

a resilient haor
by Ginger Hanssens

How can sustainable and durable housing be built for the people of the Tanguar Haor that can withstand annual flooding, create a solution for the water pollution and subsequently address the needs of the residents?

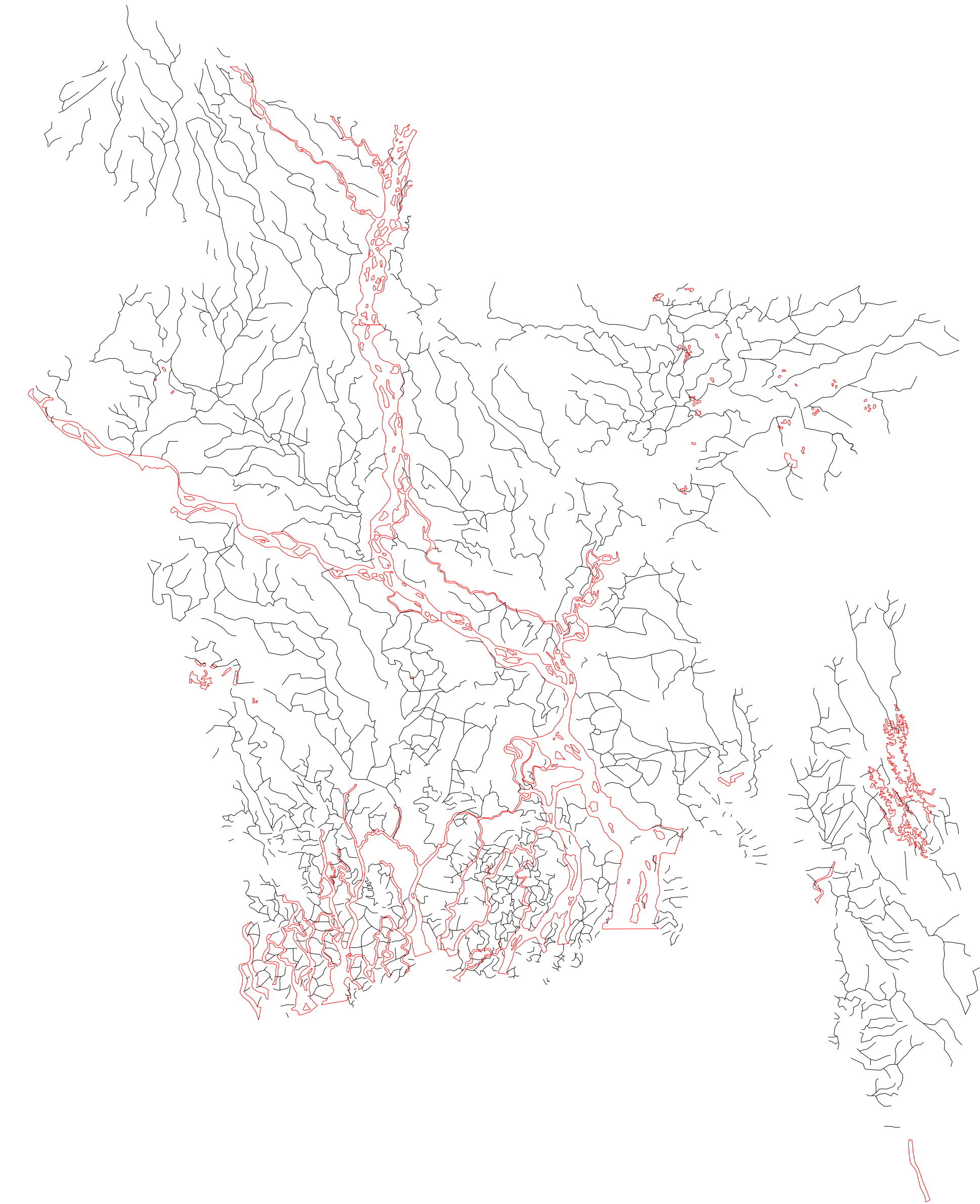
In what way can waste management and circularity be implemented in a new development in the rural area of the Tanguar Haor?

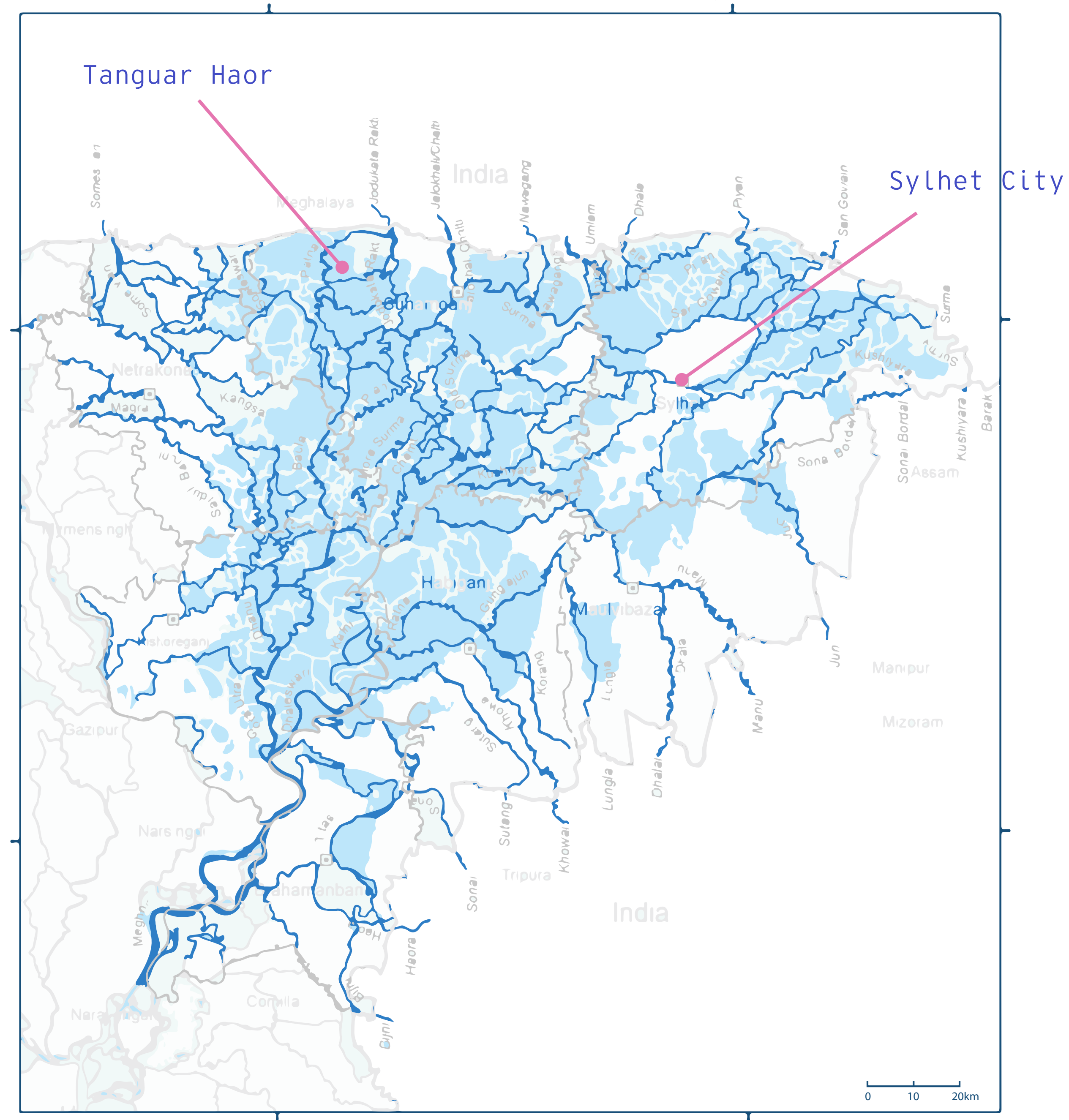
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How can the settlement and fragile housing be renewed and made more flood resilient while keeping the strengths of the current settlement intact?

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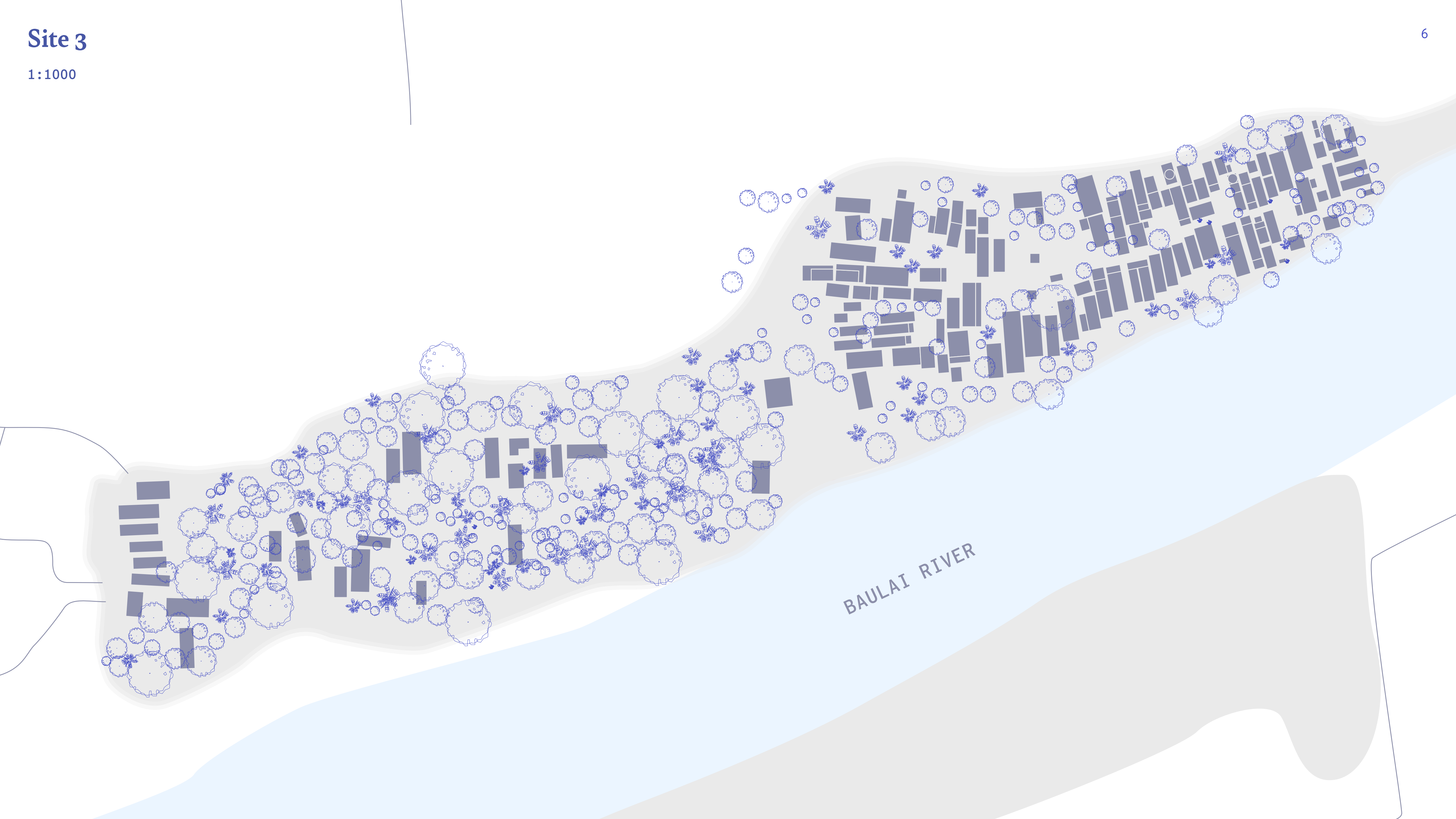
In what ways can clean and safe water be implemented into the design?

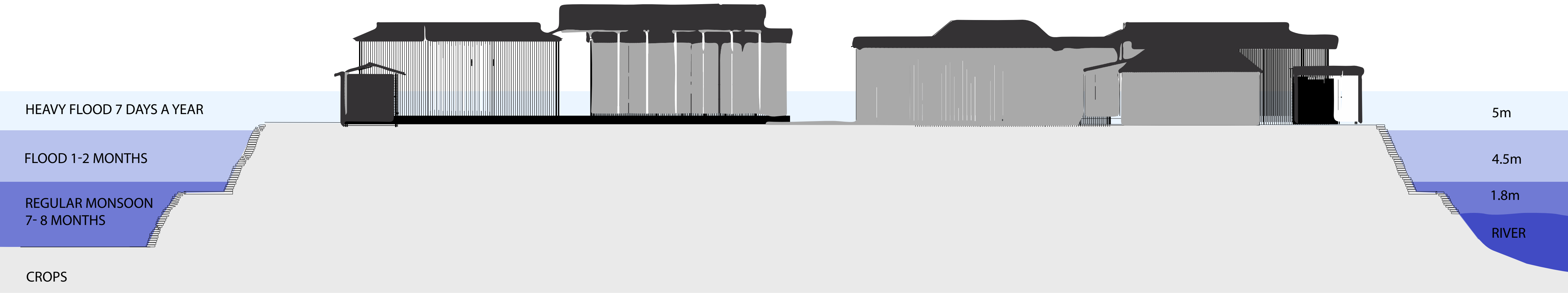




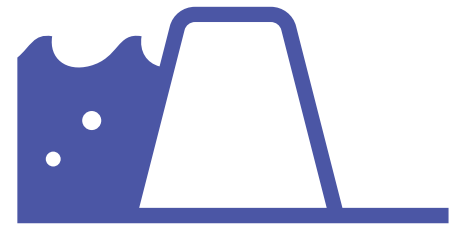


300m





Flood Resilience



strengthen embankment



stronger foundation
and plinth



elevate house

How can the settlement and fragile housing be renewed and made more flood resilient while keeping the strengths of the current settlement intact?

FLOOD RESILIENCE

stronger foundation



mud

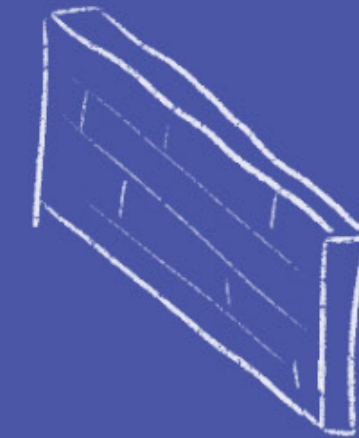


to



brick

A more durable
plinth



Strengthen
embankment
against soil
erosion

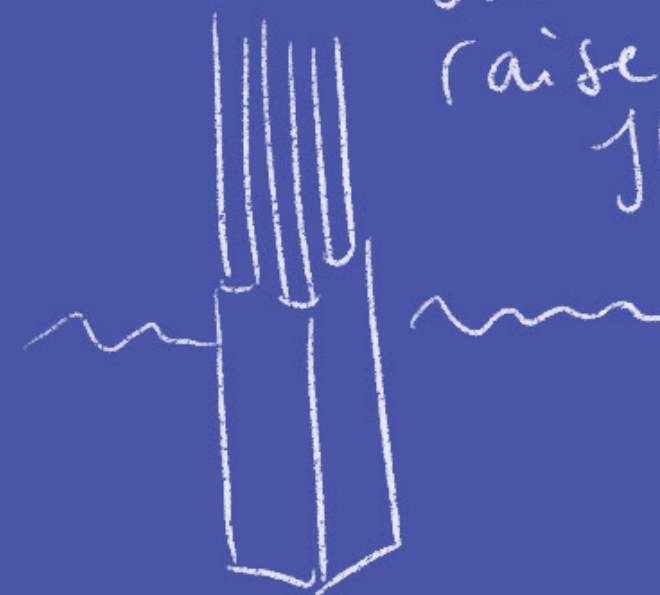


vetiver
+ jute



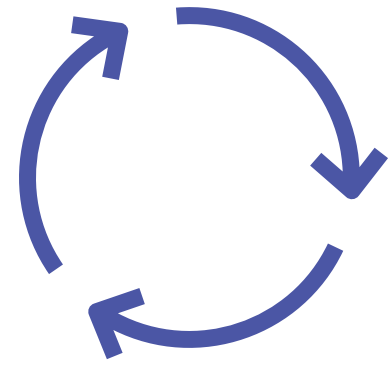
add story for
flood refuge
& raised
foundation

bamboo structure
raised above
flood levels

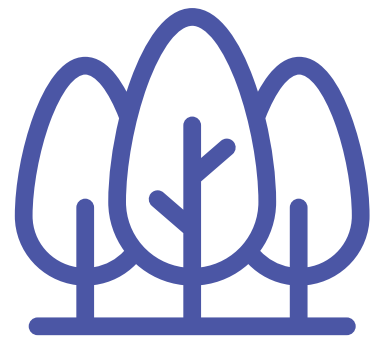
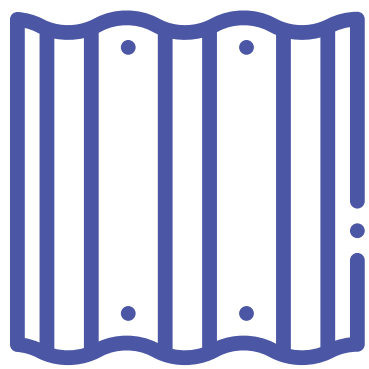


openings
in brick
wall for flood water
to recede + lessen impact
on wall.

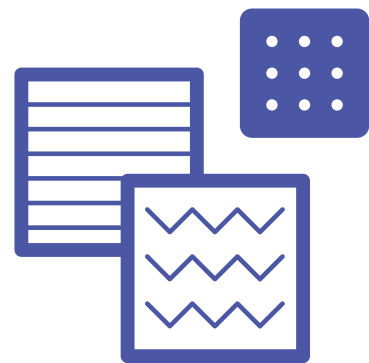
No Waste



circular economy



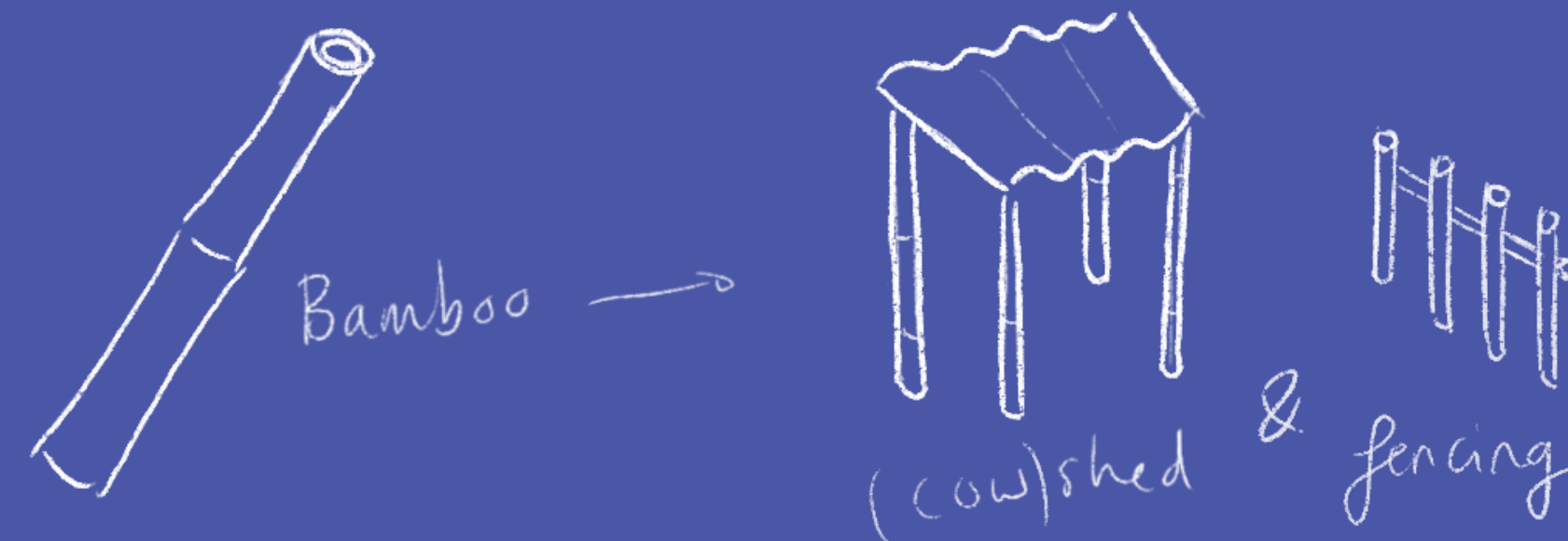
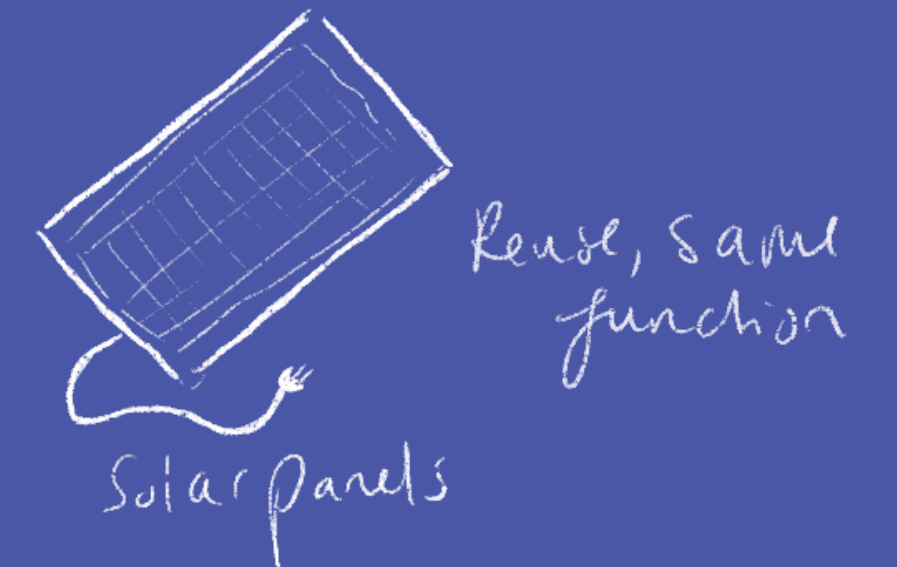
re-use and keep



better material use

In what way can waste management and circularity be implemented in a new development in the rural area of the Tanguar Haor?

REUSED MATERIALS



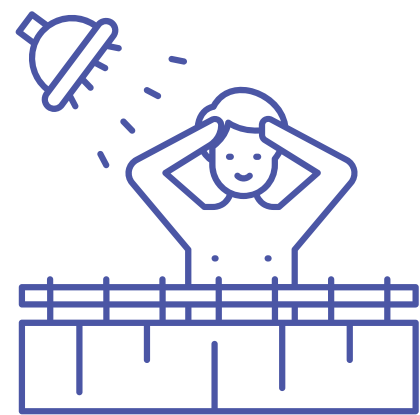
Rice &



Sanitation



clean drinking water



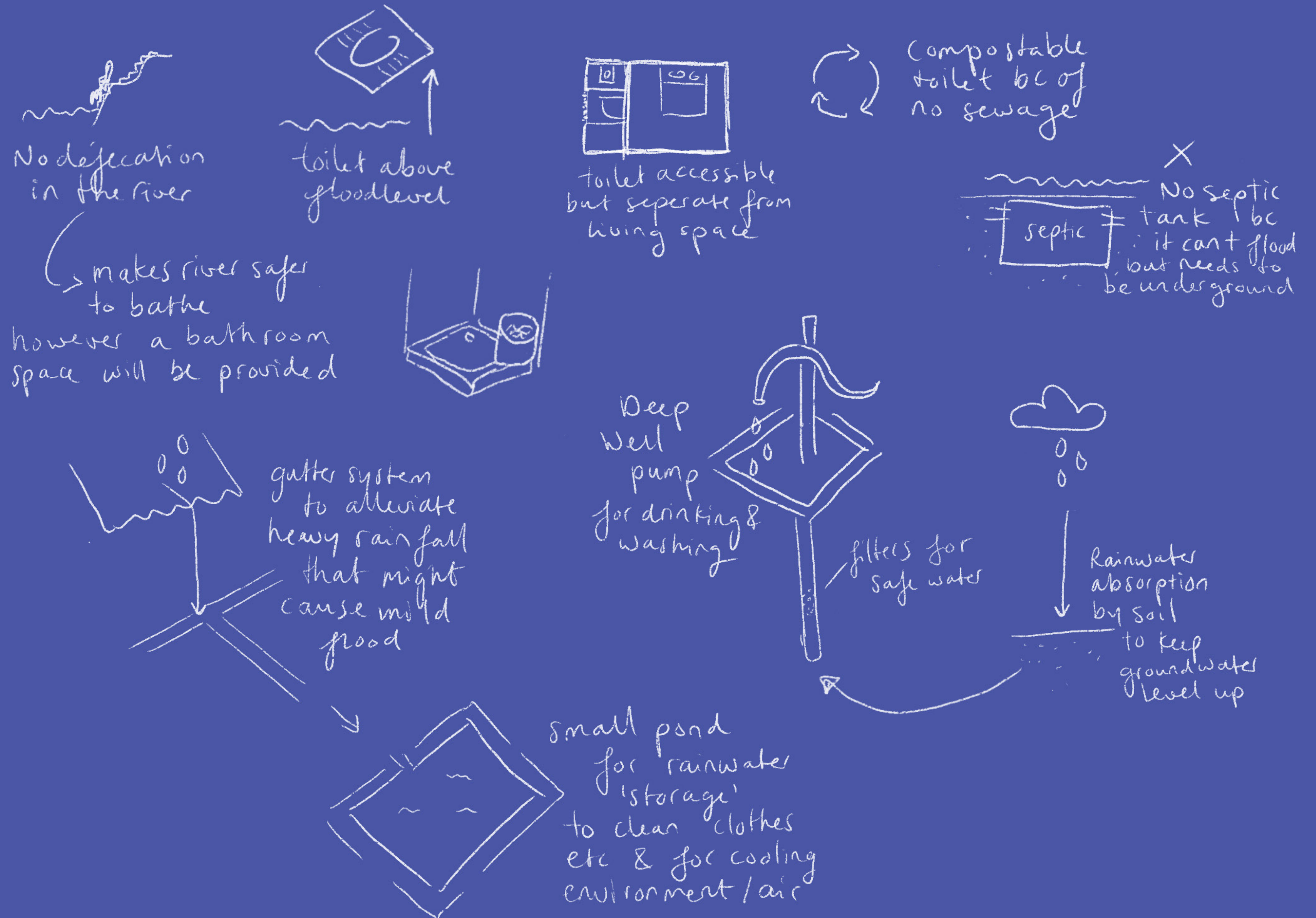
safe bathing water



toilet solution

In what ways can pollution be reduced and clean and safe water be implemented into the design?

SANITATION

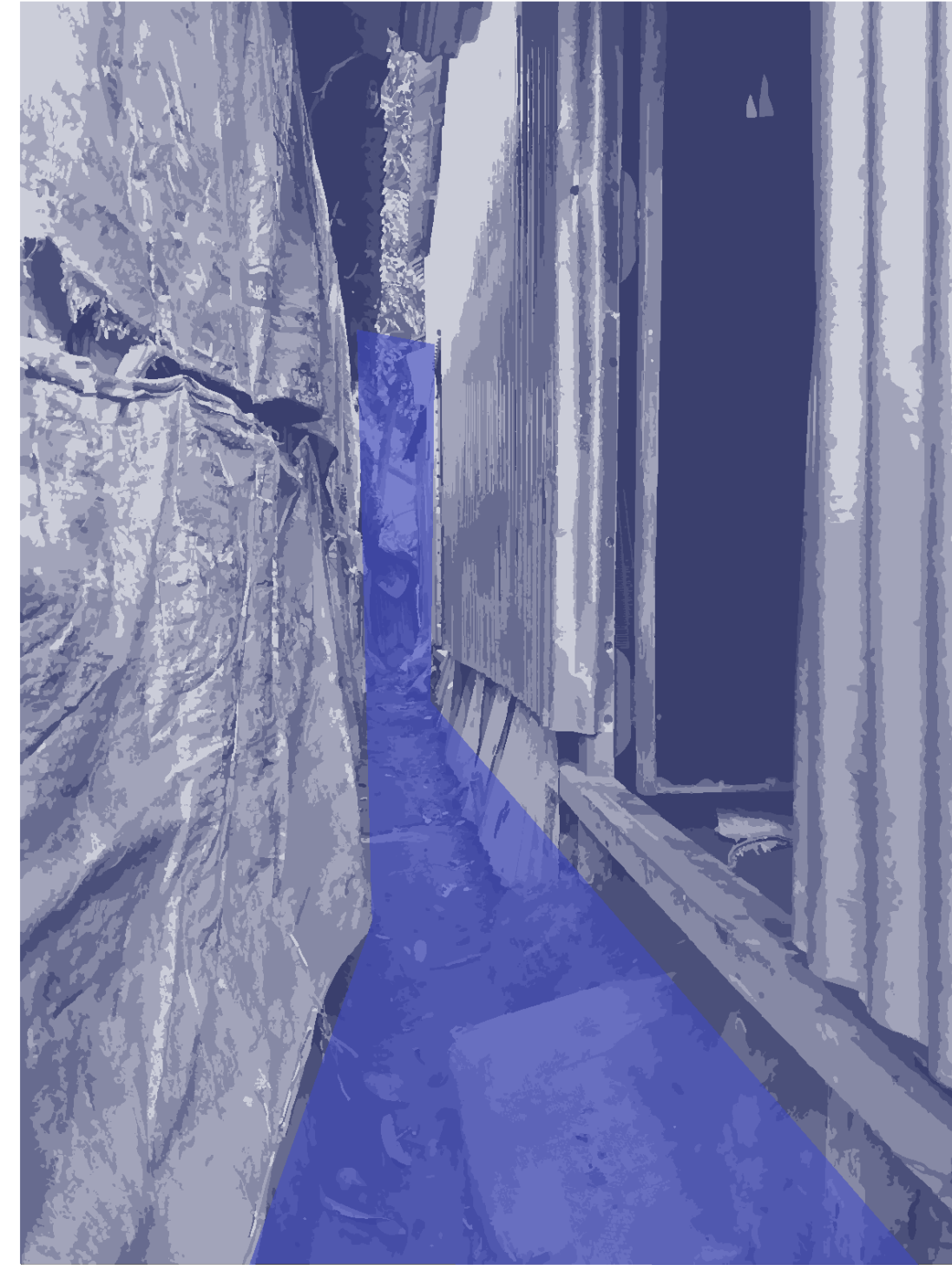




fragile embankment



damaged plinth



narrow alleys



damaged materials



courtyards

main circulation

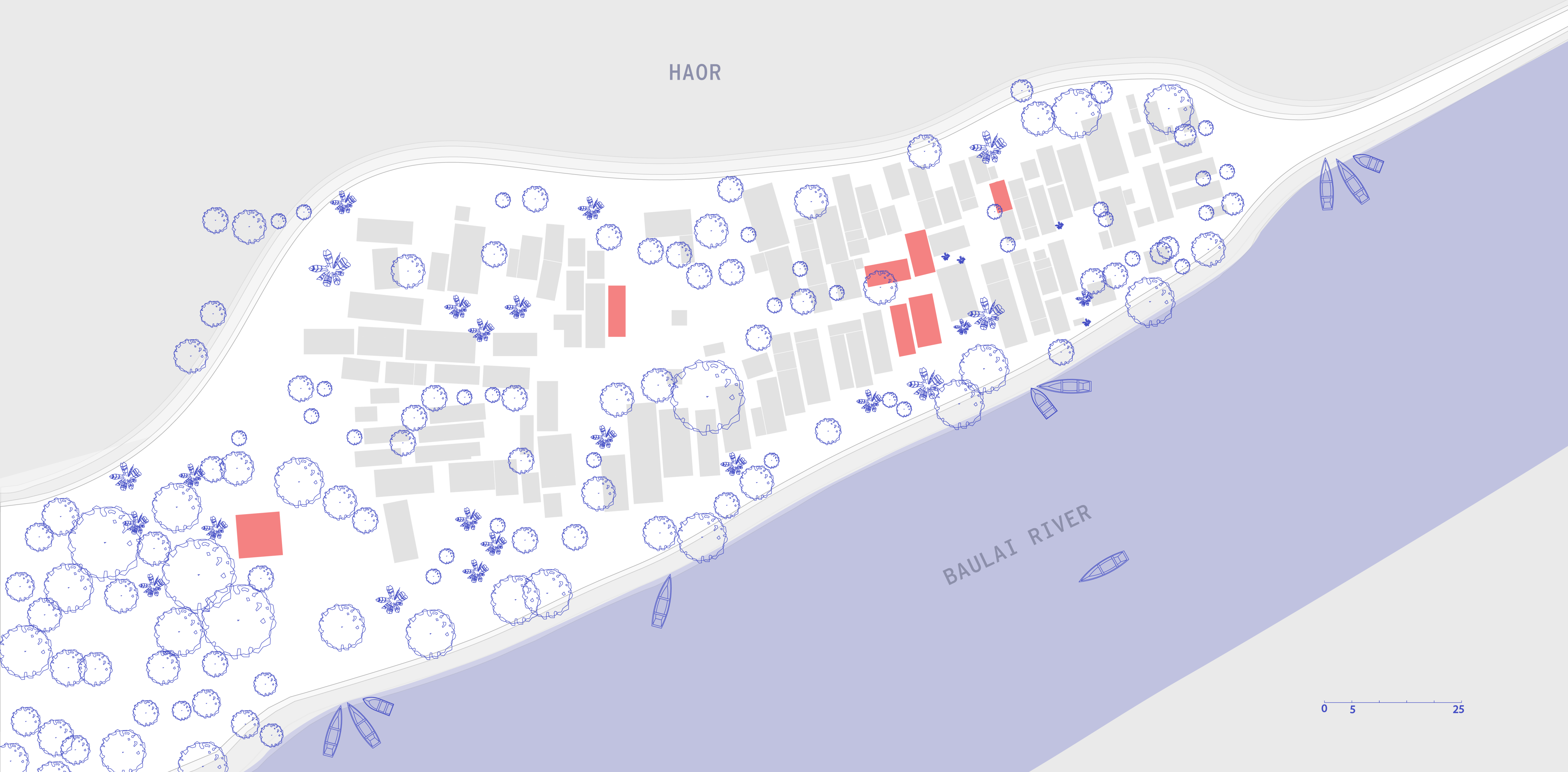
stone houses
& Khudi Bari's



The Urban Scale

The existing settlement

density existing situation:
homes: estimated 96
people: estimated 600
GSI: 0,32 FSI: 0.32

