

RISING GROUNDS

'BUILDING THE FOUNDATIONS FOR THRIVING
COMMUNITIES'

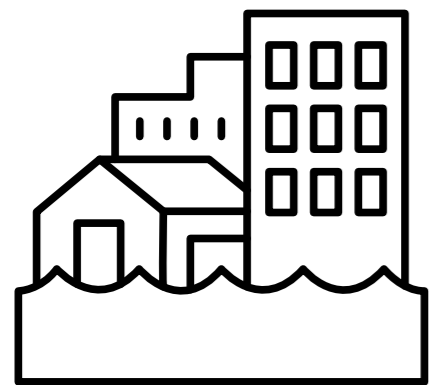


GLOBAL HOUSING
TIM SCHURMAN
5164958
03-07-2025

“WHAT ARCHITECTURAL SOLUTIONS CAN BE
DESIGNED TO MITIGATE THE IMPACTS OF OVERSPILL
FLOODING IN PRE-URBAN AREAS OF SYLHET, TO
ENHANCE RESILIENCE AND SELF-RELIANCE FOR LOCAL
COMMUNITIES?”

RESEARCH

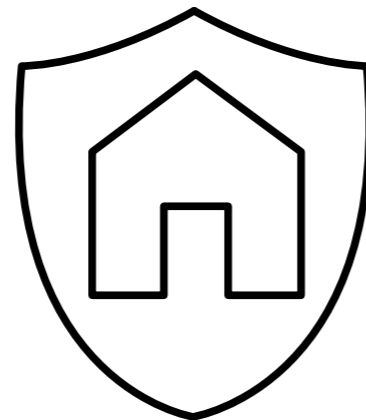
LITERATURE VIEW



CLIMATE-INDUCED URBANIZATION

“**Floods** are a major driver of urban migration in Bangladesh, gradually eroding the viability of **pre-urban village settlements**.”

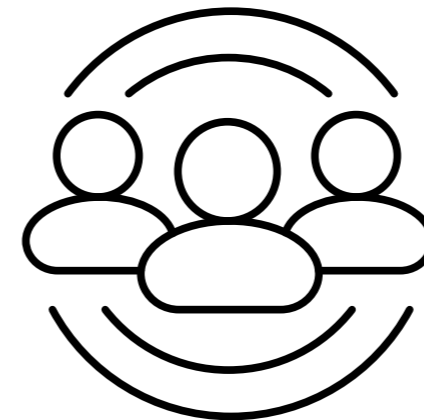
Karim & Alam, 2022



RESILIENT HOUSING

“**Existing shelter typologies** are **not designed** to evolve with **rising flood levels**, leaving communities perpetually at risk.”

Jahan, 2021



COMMUNITY AGENCY & ADAPTATION

“**Resilience in pre-urban settlements** must be rooted in **participatory, affordable**, and **culturally embedded** design frameworks.”

Roy & Mahmud, 2018

“**URBANIZATION** AFFECTS THE LOCAL PEOPLE NEGATIVELY. IT TRANSFORMED THE LAND USE PATTERNS OF THE LOCALITY. WE USED TO PRACTICE **AGRICULTURE** UP TILL THE BEGINNING OF 21ST AND IT **WAS OUR GENERATIONAL PRACTICE**.” “BETWEEN 1960 AND 2005, BUILT-UP AREAS IN GREATER **DHAKA INCREASED** APPROXIMATELY **15,924 HA**, WHILE **AGRICULTURAL LAND DECREASED 7,614 HA**.” “AUGUST 2024 FLOODS CAUSED **DAMAGES** ESTIMATED AT **TK144 BILLION (US\$1.2 BILLION)**, SUBMERGING 296,852 HECTARES OF CROPS.” “IN 2024, OVER **5.8 MILLION PEOPLE** WERE AFFECTED BY **FLOODS** IN BANGLADESH, WITH MORE THAN **502,500 DISPLACED** INTO 3,403 EVACUATION SHELTERS.” “IN 2023, FLOODS CAUSED **9.8 MILLION DISPLACEMENTS** WORLDWIDE, ACCOUNTING FOR NEARLY **HALF OF ALL DISASTER-INDUCED MOVEMENTS**.” “IN AN AVERAGE YEAR, **ABOUT 25% OF BANGLADESH IS INUNDATED DURING THE MONSOON**; SEVERE FLOODS CAN COVER UP TO **TWO-THIRDS OF THE COUNTRY**.” “**URBANIZATION** AFFECTS THE LOCAL PEOPLE NEGATIVELY. IT TRANSFORMED THE LAND USE PATTERNS OF THE LOCALITY. WE USED TO PRACTICE **AGRICULTURE** UP TILL THE BEGINNING OF 21ST AND IT **WAS OUR GENERATIONAL PRACTICE**.” “IN 2020, NEARLY **4 MILLION BANGLADESHIS** WERE **DISPLACED** BY EXTREME WEATHER, WITH MOST **SING REFUGE IN URBAN CENTERS** LIKE DHAKA. IN 2023, FLOODS CAUSED **9.8 MILLION DISPLACEMENTS** WORLDWIDE, ACCOUNTING FOR NEARLY **HALF OF ALL DISASTER-INDUCED MOVEMENTS**.” “BETWEEN 1960 AND 2005, BUILT-UP AREAS IN GREATER **DHAKA INCREASED** APPROXIMATELY **15,924 HA**, WHILE **AGRICULTURAL LAND DECREASED 7,614 HA**.”

RESEARCH

GOALS & AIMS



EXPANDING CITY



FLOOD PROOF



IDENTITY

RESEARCH

REFERENCES

"THE SEMISUBURBANIZED AND SUBURBANIZED MESSSES WE CREATE IN THIS WAY BECOME DESPISED BY THEIR OWN INHABITANTS TOMORROW. THESE THIN DISPERSIONS LACK ANY REASONABLE DEGREE OF INNATE VITALITY, STAYING POWER, OR INHERENT USEFULNESS AS SETTLEMENTS."



JANE JACOBS



RESEARCH

REFERENCES

"SEVERE WEATHER ATTRIBUTABLE TO CLIMATE CHANGE, ESPECIALLY FLOODS, OFTEN WREAK THE GREATEST DAMAGE IN THE POORER COUNTRIES."



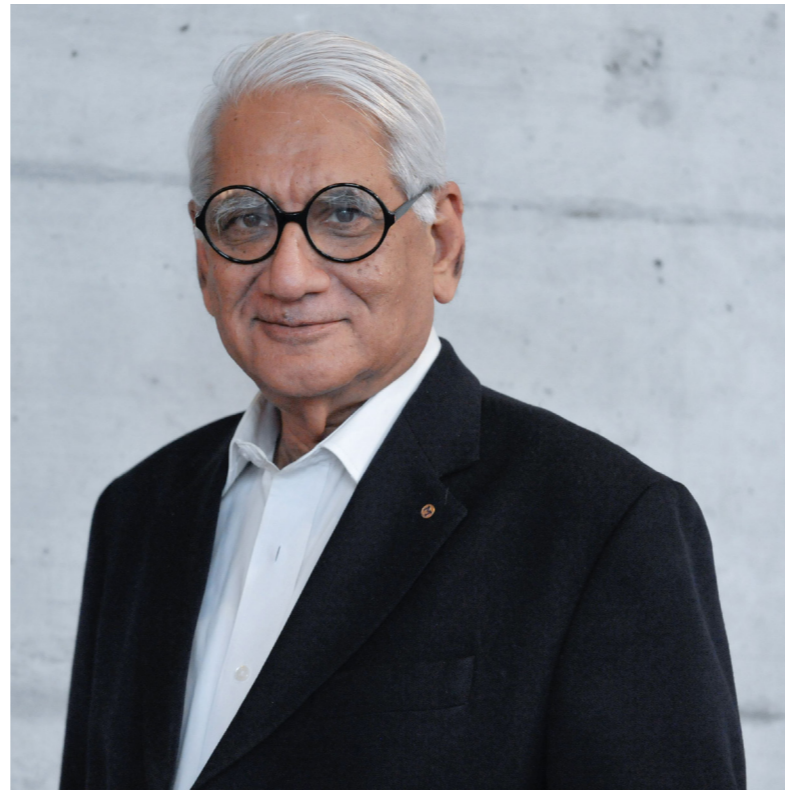
ANNA HERINGER



RESEARCH

REFERENCES

"SHELTER IS NOT JUST A ROOF OVER ONE'S HEAD—IT IS A PLACE WHERE THE SPIRIT IS NURTURED, WHERE CULTURE IS EXPRESSED, AND WHERE THE IDENTITY OF A COMMUNITY CAN BE SAFEGUARDED."



