

Global Housing - People in transition

Urban Dreams,
Rural Realities

Urban Dreams, Rural Realities
Mitigating rural to urban migration through economic empowerment and flood resilience in the Haor region of Bangladesh.
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Global Housing studio (AR4AD105):
Architecture of Transition in the Bangladesh Delta
Master thesis MSc Architecture, Delft University of Technology
Main mentor: Rohan Varma
Second mentor: Mo Smit
Third mentor: Marina Tabassum

Delft, the Netherlands, 04-07-2024



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A light gray world map serves as the background. A small red dot is located in the northern part of India, specifically in the state of Jammu and Kashmir. The text "Problem statement" is centered over the map.

Problem statement

Challenges in Rural Bangladesh



Floodings



Extreme Poverty

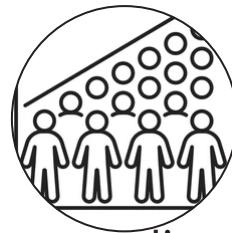


Lack of basic services

Life after rural to urban migration



Bad Mental and
general Health



Overcrowding of
Cities



Lack of Services

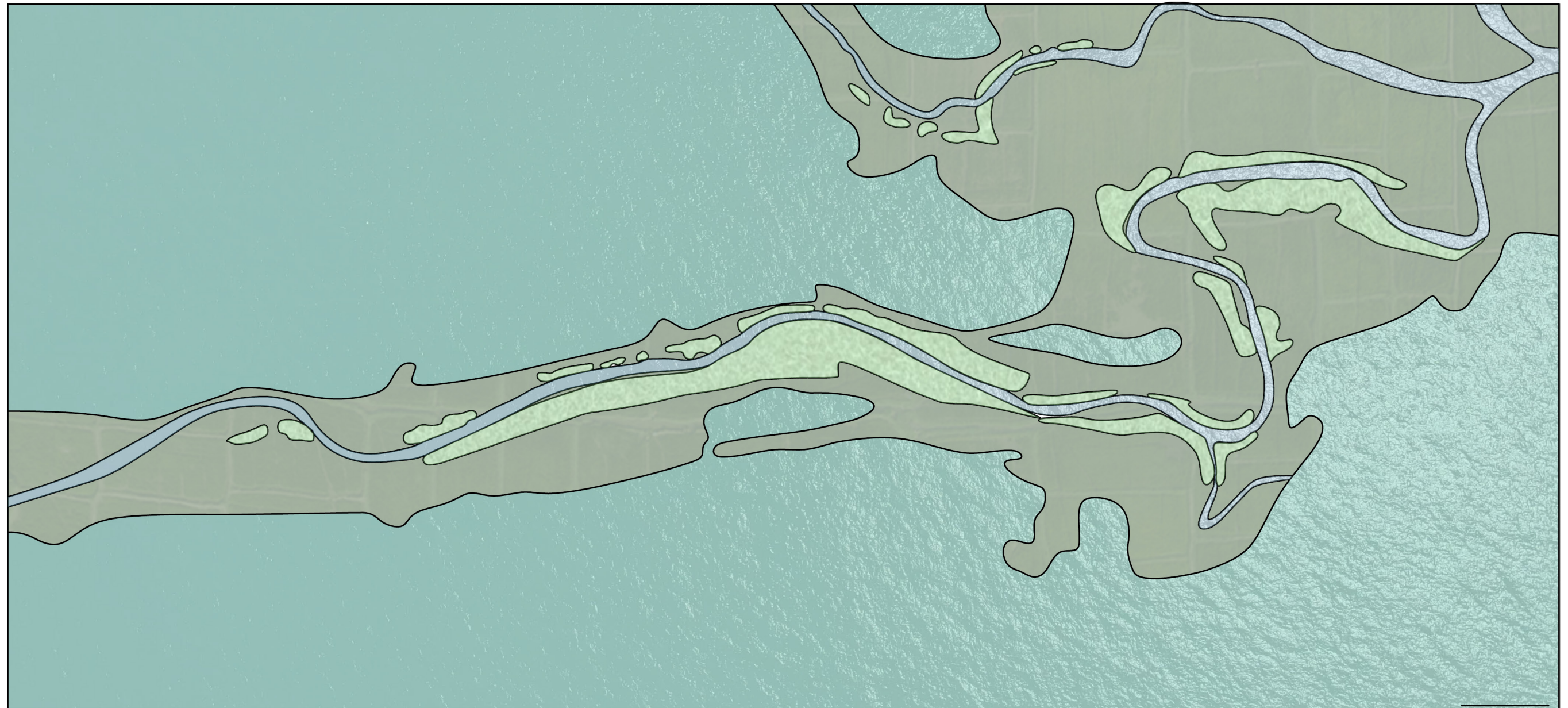


A light gray world map serves as the background. A small red dot is located in East Asia, specifically in the region of China. The text "Site Analysis" is centered over the map.

Site Analysis



Tahirpur Region Dry Period 1 : 25.000



Tahirpur Region Monsoon Period 1 : 25.000



Tahirpur Region Flood 1 : 25.000



Tahirpur Region Schools 1 : 25.000

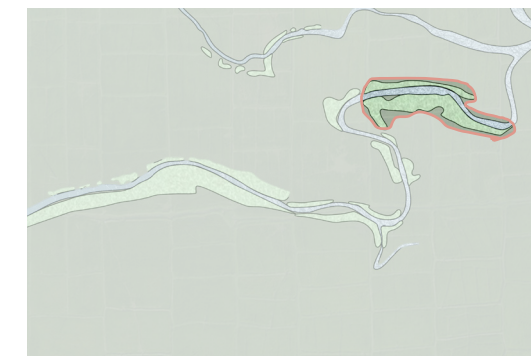
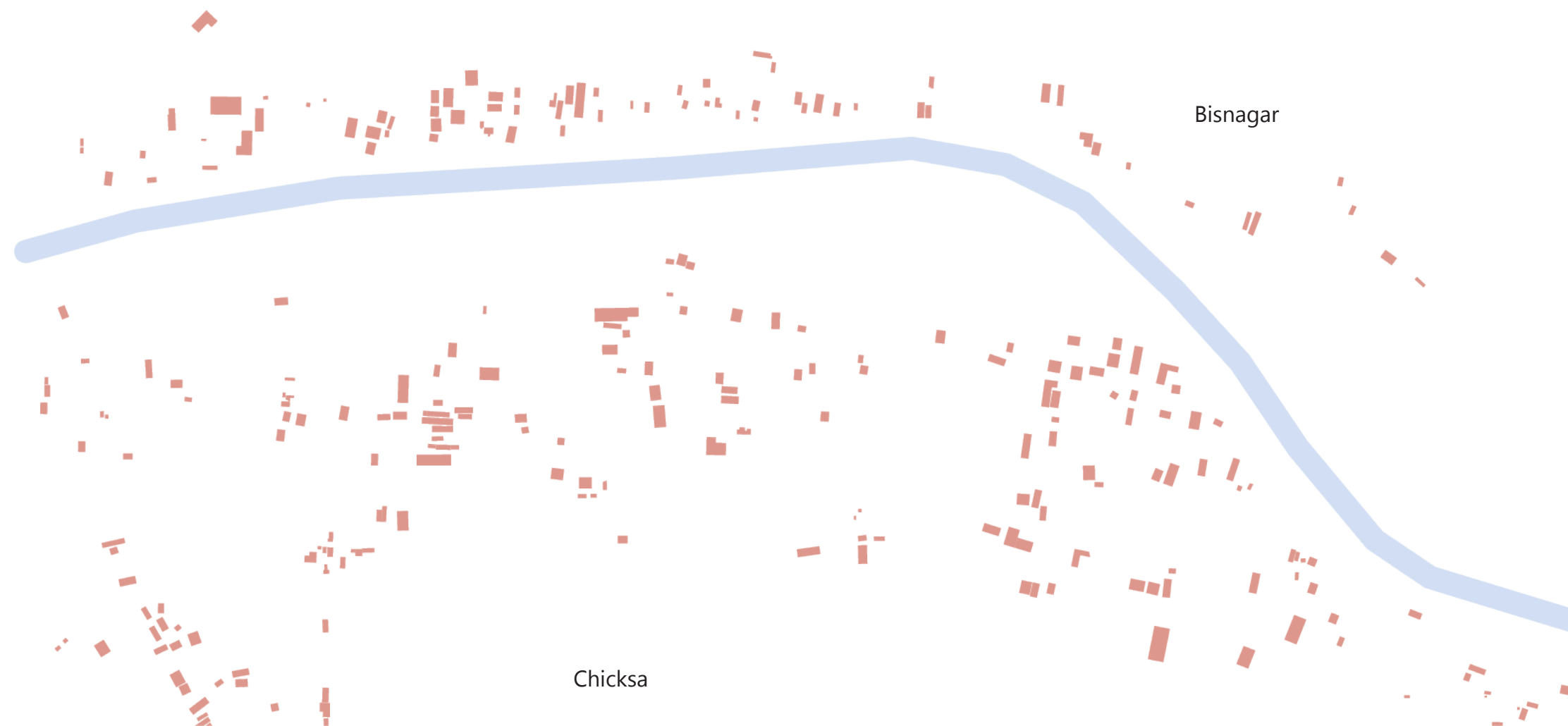


School Tahirpur Region



Tahirpur Dwelling Secluded by Flood

Settlement Analysis



Chicksa

Orientation:	
Area (ha):	36
Bisnagar:	9
Chicksa	28
Total Households:	654
Bisnagar:	174
Chicksa:	480
Total Population:	3.692
Bisnagar:	973
Chicksa:	2.719
Average Household size:	5,65
Density (people / ha):	101,23



Jamalgar



Orientation:

Area (ha): 58

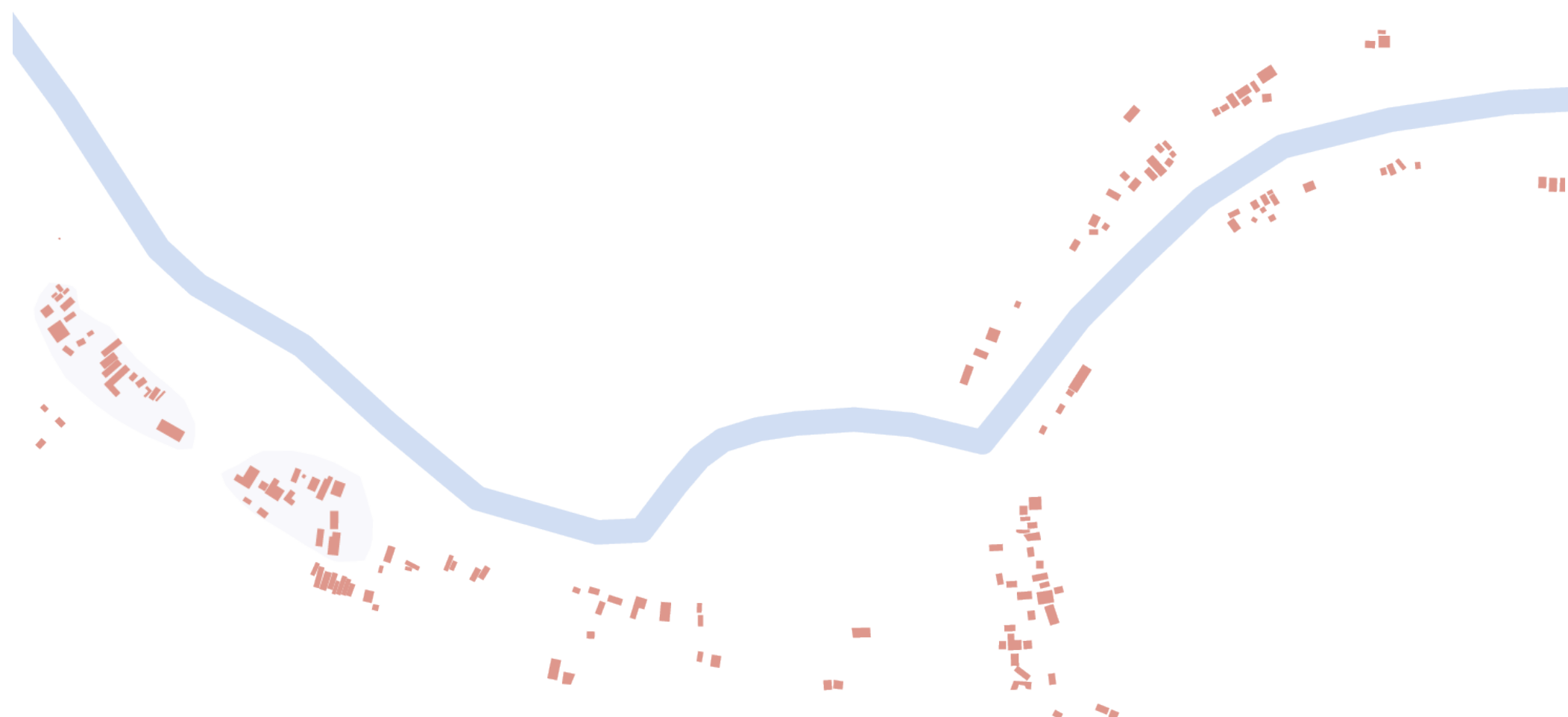
Total Households: 742

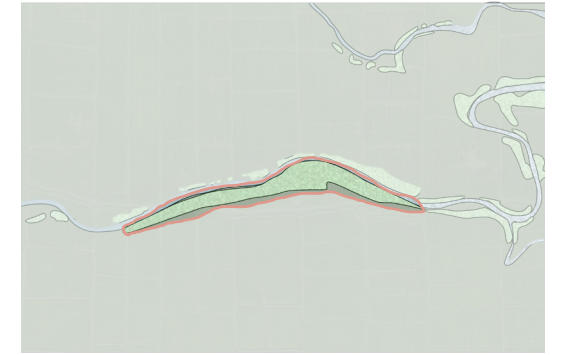
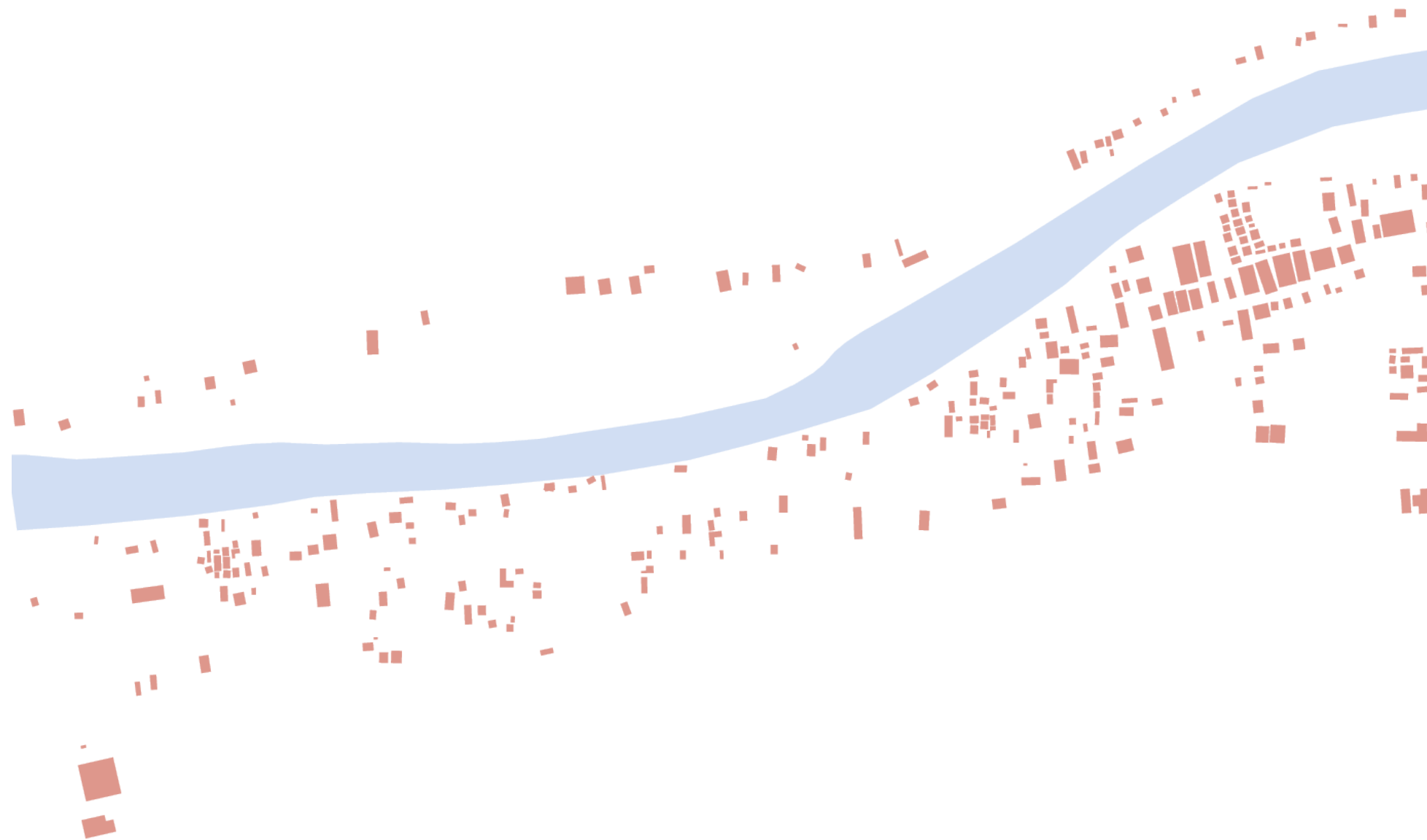
Total Population: 3.848

Average Household size: 5,19

Density (people / ha): 66,34

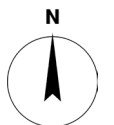
Max density: 128,75





Tahirpur

Orientation:



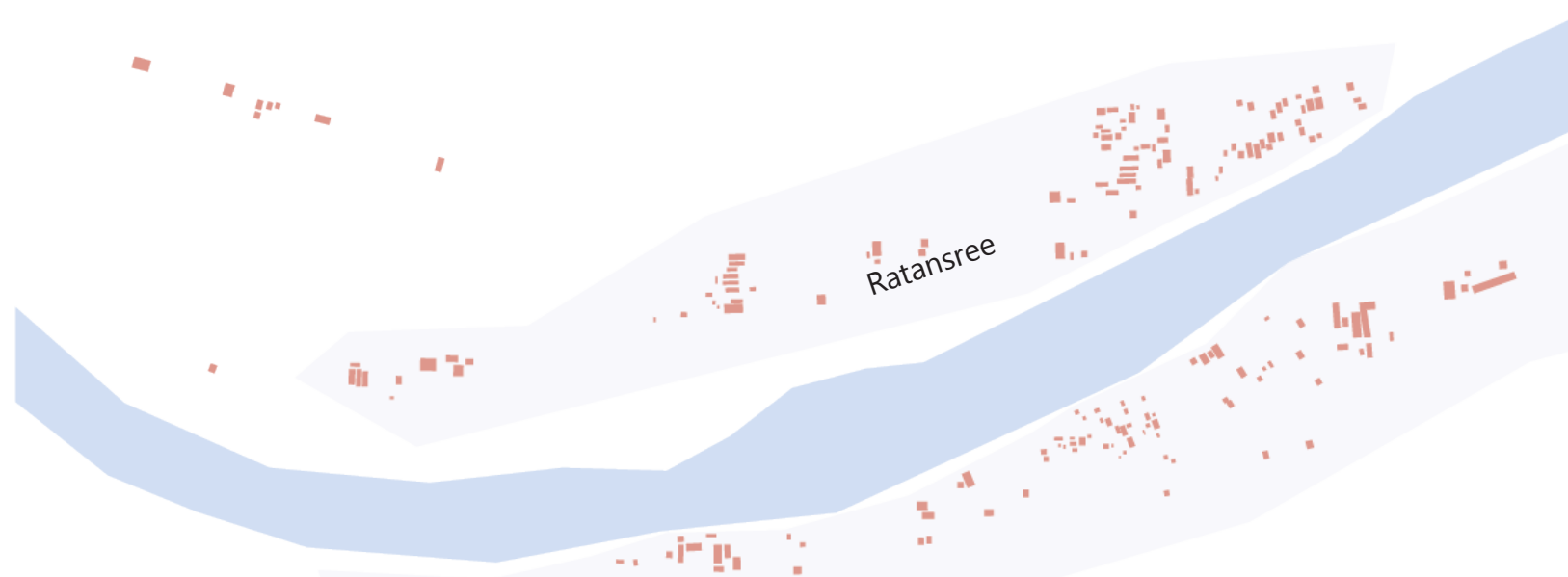
Area (ha): 59,87

Total Households: 1.685

Total Population: 9.450

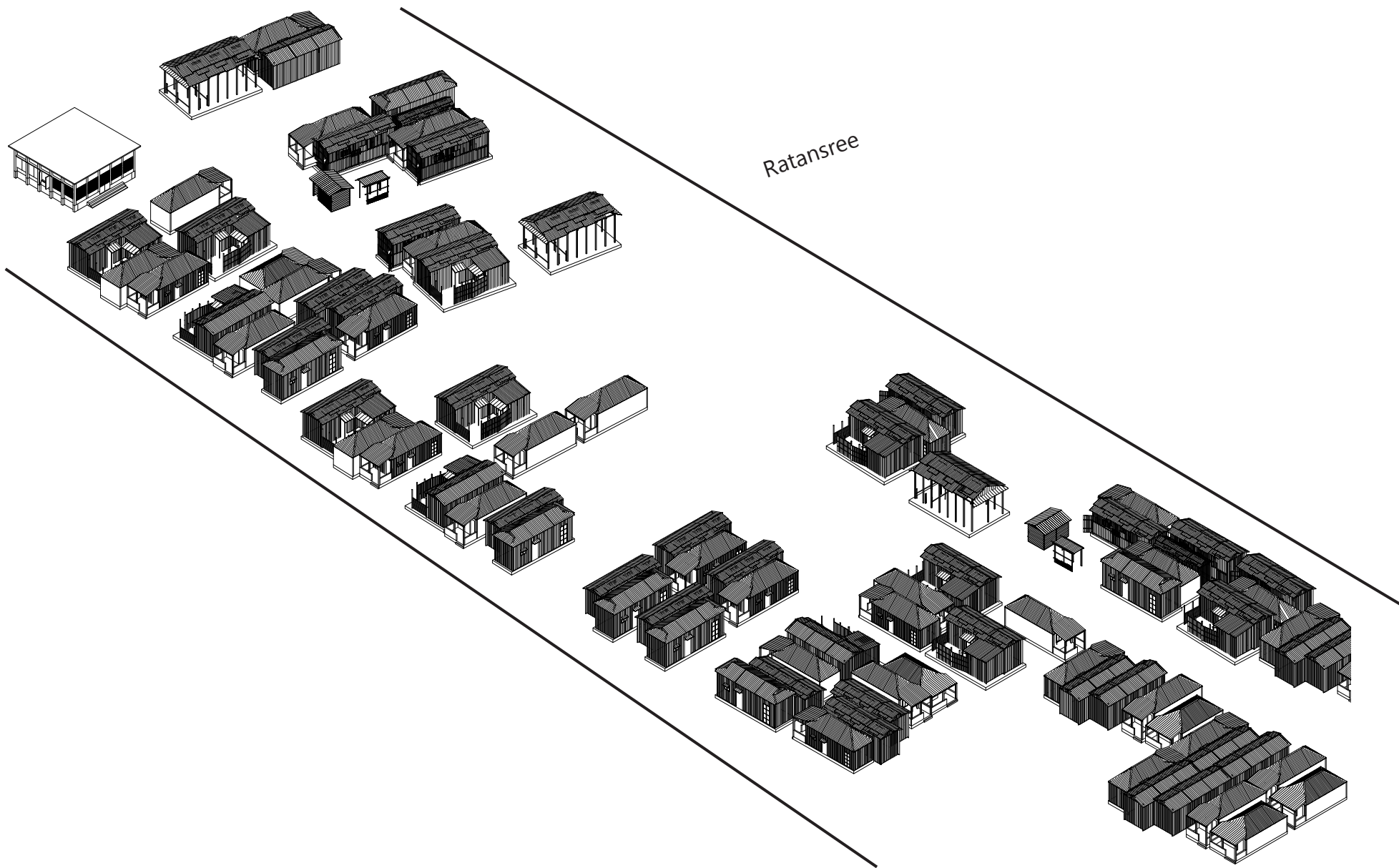
Average Household size: 5,61

Density (people / ha): 157,84



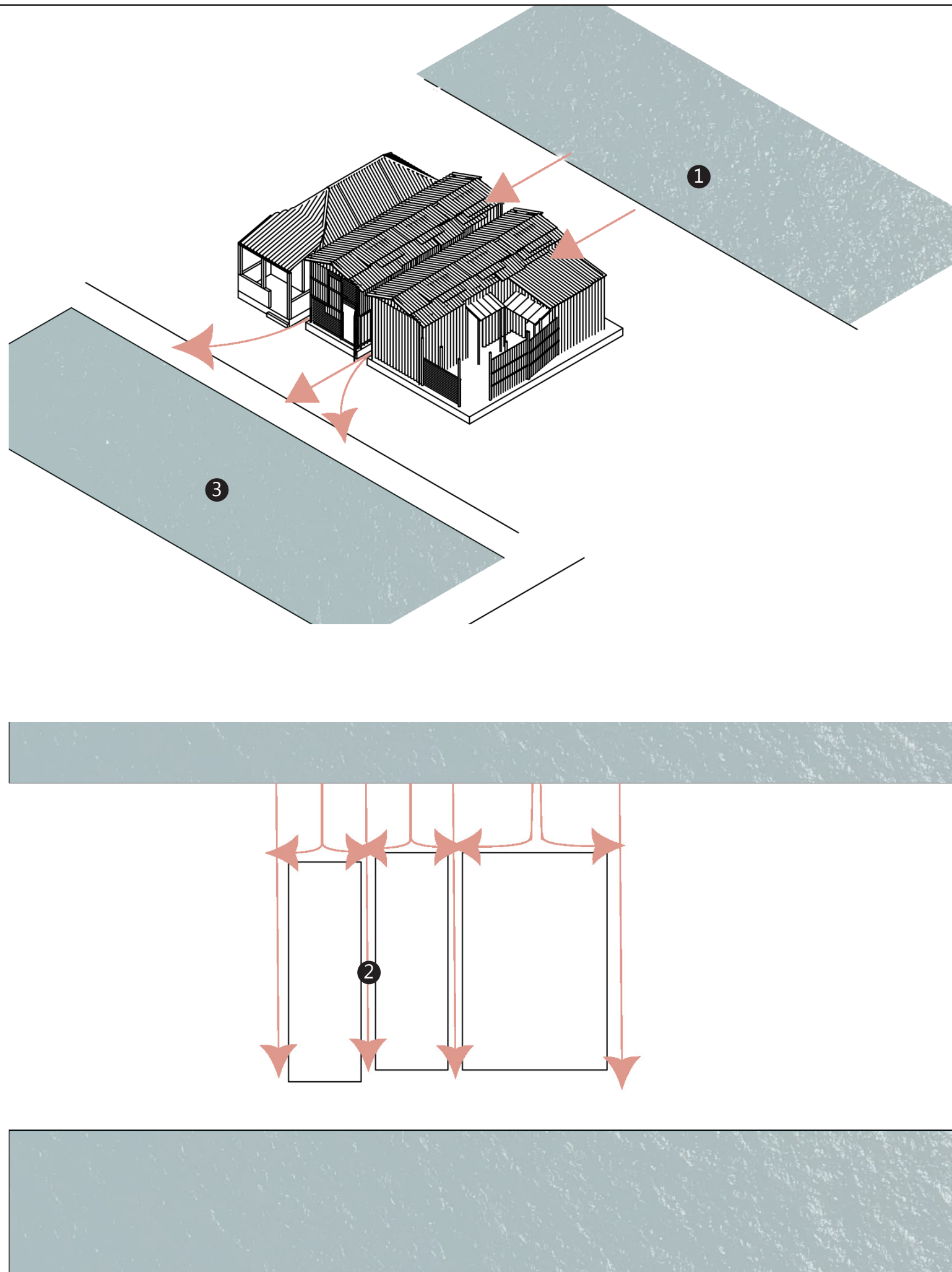
Ratansree

Orientation:	
Area (ha):	3,2
Total Households:	224
Total Population:	536
Average Household size:	2,39
Density (people / ha):	167,5