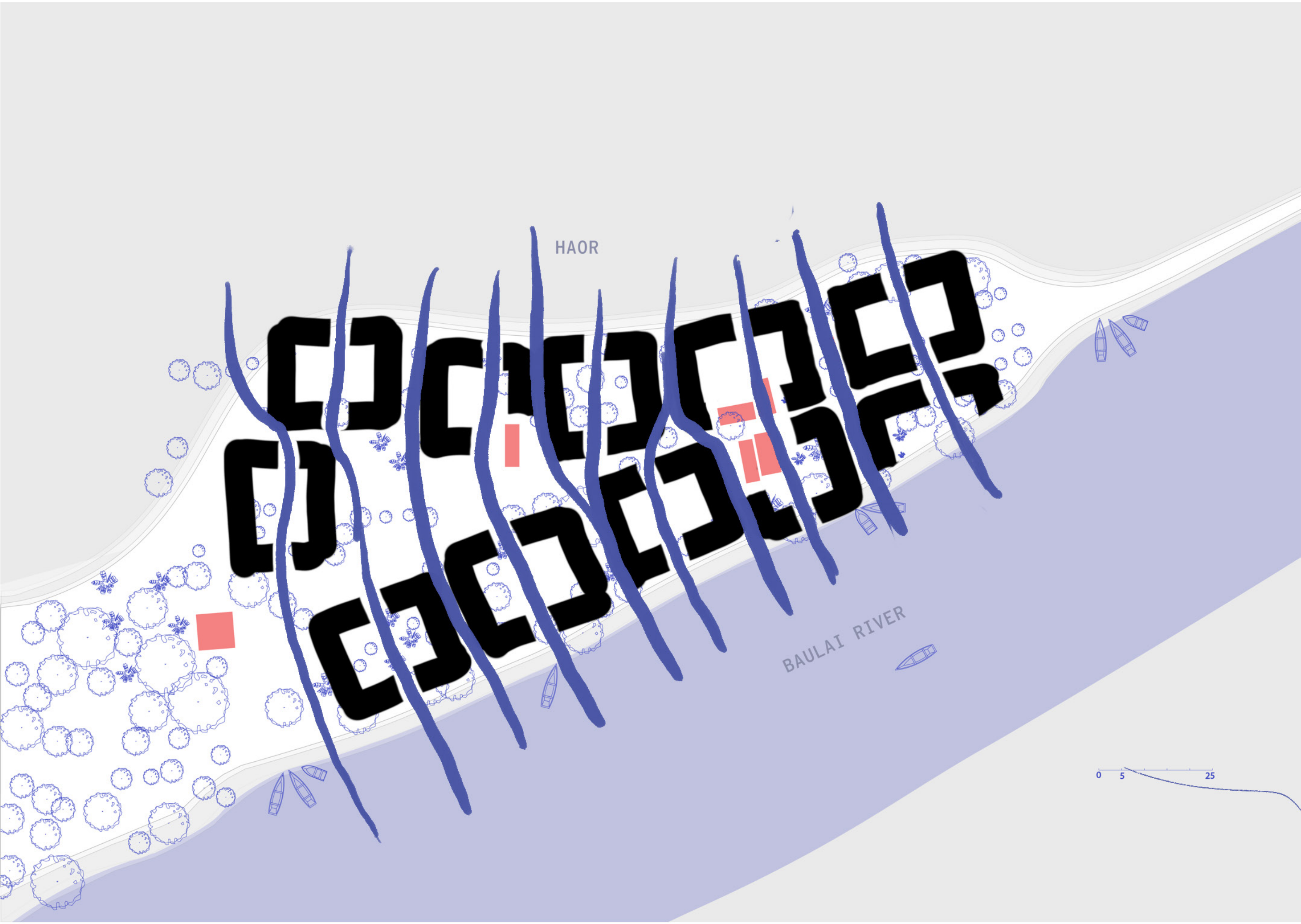












Masterplan - building mass

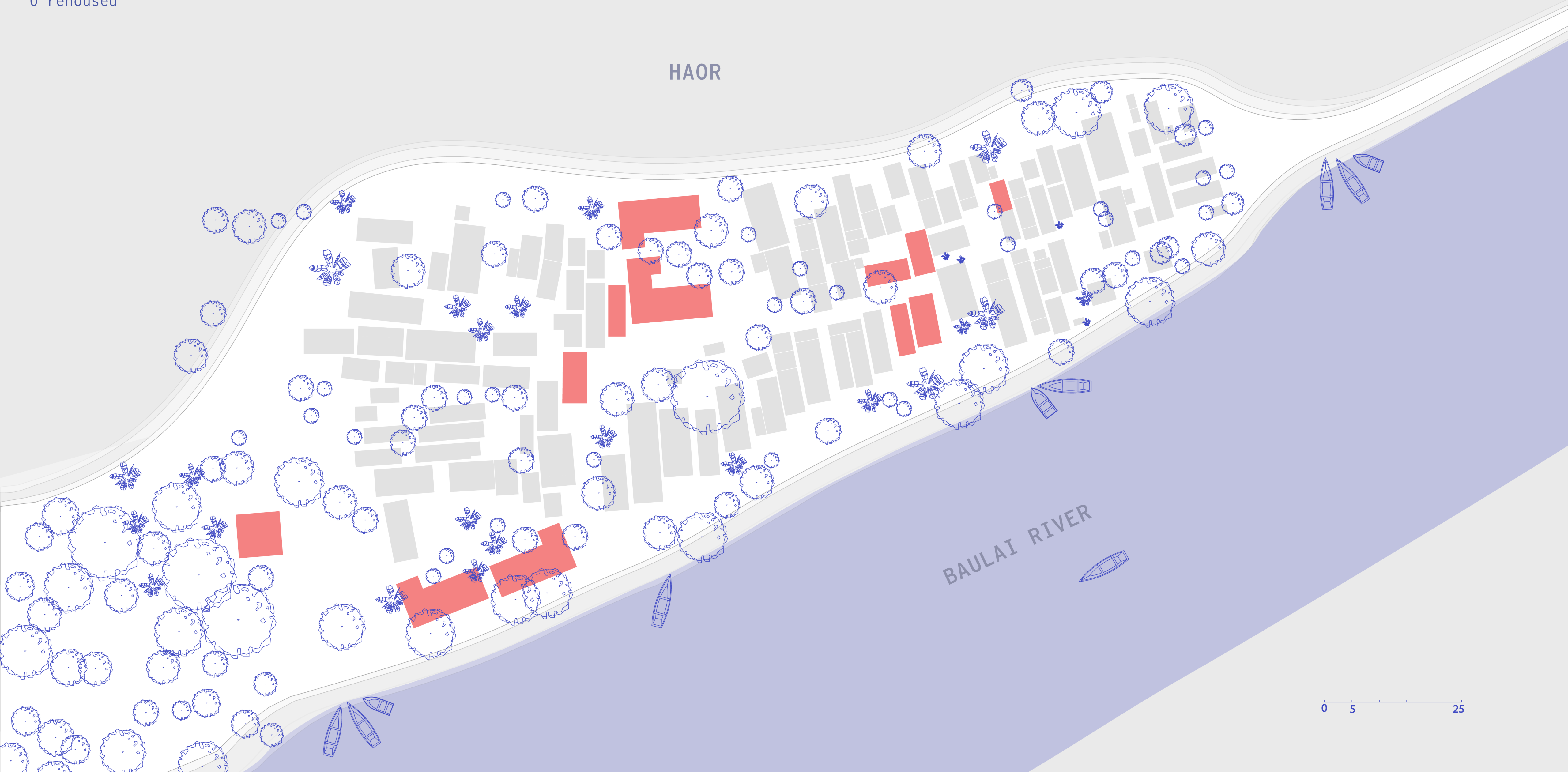
1:500



0 5 25

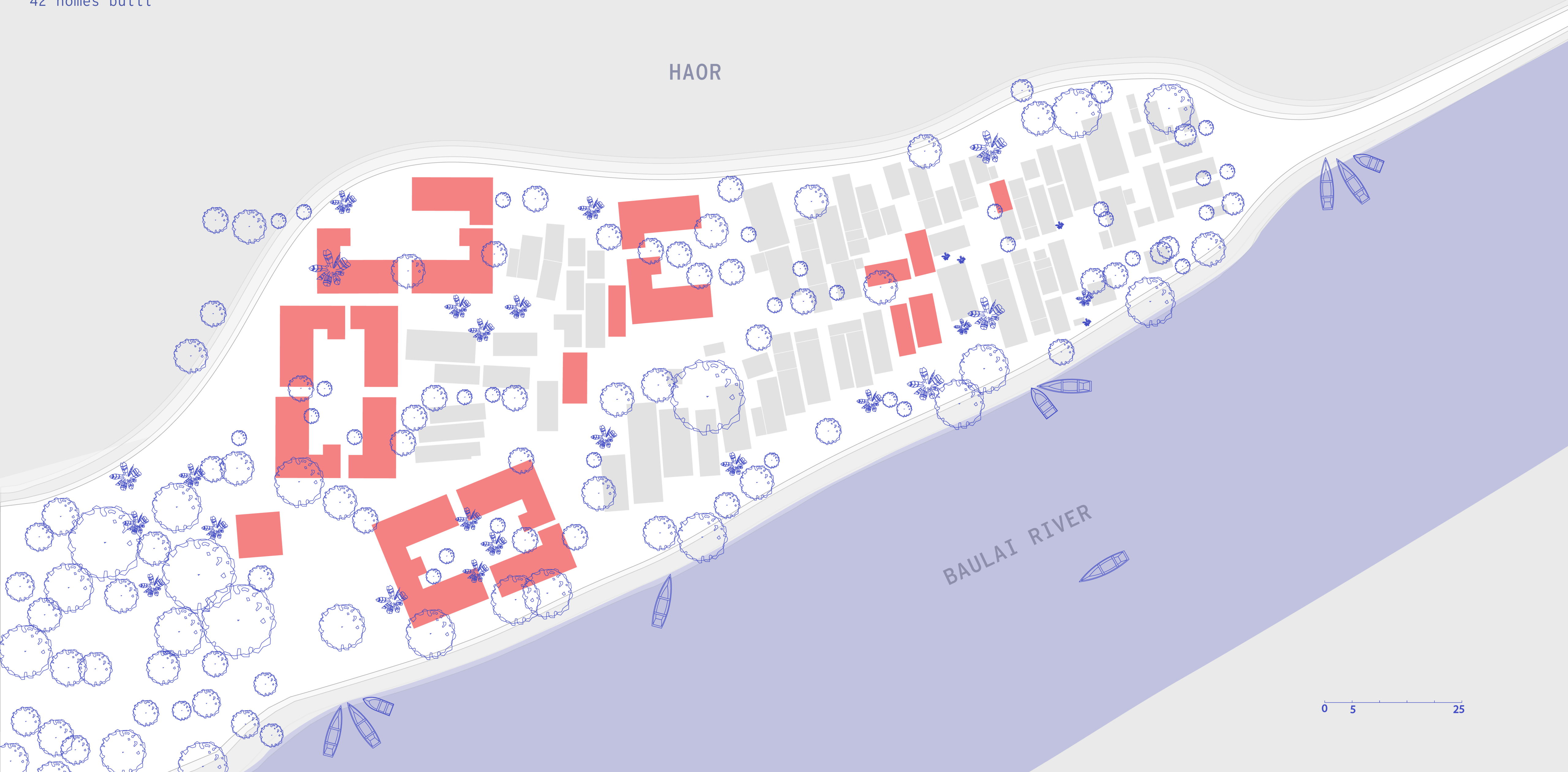
Phase 1

17 homes built
0 rehoused



Phase 2

17 rehoused
42 homes built



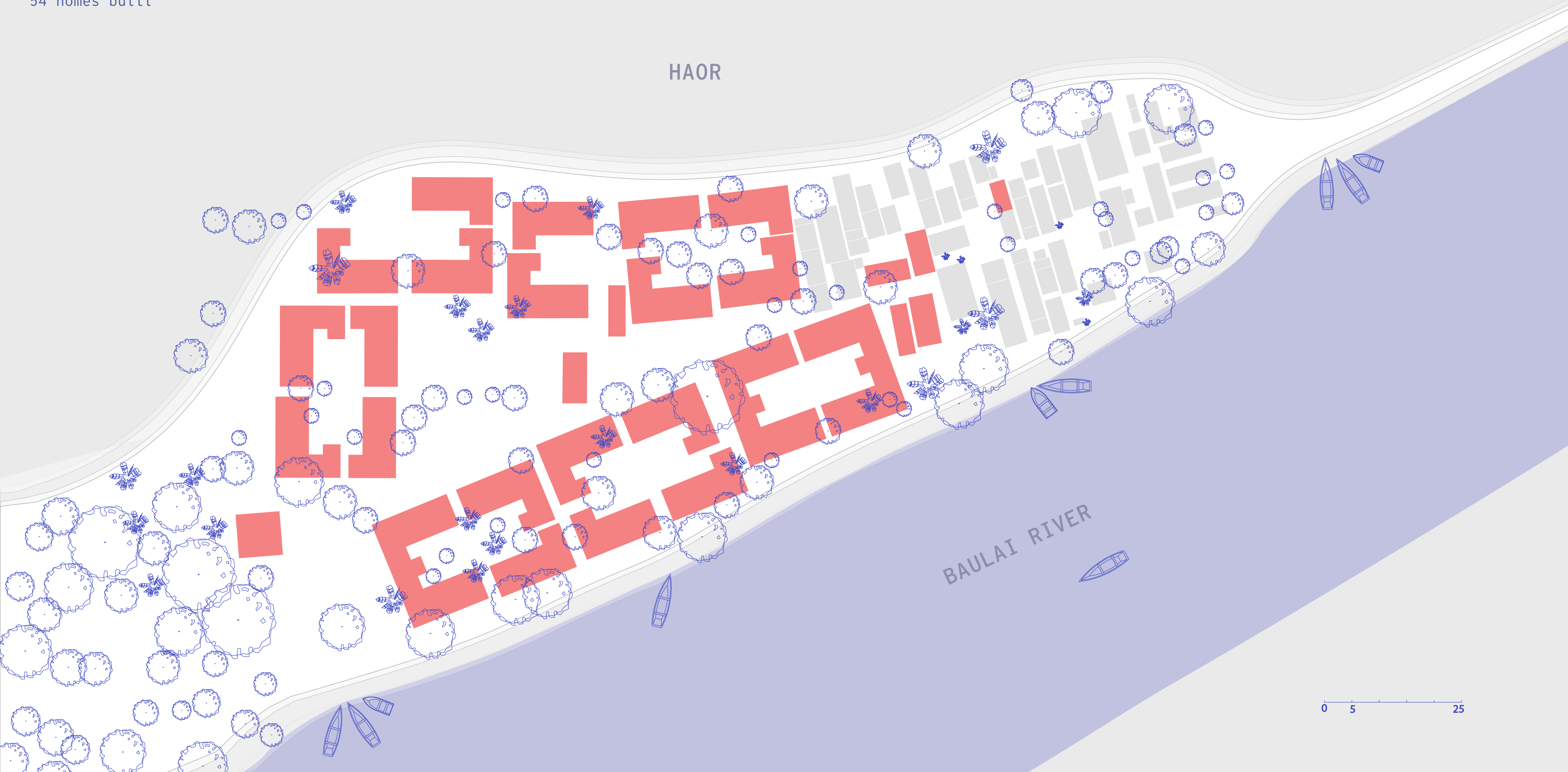
HAOR

BAULAI RIVER

0 5 25

Phase 3

36 rehoused
54 homes built



0 5 25

Phase 4

36 rehoused
46 homes built



HAOR

BAULAI RIVER

0 5 25

Household necessities

Personal bathroom

Water pump (deep well)
- 1 per cluster

Pond for household chores
- 1 per cluster

Outdoor space
- cattle
- laundry
- gardening
- social connection

Amenities

2 Multi use communal spaces
- education
- events
- workshops

Shops
- 1 per cluster

Market
- on the public square
- income generation

Infrastructure

Healthcare
- 1 doctor's office
- 1 pharmacy

Education
- 1 primary school

Central circulation
- main streets
- secondary streets

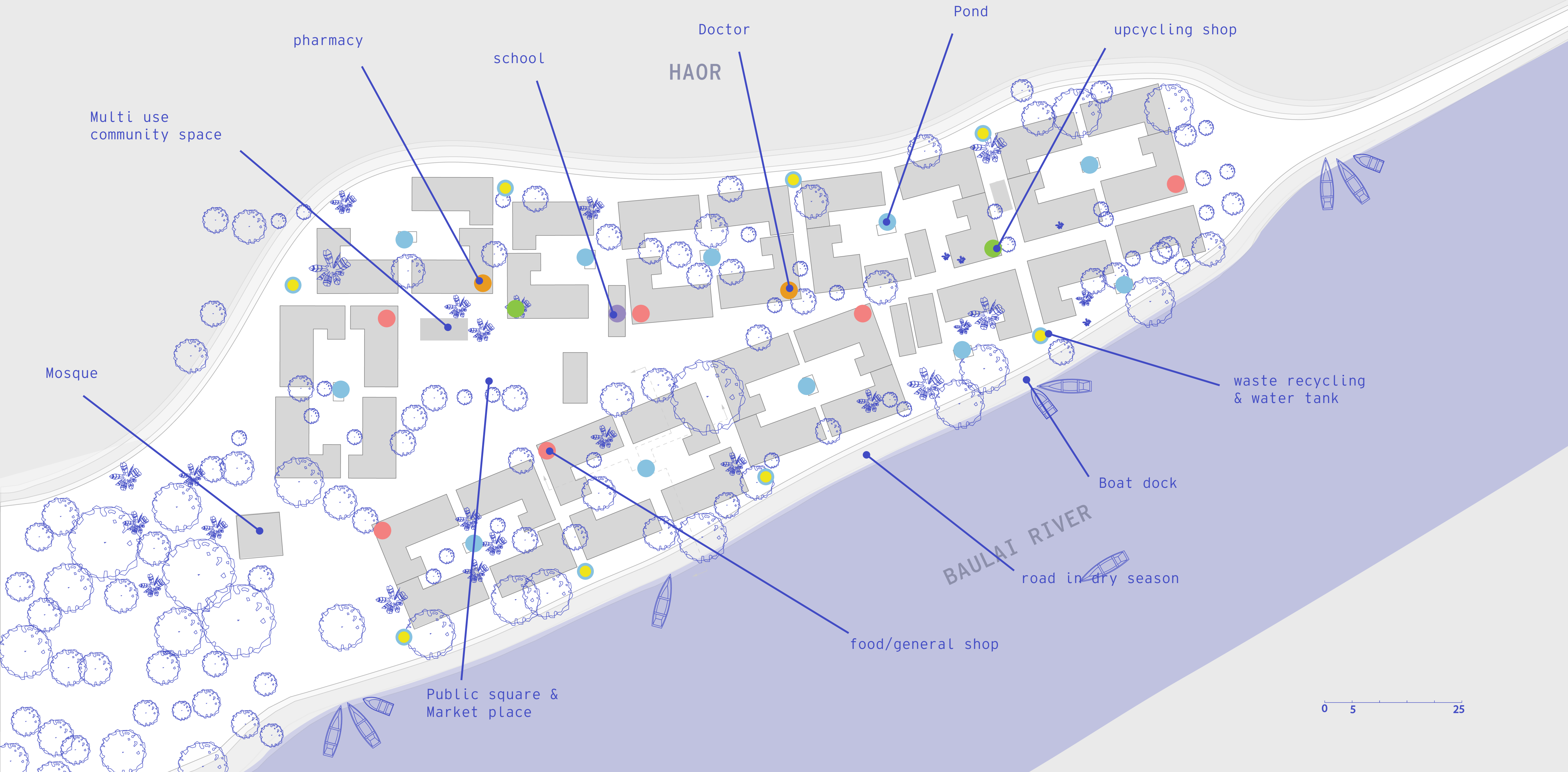
Public square & courtyards
- recreational
- economic

Boat docking space
- main transport
monsoon season

Masterplan

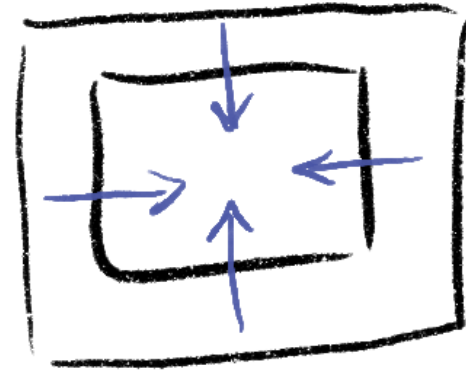
1:500

density
homes: 158
people: estimated 948
GSI: 0,29 FSI: 0,61

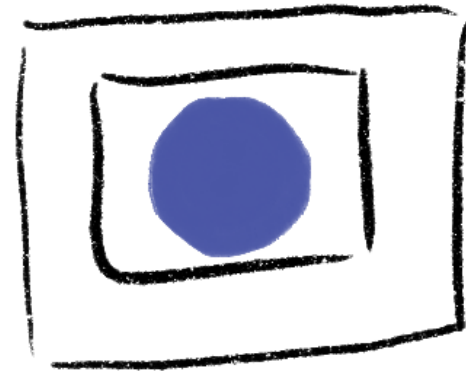


The Cluster

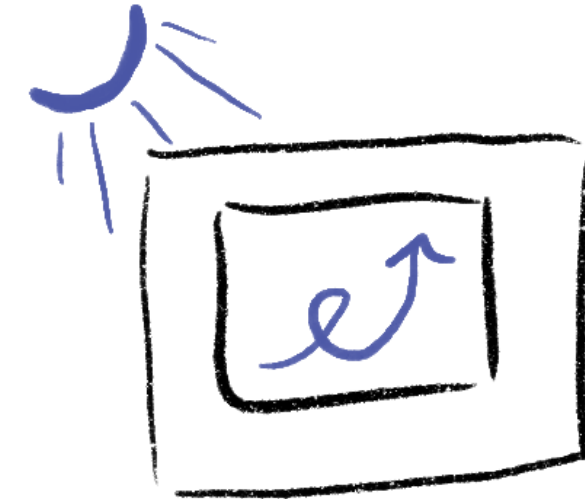
why a courtyard
typology?