CHARLES CORREA



RESEARCH

CASE STUDIES



BANGLA BATON HOUSES – SYLHET, BANGLADESH

TIMBER-FRAMED CONSTRUCTION

UTILIZING LOCAL MATERIALS

COURTYARD-CENTRIC SPATIAL ORGANIZATION

FOSTERS COMMUNAL INTERACTION AND SUPPORTS
DAILY ACTIVITIES AT GROUND LEVEL

GABLE-END DETAILING WITH EVOLVED MATERIAL LAYERING

ORIGINALLY WOVEN BAMBOO PANELS LATER
REINFORCED WITH CLAY PLASTER

ELEVATED PLINTHS AND EXTENDED EAVES

PROVIDE PROTECTION AGAINST MONSOON RAINS
AND FACILITATE PASSIVE COOLING

INTEGRATION OF SEMI-OUTDOOR VERANDAS

SERVES AS TRANSITIONAL SPACES, BLENDING
INDOOR COMFORT WITH OUTDOOR ENGAGEMENT



RESEARCH

CASE STUDIES - SOE KER TIE HOUSE



SOE KER TIE HOUSE – NOH BO, THAILAND

STILTED FOUNDATION SYSTEM

THE STRUCTURE ABOVE FLOOD LEVELS

COURTYARD-ORIENTED SPATIAL ORGANIZATION

SUPPORTS COMMUNAL INTERACTION, DAILY RITUALS, AND CONTINUITY

PROGRAMMATIC FLOOD HIERARCHY

PLACES ESSENTIAL FUNCTIONS LIKE SLEEPING ON UPPER LEVELS

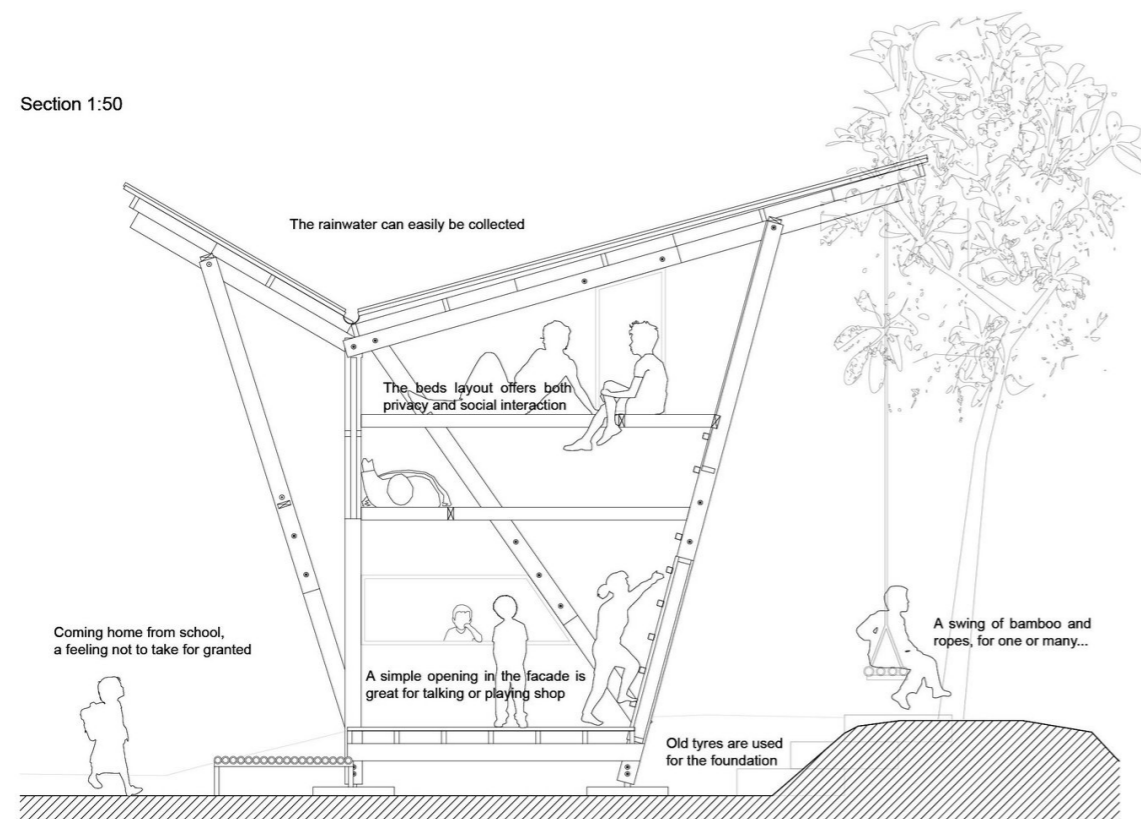
OPEN PLINTH AND POROUS FAÇADE

ENCOURAGE GROUND-LEVEL SOCIAL ENGAGEMENT

INCREMENTAL MODULARITY

ENABLES PHASED SPATIAL EXPANSION IN RESPONSE TO EVOLVING HOUSEHOLD

Section 1:50



TIM SCHURMAN - GLOBAL HOUSING

RESEARCH

CASE STUDIES



BELAPUR HOUSING – NAVI MUMBAI, INDIA

CLUSTER-BASED SITE PLANNING

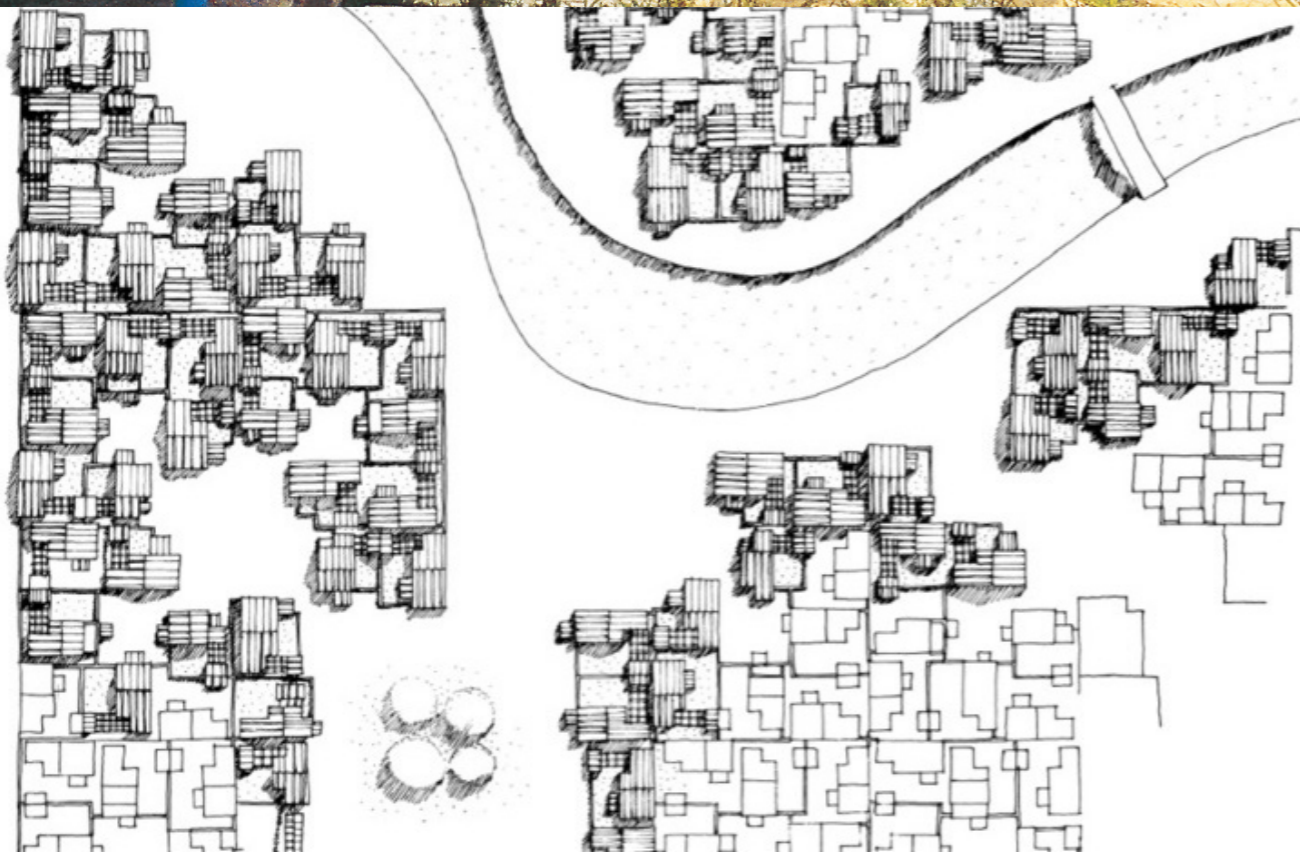
ORGANIZES DWELLINGS INTO INTIMATE GROUPS OF 6-12 UNITS, STRONG SENSE OF NEIGHBORHOOD IDENTITY