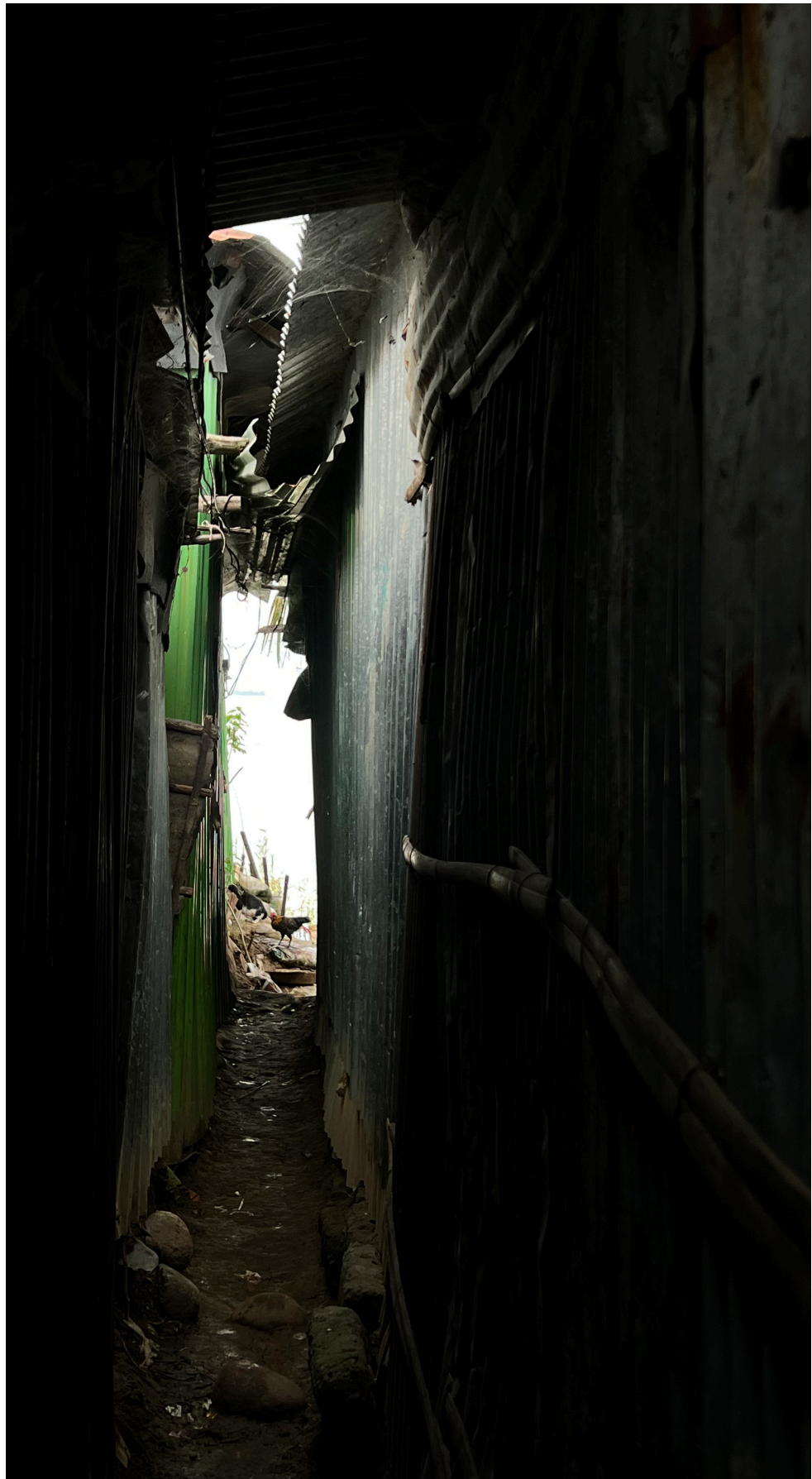
Housing Orientation Ratansree

Orientation:	
Area (ha):	3,2
Total Households:	224
Total Population:	536
Average Household size:	2,39
Density (people / ha):	167,5



Water passage

- ① **Wetlands**
- ② **Water passage**
- ③ **River**



Water passage



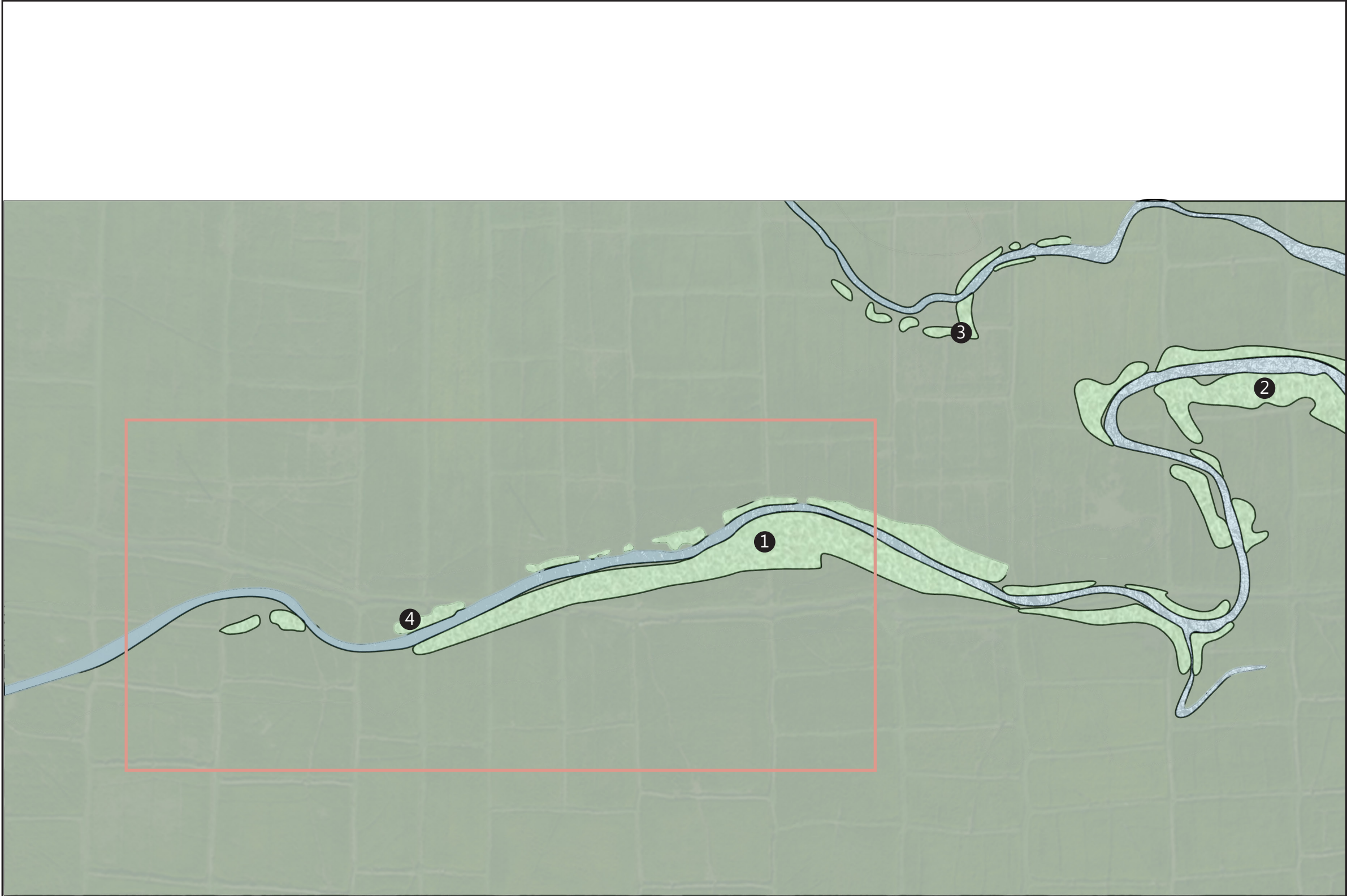
<0,5m



Water passage



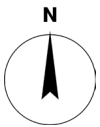
Street profile



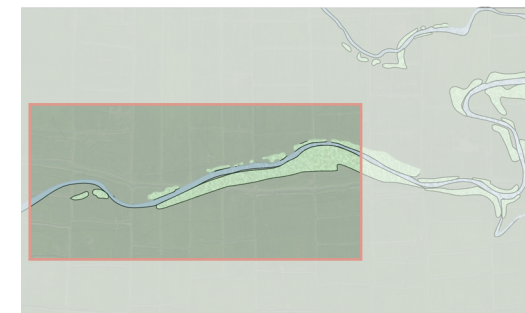
Regional Plan

Scale: 1 : 50.000

Orientation:

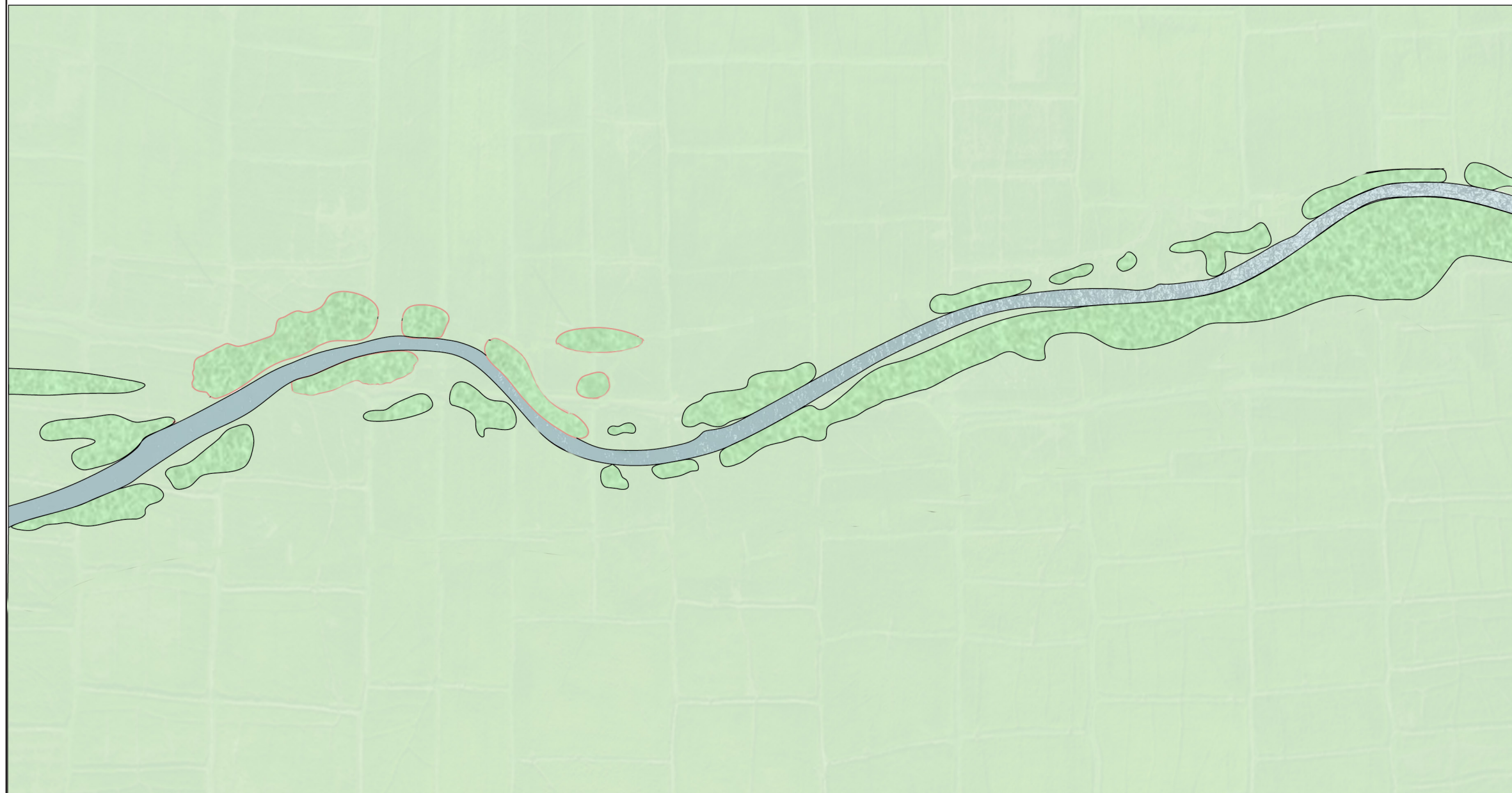
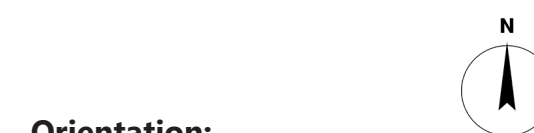


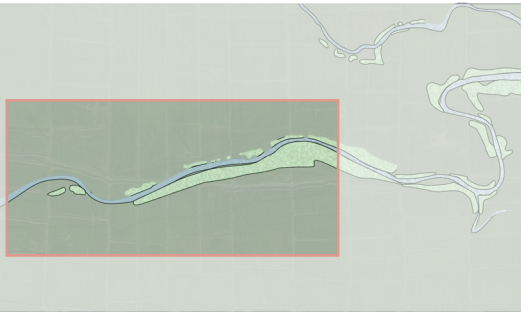
- | | |
|---|-----------|
| ① | Tahirpur |
| ② | Chiksa |
| ③ | Jamalgar |
| ④ | Ratansree |



Site dry period

Scale: 1 : 25.000

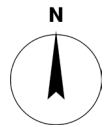


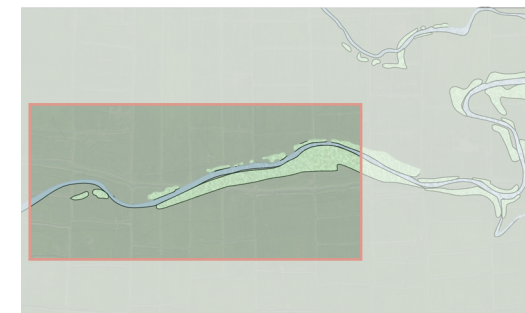


Site Monsoon period

Scale: 1 : 25.000

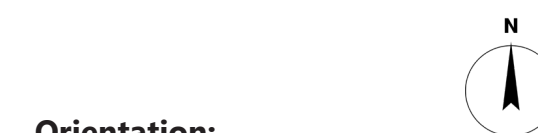
Orientation:



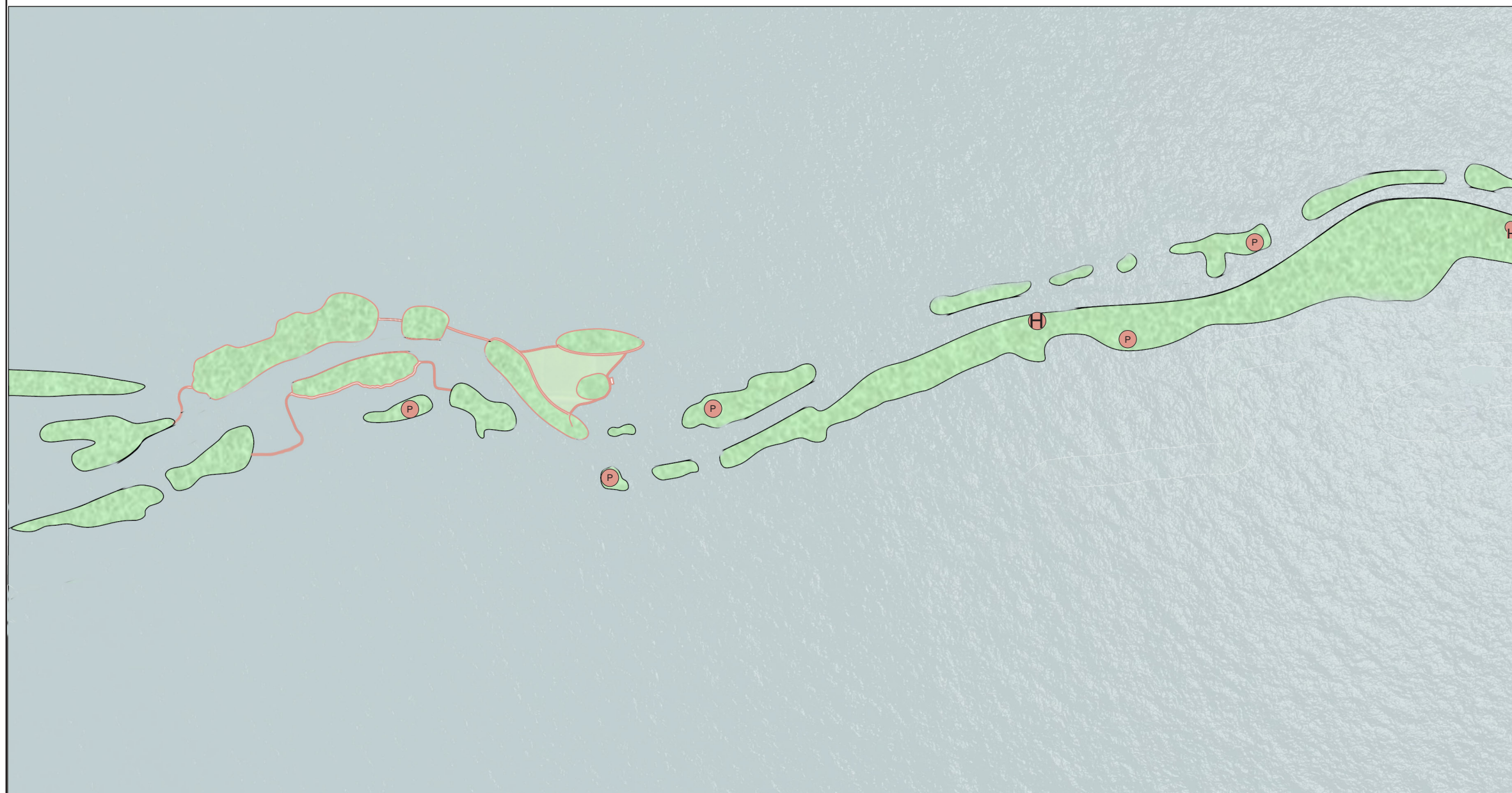


Site during flood

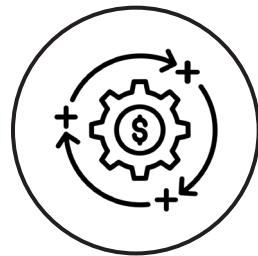
Scale: 1 : 25.000



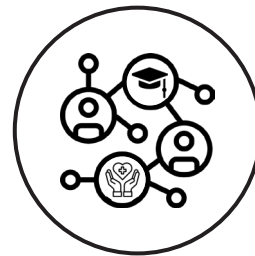
Orientation:



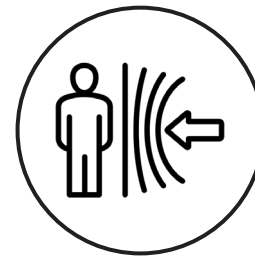
Objectives



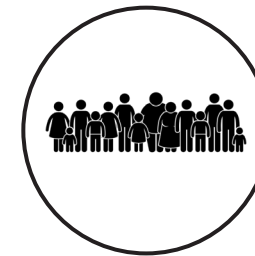
Generating income



Access to basic services



Resilience against floods

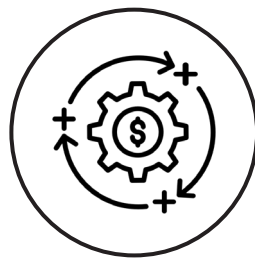


Foster communities

Primary Goal:

Design a resilient rural settlement in the Haor region that ensures safe, sustainable living and economic opportunities for residents.

Program of requirements



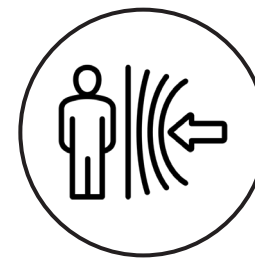
Generating
income

- **Pro-Poor Tourism**
- **Commercial Hotspots**
- **Reclaimed Land**



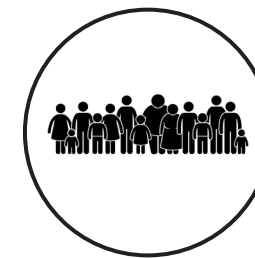
Acces to basic
services

- **Elevated connecting roads**
- **Flexible spaces**
- **Public transport**



Resilience
against floods

- **High Islands**
- **Elevated plinths**
- **Reclaimed land**
- **Water management**



Foster
communities

- **Cooperative organizations**
- **Community spaces**
- **Construction involvement**

Target groups



Residents

- **Families & children**
- **Elderly and Vulnerable Populations**
- **Poorest members of society**



Jobs

- **Local farmers**
- **Small entrepreneurs**
- **Local artisans**
- **Local fishermen**



Visitors

- **Tourists**
- **Visitors**

Pro Poor Tourism



Unique Landscape



Guided Boat Tours



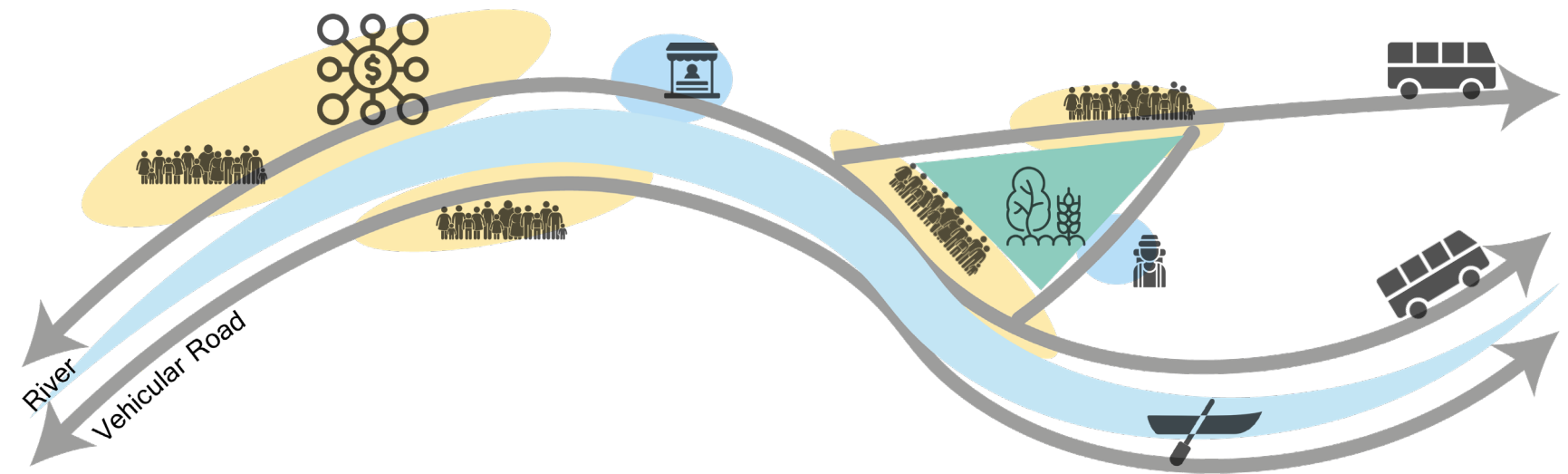
Experience Local Life



Bazars with locally crafted goods

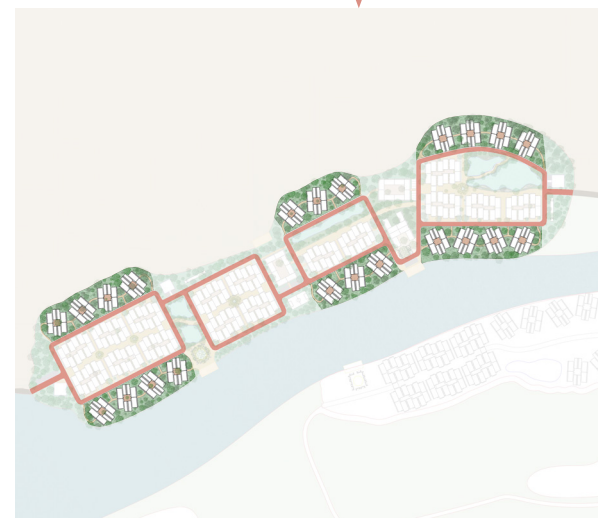
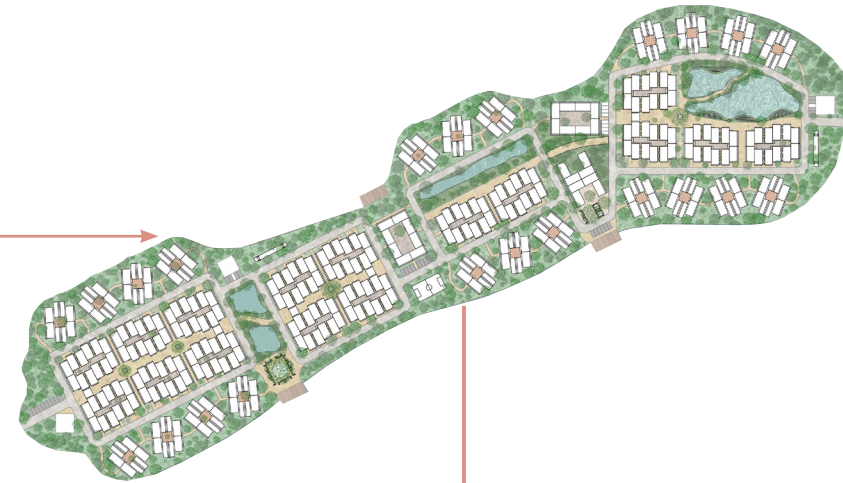


Develops Regional plan

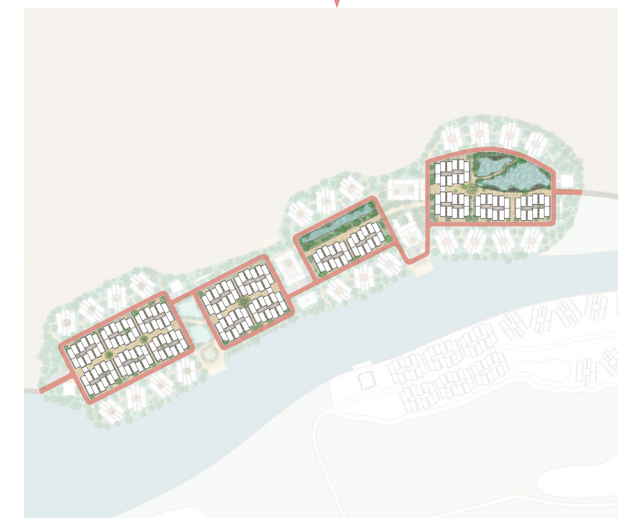




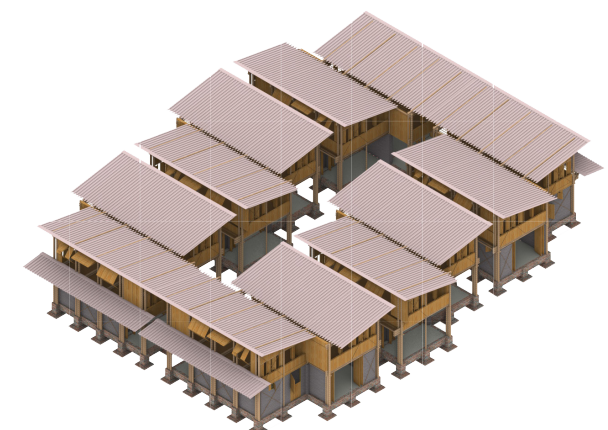
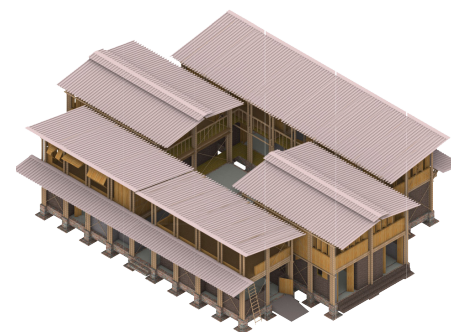
Develops settlements

