BEYOND THE RIPPLE

A holistic approach to flood-resilient, trauma-healing, and low-cost housing design

RESEARCH

14000

Children drown annually in Bangladesh

68000

Children annually experience near drowning

Natural disasters can cause chronic stress, PTSD &

TRAUMA

Trauma in this form is a collective problem & is in need of

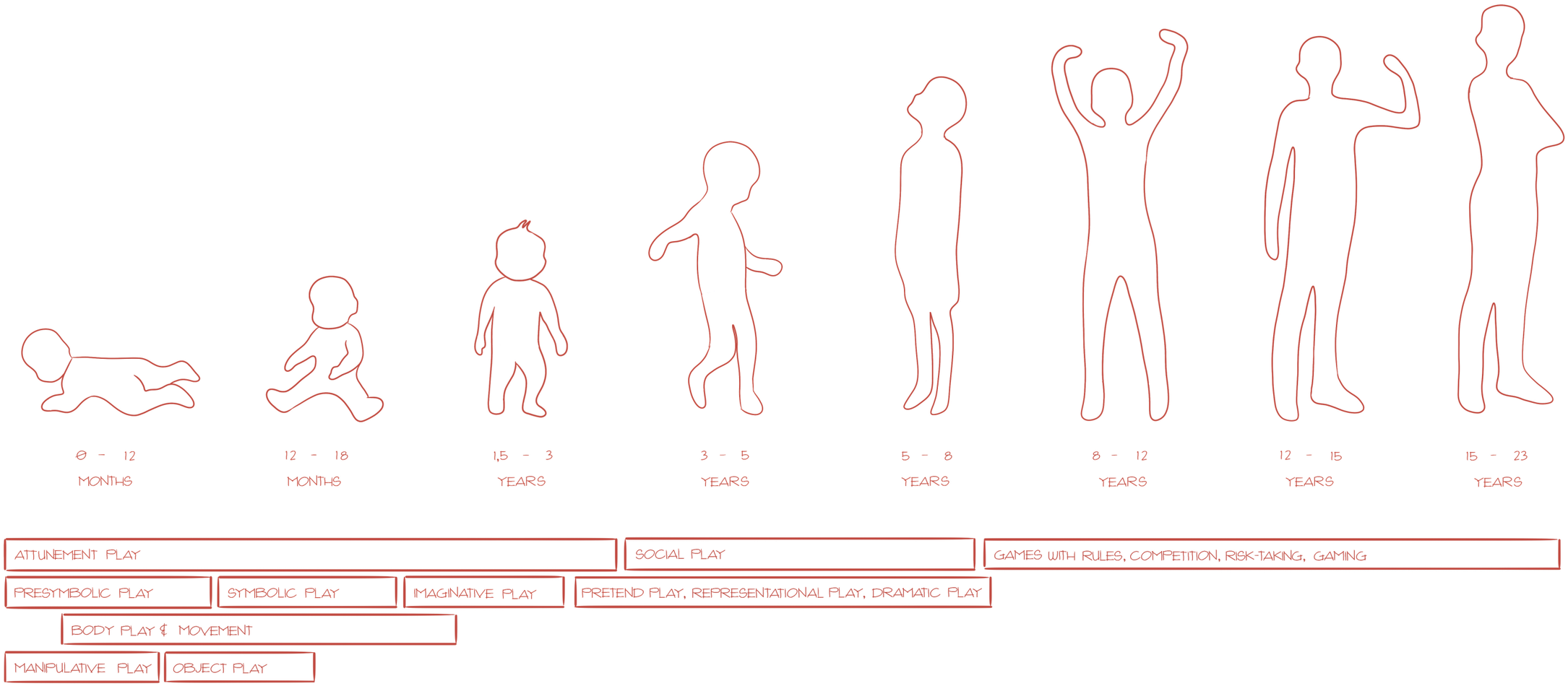
COMMUNITY-BASED SOLUTIONS

PLAY

is a natural coping mechanism for trauma
& helps regulate memories and feelings

PLAY

"a volitional act within certain limits of space and time, according to voluntarily accepted but compelling rules, being a goal in itself, accompanied by feelings of excitement and joy, different from everyday life." - Johan Huizinga

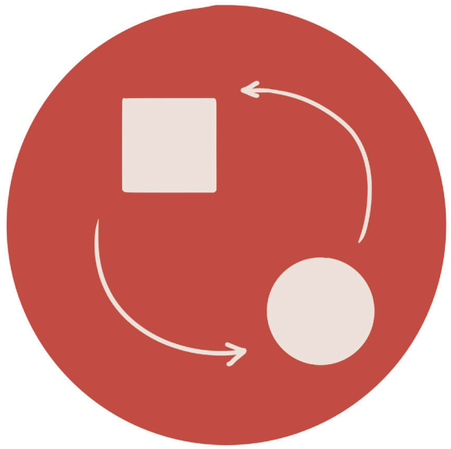


RESEARCH

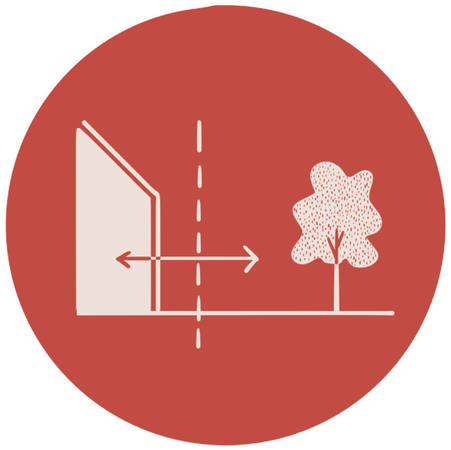
TYPES OF PLAY BY AGE

Nature

Imagination

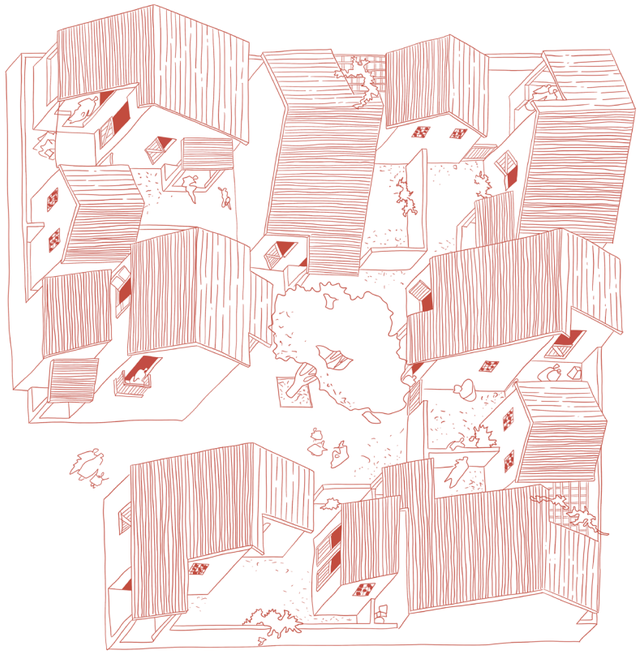


Transform /
be transformed

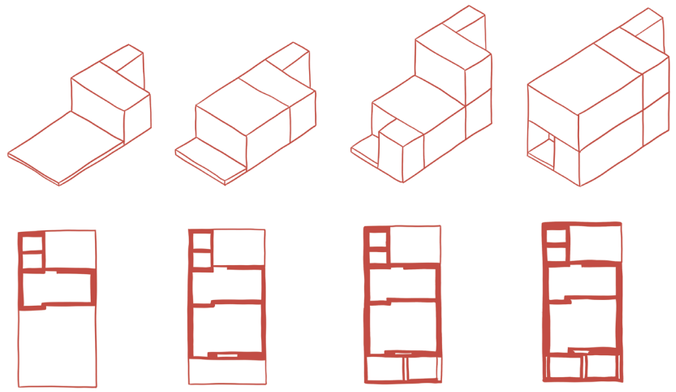


Border inside
& outside

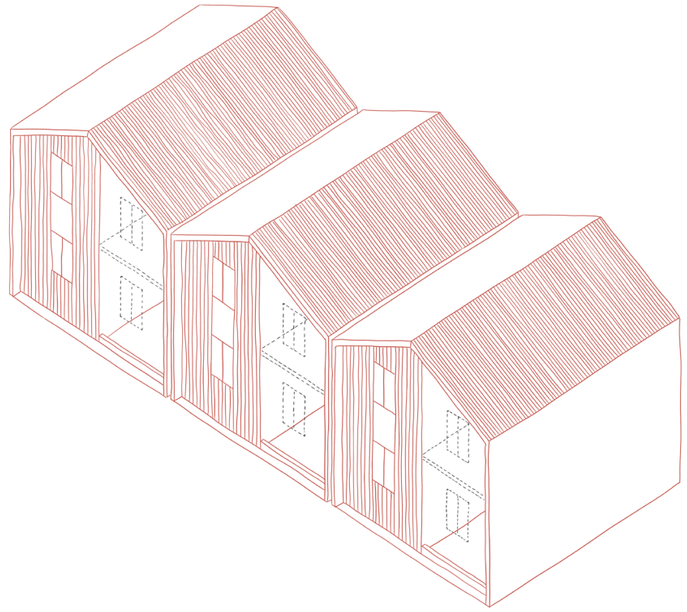
Variation in
space



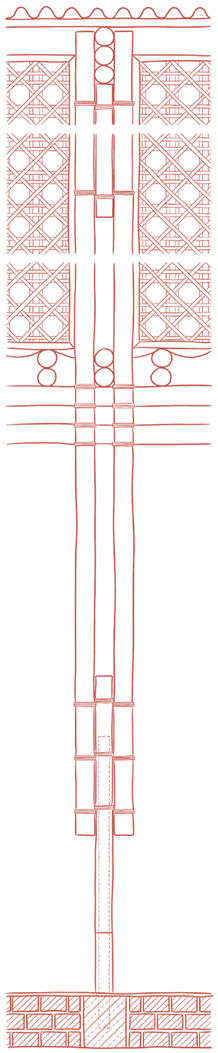
Belapur



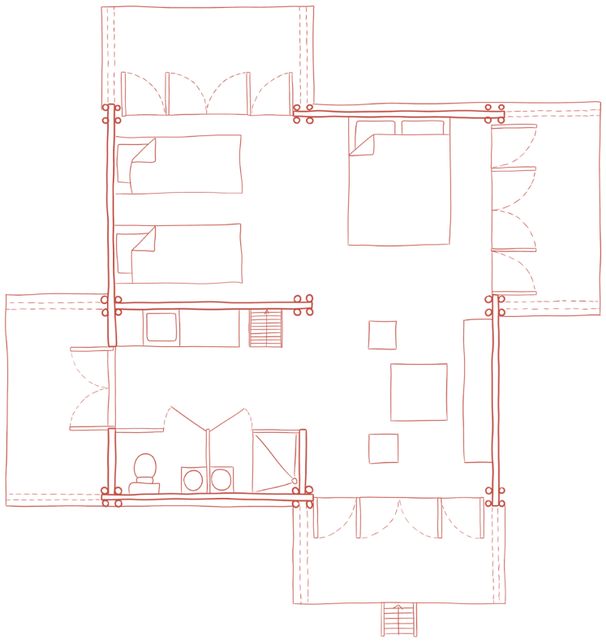
aranya



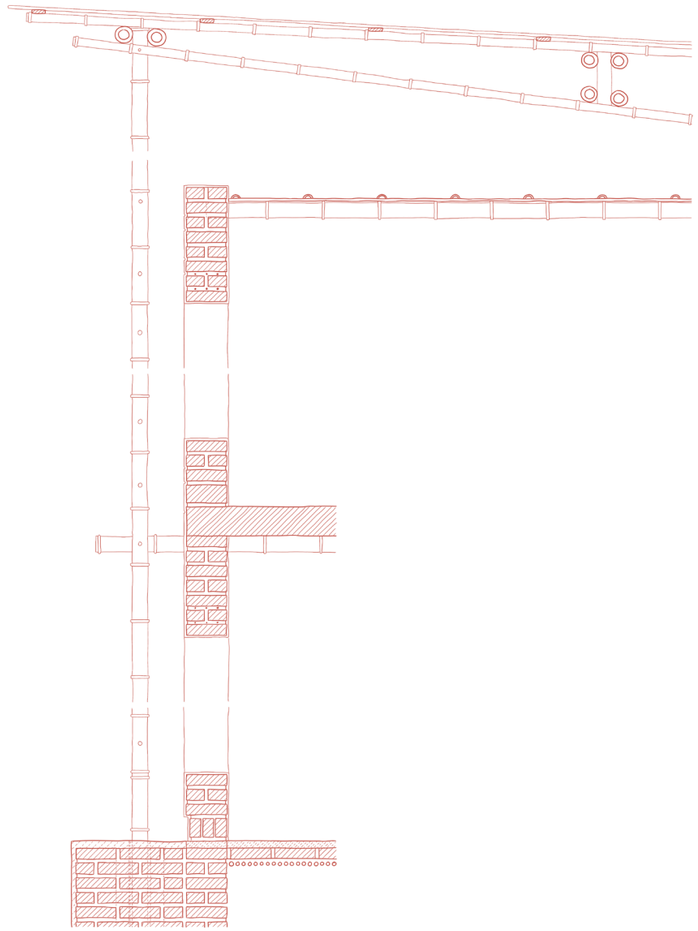
villa verde



Vocational school

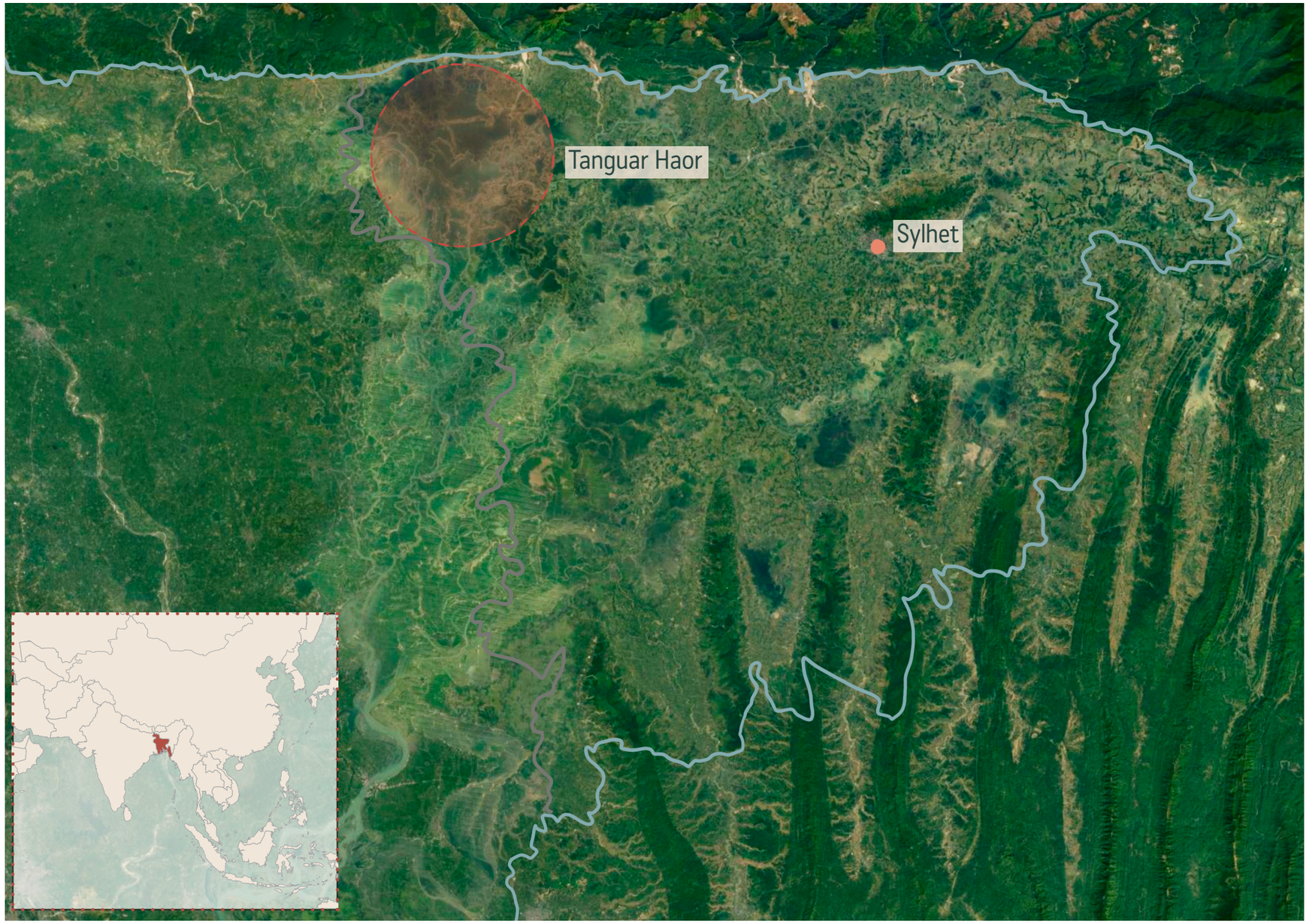


Blooming bamboo



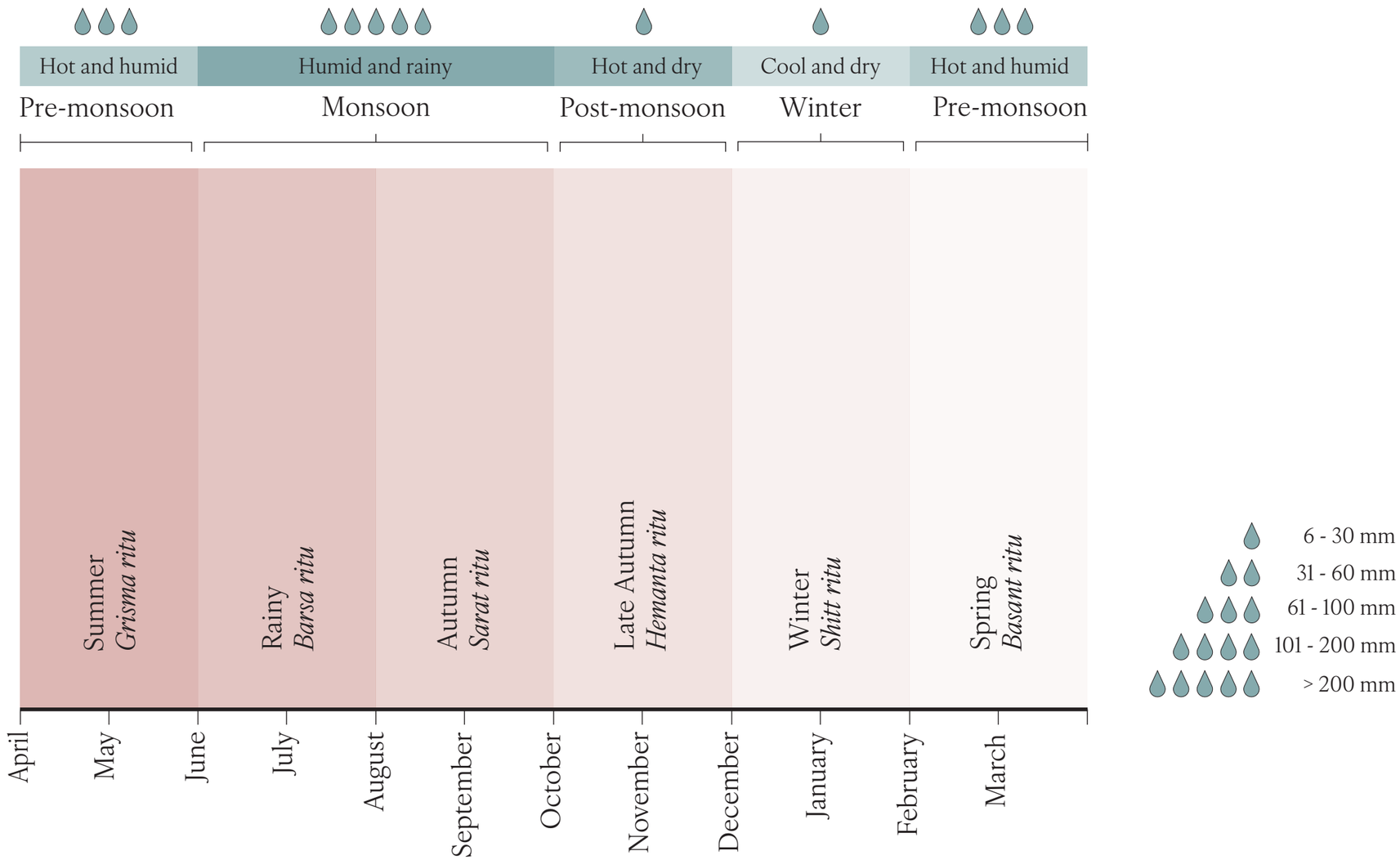
Community center

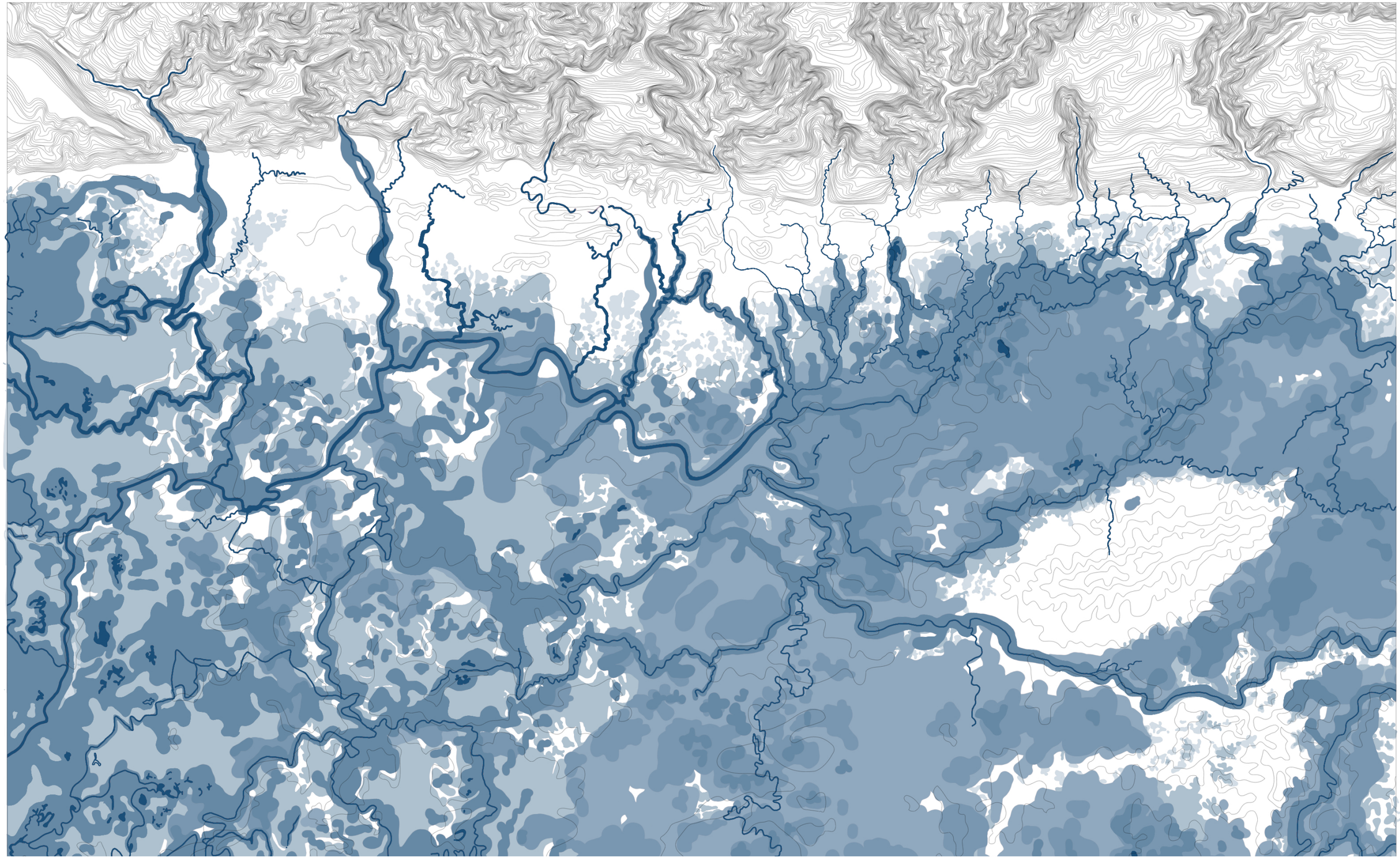
TANGUAR HAOR



TANGUAR HAOR

LOCATION


Hot and humid
Humid and rainy
Hot and dry
Cool and dry
Hot and humid
Pre-monsoon
Monsoon
Post-monsoon
Winter
Pre-monsoon
Summer
Grisma ritu
Rainy
Barsa ritu
Autumn
Sarat ritu
Late Autumn
Hemanta ritu
Winter
Shitt ritu
Spring
Basant ritu
April
May
June
July
August
September
October
November
December
January
February
March
6 - 30 mm
31 - 60 mm
61 - 100 mm
101 - 200 mm
> 200 mm