HIERARCHICAL SPATIAL STRUCTURE

LINKS PRIVATE COURTYARDS TO SEMI-PRIVATE CLUSTER SPACES

TOPOGRAPHY-RESPONSIVE LAYOUT

STEPS HOUSING UNITS ALONG GENTLE SLOPES

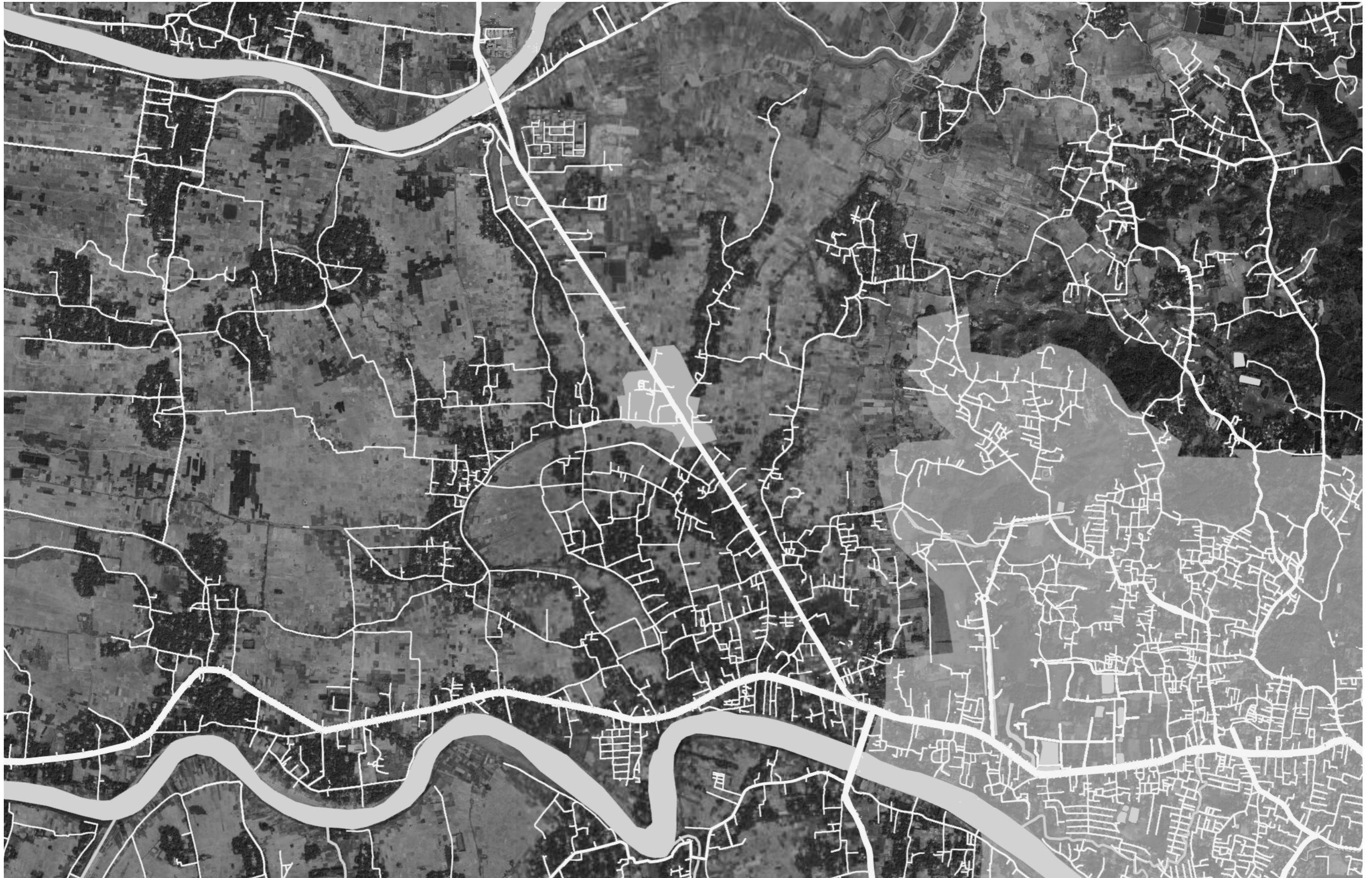


02

SITE ANALYSIS

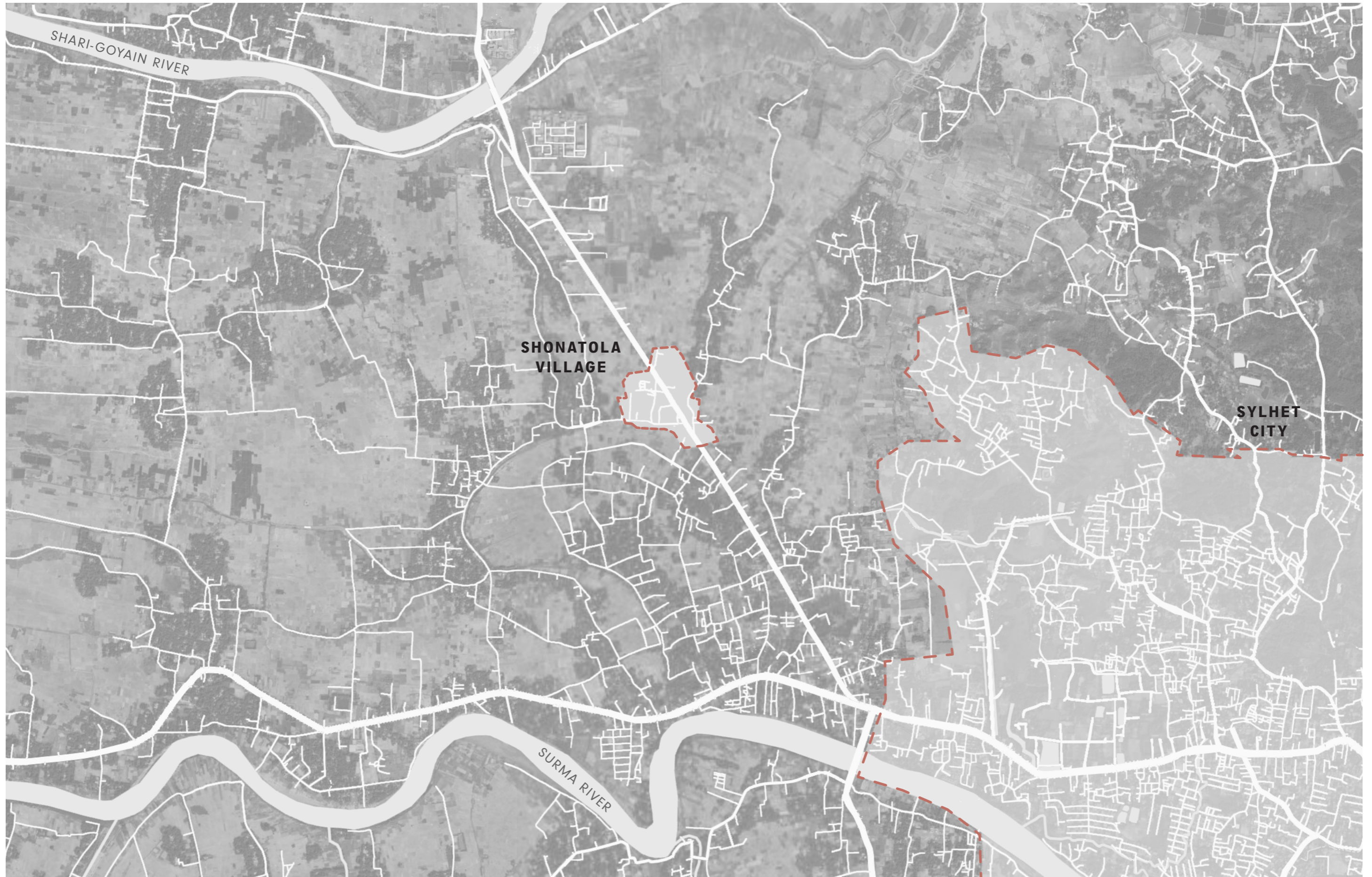
SITE ANALYSIS

SHONATOLA VILLAGE



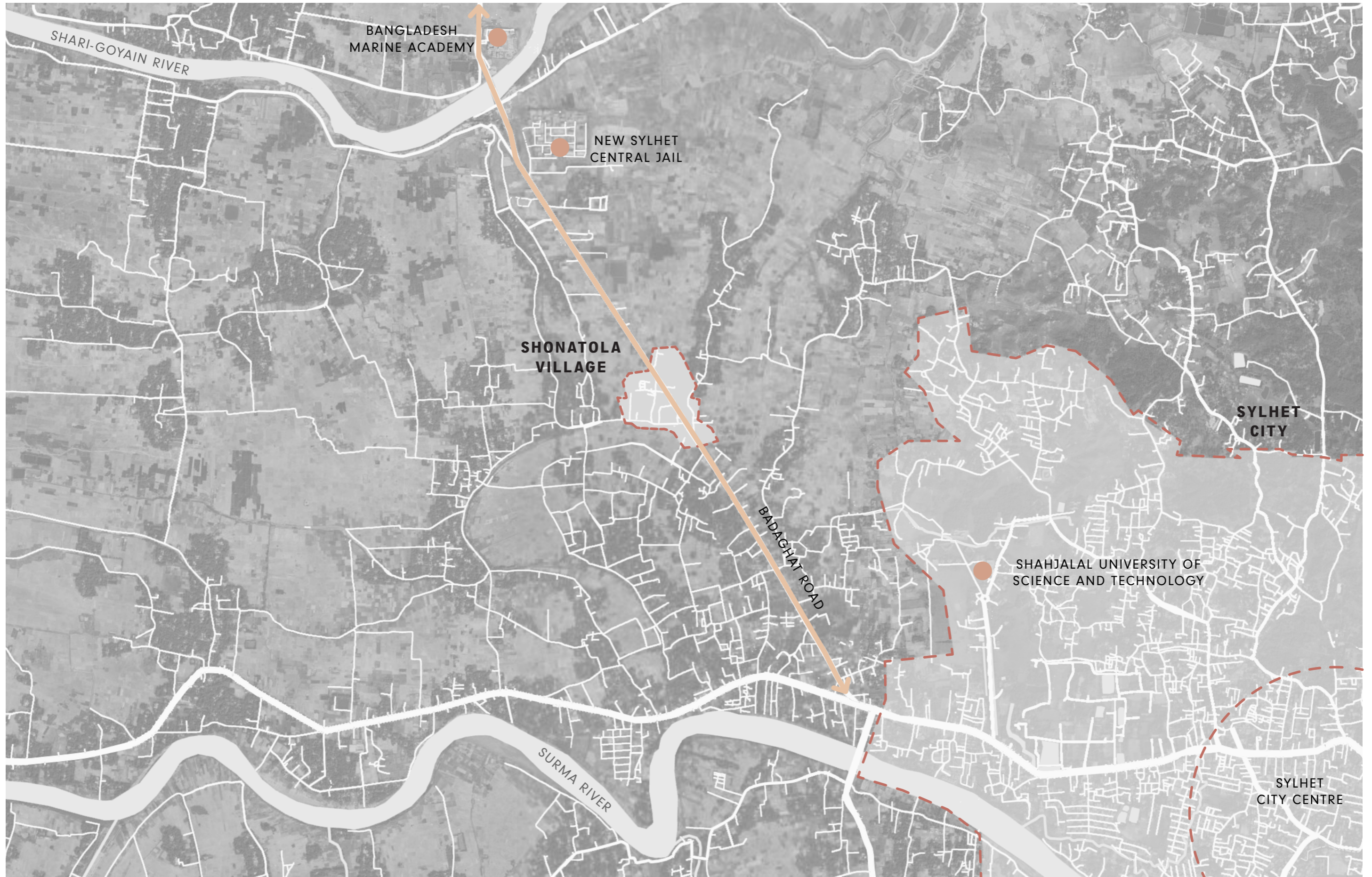
SITE ANALYSIS

SHONATOLA VILLAGE



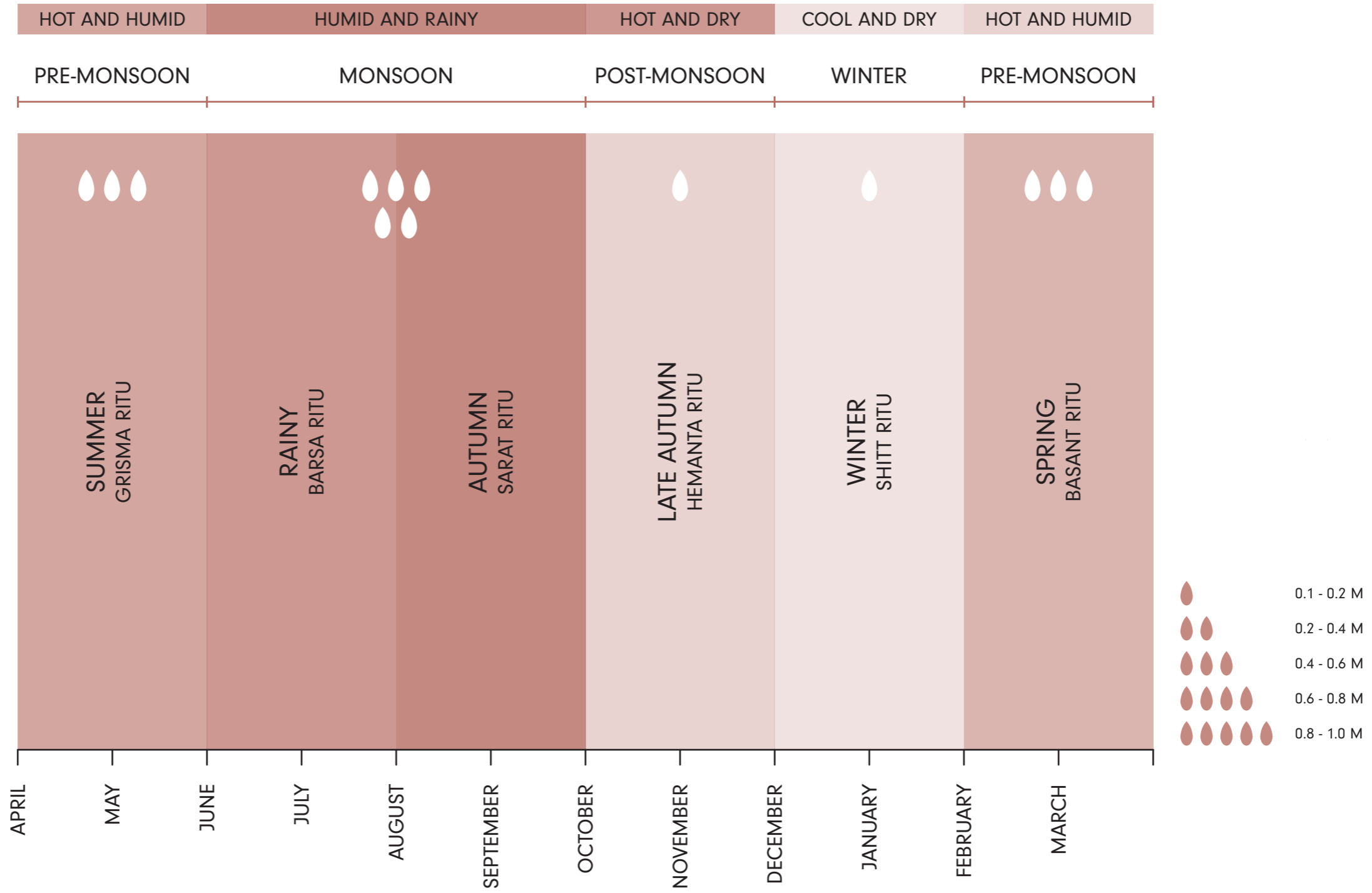
SITE ANALYSIS

SHONATOLA VILLAGE



SITE ANALYSIS

FREQUENT FLOODS - SHONATOLA



SITE ANALYSIS

CURRENT CONDITION

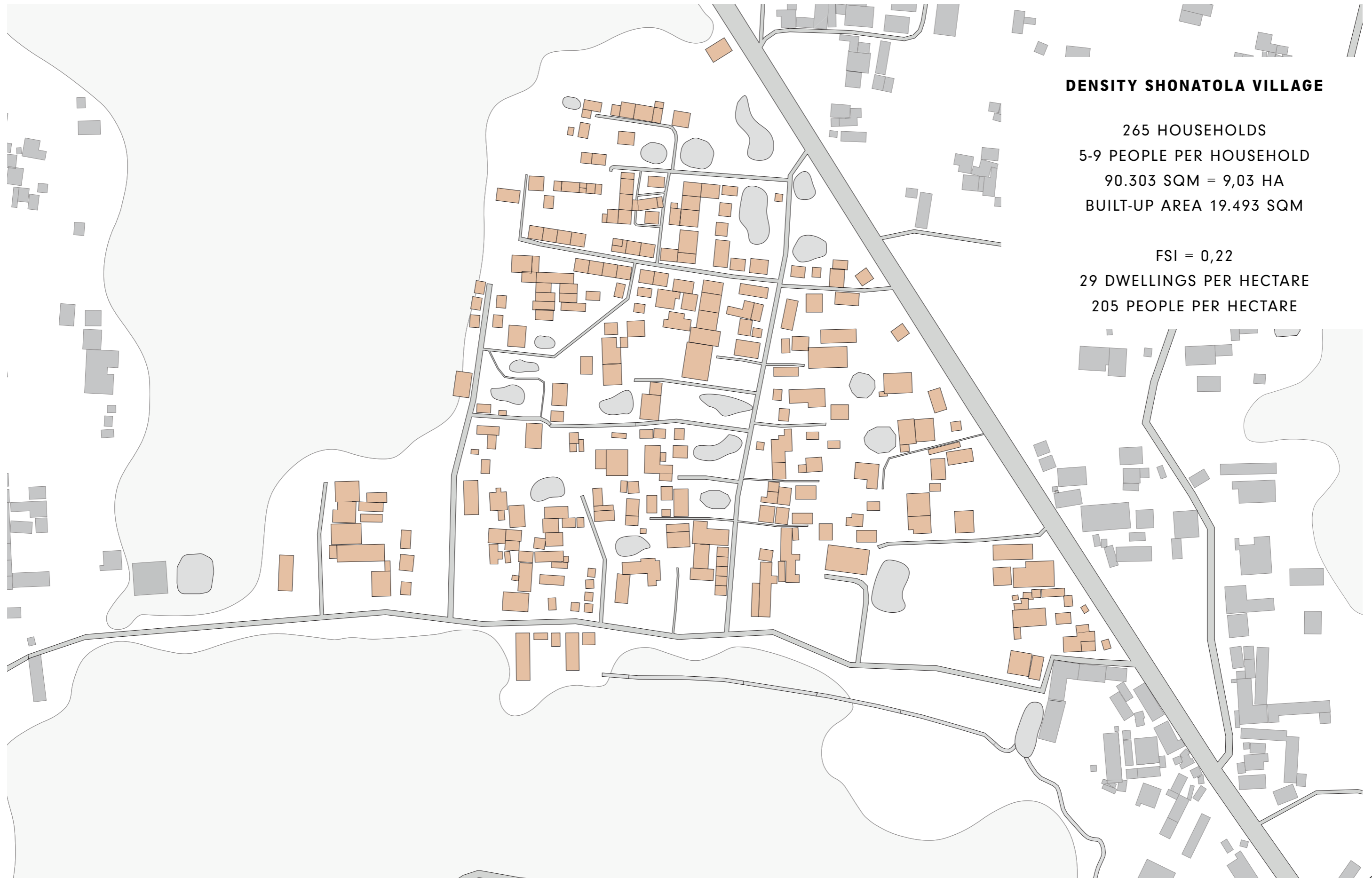


SCALE 1:2000



SITE ANALYSIS

CURRENT CONDITION



DENSITY SHONATOLA VILLAGE

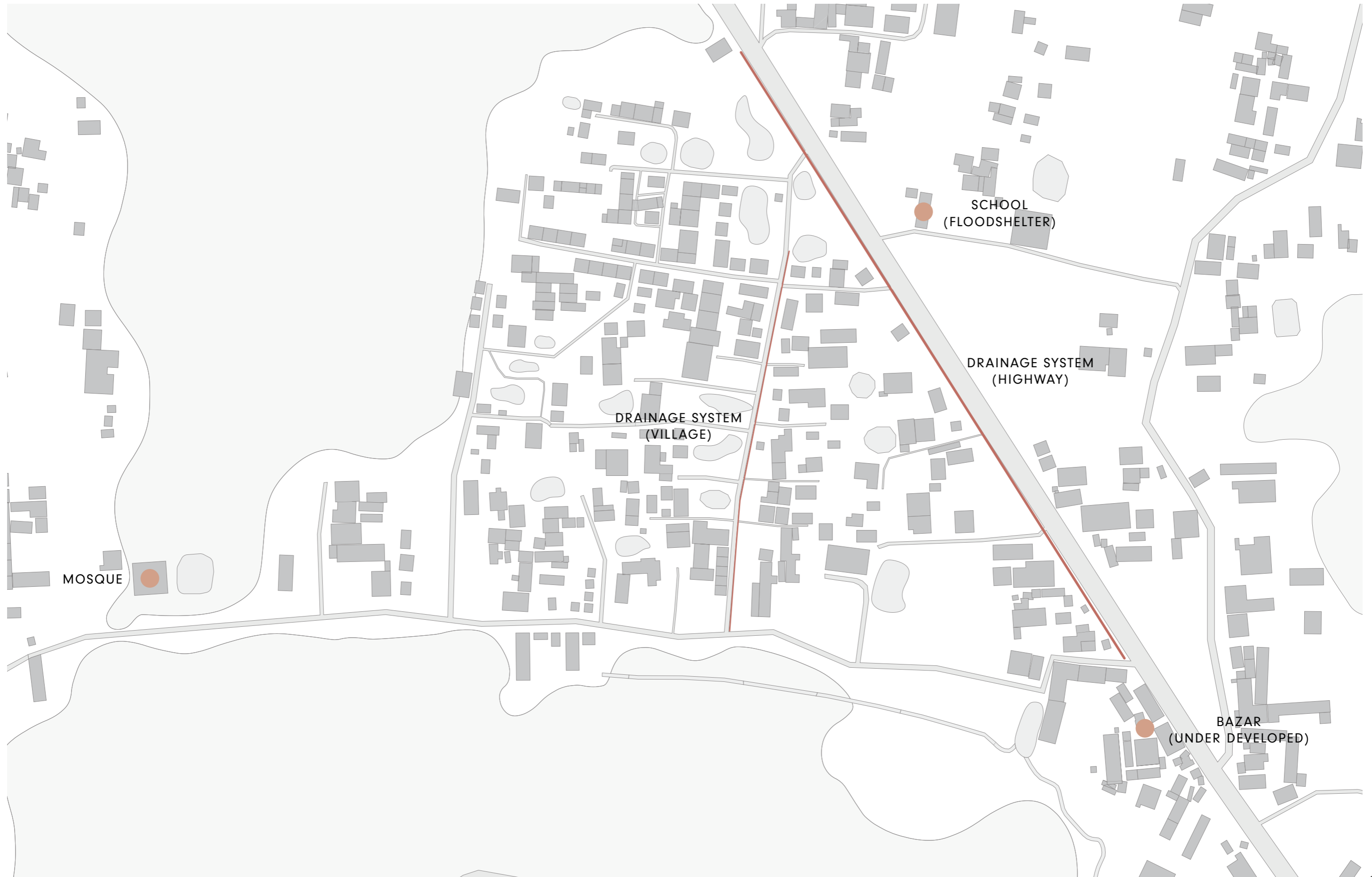
265 HOUSEHOLDS
5-9 PEOPLE PER HOUSEHOLD
90.303 SQM = 9,03 HA
BUILT-UP AREA 19.493 SQM