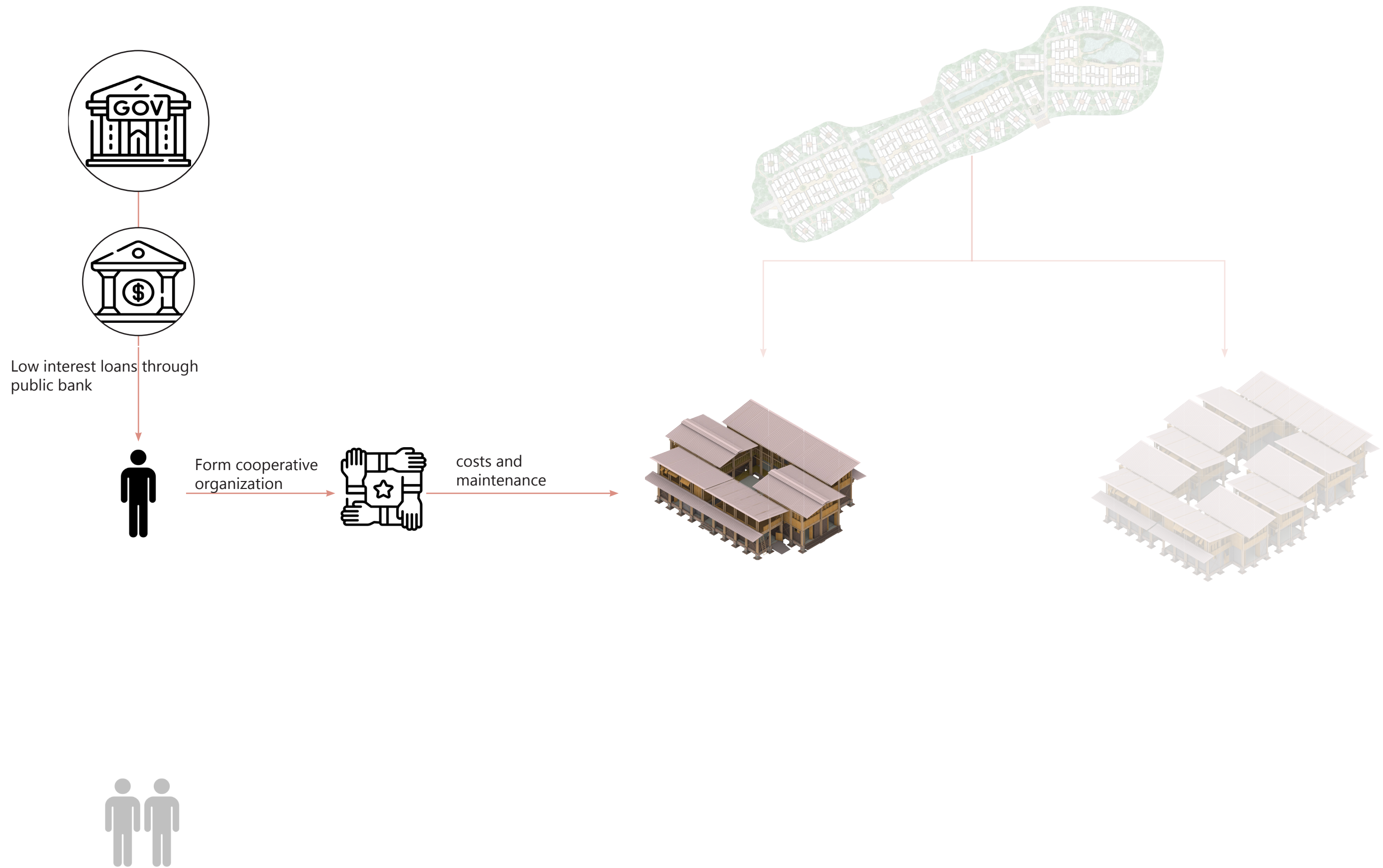


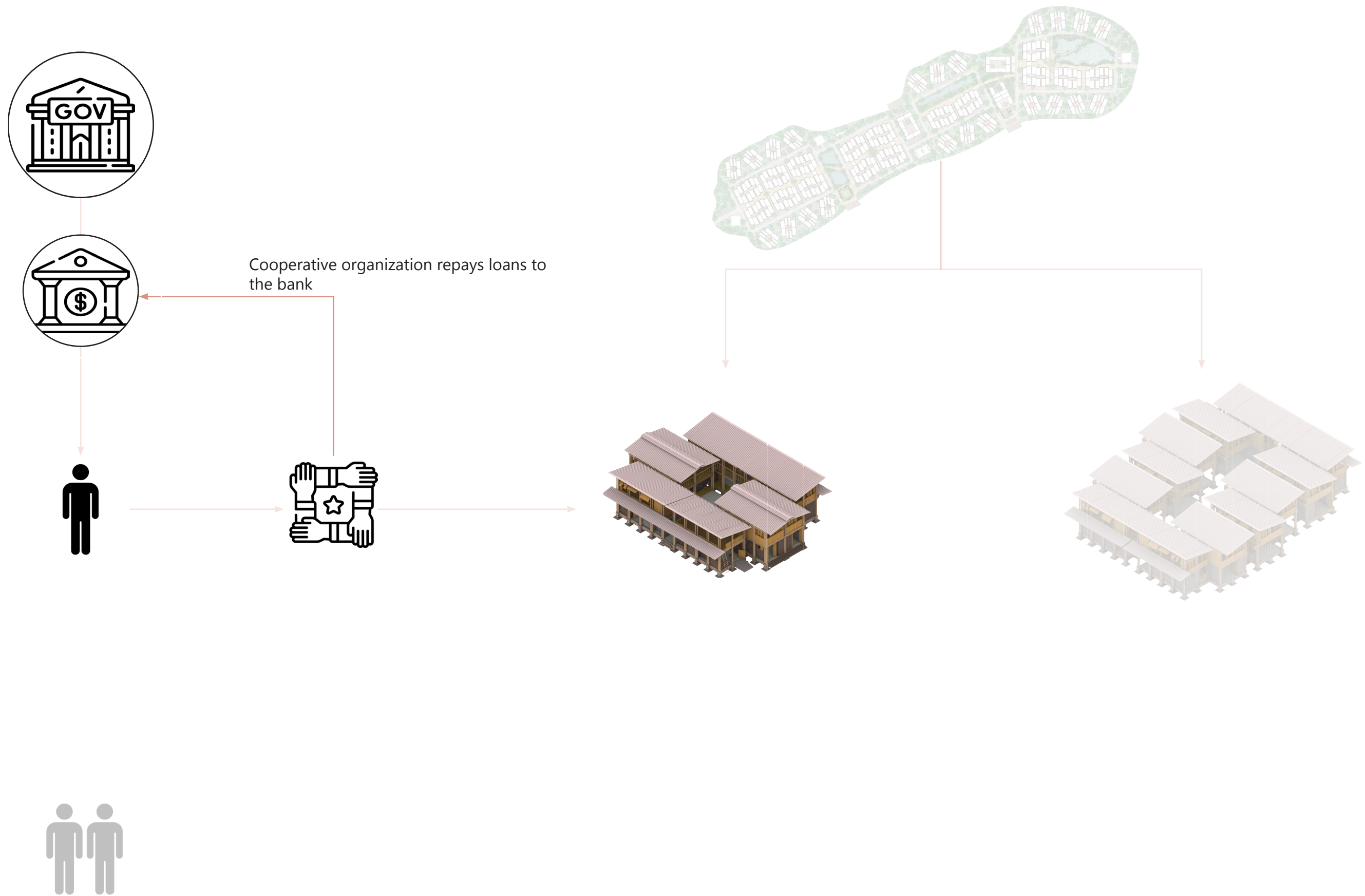
Low income housing zones

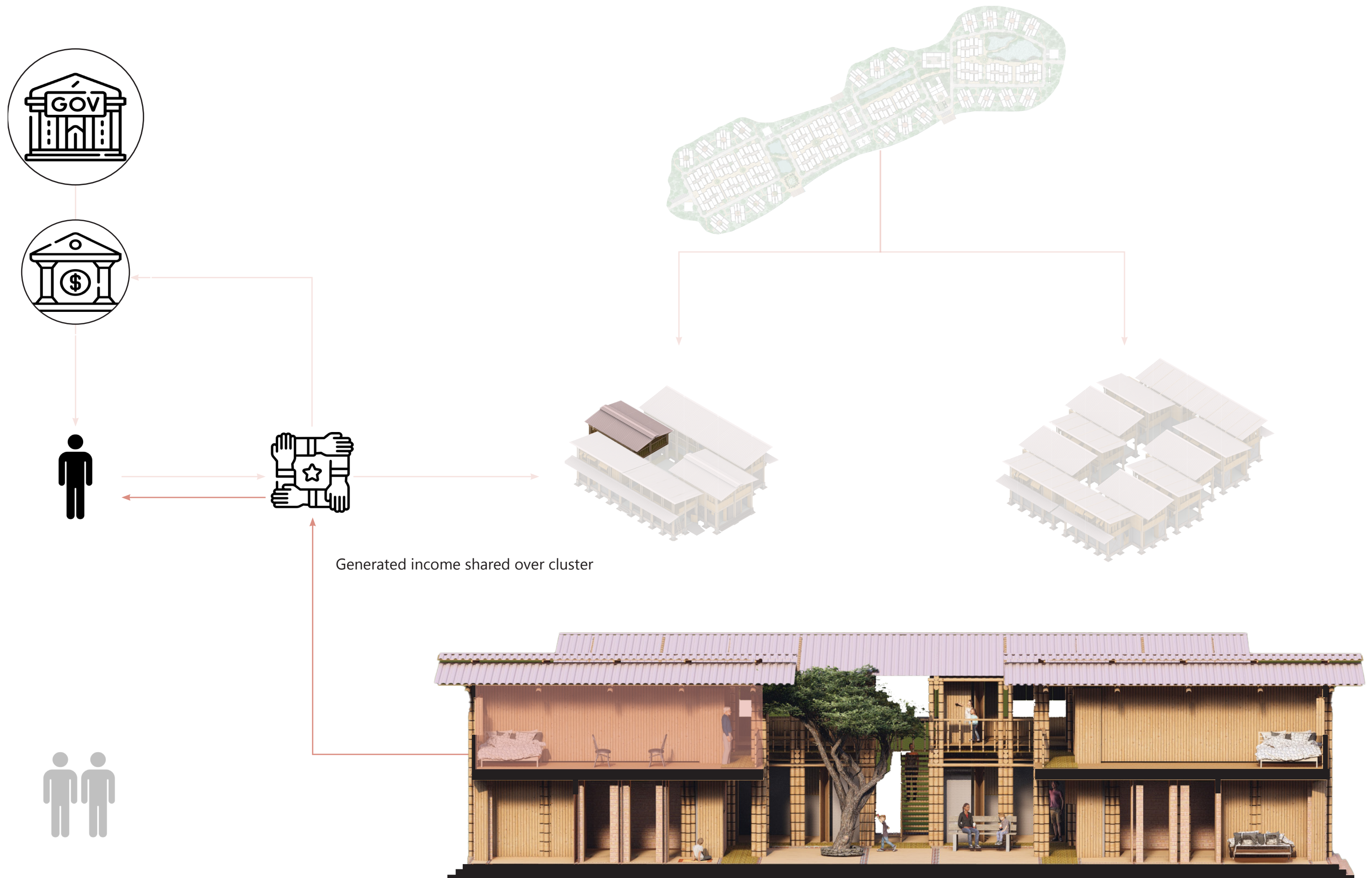


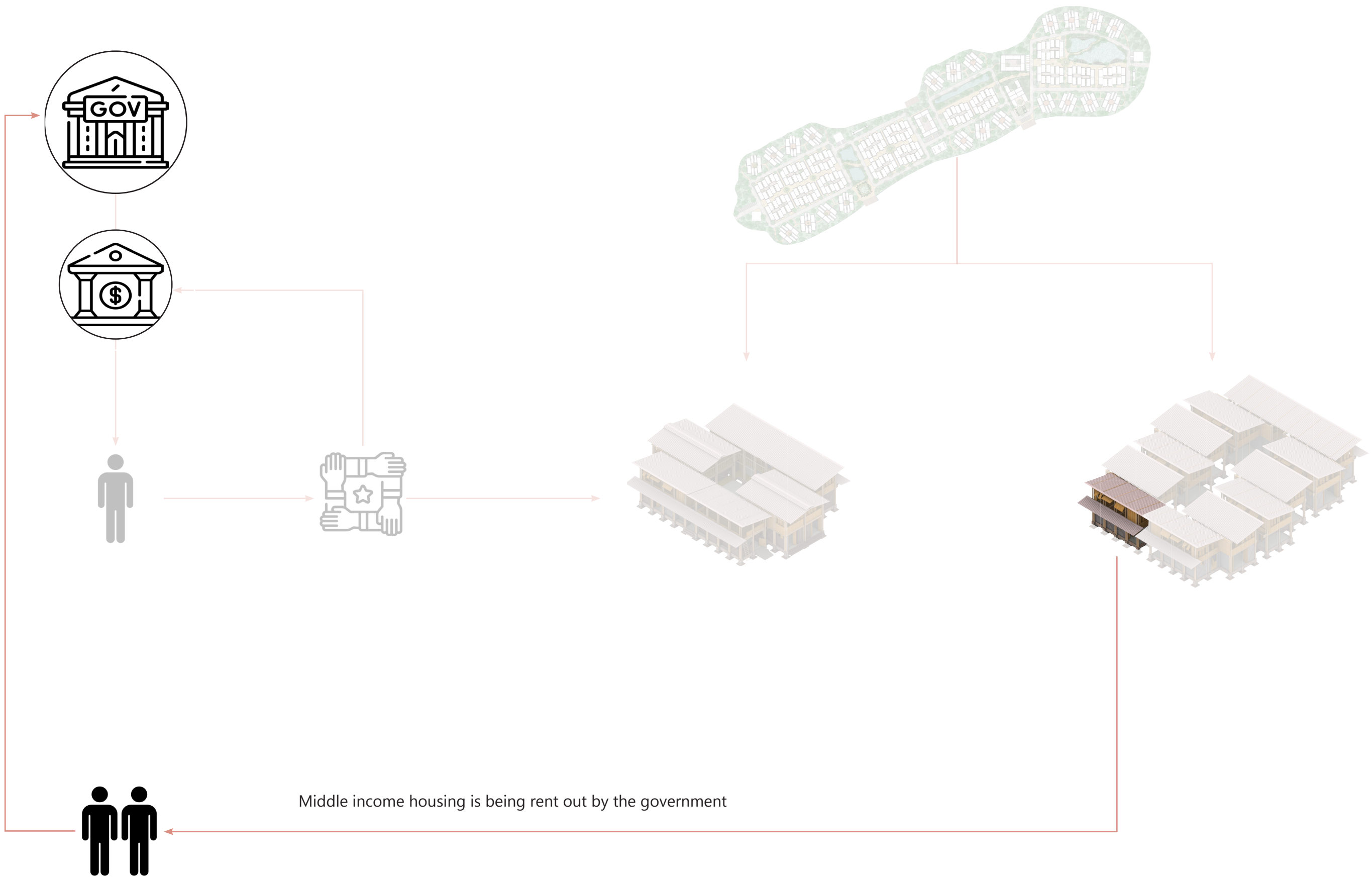
Middle income housing zones

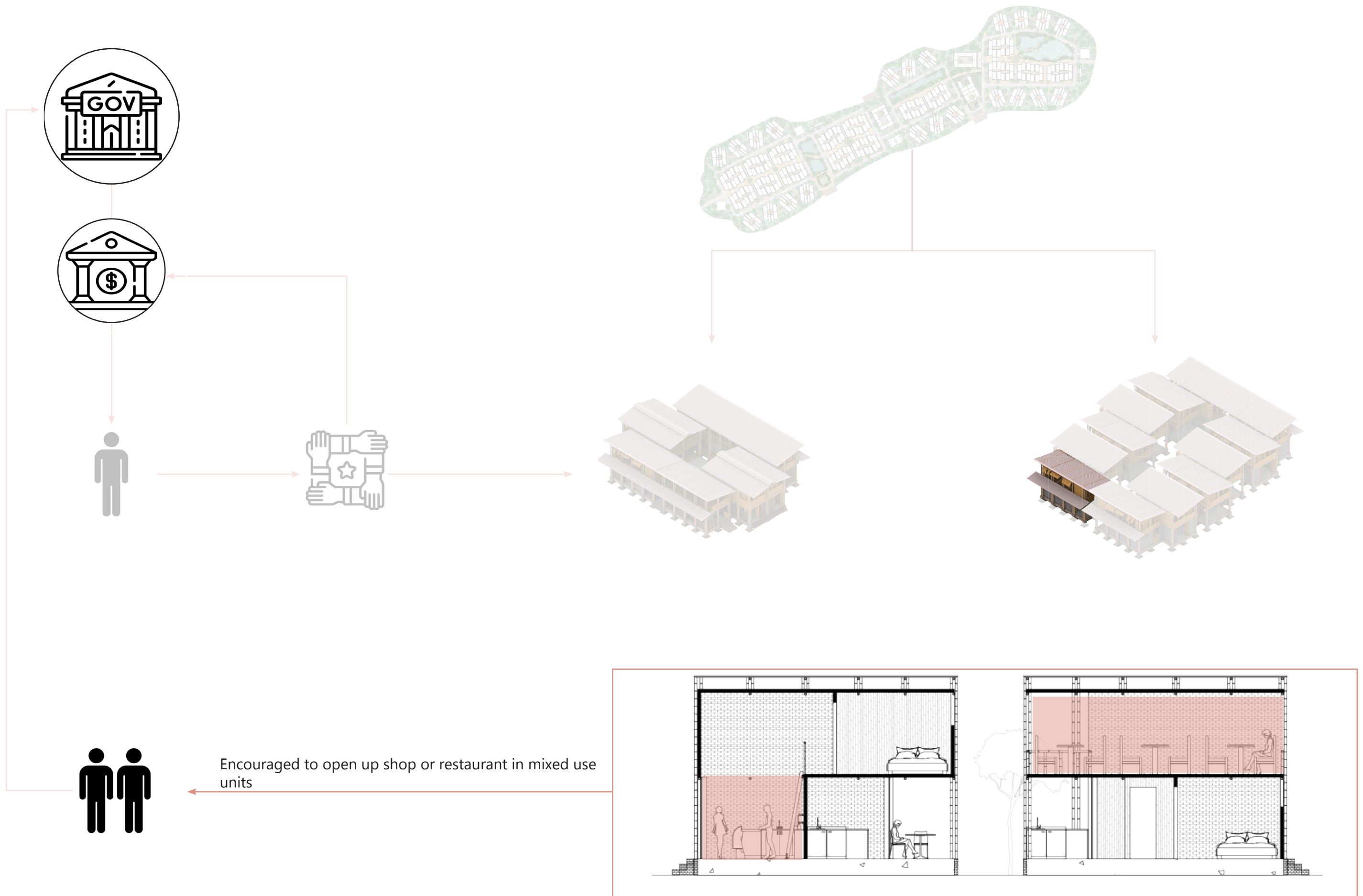












Design

Regional



Regional Plan

Scale:	1 : 5000
Orientation:	
Area (islands)(ha):	16,99
Population:	4.160
Density (people / ha):	254.4

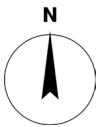
- ① Main Island
- ② Bazaar Island
- ③ Secondary Island 1
- ④ Secondary Island 2
- ⑤ Tourist Island
- ⑥ Reclaimed land
- ⑦ Secondary Island 3



New elevated vehicular roads

Scale: 1 : 5000

Orientation:





Bazaar Island

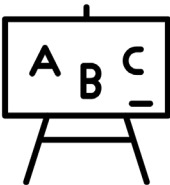
Scale:	1 : 5000
Orientation:	
Area (ha):	1,21
Population:	300
Density (people / ha):	247
FSI:	0,31
GSI:	0,62





Secondary Island 1

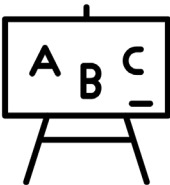
Scale:	1 : 5000
Area (ha):	2,87
Population:	770
Density (people / ha):	268
FSI:	0,30
GSI:	0,56





Secondary Island 2

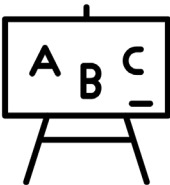
Scale:	1 : 5000
Orientation:	
Area (ha):	1,99
Population:	480
Density (people / ha):	241
FSI:	0,31
GSI:	0,60





Secondary Island 3

Scale:	1 : 5000
Orientation:	
Area (ha):	2,85
Population:	770
Density (people / ha):	268
FSI:	0,28
GSI:	0,53





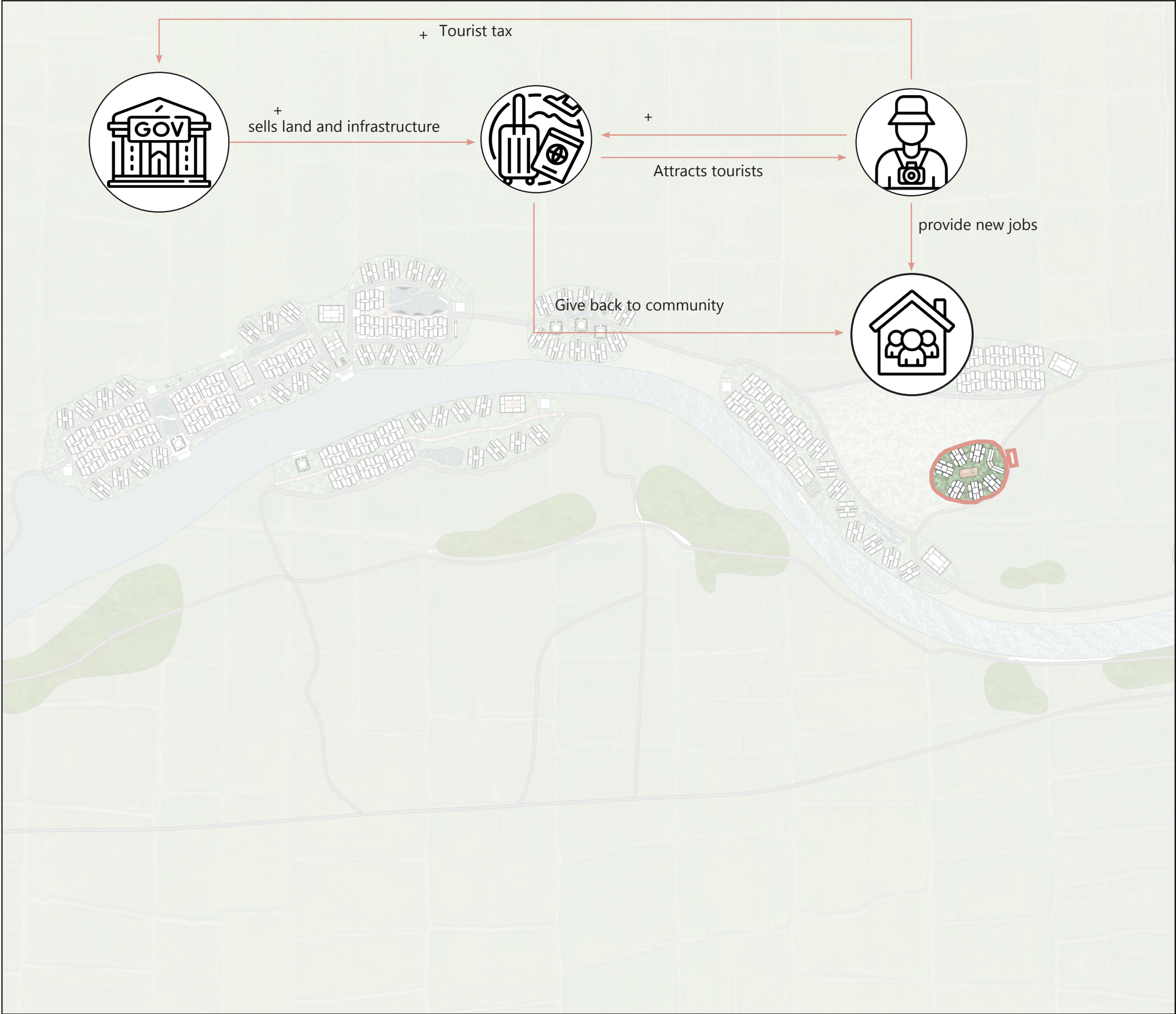
Tourist Centre

Scale: 1 : 5000

Orientation: 

Area (ha): 0,67





Tourist Centre

Scale: 1 : 5000

Orientation: 

Area (ha): 0,67





Reclaimed Land

Scale: 1 : 5000

Orientation: 

Area (ha): 3,5

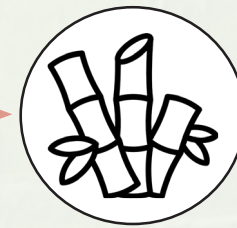




+
Rents out land to farmers

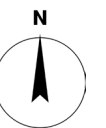


+
sell farmed goods



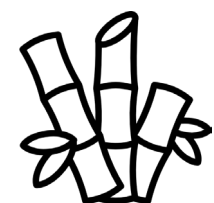
Reclaimed Land

Scale: 1 : 5000



Orientation:

Area (ha): 3,5



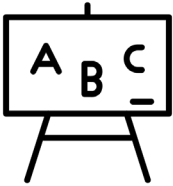


Main Island

Scale: 1 : 5000

Orientation: 

Area (ha): 7,4





Birdseye view site



Birdseye view site

Settlement



Main Island

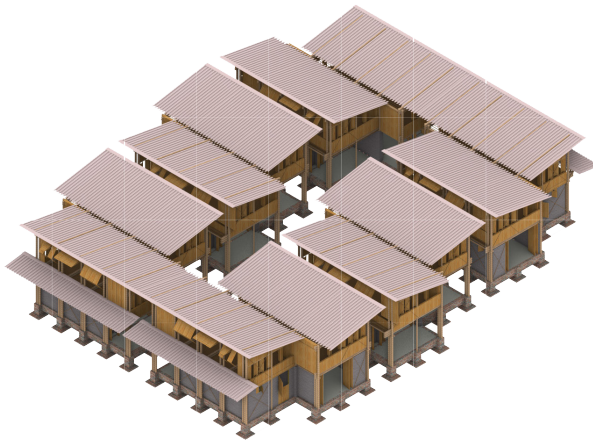
Scale:	1 : 2000
Orientation:	
Area (ha):	7,4
Population:	1.840
Density (people / ha):	248
FSI:	0,31
GSI:	0,61
Low Income Units:	264
Middle income Units:	176



Main Island - middle income zones

Scale: 1 : 2000

Orientation:

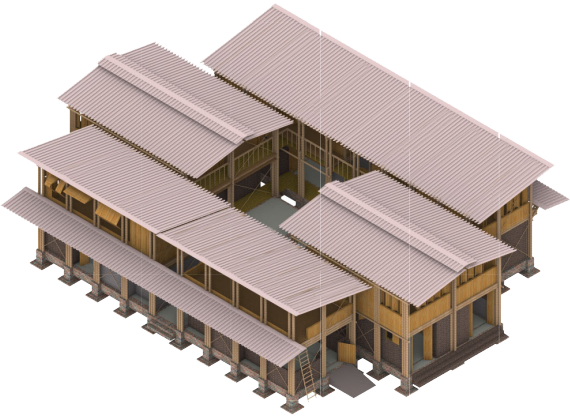
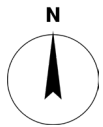




Main Island - low income zones

Scale: 1 : 2000

Orientation:

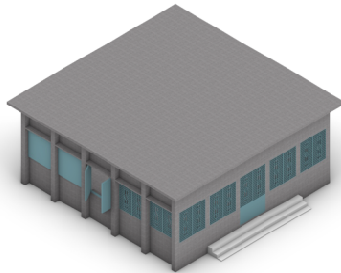
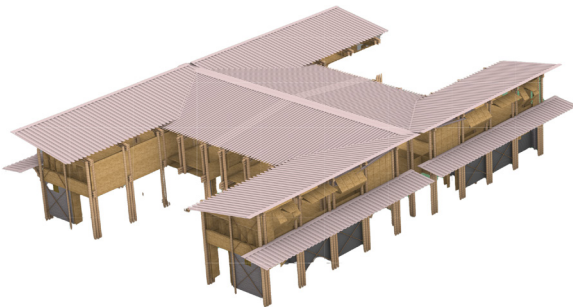
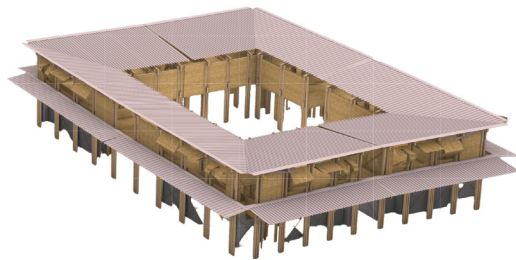




Main Island - Public zones

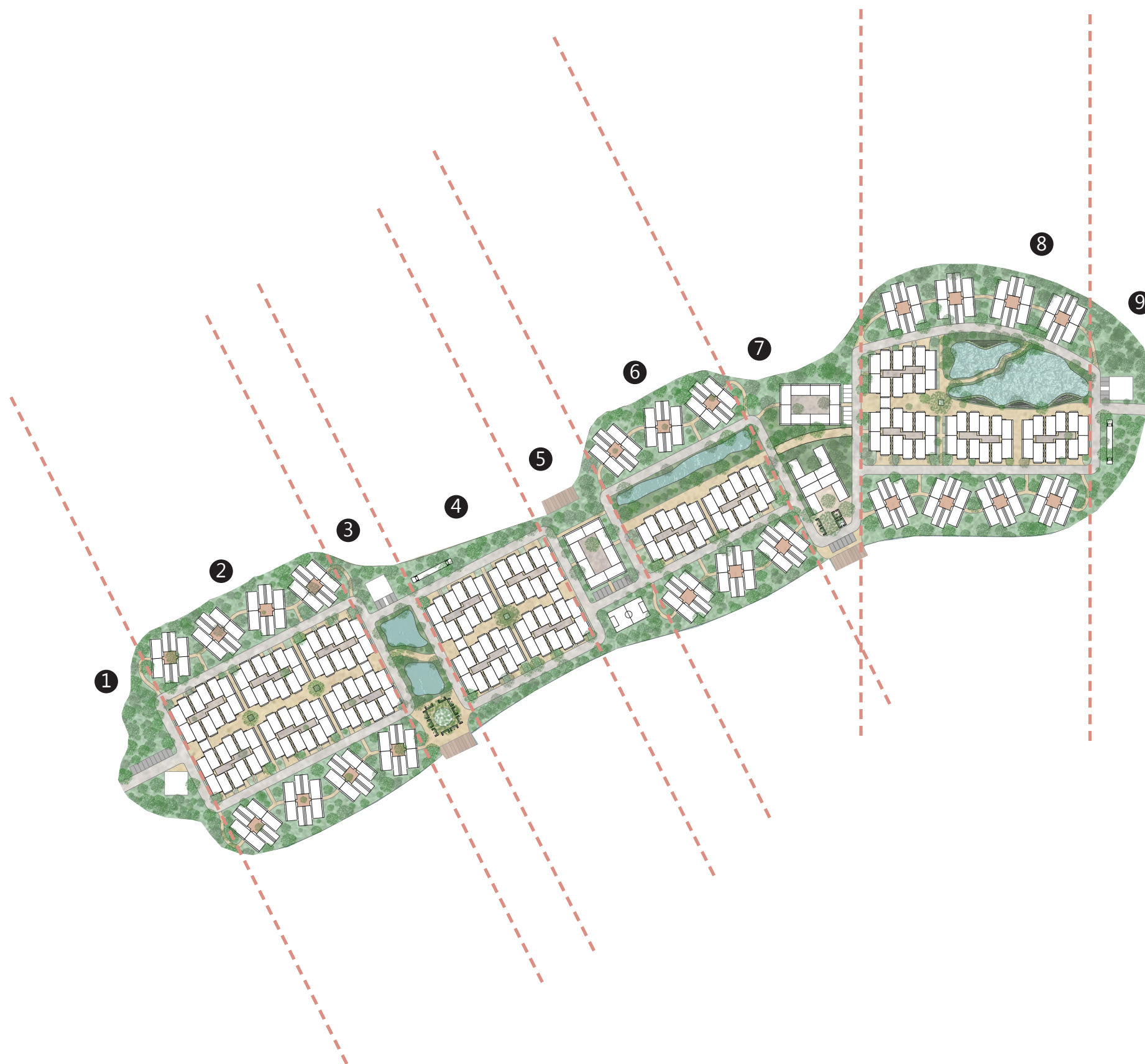
Scale: 1 : 2000

Orientation:



Sectors



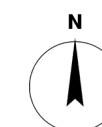


Sectors

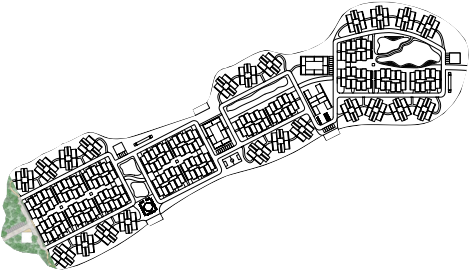
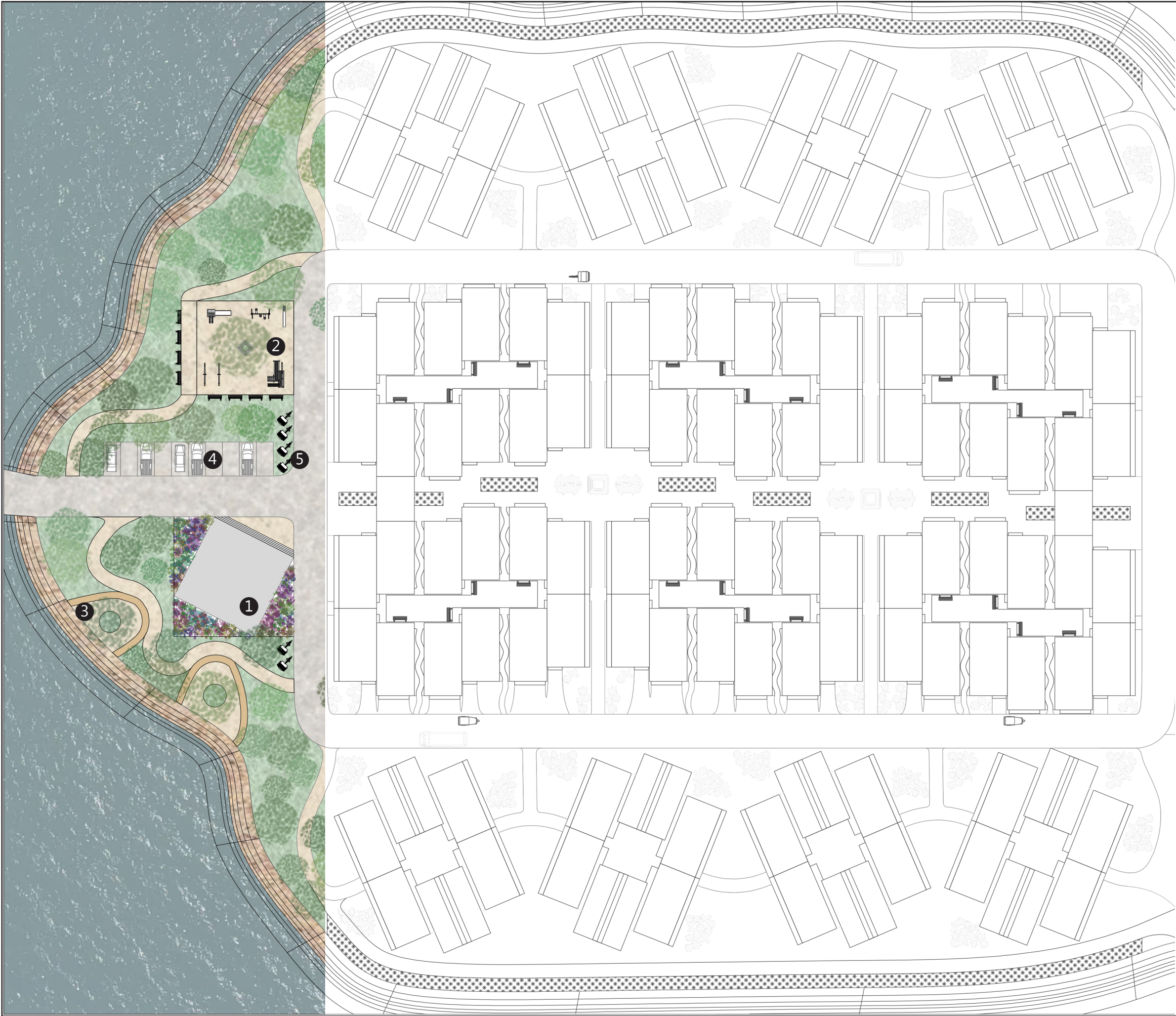
Scale:

1 : 2000

Orientation:



- ① Entrance
- ② Residential hub
- ③ Market & waterbodies
- ④ Community spine
- ⑤ Elementary school
- ⑥ Residential hub
- ⑦ Amenity hub
- ⑧ Big lake residential hub
- ⑨ Entrance



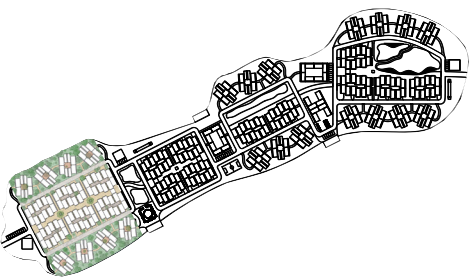
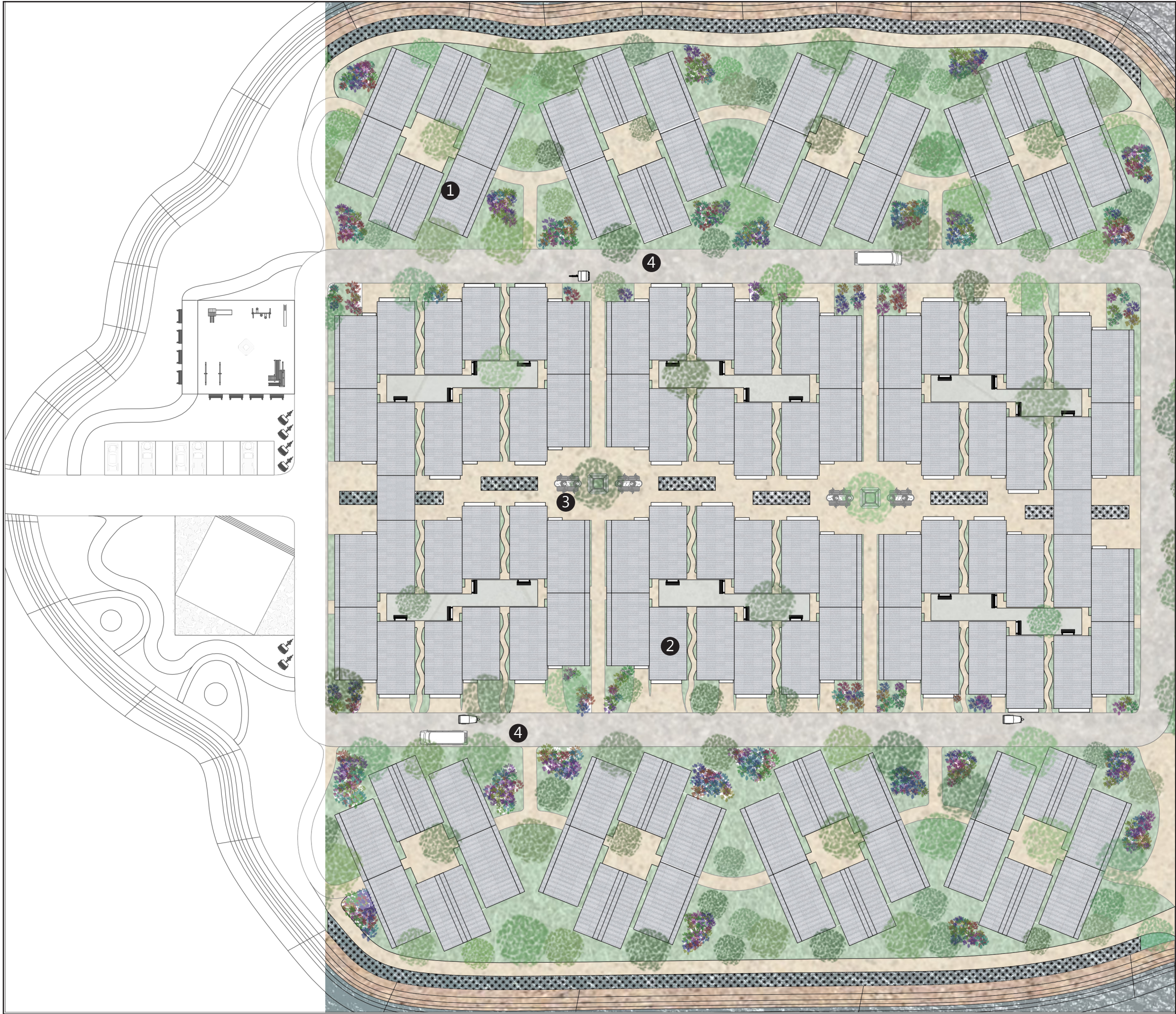
Sector 1 - Entrance

Scale: 1 : 500

Orientation:



- 1 Mosque
- 2 Playground
- 3 Embankment Seating Area
- 4 Parking
- 5 Rickshaw stand



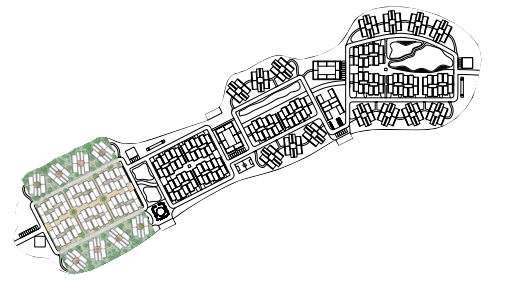
Sector 2 - Dwelling

Scale: 1 : 500

Orientation:



- 1 Low Income Cluster
- 2 Middle Income Cluster
- 3 Community spine
- 4 Vehicular Road



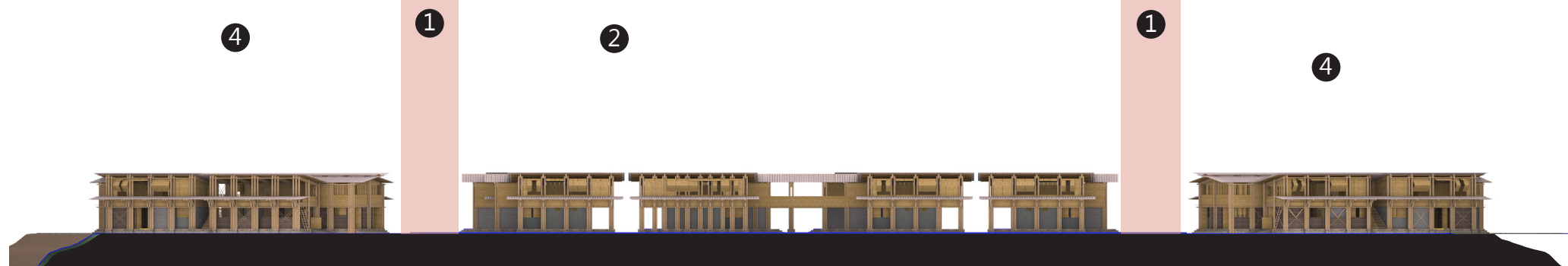
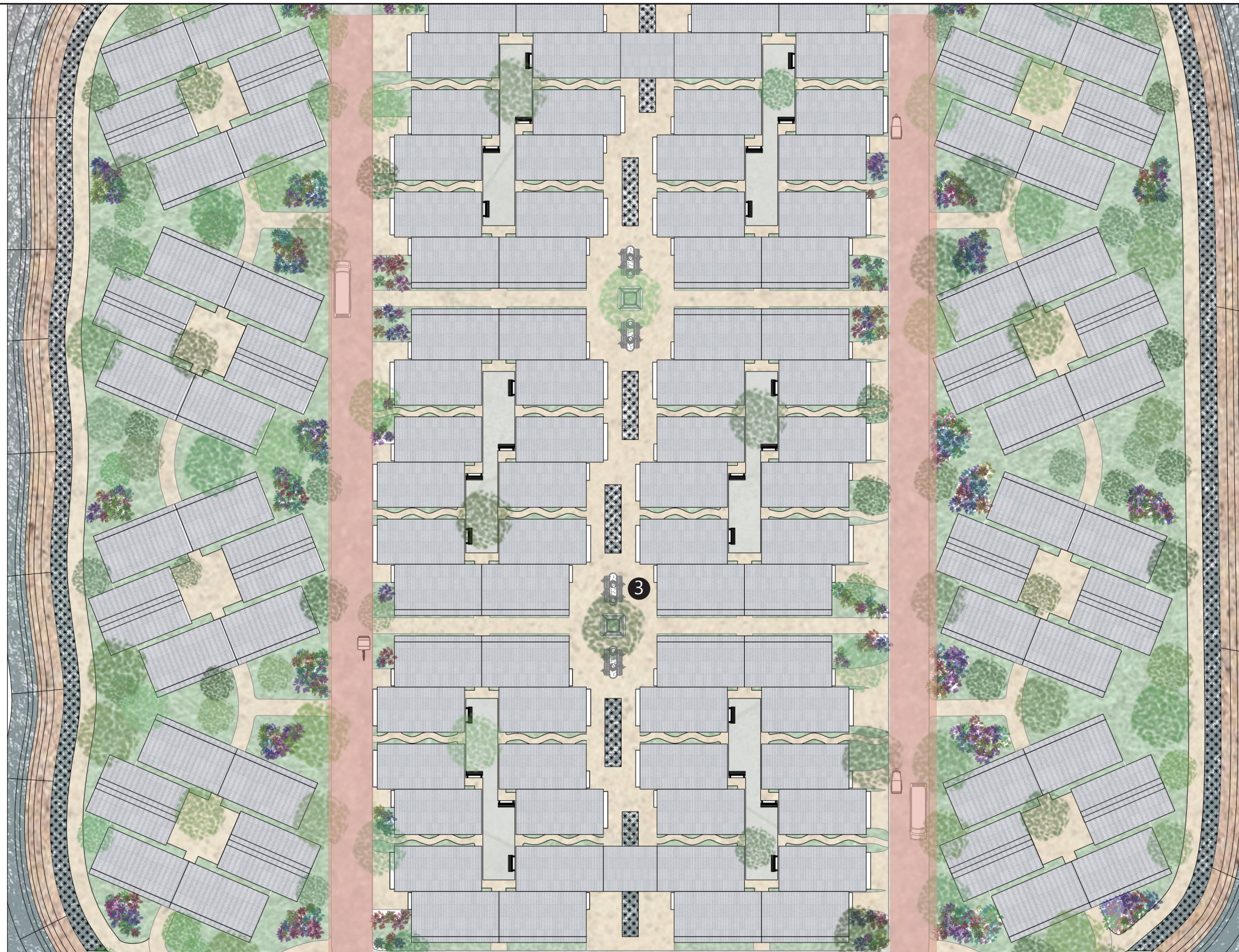
Sector 2 - Dwelling

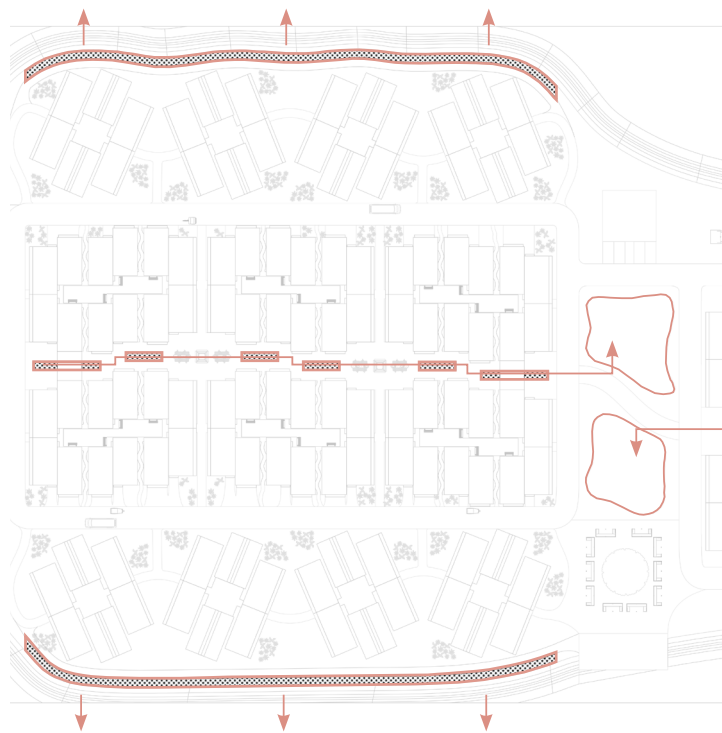
Scale: 1 : 500

Orientation:



- ① Vehicular road
- ② Middle Income Zone
- ③ Community spine
- ④ Low Income zone

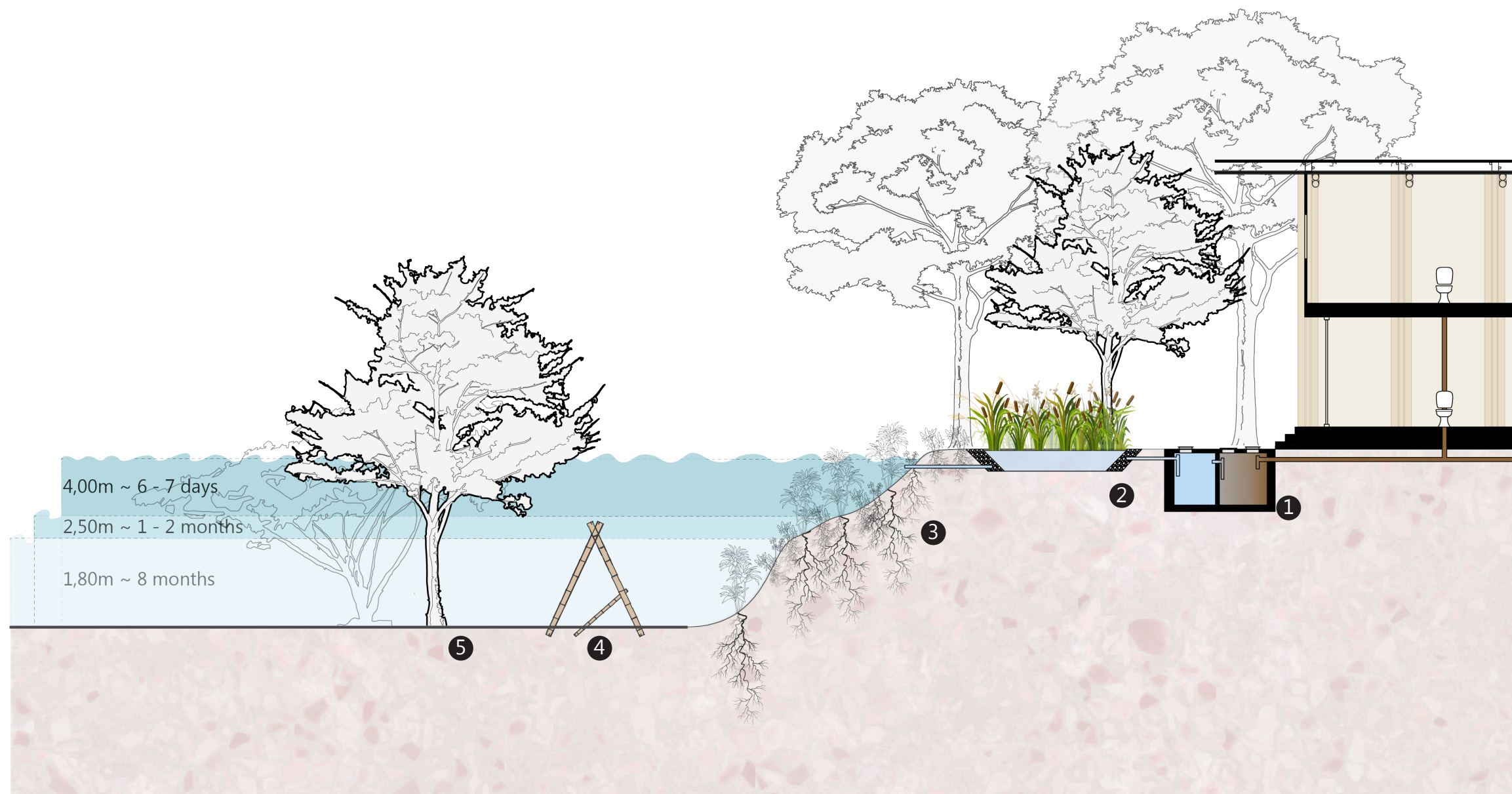




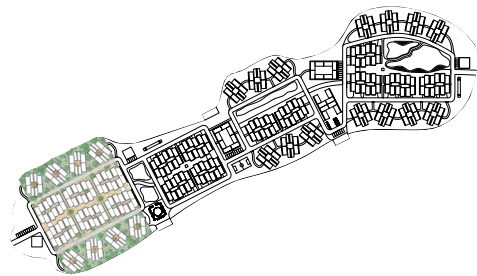
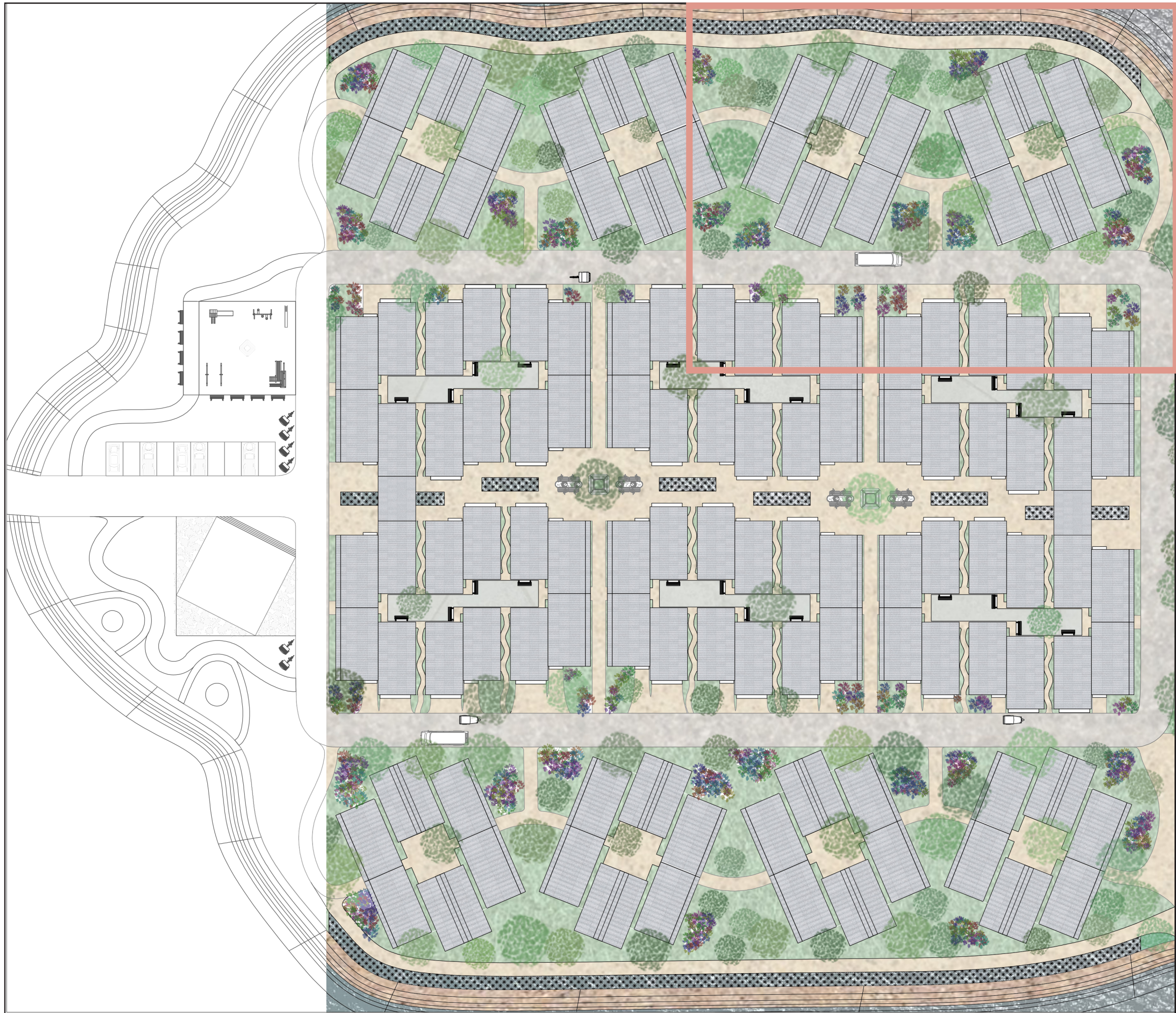
Embankment

Scale: 1 : 500

Orientation:



- ① Septic tank
- ② Helofytes Filter
- ③ Vetiver grass
- ④ Bamboo wave control
- ⑤ Koroch trees

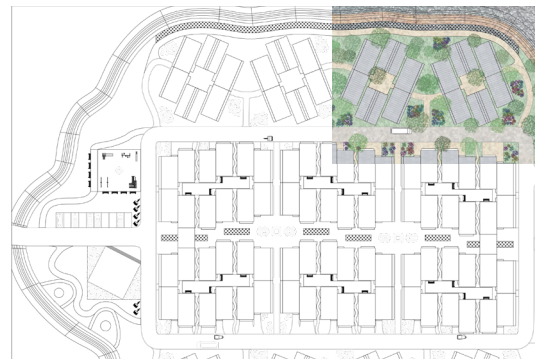


Sector 2 - Dwelling

Scale: 1 : 500

Orientation:





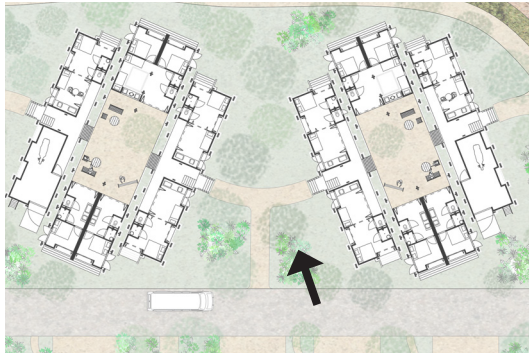
Low Income Housing

Scale: 1 : 200

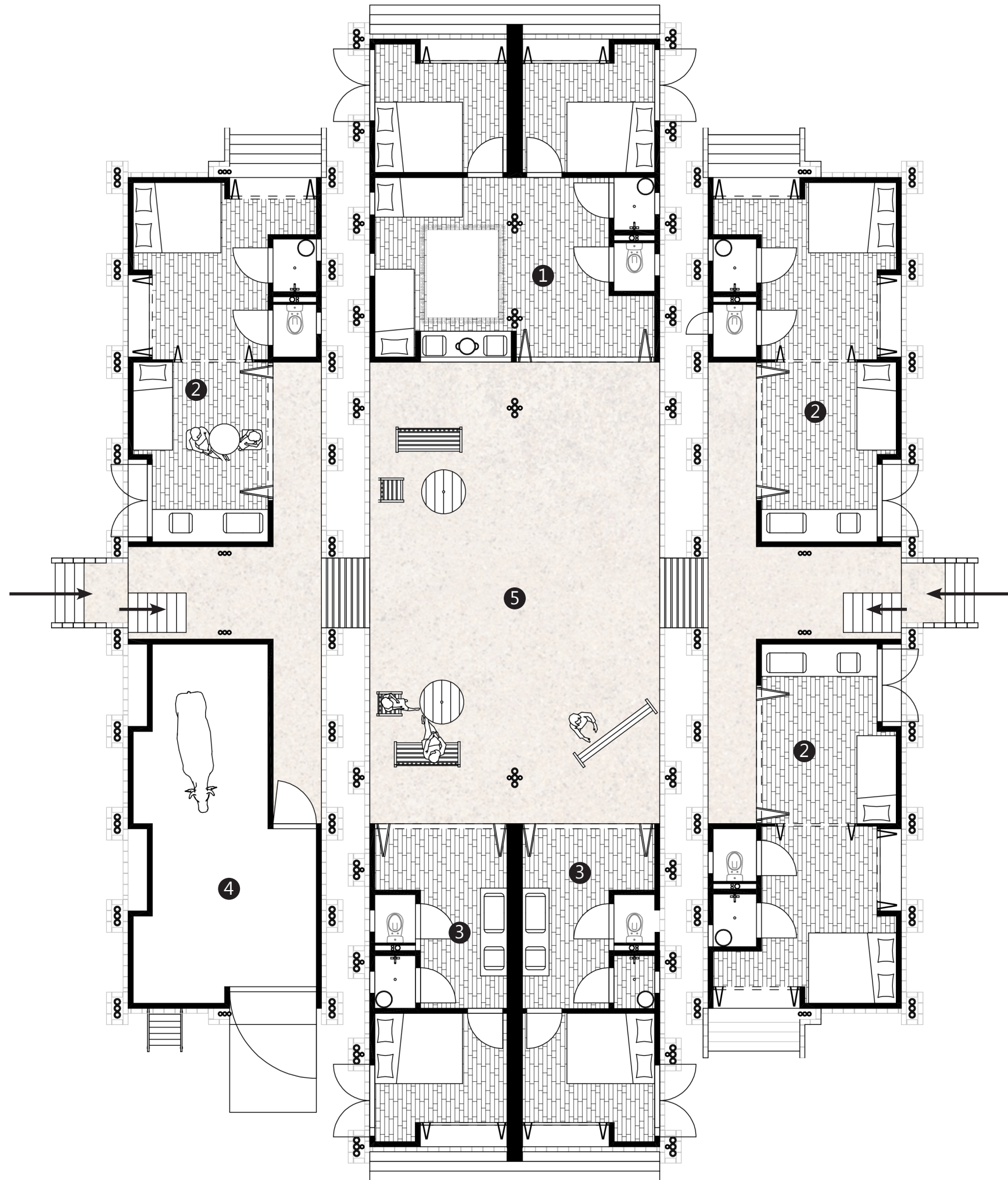
Orientation:



- 1 Helofyte Filter
- 2 Embankment
- 3 Pedestrian path
- 4 Vehicular Road
- 5 Shared Courtyard



Pockets of space between housing



Low Income Cluster - GF

Scale: 1 : 100

Building Footprint (m2): 375

Net Floor Area

Units: 12

Residents: 40

Shared courtyard (m2): 70

- ① Big Unit
- ② Medium Unit
- ③ Small Unit
- ④ Shared Stable
- ⑤ Shared Courtyard