TANGUAR HAOR

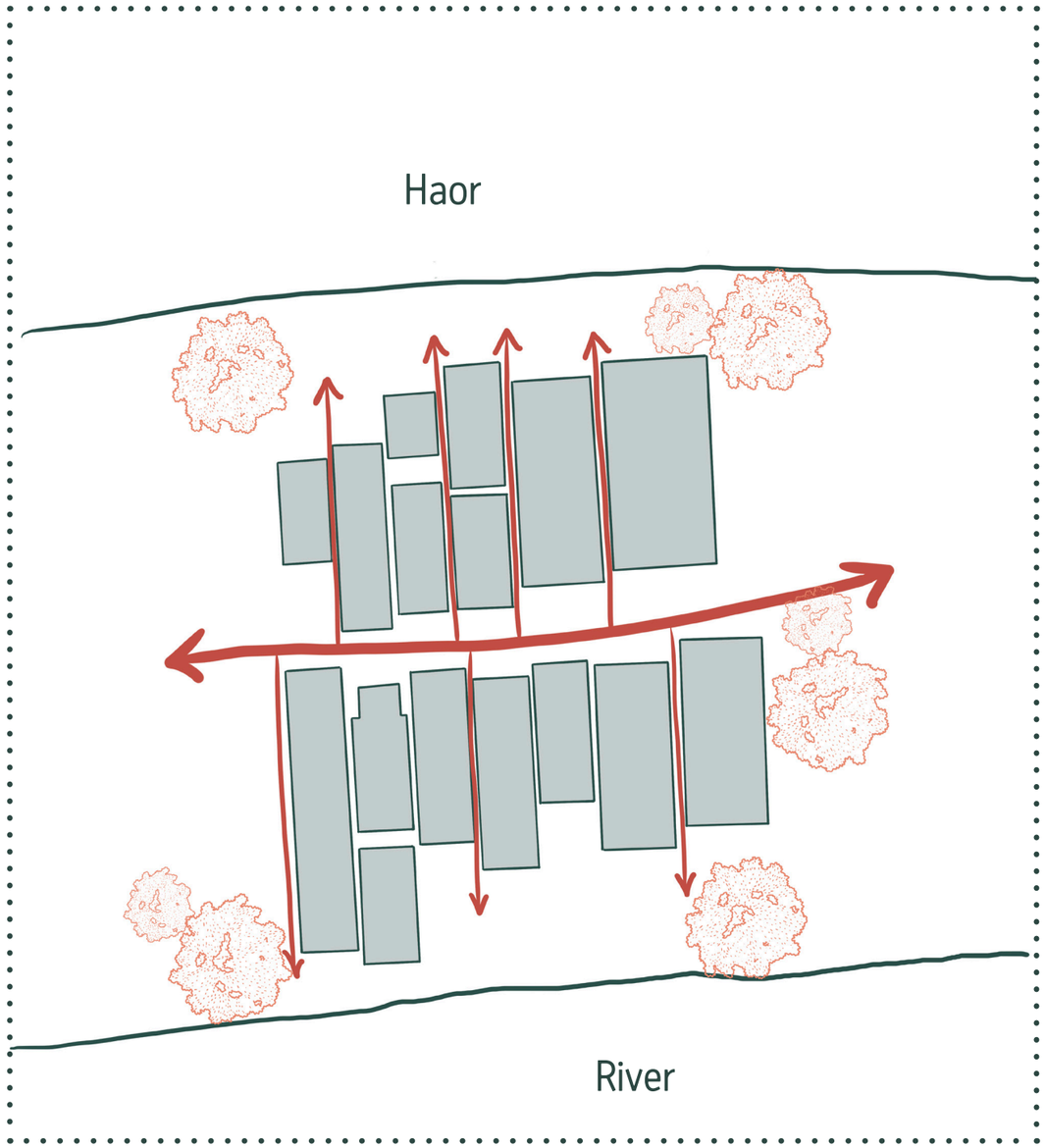
FLOODING IN THE HAOR

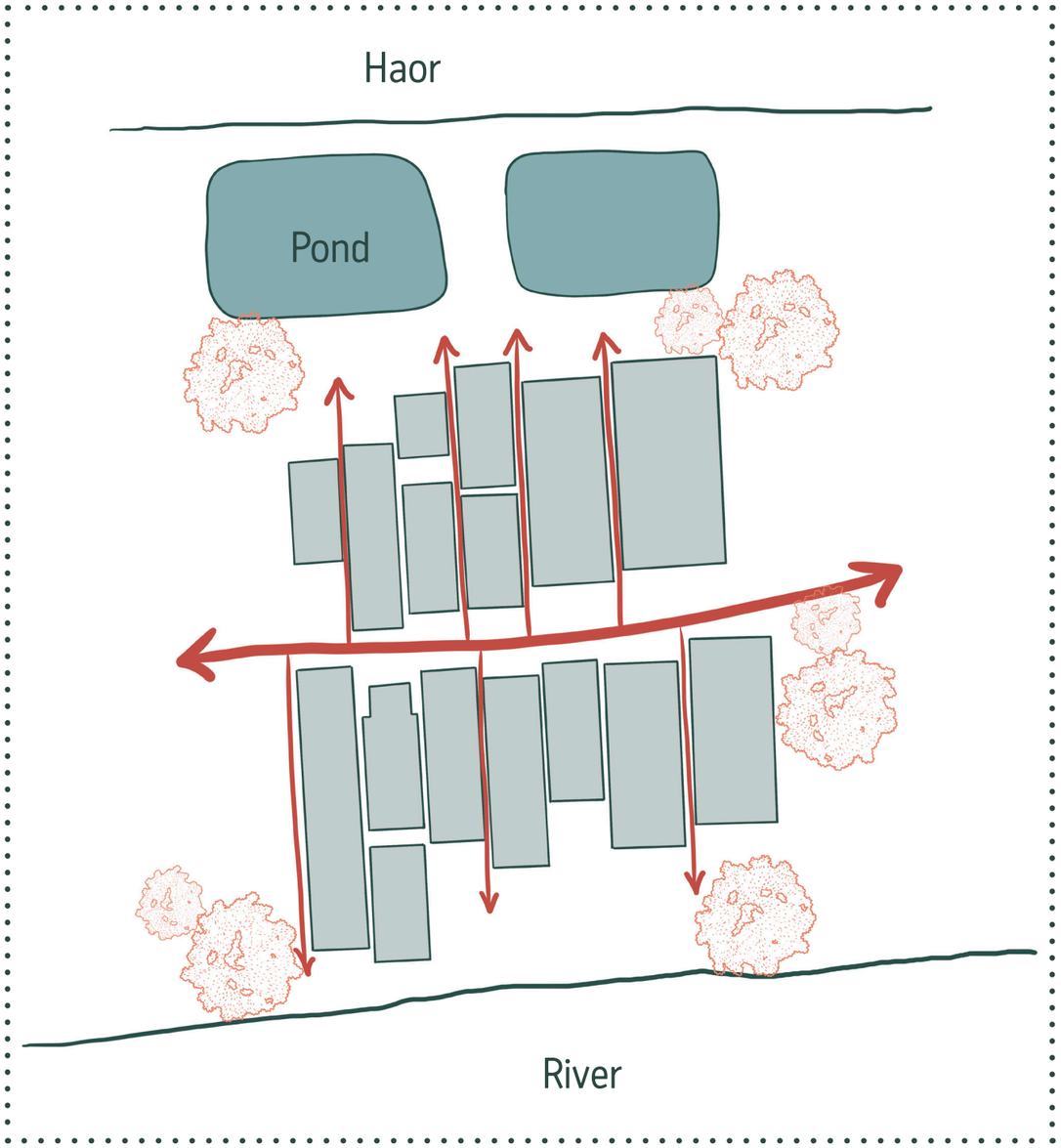
TANGUAR HAOR

CHILDREN & FLOODS

TANGUAR HAOR

EXISTING SITUATION



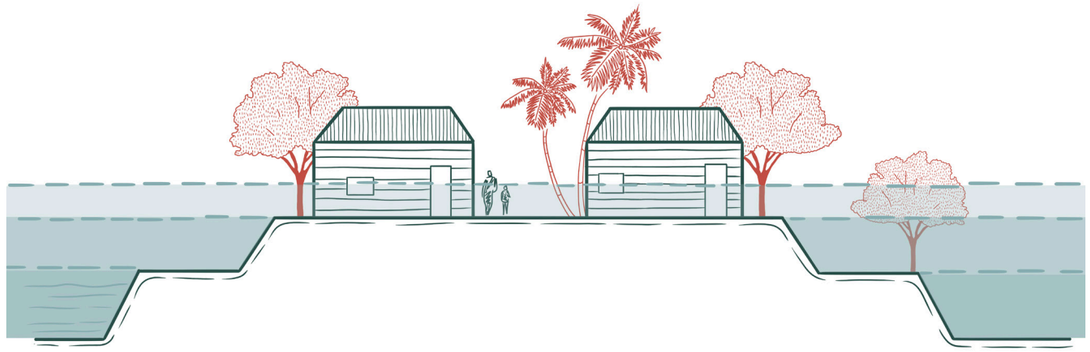


TANGUAR HAOR

SETTLEMENT PATTERNS

TANGUAR HAOR

SETTLEMENT PATTERNS

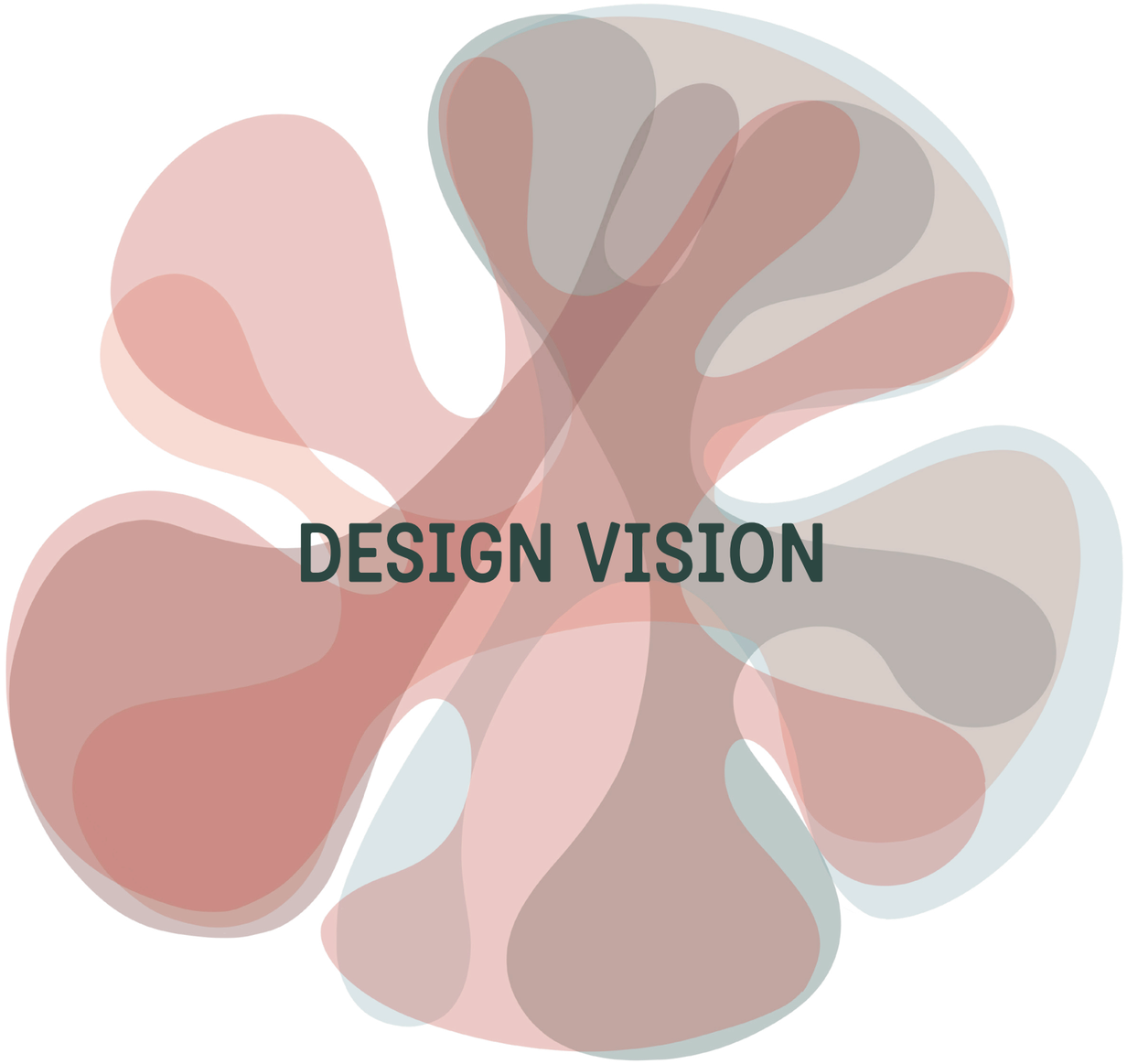


TANGUAR HAOR

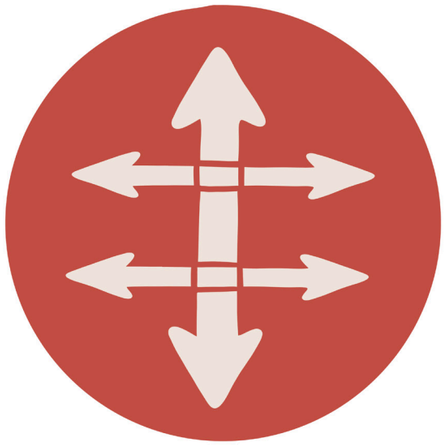
EMBANKMENT

TANGUAR HAOR

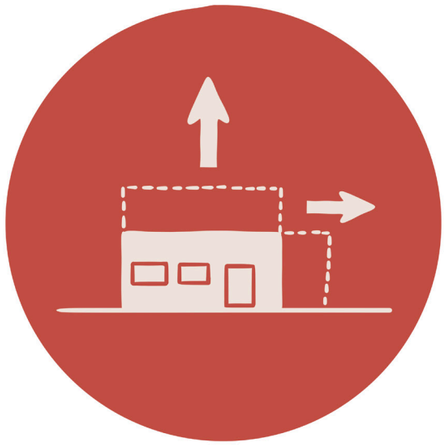
EMBANKMENT



DESIGN VISION



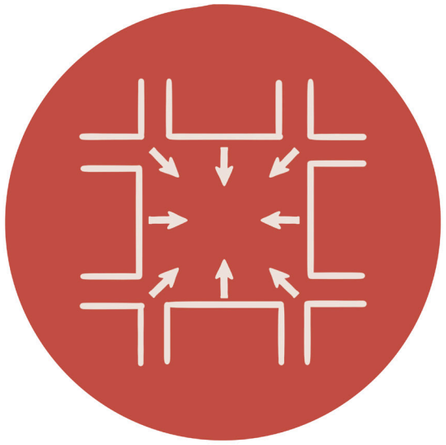
Re-imagine
circulation



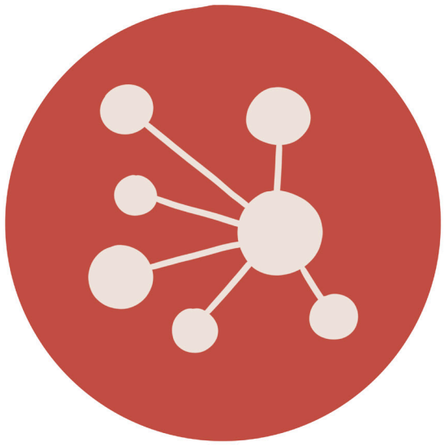
Incremental
growth

Re-imagine
open spaces

Basic elements

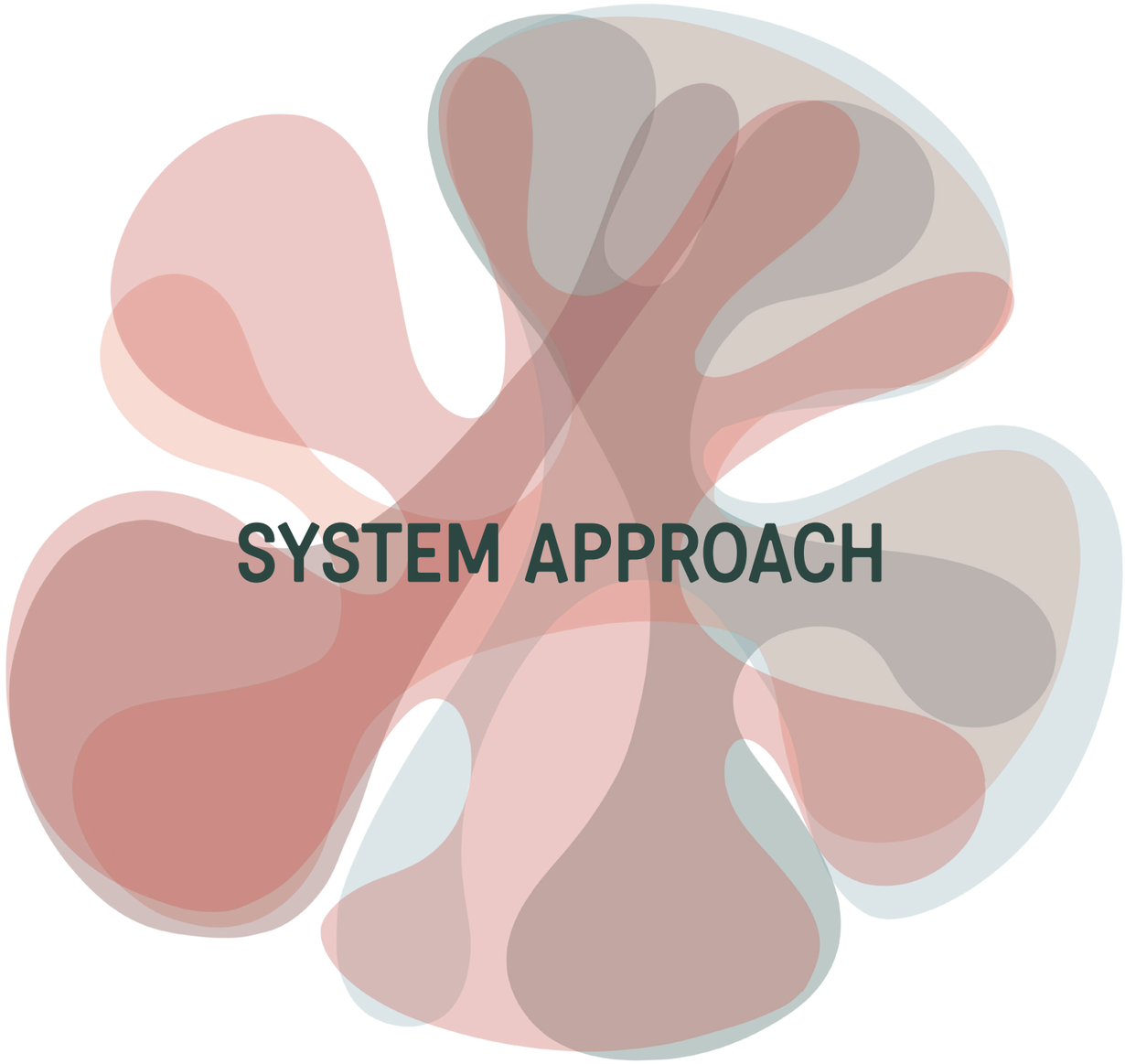


Courtyard

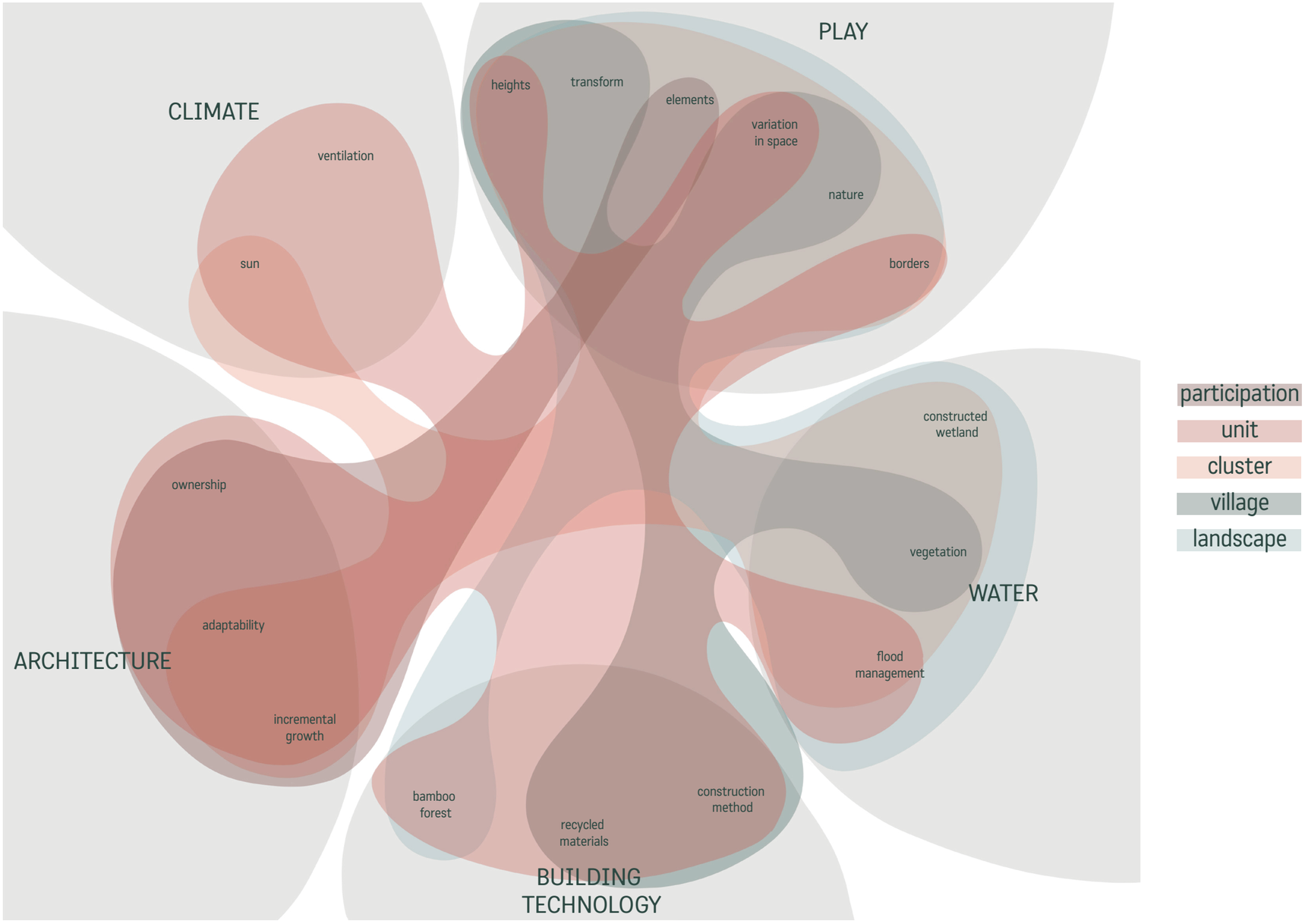


Connectivity
open spaces

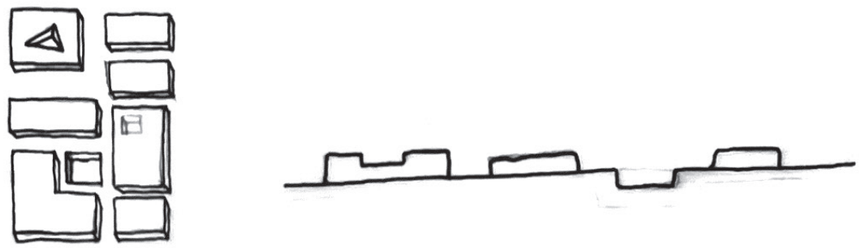
Flood
protection

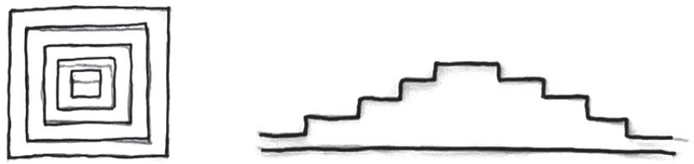


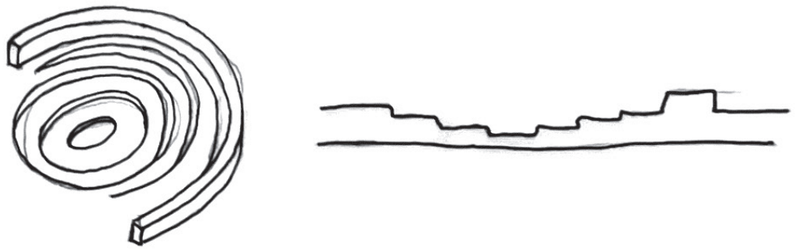
SYSTEM APPROACH


PLAY
heights
transform
elements
variation
in space
nature
borders
CLIMATE
ventilation
sun
constructed
wetland
ownership
vegetation
WATER
adaptability
ARCHITECTURE
flood
management
incremental
growth
bamboo
forest
construction
method
recycled
materials
BUILDING
TECHNOLOGY
participation
unit
cluster
village
landscape

