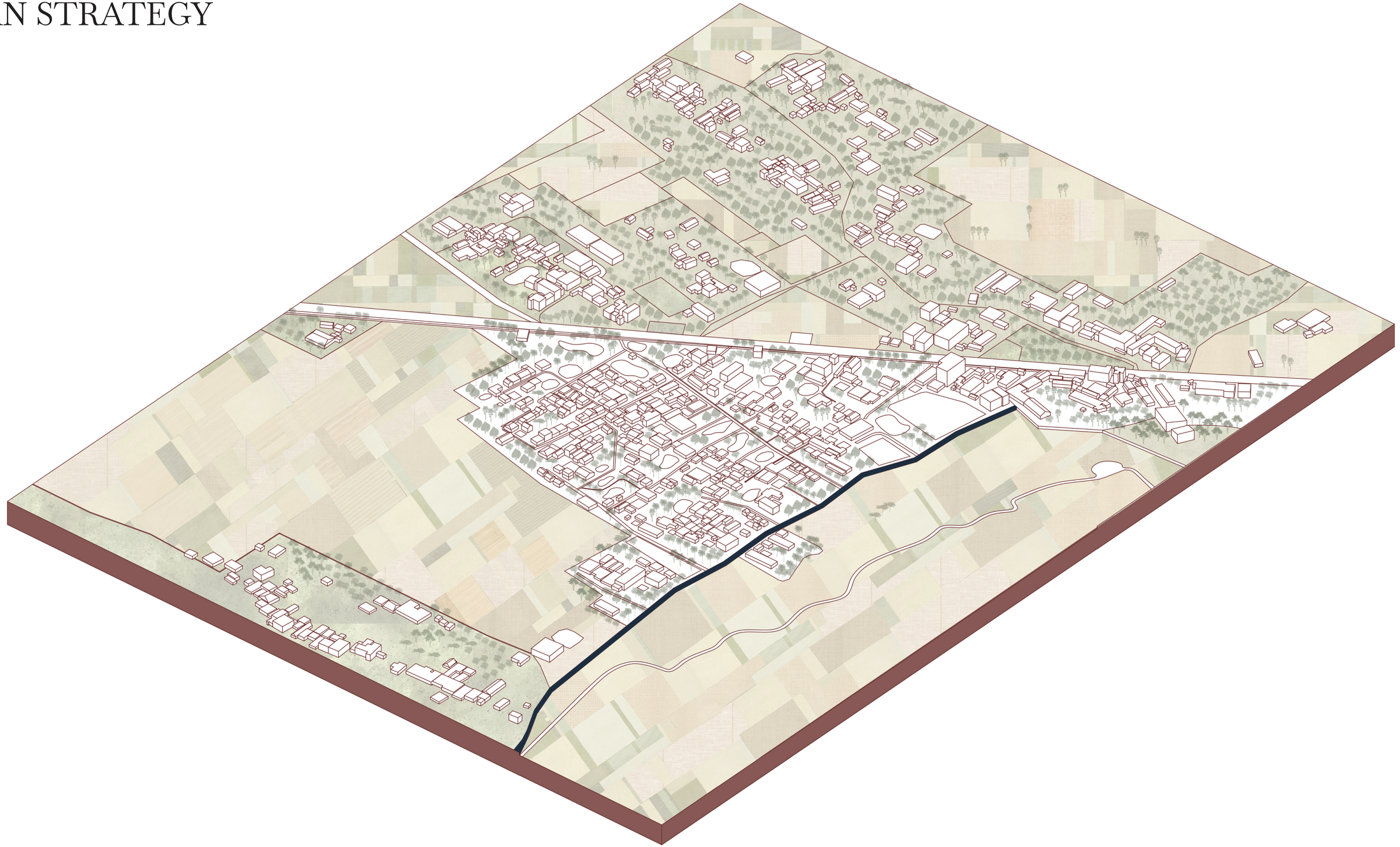
Grants for
low-income housing

NGOs
&
Climate Adaptation
Funds

Loans to
villagers

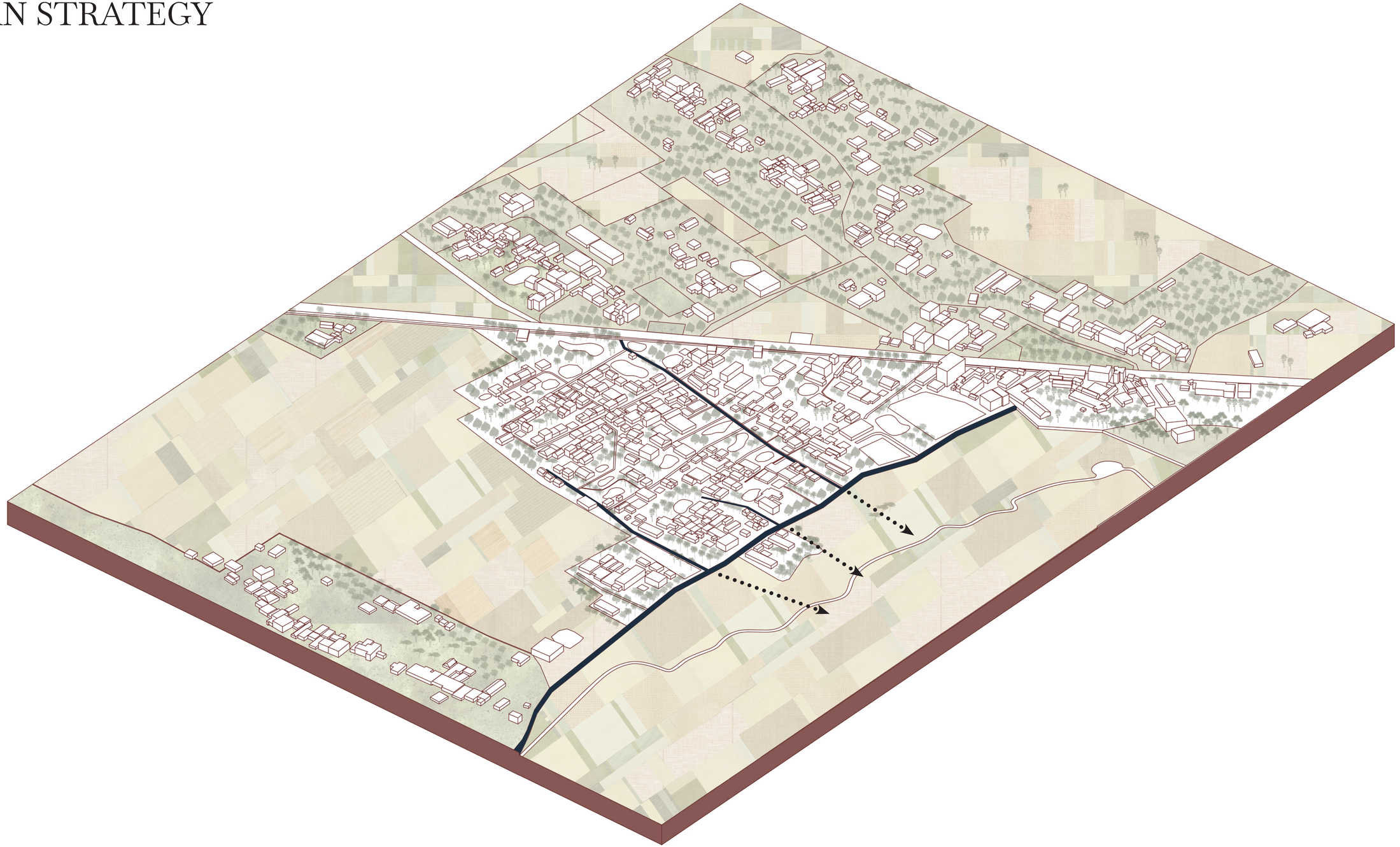
Microfinance
Institutions
(Grameen Bank)