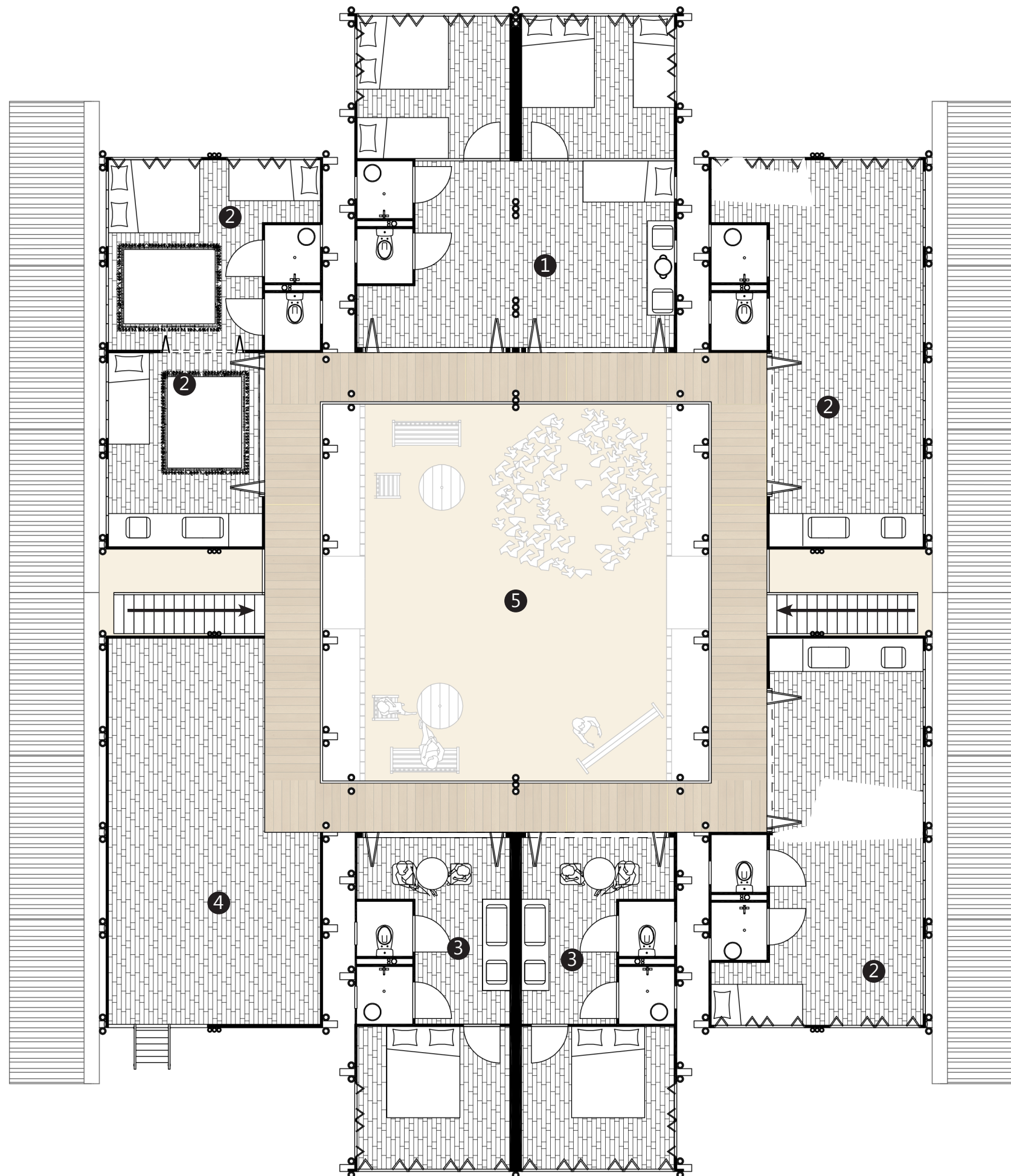
Low Income Cluster - 1F

Scale: 1 : 100

Building Footprint (m2): 375

Units: 12

Residents: 40



- ① Big Unit
- ② Medium Unit
- ③ Small Unit
- ④ Shared Space
- ⑤ Shared Courtyard



Low Income Cluster - 1F

Scale: 1 : 100



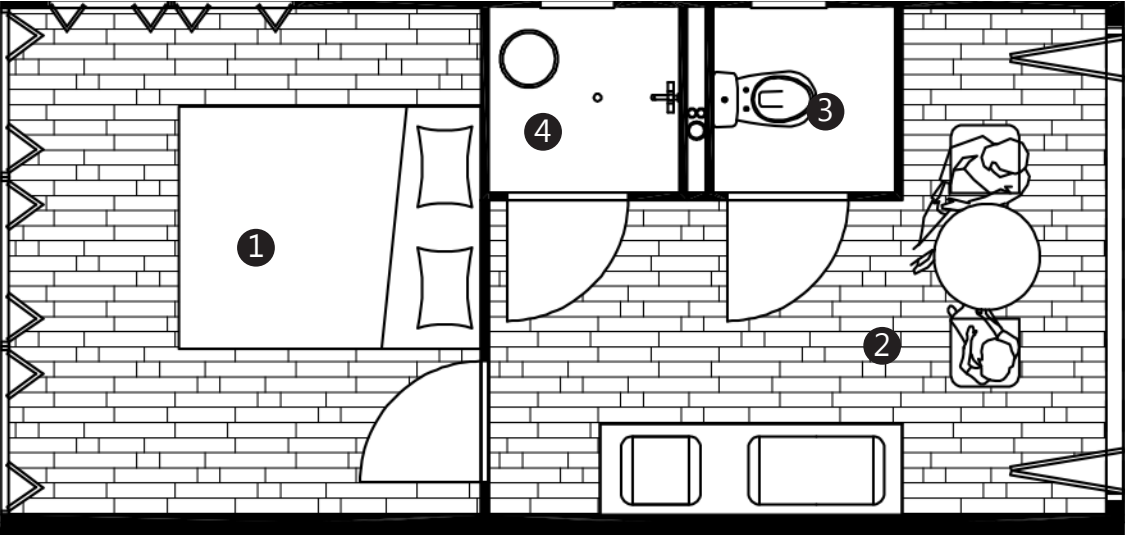
Building Footprint (m2): 375

Net floor area (m2):

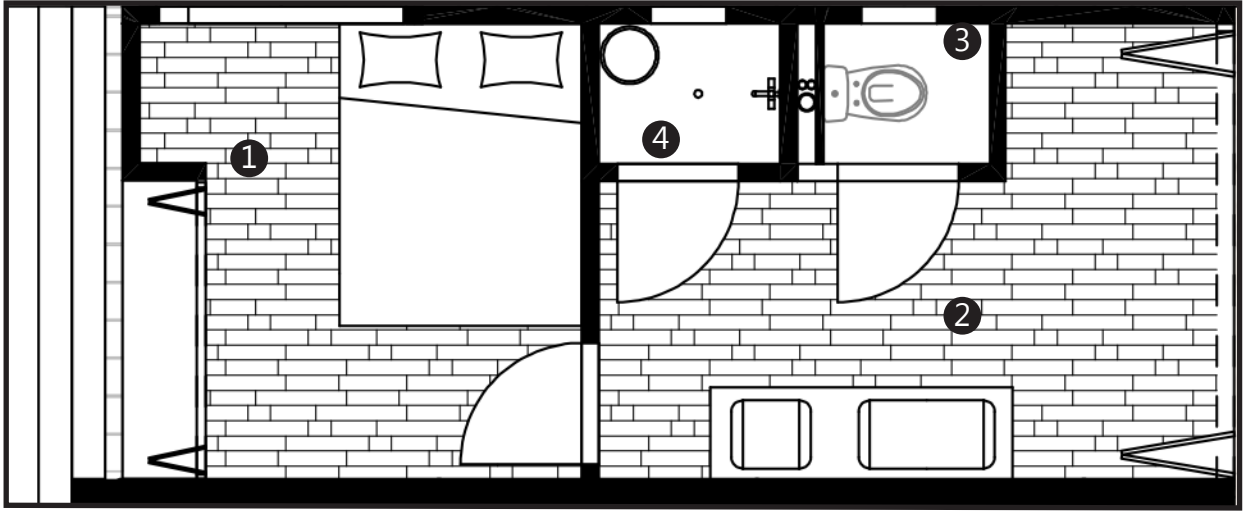
Units: 12

Residents: 40

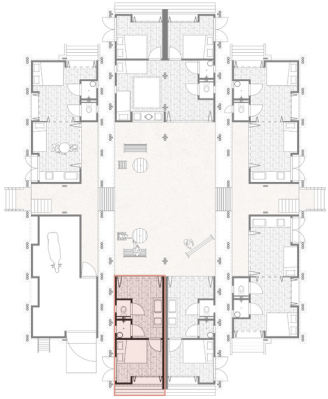
- ① Big Unit
- ② Medium Unit
- ③ Small Unit
- ④ Shared Space
- ⑤ Shared Courtyard



1F



GF



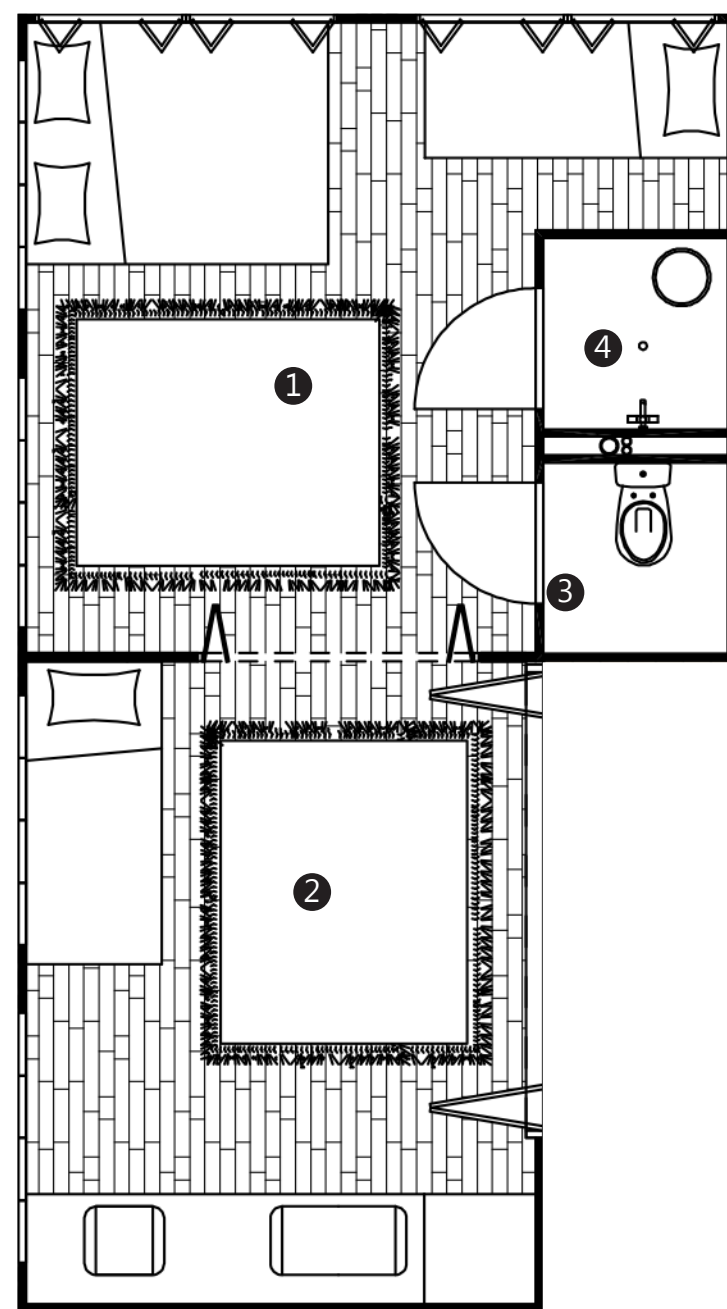
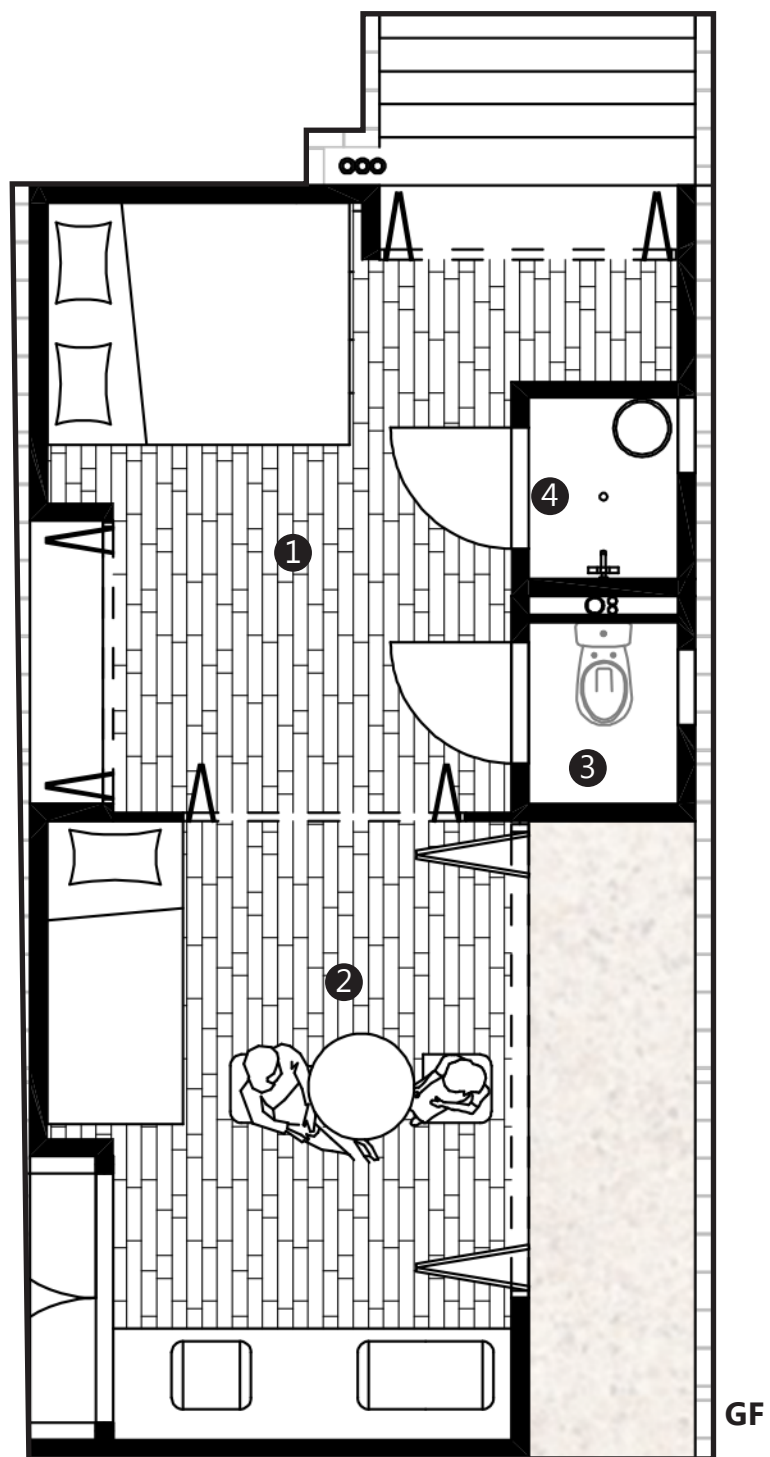
Small unit

Scale: 1 : 50

Area (m2): 23

Household size: 1 - 2

- 1 Bedroom
- 2 Multipurpose room
- 3 Bathroom
- 4 Shower
- 5 Shared Courtyard



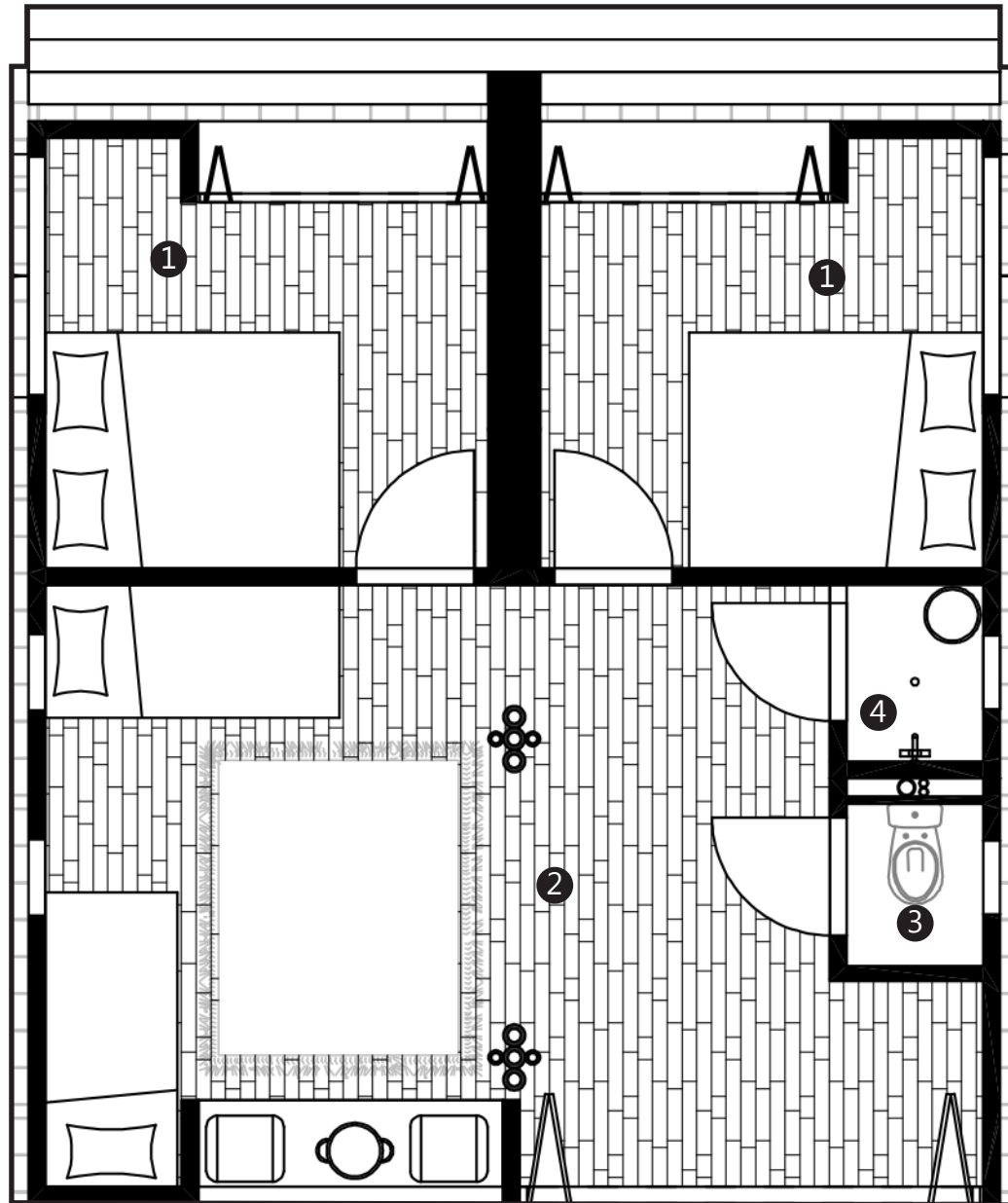
Medium unit

Scale: 1 : 50

Area (m2): 34

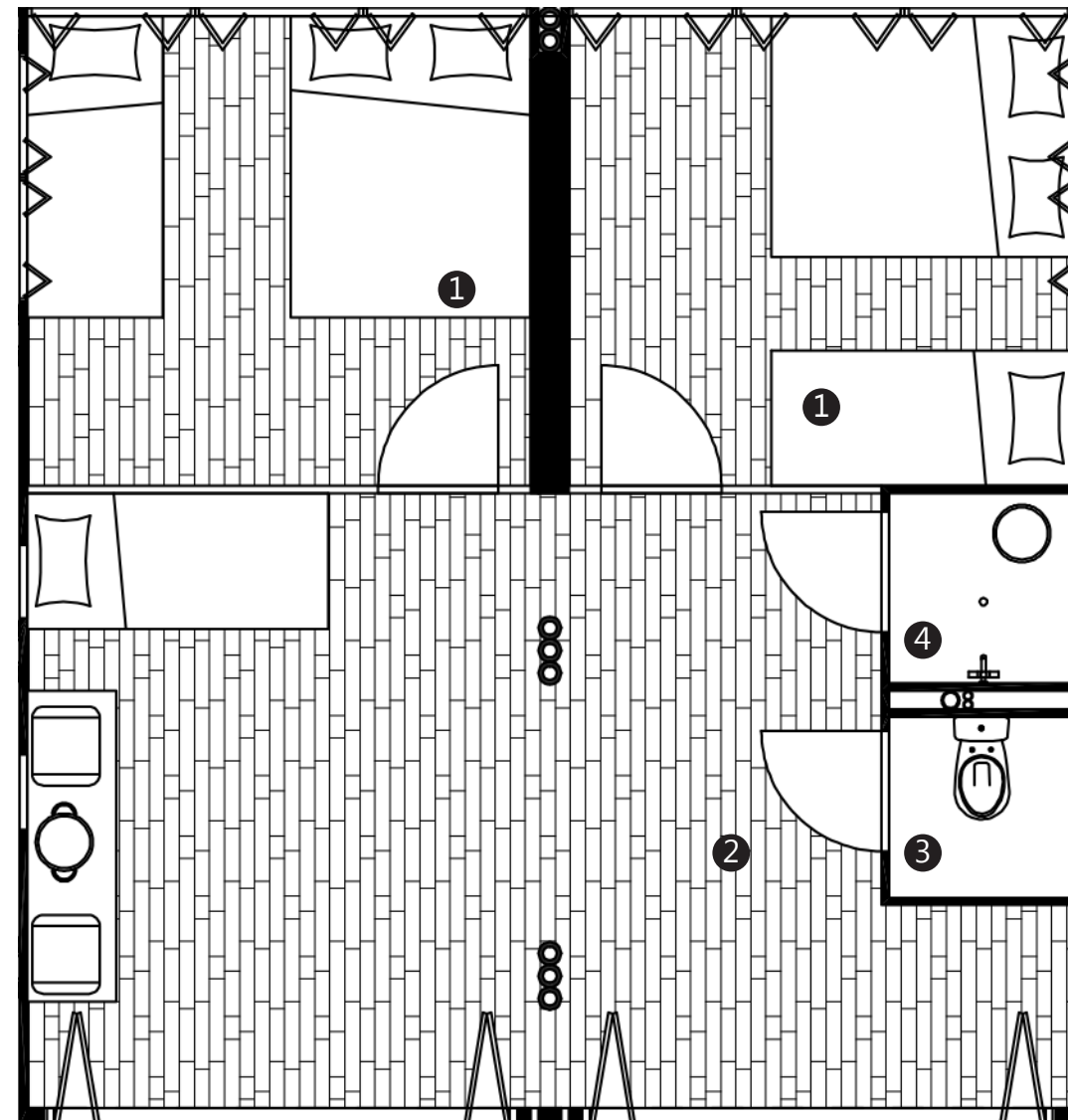
Household size: 3 - 4

- ① Bedroom
- ② Multipurpose room
- ③ Bathroom
- ④ Shower
- ⑤ Shared Courtyard

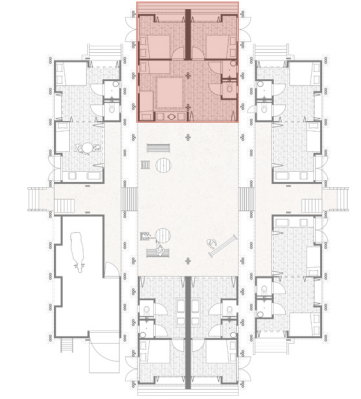


GF

5



1F



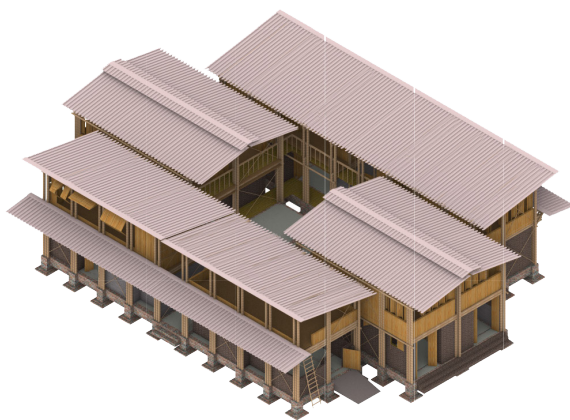
Big unit

Scale: 1 : 50

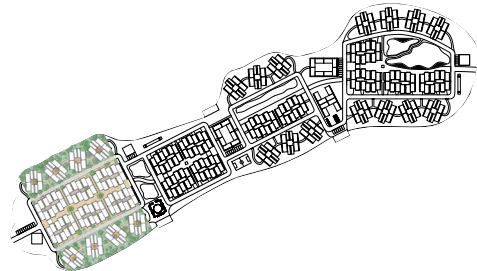
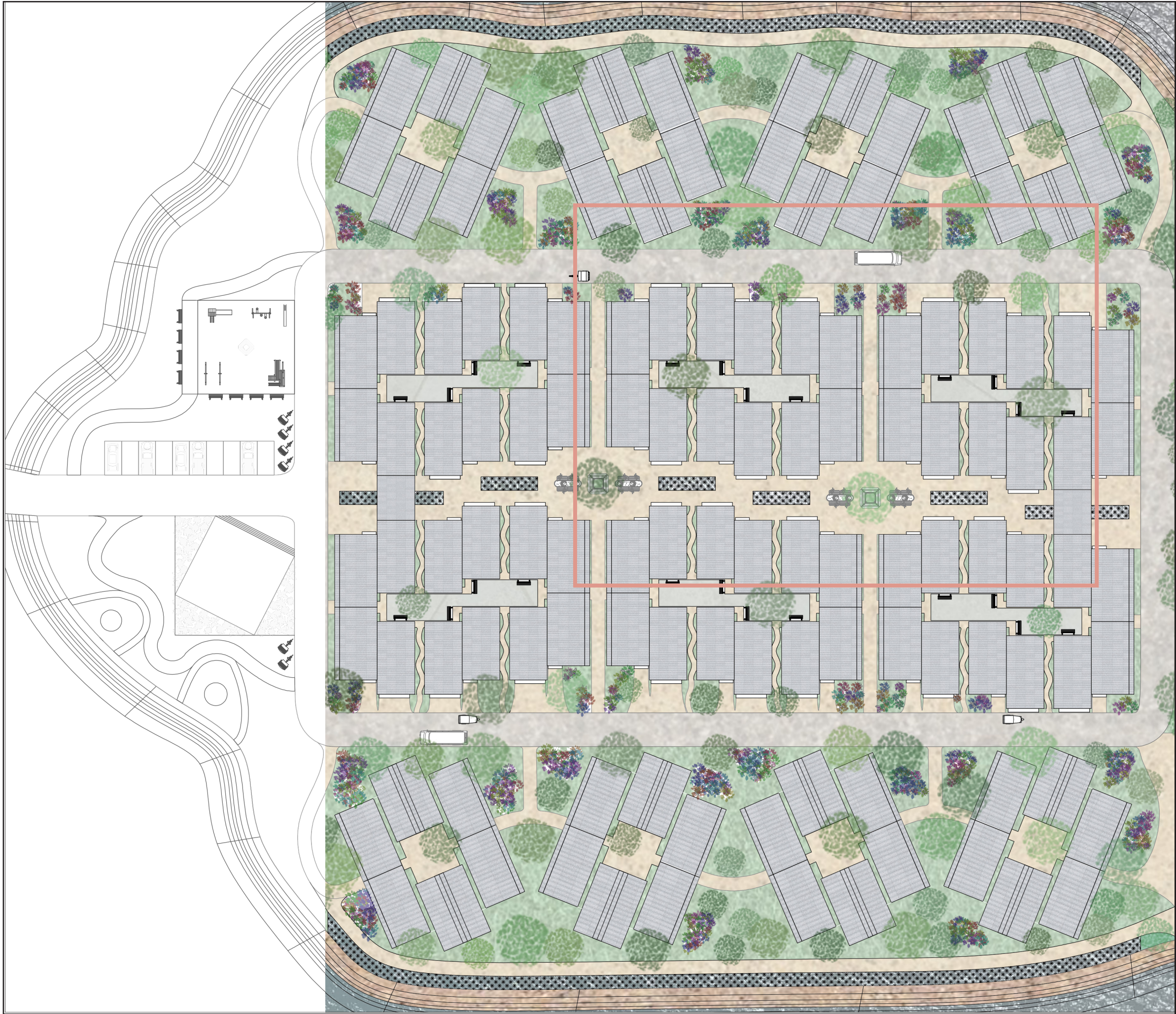
Area (m2): 45

Household size: 6 - 7

- 1 Bedroom
- 2 Multipurpose room
- 3 Bathroom
- 4 Shower
- 5 Shared Courtyard



Low income cluster courtyard

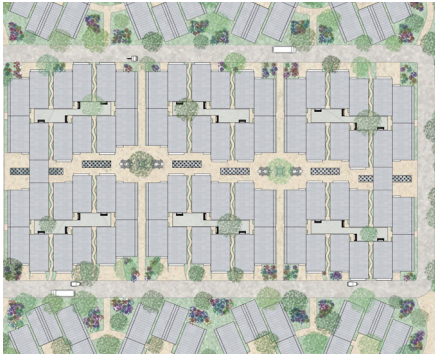


Sector 2 - Dwelling

Scale: 1 : 500

Orientation:



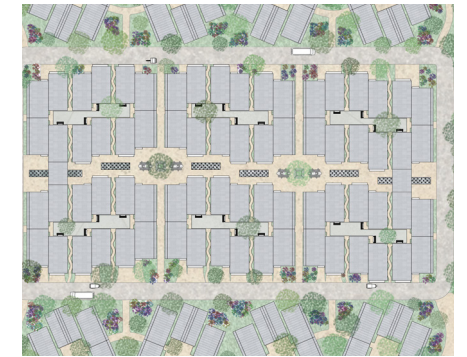


Middle income Housing

Scale: 1 : 200

Orientation:

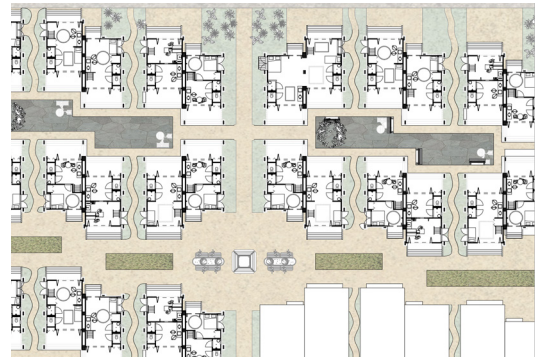




Section Community spine

Scale: 1 : 100





Middle income cluster - GF

Scale: 1 : 100

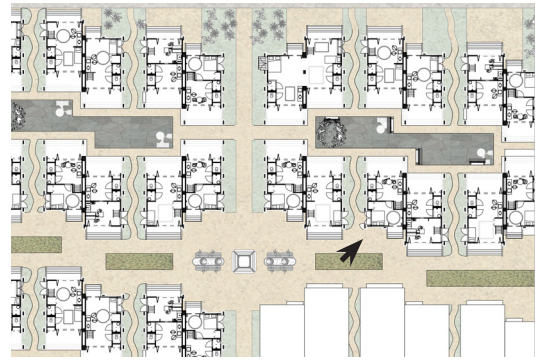
Orientation: 