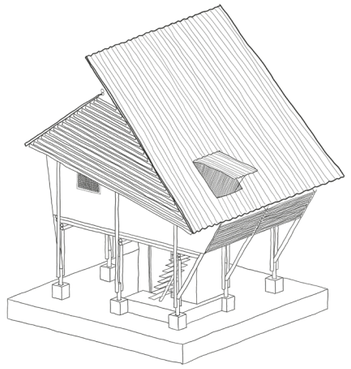
PARTICIPATION STRATEGY

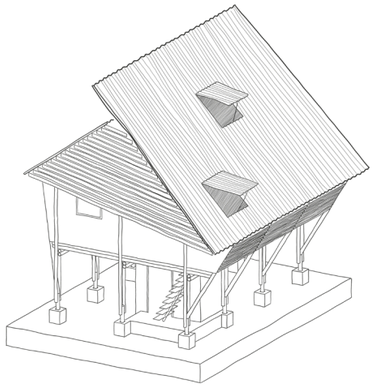


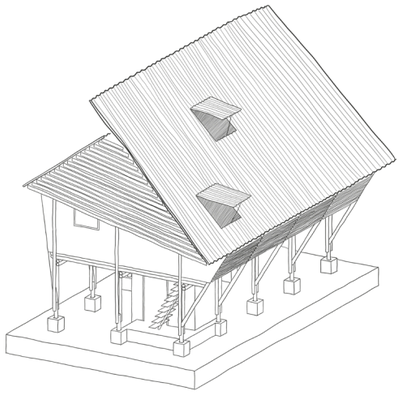




STEP 01







STEP 02

30 M²

36 M²

42 M²

56 M²

42 M²

48 M²

56 M²

64 M²

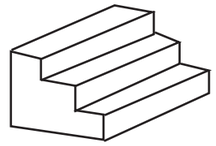
50 M²

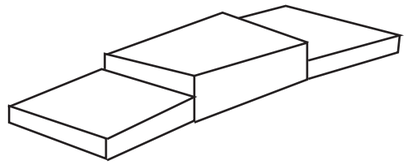
60 M²

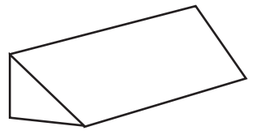
70 M²

80 M²

STEP 03



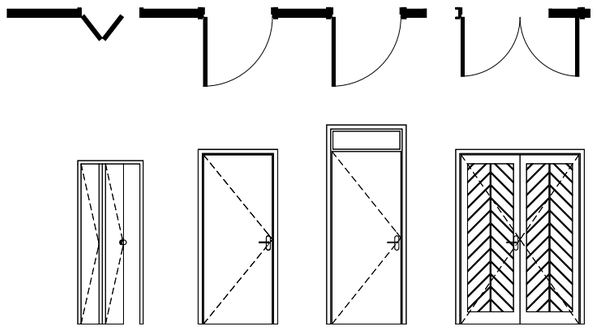




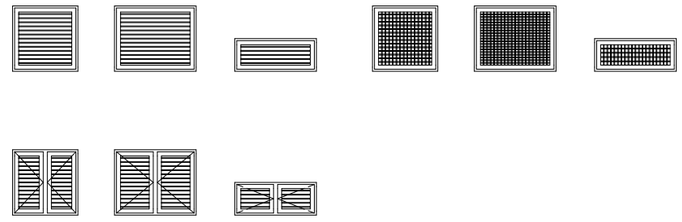
PARTICIPATION STRATEGY

CHOOSE YOUR HOME

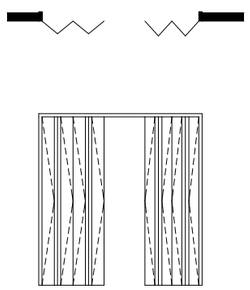
DOORS



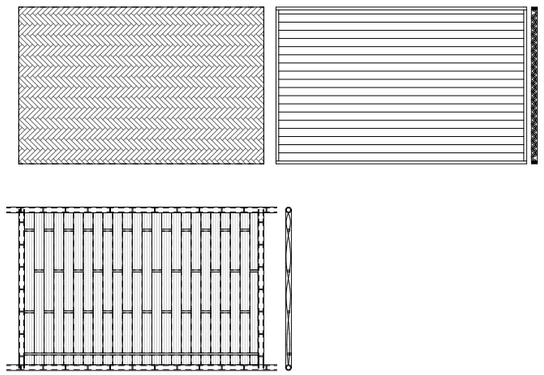
openings

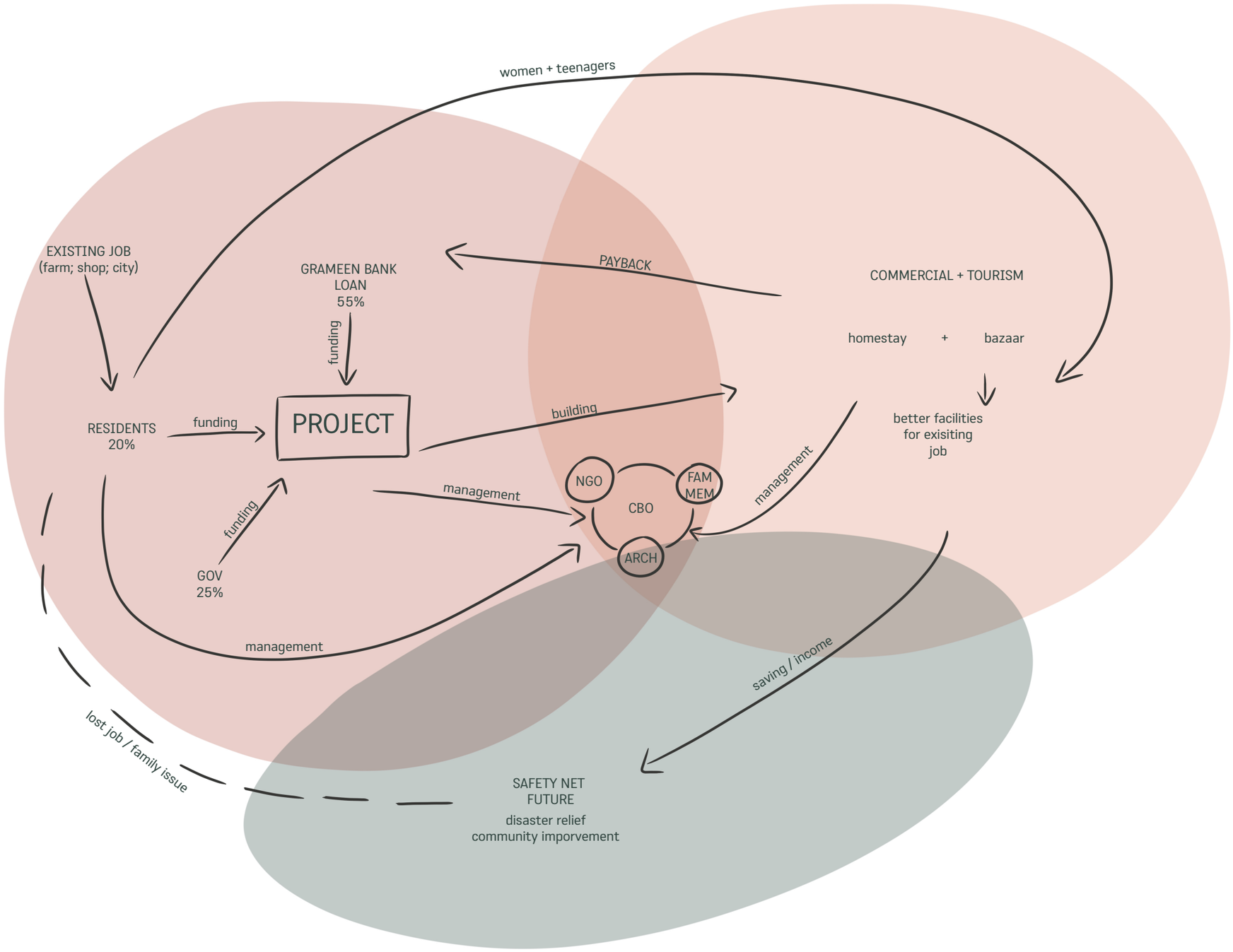


inner walls



facade

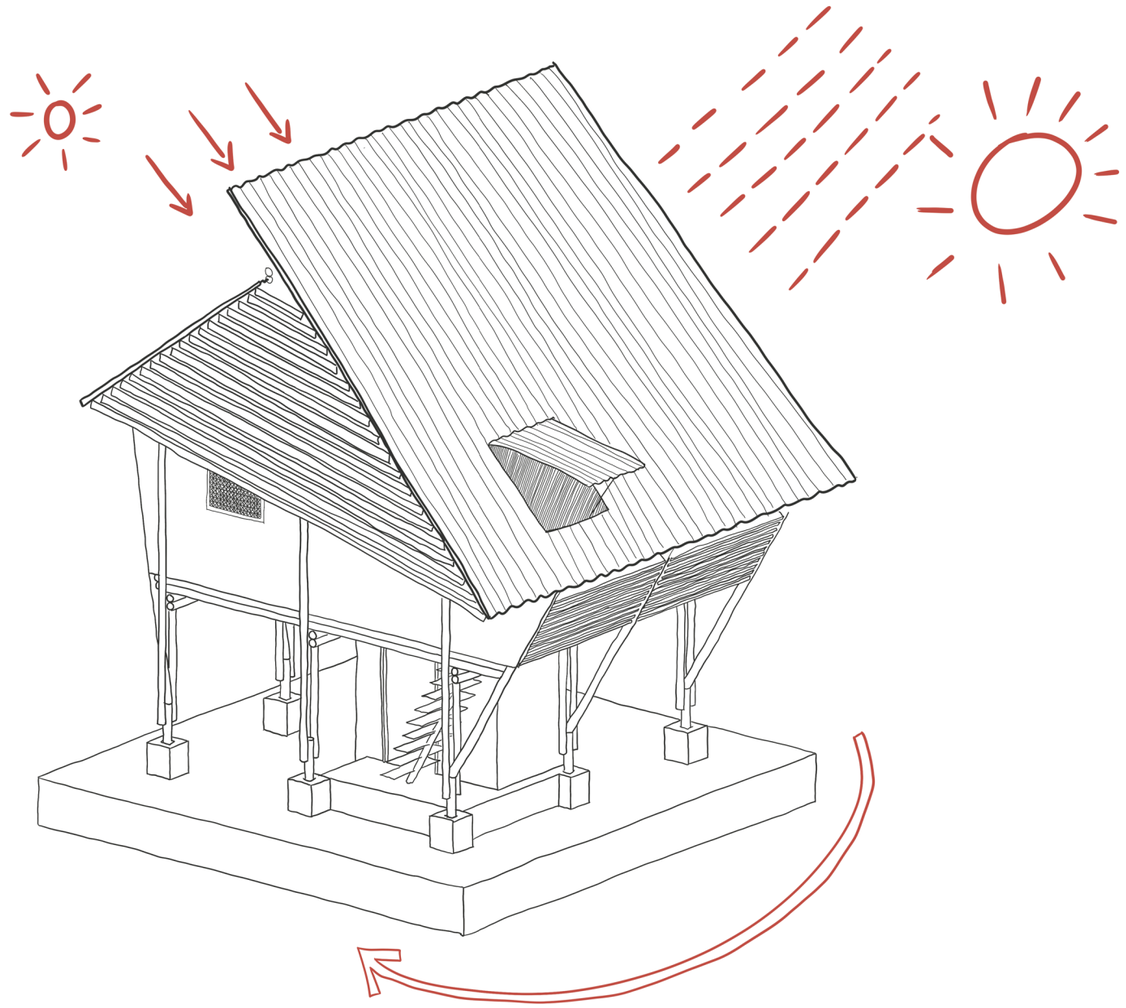




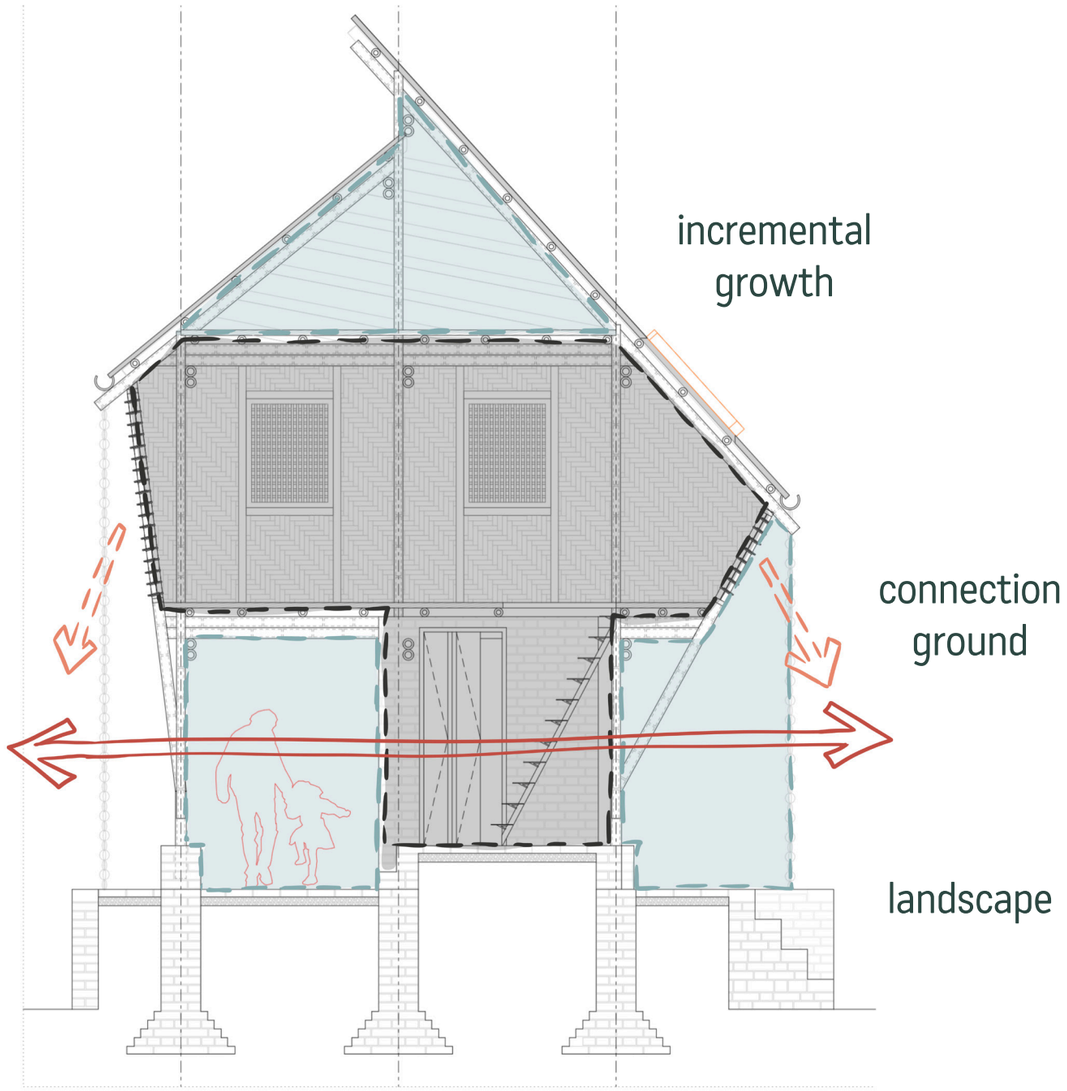
PARTICIPATION STRATEGY

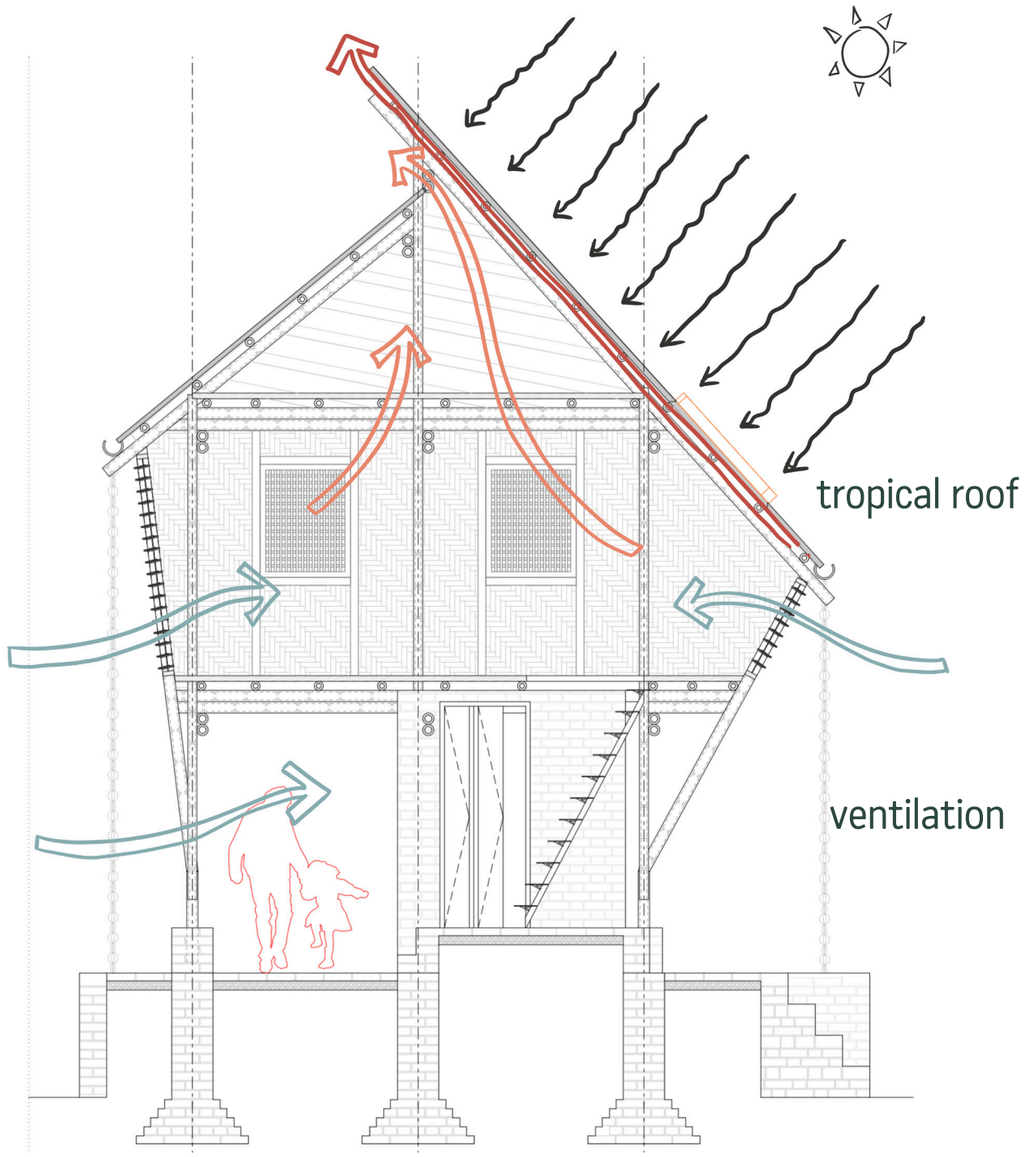
MANAGERIAL STRATEGY

UNIT STRATEGY



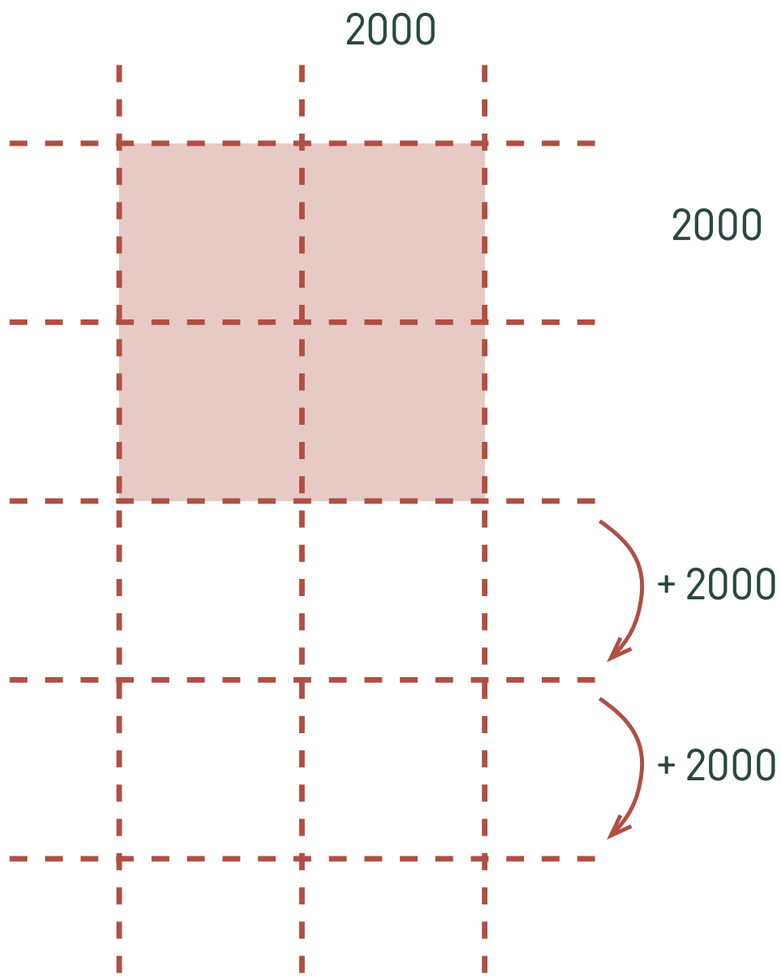
Shade &
ventilation

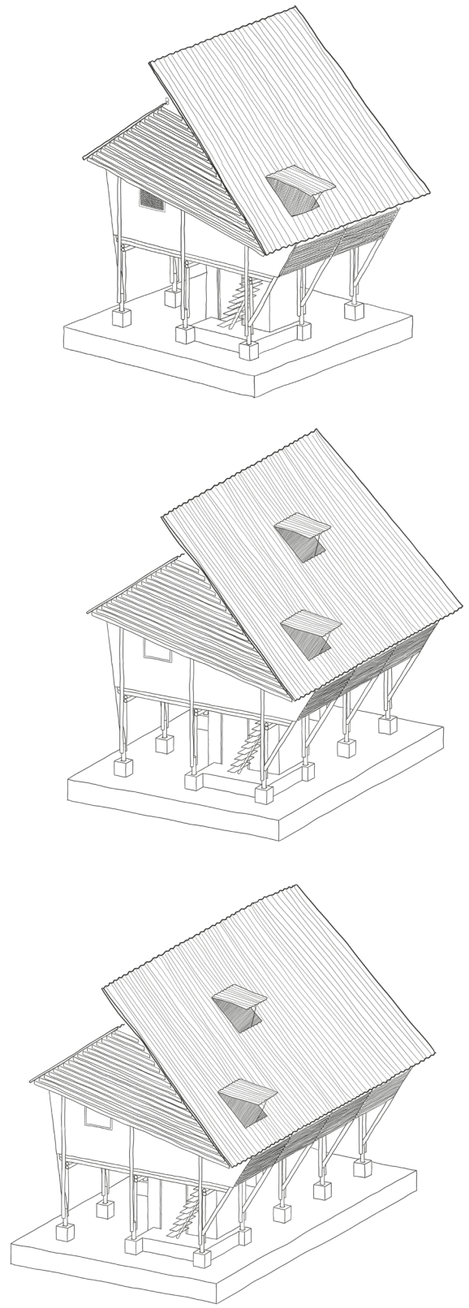




UNIT STRATEGY

UNIT PRINCIPLES

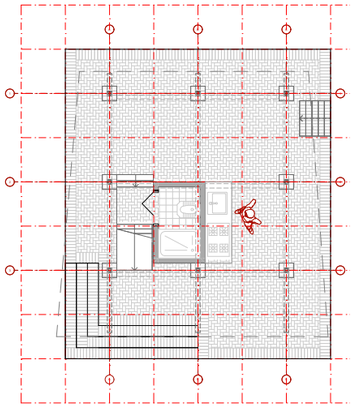


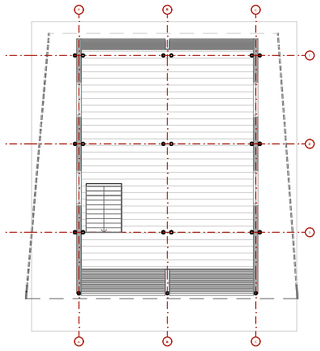


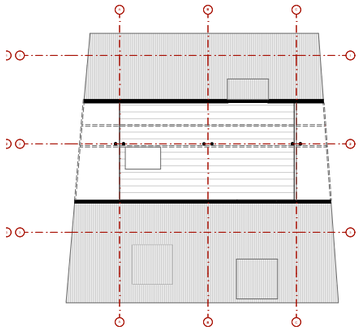
UNIT STRATEGY

STRUCTURE OF TYPES

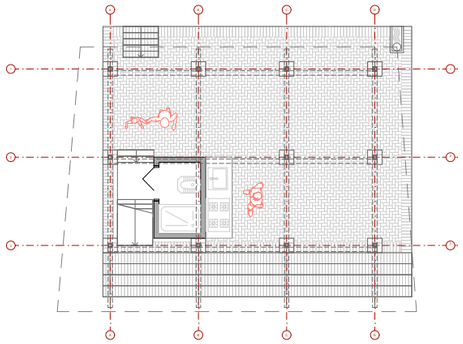
type A

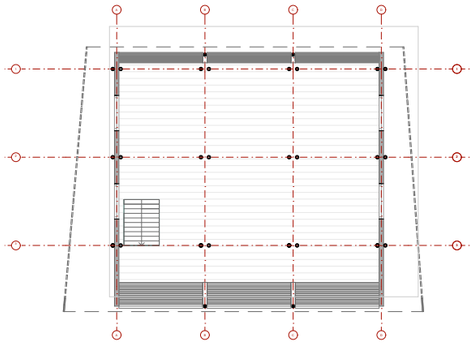


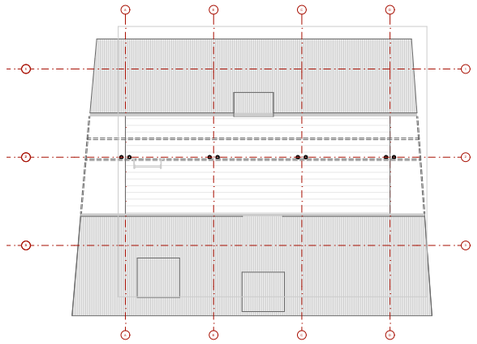




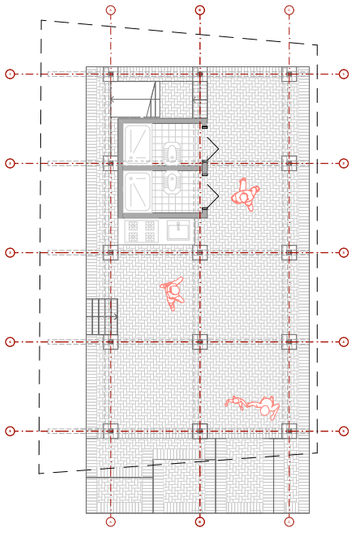
type B

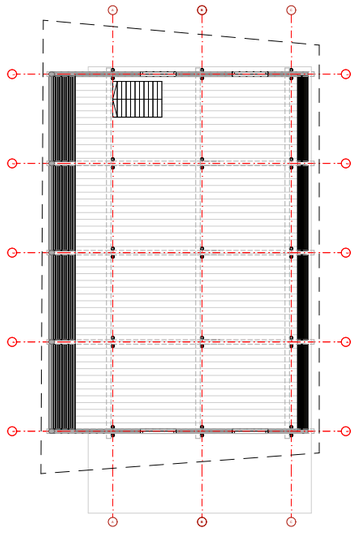


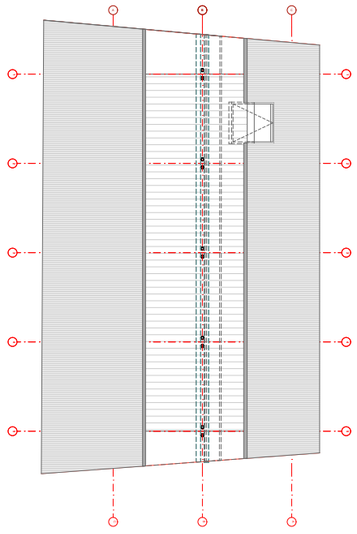




type C

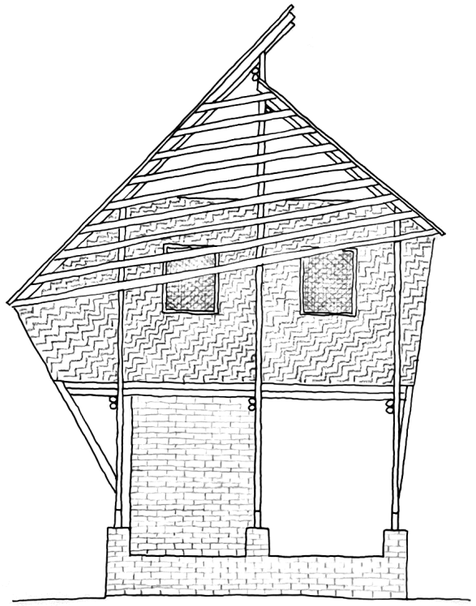




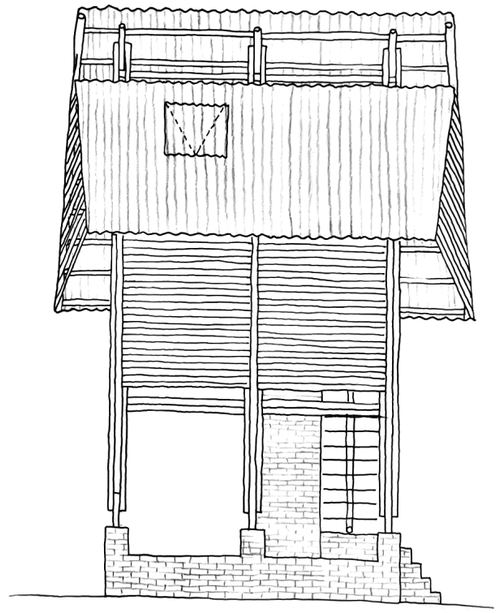


UNIT STRATEGY

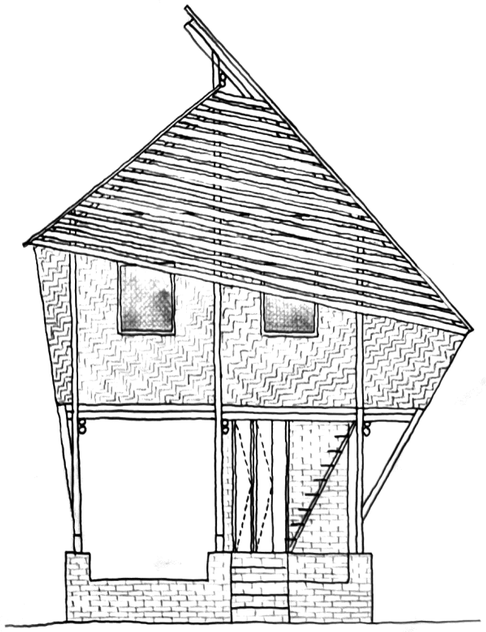
TYPES - START SCENARIO



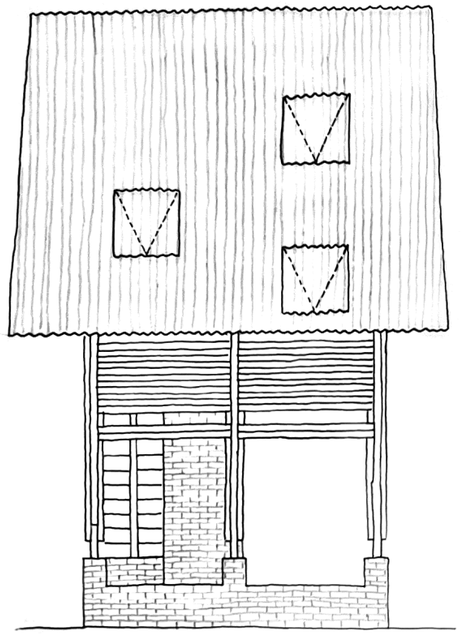
EAST



NORTH.