FSI = 0,22
29 DWELLINGS PER HECTARE
205 PEOPLE PER HECTARE



SITE ANALYSIS

CURRENT CONDITION



SCALE 1:2000



SITE ANALYSIS

SITE IMPRESSIONS



SITE ANALYSIS

SITE IMPRESSIONS



SITE ANALYSIS

SITE IMPRESSIONS



SITE ANALYSIS

SITE IMPRESSIONS



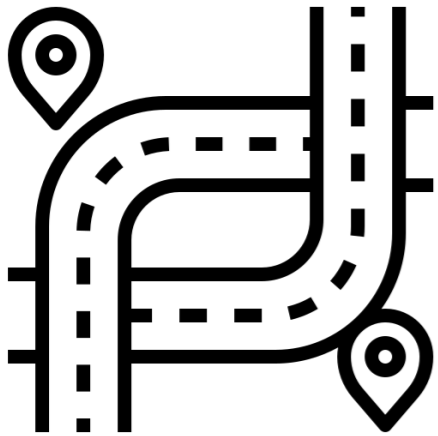
SITE ANALYSIS

SITE IMPRESSIONS

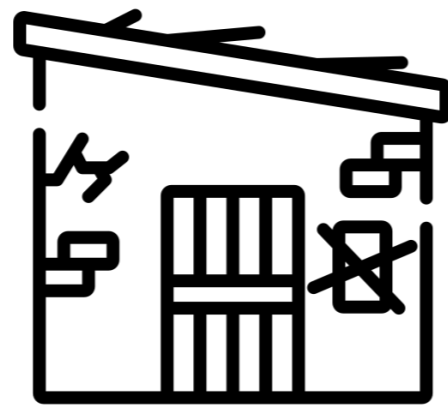


SITE ANALYSIS

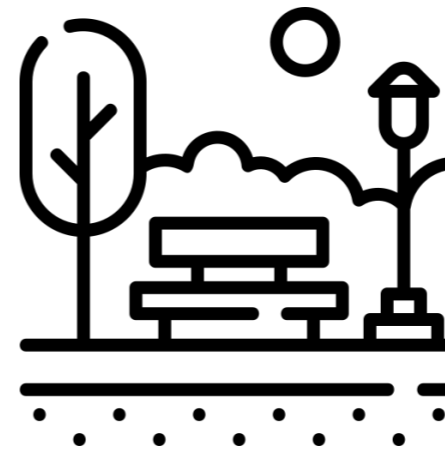
PROBLEM SHONATOLA



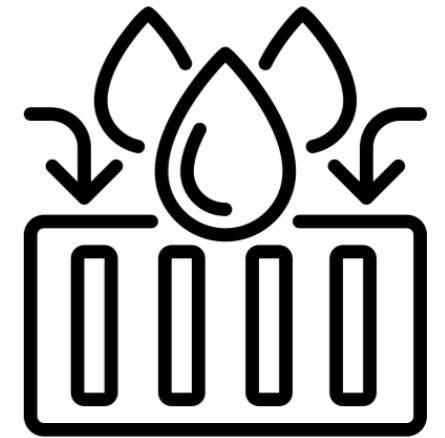
UNMAINTAINED
INFRASTRUCTURE



POOR HOUSING



LACK OF PUBLIC SPACE



UNDEVELOPED WATER
MANAGEMENT

03

DESIGN APPROACH

DESIGN APPROACH

TARGET GROUPS



SEASONAL WORKERS

INDIVIDUAL
LOW INCOME



EXISTING FAMILIES

5-8 MEMBER FAMILY
LOW TO MID INCOME



NEW RESIDENTS

1-8 MEMBER FAMILY
LOW, MID AND HIGH INCOME

DESIGN APPROACH

TARGET GROUPS



SEASONAL WORKERS

TEMPORARY AND CYCLICAL EMPLOYMENT

- AGRICULTURAL DAY LABOURERS
- MIGRANT CONSTRUCTION WORKERS
- HIRED HELP DURING PLANTING/HARVEST SEASONS

TRANSIENT HOUSEHOLDS

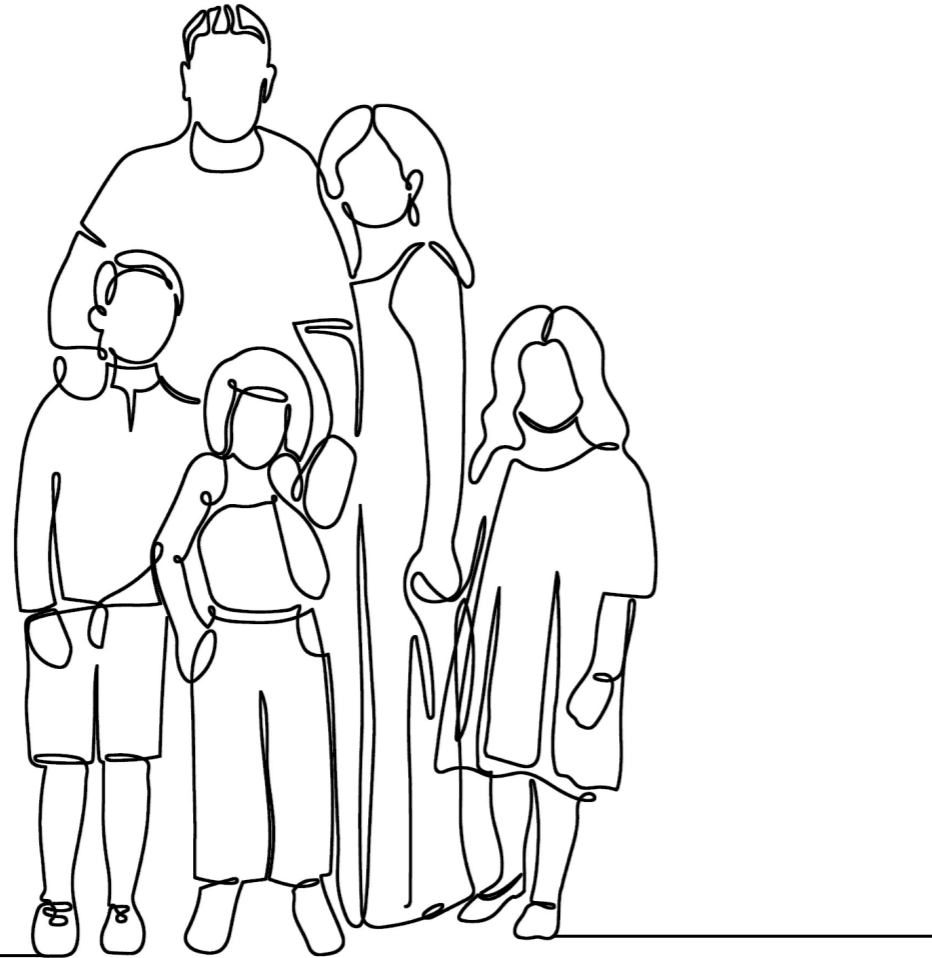
- 1 TO 8 INDIVIDUALS
- OFTEN LIVING IN SHARED OR EMPLOYER-PROVIDED SPACES

VULNERABLE LIVING CONDITIONS

- LOW ACCESS TO PERMANENT SHELTER
- NO OWNERSHIP OF LAND OR HOUSING
- LIMITED ACCESS TO WATER, SANITATION, AND ELECTRICITY

DESIGN APPROACH

TARGET GROUPS



POOR, LOCAL LIVELIHOODS

- SMALL-SCALE FARMERS
- LIVESTOCK REARERS
- LOCAL TRADES AND CRAFTS

LARGE OR EXTENDED HOUSEHOLDS

- 5 TO 8 MEMBERS
- TWO TO THREE GENERATIONS UNDER ONE ROOF

BAD LIVING CONDITIONS

- LIMITED PROTECTION FROM FLOODS AND STORMS
- LACK OF PROPER SANITATION

EXISTING FAMILIES

DESIGN APPROACH

TARGET GROUPS



NEW RESIDENTS

CITY-LINKED OCCUPATIONS

- COMMUTERS WORKING IN SYLHET CITY
- REMOTE WORKERS AND URBAN MIGRANTS
- EARLY-STAGE ENTREPRENEURS

SMALL TO MEDIUM HOUSEHOLDS

- 1 TO 8 MEMBERS
- YOUNG FAMILIES OR COUPLES SEEKING AFFORDABLE LAND

TRANSITIONAL LIVING CONDITIONS

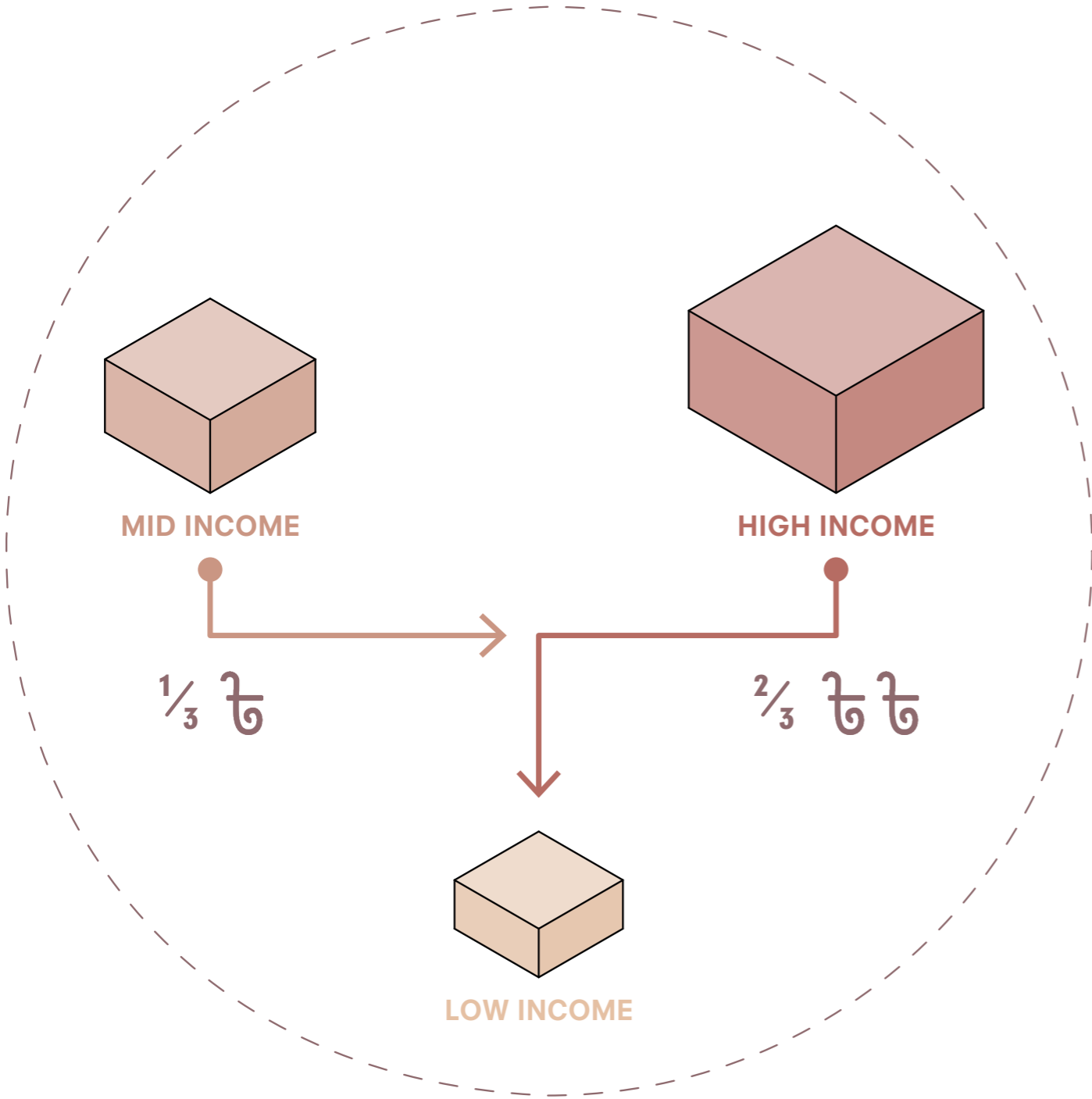
- OFTEN RENTING OR BUILDING INCREMENTALLY
- LOOKING FOR INFRASTRUCTURE ACCESS AND LONG-TERM OPPORTUNITY
- DRAWN TO AFFORDABLE LAND NEAR FUTURE GROWTH ZONES

04

VILLAGE STRATEGY

MANAGEMENT STRATEGY

CROSS-SUBSIDIZATION



HIGH INCOME

PAYS PREMIUM FOR LAND/SERVICES/HOUSING

MID INCOME

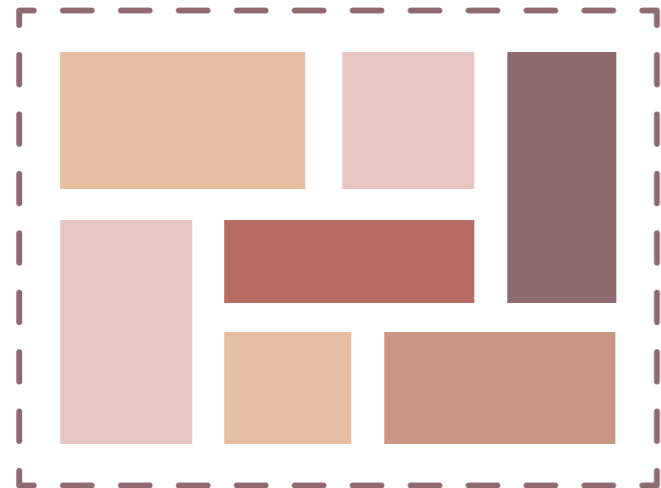
PAYS NEAR-MARKET RATES THAT PARTIALLY SUBSIDIZE LOWER TIERS

LOW INCOME

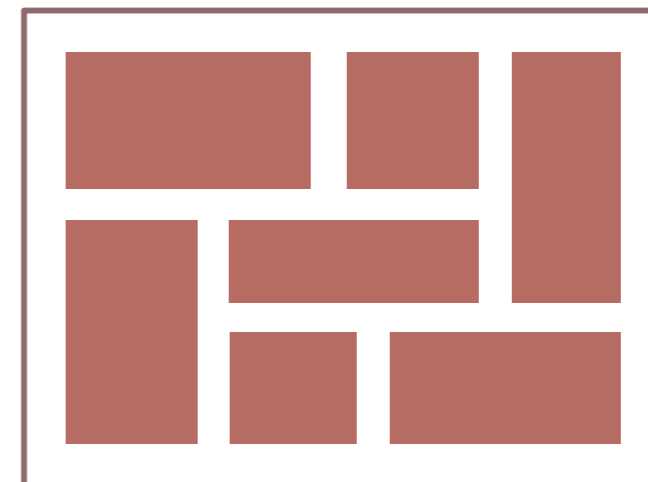
ACCESS TO AFFORDABLE HOUSING AND COMMUNITY SERVICES

MANAGEMENT STRATEGY

COMMUNITY LAND TRUST (CLT)



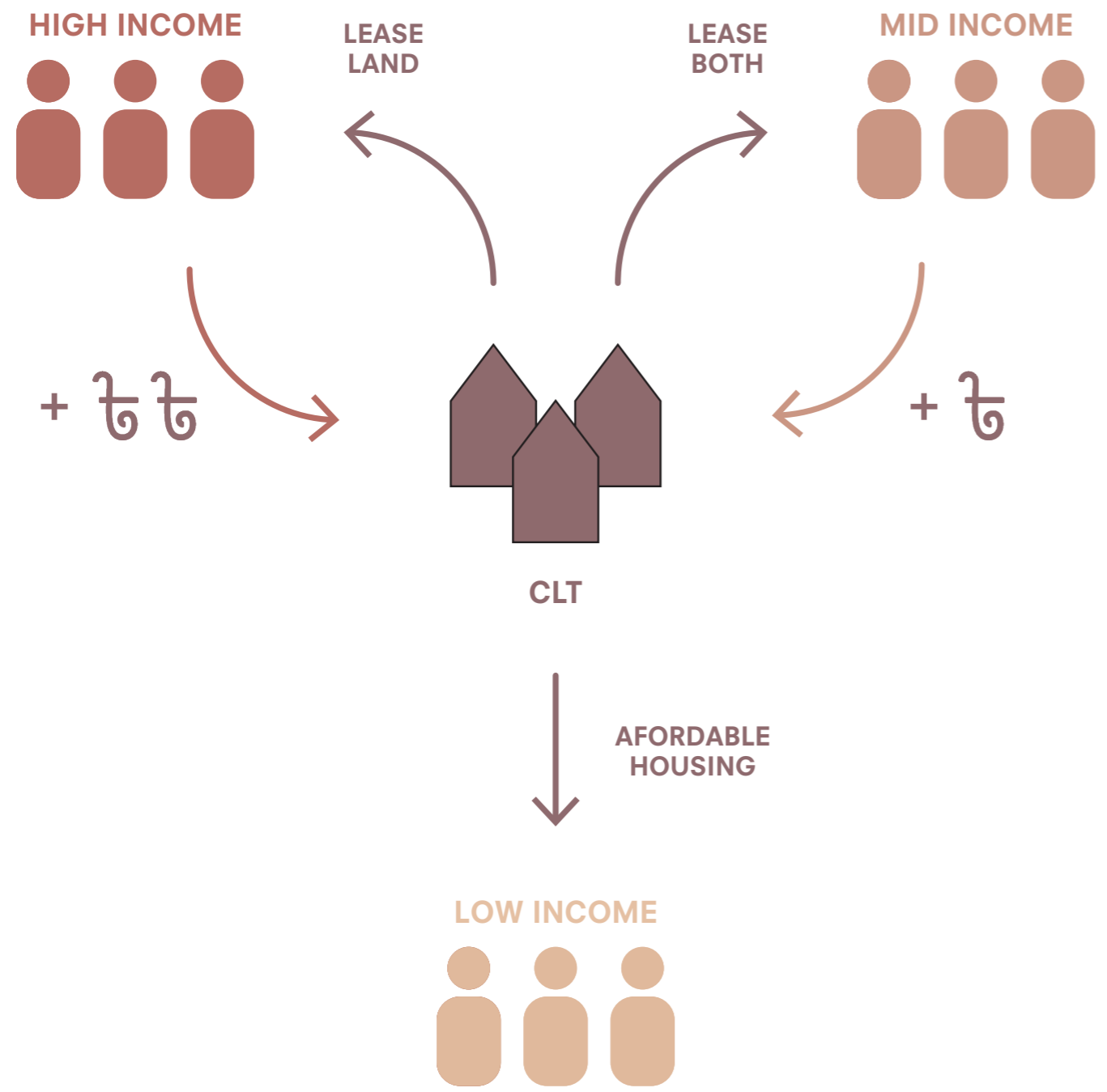
CURRENT SITUATION
MULTIPLE INDIVIDUALLY OWNED PLOTS