create
community



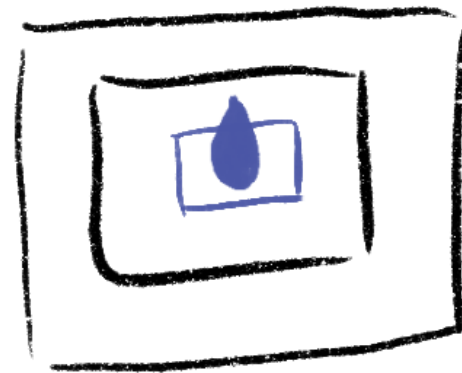
more room
for daily activities



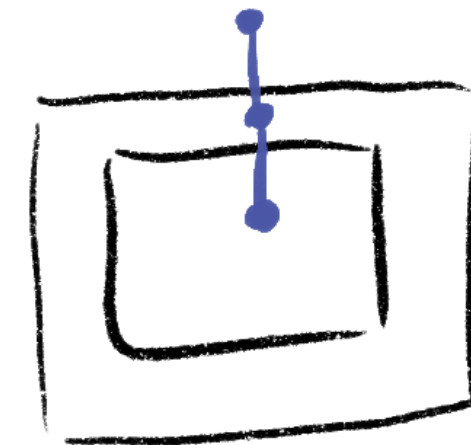
climatic
comfort



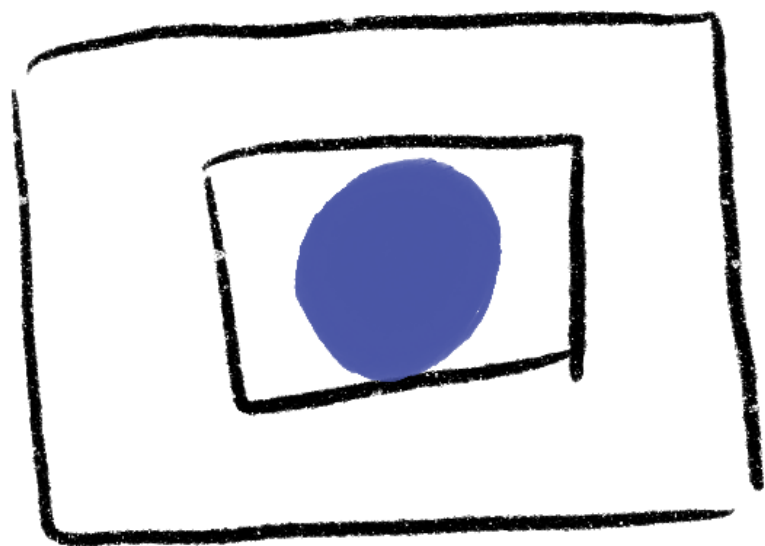
building
around the
trees



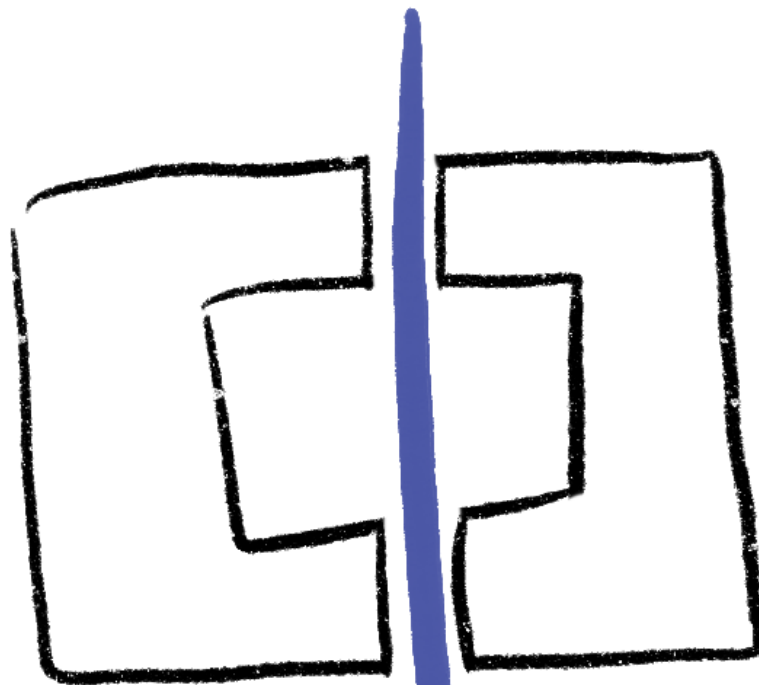
space for
clean
water



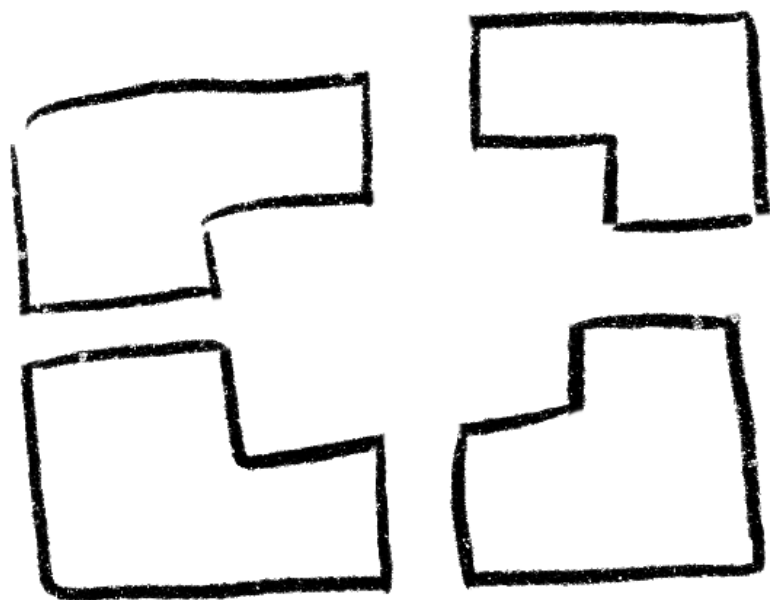
create a
hierarchy
of spaces



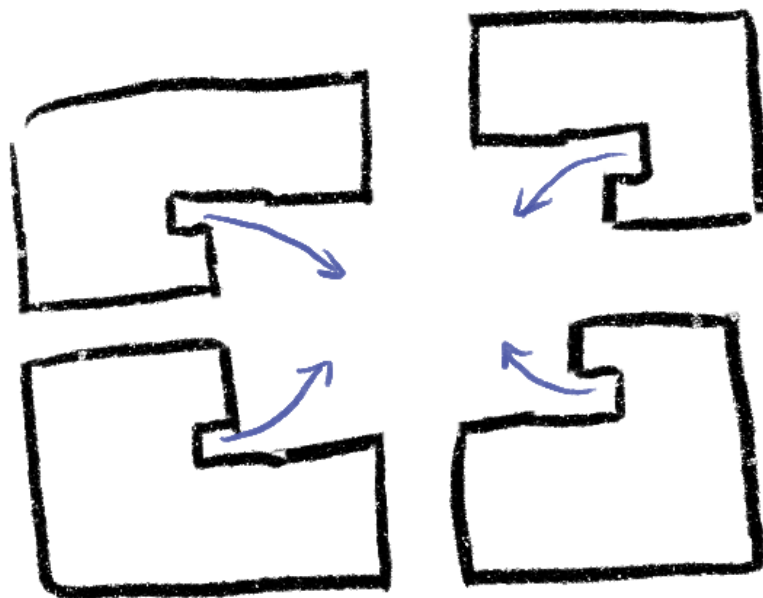
base form



room for water
& connection hall
+ river

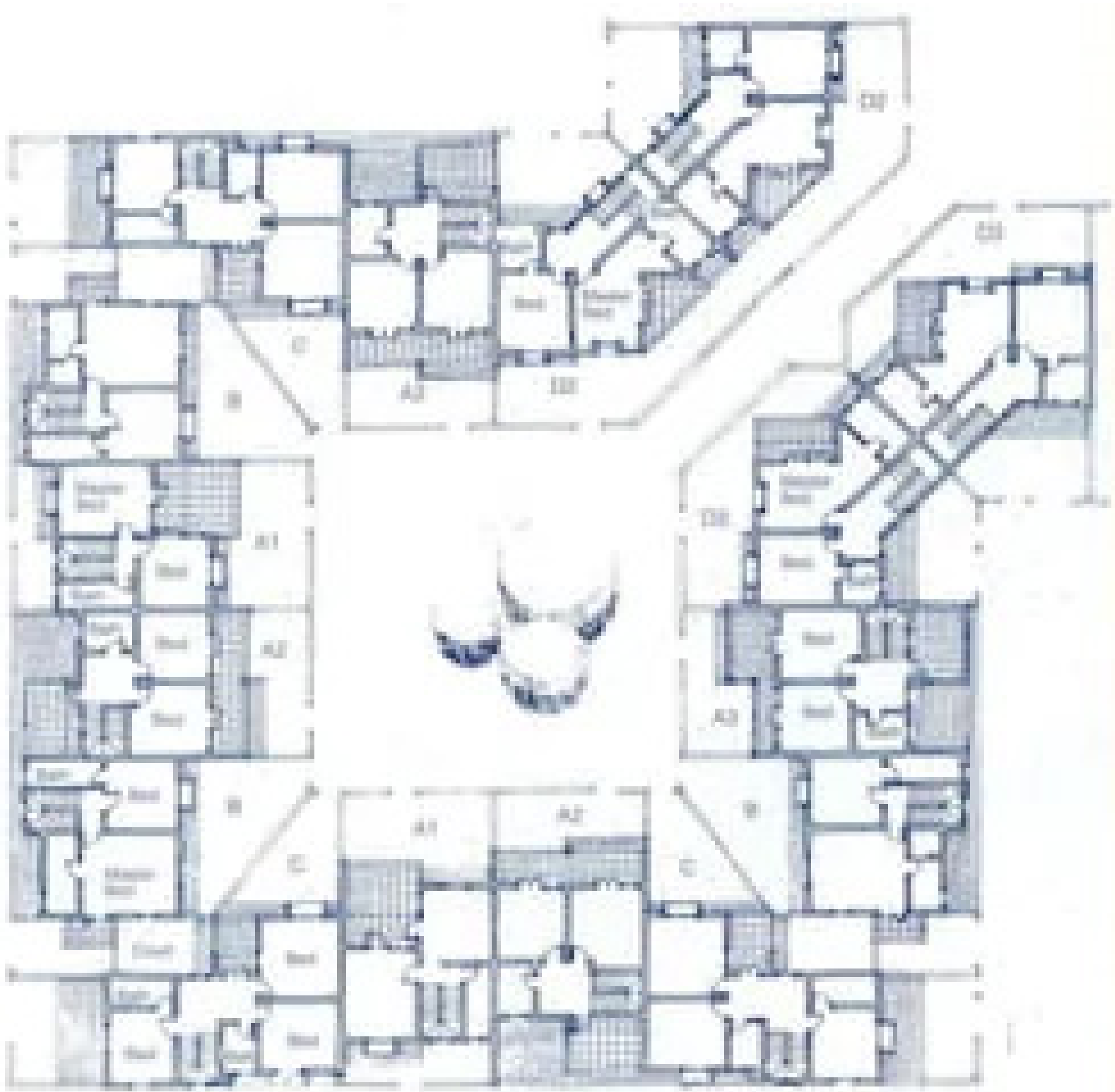


flexibility in masterplan
for trees + landscape

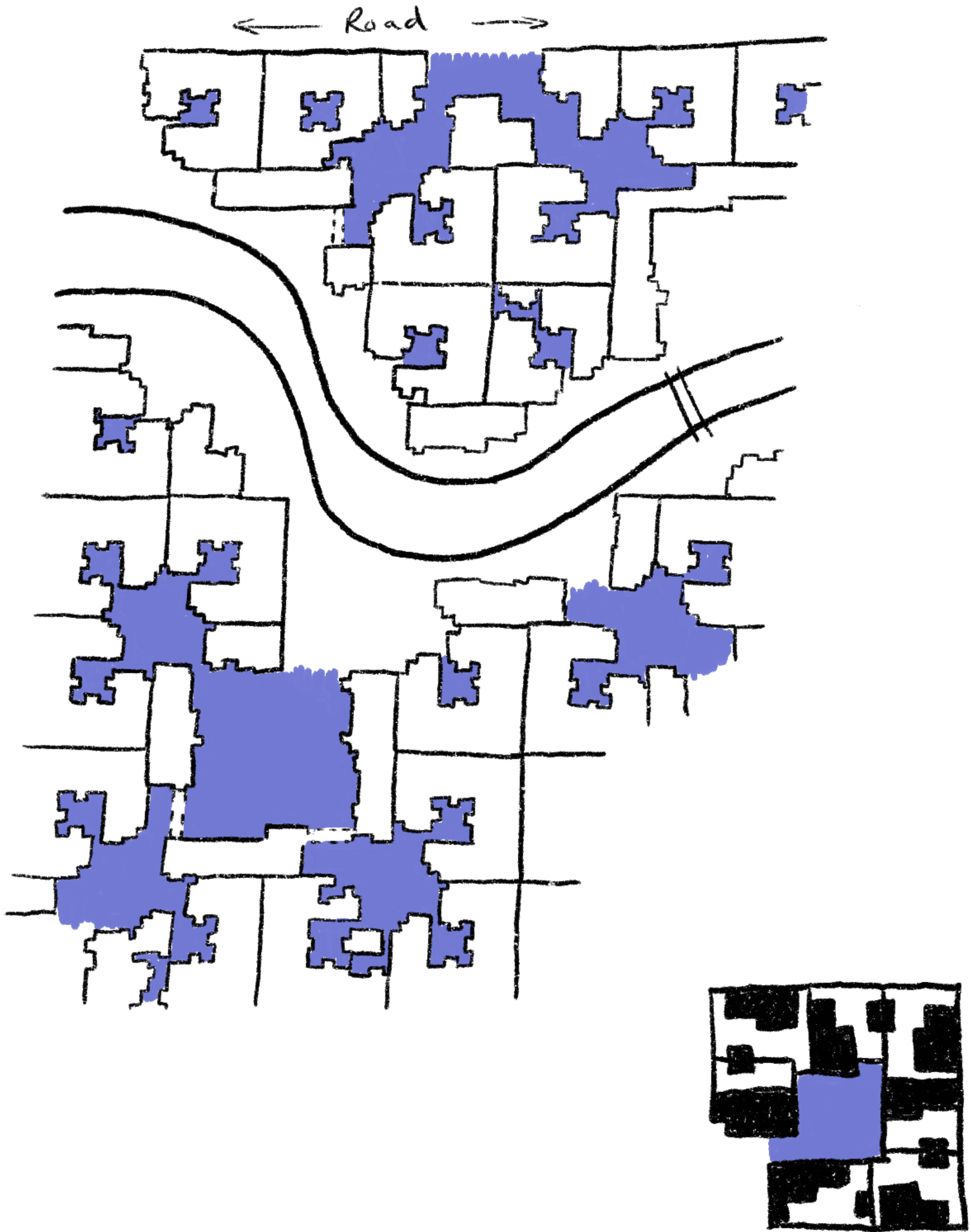


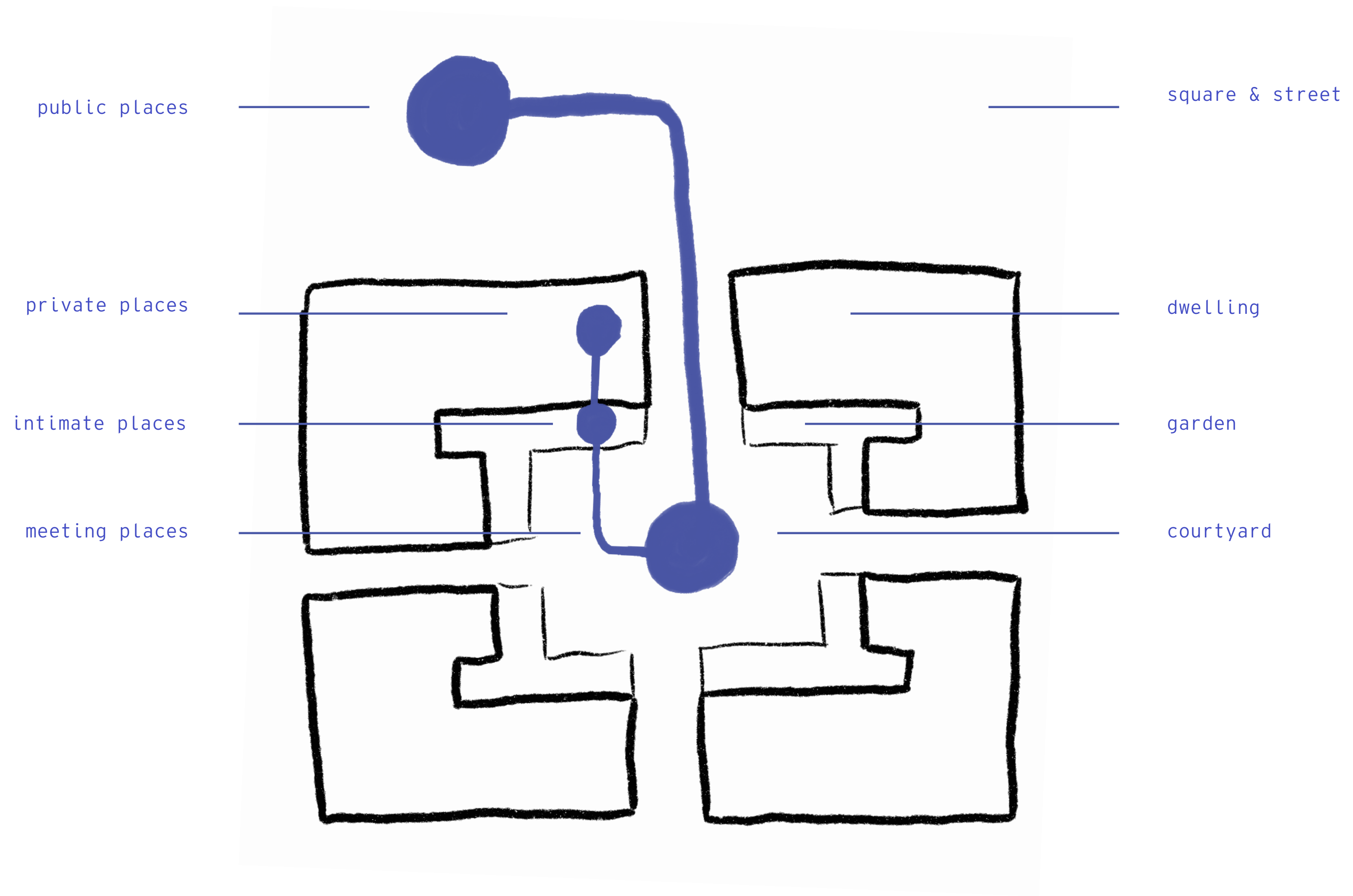
corner access
to courtyard

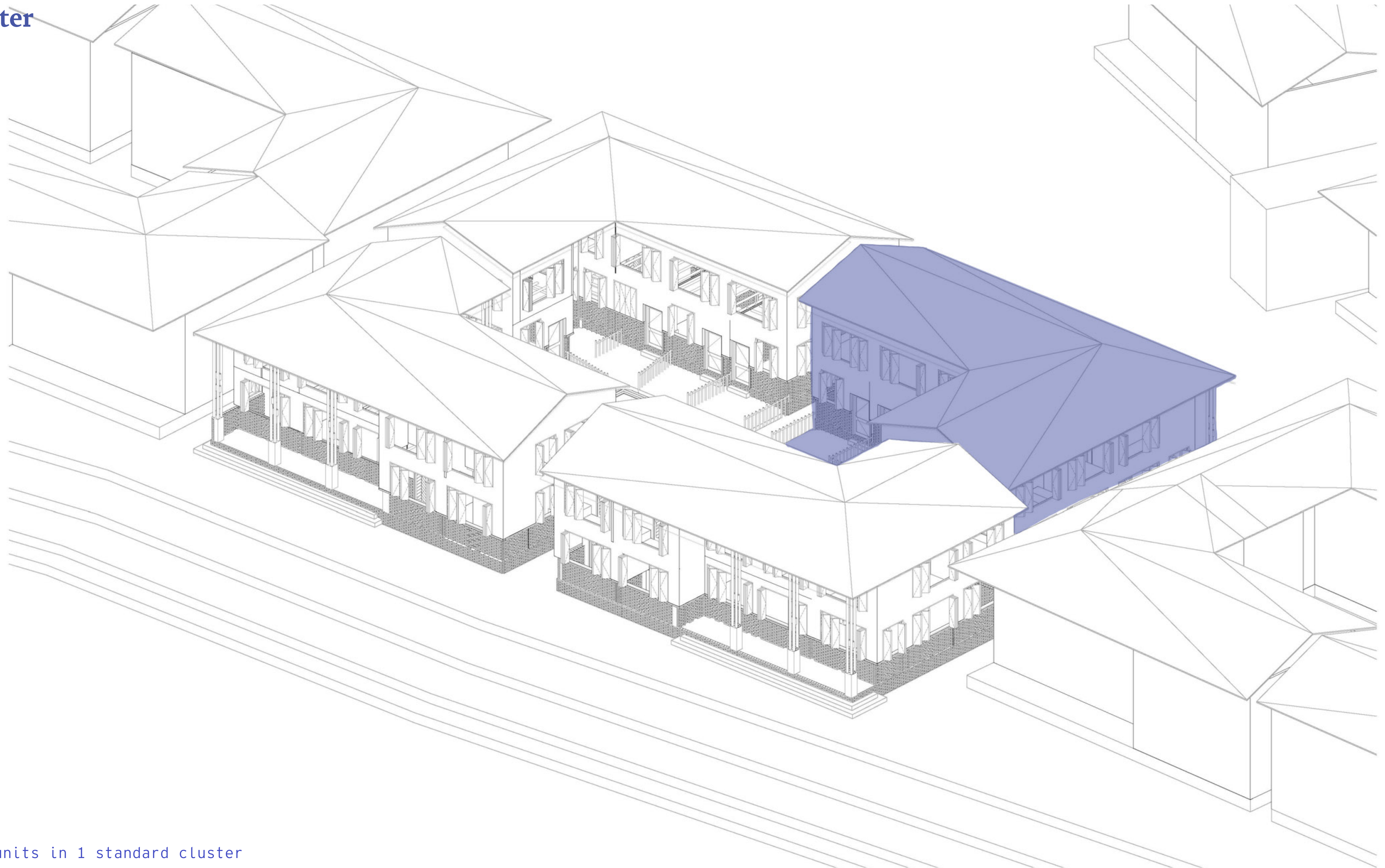
titan township



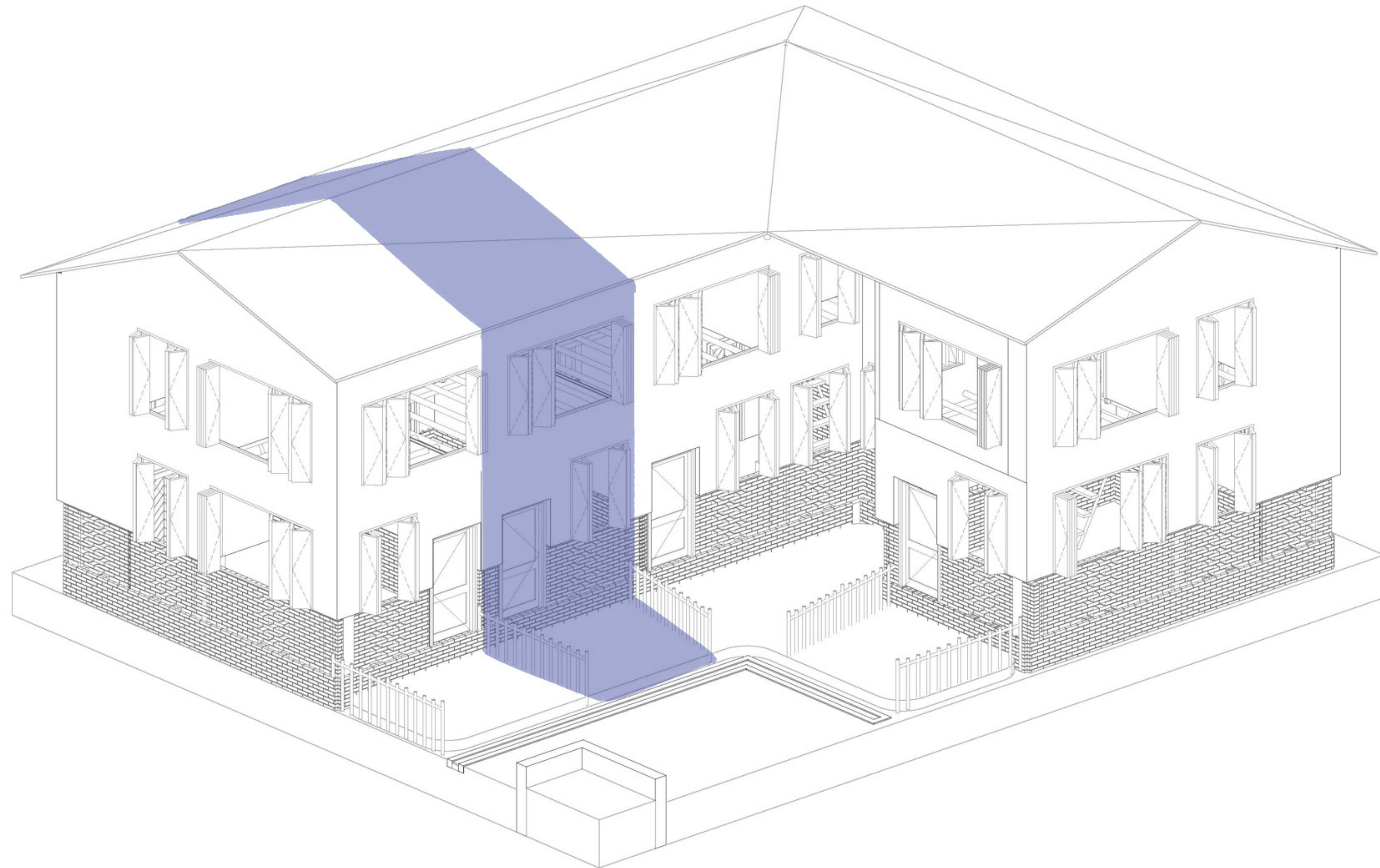
Belapur







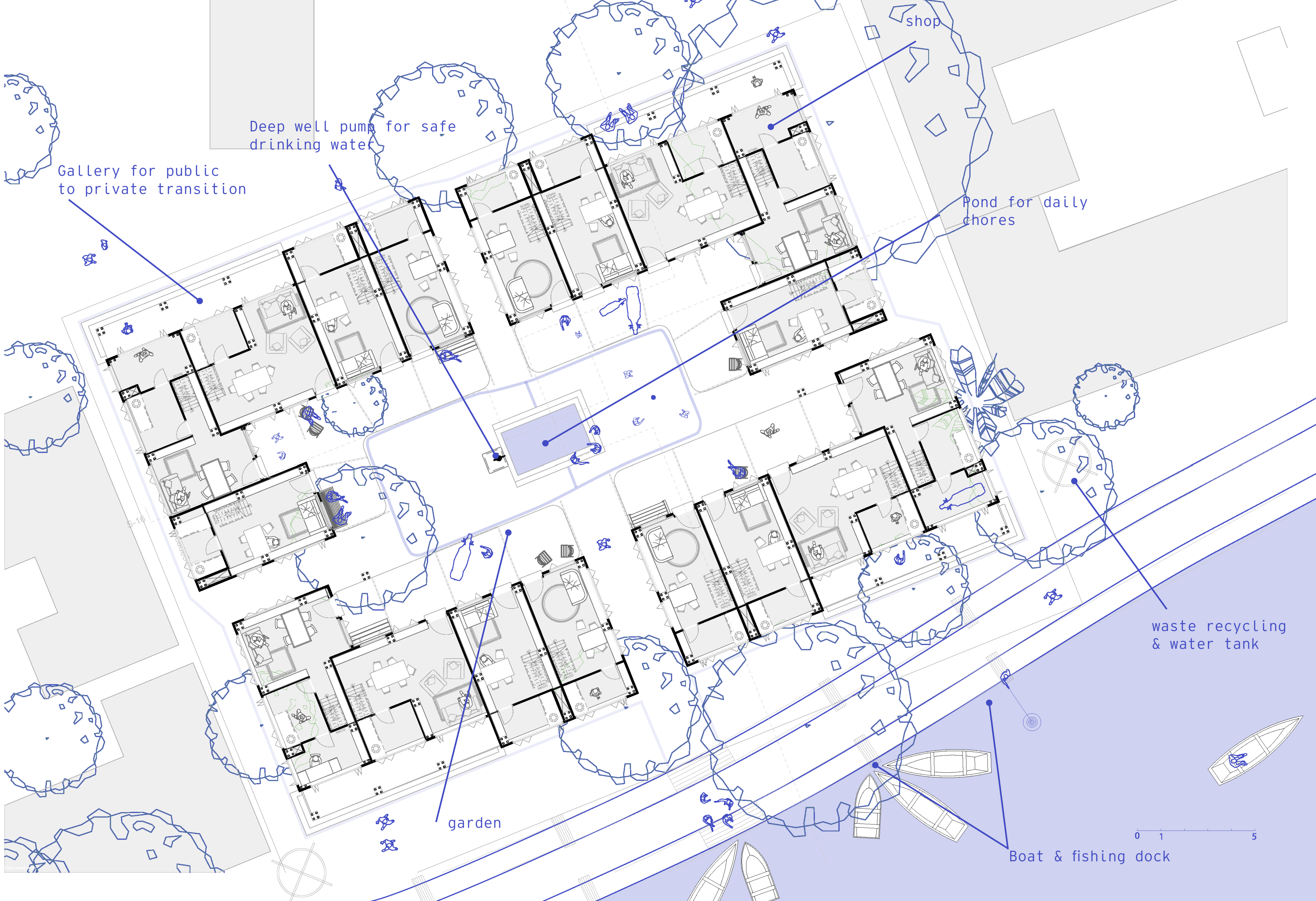
4 units in 1 standard cluster



5 dwellings in 1 standard unit

Cluster

1:100



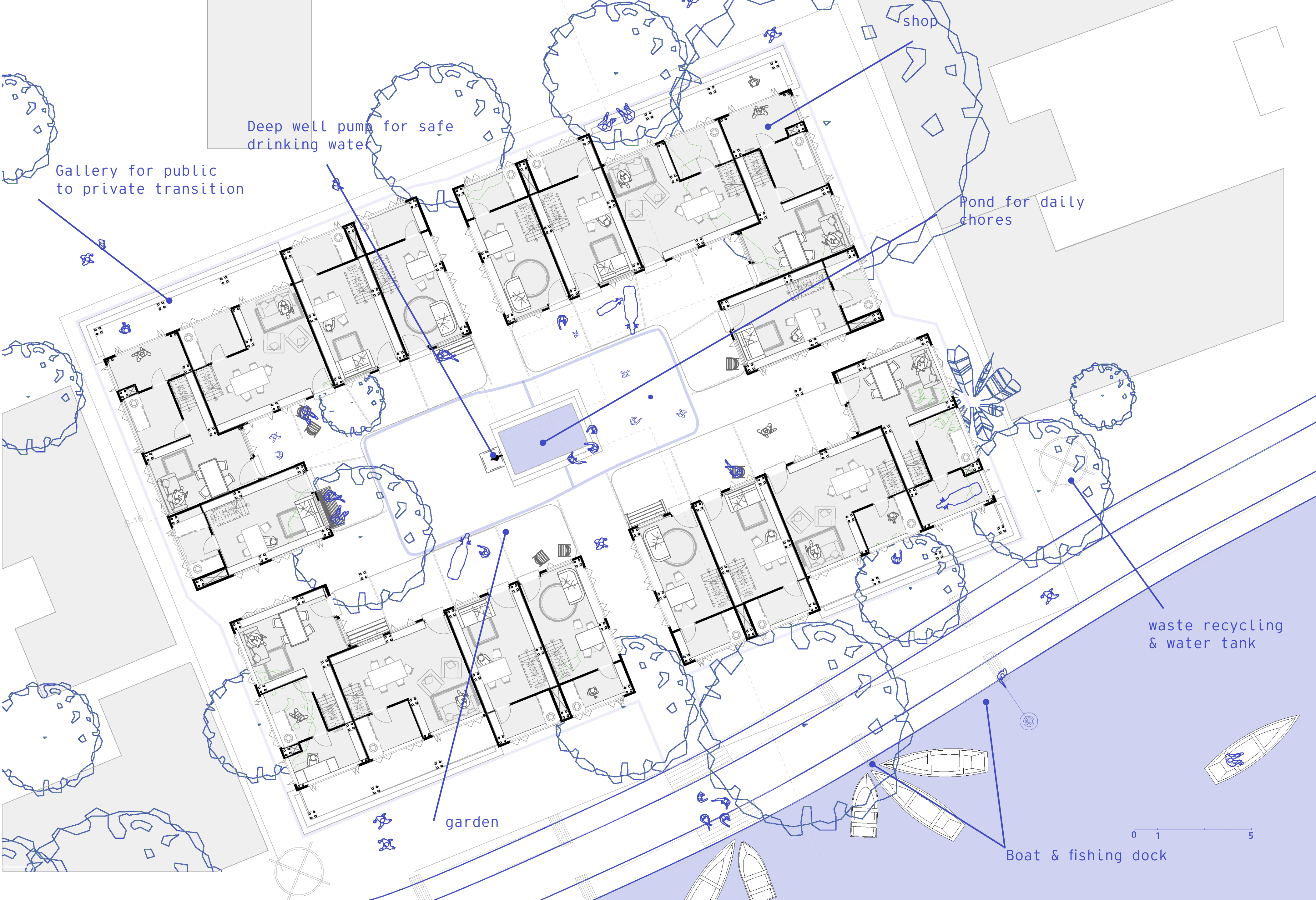
Elevation whole street

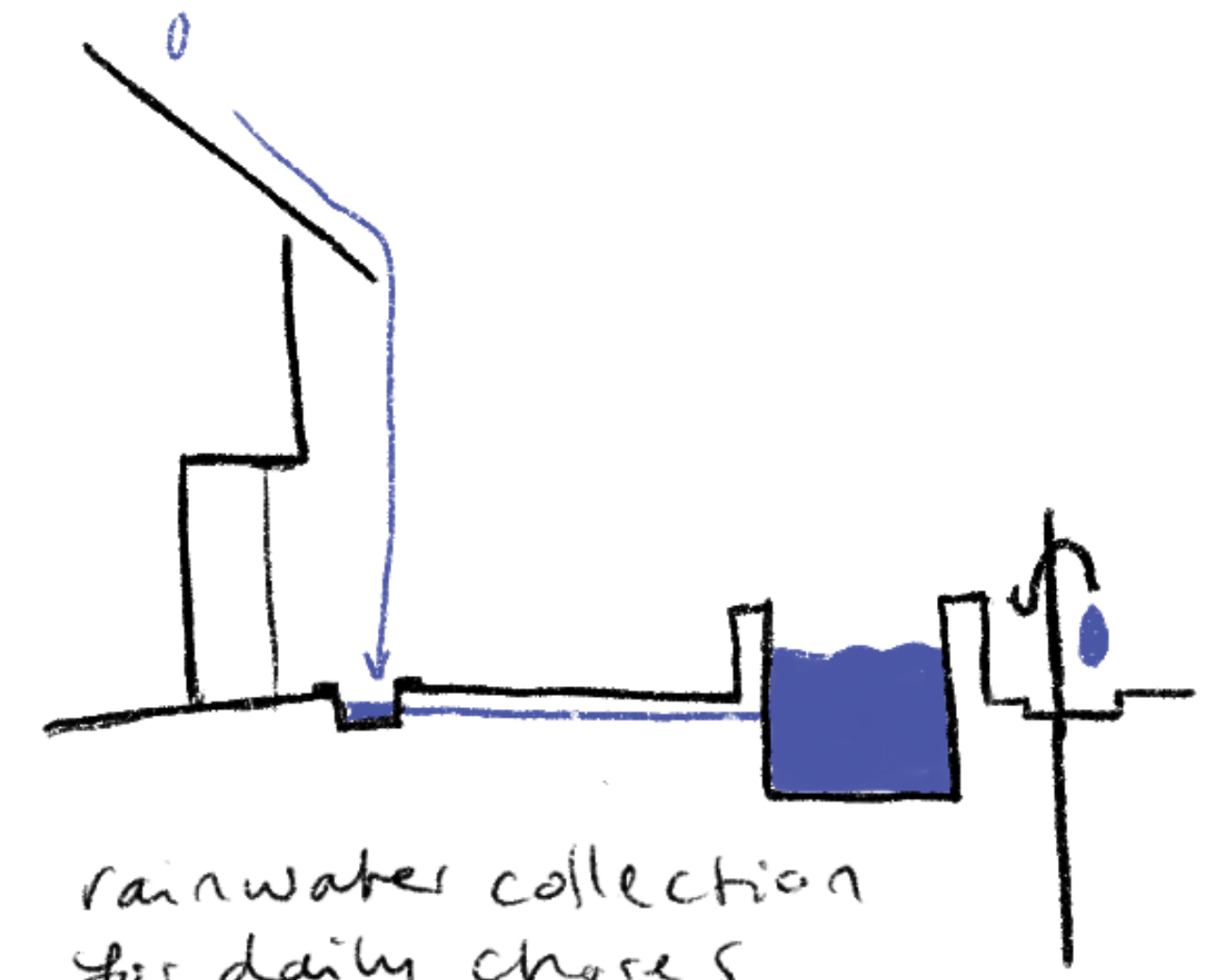
1:100



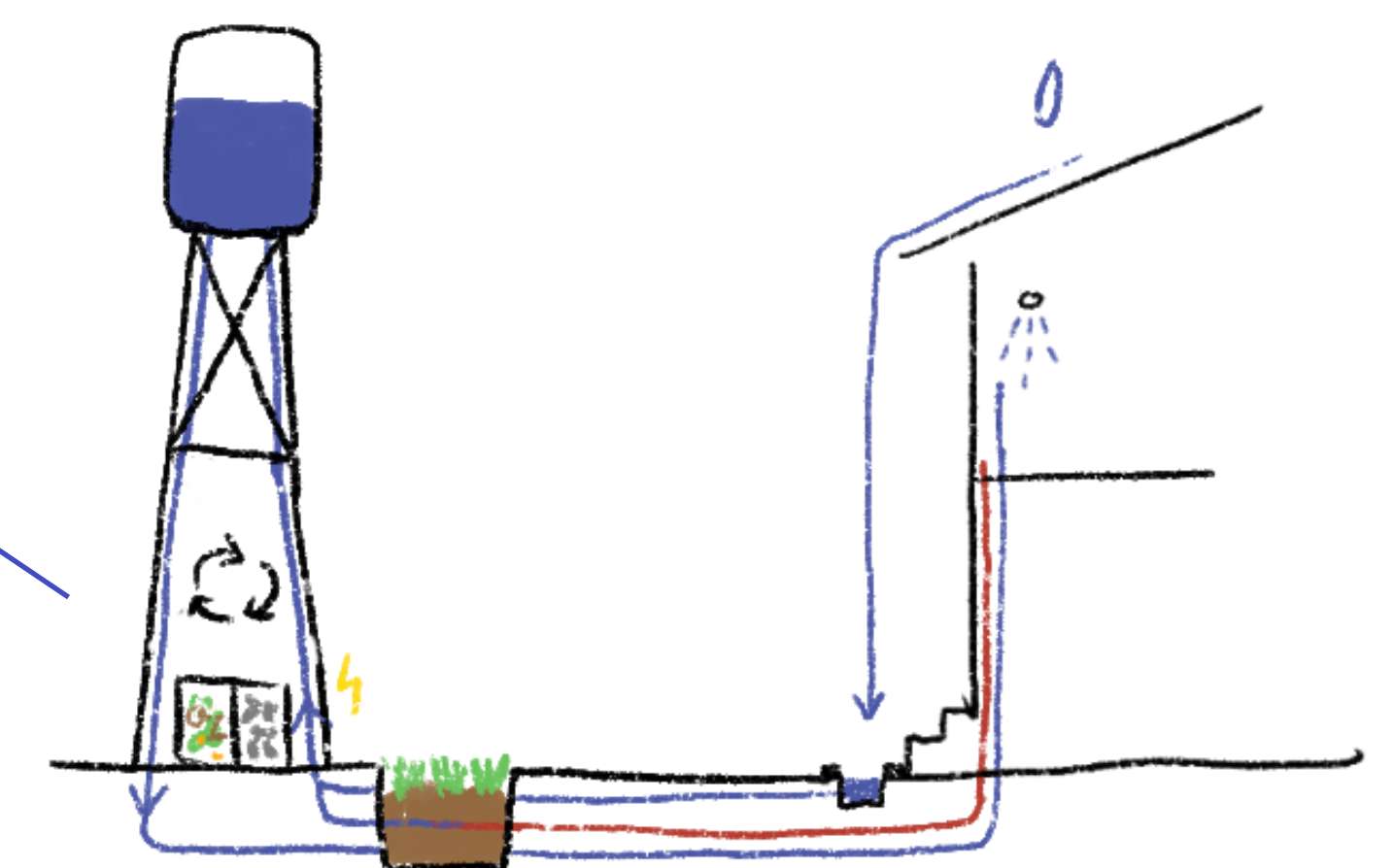
Cluster

1:100





rainwater collection
for daily chores



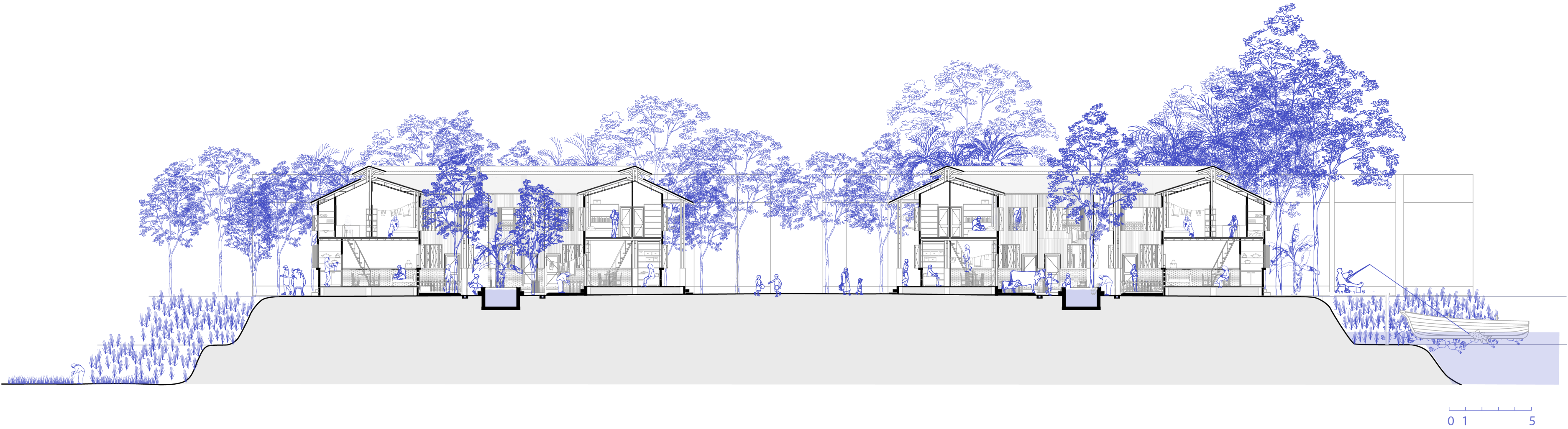
water system shower:
helofyte filters greywater
water tank to supply shower
water using gravity
space underneath water
tower = waste sorting /
recycling station.