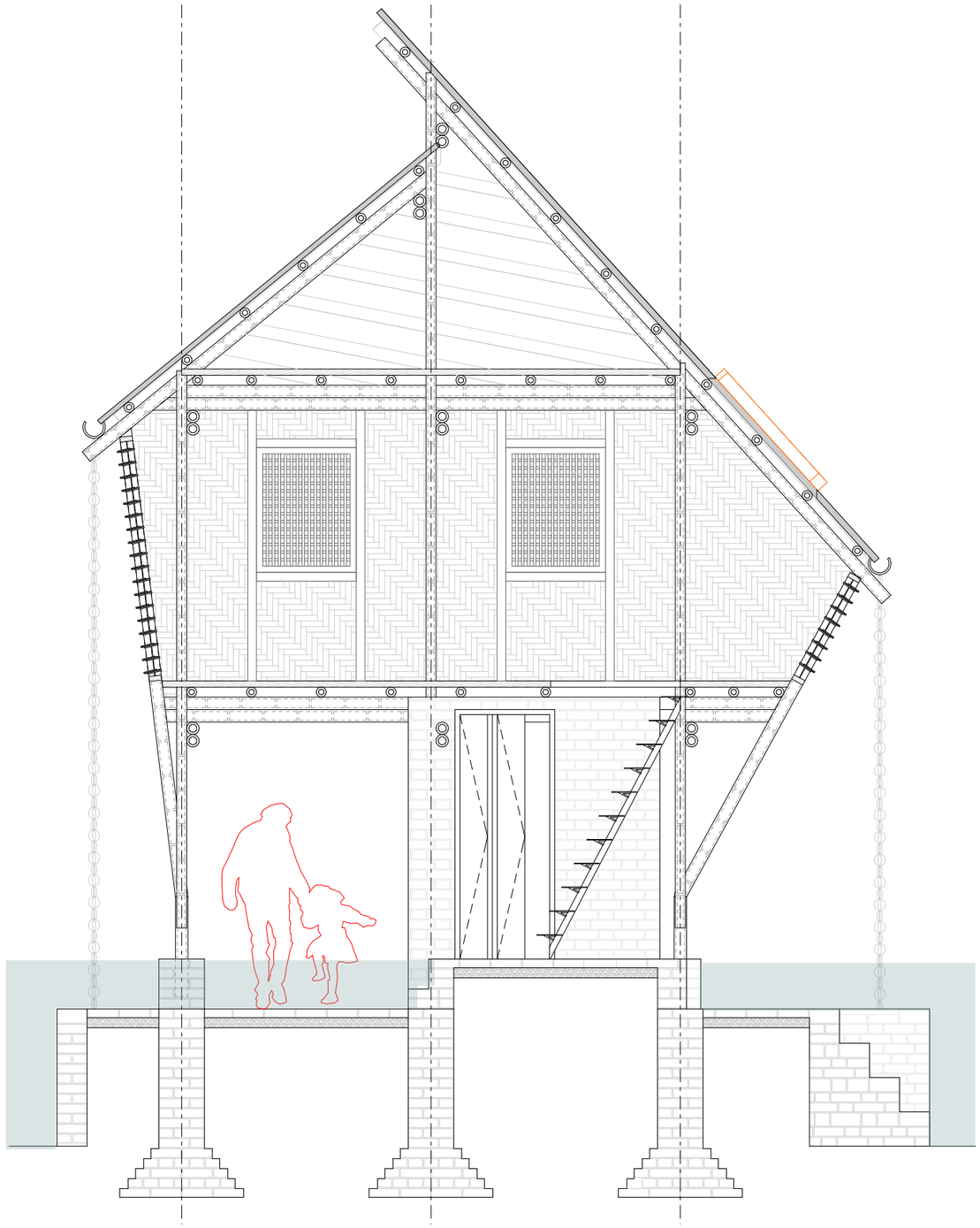
WEST



SOUTH

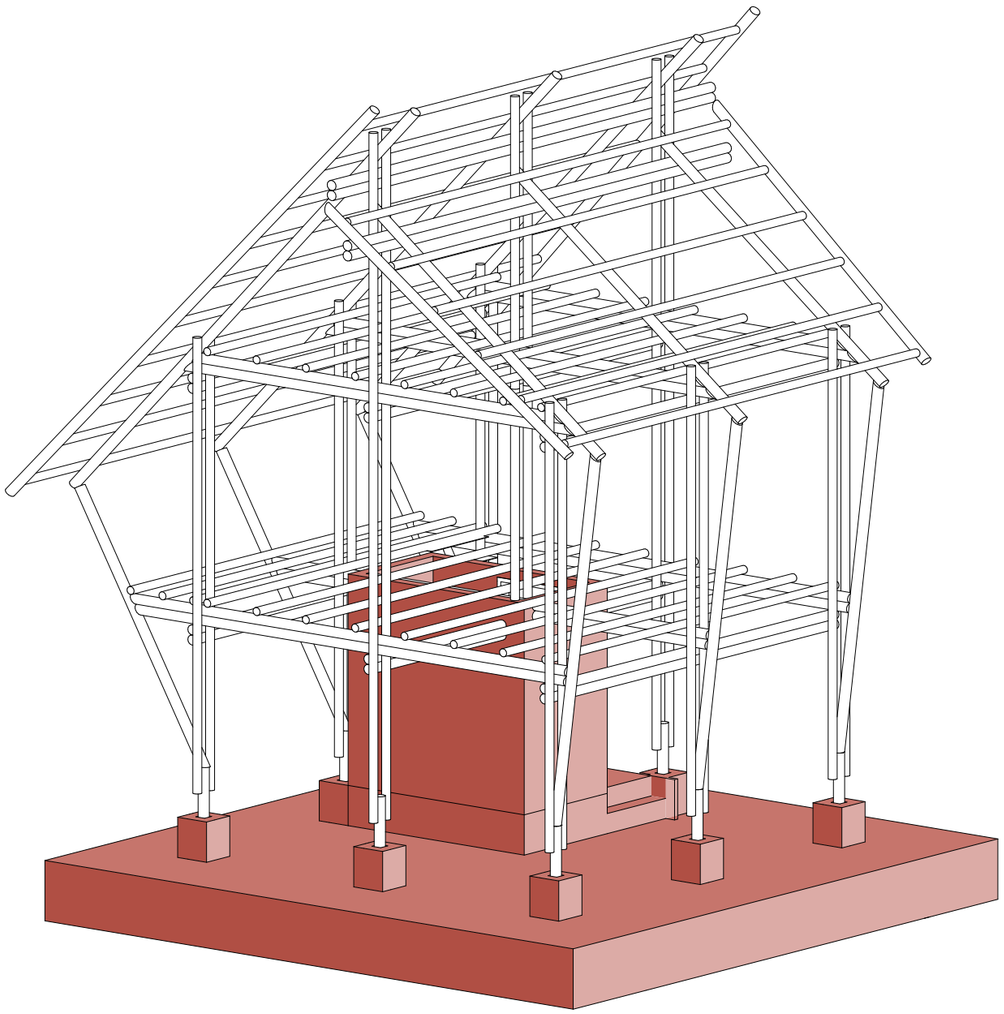
UNIT STRATEGY

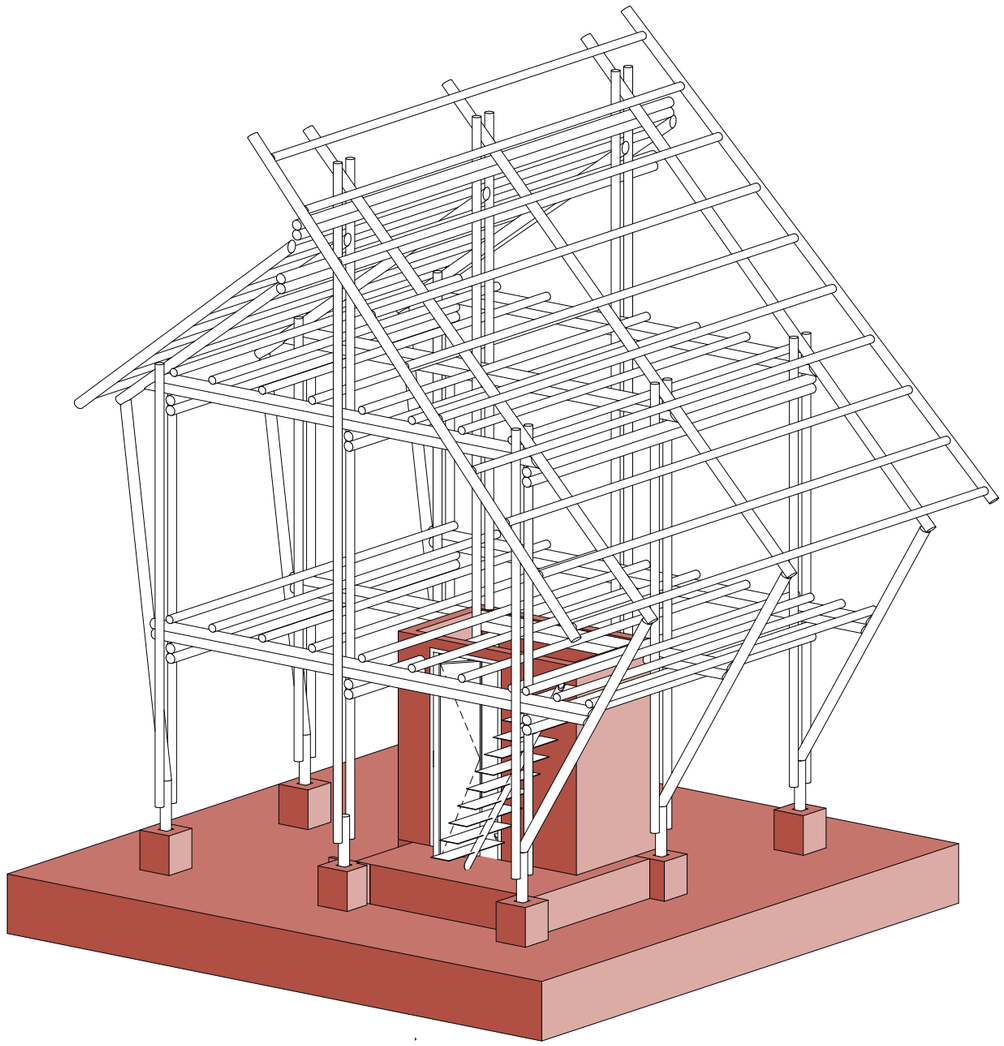
ELEVATIONS - START SCENARIO



UNIT STRATEGY

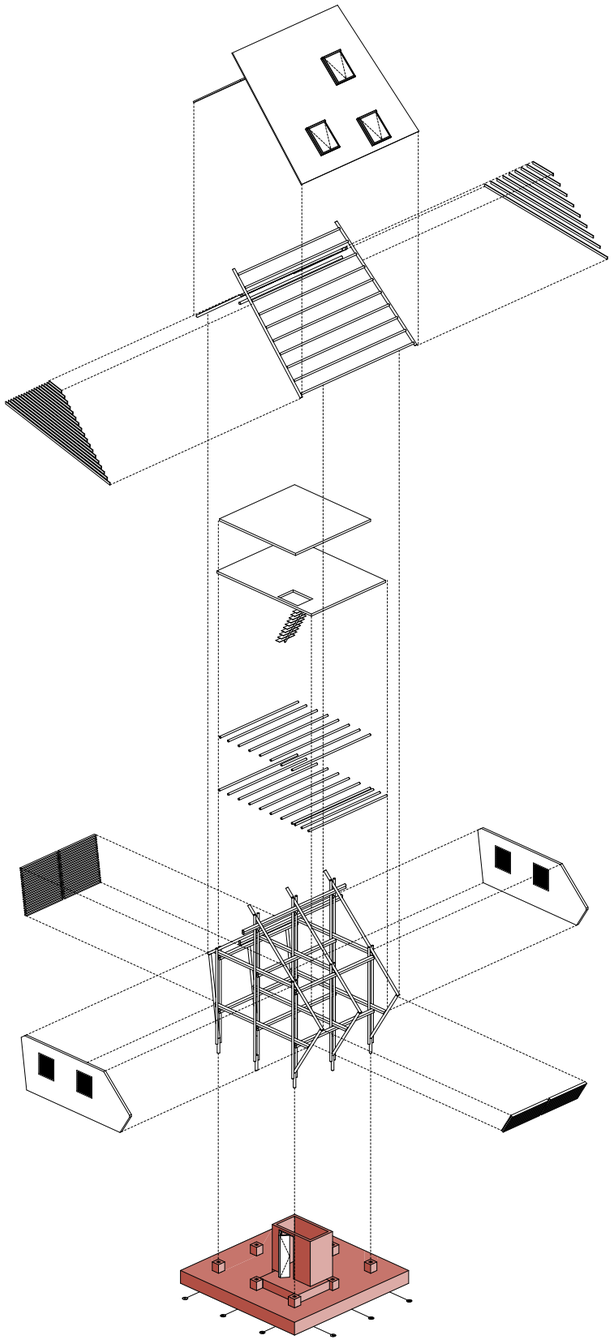
USE DURING FLOODS





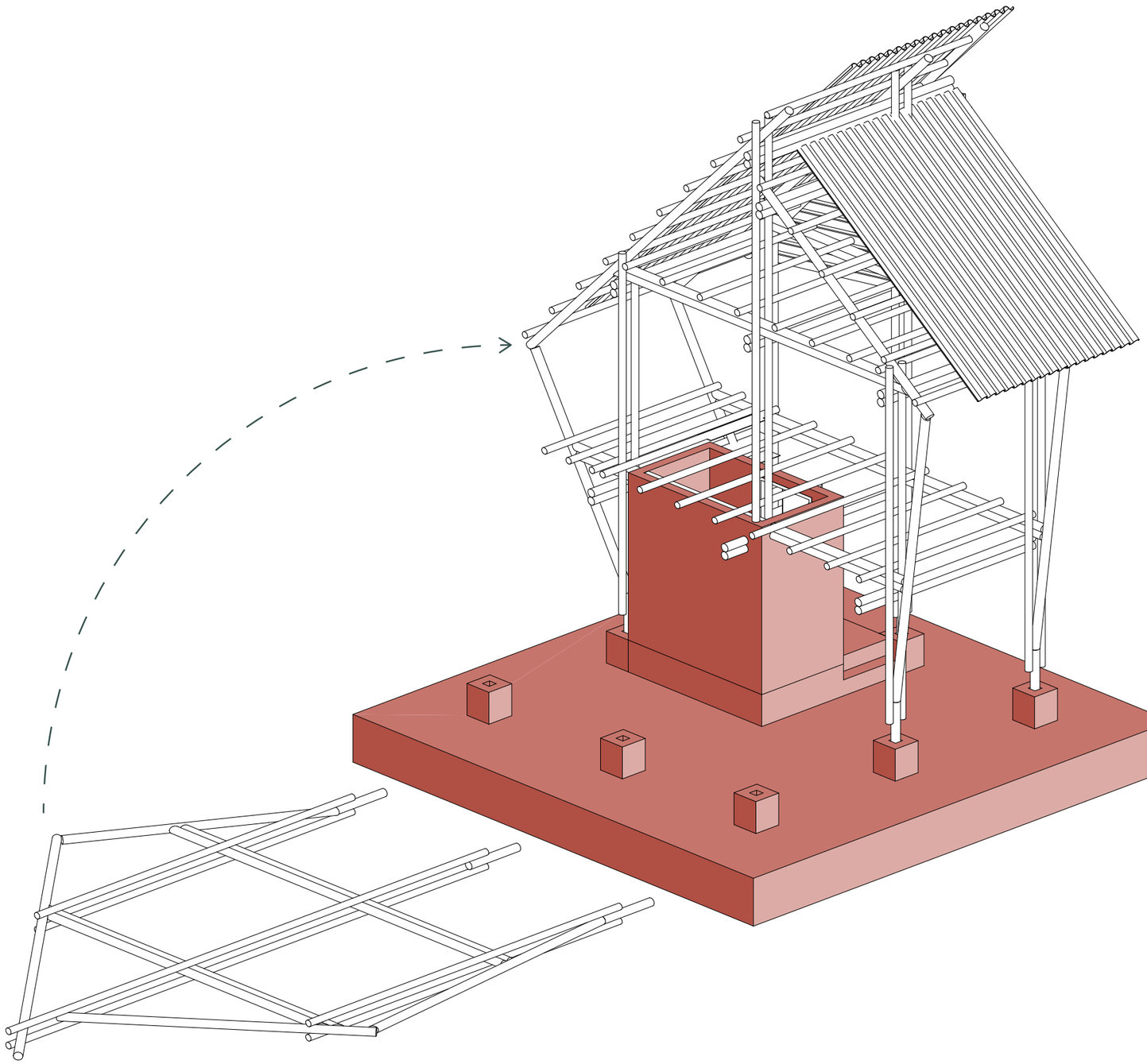
UNIT STRATEGY

STRUCTURE



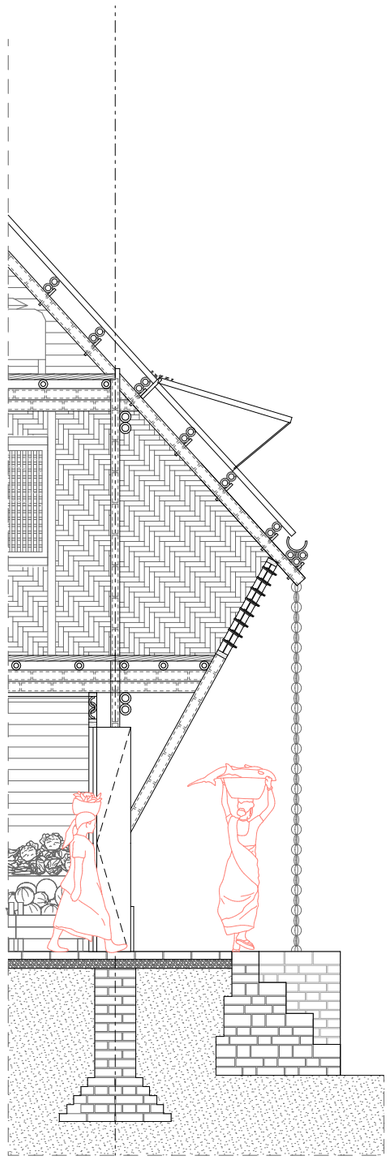
UNIT STRATEGY

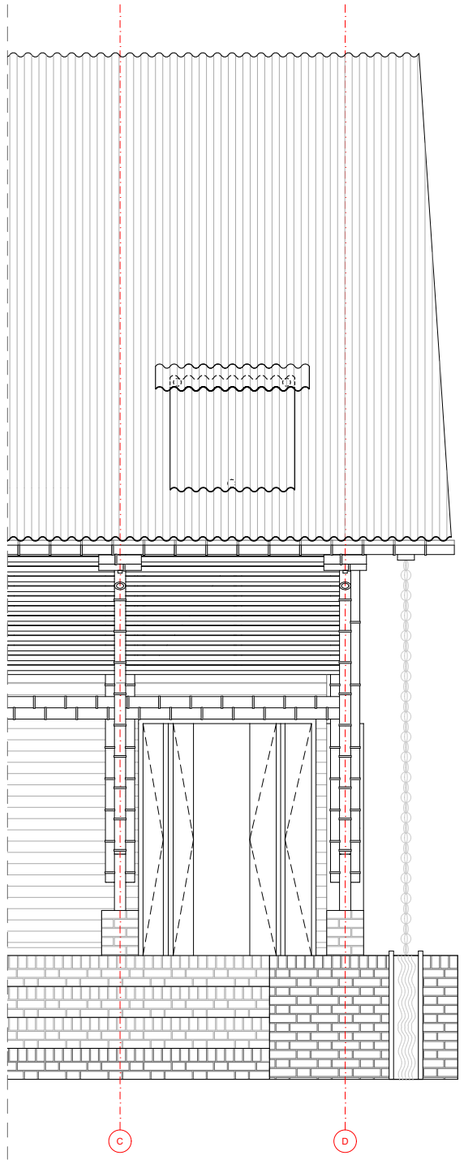
CONSTRUCTION

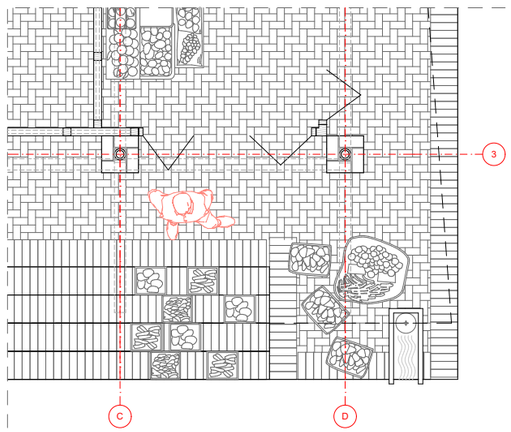


UNIT STRATEGY

BUILDING METHOD

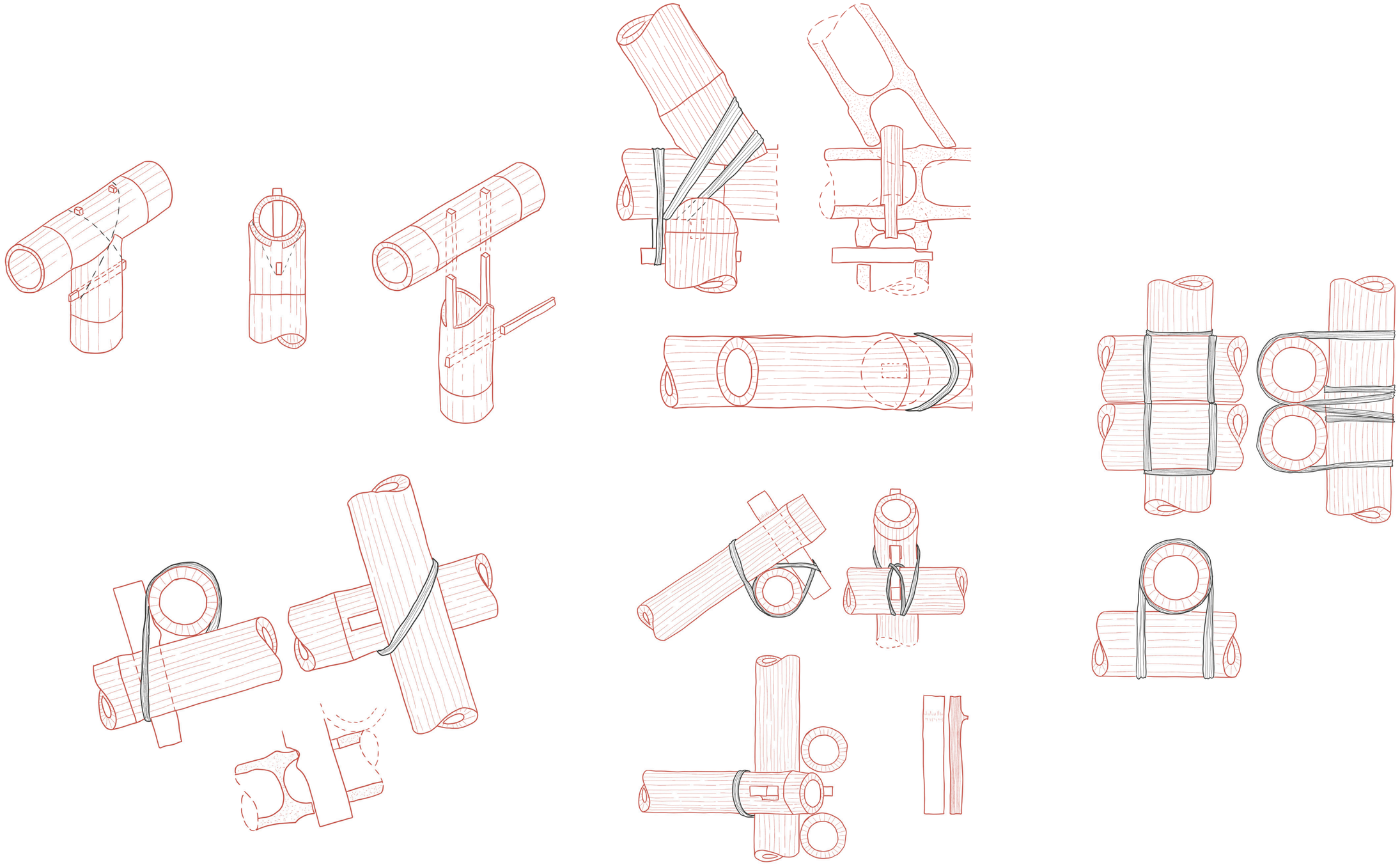






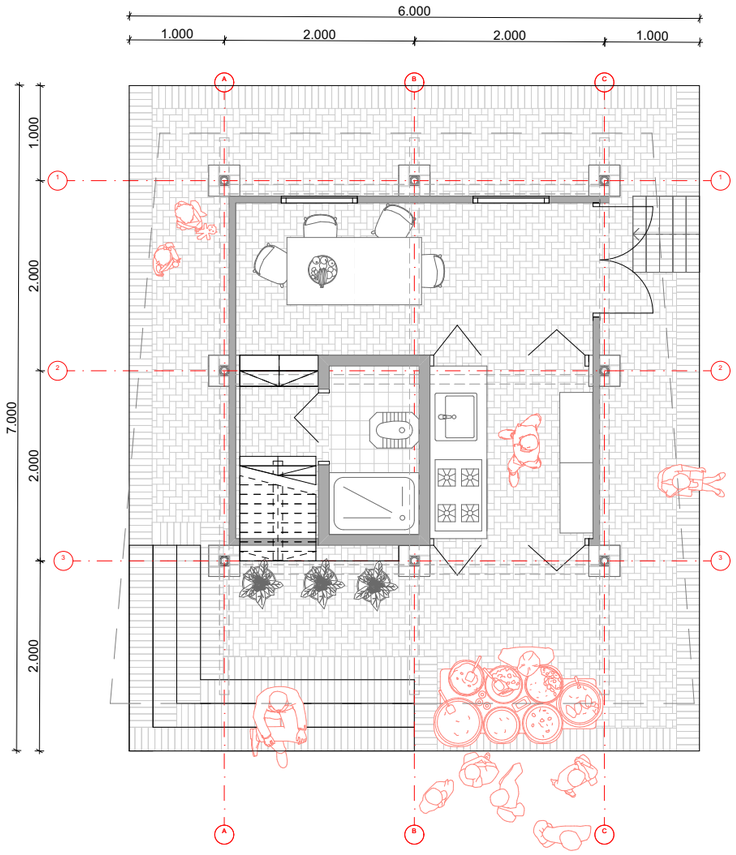
UNIT STRATEGY

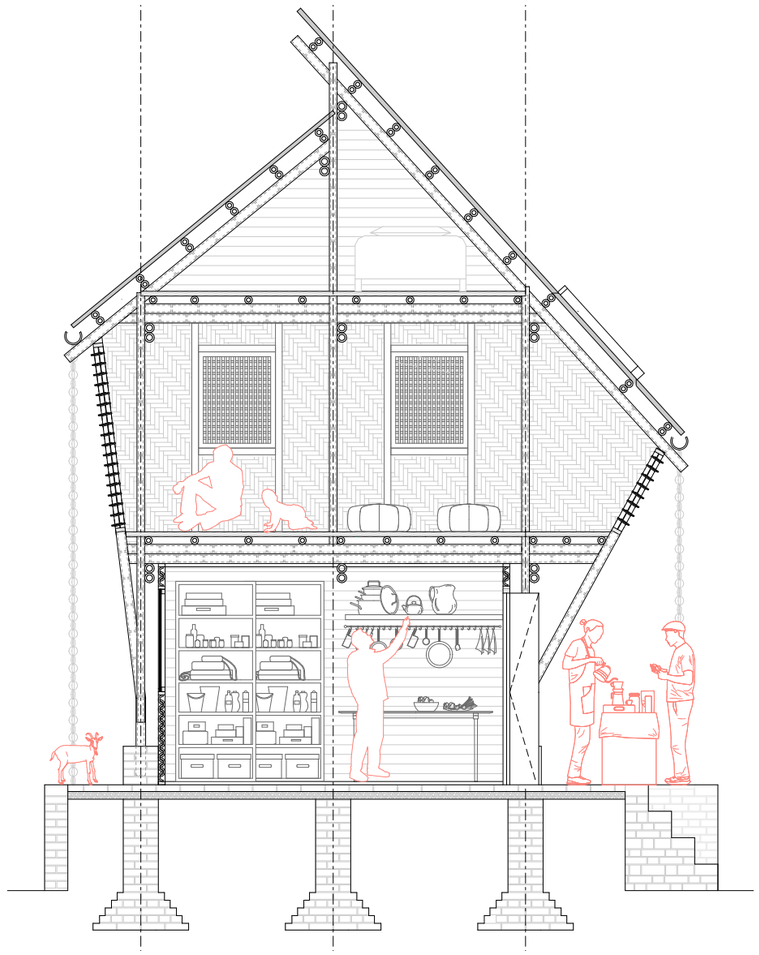
FRAGMENT