PROPOSAL SITUATION
1 SINGLE LANDHOLD,
VIA COMMUNITY LAND TRUST

MANAGEMENT STRATEGY

COMMUNITY LAND TRUST (CLT)



BENEFITS LOW INCOME

- IMPROVED HOUSING
- COLLECTIVE OWNERSHIP & VOTING RIGHTS
- JOB AND TRAINING OPPORTUNITIES
- ACCESS TO IMPROVED INFRASTRUCTURE
- ZERO OR SUBSIDIZED COST FOR A UNIT
- NO DISPLACEMENT

MASTER PLAN

PHASING MASTER PLAN



SCALE 1:2000



MASTER PLAN

PHASING MASTER PLAN



SCALE 1:2000



MASTER PLAN

PHASING MASTER PLAN

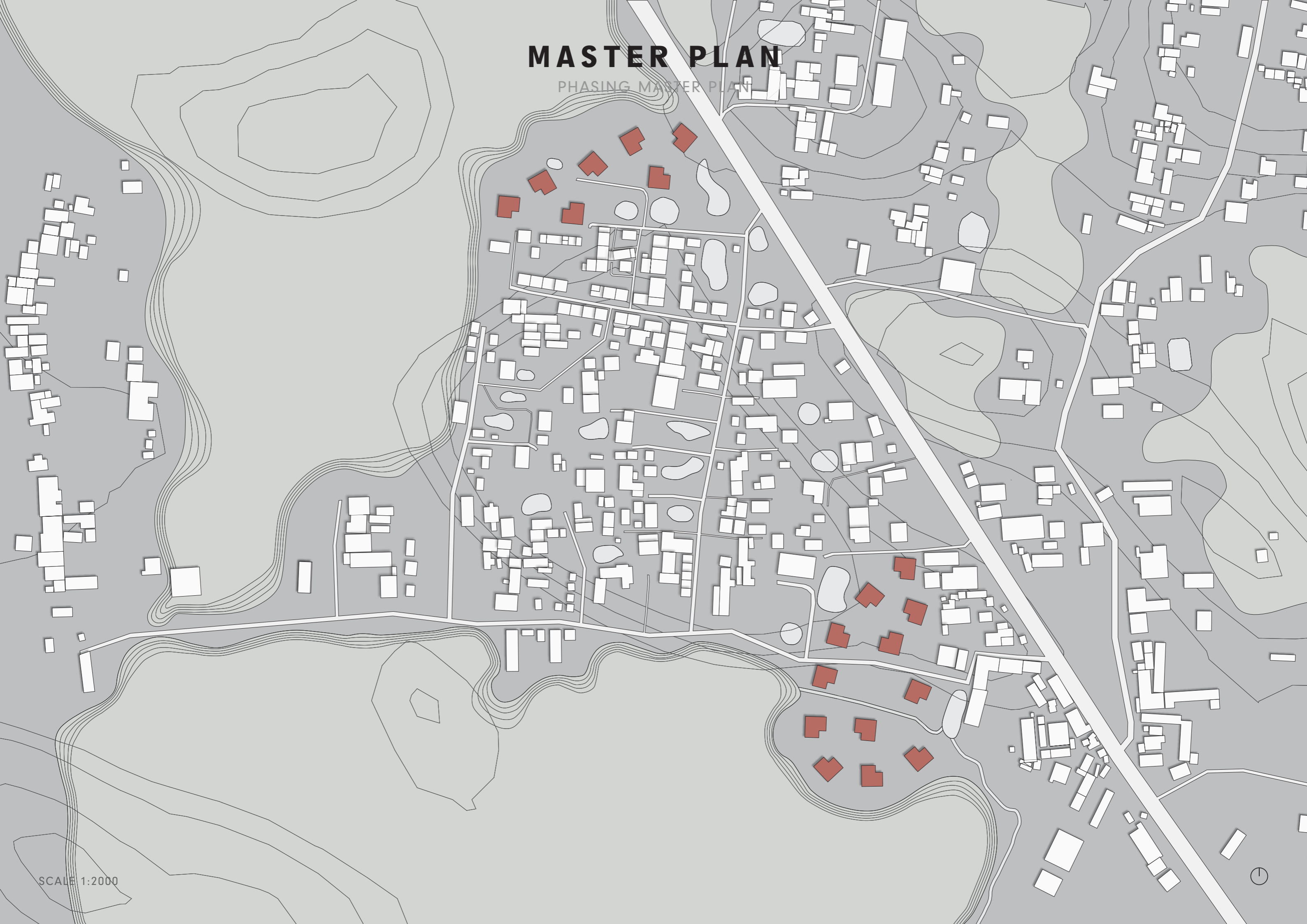


SCALE 1:2000



MASTER PLAN

PHASING MASTER PLAN



SCALE 1:2000



MASTER PLAN

PHASING MASTER PLAN



SCALE 1:2000



MASTER PLAN

PHASING MASTER PLAN



SCALE 1:2000

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PHASING MASTER PLAN



SCALE 1:2000

MASTER PLAN

PHASING MASTER PLAN



SCALE 1:2000



MASTER PLAN

PHASING MASTER PLAN



SCALE 1:2000



MASTER PLAN

VILLAGE STRATEGY



SCALE 1:2000



MASTER PLAN

STREETS & PONDS



SCALE 1:2000



MASTER PLAN

STREETS & PONDS



SCALE 1:2000

MASTER PLAN

UNIT TYPES



SCALE 1:2000



MASTER PLAN

PUBLIC SPACE & GREENERY

CENTRAL ROAD WITH PUBLIC AMENITIES

SCALE 1:2000



MASTER PLAN

STREET PROFILES

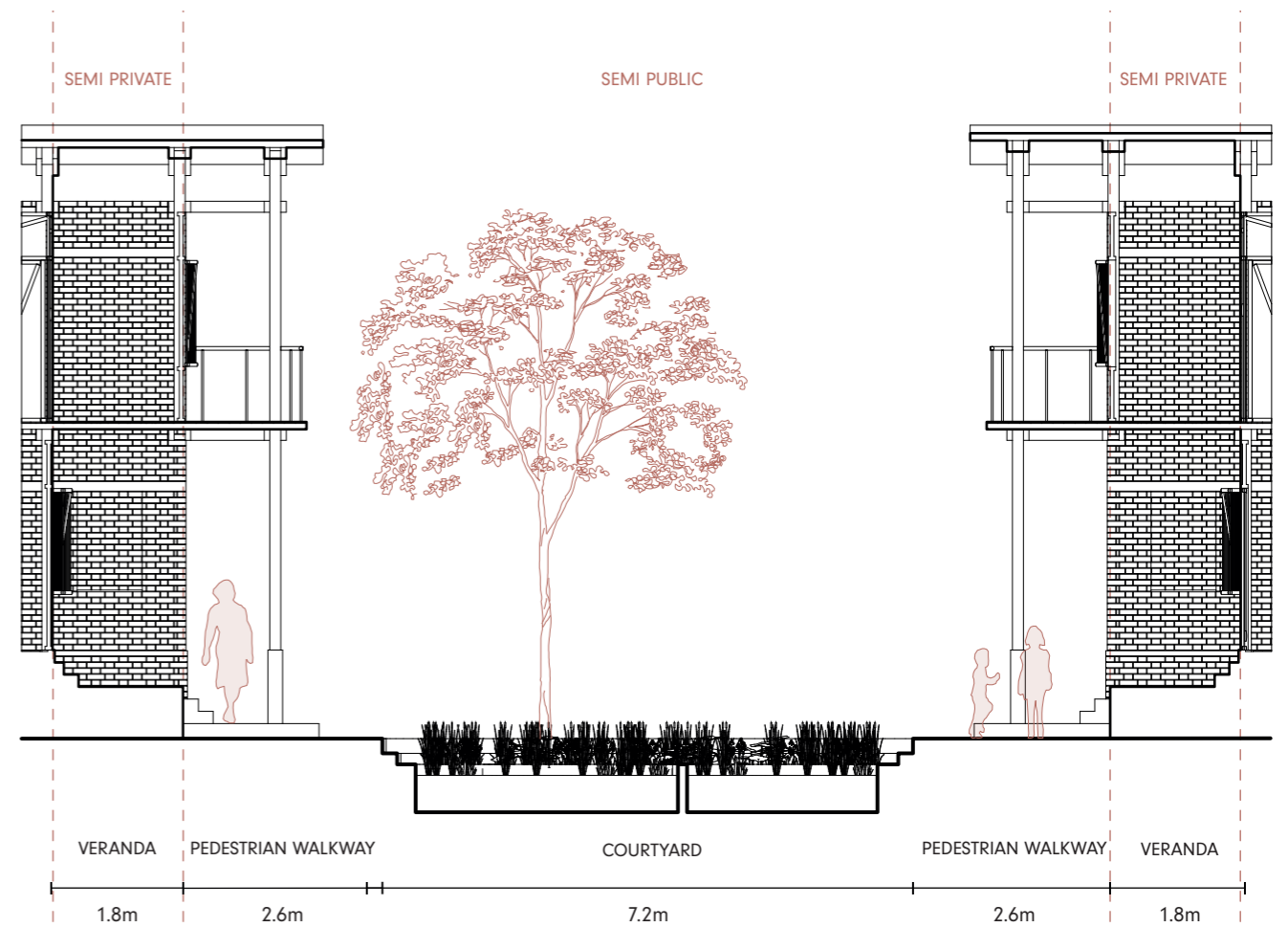
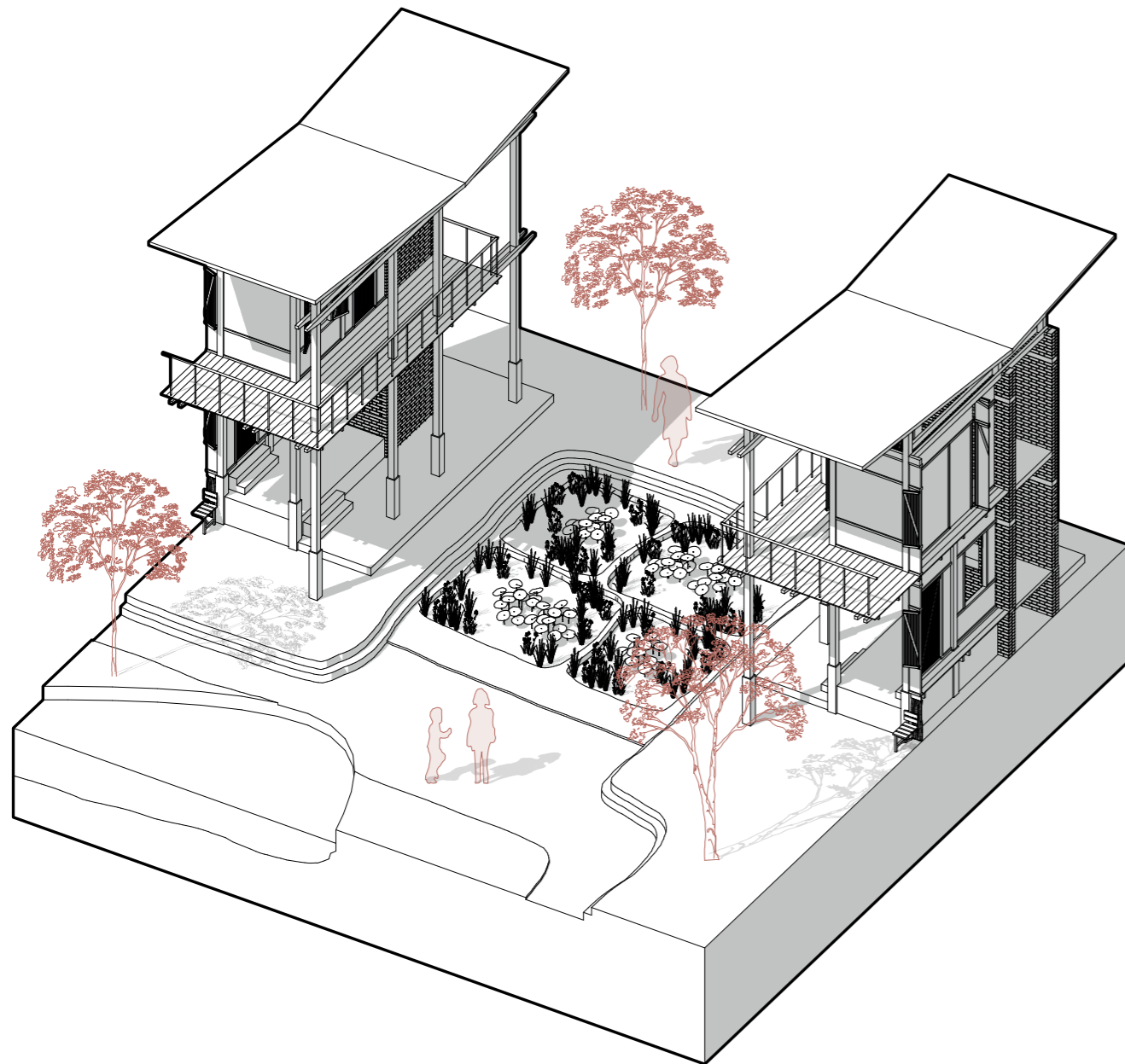