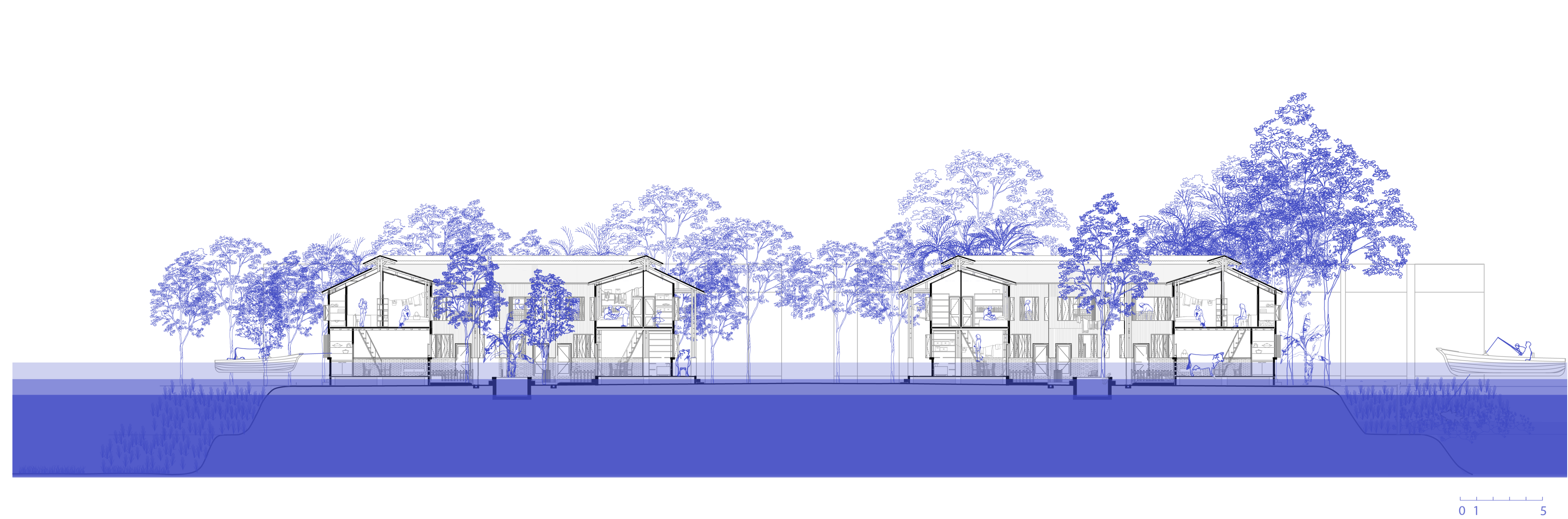
Section haor to river

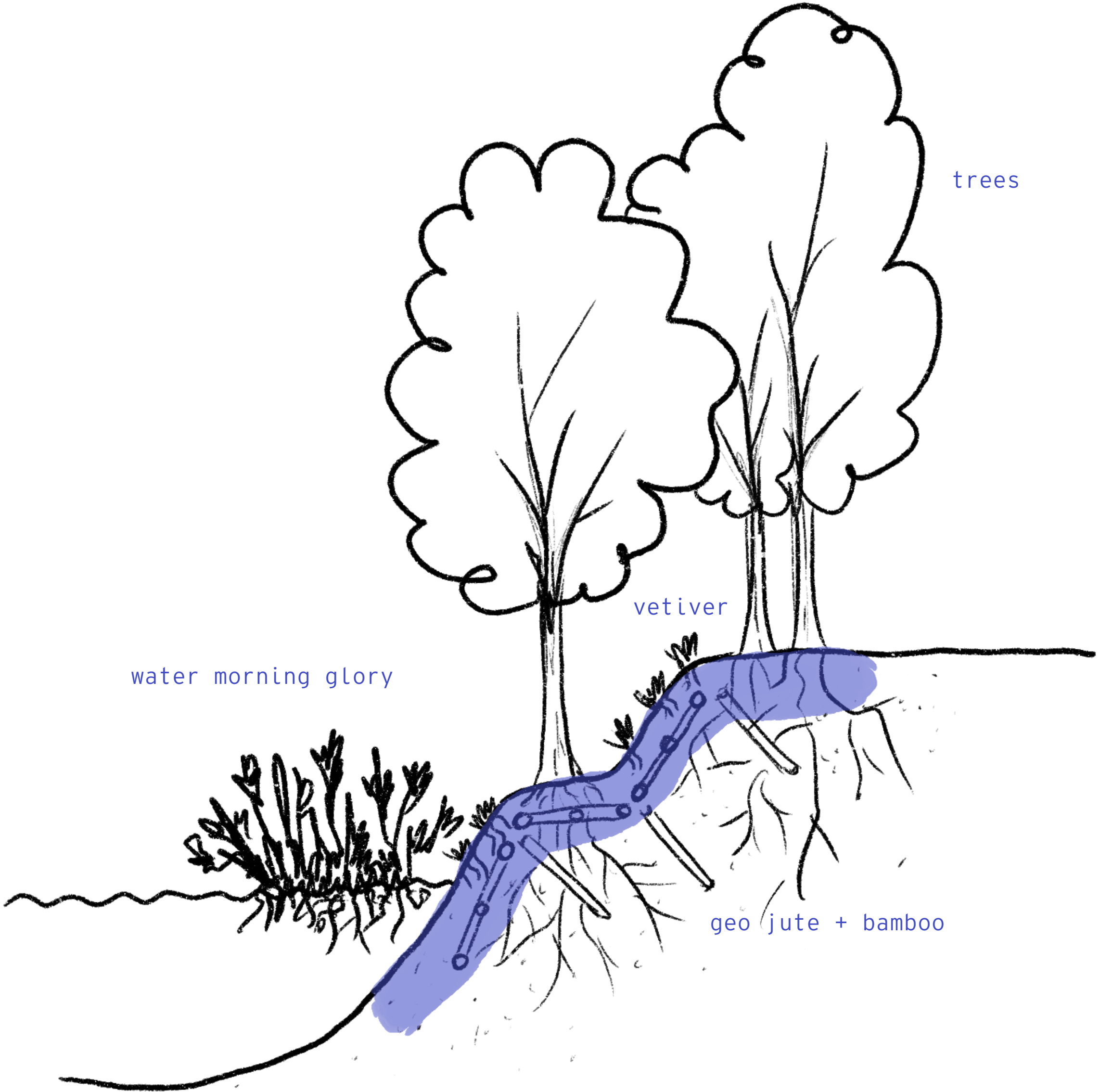
1:200

dry season



wet season





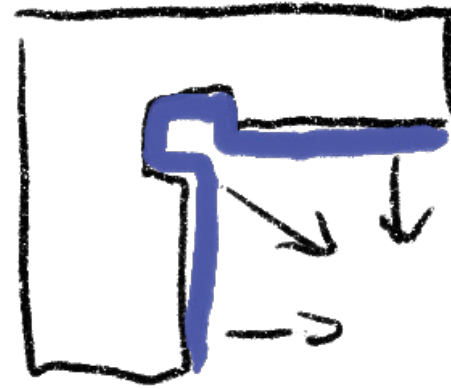
The Unit

Cluster

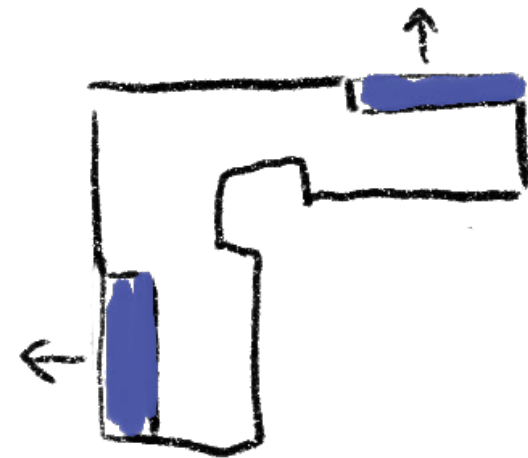
1:100



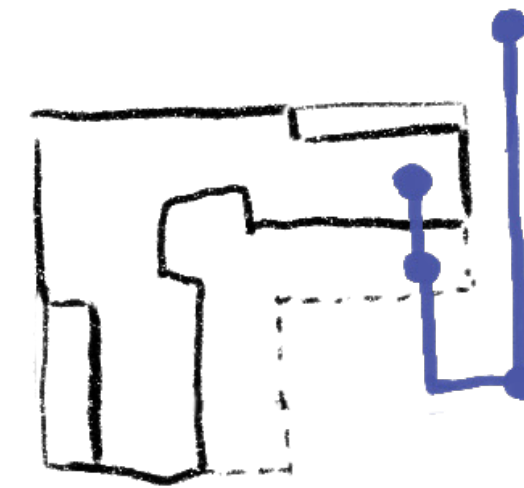
What do I want?
from unit type



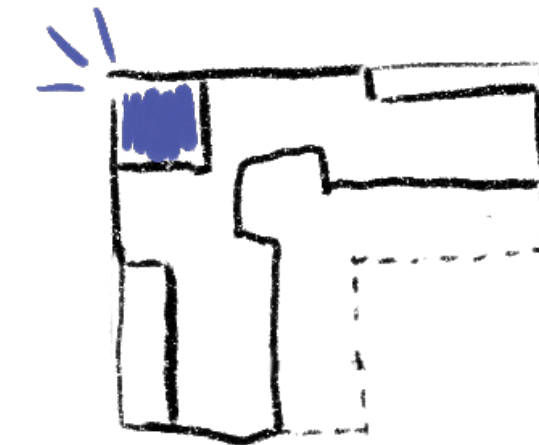
equal
courtyard
access



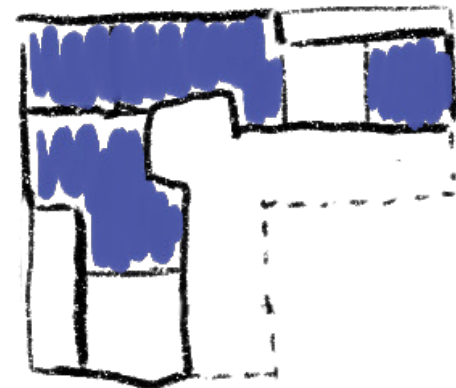
softer
transition
street side



hierarchy
of spaces



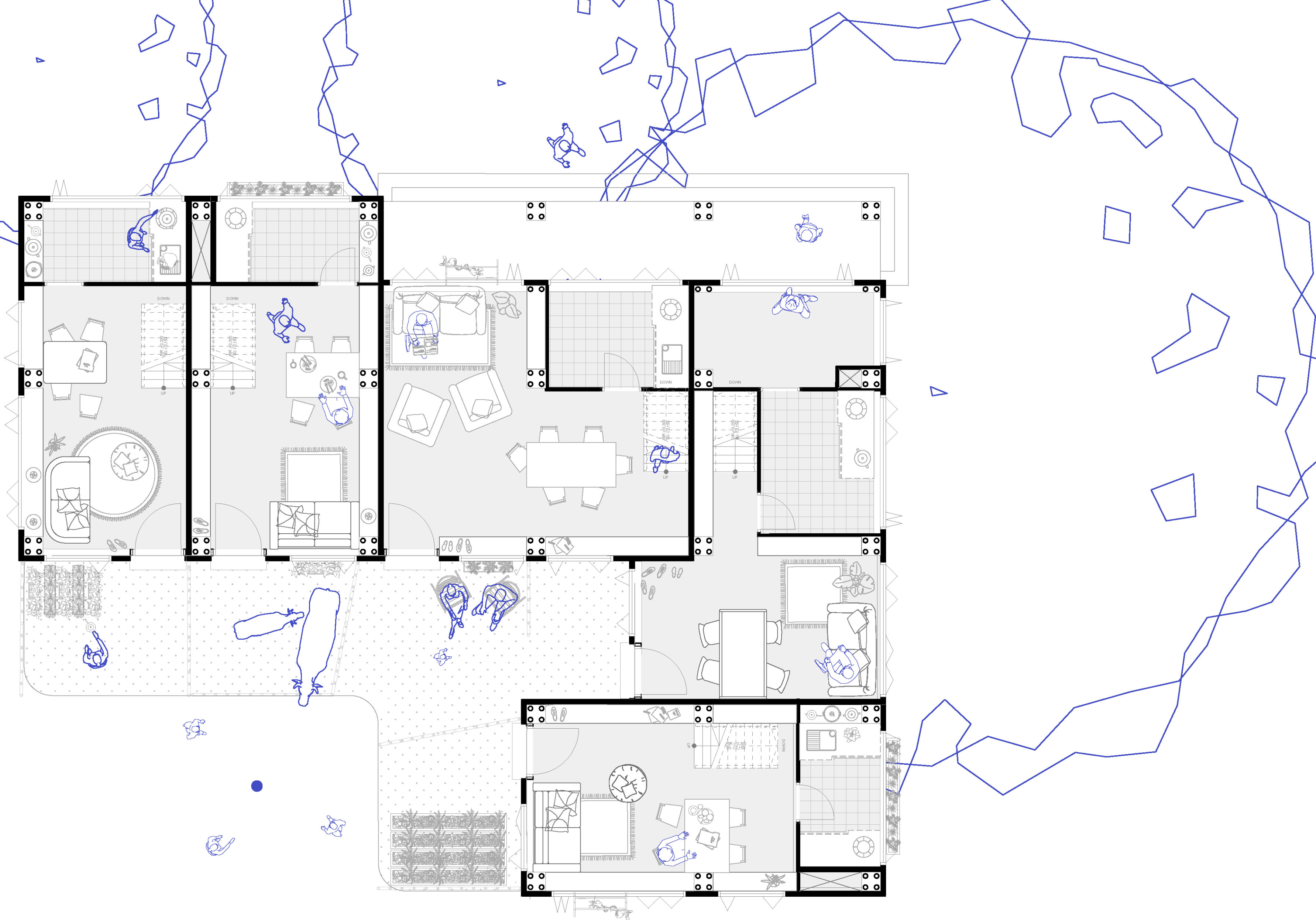
corner shop
on street side



different size
houses for
varying households

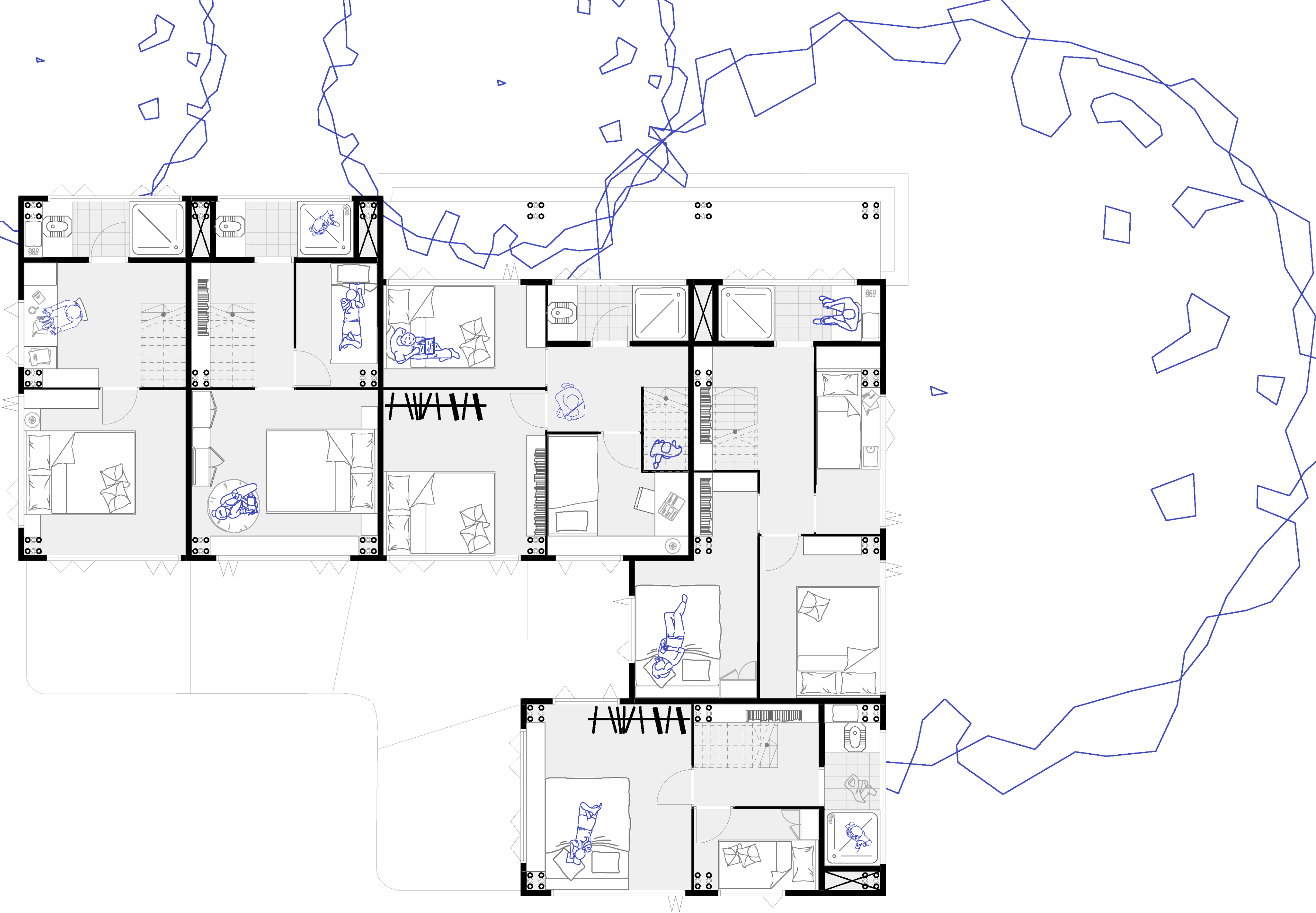
Floorplan - ground floor

1:50



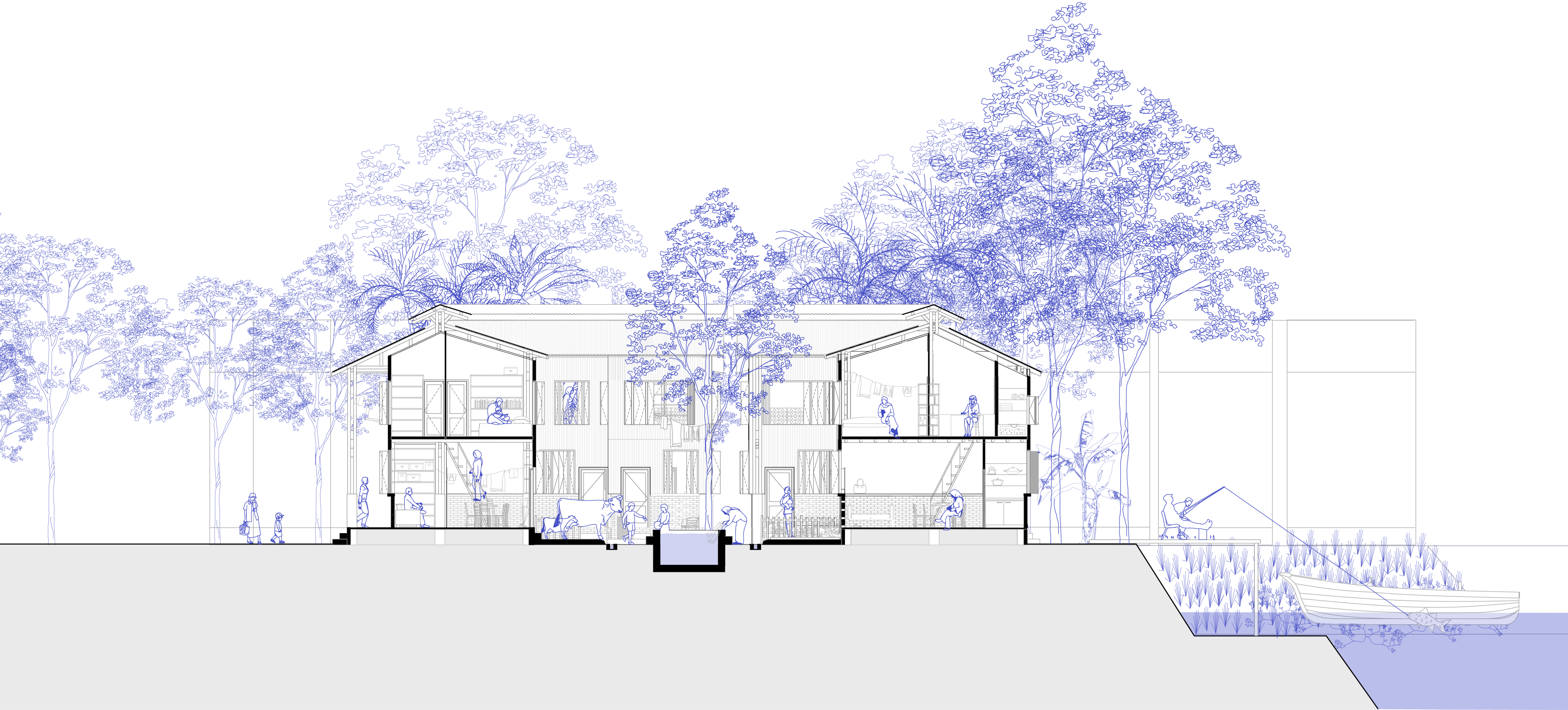
Floorplan - first floor

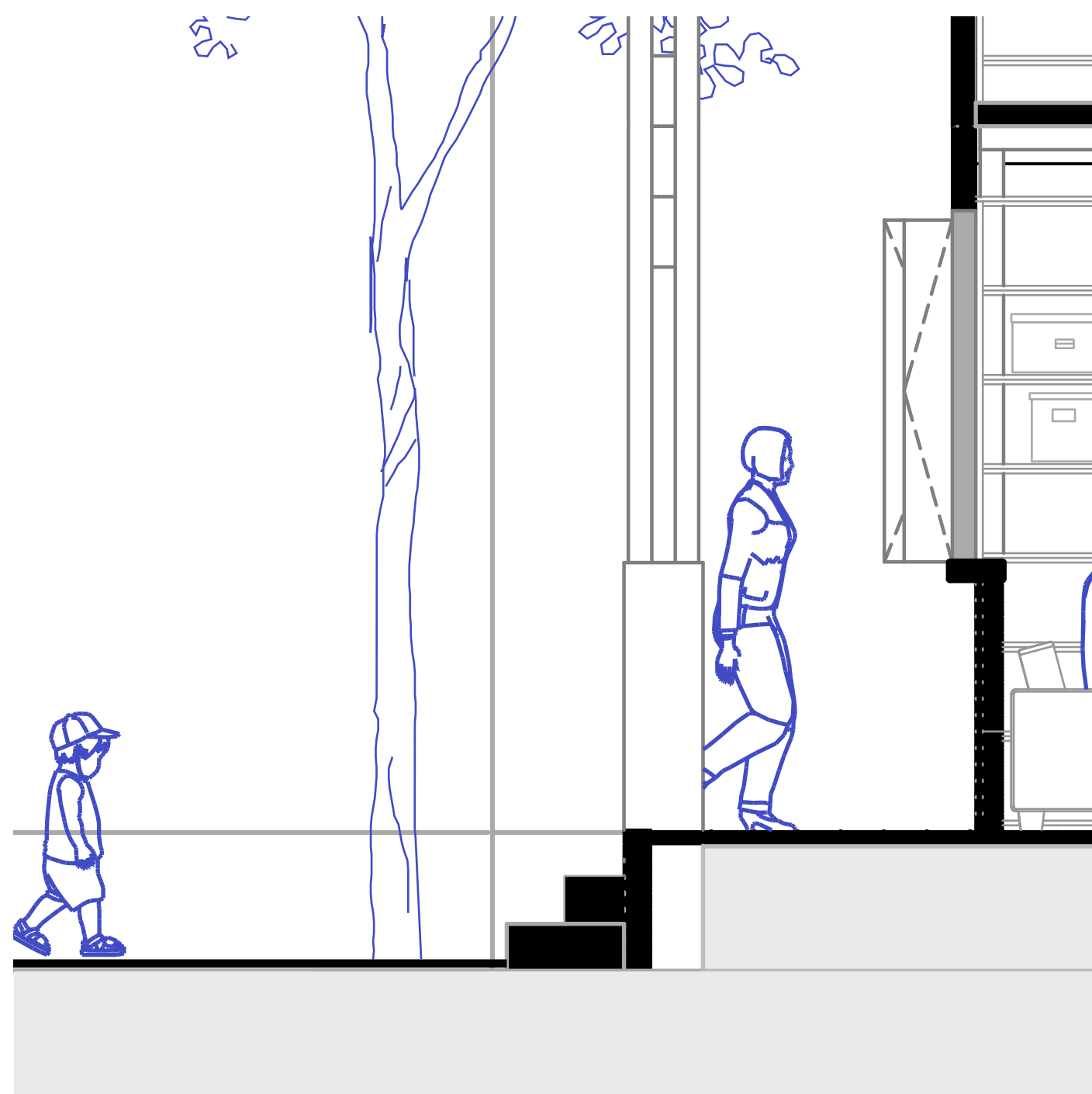
1:50



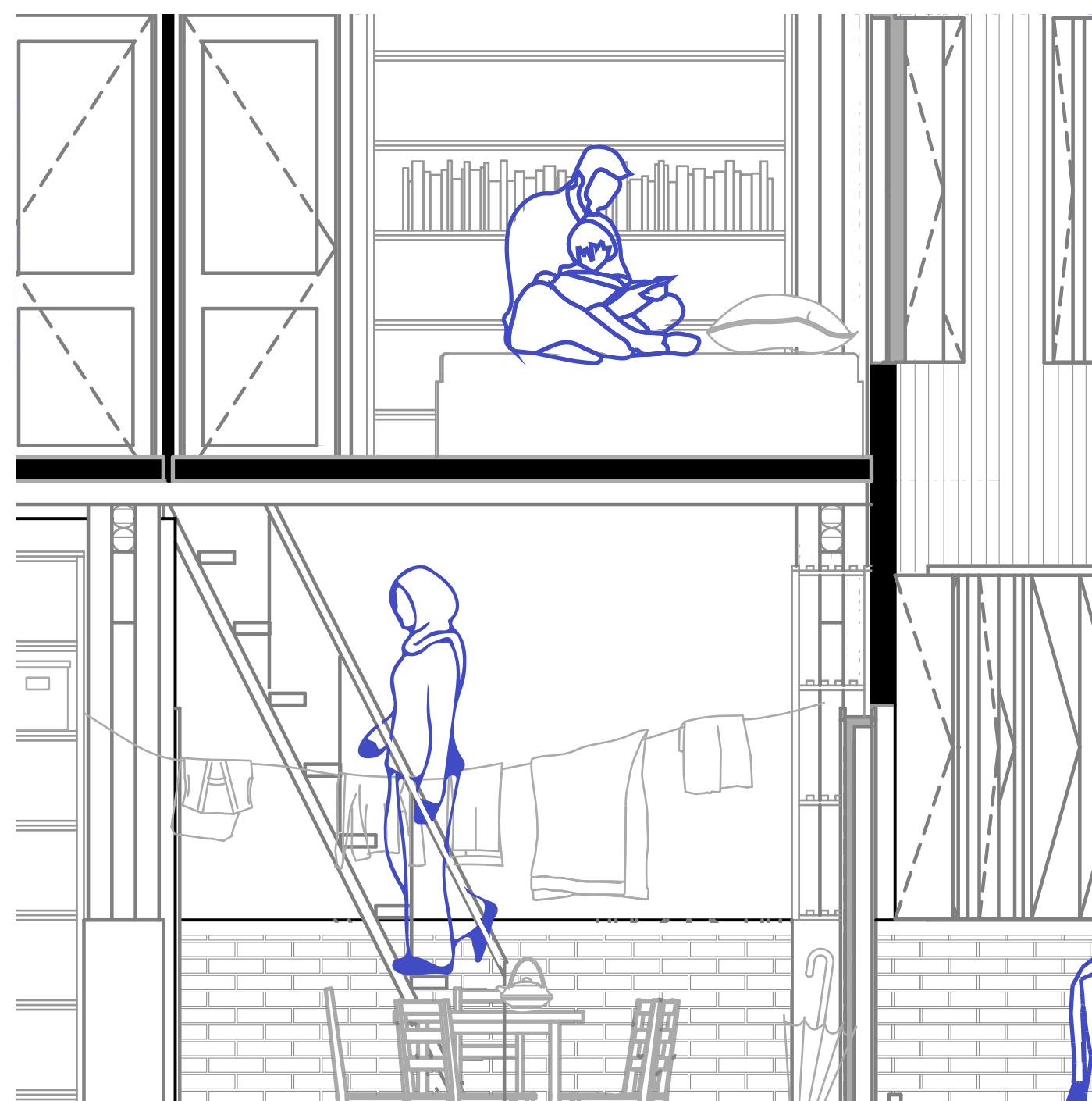
Section river side (south)