UNIT STRATEGY

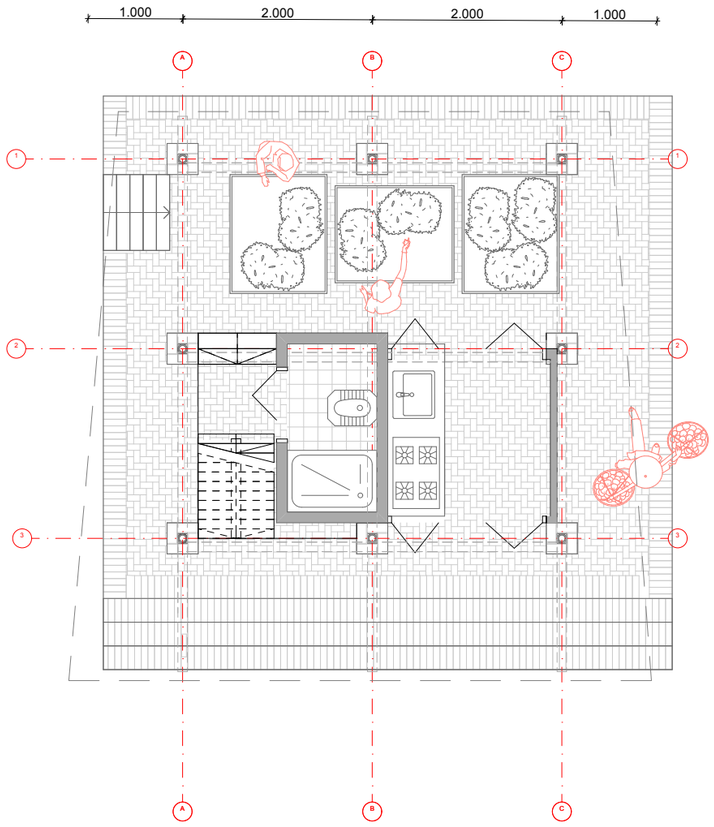
BAMBOO JOINTS

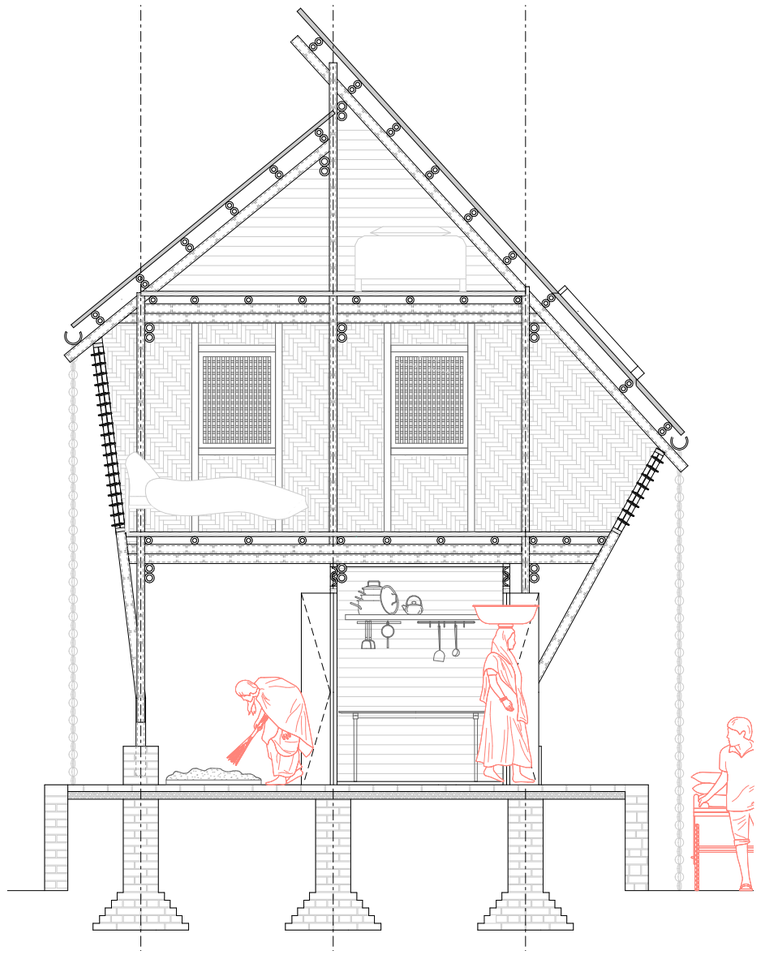




UNIT STRATEGY

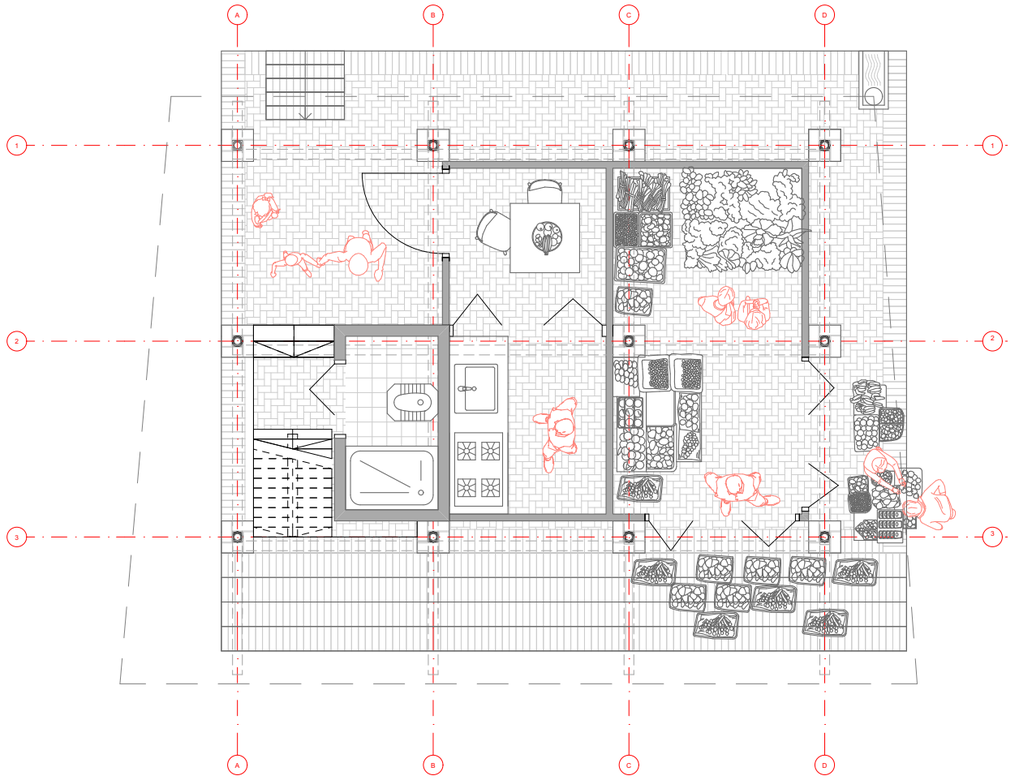
TYPE A - FOOD SHOP

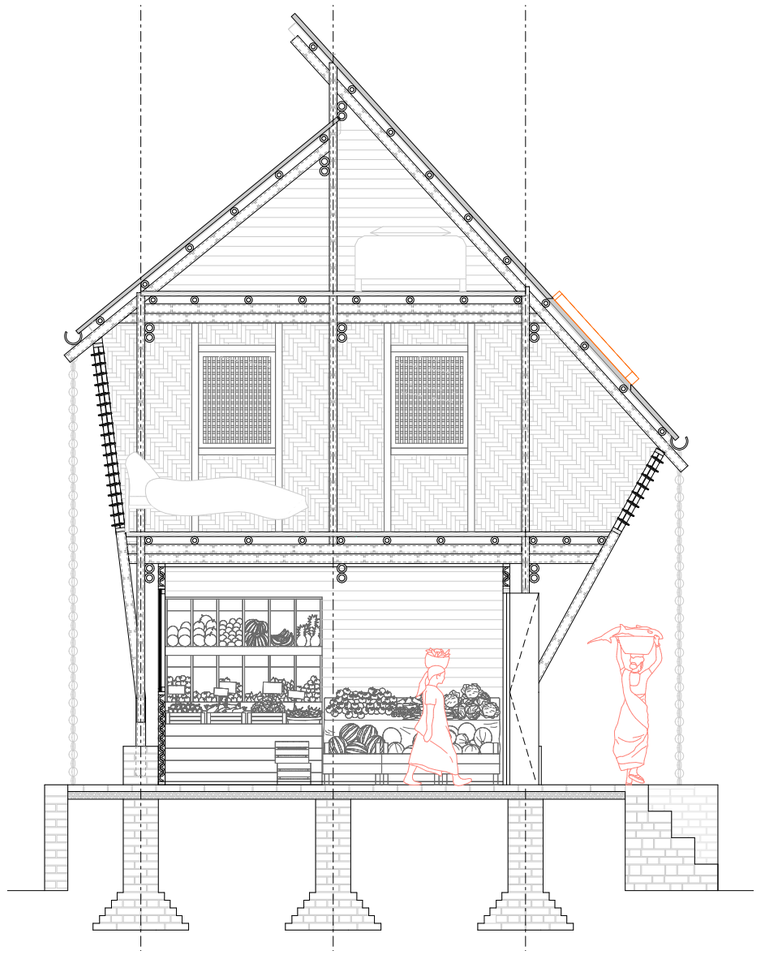




UNIT STRATEGY

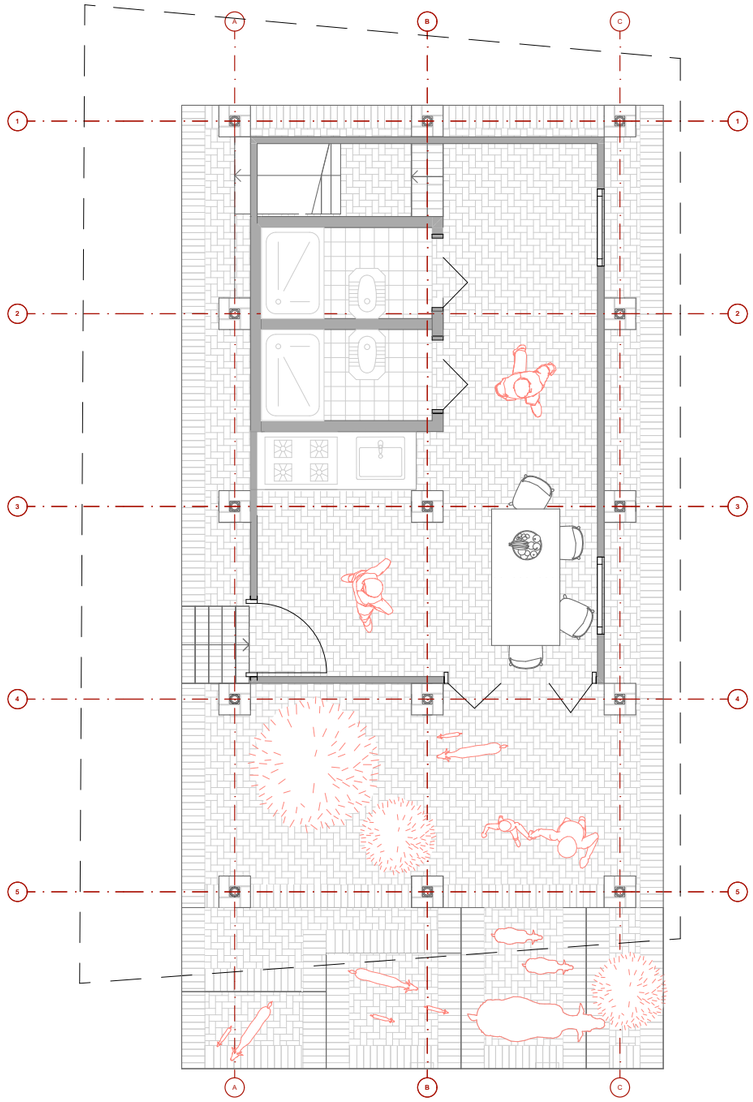
TYPE A - FARMER





UNIT STRATEGY

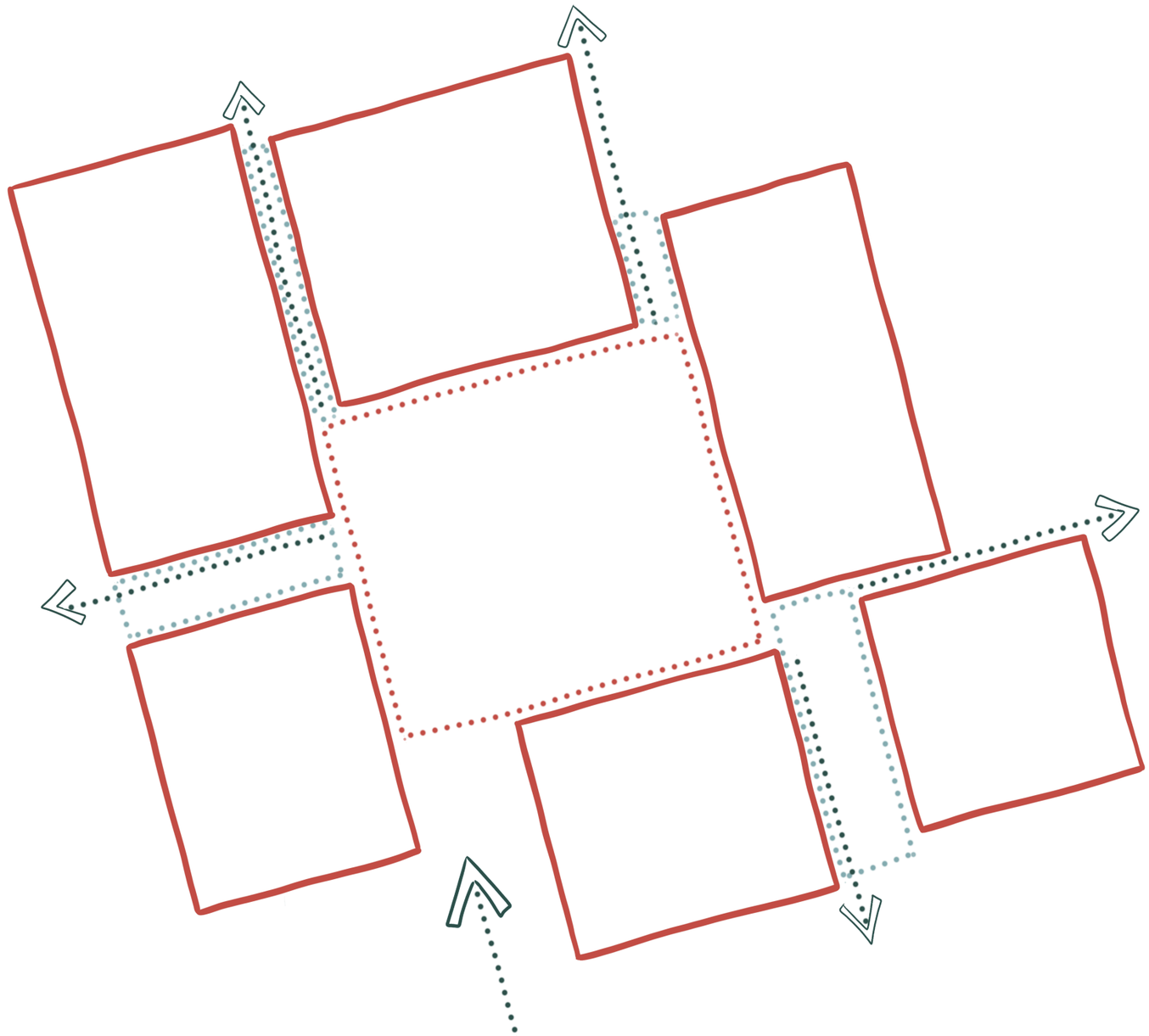
TYPE B - FRUIT SHOP



UNIT STRATEGY

TYPE C - CATTLE FARMER

CLUSTER STRATEGY



CLUSTER PRINCIPLES

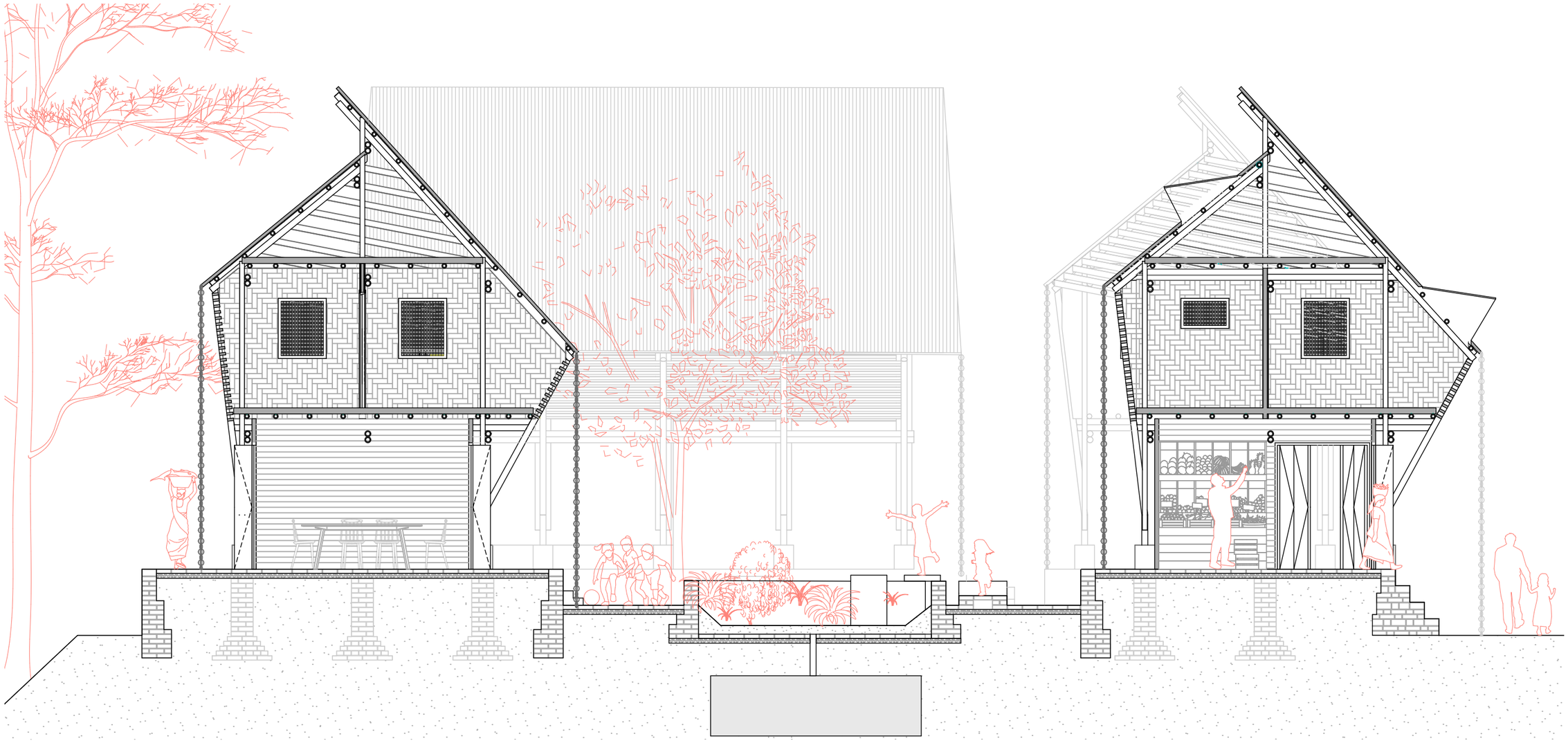
CLUSTER PRINCIPLES

CLUSTER STRATEGY

START SCENARIO

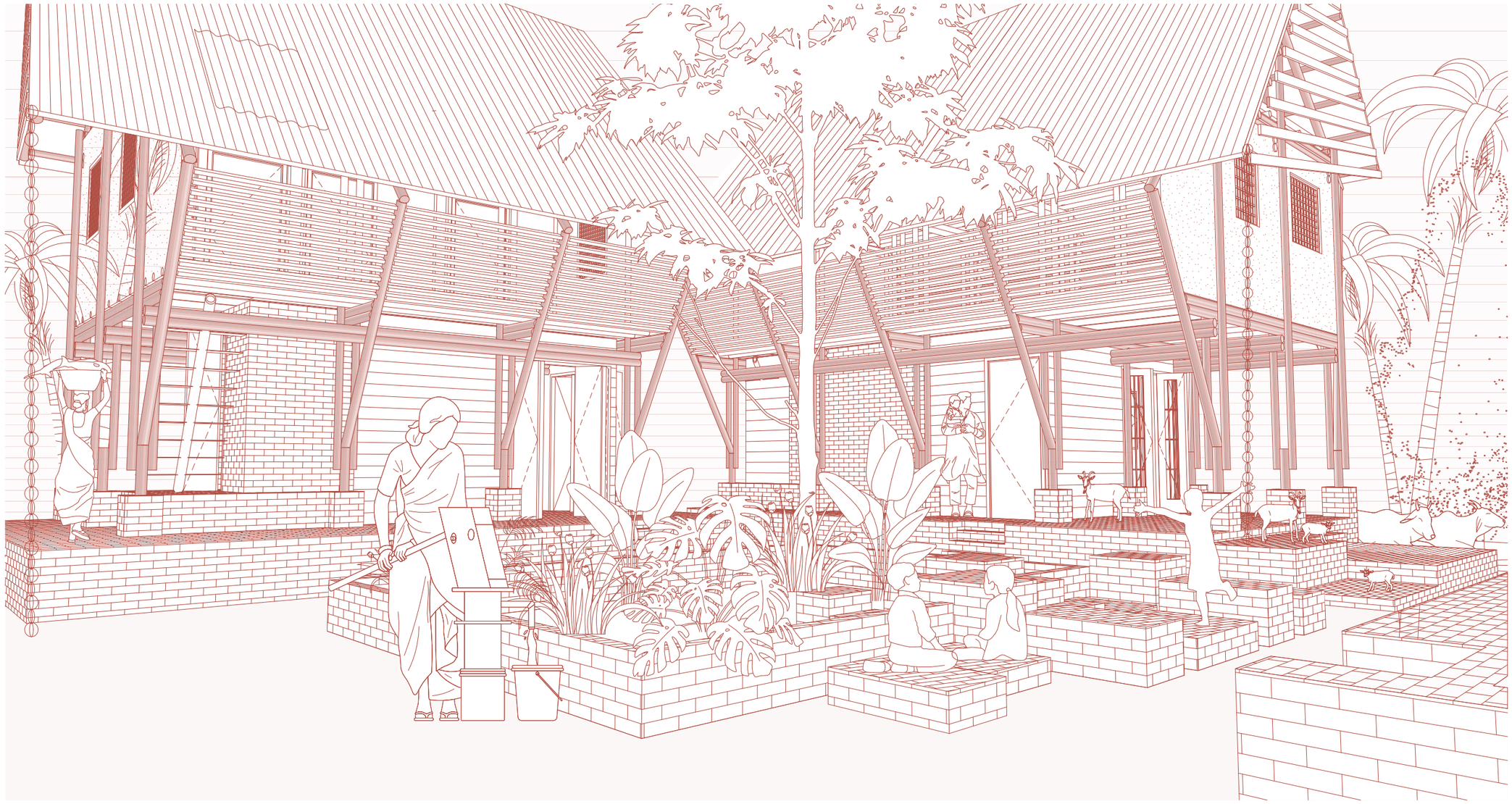
CLUSTER STRATEGY

FUTURE SCENARIO



CLUSTER STRATEGY