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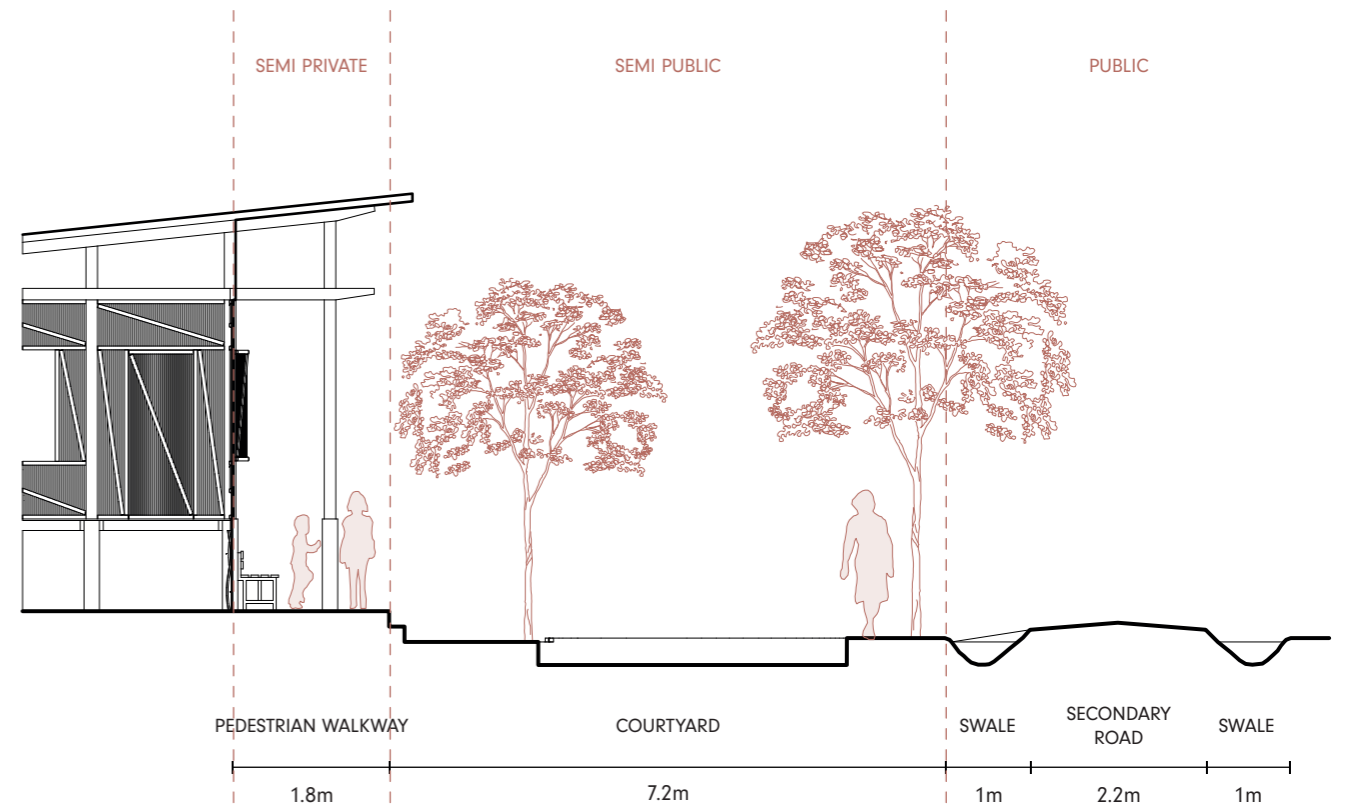
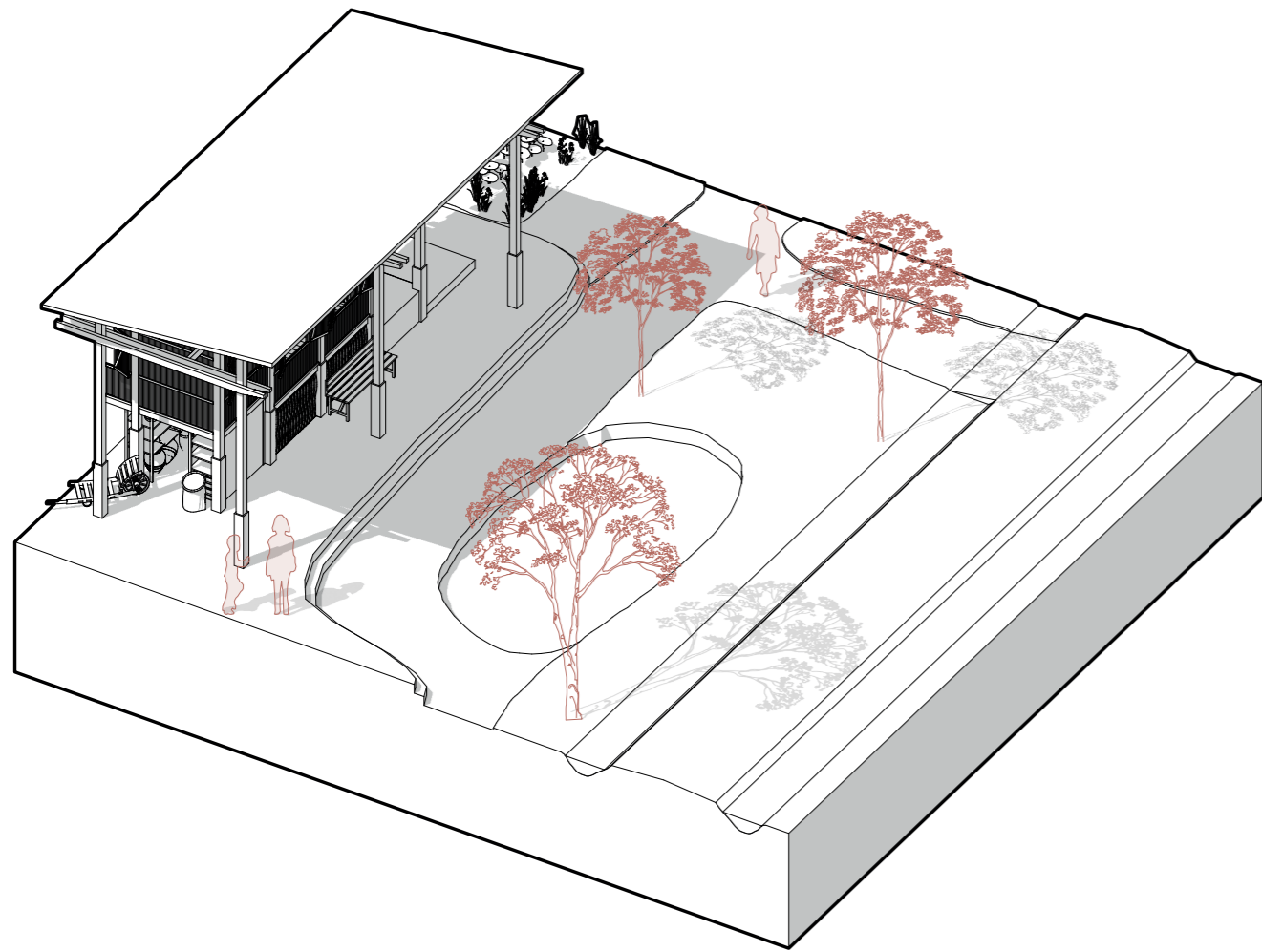
MASTER PLAN

COURTYARD PROFILE



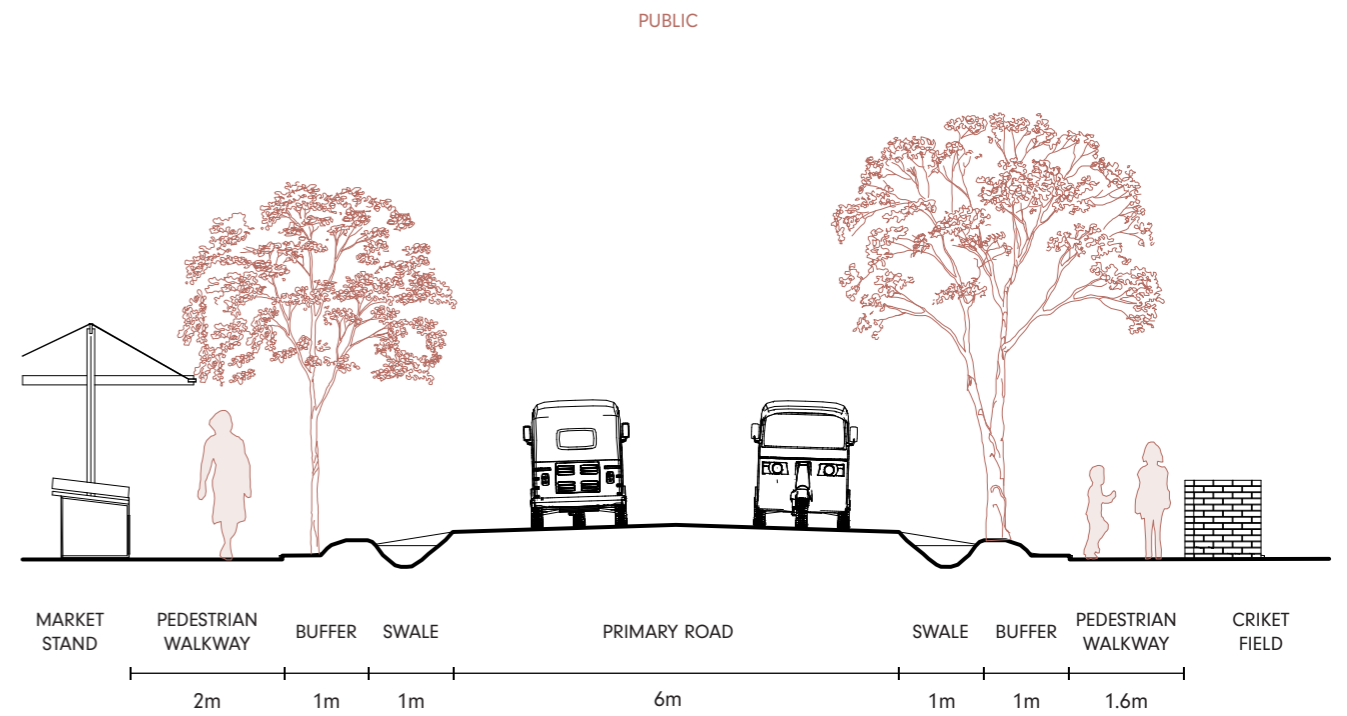
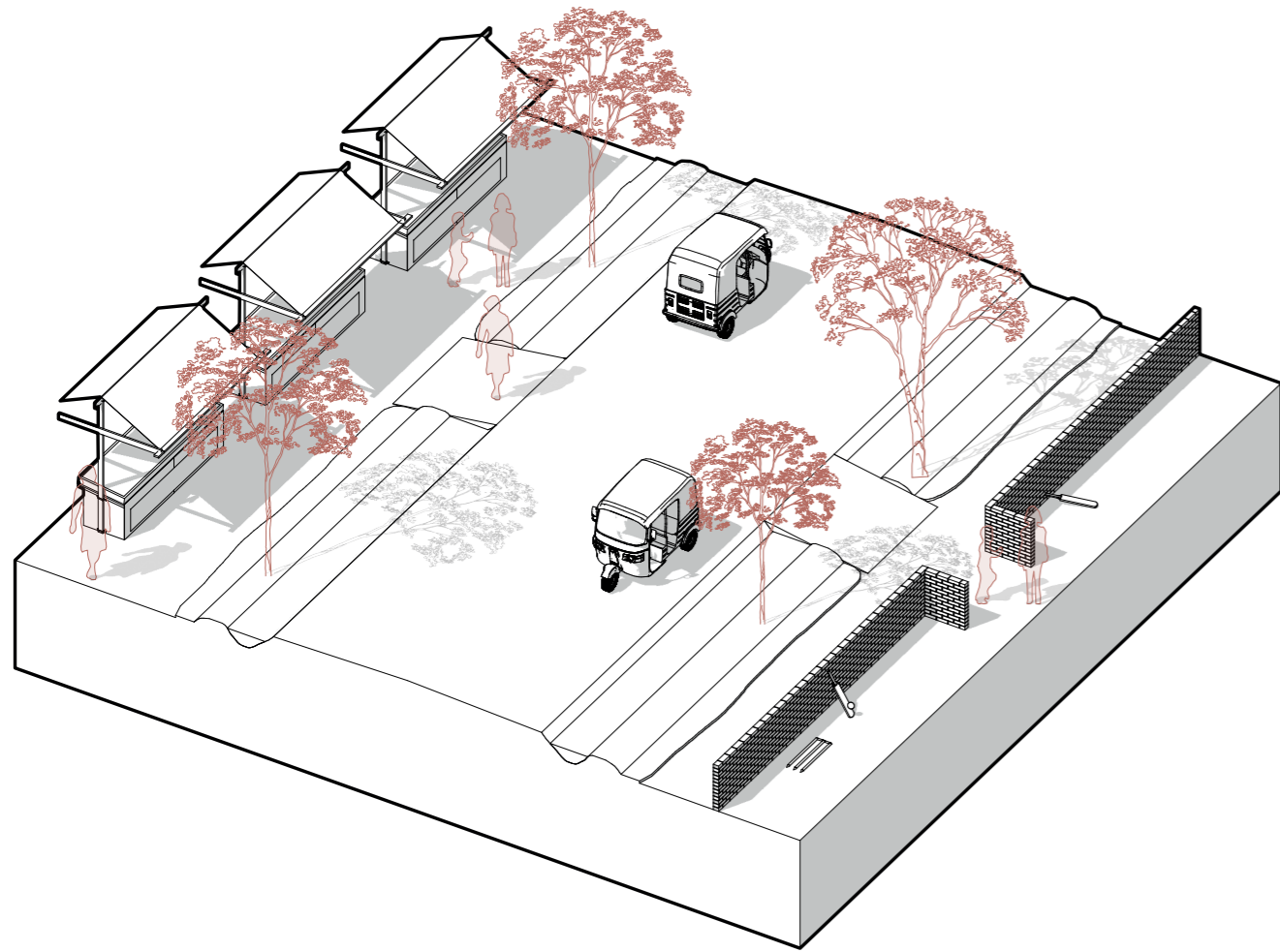
MASTER PLAN