1:100

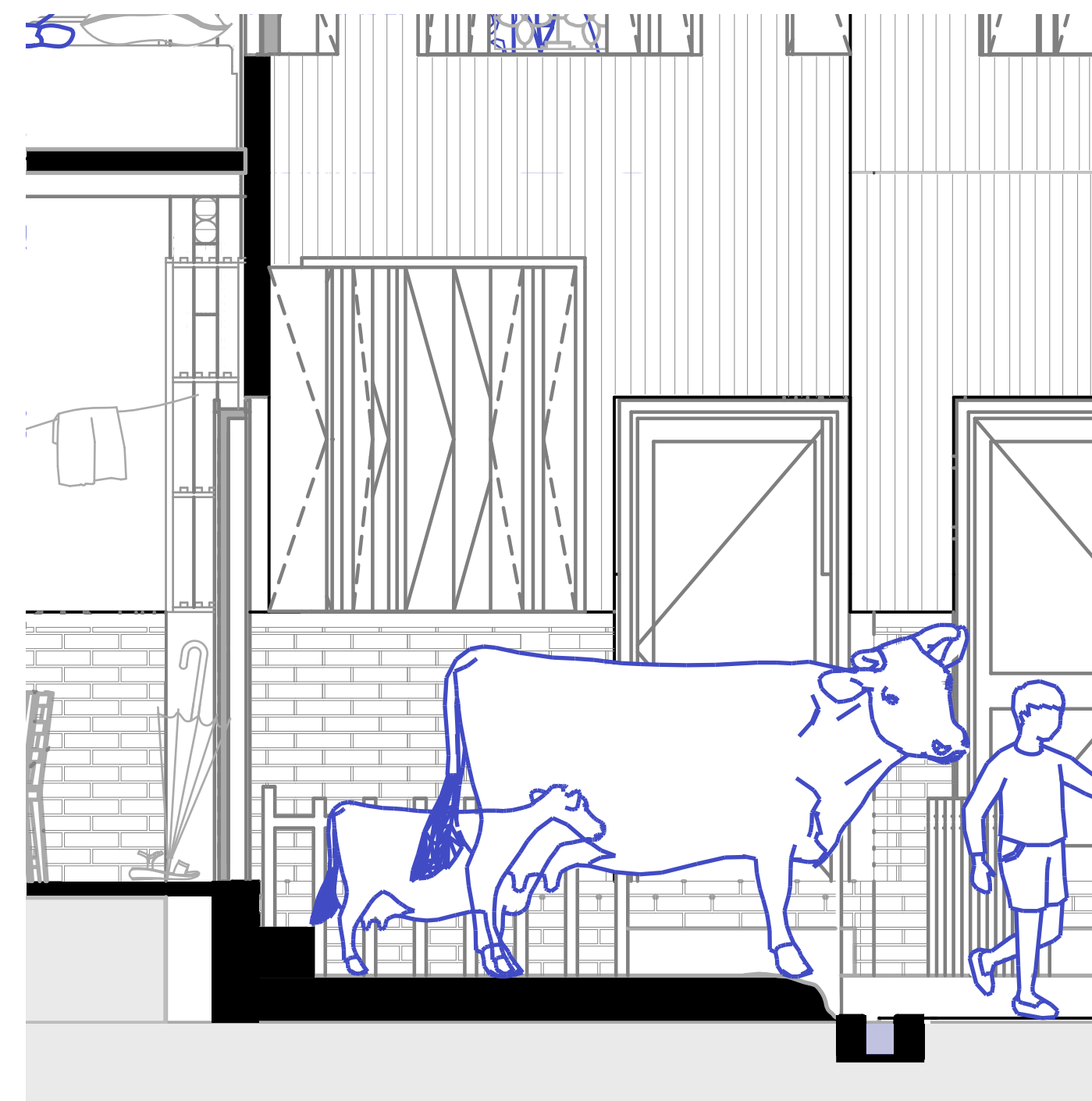




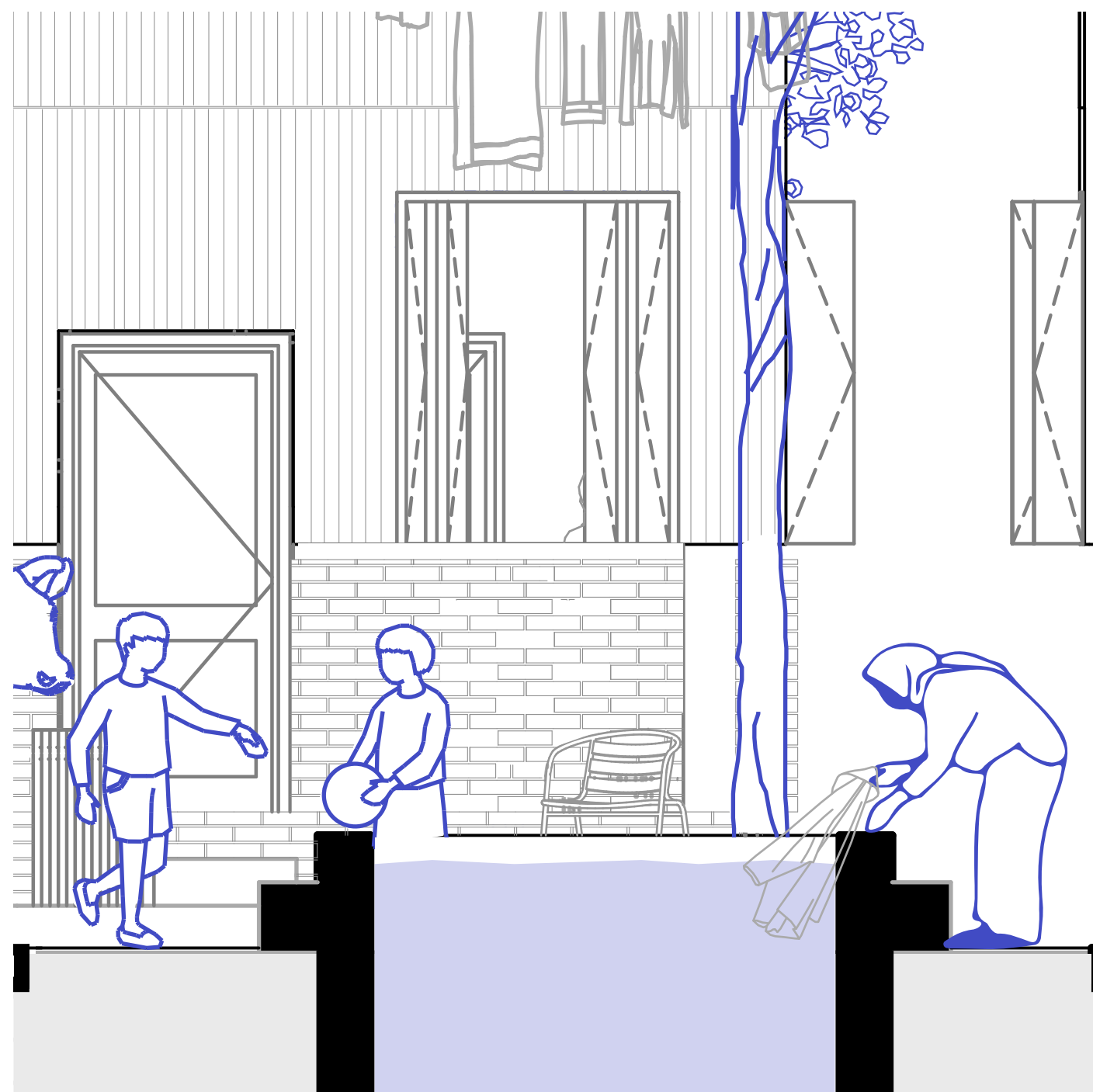
gallery/veranda
& shop



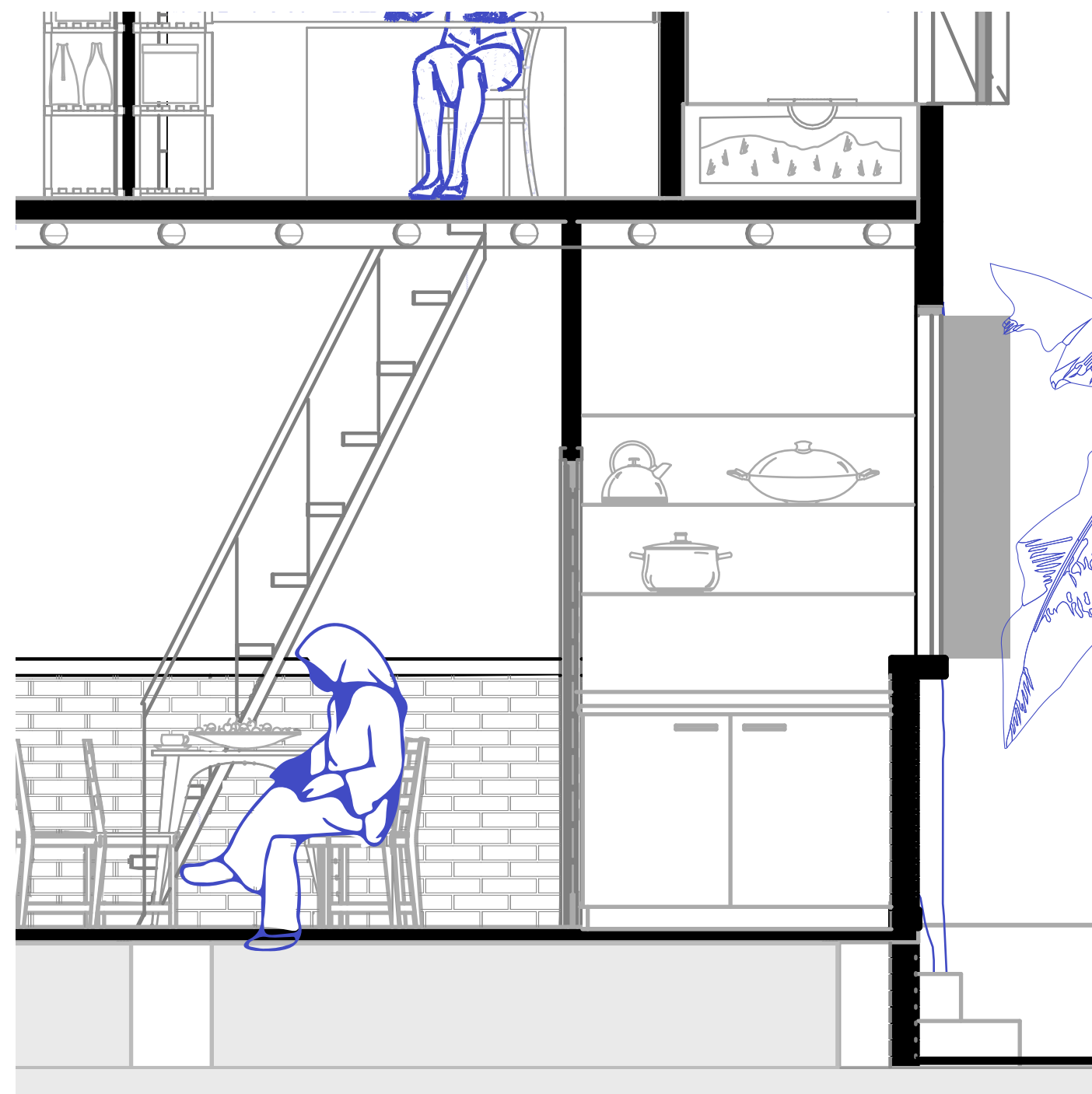
living space
& bedroom



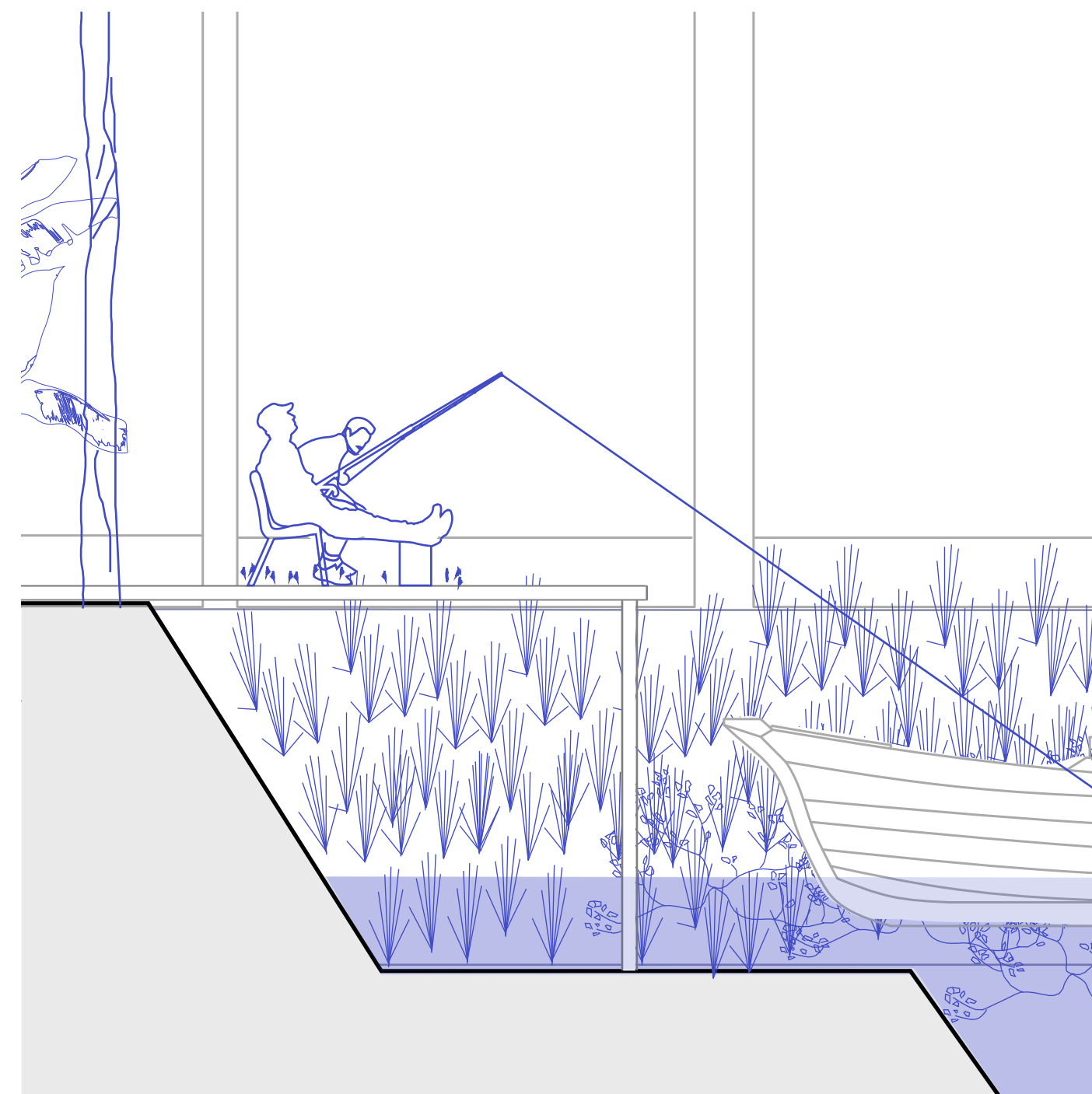
garden & cattle



pond for daily
chores



living space
& kitchen



boat docking &
fishing jetty



The dwelling

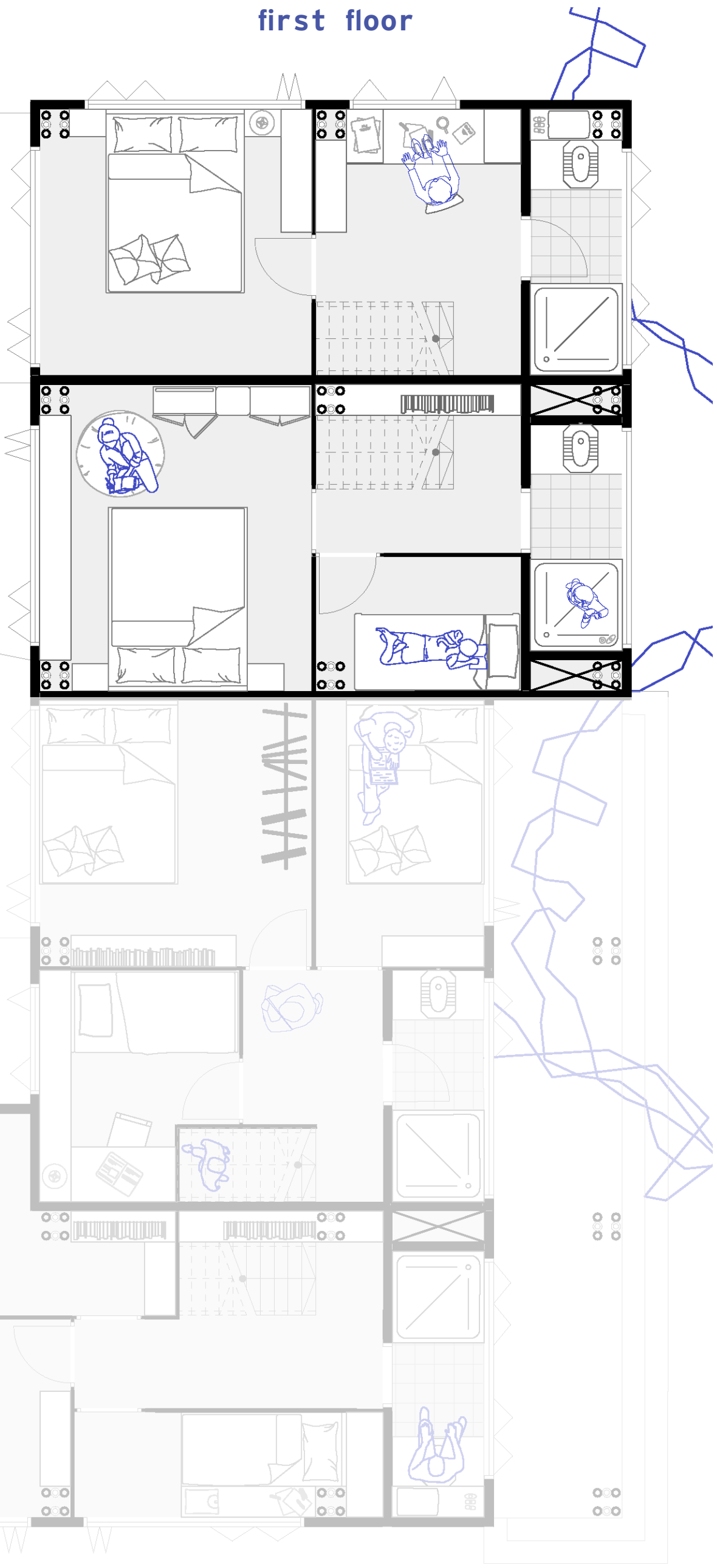
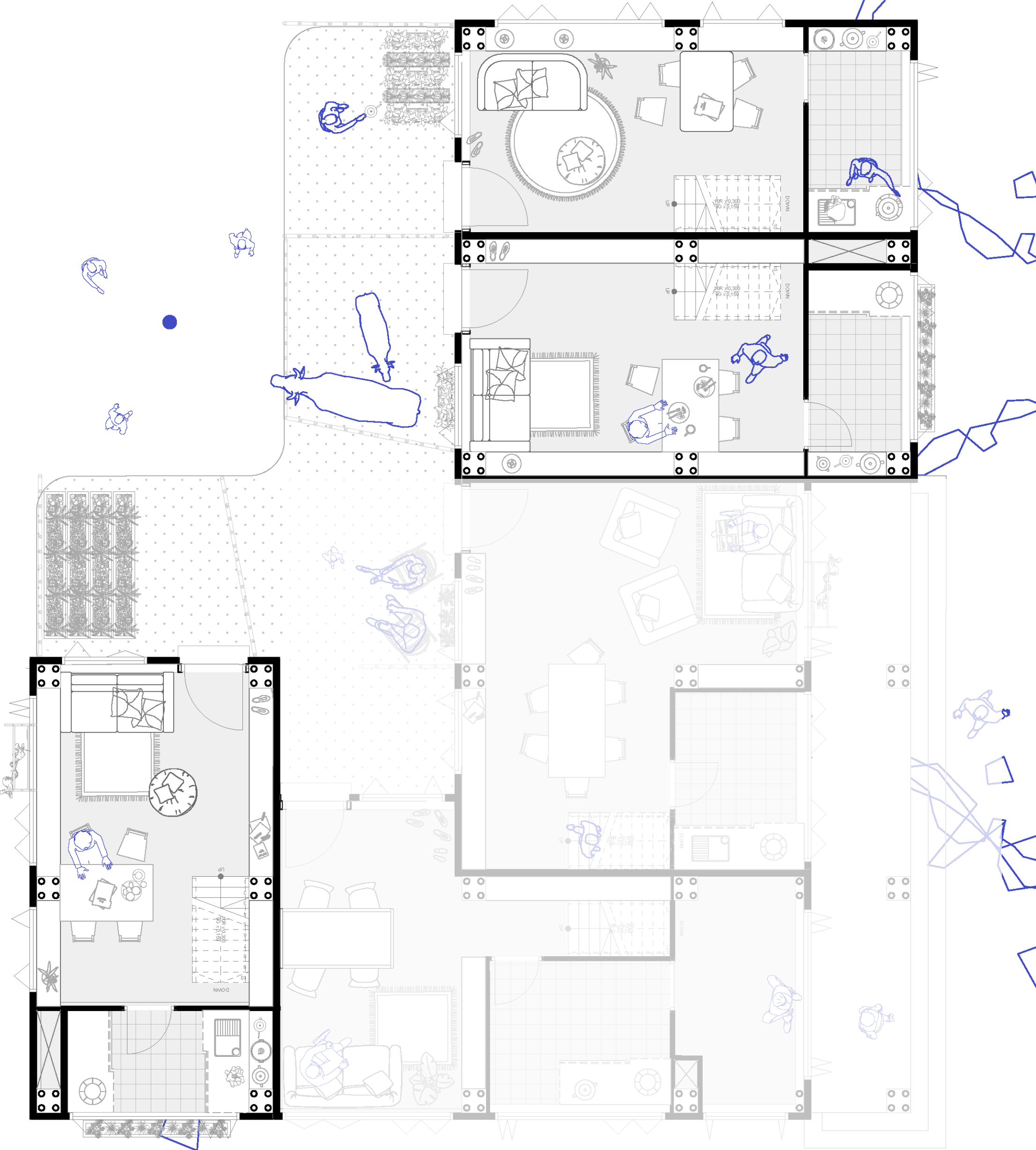
Nuclear family