URBAN STRATEGY



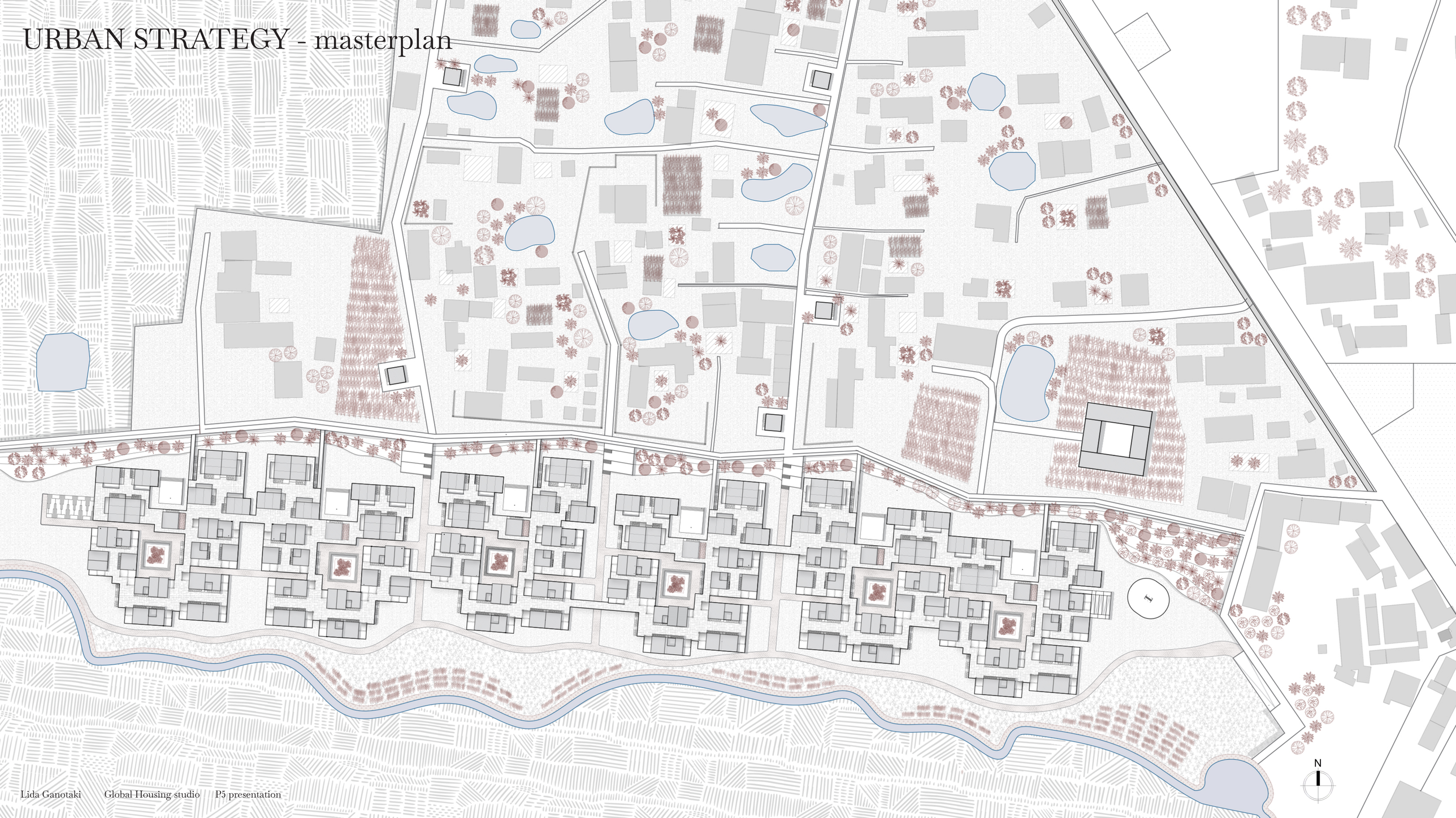
Main road as organizational axis

URBAN STRATEGY

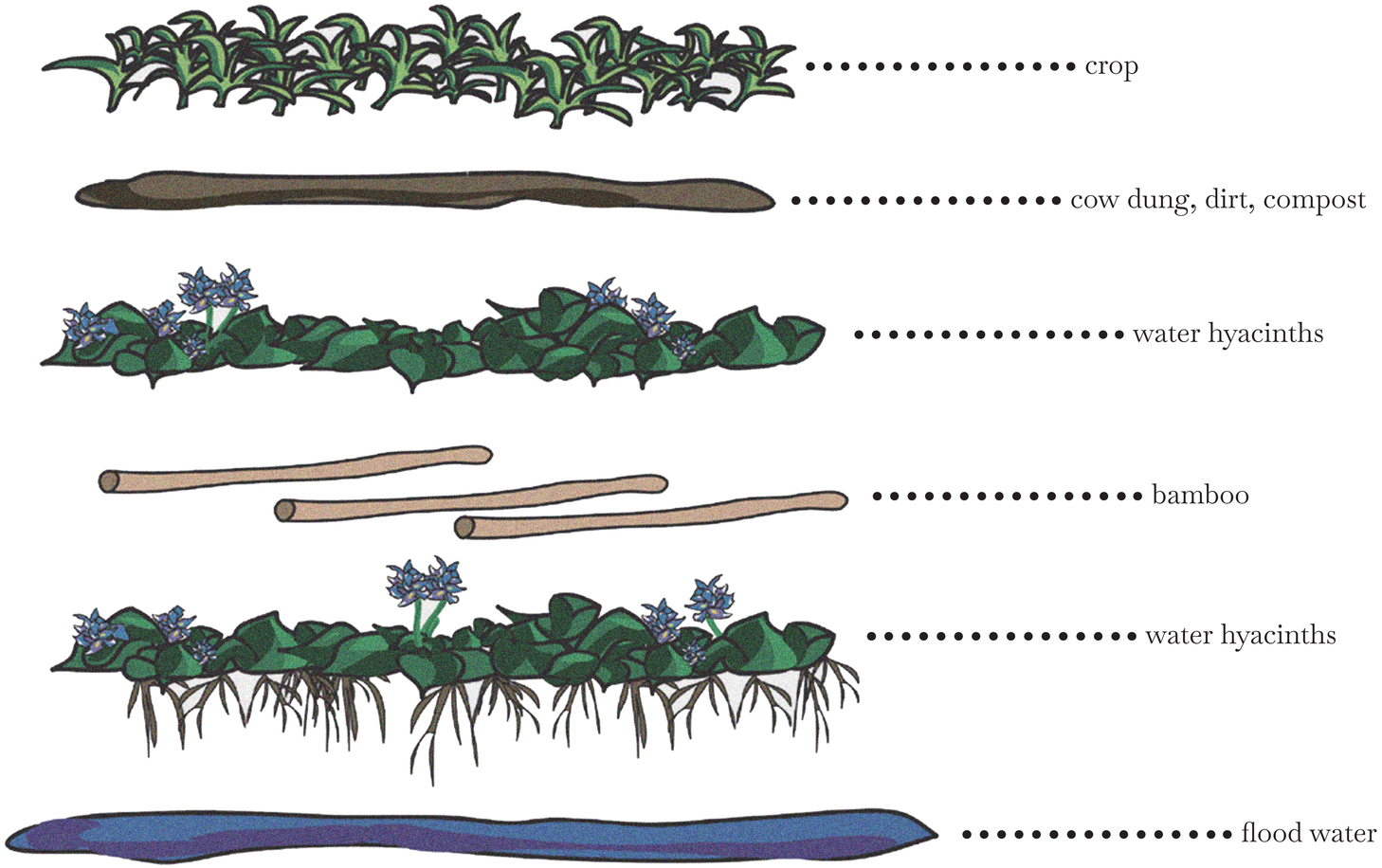


Village roads extended as new routes into the site