SECONDARY ROAD PROFILE



MASTER PLAN

PRIMARY ROAD PROFILE



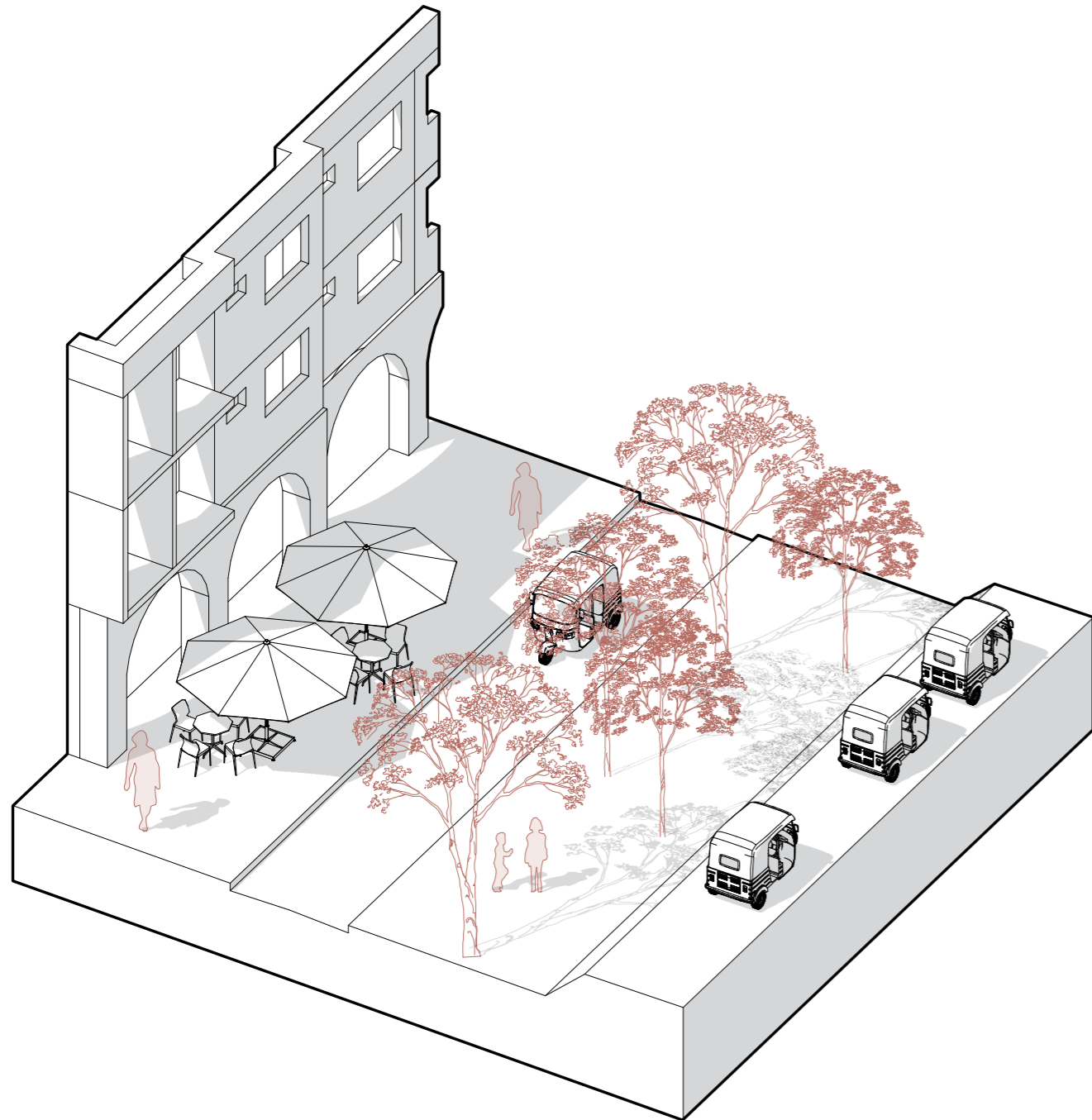
MASTER PLAN

PRIMARY ROAD PROFILE



MASTER PLAN

HIGHWAY PROFILE



MASTER PLAN

PRE URBAN NUMBERS



	M2/P	RESIDENTS DENSITY	POPULATION DENSITY	FSI
EXISTING	5	29 UNITS/HA	205 PEOPLE/HA	0,22
PROPOSAL	19	45 UNITS/HA	372 PEOPLE/HA	0,52