SECTION

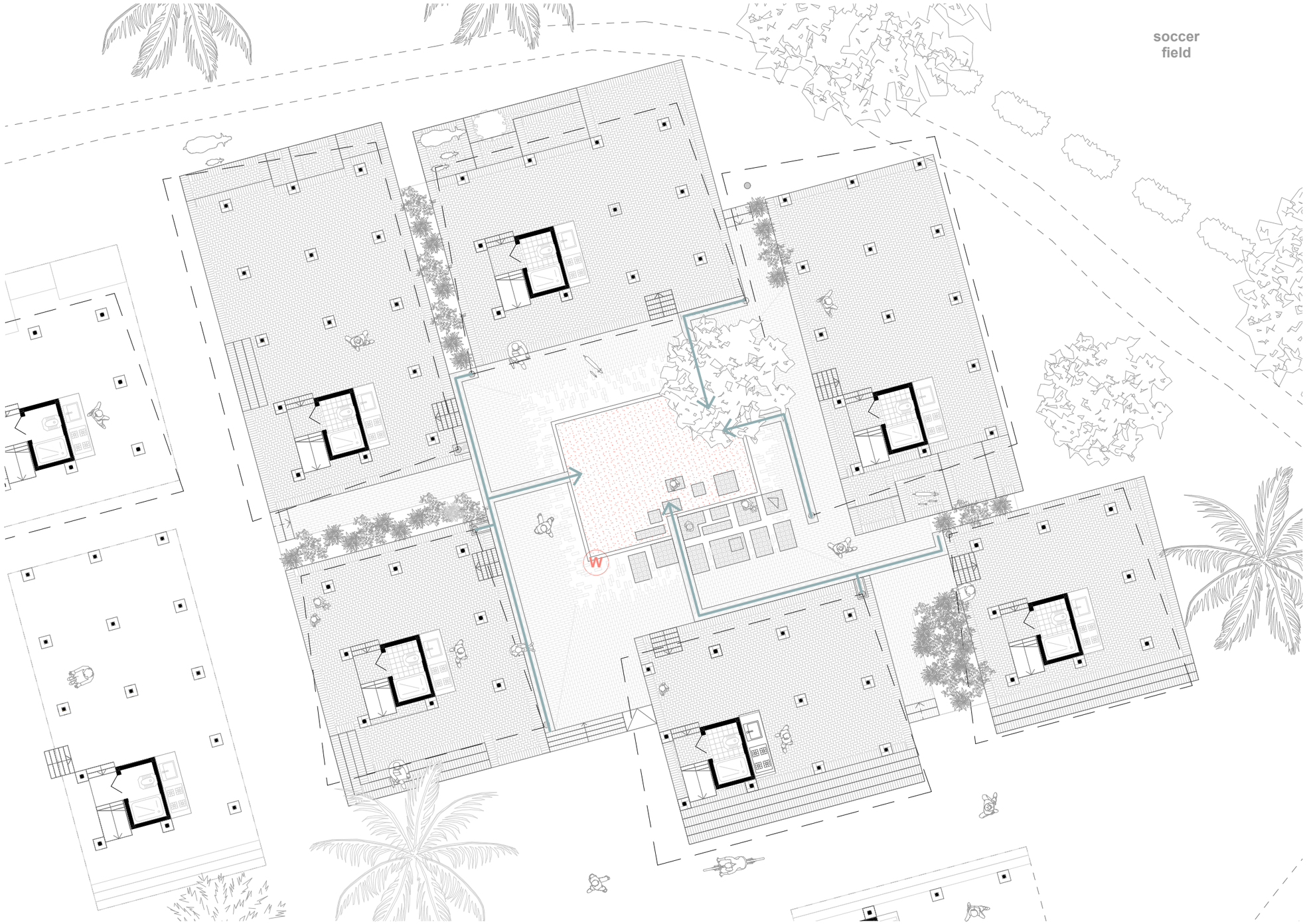


CLUSTER STRATEGY

THE COURTYARD

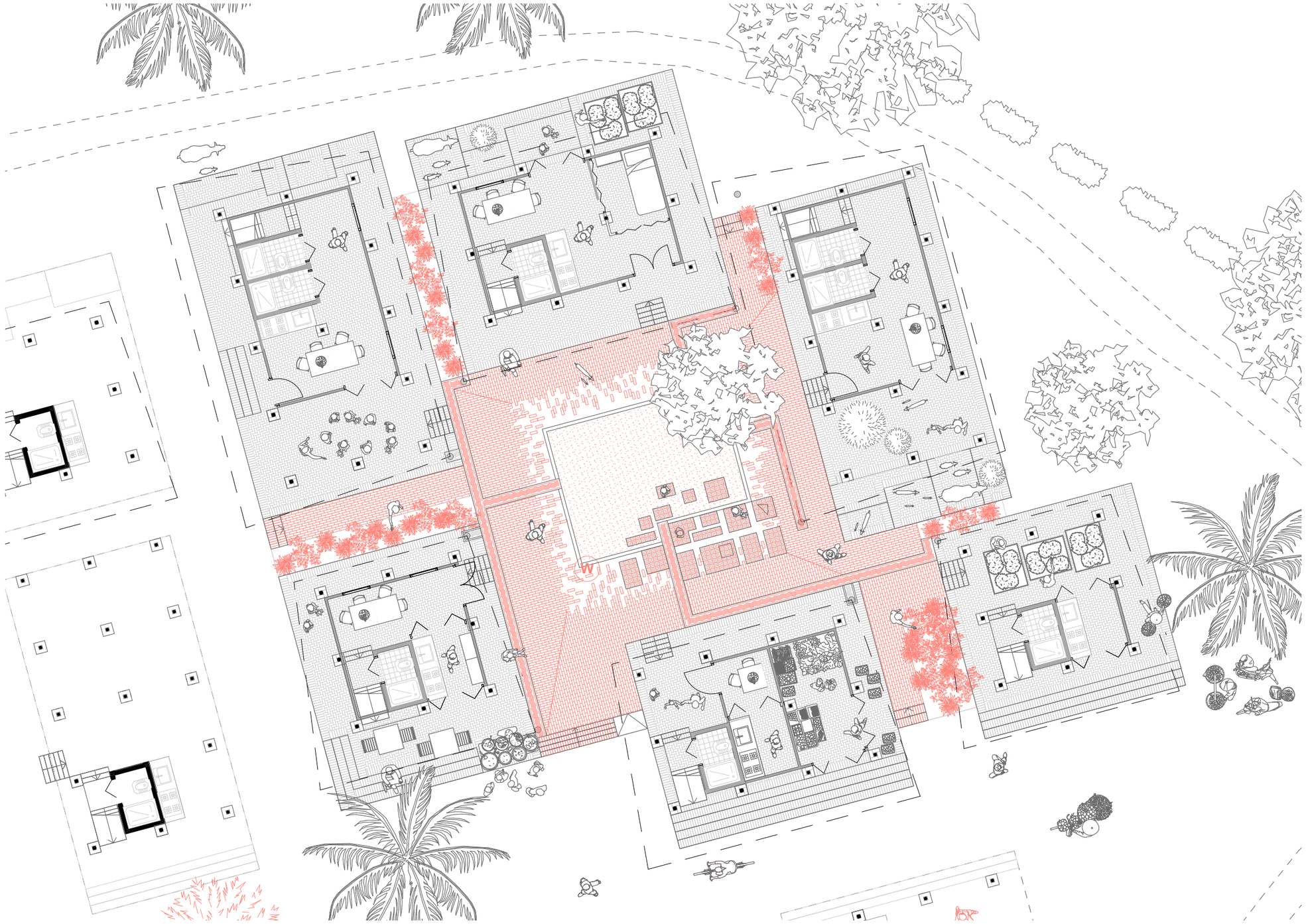
CLUSTER STRATEGY

WATER MANAGEMENT



CLUSTER STRATEGY

WATER MANAGEMENT

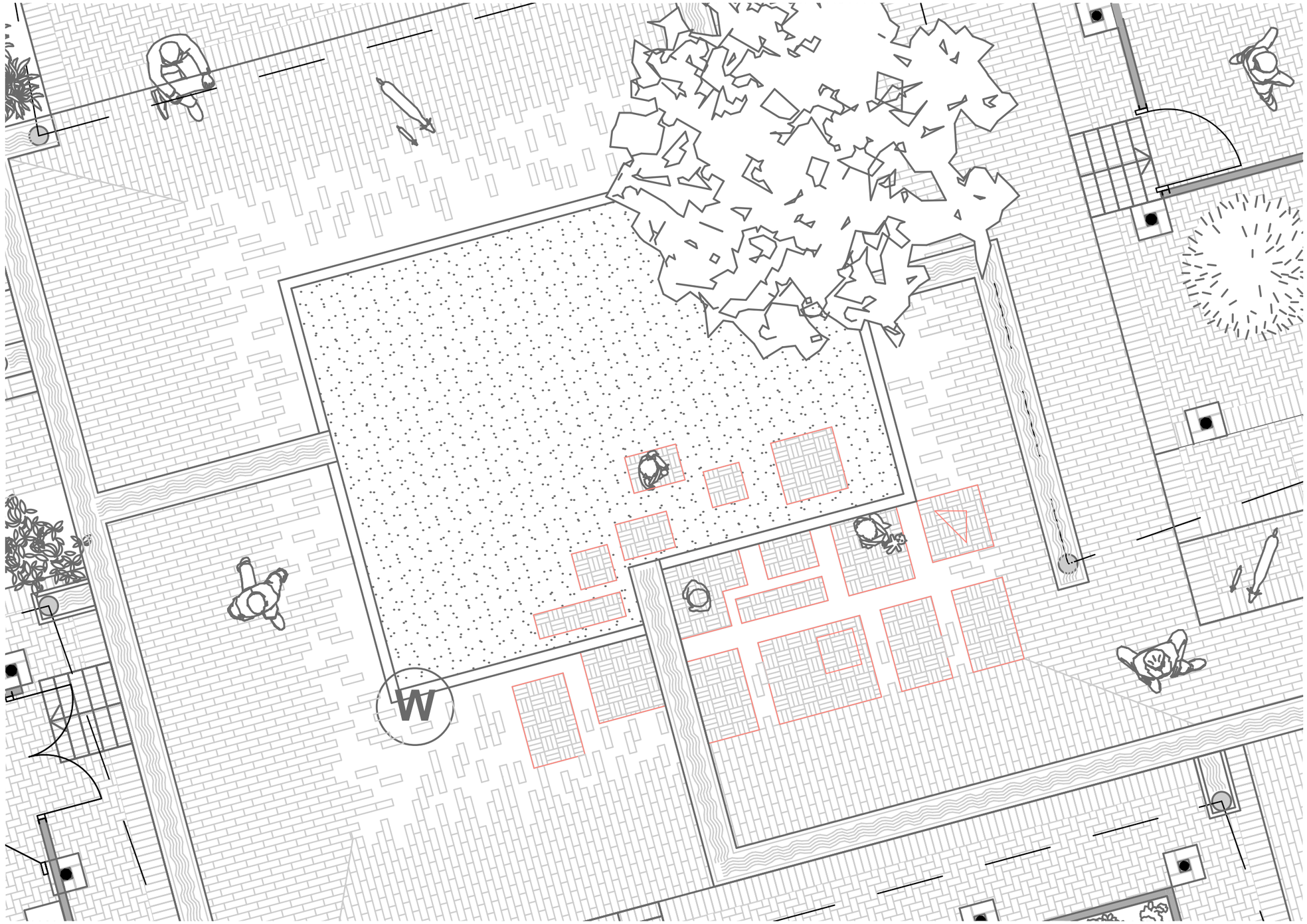


CLUSTER STRATEGY

CLUSTER MATERIALS

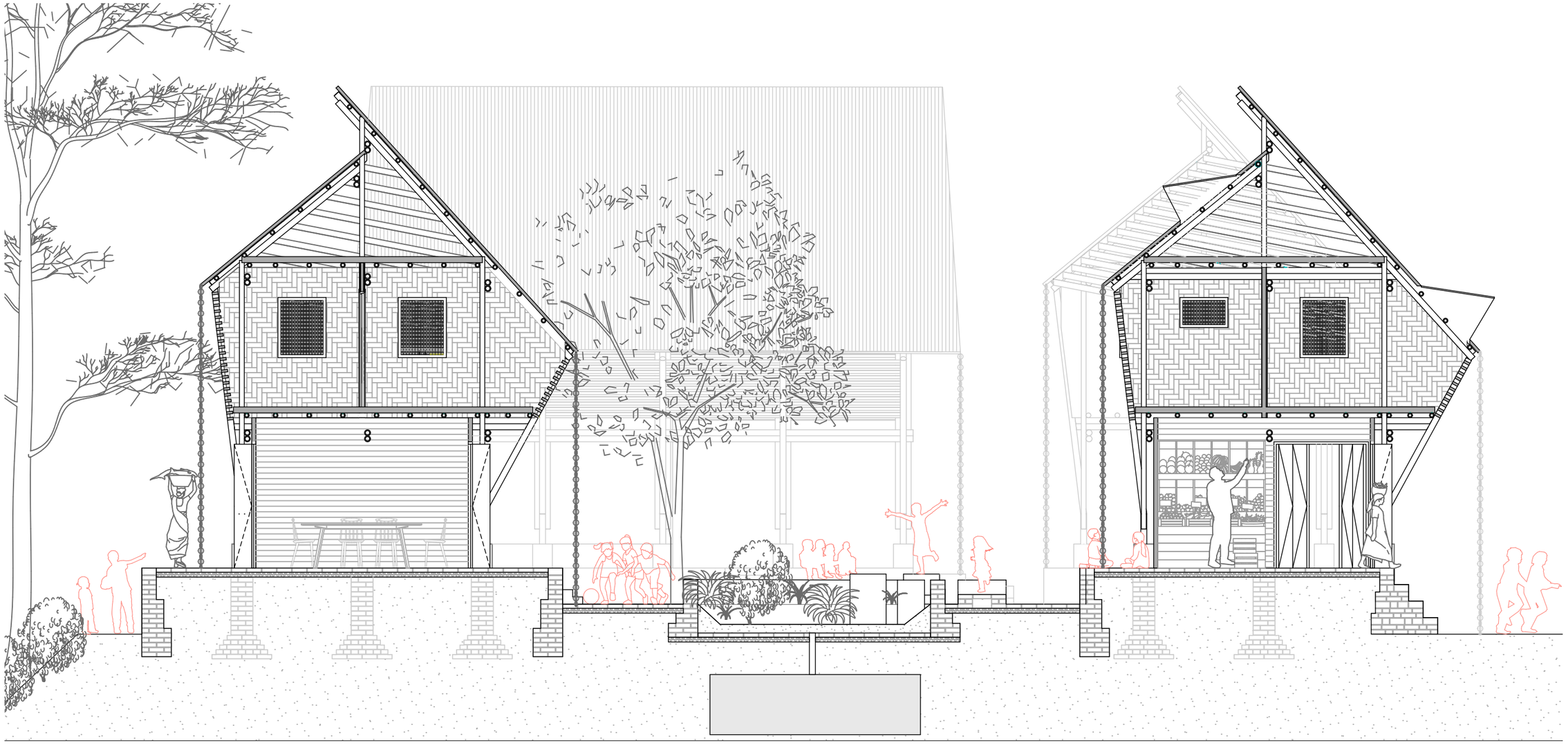
CLUSTER STRATEGY

CLUSTER AS THE PLAYGROUND



CLUSTER STRATEGY

CLUSTER AS THE PLAYGROUND



CLUSTER STRATEGY

CLUSTER AS THE PLAYGROUND

VILLAGE STRATEGY

VILLAGE STRATEGY

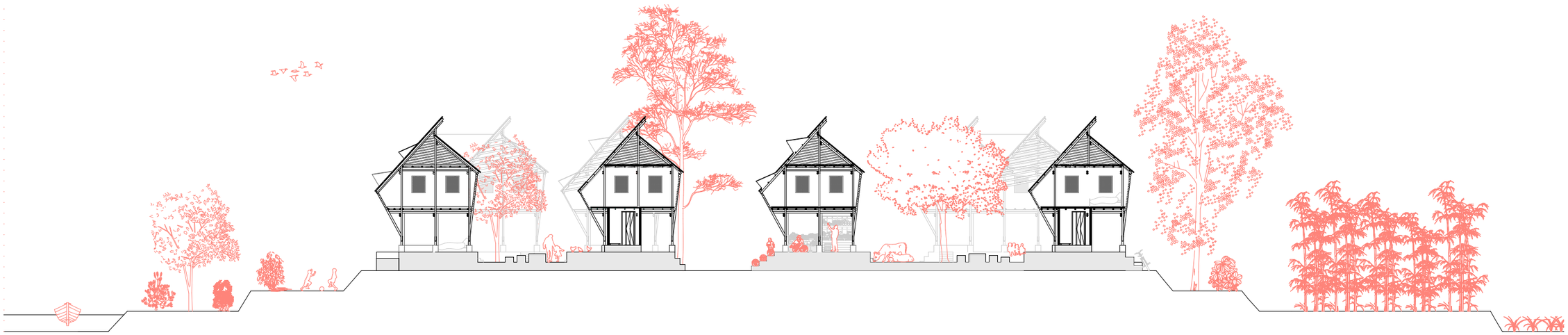
HIERARCHY OF SPACES

VILLAGE STRATEGY

HIERARCHY OF SPACES

VILLAGE STRATEGY

VILLAGE PLAN



VILLAGE STRATEGY

VILLAGE SECTION