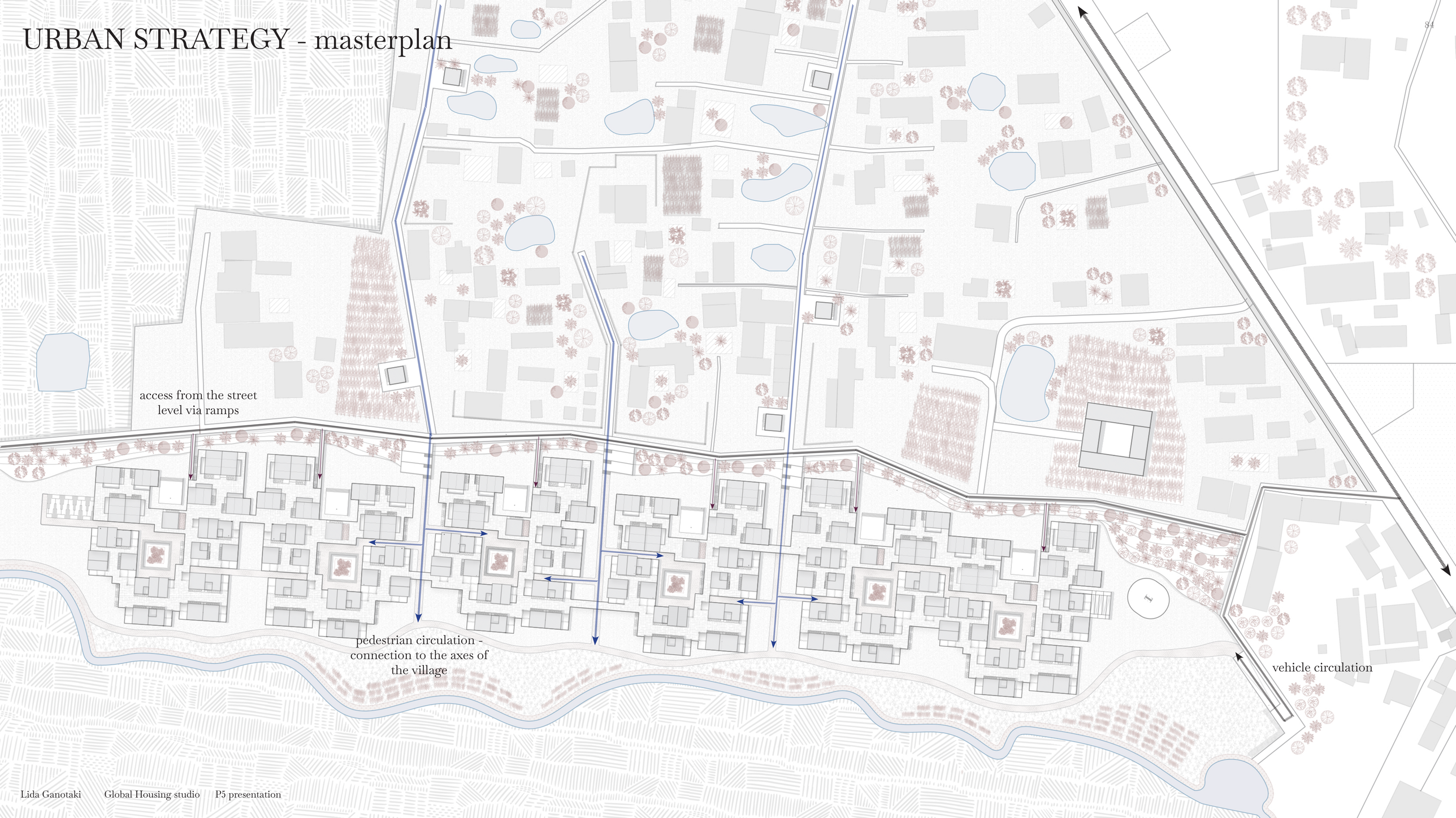
URBAN STRATEGY - masterplan



URBAN STRATEGY - masterplan



URBAN STRATEGY - masterplan



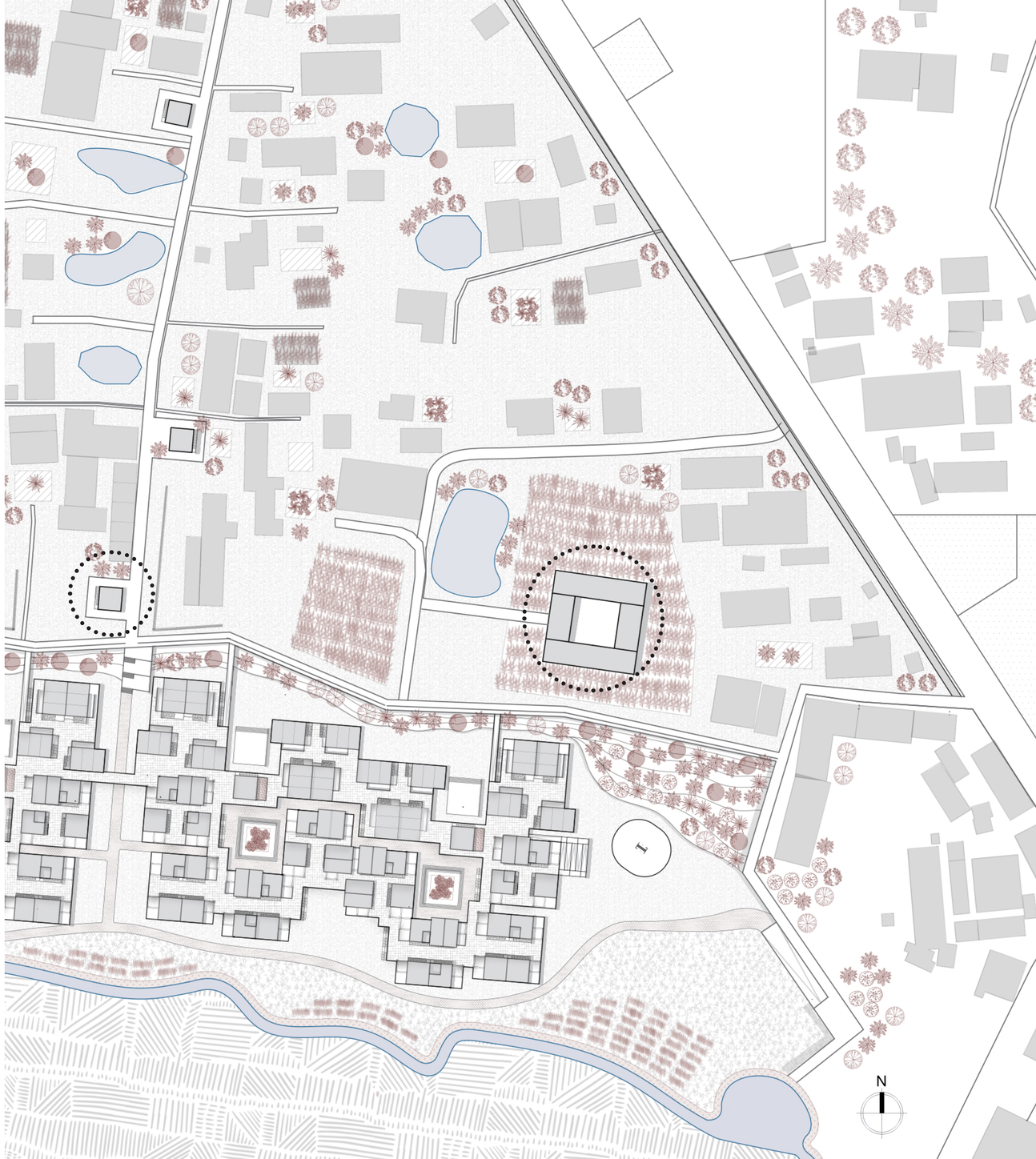