Building Footprint (m2): 750

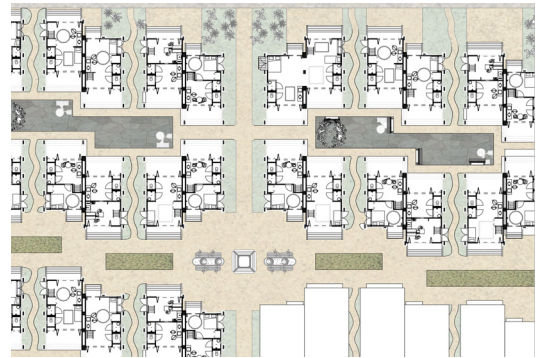
Units: 11

Residents: 60

- ① Dwelling unit
- ② Mixed unit
- ③ Double unit
- ④ Shared courtyard



Side entrances cluster



Middle income cluster - 1F

Scale: 1 : 100

Orientation:

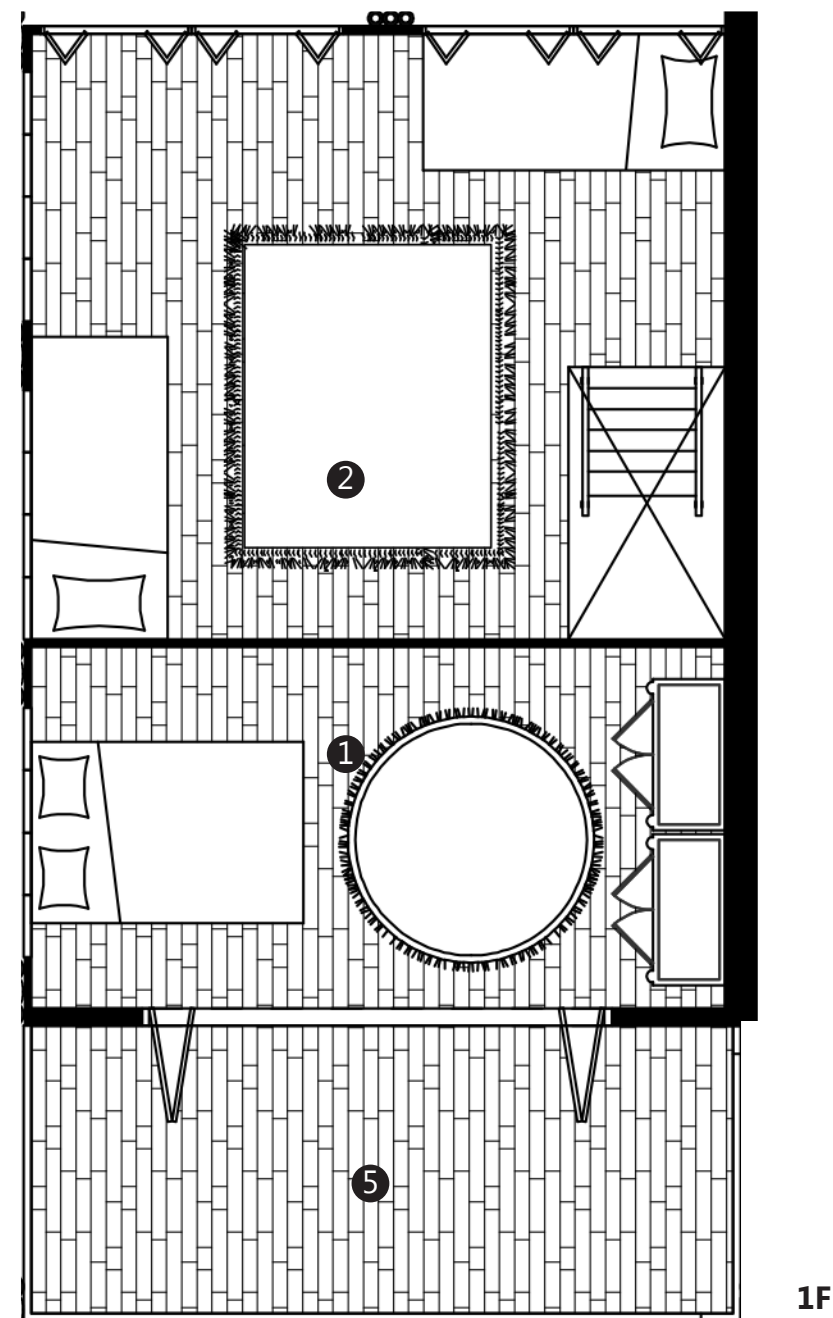
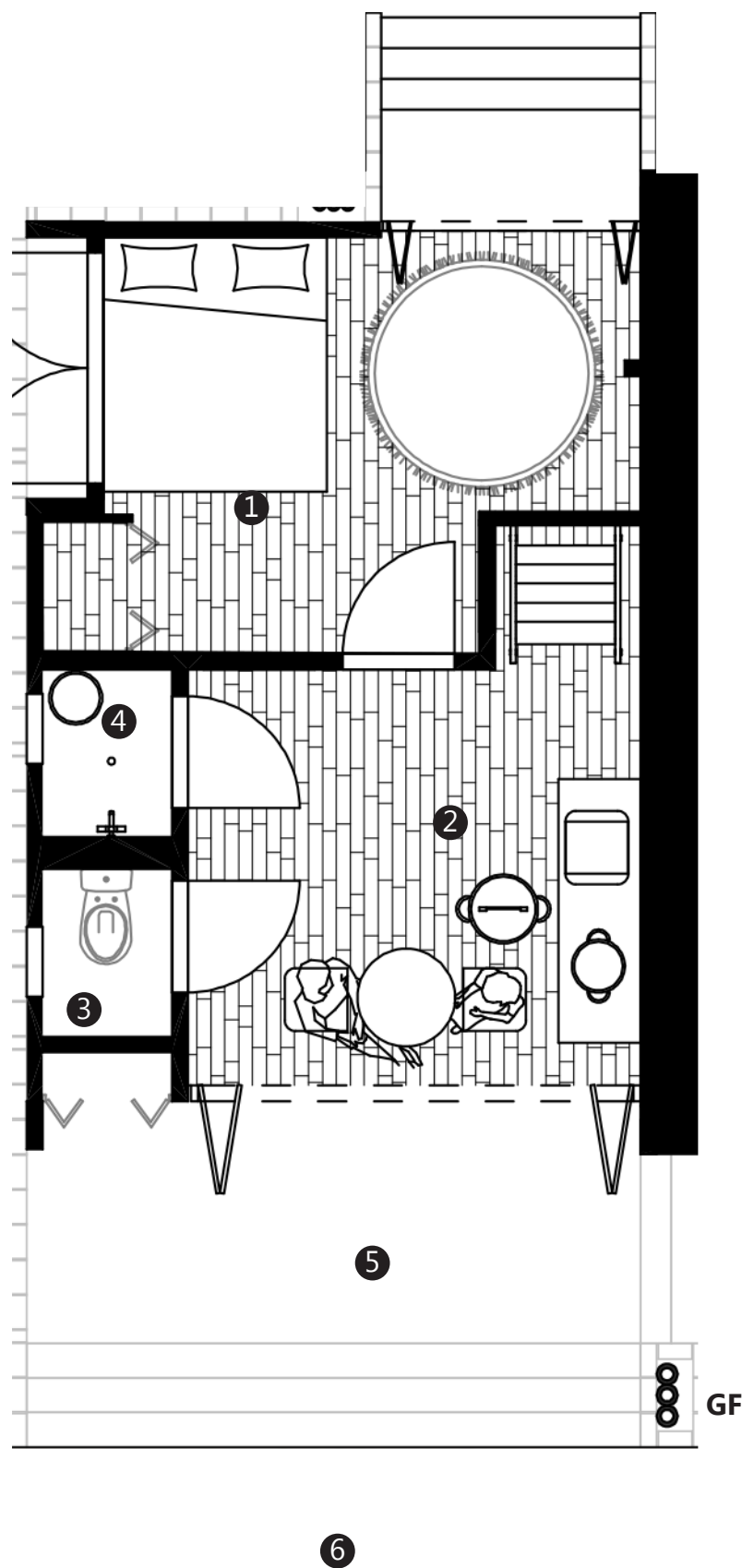


Building Footprint (m2): 750

Units: 11

Residents: 60

- ① Dwelling unit
- ② Mixed unit
- ③ Double unit
- ④ Shared courtyard



Regular unit

Scale: 1 : 50

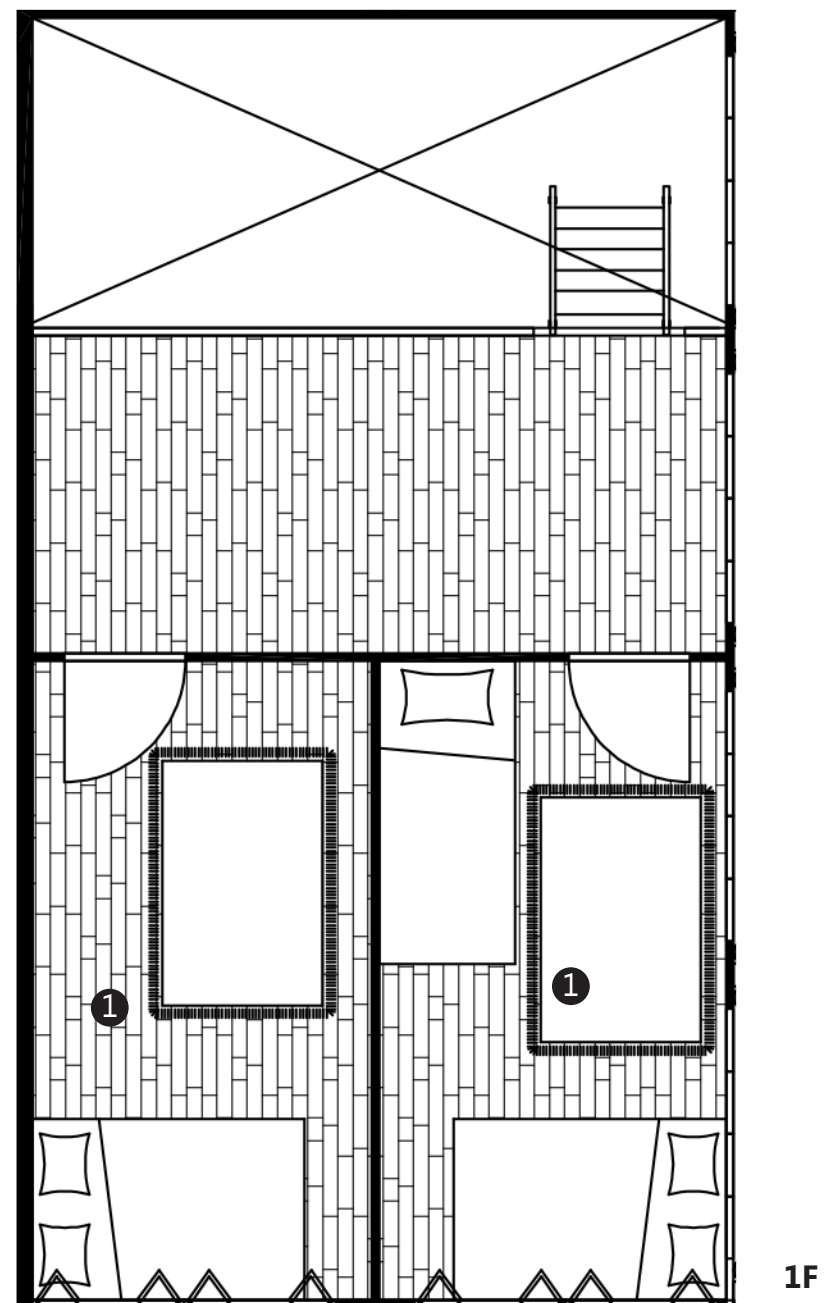
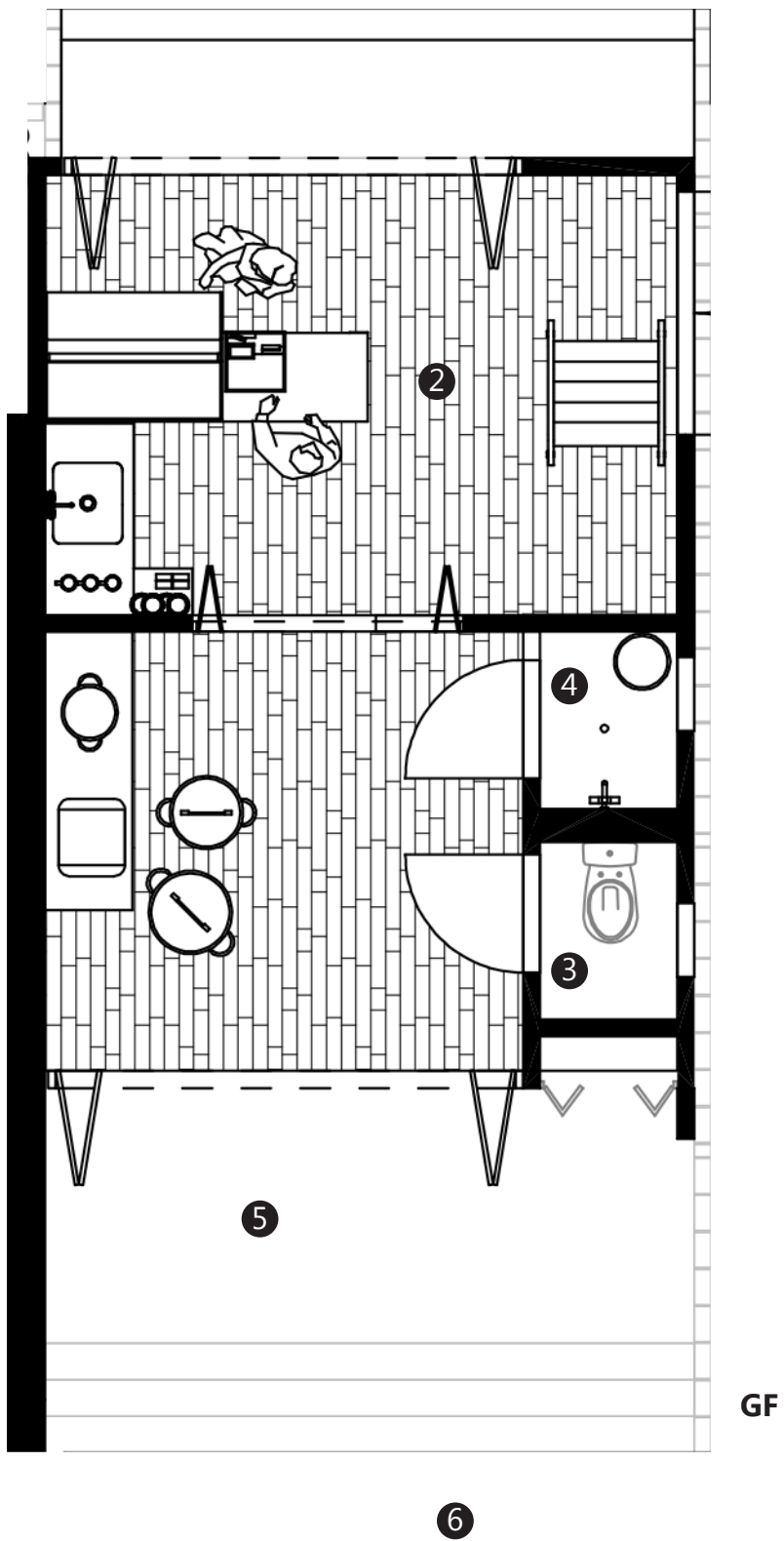
Orientation:



Area (m2): 70

Household size: 6

- ① Bedroom
- ② Multipurpose room
- ③ Bathroom
- ④ Shower
- ⑤ Outdoor space
- ⑥ Shared Courtyard



Mixed-use units

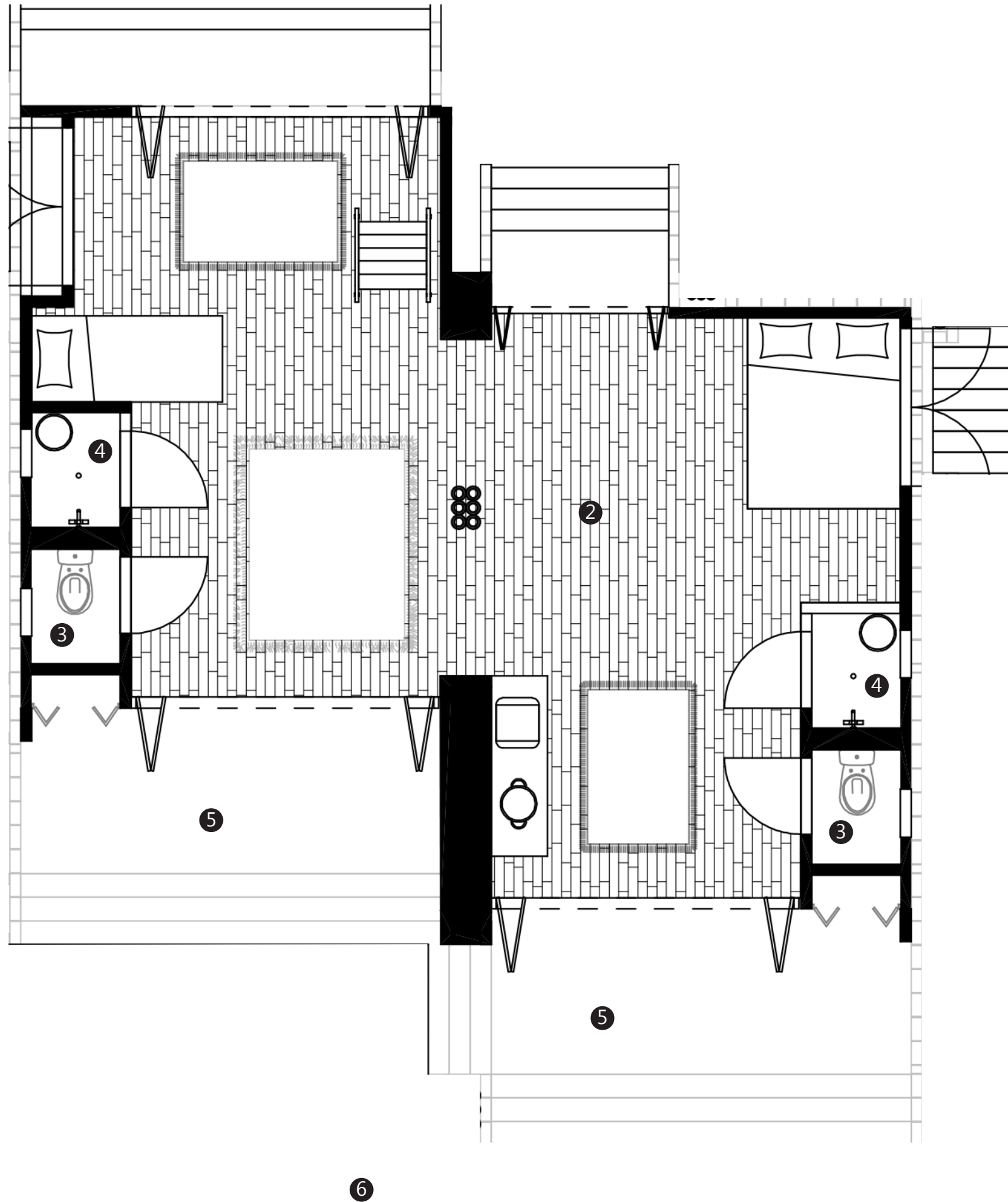
Scale: 1 : 50

Orientation:

Area (m2): 70

Household size: 4 - 5

- ① Bedroom
- ② Shop
- ③ Bathroom
- ④ Shower
- ⑤ Outdoor space
- ⑥ Shared Courtyard



Double unit - GF

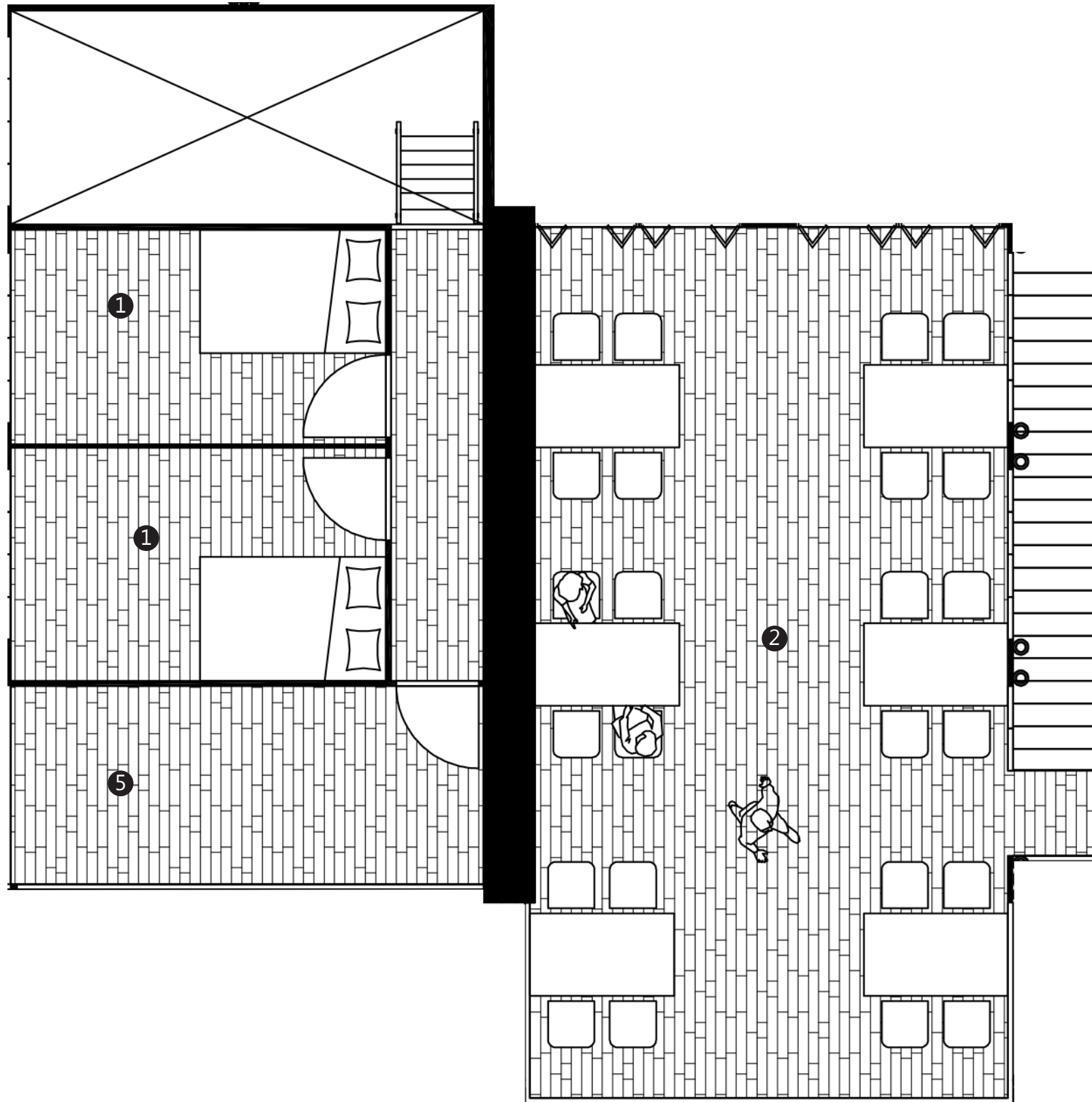
Scale: 1 : 50

Orientation:

Area (m2): 140

Household size: 6 - 14

- ① Bedroom
- ② Multipurpose room
- ③ Bathroom
- ④ Shower
- ⑤ Outdoor space
- ⑥ Shared Courtyard



Double unit - 1F

Scale: 1 : 50

Orientation:

Area (m2): 140

Household size: 6 - 14

- ① Bedroom
- ② Restaurant
- ③ Bathroom
- ④ Shower
- ⑤ Outdoor space
- ⑥ Shared Courtyard



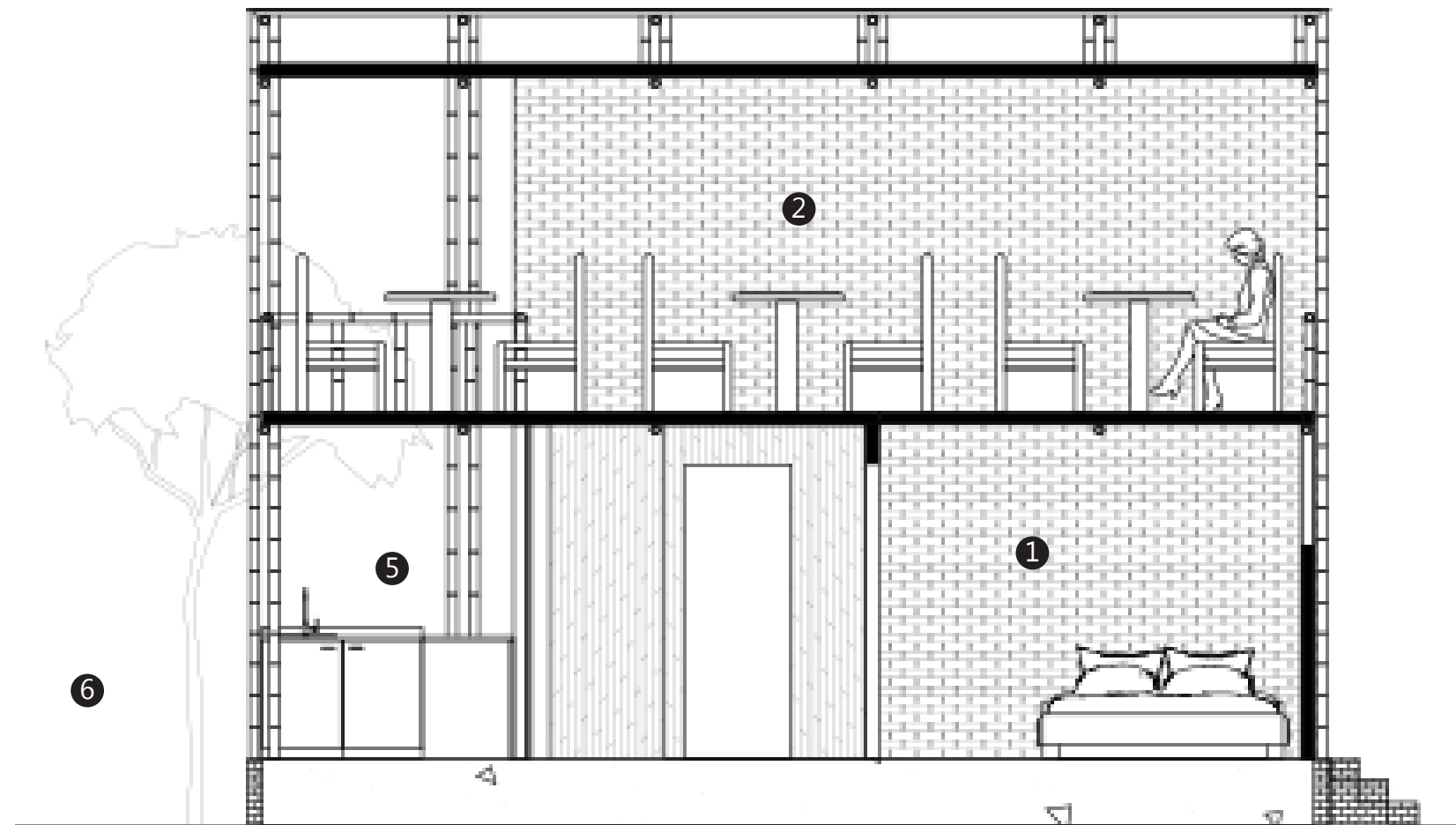
Double unit

Scale: 1 : 50

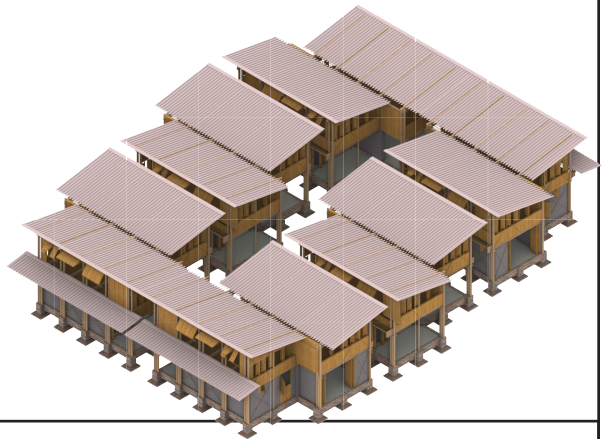
Orientation:

Area (m2): 140

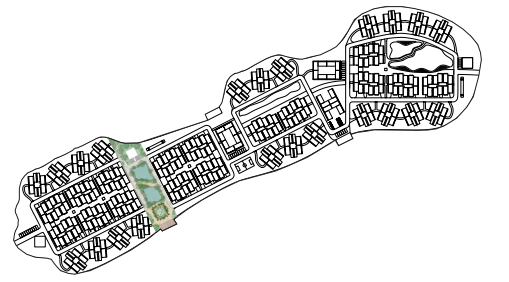
Household size: 6 - 14



- ① Bedroom
- ② Restaurant
- ③ Bathroom
- ④ Shower
- ⑤ Outdoor space
- ⑥ Shared Courtyard