VILLAGE STRATEGY

MAIN ROAD

VILLAGE STRATEGY

INFORMAL SECONDARY STREETS

PLOT SIZE
11.329 m²

RESIDENTS
600

GSI
0,372

FSI
0,374

SPACE
5,2 m² per person

PLOT SIZE
11.329 m²

RESIDENTS
600

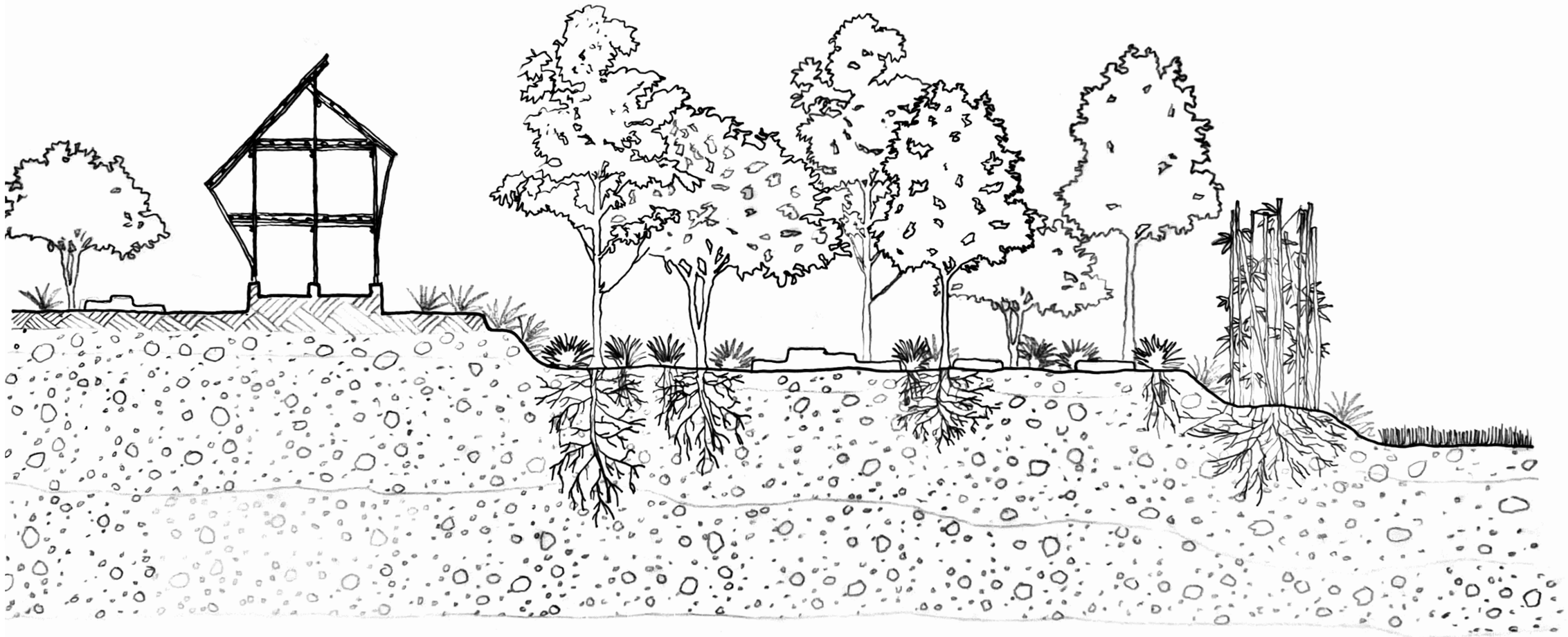
GSI
0,655

FSI-start
0,89

FSI-future
1,08

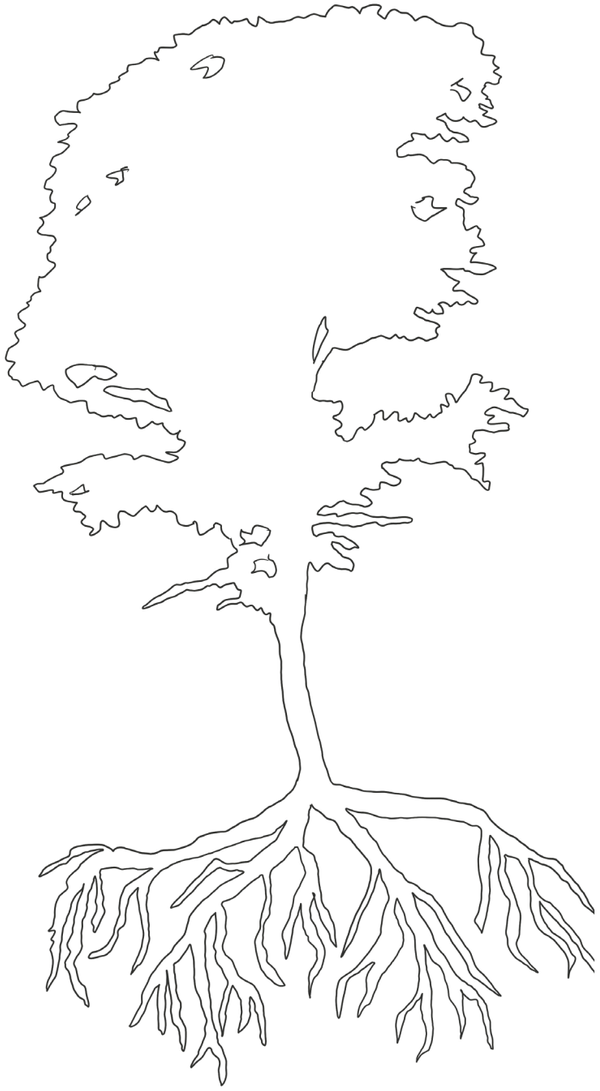
SPACE
10 m² per person

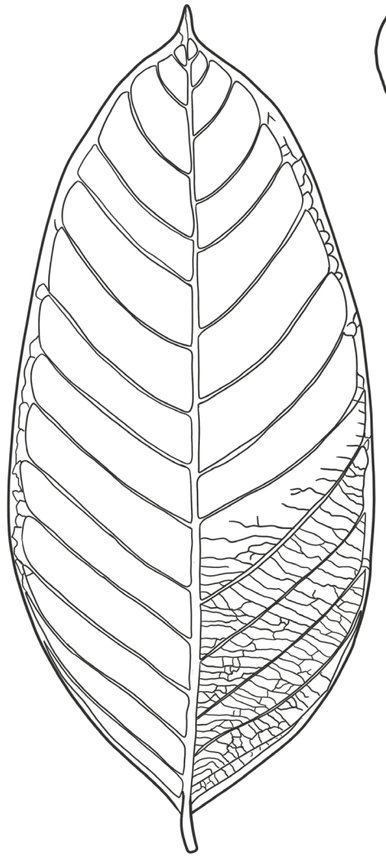
LANDSCAPE STRATEGY

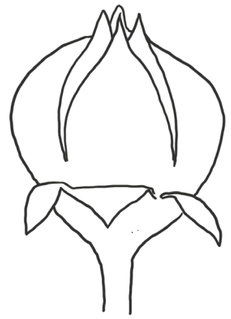


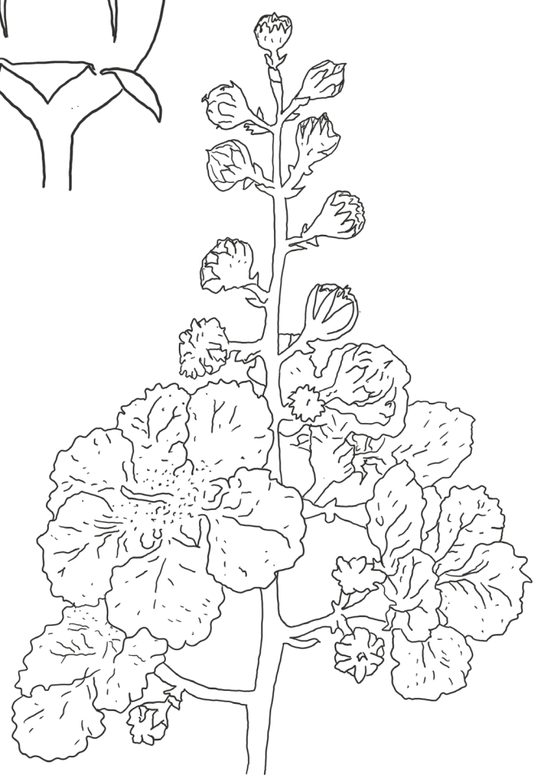
LANDSCAPE STRATEGY

SOFT EMBANKMENT

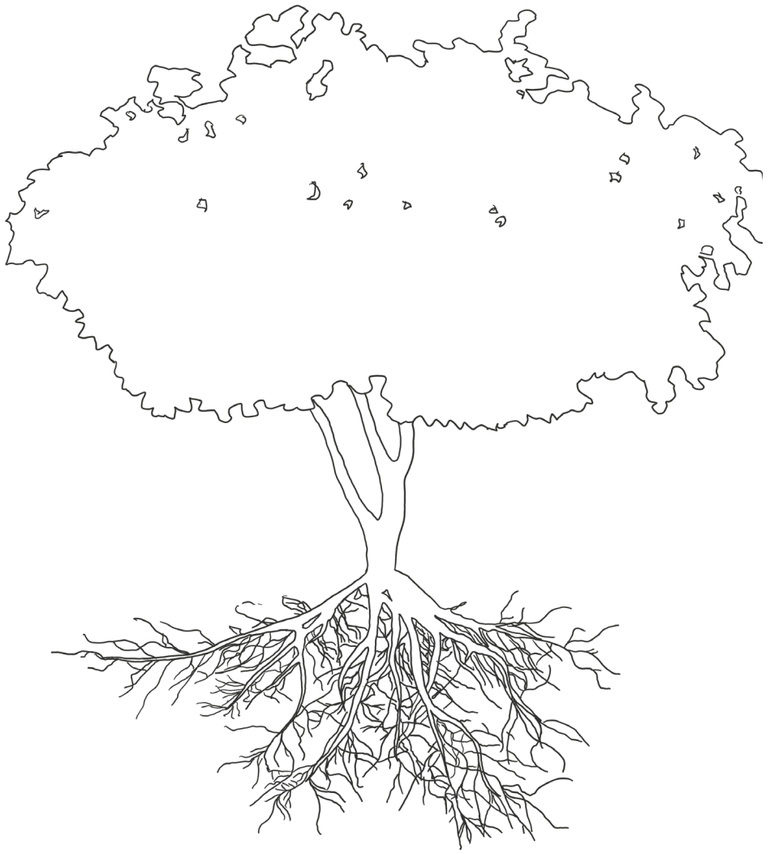






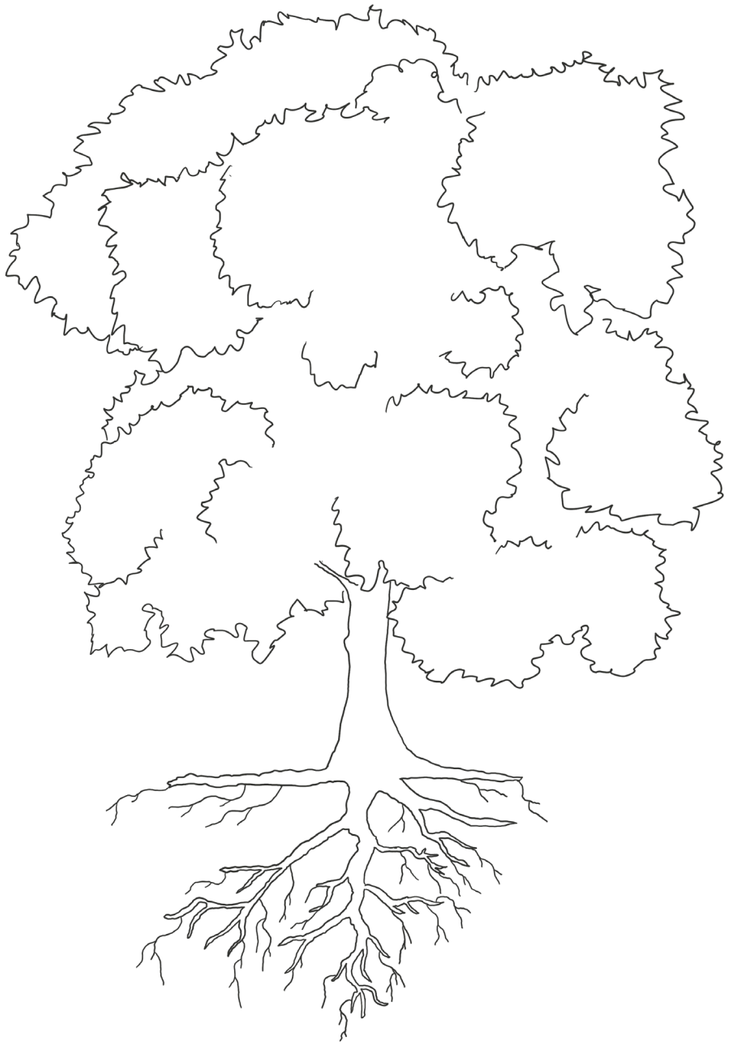


VEGETATION - INDIAN OAK

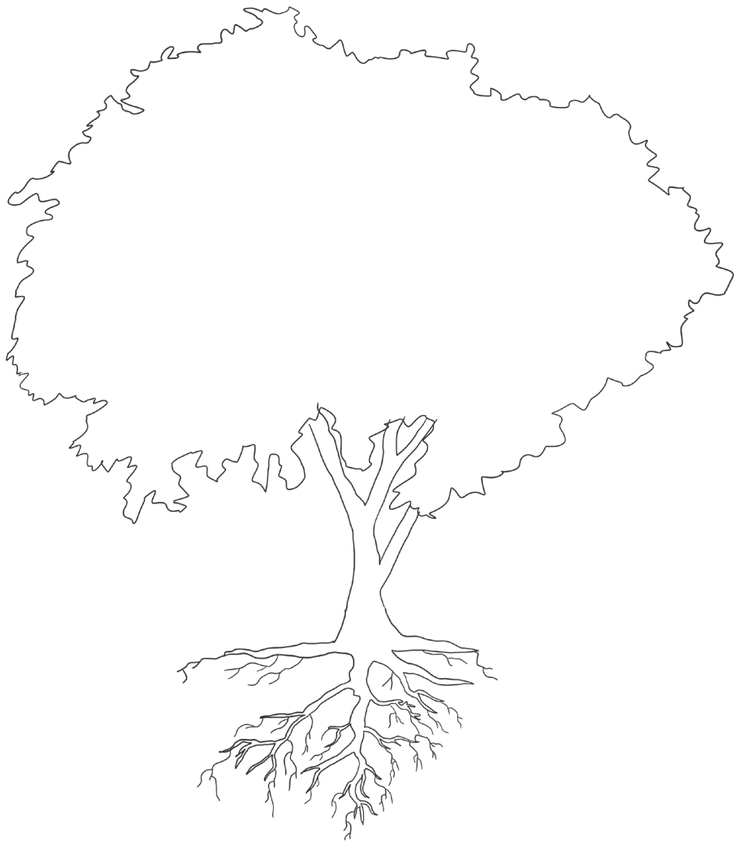