URBAN STRATEGY - masterplan

Number of dwellings: 150

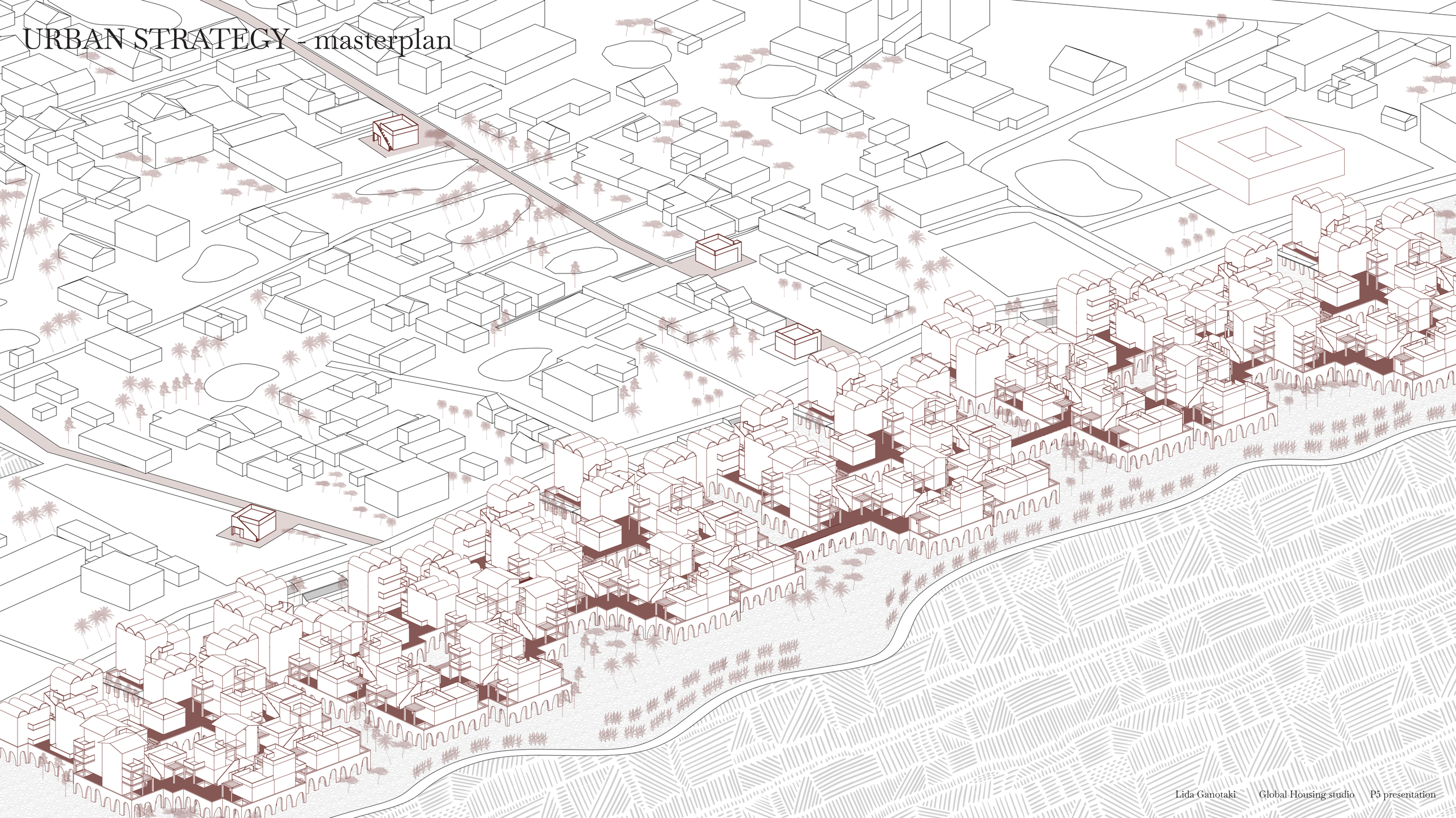
GSI : ~ 0

FSI (initial): 0.3

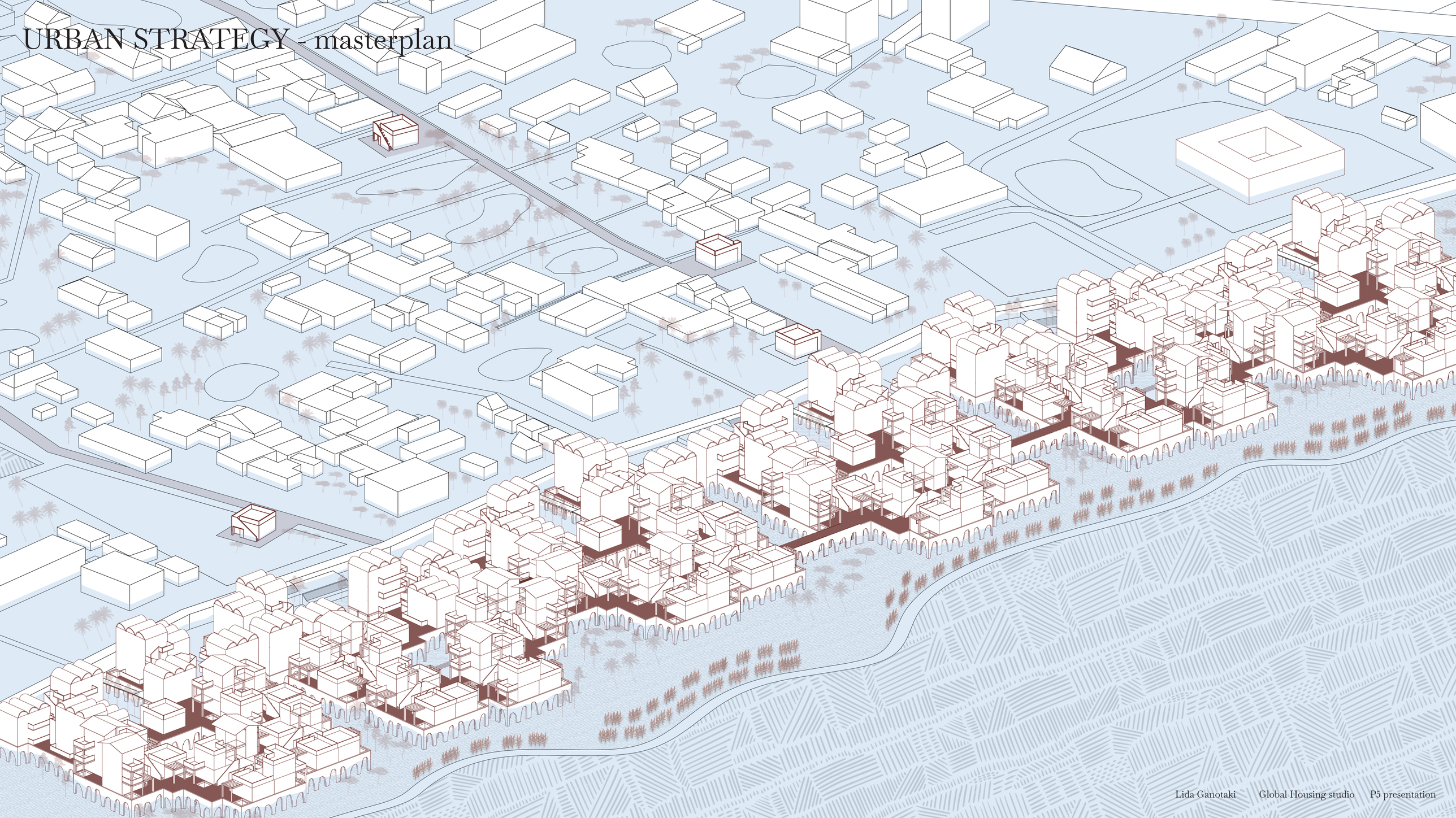
FSI (maximum): 0.8