Middle income cluster courtyard



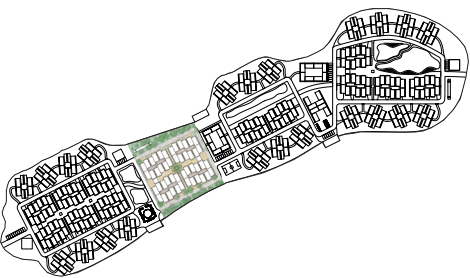
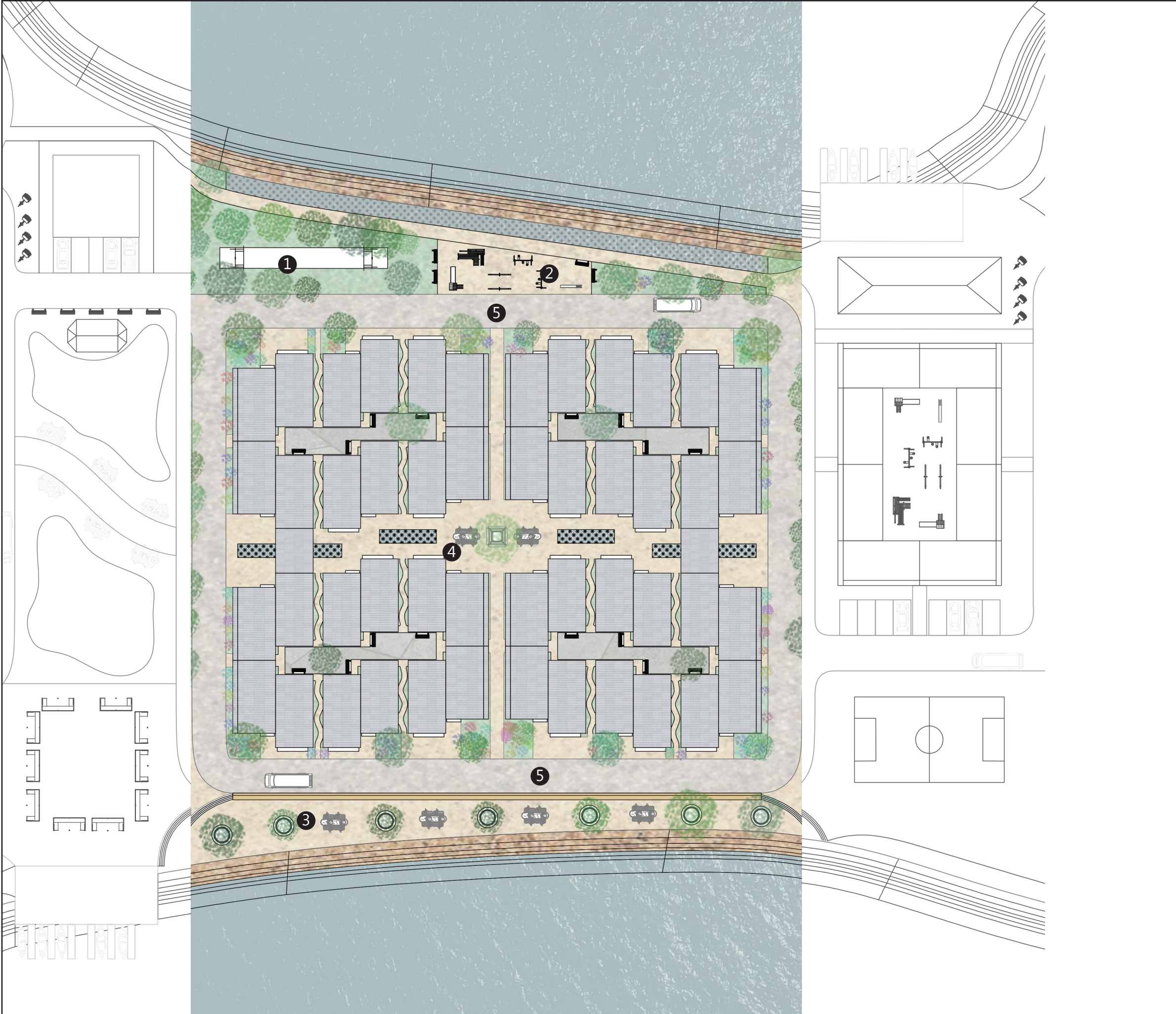
Sector 3 - Public

Scale: 1 : 500

Orientation:



- 1 City hall
- 2 Dock
- 3 Market place
- 4 Parking
- 5 Lake Pavillion



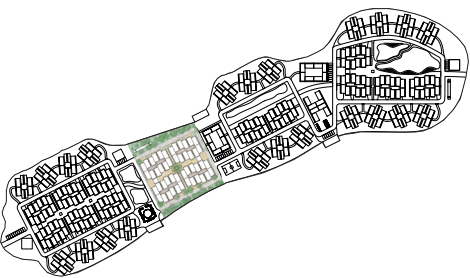
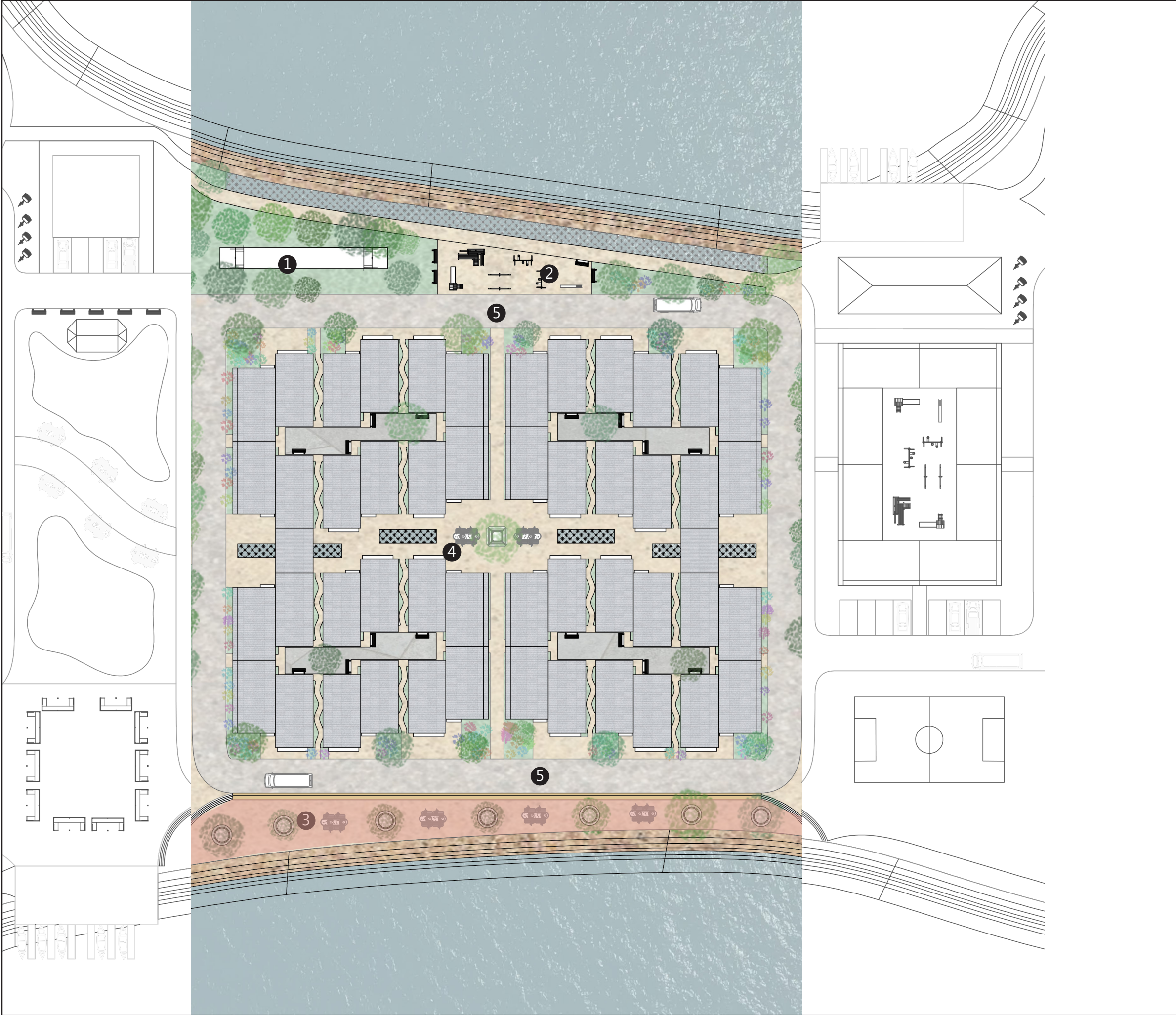
Sector 4 - Dwelling

Scale: 1 : 500

Orientation:



- 1 Cricket pitch
- 2 Playground
- 3 Embankment Seating Area
- 4 Community spine
- 5 Vehicular Road



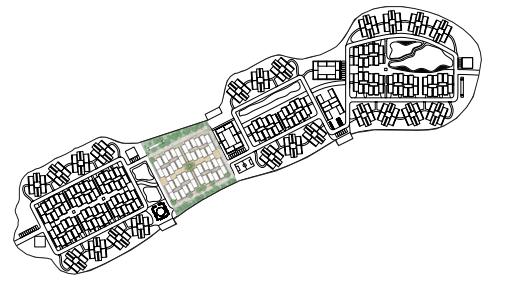
Sector 4 - Dwelling

Scale: 1 : 500

Orientation:



- 1 Cricket pitch
- 2 Playground
- 3 Embankment Seating Area
- 4 Community spine
- 5 Vehicular Road

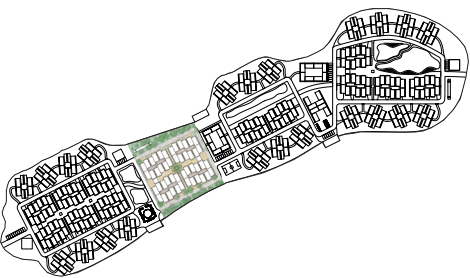
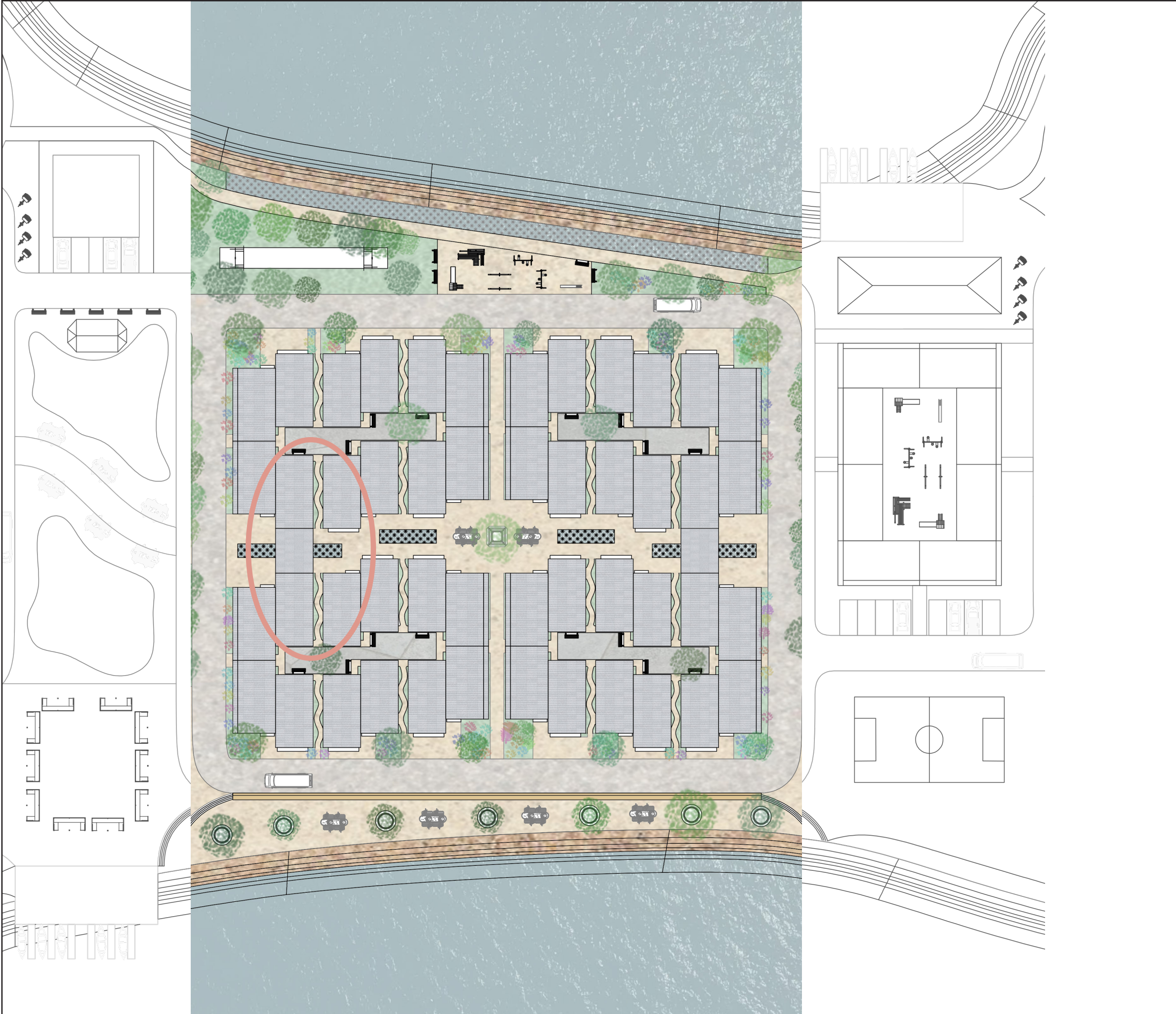


Sector 4 - Dwelling

Scale: 1 : 500

Orientation: 

- ① Cricket pitch
- ② Playground
- ③ Embankment Seating Area
- ④ Community spine
- ⑤ Vehicular Road

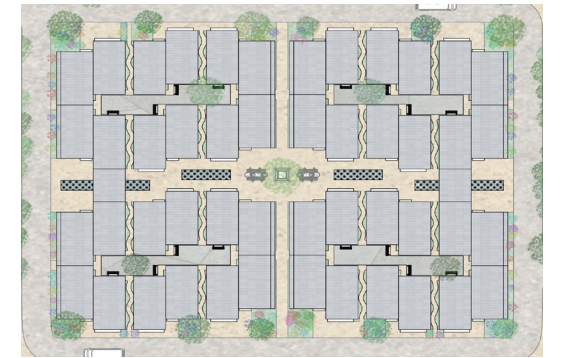


Sector 4 - Dwelling

Scale: 1 : 500

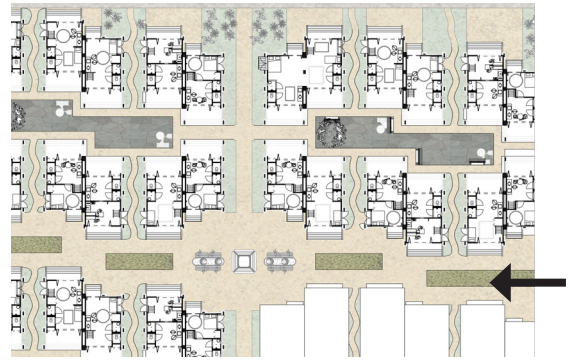
Orientation:



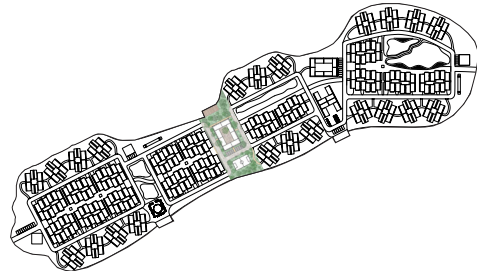
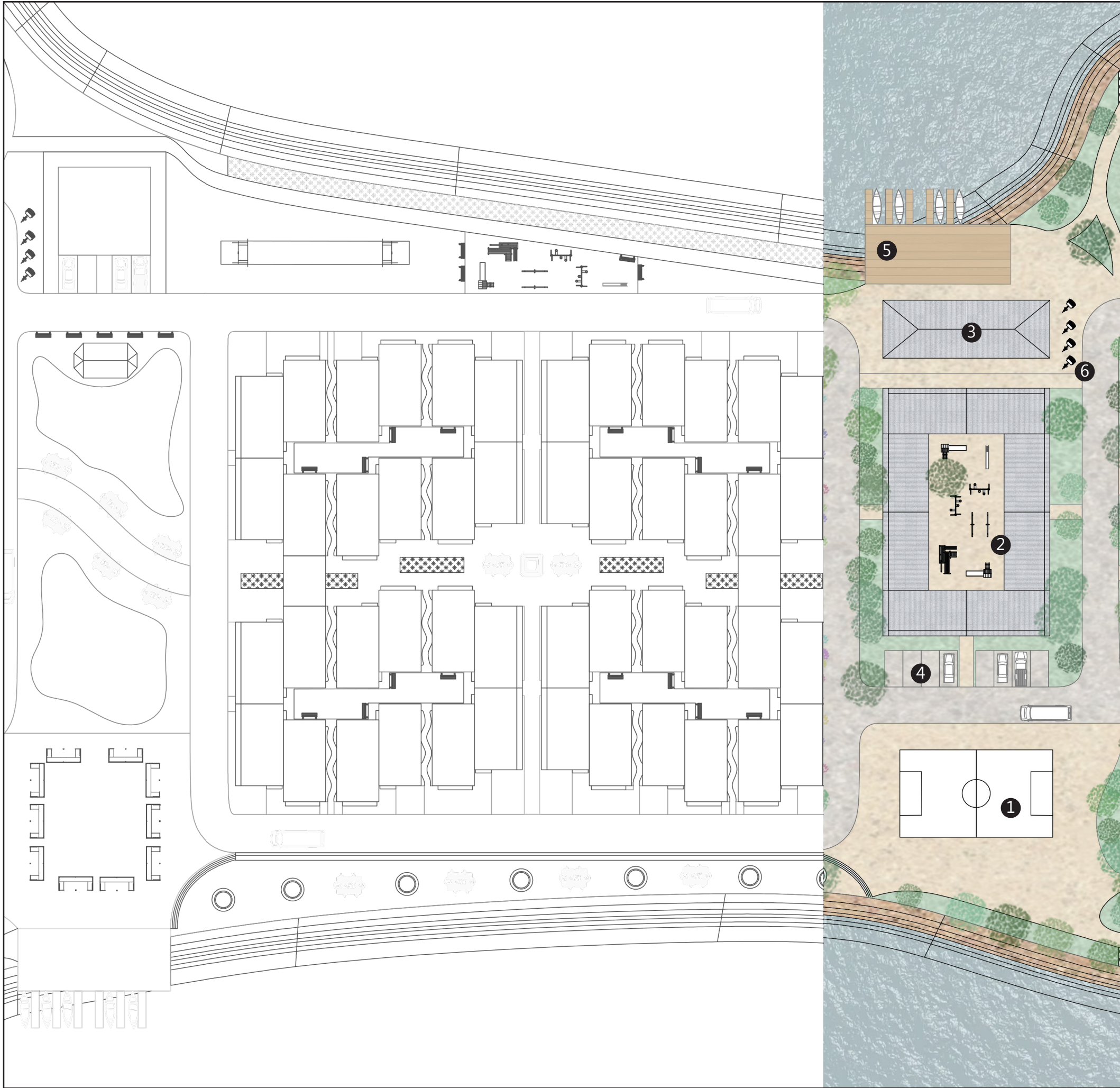


Gate to the community spine





Community spine



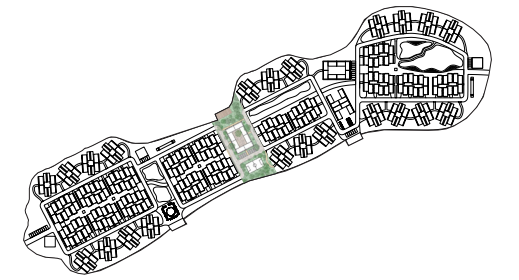
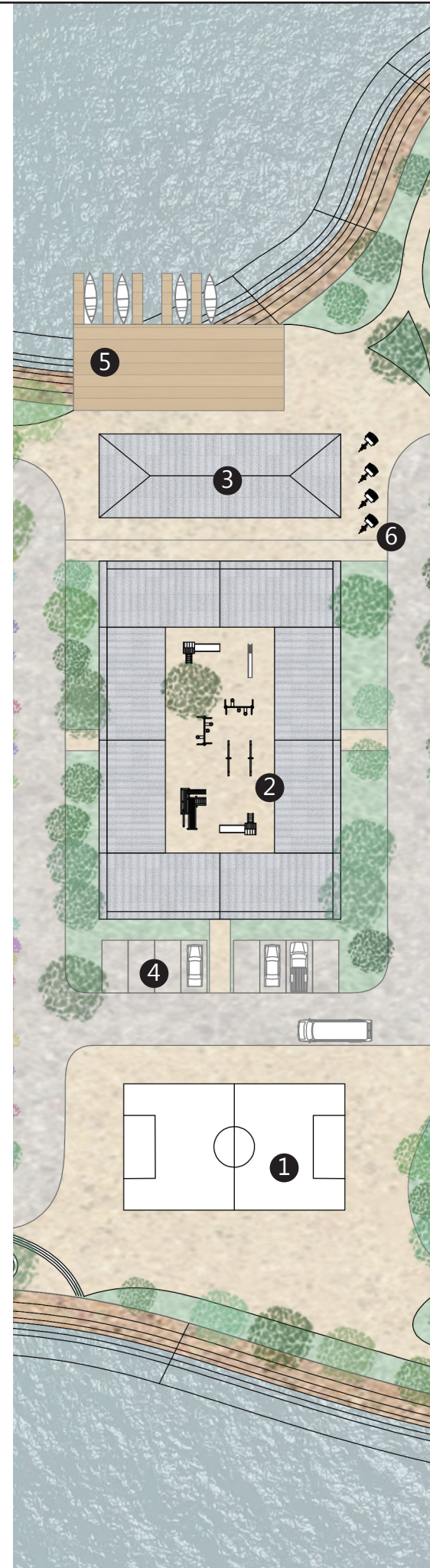
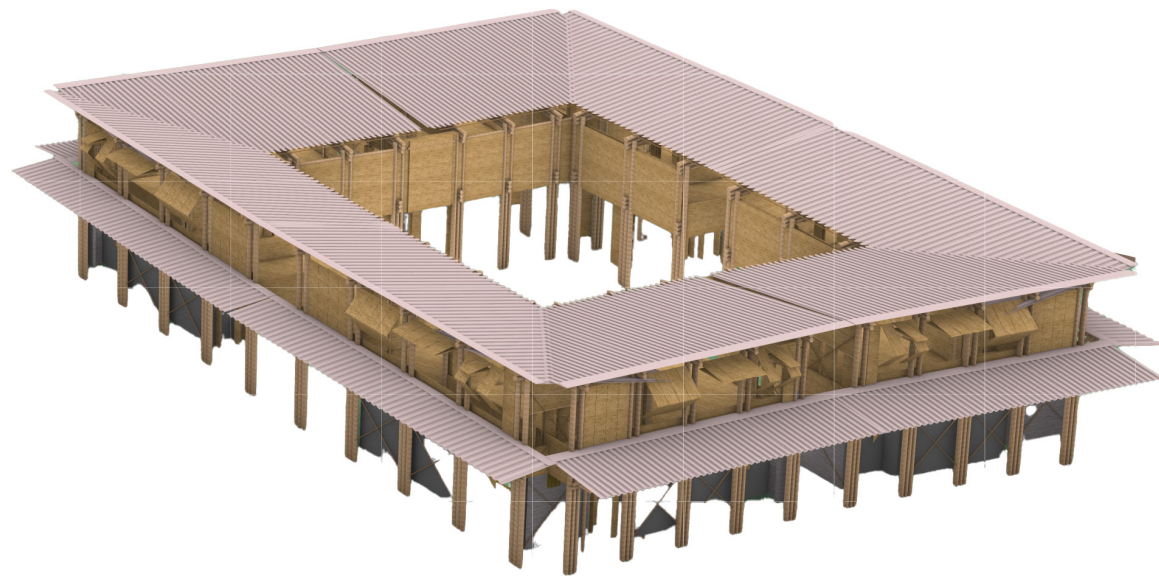
Sector 5 - Public

Scale: 1 : 500

Orientation:



- 1 Sportsfield
- 2 Elementary School
- 3 Pavilion
- 4 Parking
- 5 Dock
- 6 Rickshaw stand



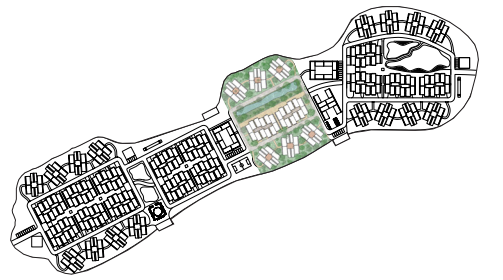
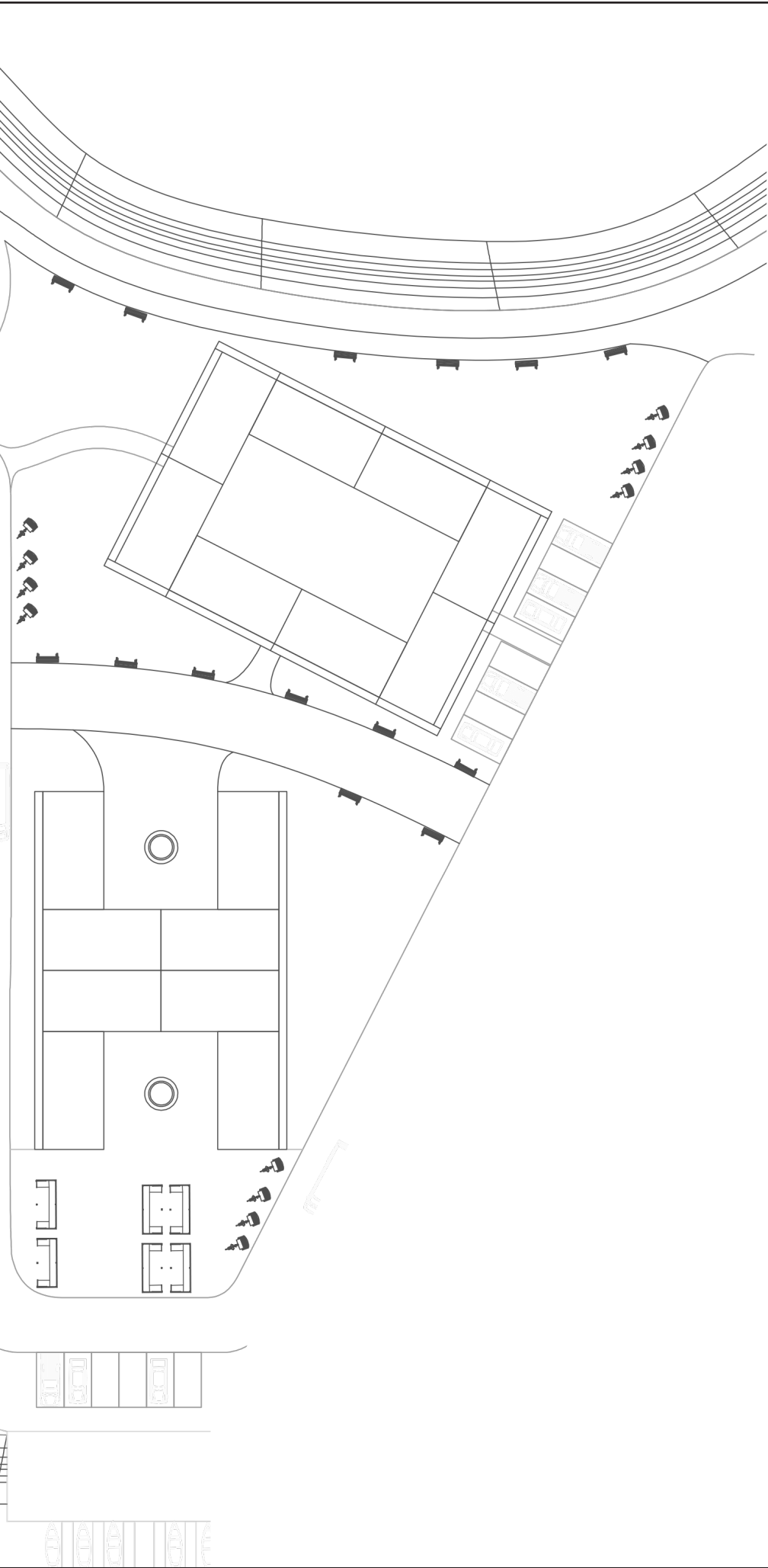
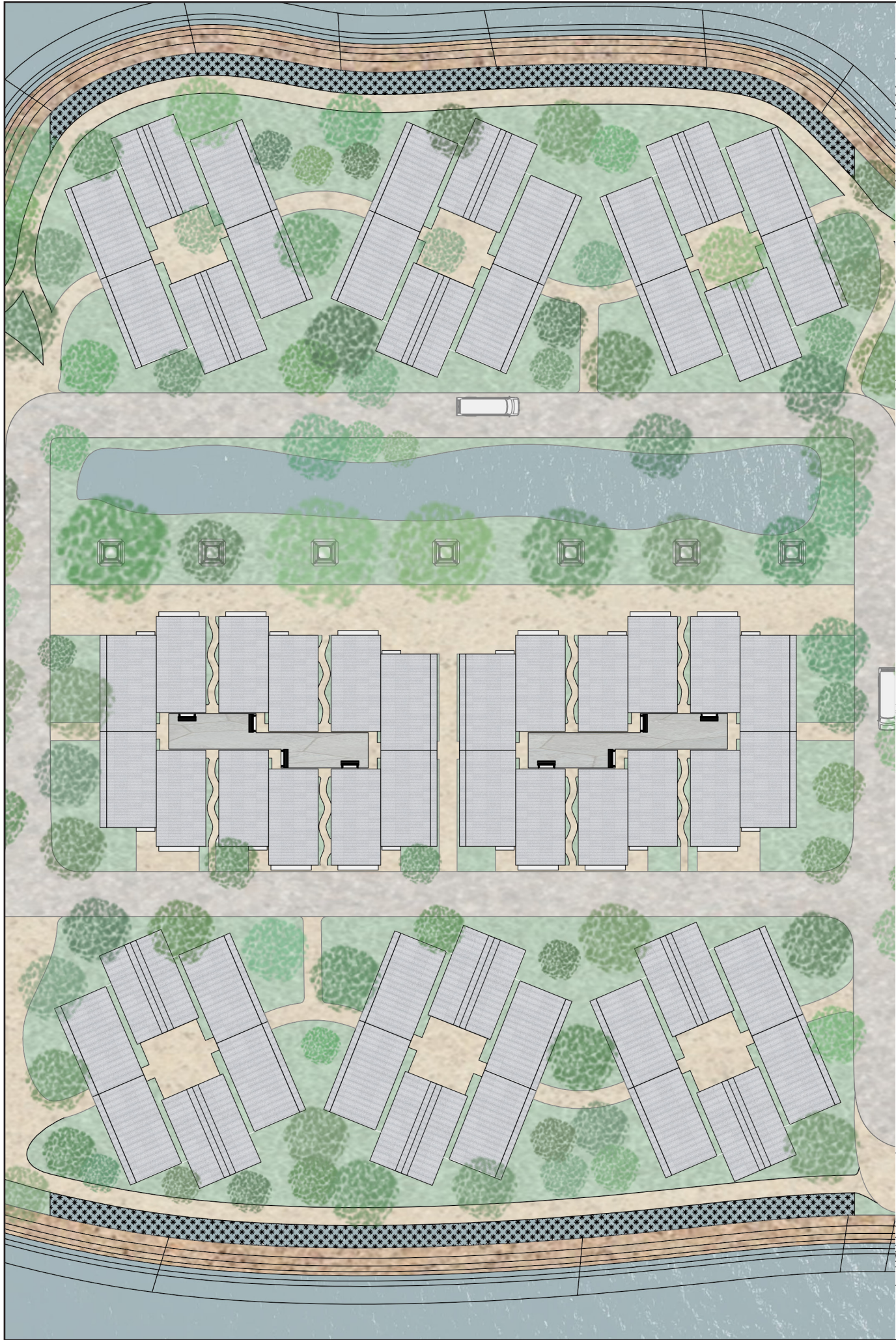
Sector 5 - Public