LANDSCAPE STRATEGY

VEGETATION - PONGAMIA PINNATTA



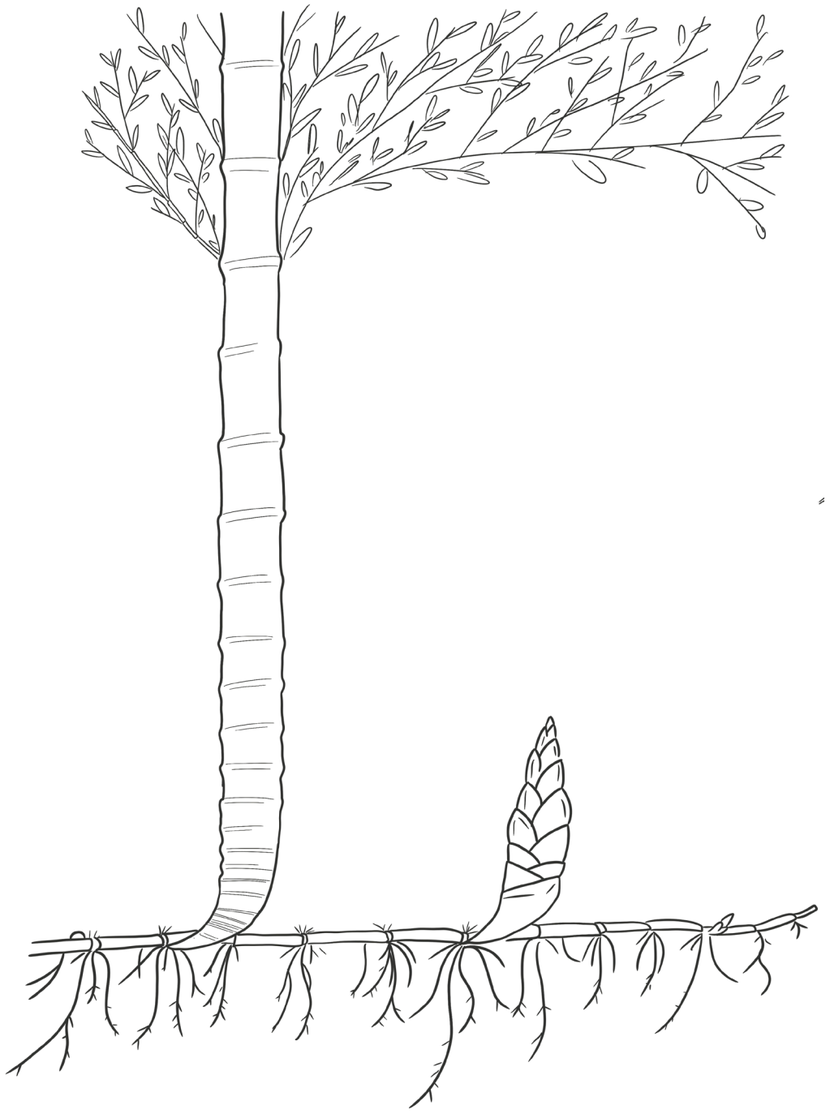
VEGETATION - INDIAN BLACKBERRY



VEGETATION - MANGO TREE

LANDSCAPE STRATEGY

VEGETATION - VETIVER GRASS

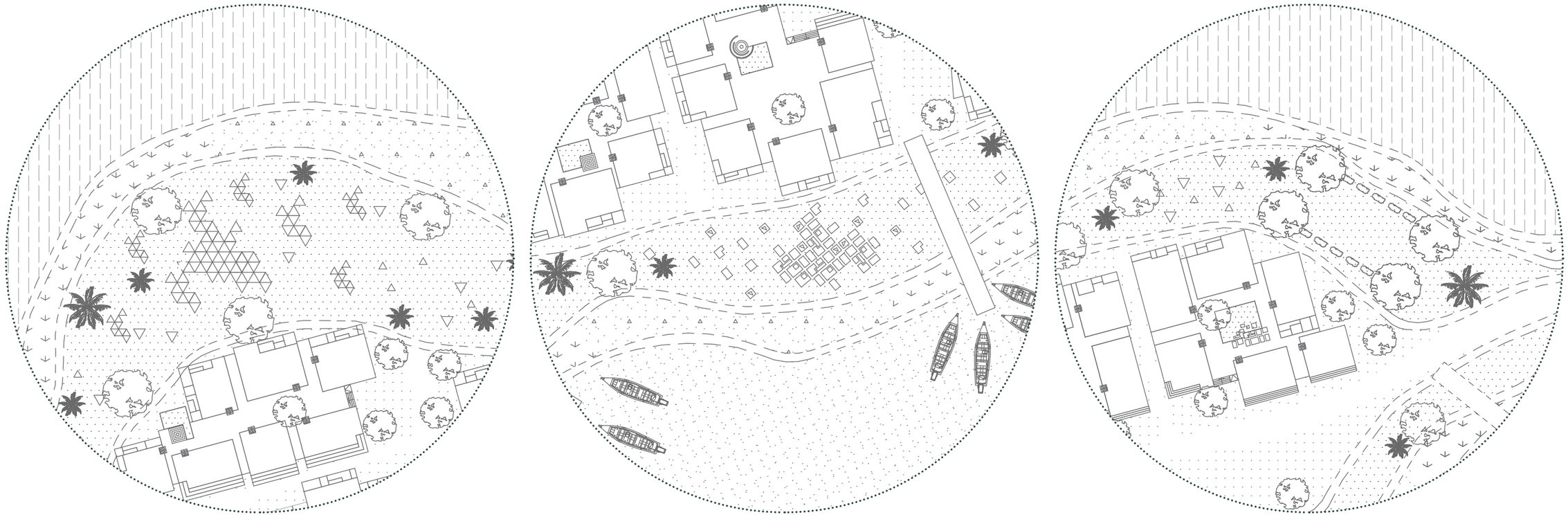


LANDSCAPE STRATEGY

VEGETATION - BAMBOO

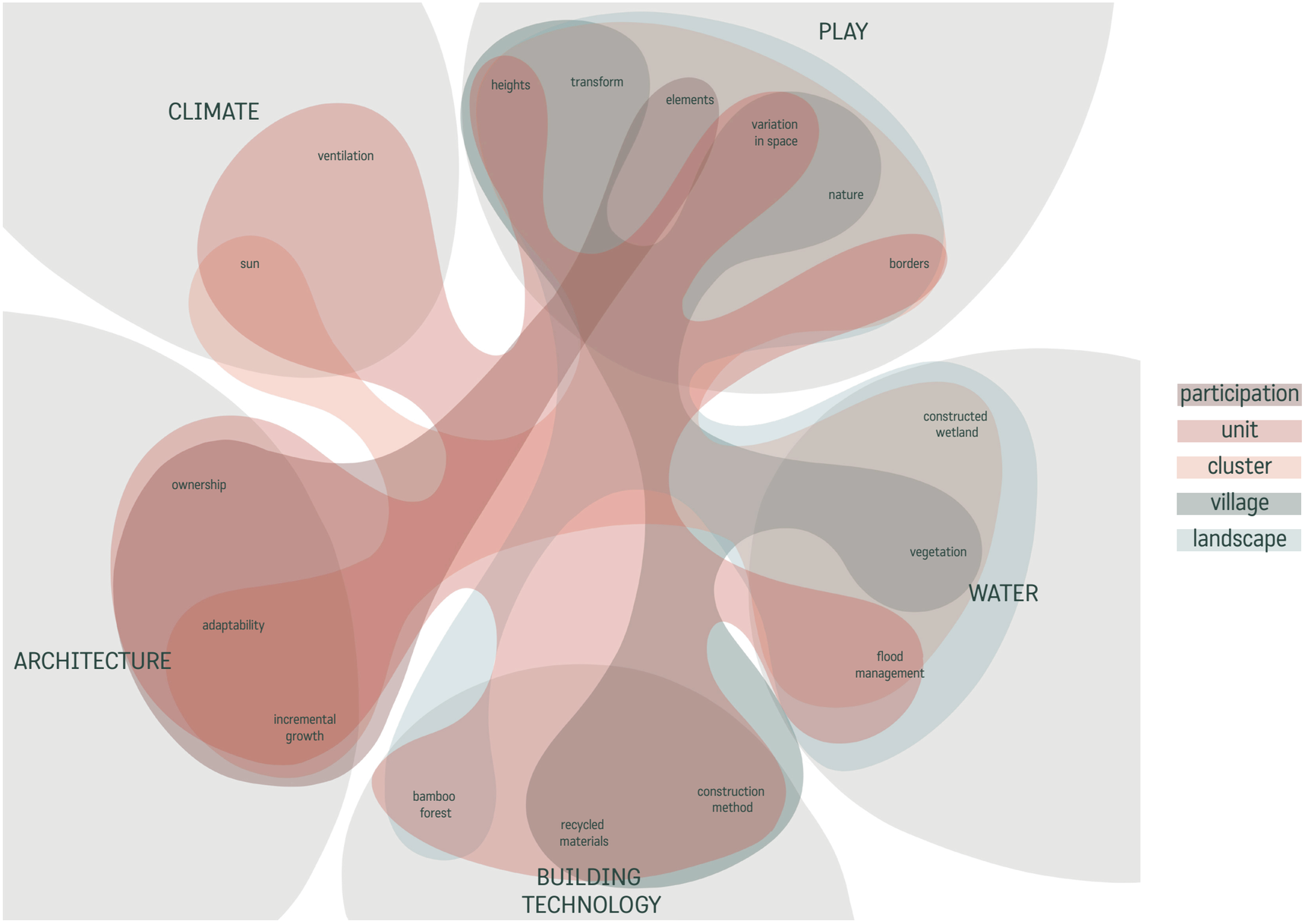
LANDSCAPE STRATEGY

LANDSCAPE PLAN

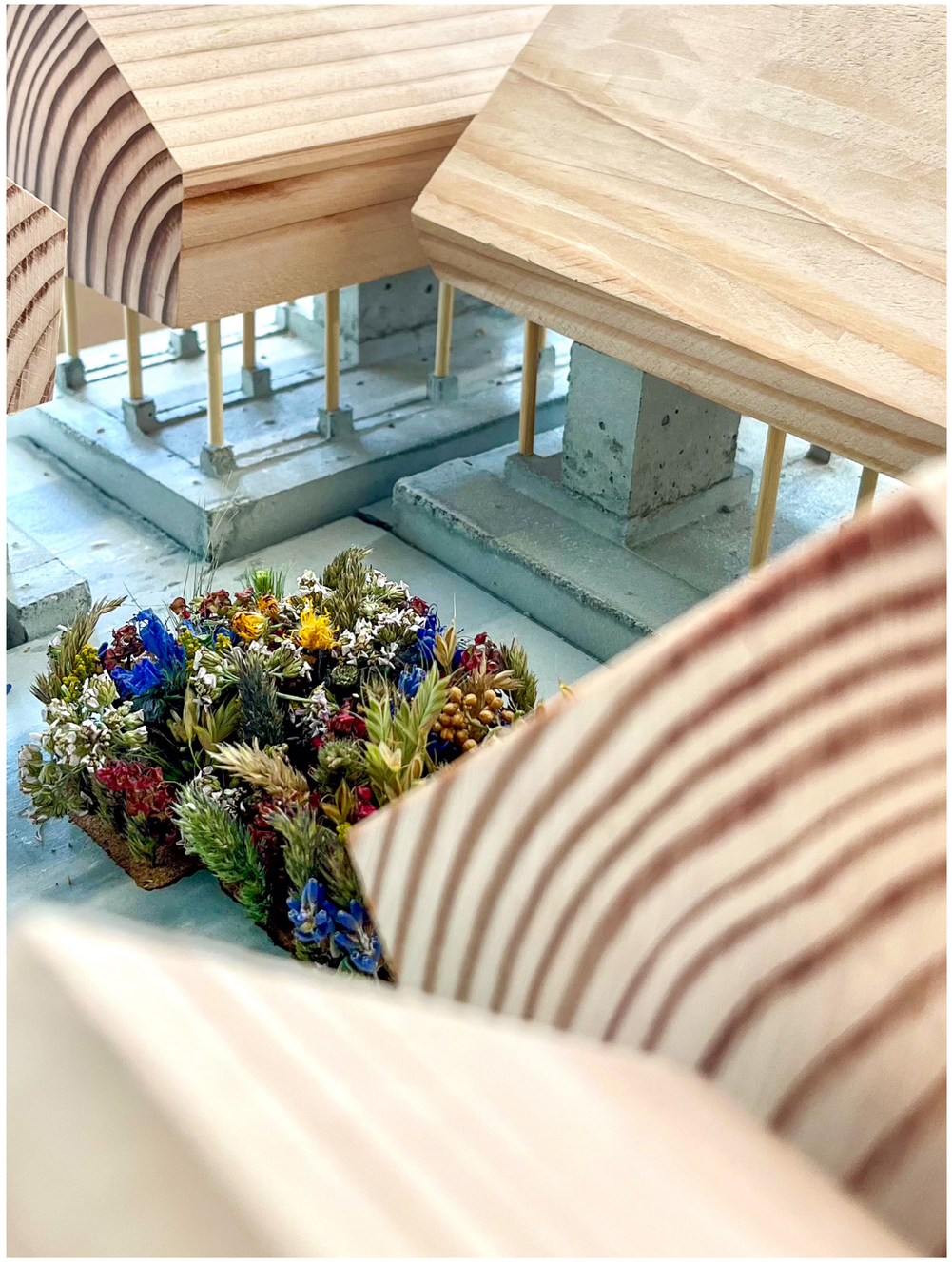


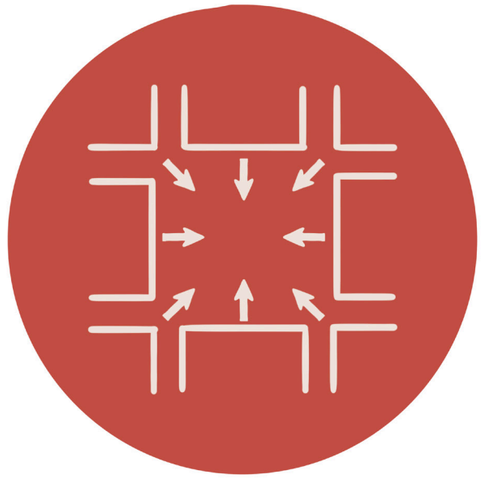
LANDSCAPE STRATEGY

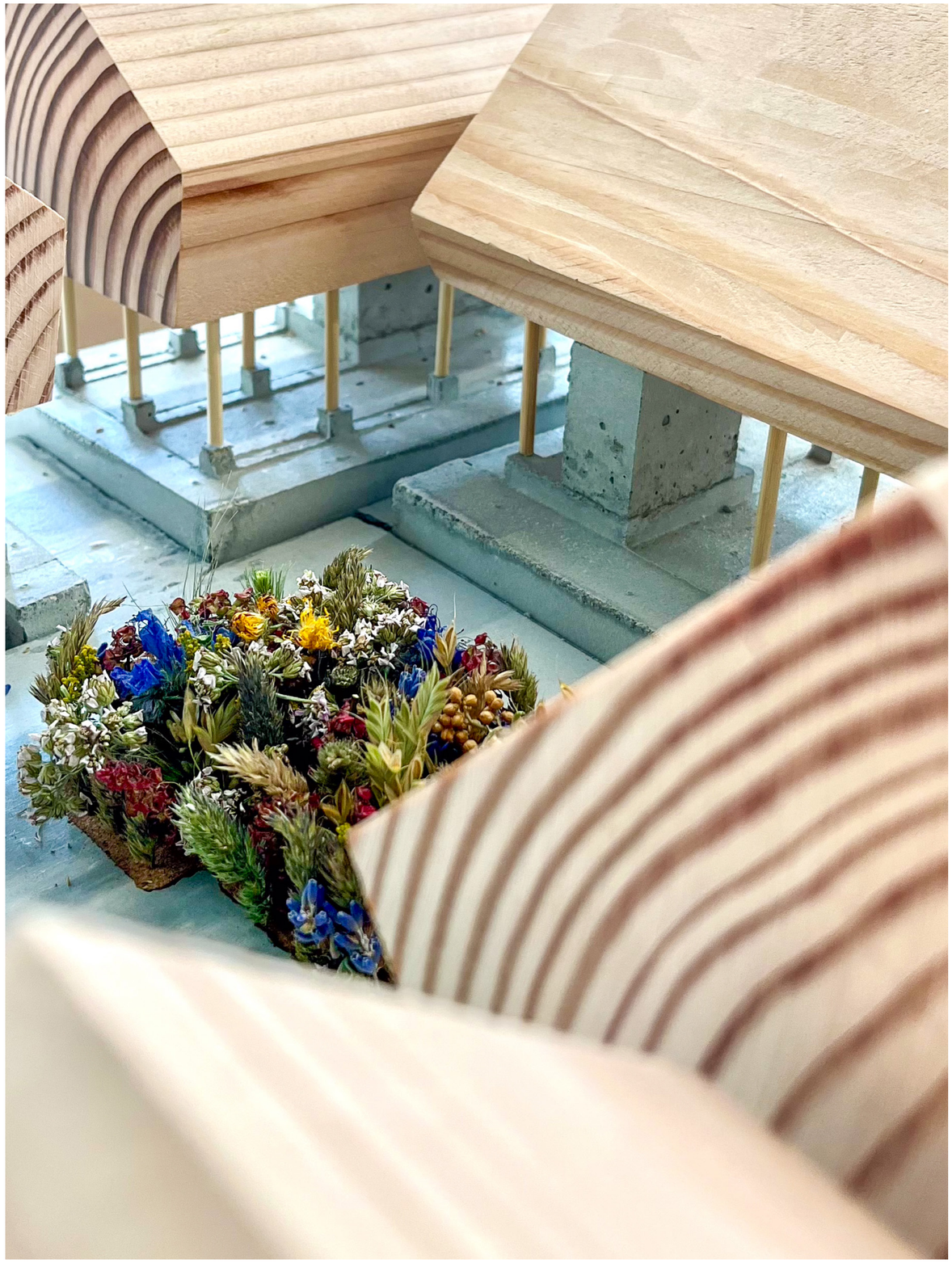
PLAY



SYSTEM APPROACH







BEYOND THE RIPPLE

SASCHA ALBADA JELGERSMA

A holistic approach to flood-resilient, trauma-healing, and low-cost housing design