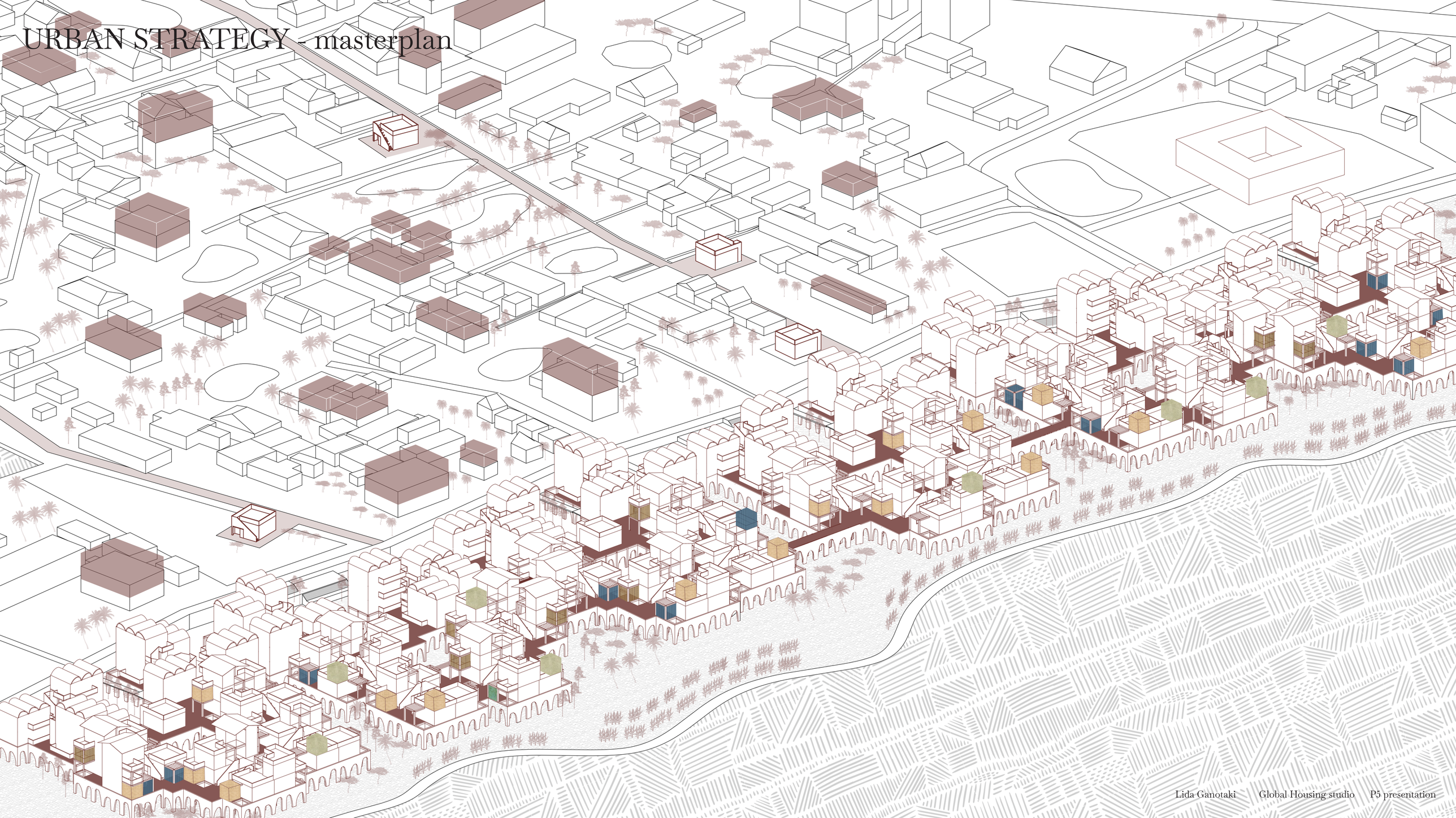
URBAN STRATEGY - masterplan

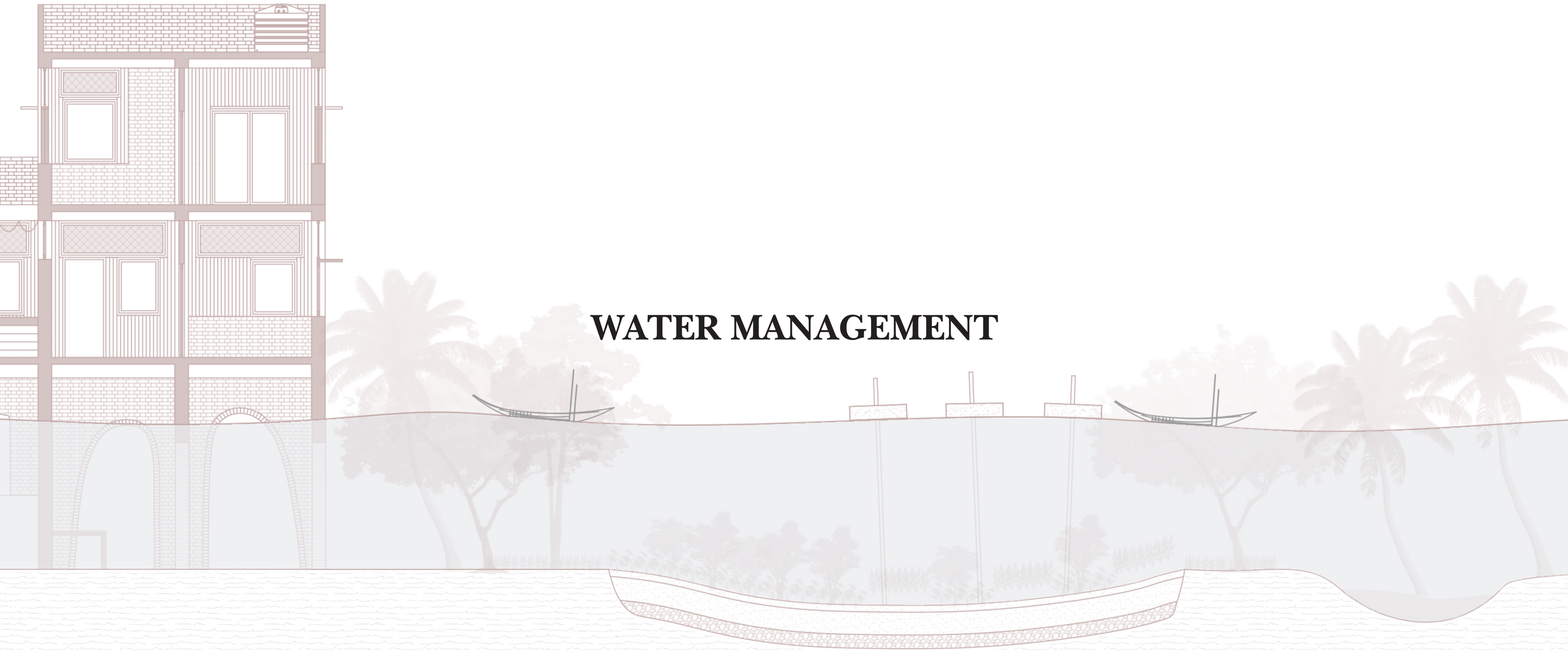


URBAN STRATEGY - masterplan



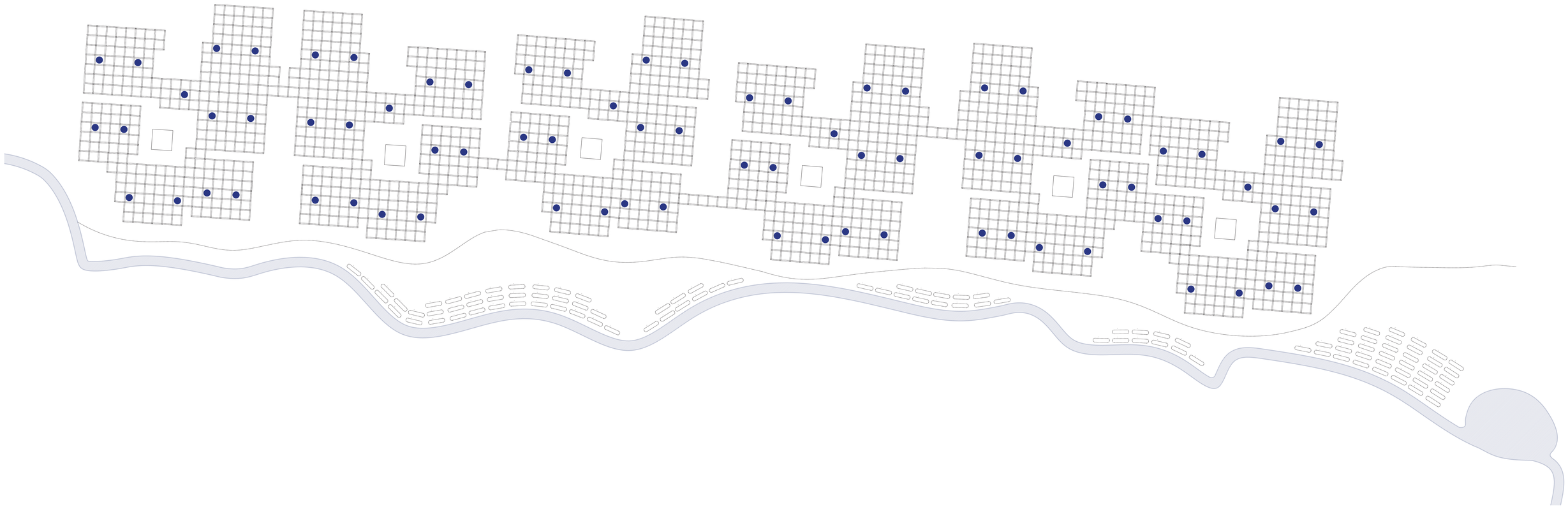