1:50

ground floor

36-42m2
2-3+ people

first floor

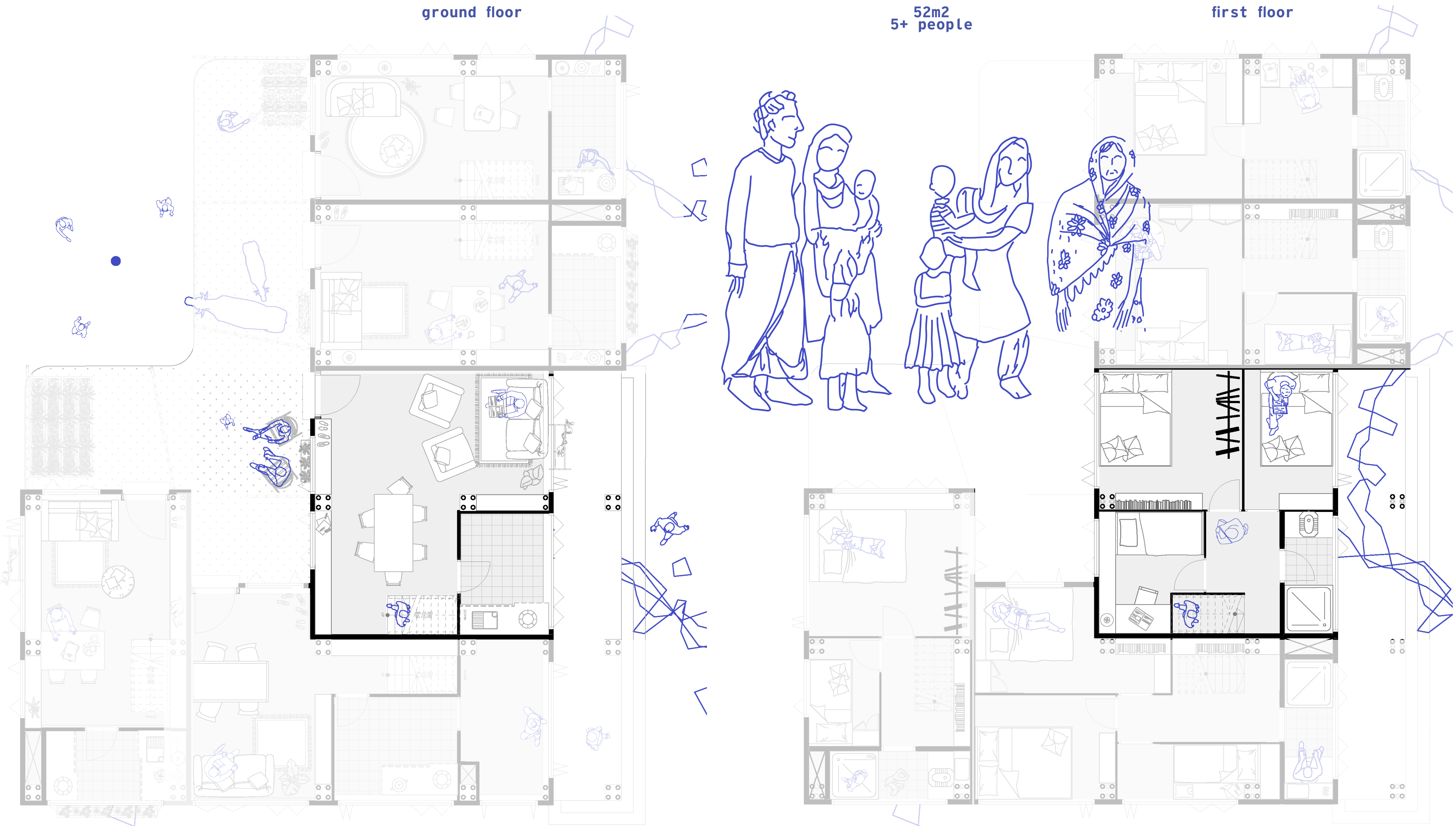


1:50

ground floor

52m2
5+ people

first floor



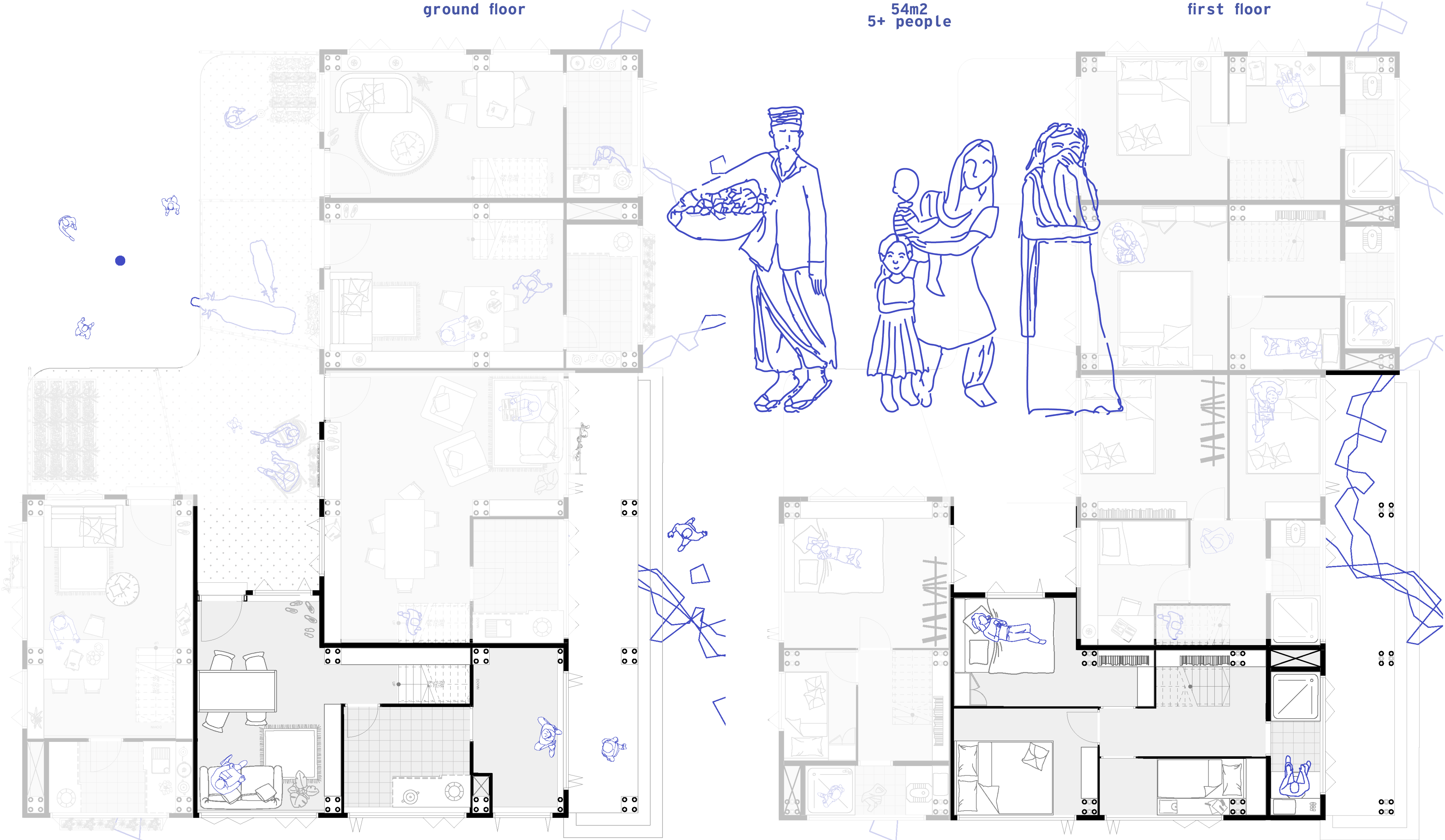
The shophouse

1:50

ground floor

5+ 54m2
people

first floor



foundation

plinth

facade & structure

roof panels





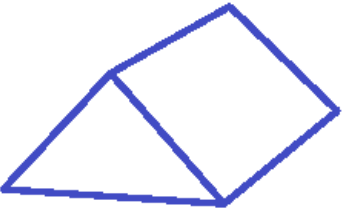
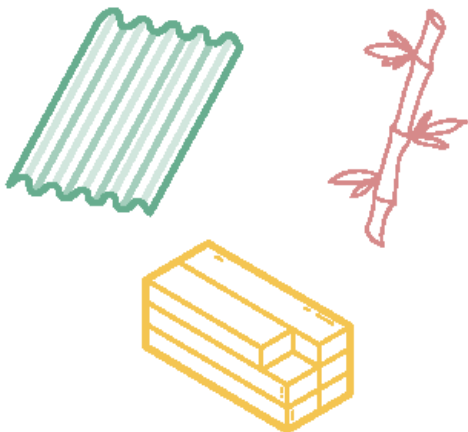
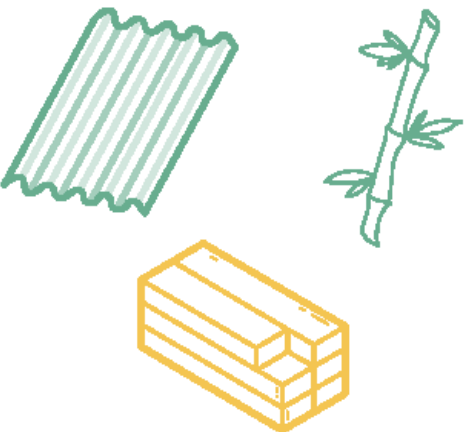
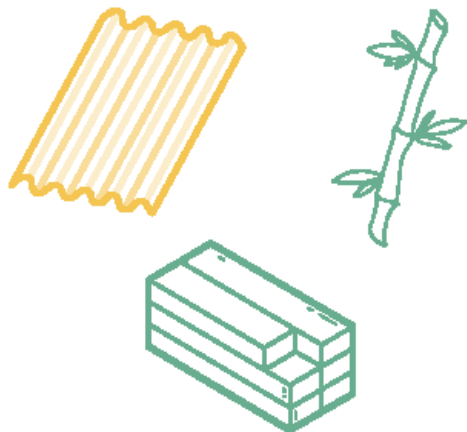
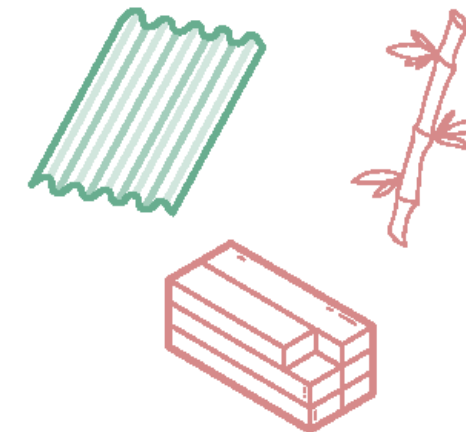
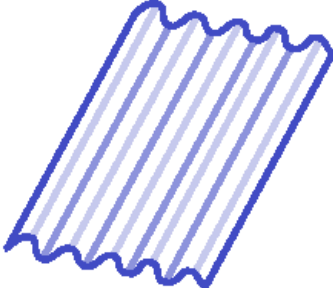
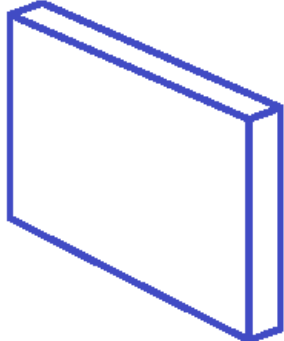
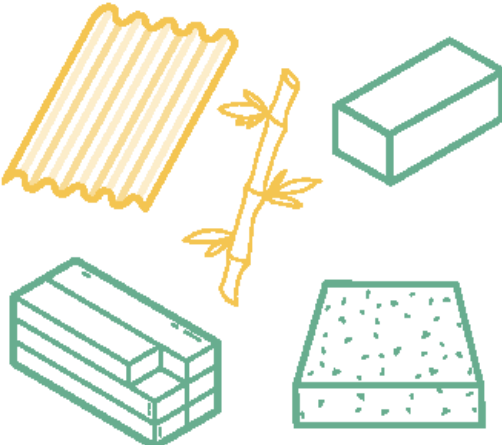
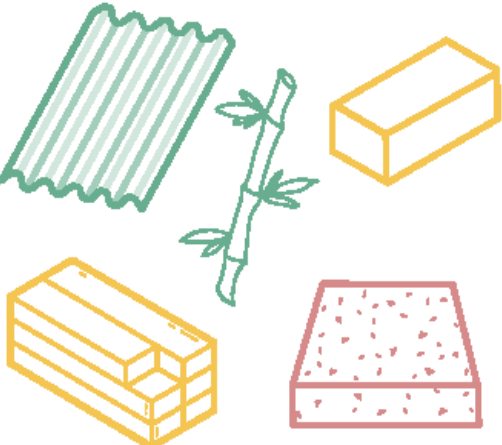
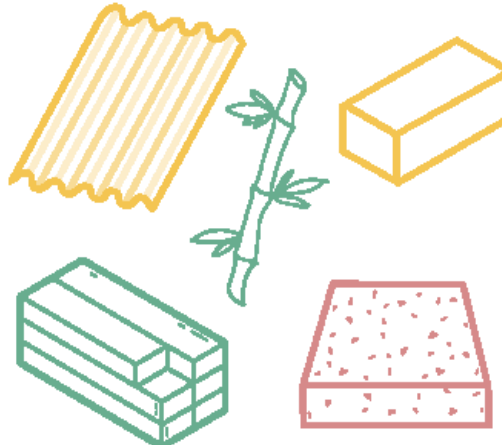
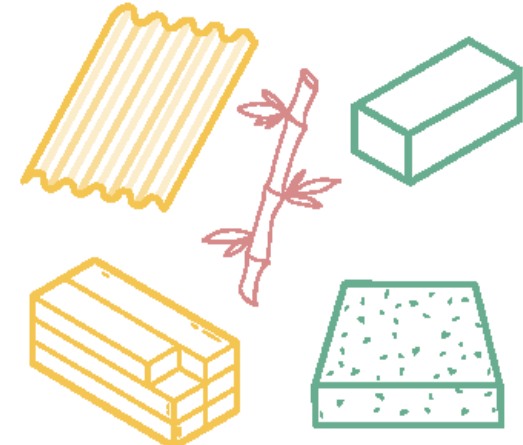
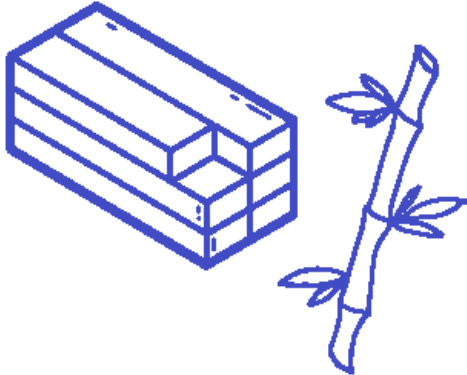
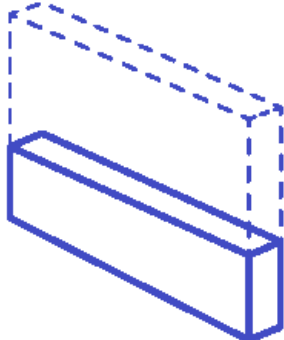
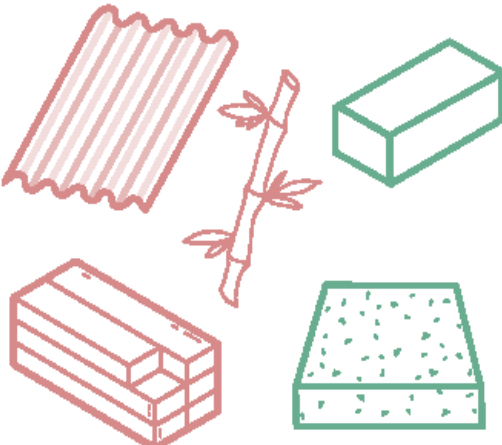
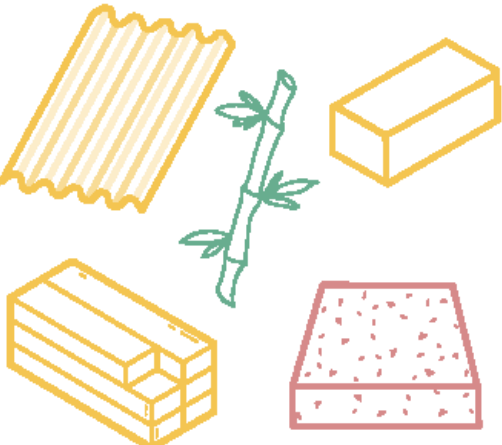
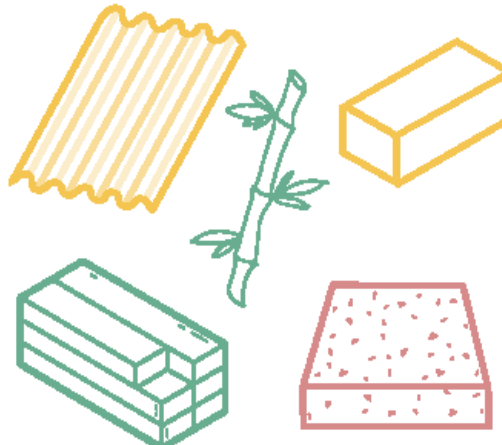
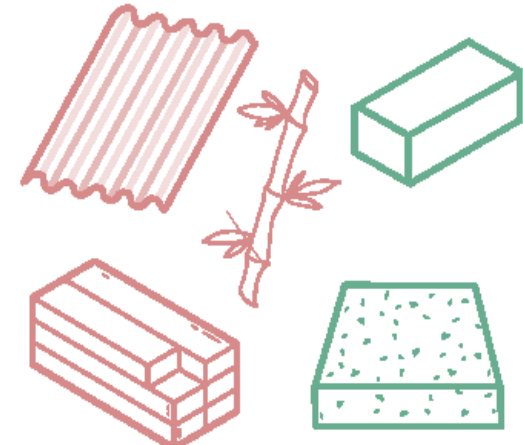
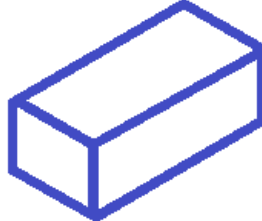
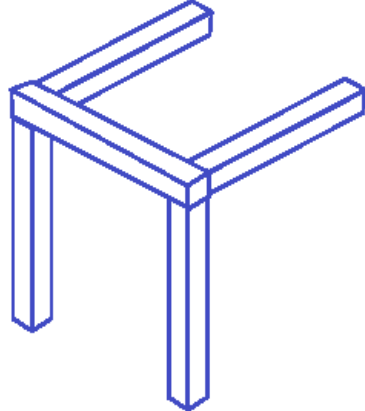
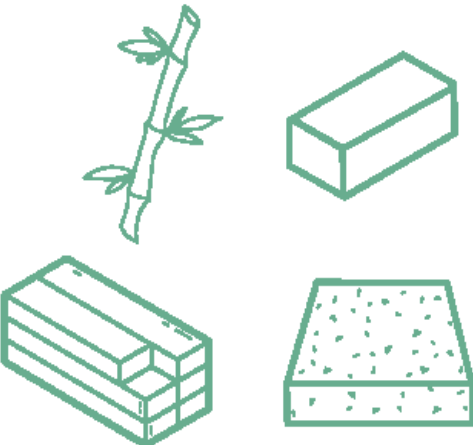
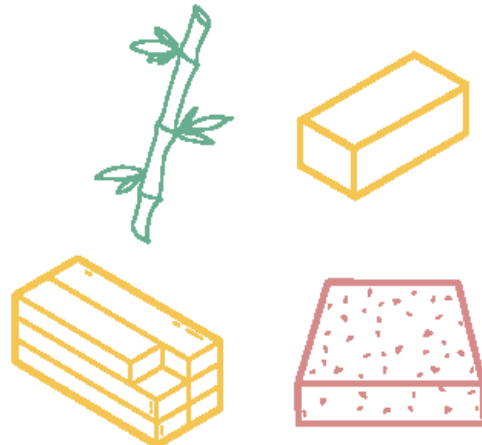
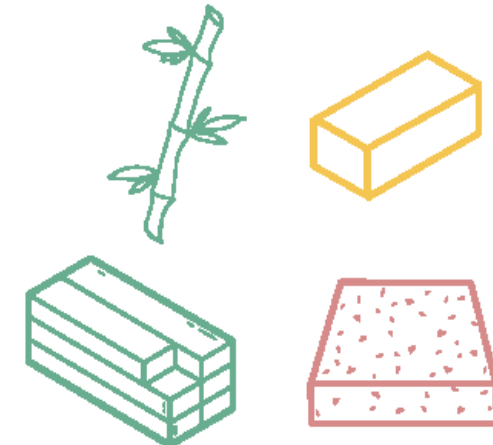
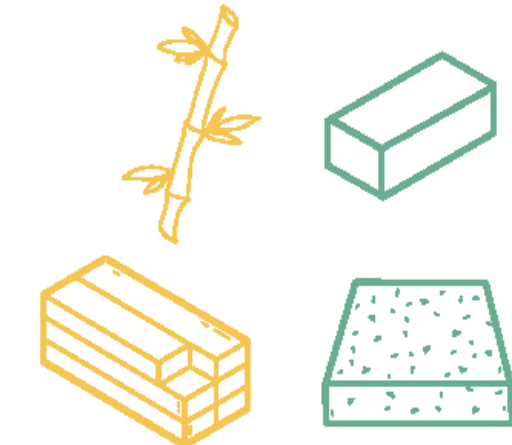
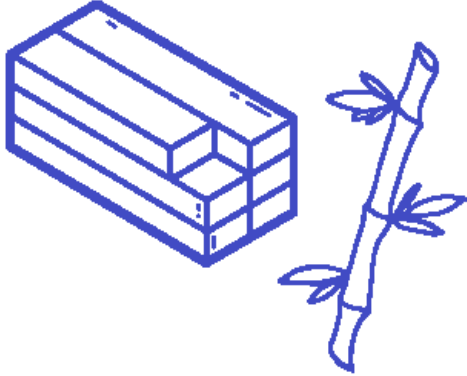
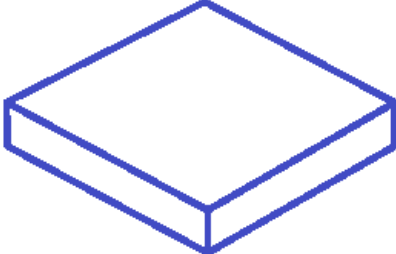
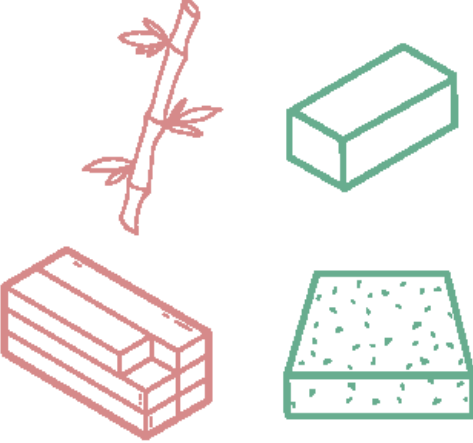
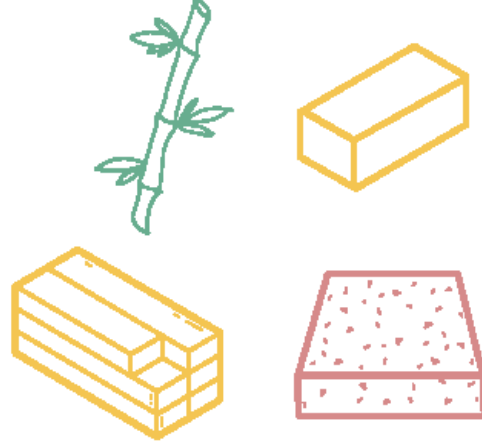
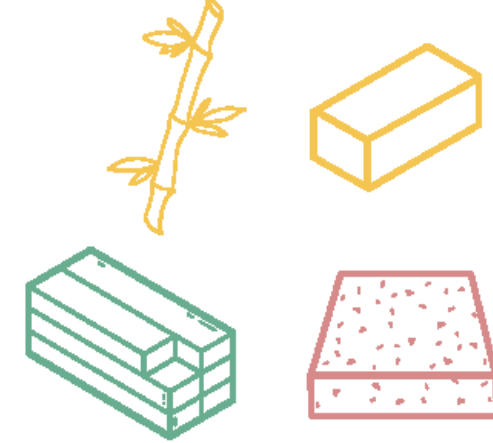
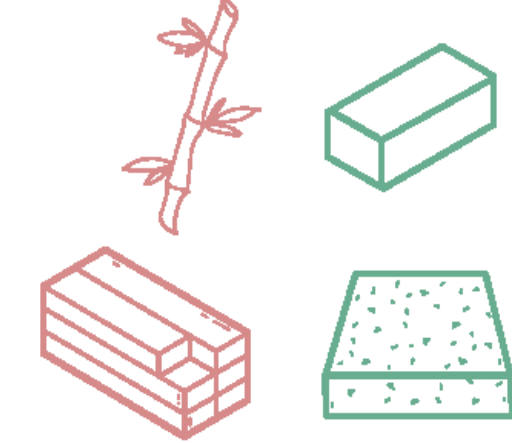
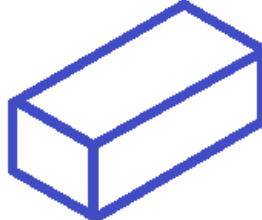


brick

half open brick

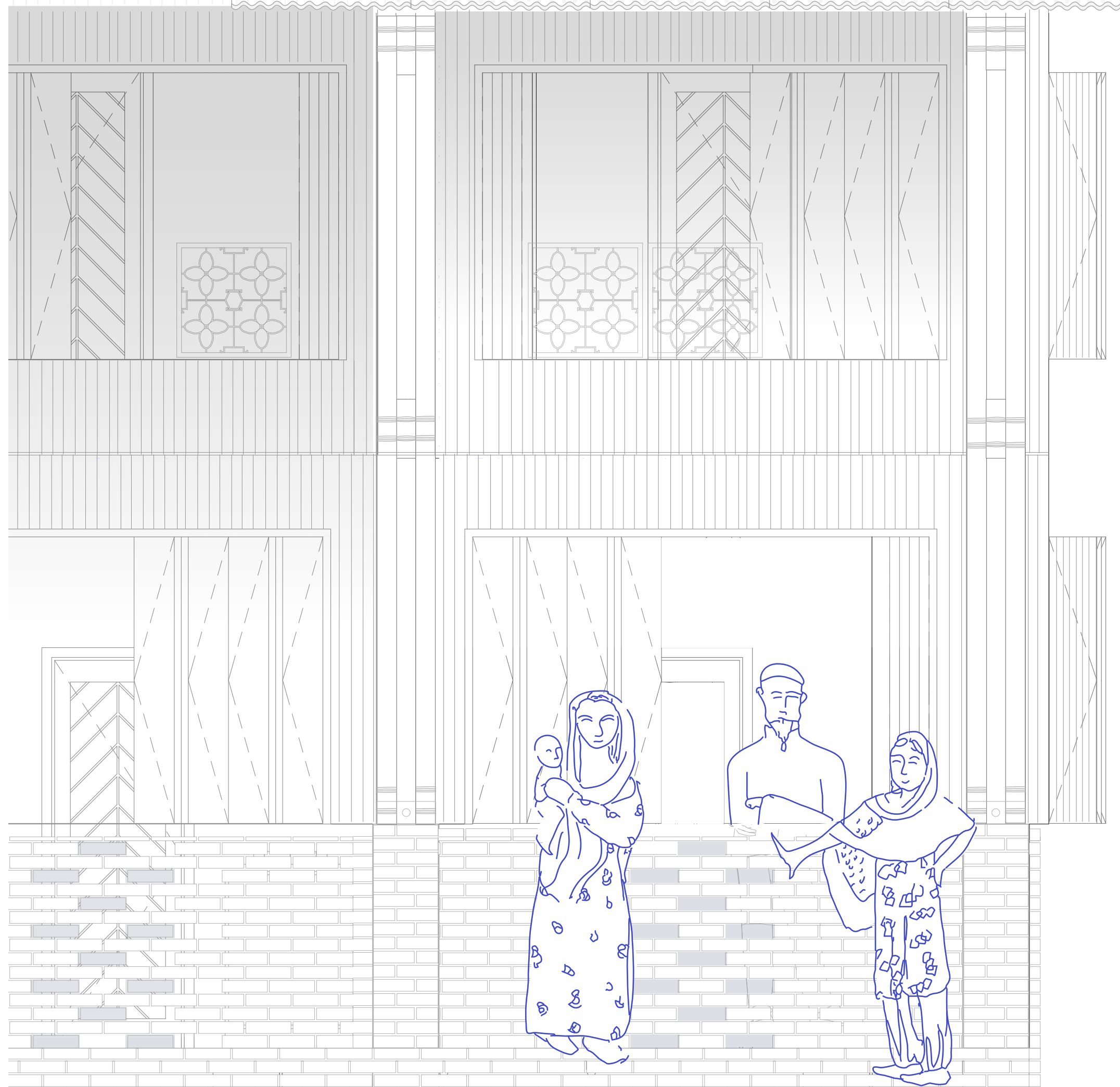
bamboo

CGI panels

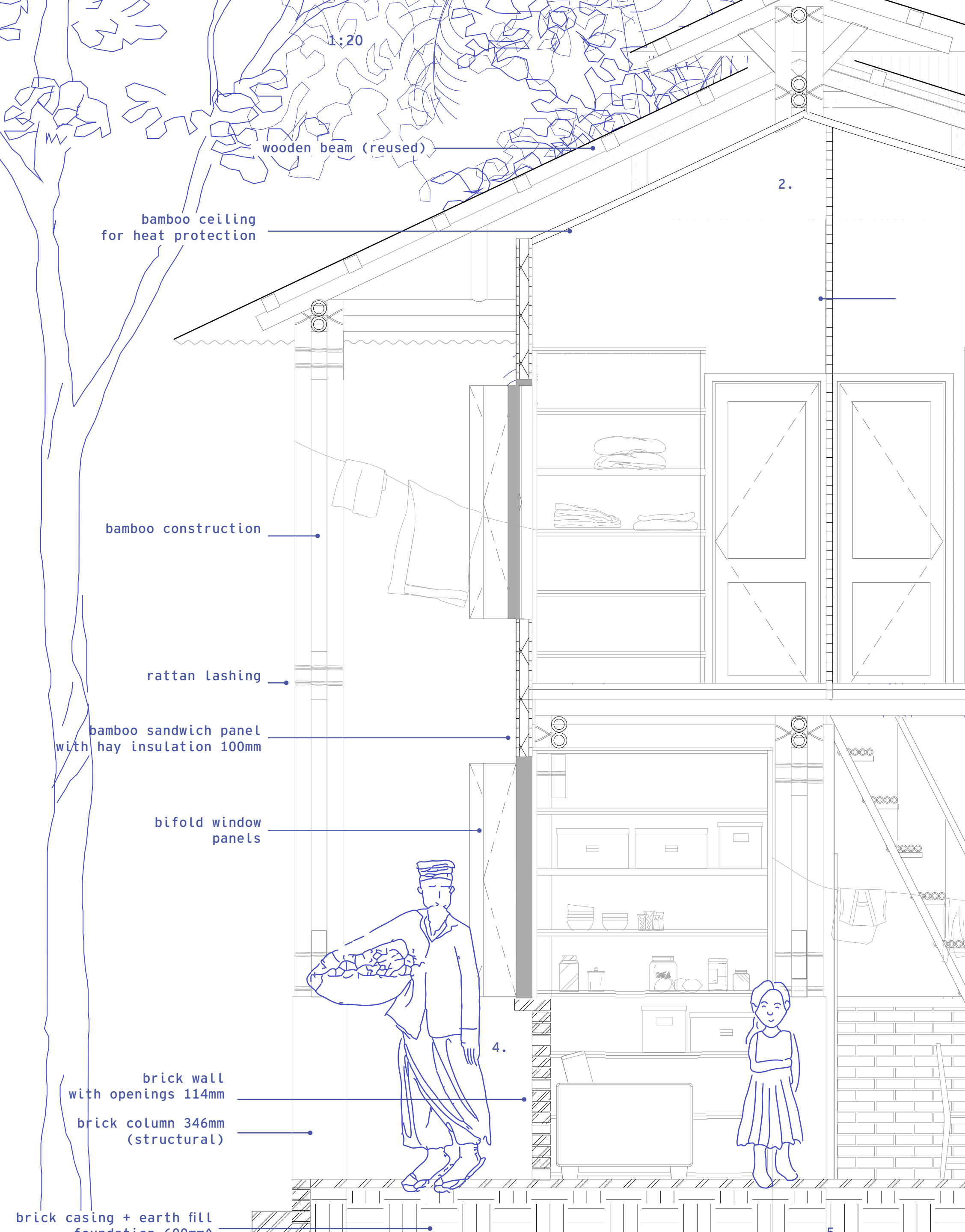
					
					
					
					
					
					

facade

1:20



1:20



wooden beam (reused)

2.

bamboo ceiling
for heat protection

bamboo construction

rattan lashing

bamboo sandwich panel
with hay insulation 100mm

bifold window
panels

4.

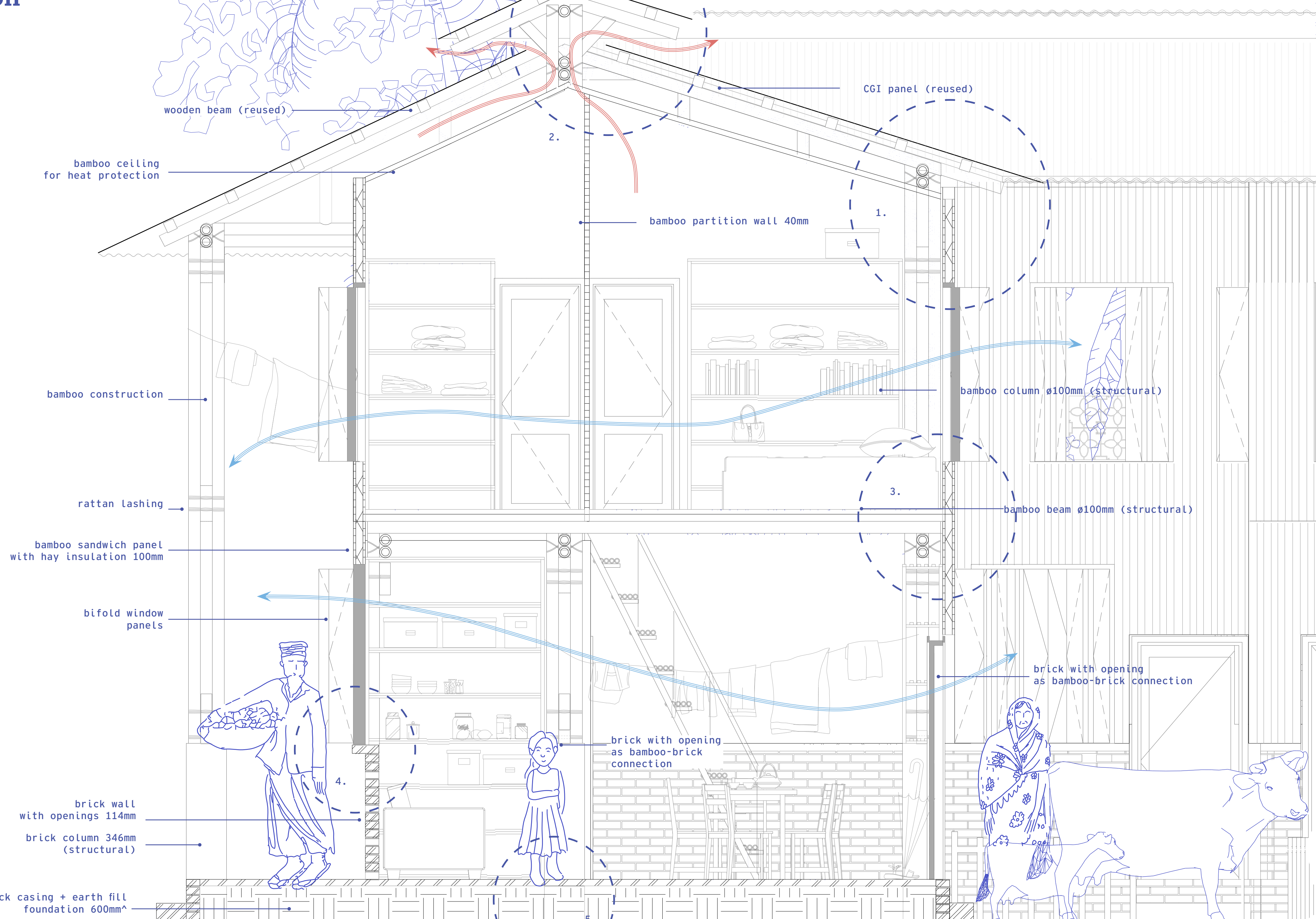
brick wall
with openings 114mm

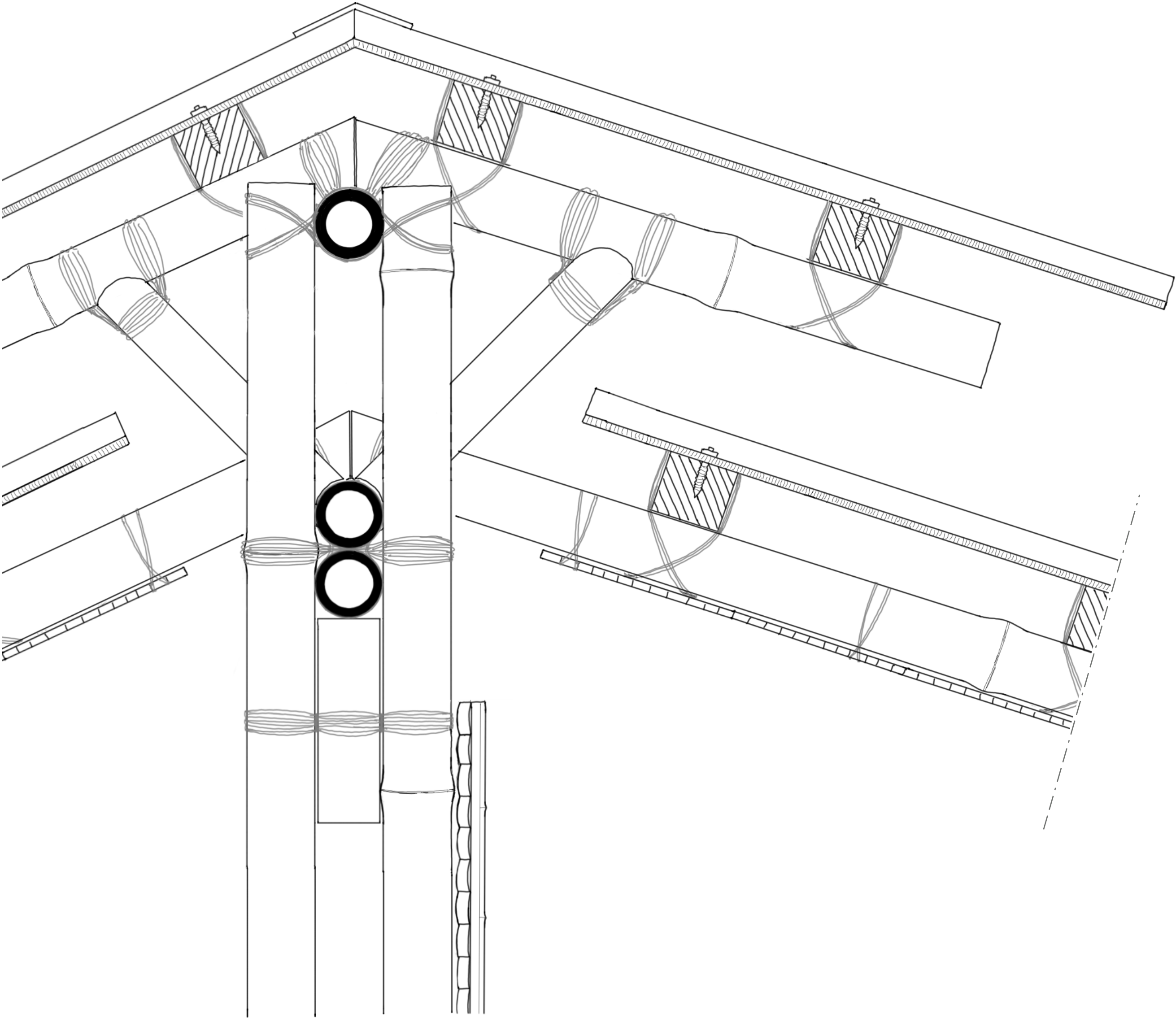
brick column 346mm
(structural)