Scale: 1 : 500

Orientation:



- ① Sportsfield
- ② Elementary School
- ③ Pavilion
- ④ Parking
- ⑤ Dock
- ⑥ Rickshaw stand

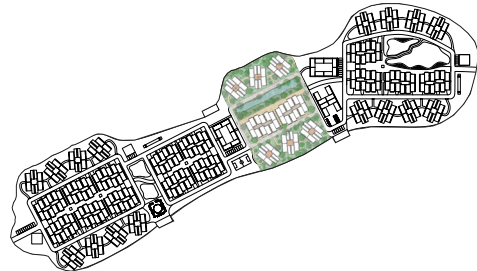
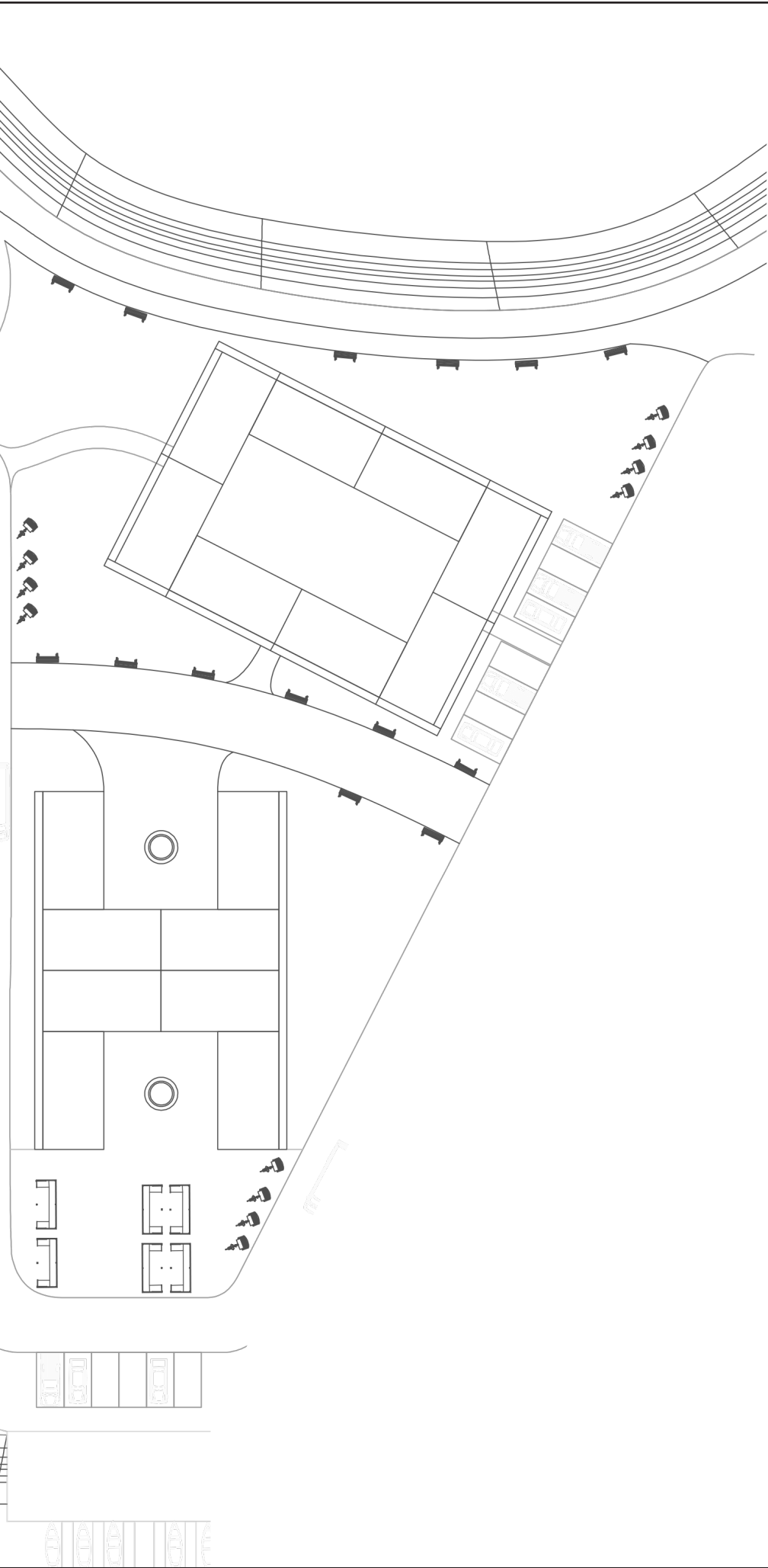
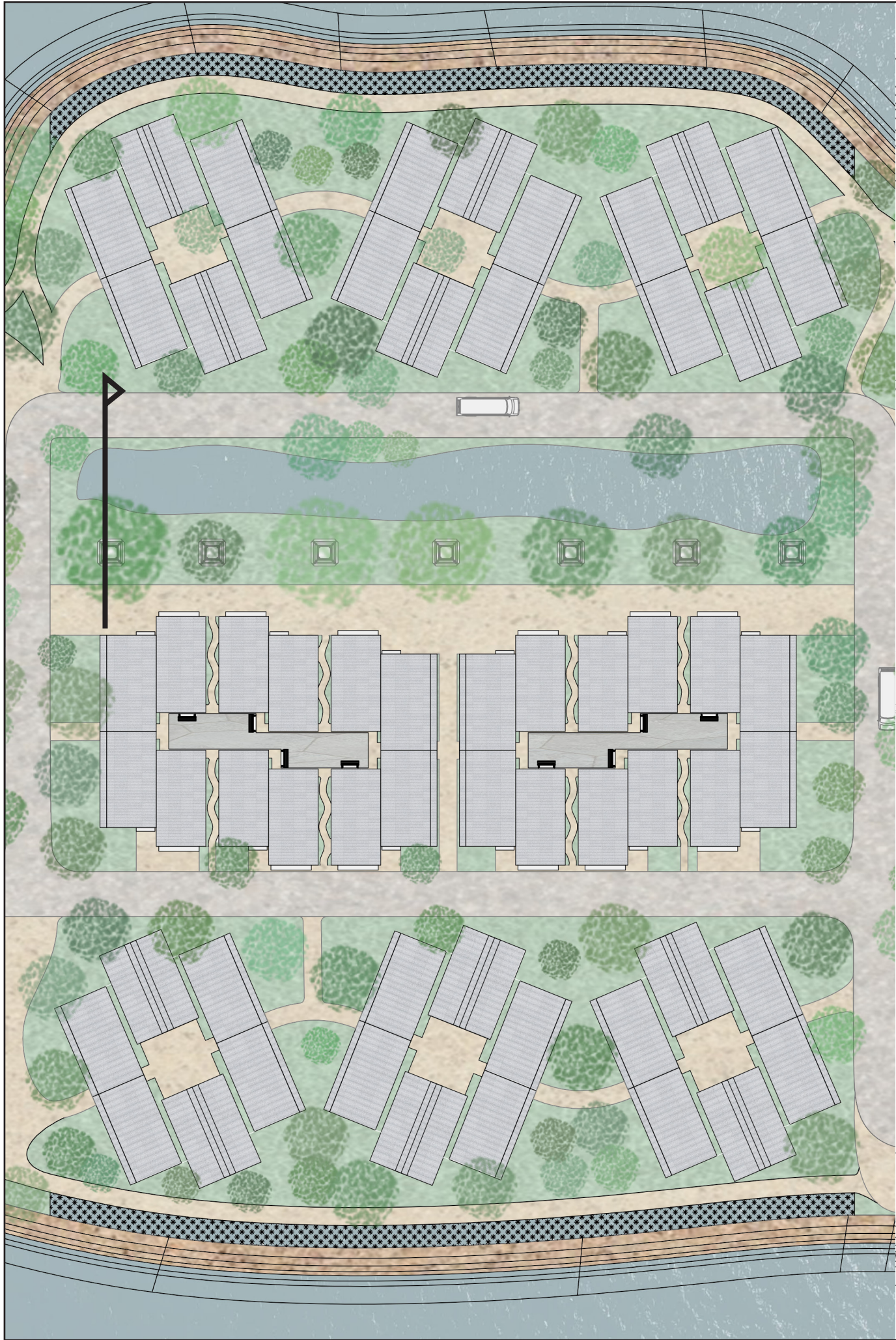


Sector 6 - Dwelling

Scale: 1 : 500

Orientation:





Sector 6 - Dwelling

Scale: 1 : 500

Orientation:

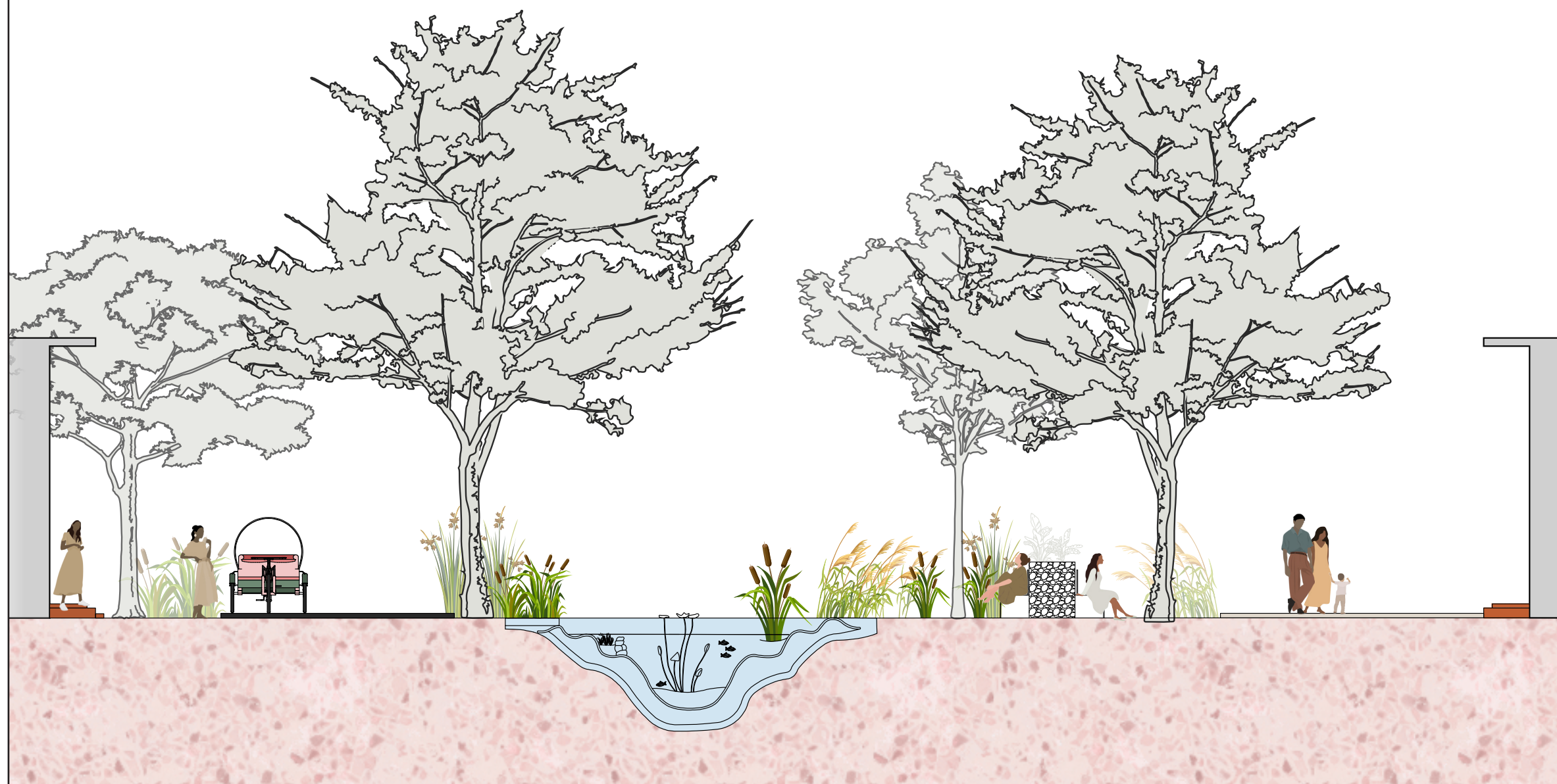


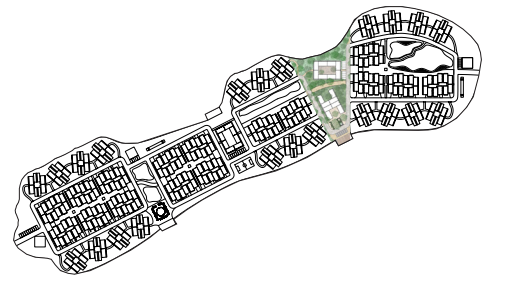
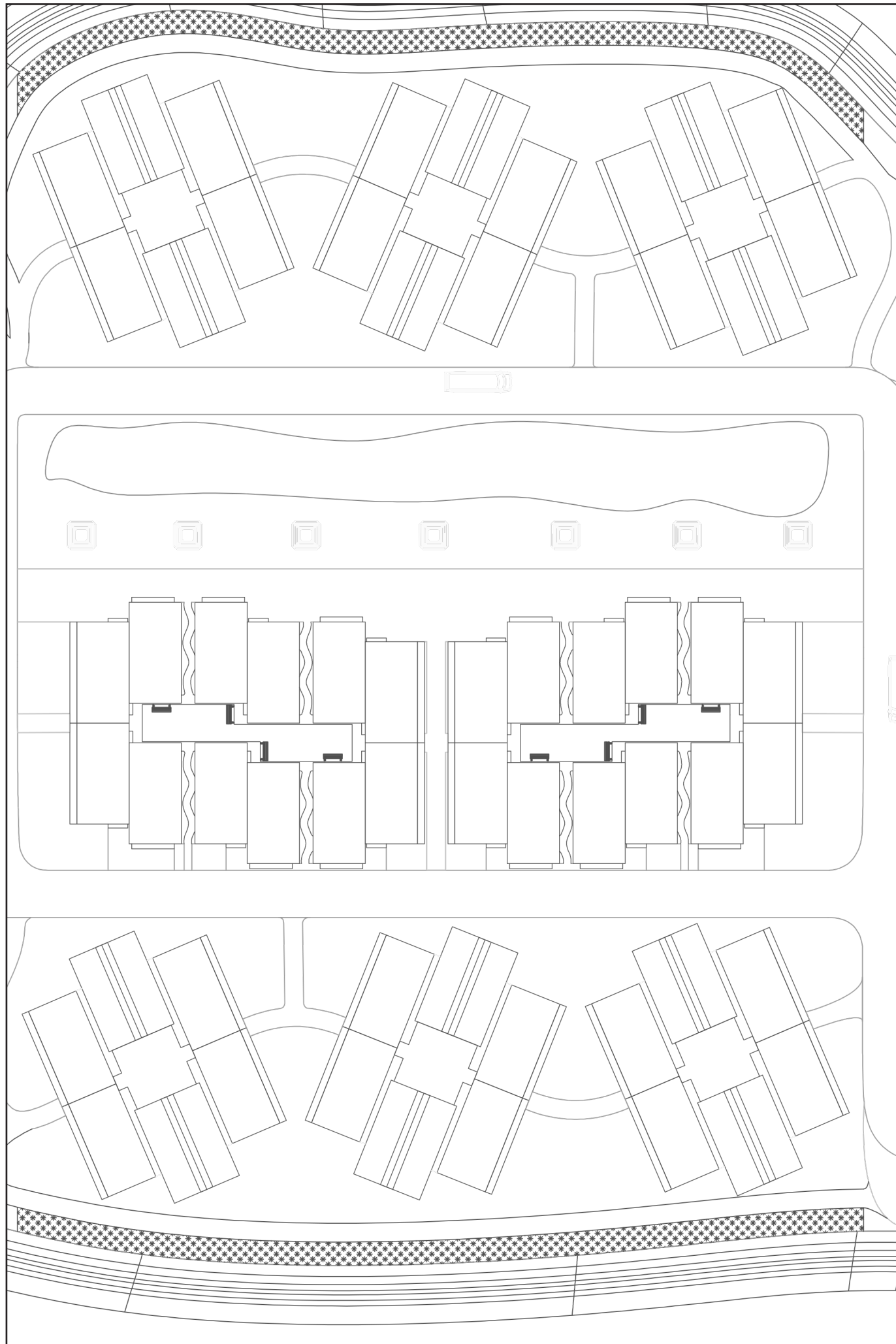


Streetprofile

Scale:

1 : 100





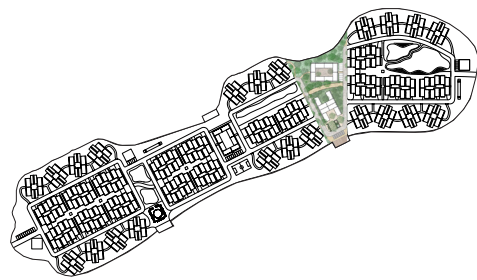
Sector 7 - Public

Scale: 1 : 500

Orientation:

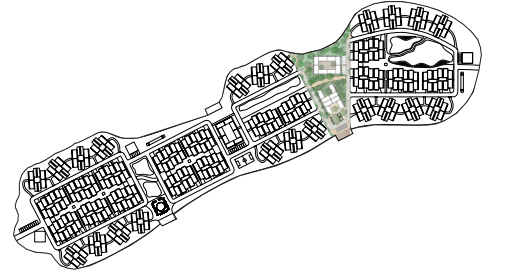


- ① Center - Healthcare, shops etc
- ② High School
- ③ Market stands
- ④ Dock
- ⑤ Rickshaw stand

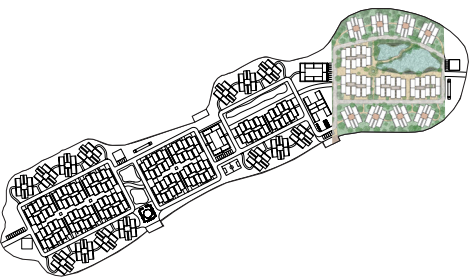
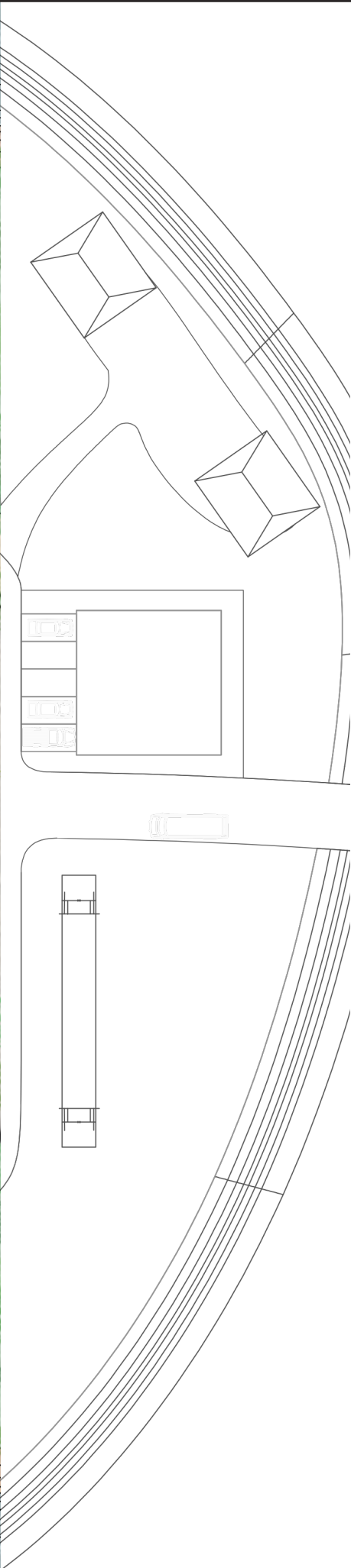
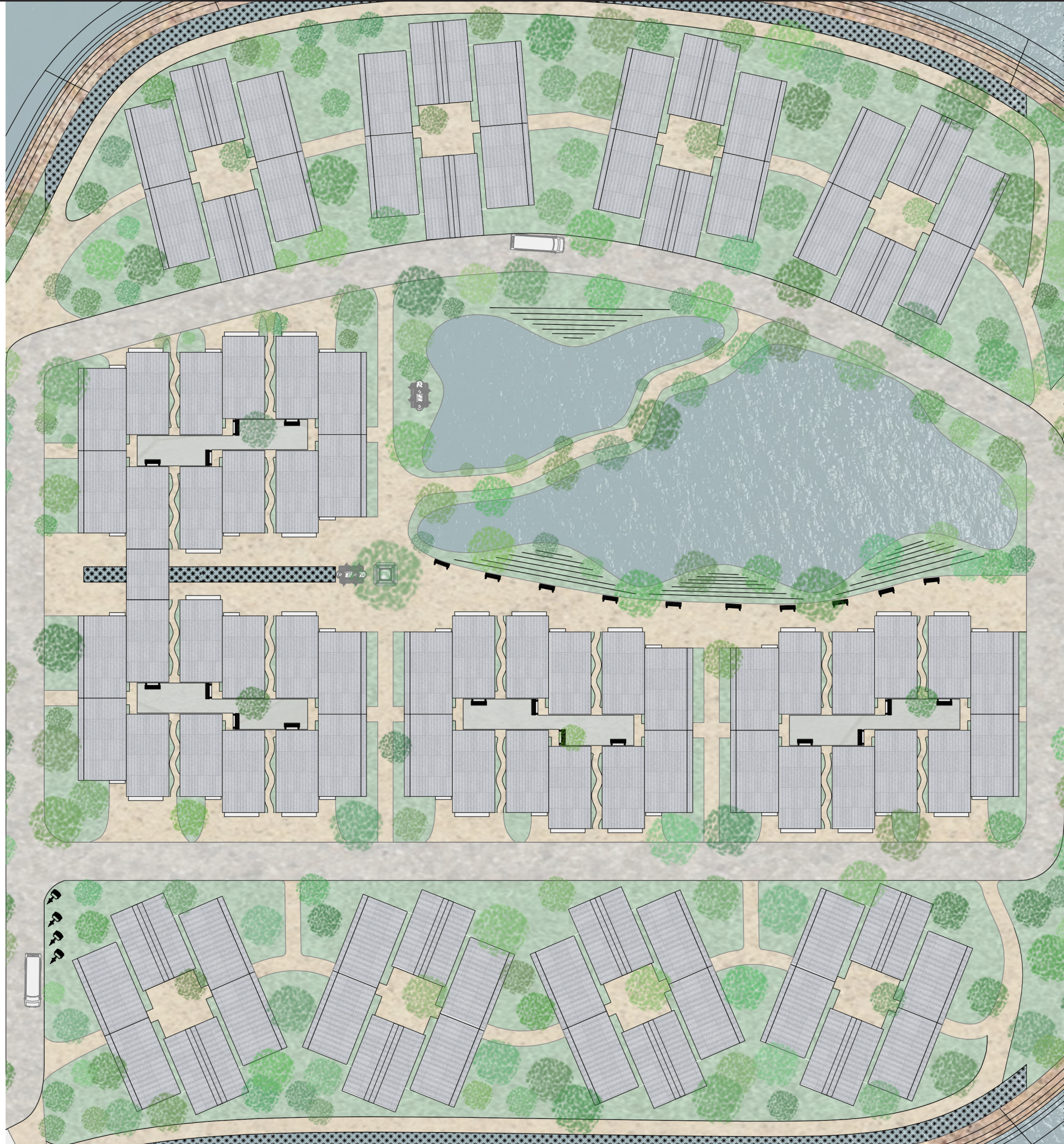


Sector 7 - Public

- ① Center - Healthcare, shops etc
- ② High School



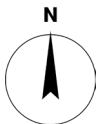
Sector 7 - Public



Sector 8 - Dwelling

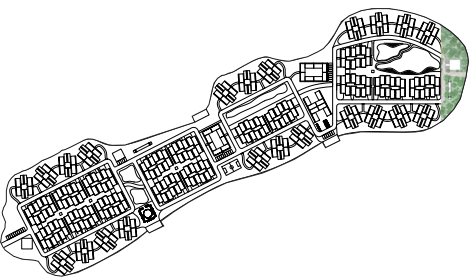
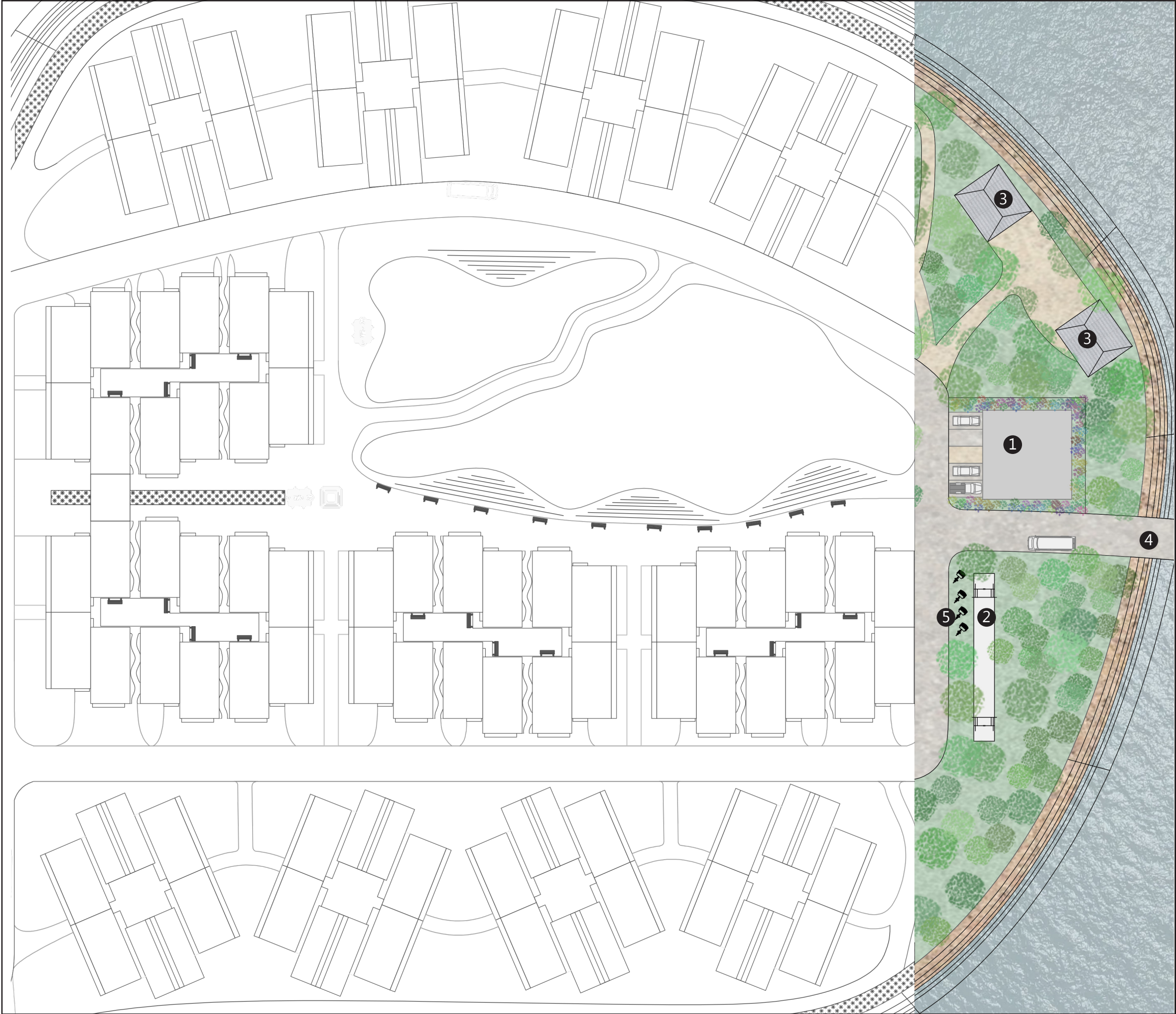
Scale: 1 : 500

Orientation:





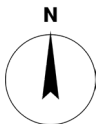
Sector 8 - Dwelling



Sector 9 - Entrance

Scale: 1 : 500

Orientation:



- 1 Mosque
- 2 Cricket Pitch
- 3 Pavillions
- 4 Road to the other settlements
- 5 Rickshaw stand

A wide-angle photograph of a sunset over a body of water. The sky is filled with dramatic, layered clouds in shades of orange, yellow, and blue. The sun is low on the horizon, creating a bright orange glow that reflects on the water's surface. Silhouetted trees and buildings line the shore, and a small boat is visible in the distance.

Global Housing - People in transition

Urban Dreams,
Rural Realities