URBAN STRATEGY - masterplan





WATER MANAGEMENT

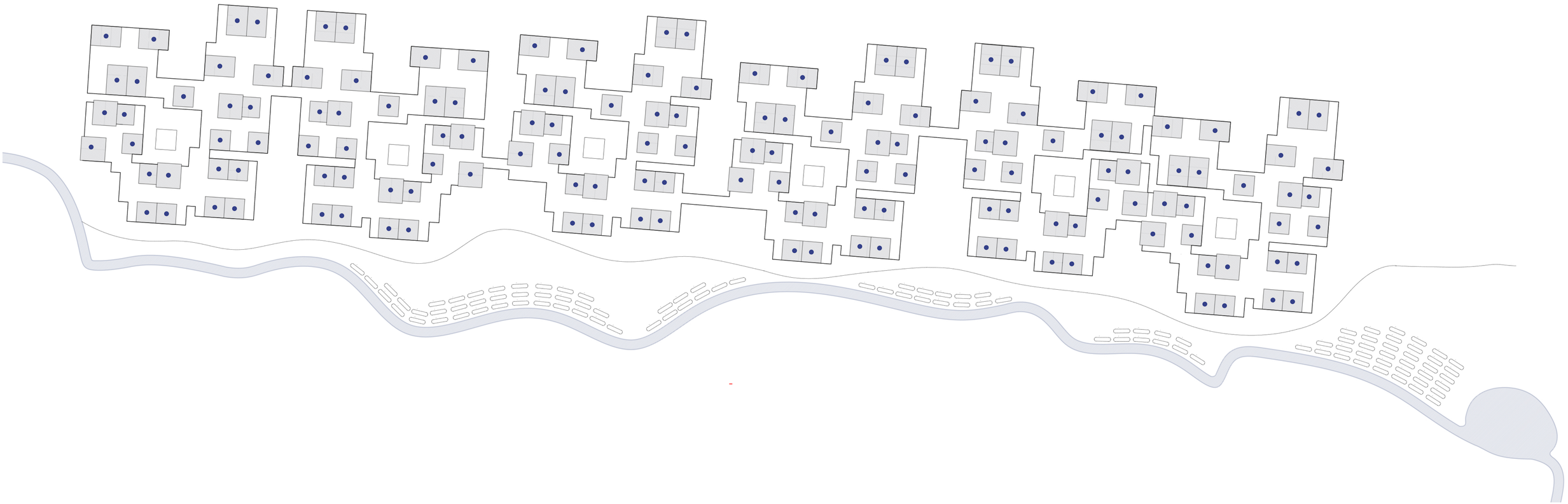
WATER MANAGEMENT



rainwater is collected from the roofs and stored in concrete tanks on the ground floor