brick casing + earth fill
foundation 600mm

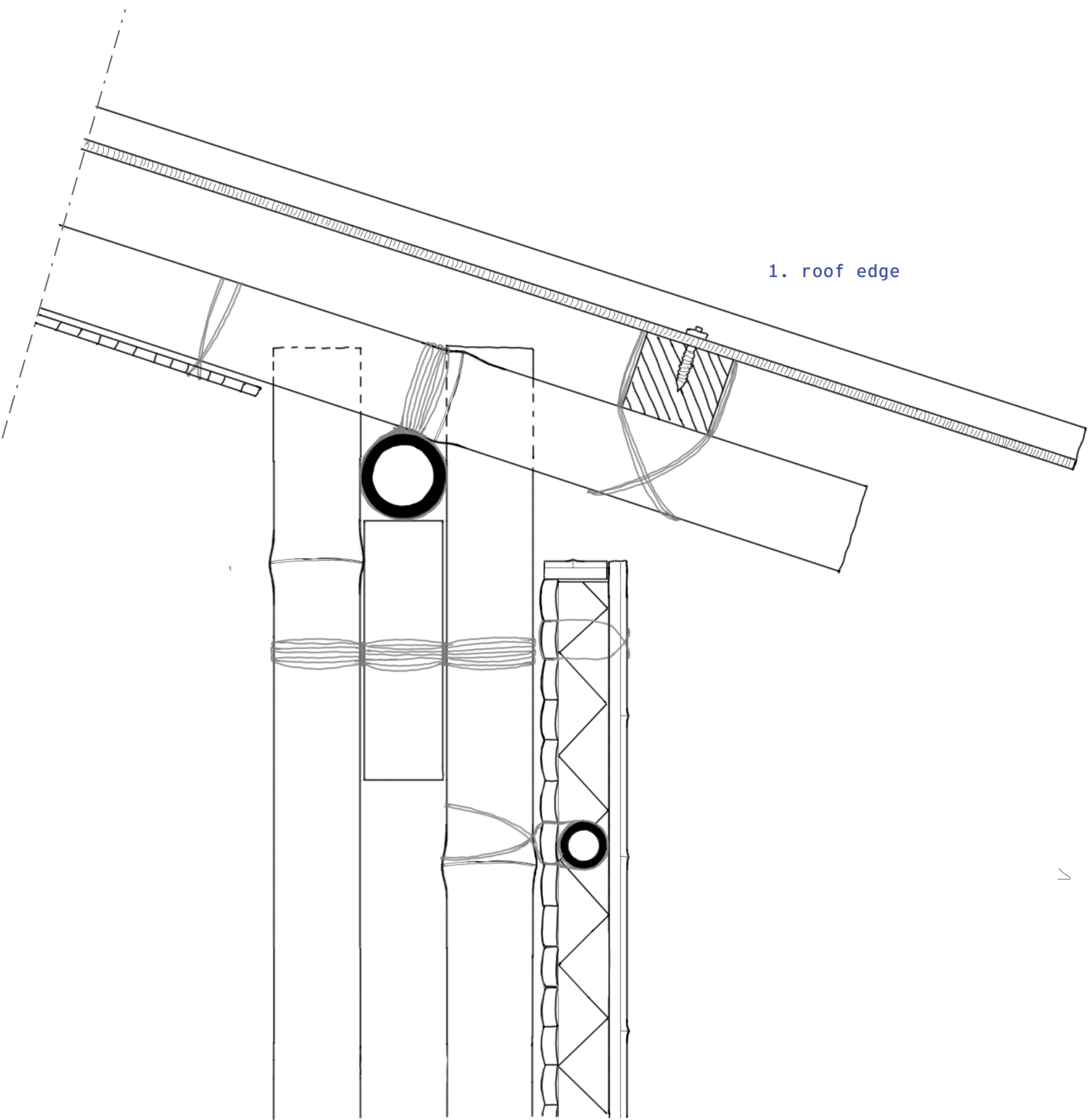
Section

1:20

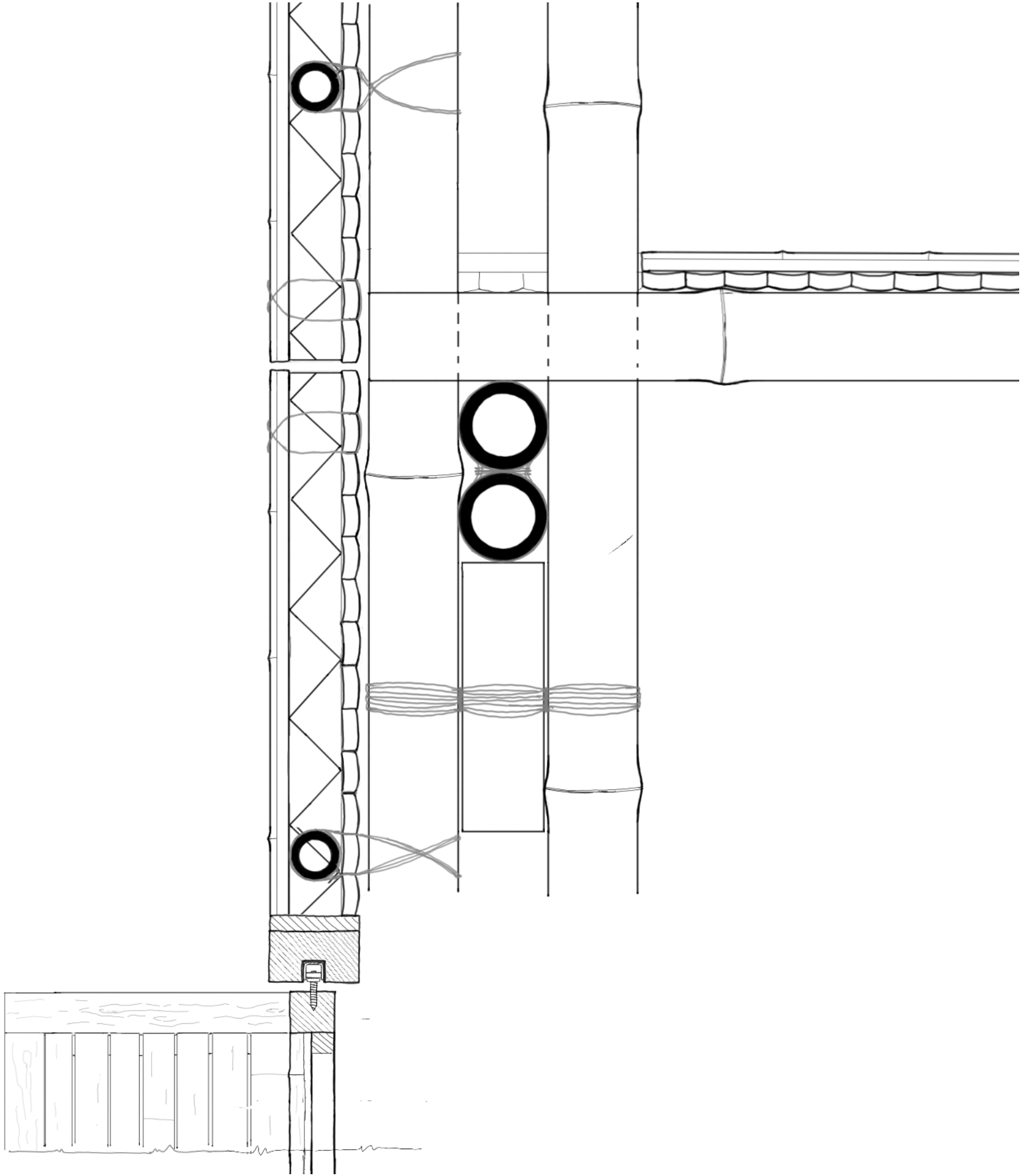




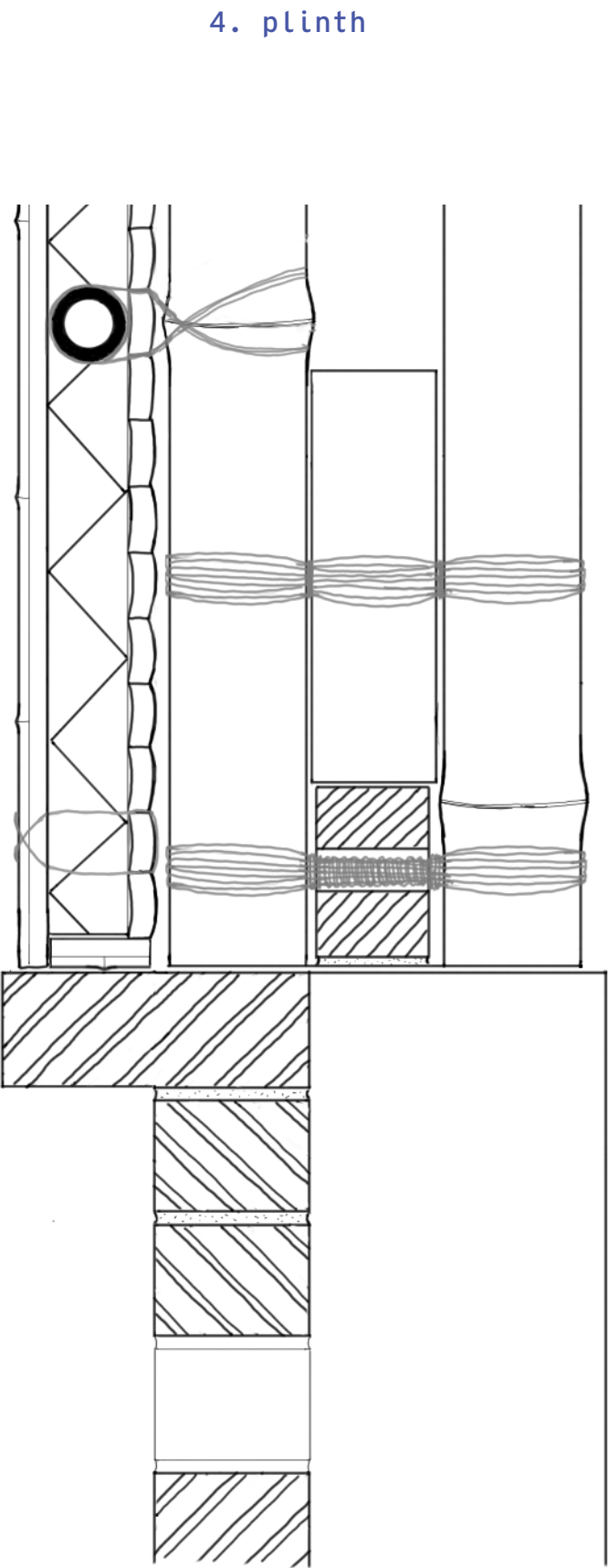
2. roof nook



1. roof edge

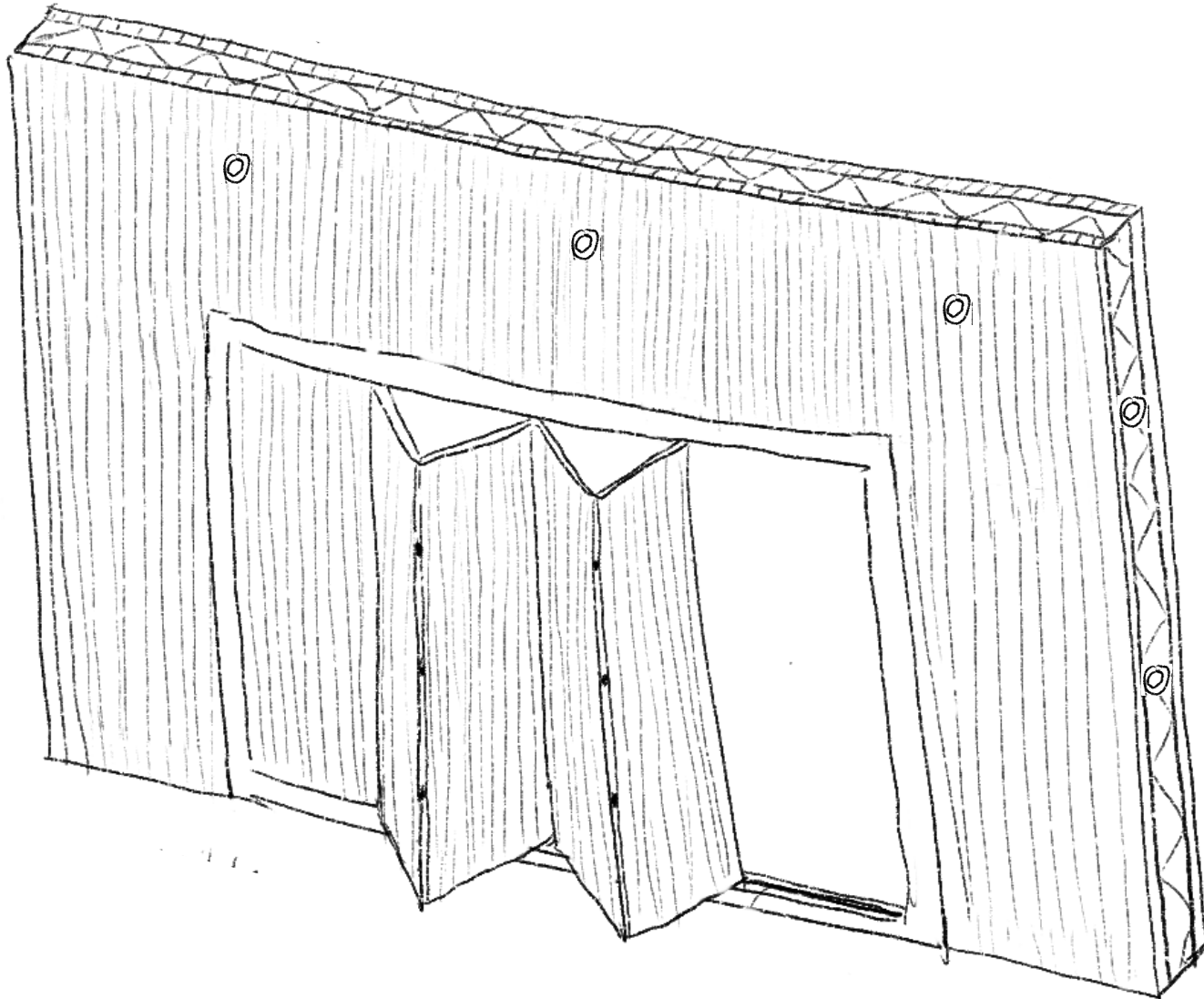
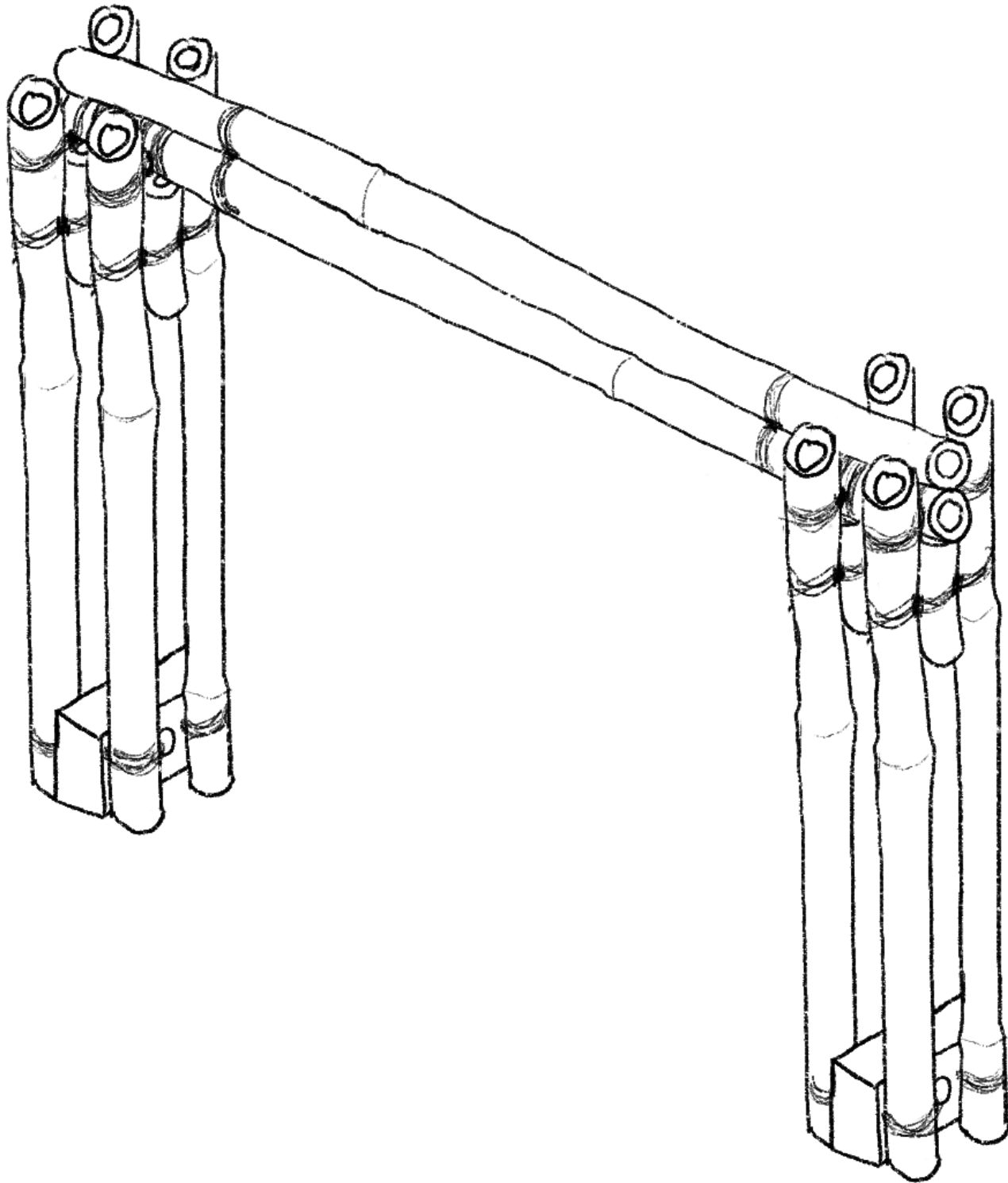