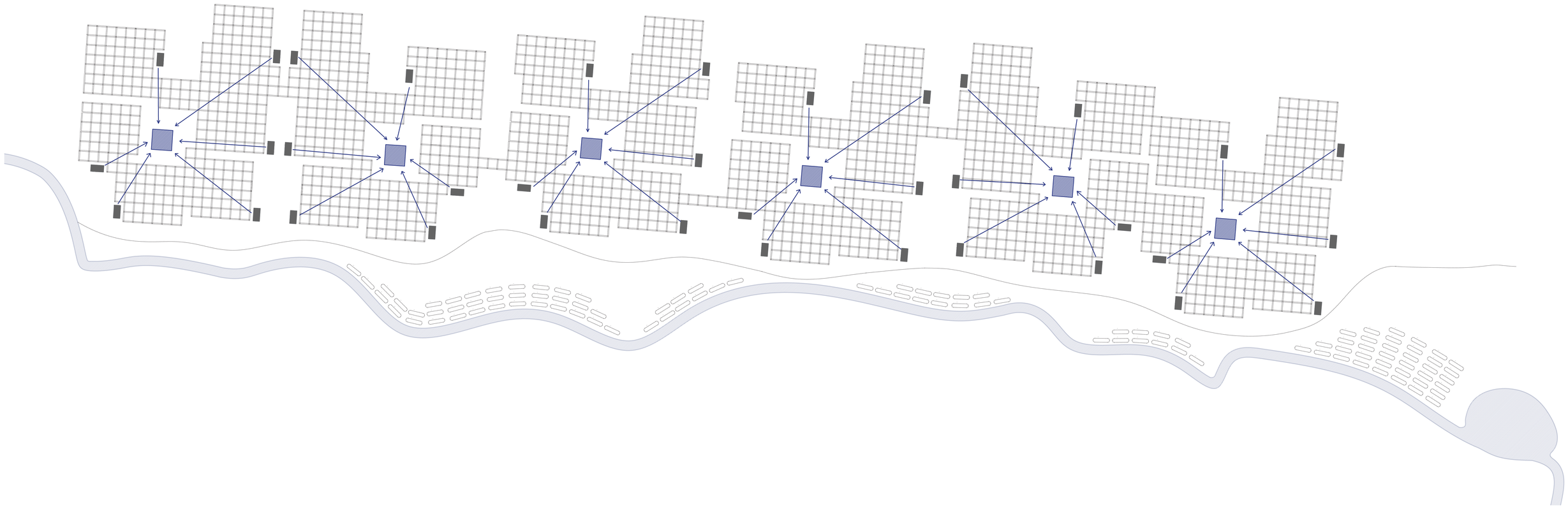
(two 6000 l tanks per 4 dwellings)

WATER MANAGEMENT



after filtration, the water is pumped up to a smaller water tank in each dwelling

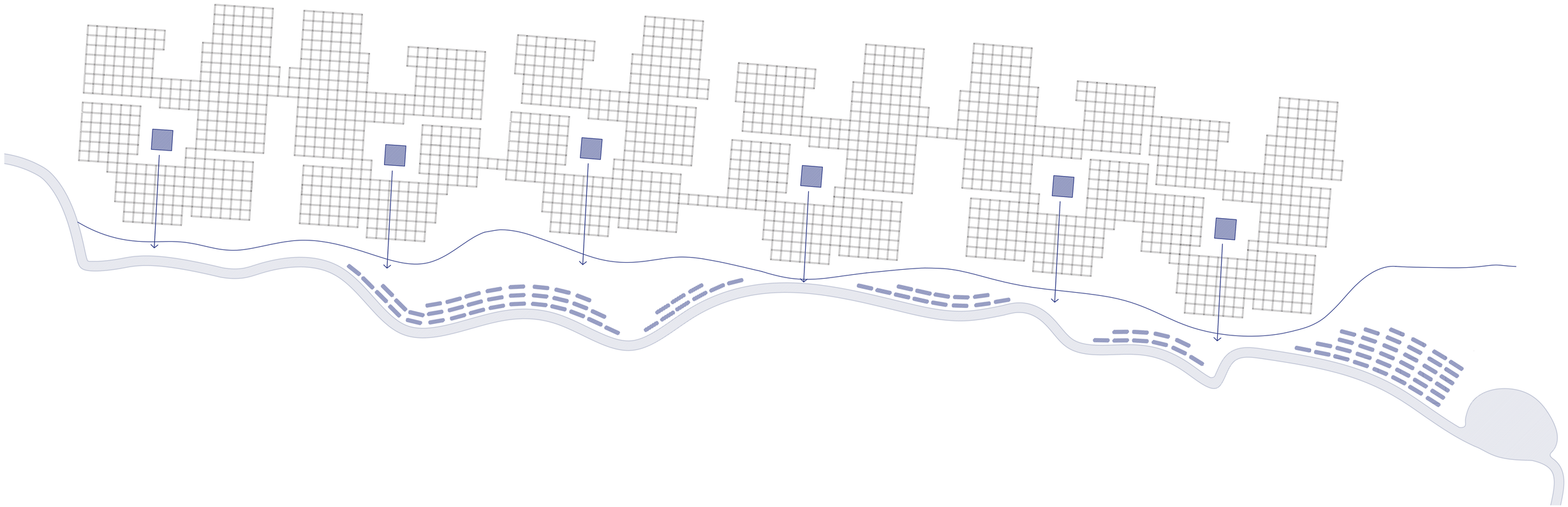
WATER MANAGEMENT



greywater and blackwater flow into underground septic tanks
(one 5000 l tank per 4 dwellings)

after intial filtration, the water flows into a constructed wetland at the center of each cluster

WATER MANAGEMENT

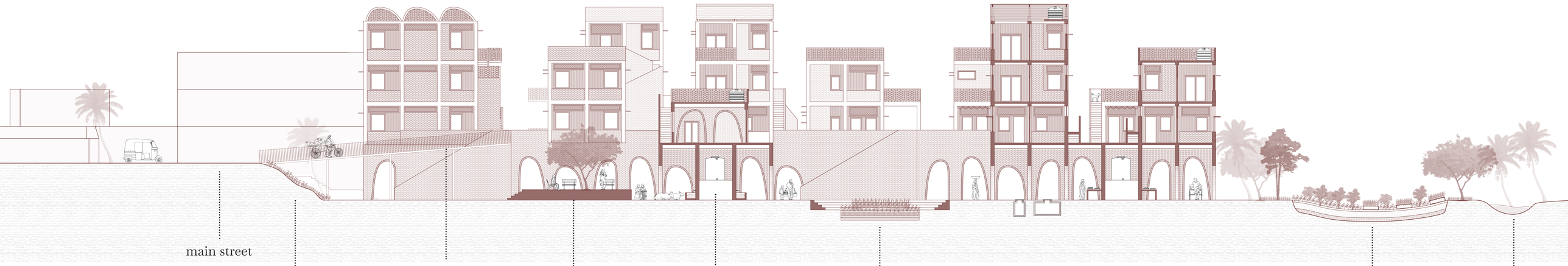


the water then flows into and infiltration/floating garden system on the south side of the site

WATER MANAGEMENT



URBAN STRATEGY - dry season



main street

green buffer with
flood-resilient plants

access from the street
level with ramps

raised platform

rainwater storage
tanks raised
above flood level

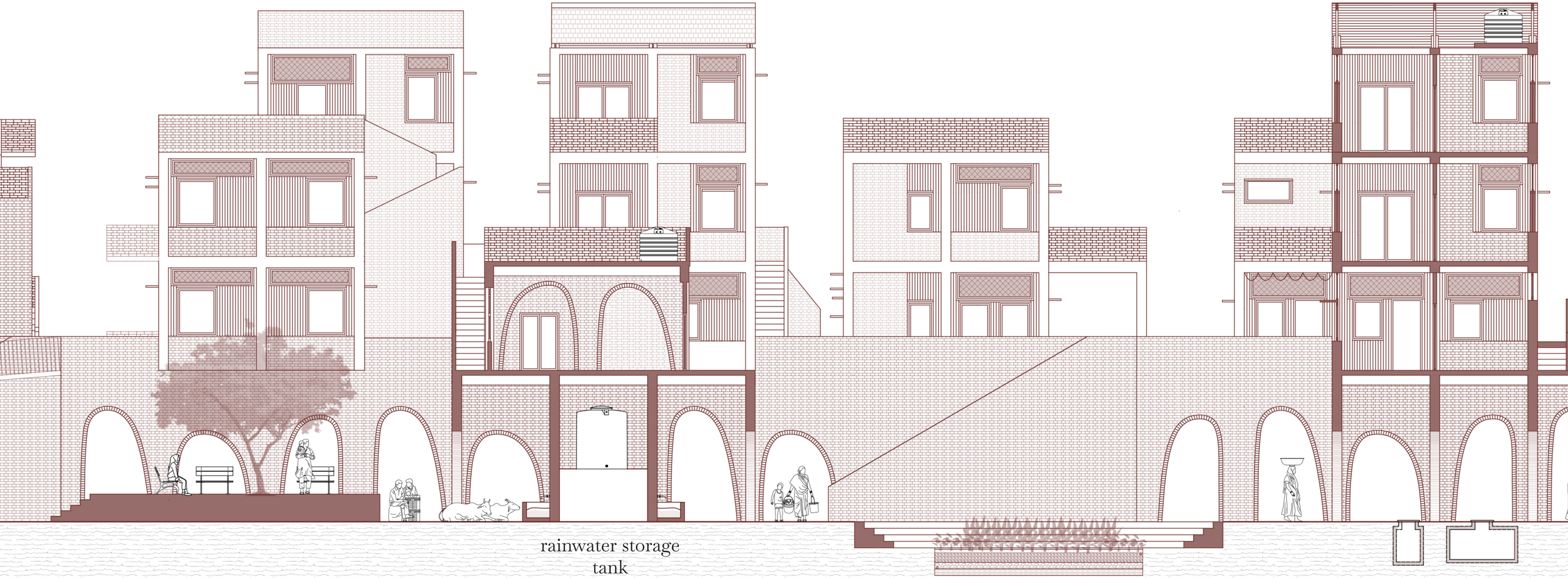
constructed wetland

infiltration garden/floating
garden system

-the floating gardens
function
as raised plant beds-

stream

URBAN STRATEGY - dry season



rainwater storage tank

constructed wetland

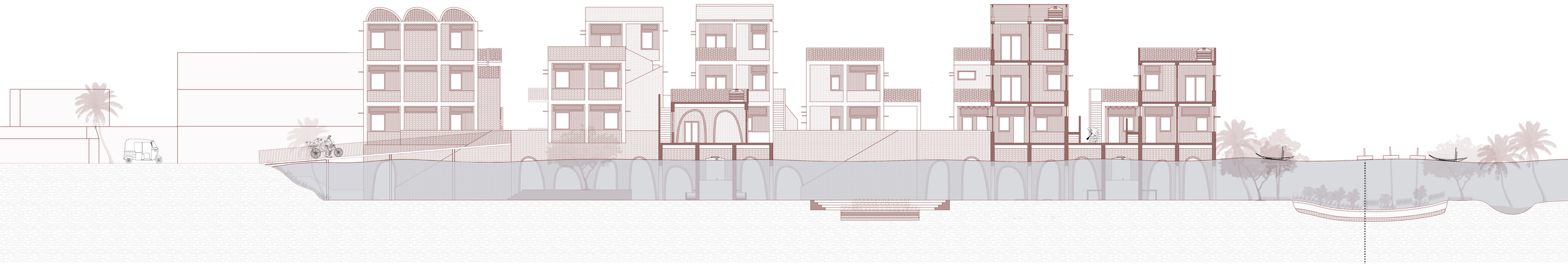
MASTERPLAN SECTION - dry season



infiltration garden/
floating
garden system

-the floating gardens
function
as raised plant beds-

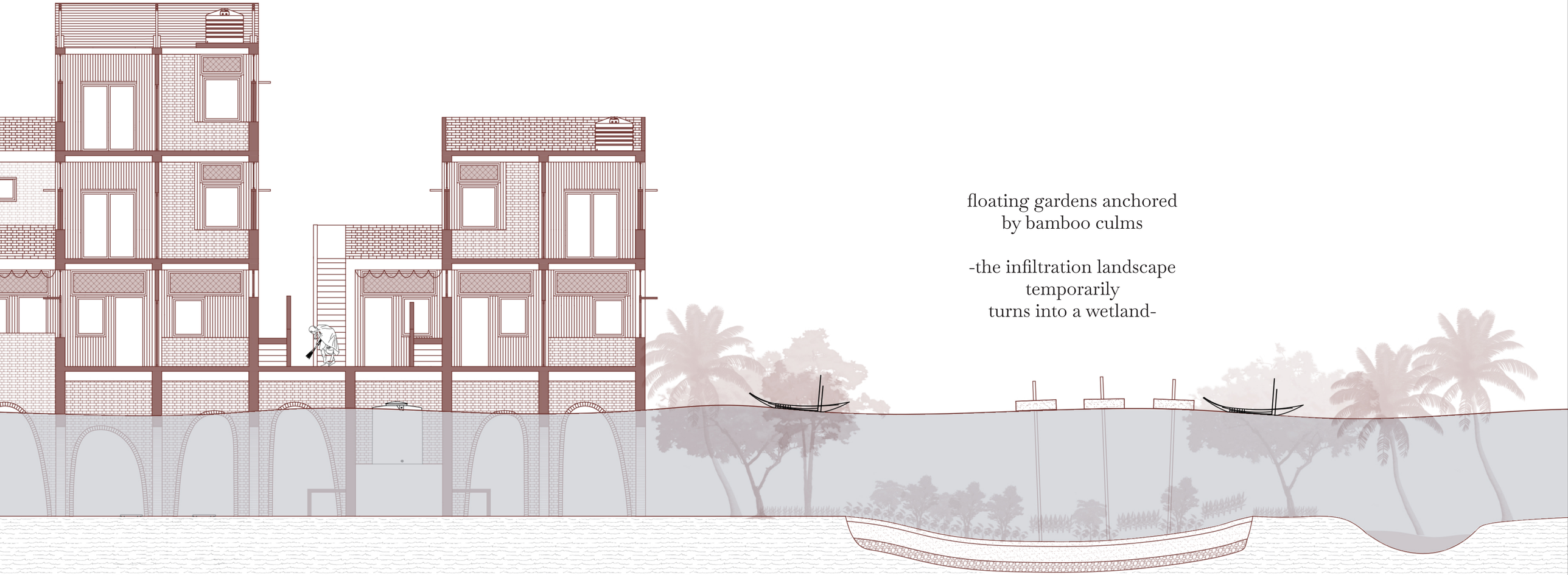
URBAN STRATEGY - flood season



floating gardens anchored
by bamboo culms

-the infiltration landscape
temporarily
turns into a wetland-

URBAN STRATEGY - flood season



floating gardens anchored
by bamboo culms

-the infiltration landscape
temporarily
turns into a wetland-

URBAN STRATEGY - climate scheme



WATER MANAGEMENT



Constructed Wetland


THANK YOU