3. facade & bifold window

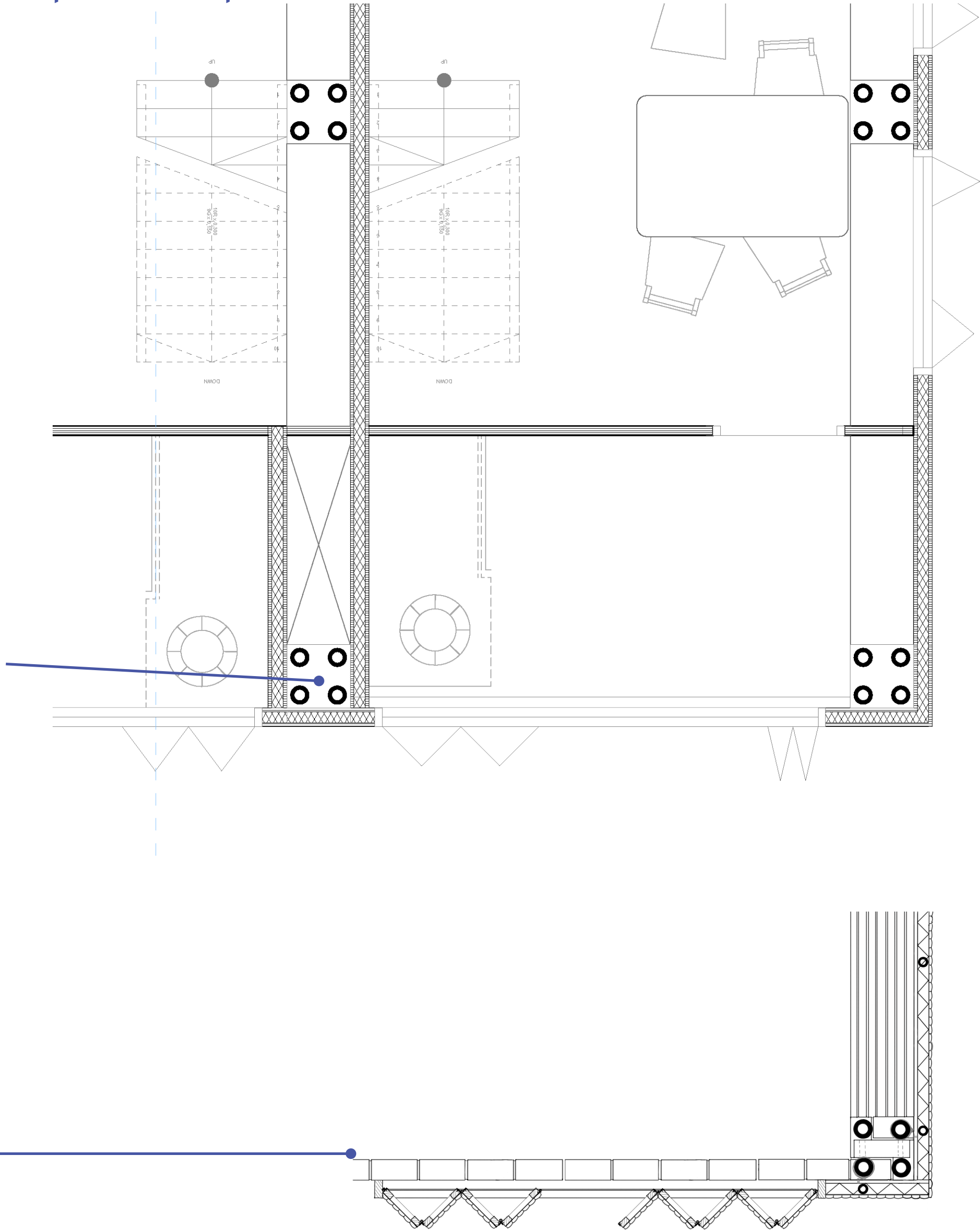


horizontal detail

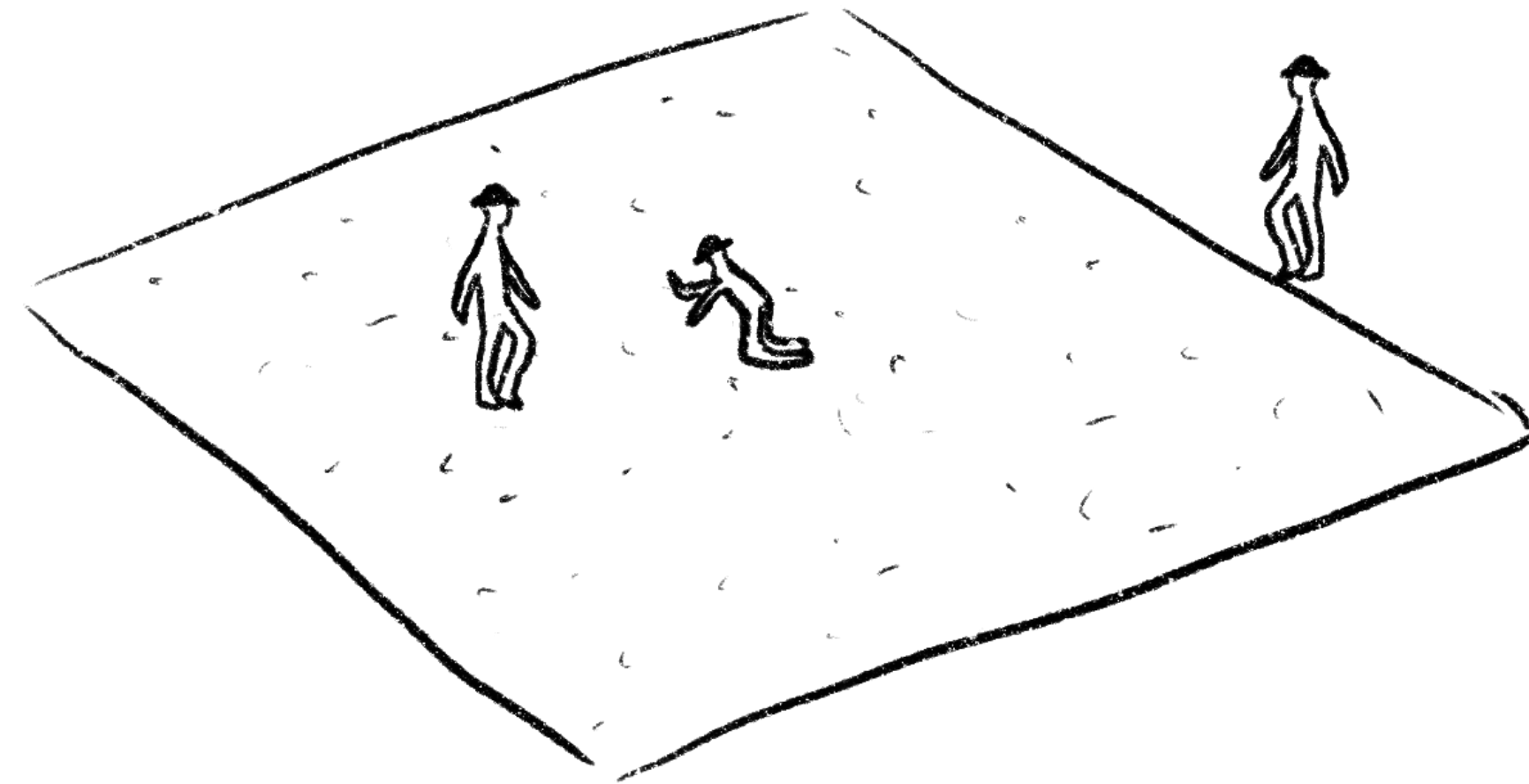
1:20



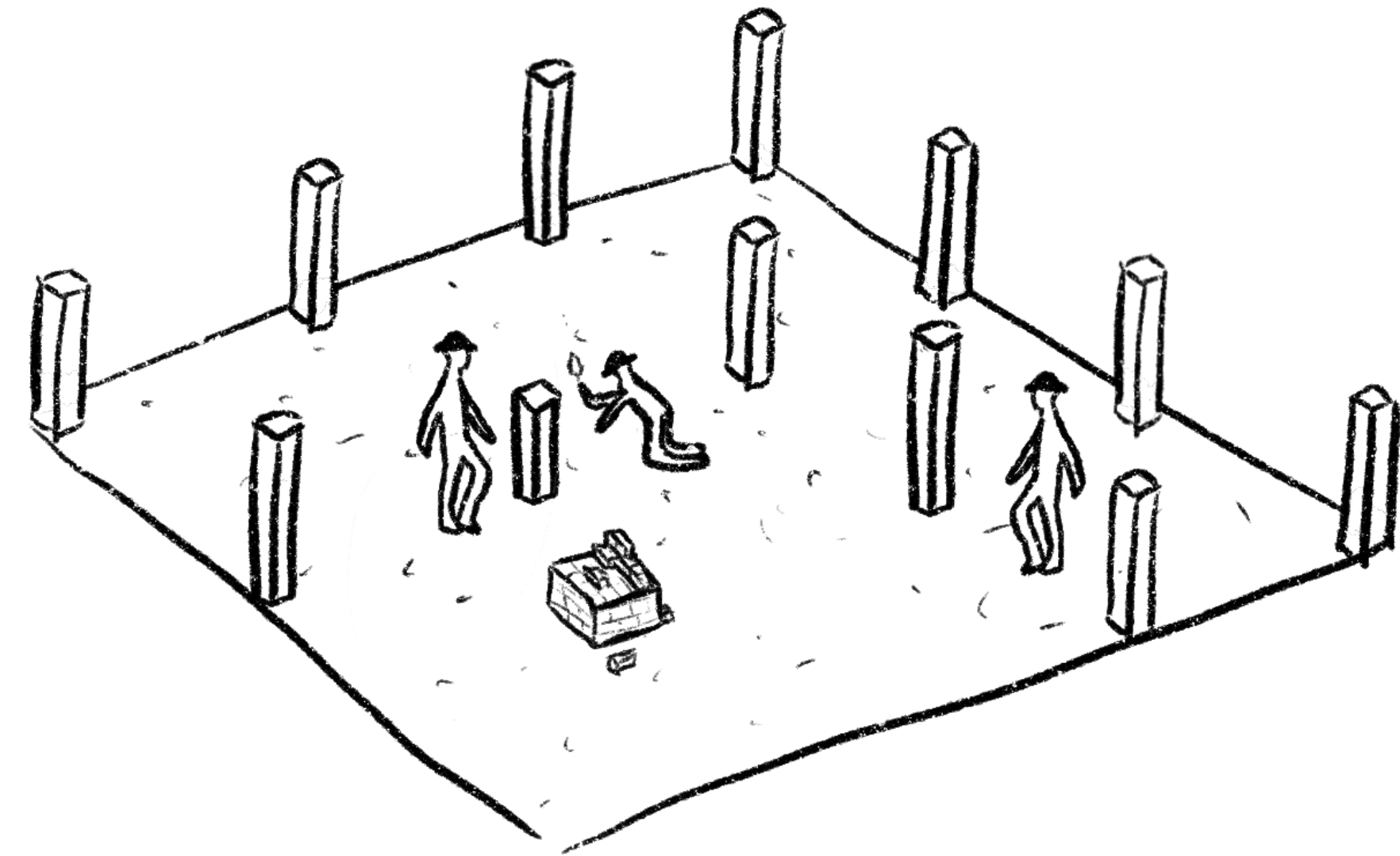
part of floorplan



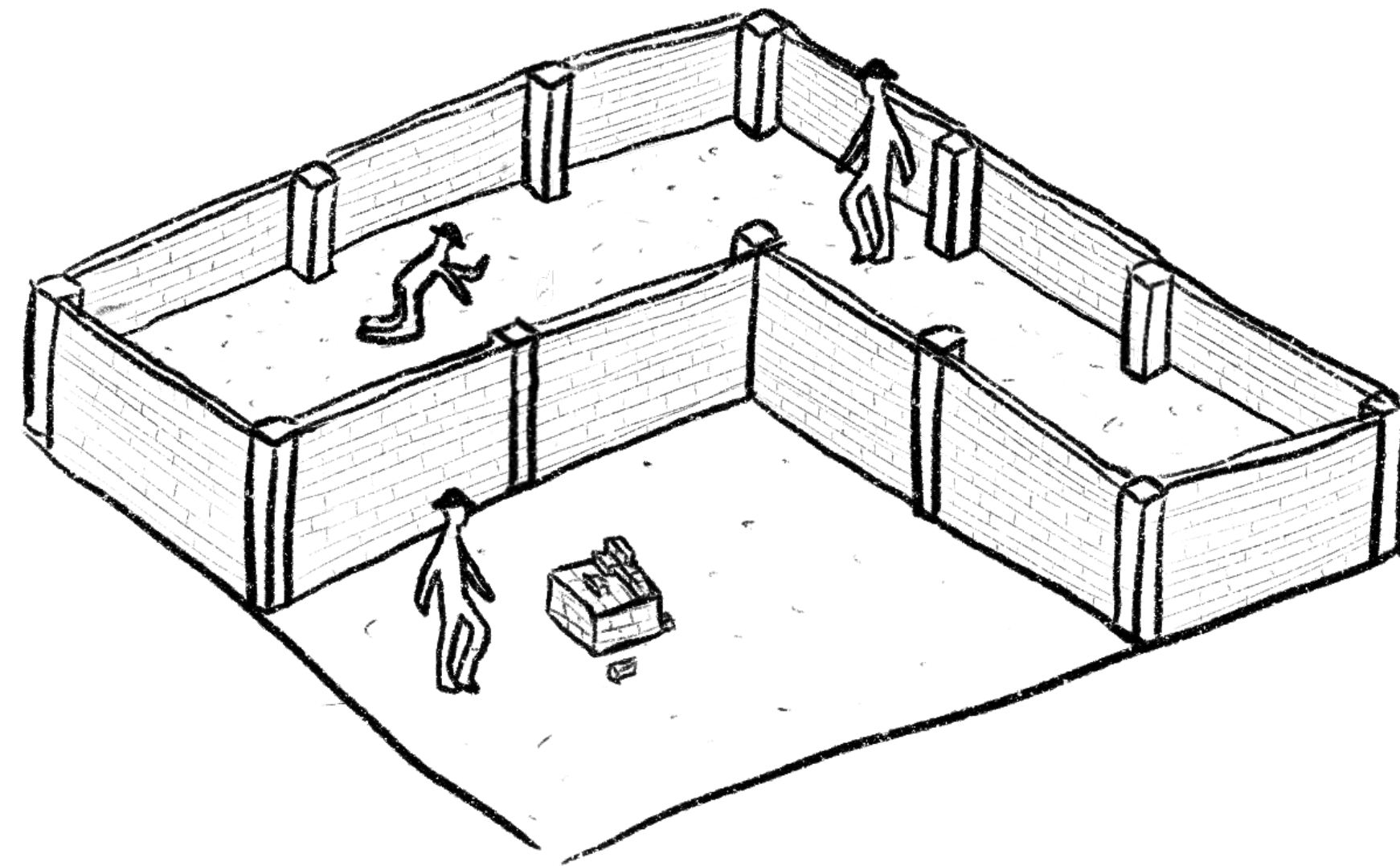
Preparing the site



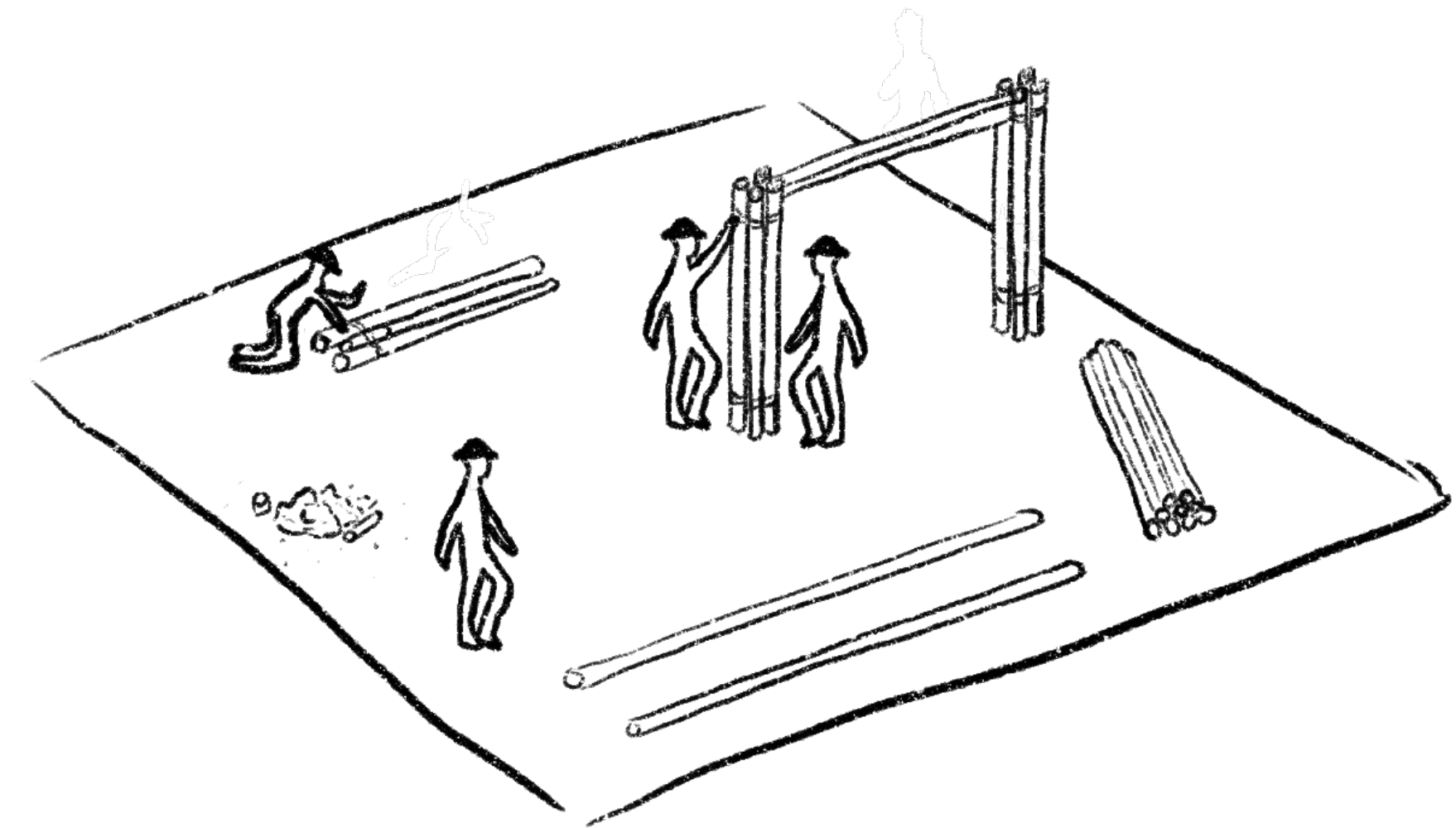
building the foundation



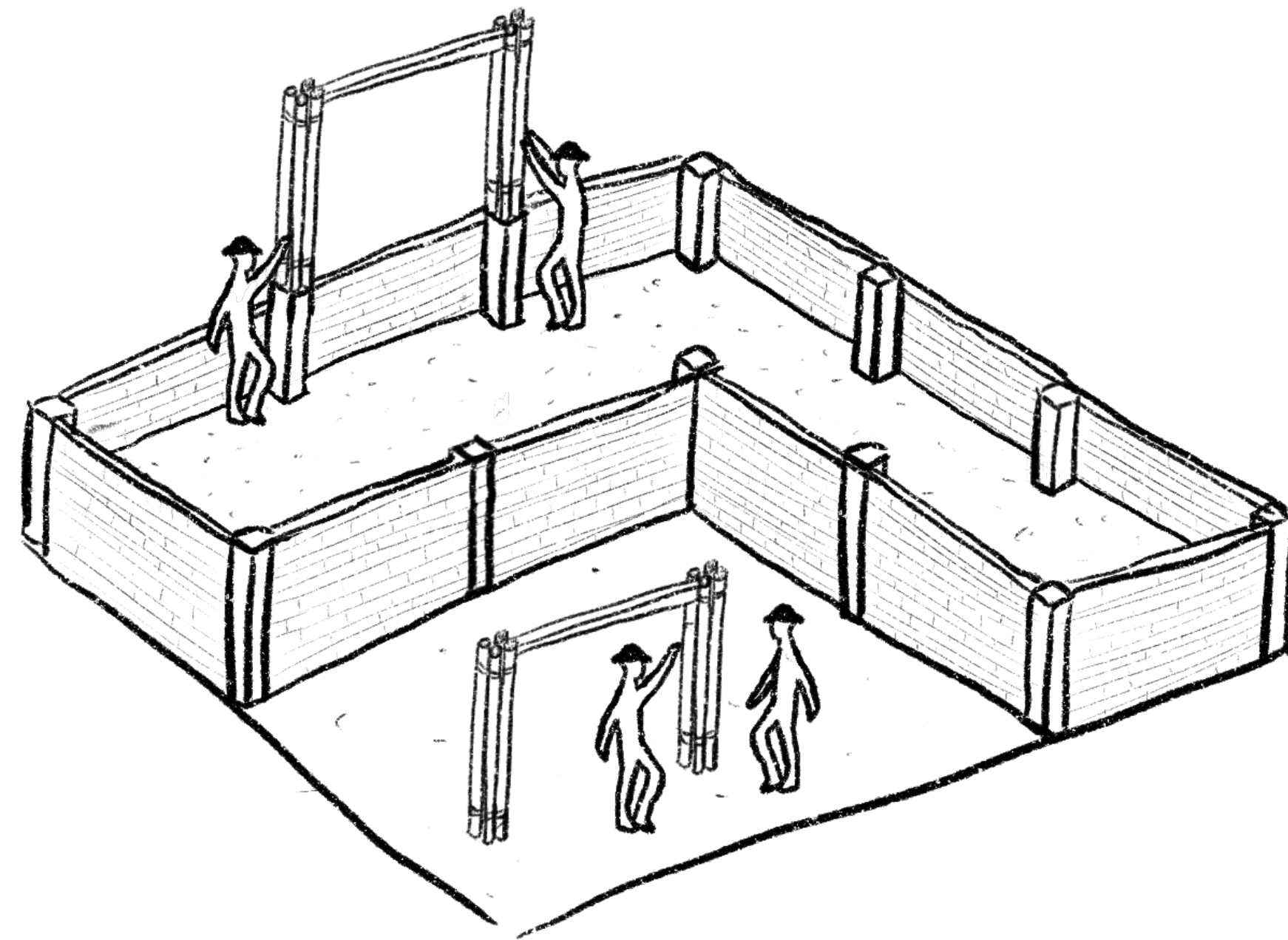
building the plinth



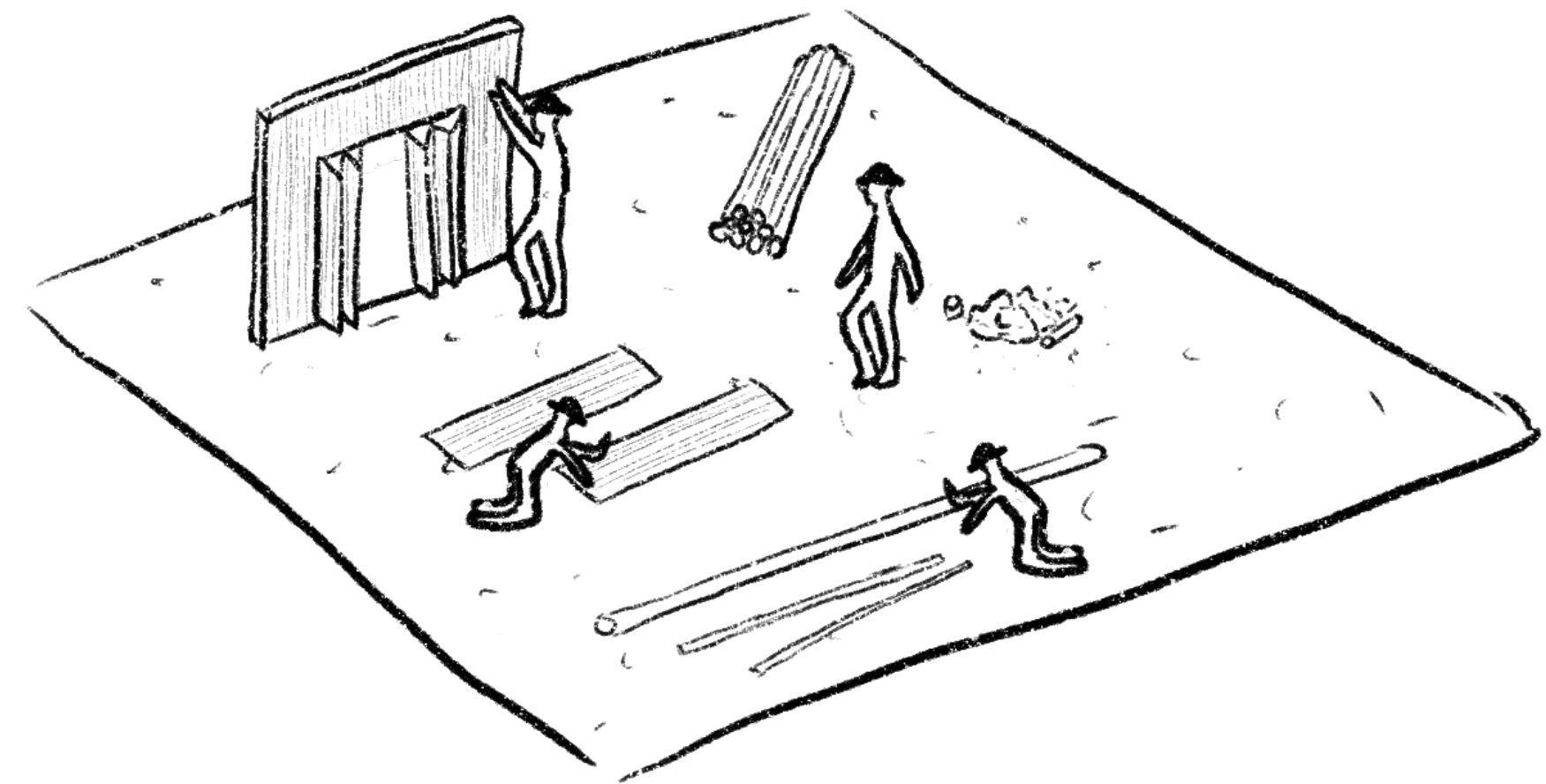
prefabricating the structural elements

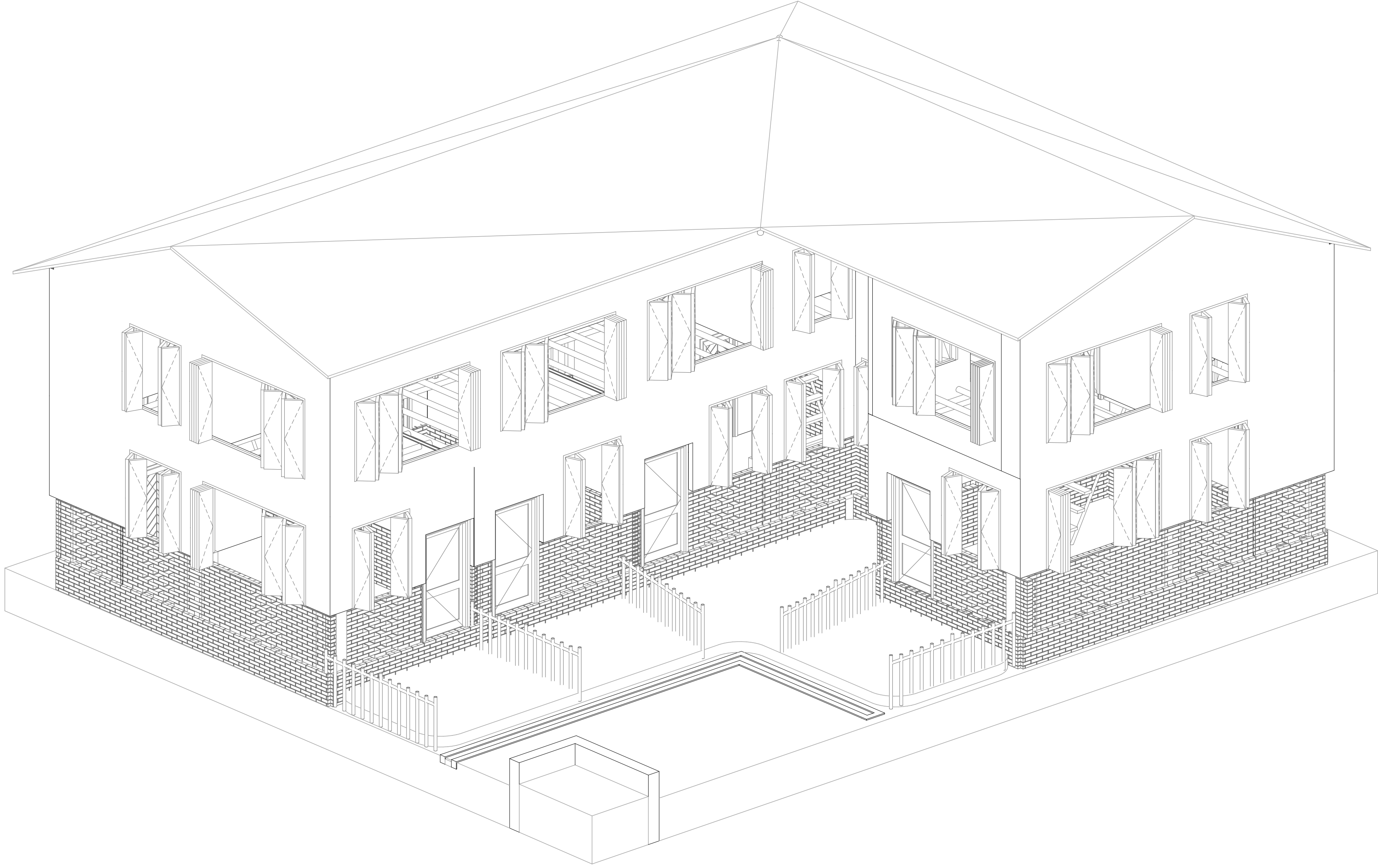


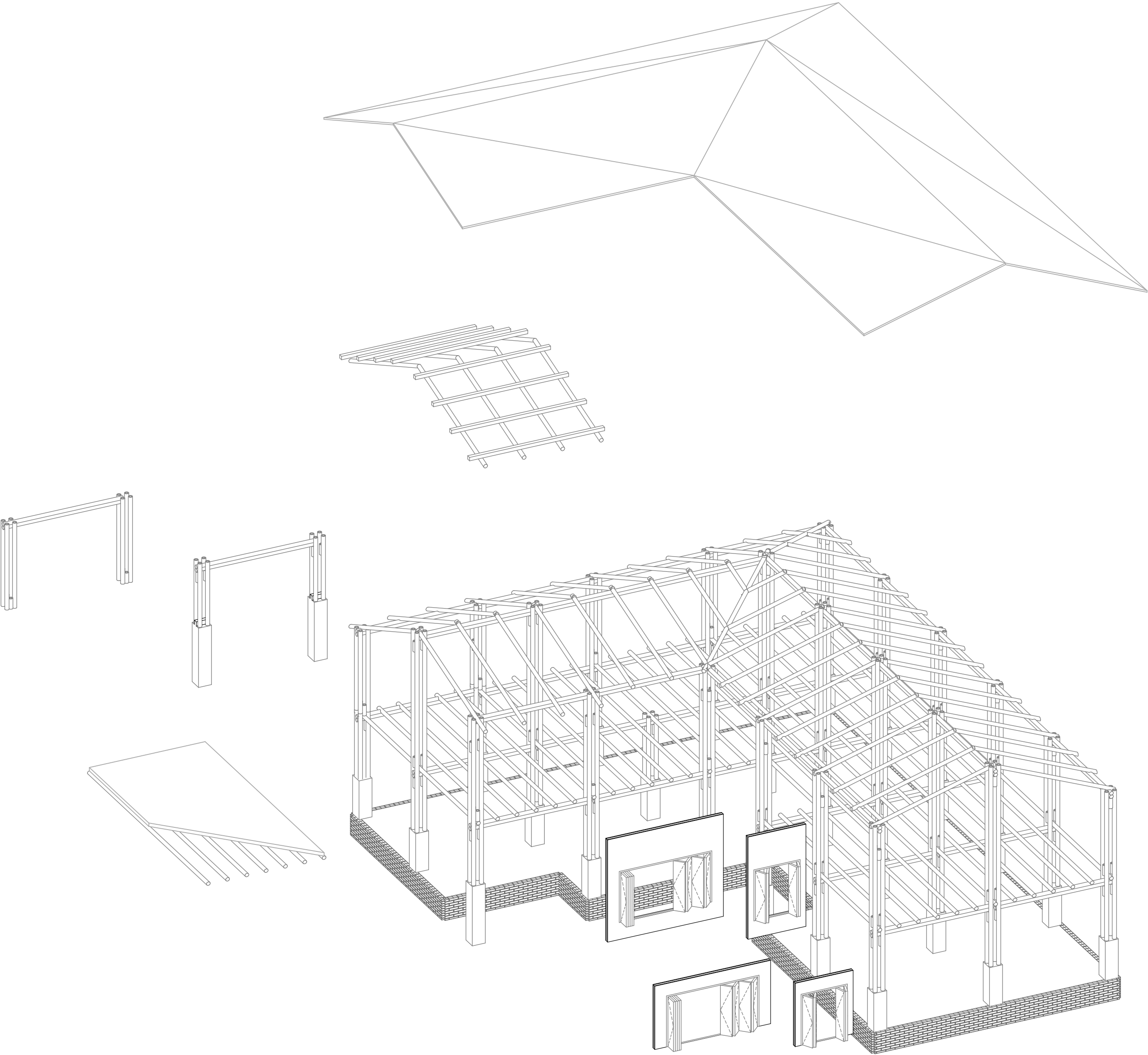
assembling the structural elements



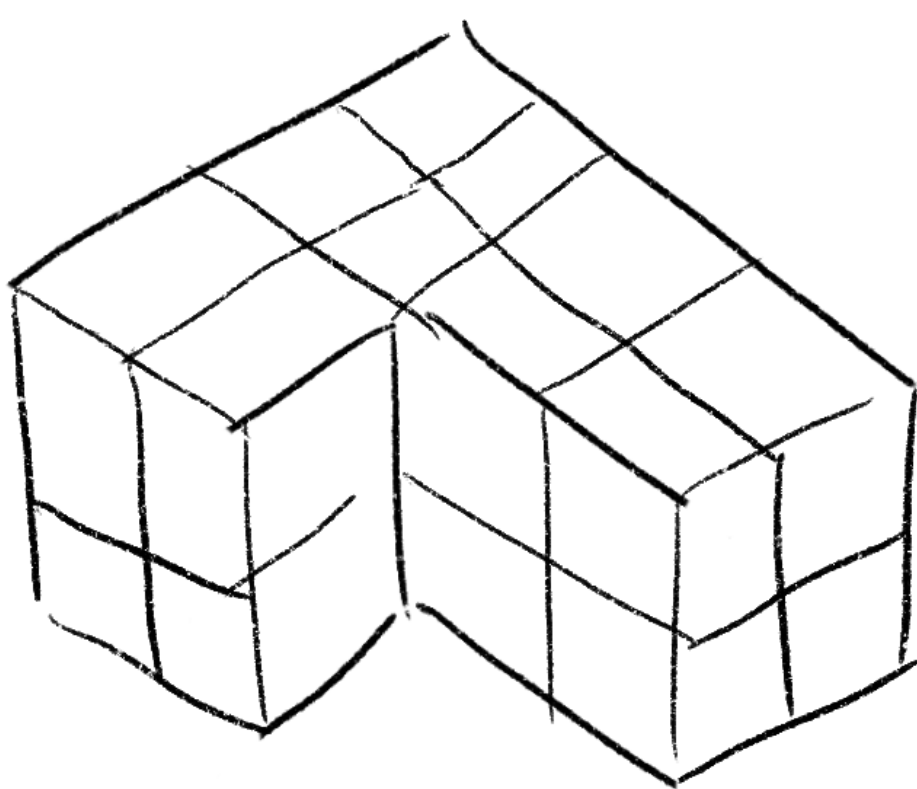
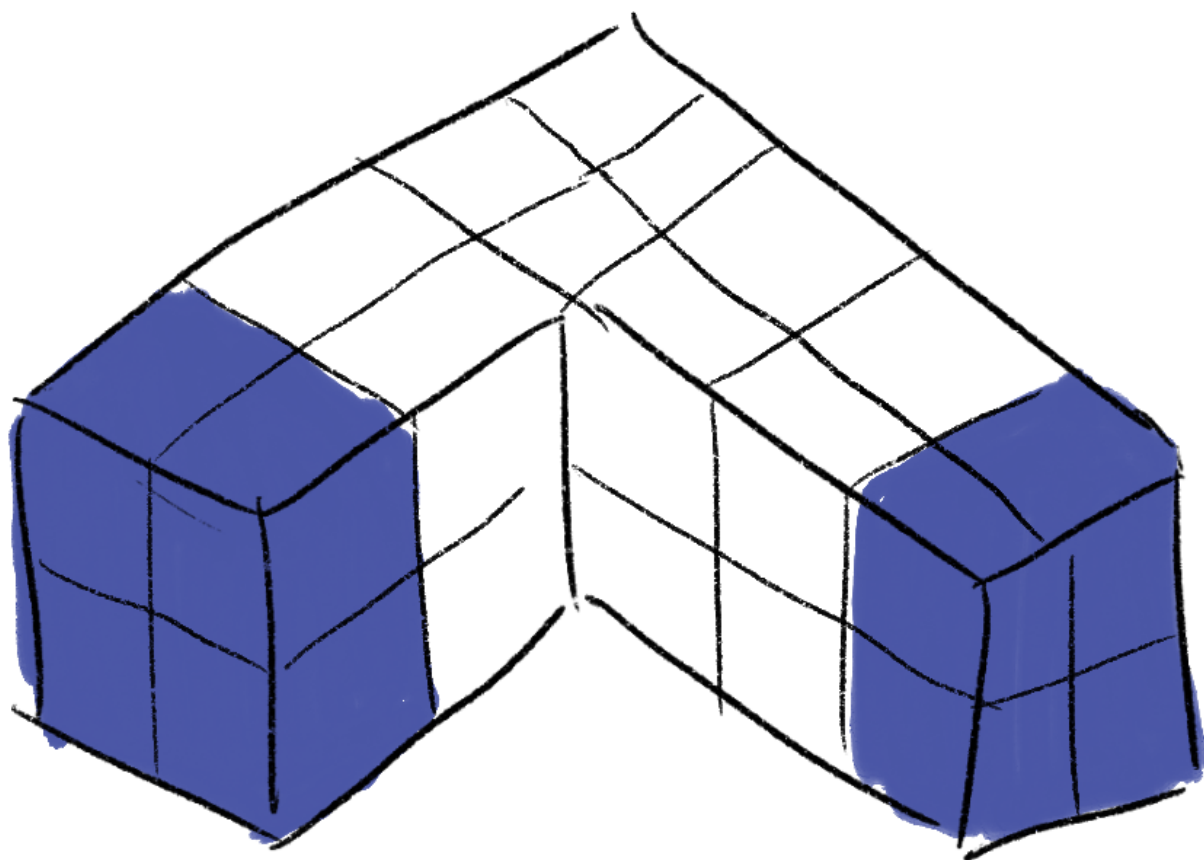
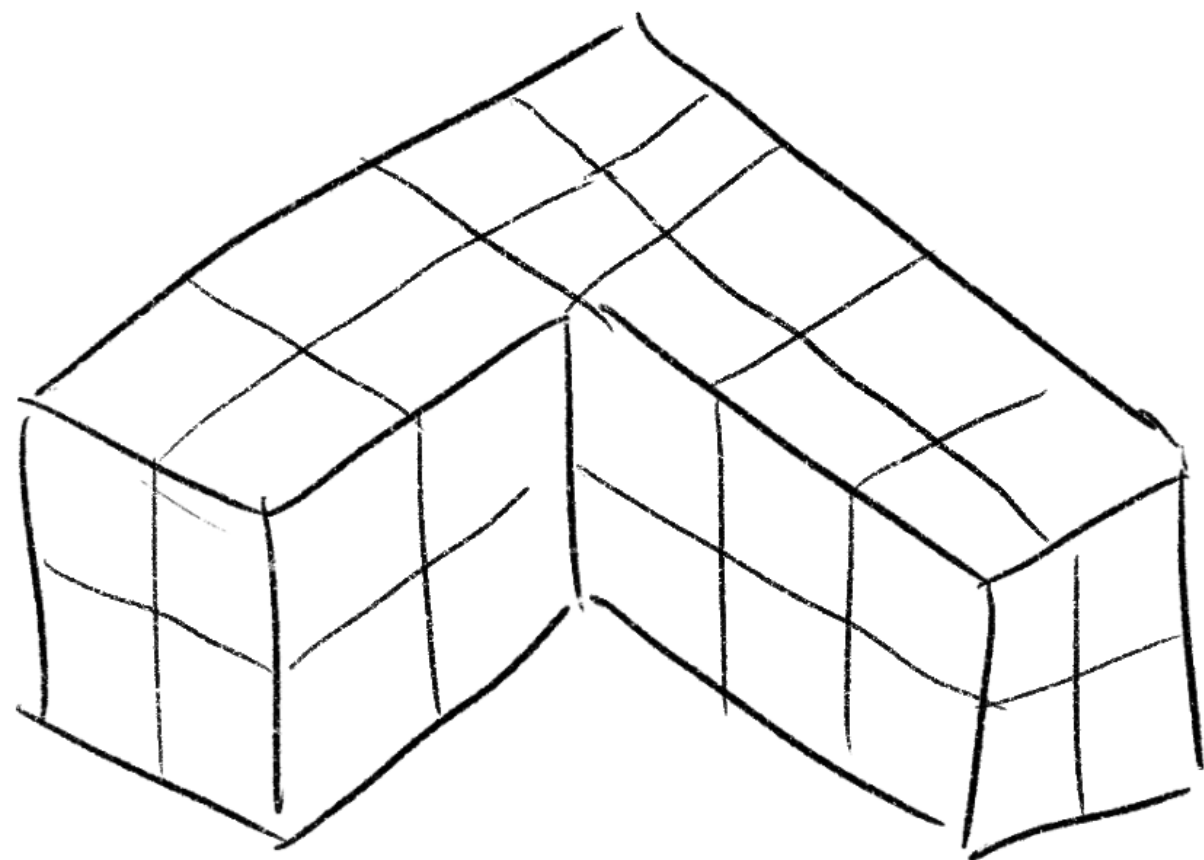
prefabricating the facade panels

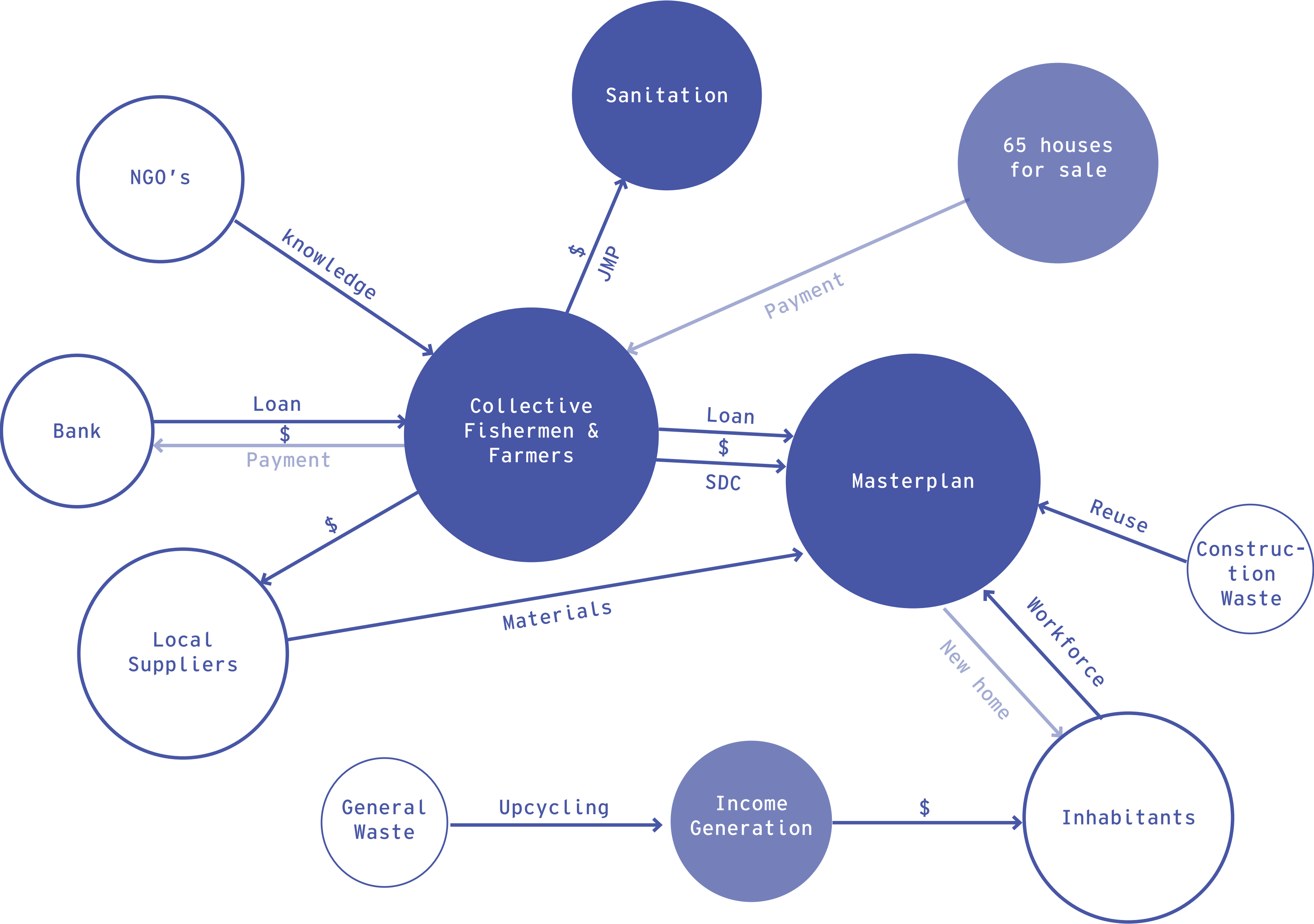


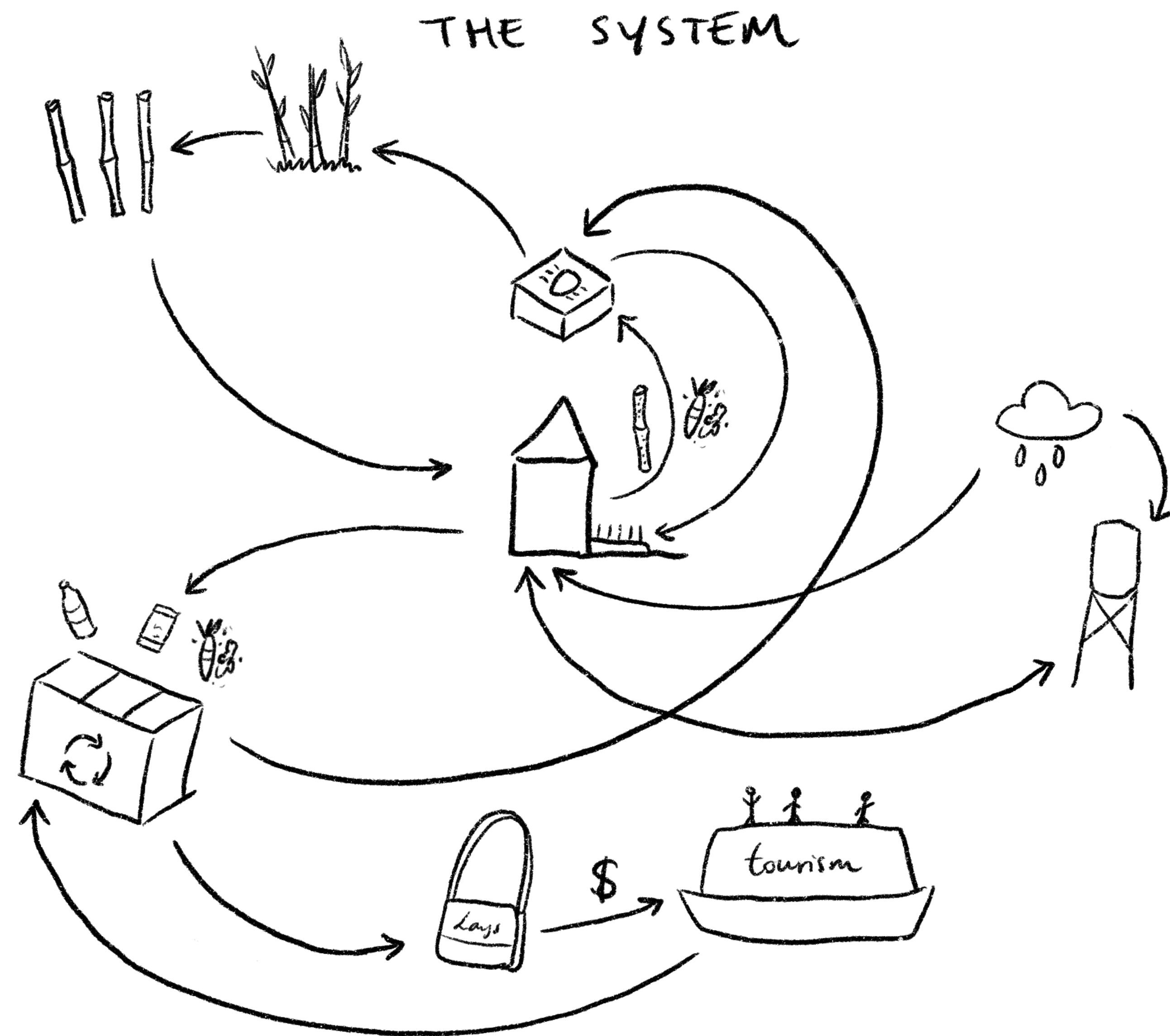


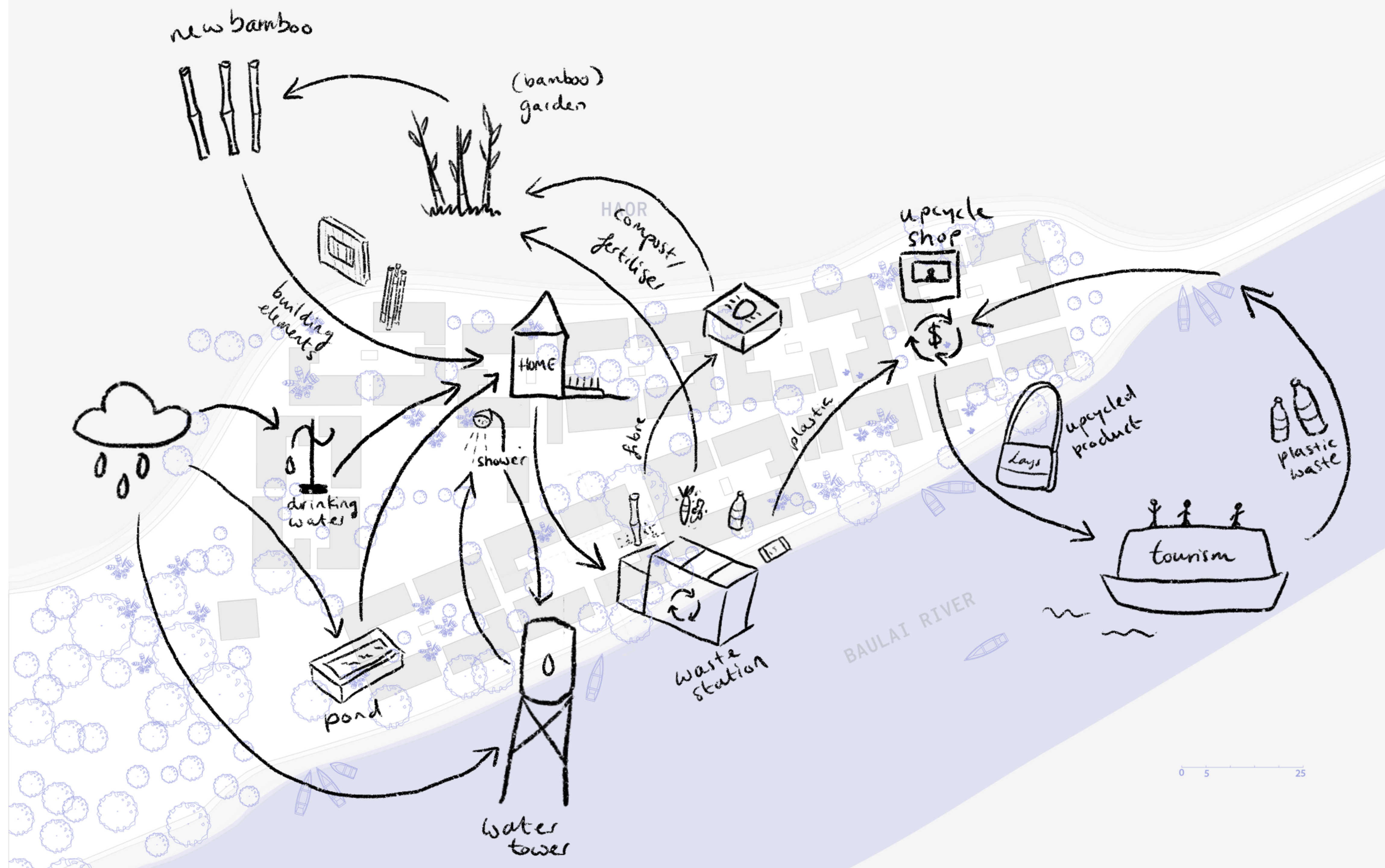


add or subtract









thank you!