05

CLUSTER STRATEGY

CLUSTER STRATEGY

CLUSTER TYPES



TYPE B

TYPE C

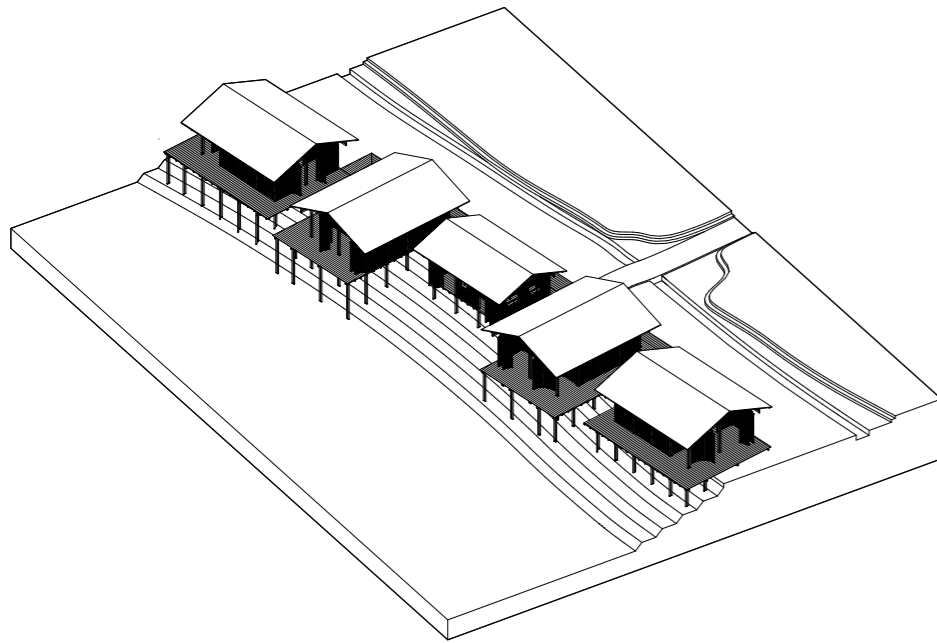
TYPE A

SCALE 1:2000



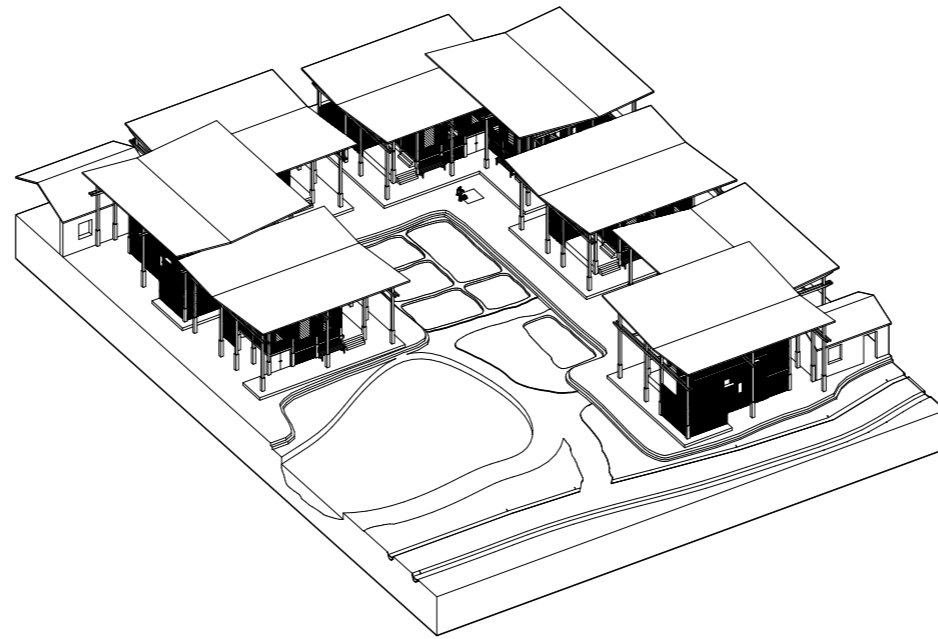
CLUSTER STRATEGY

3 TYPES OF CLUSTERS



TYPE A - LOW INCOME

3-4 UNITS
SHARED TOILET BUILDING
SEASONAL WORKERS



TYPE B - LOW INCOME

5-8 UNITS
COURTYARD
EXISTING FAMILIES & NEW RESIDENTS

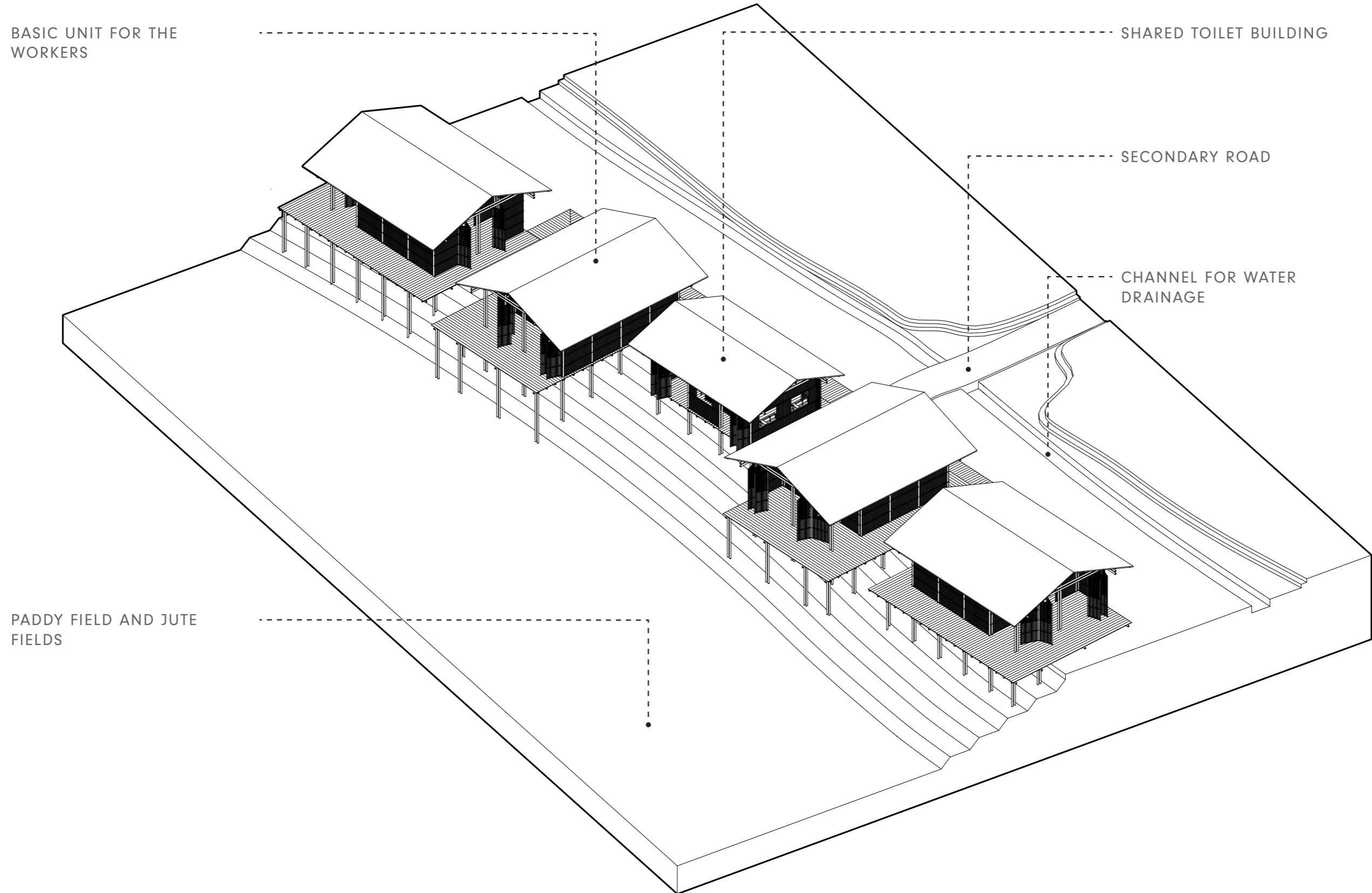


TYPE C - MID INCOME

5-8 UNITS
COURTYARD + POND
EXISTING FAMILIES & NEW RESIDENTS

CLUSTER STRATEGY

RURAL CLUSTER



CLUSTER RURAL

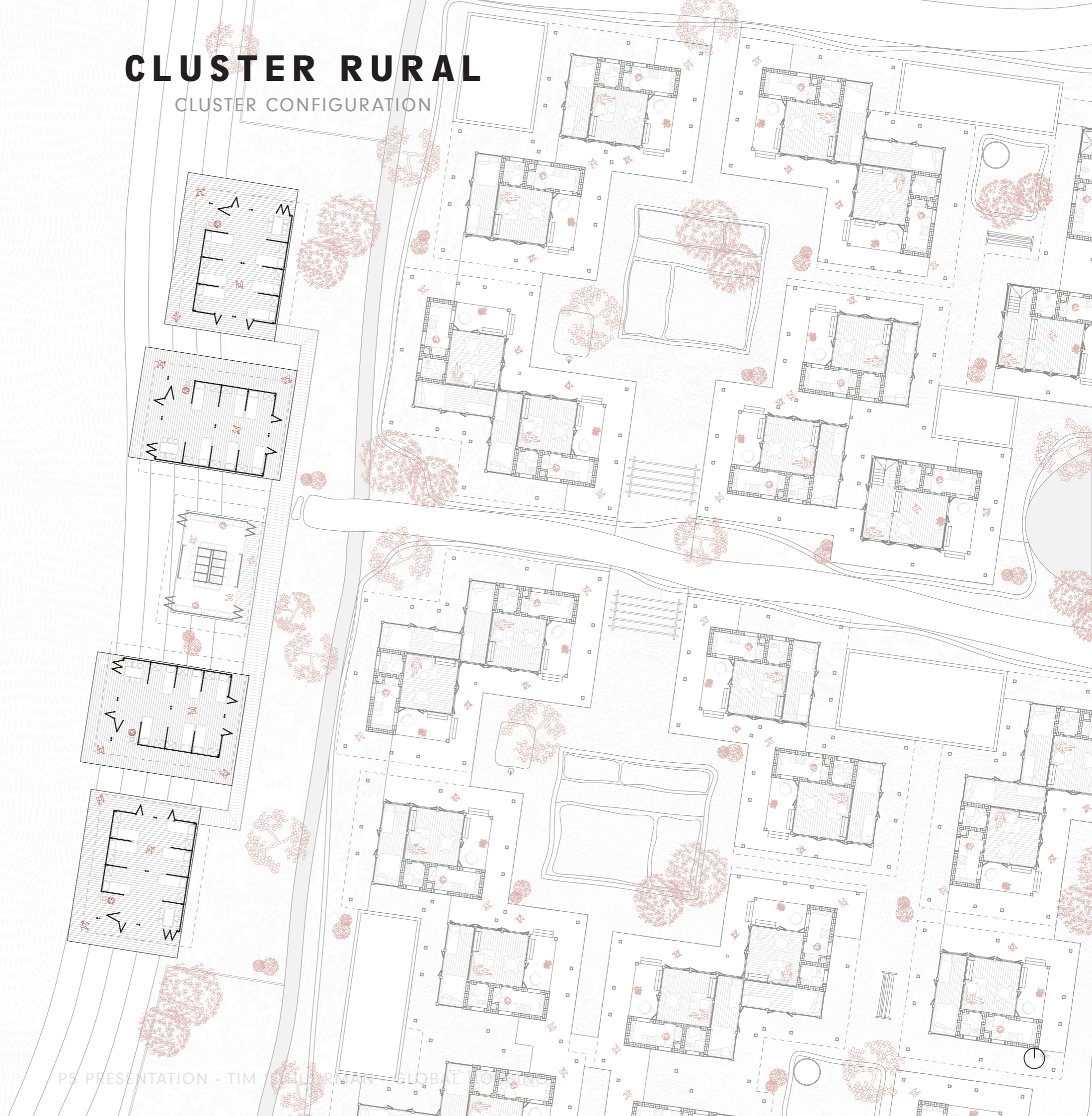
CLUSTER CONFIGURATION



SCALE 1:250

CLUSTER RURAL

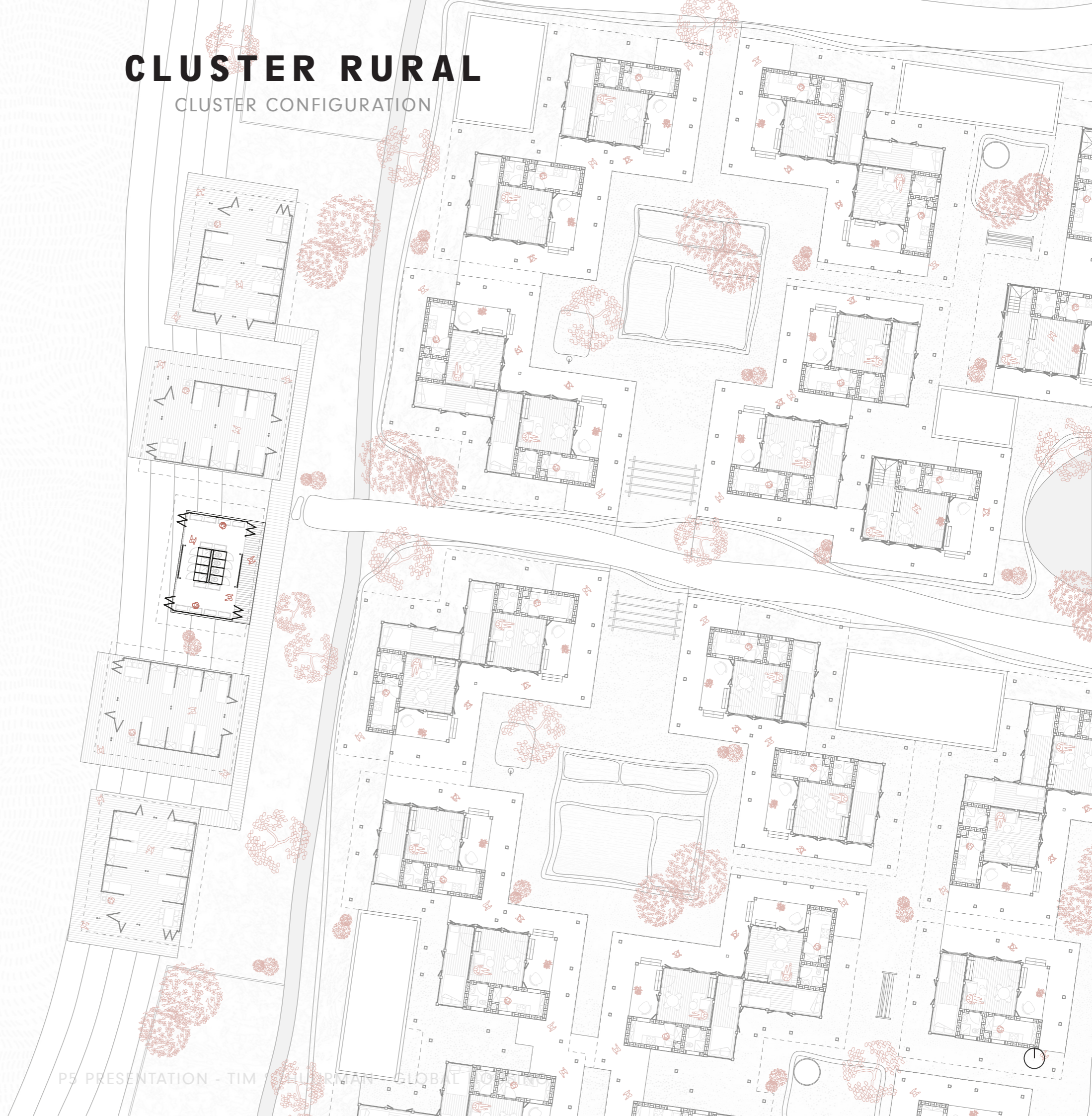
CLUSTER CONFIGURATION



SCALE 1:250

CLUSTER RURAL

CLUSTER CONFIGURATION



SCALE 1:250

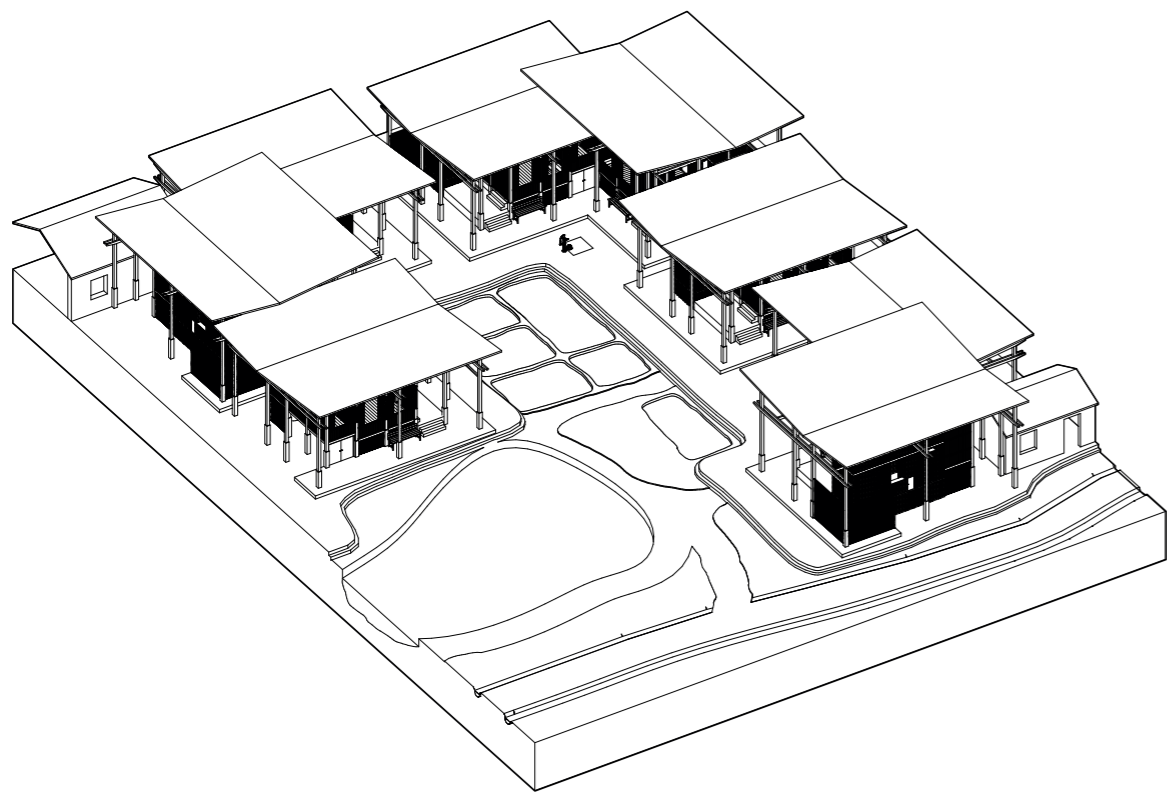
CLUSTER RURAL

SEASONAL WORKERS CLUSTER IMPRESSION



CLUSTER STRATEGY

VILLAGE CLUSTER



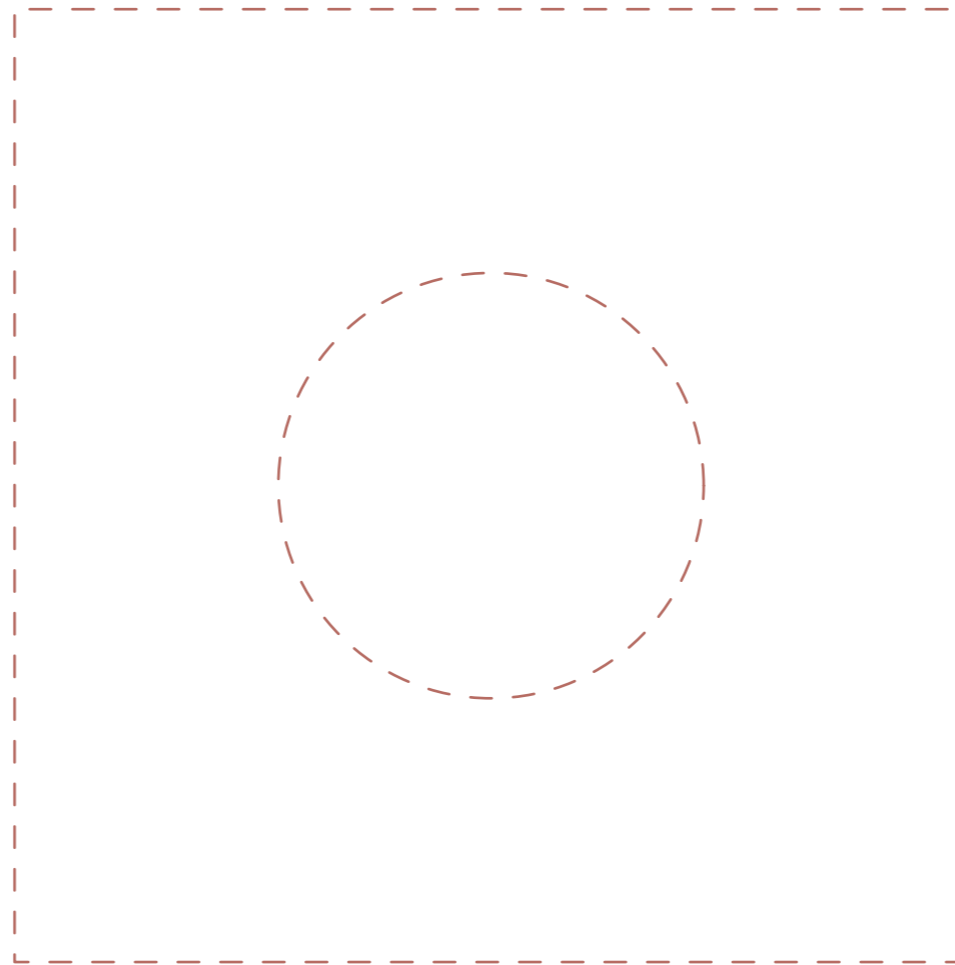
TYPE B - LOW INCOME



TYPE C - MID INCOME

CLUSTER VILLAGE

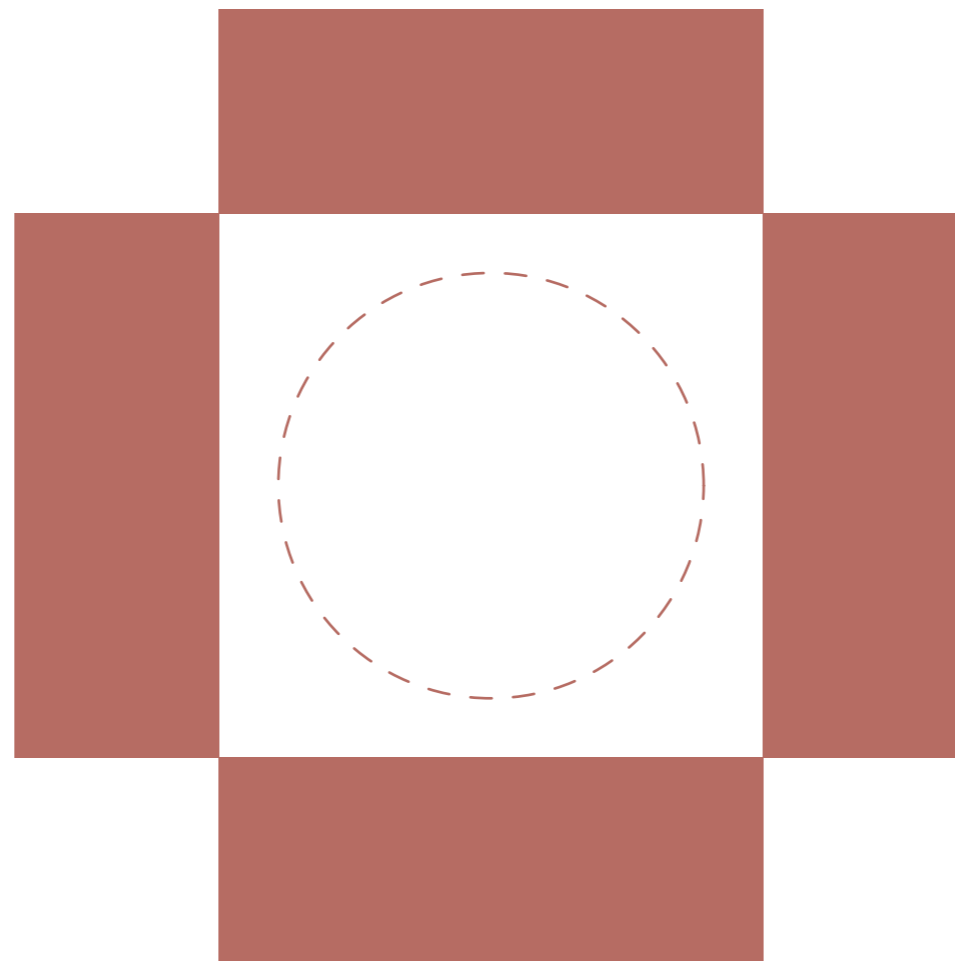
CLUSTER CONCEPT



0. CLUSTER DESIGN

CLUSTER VILLAGE

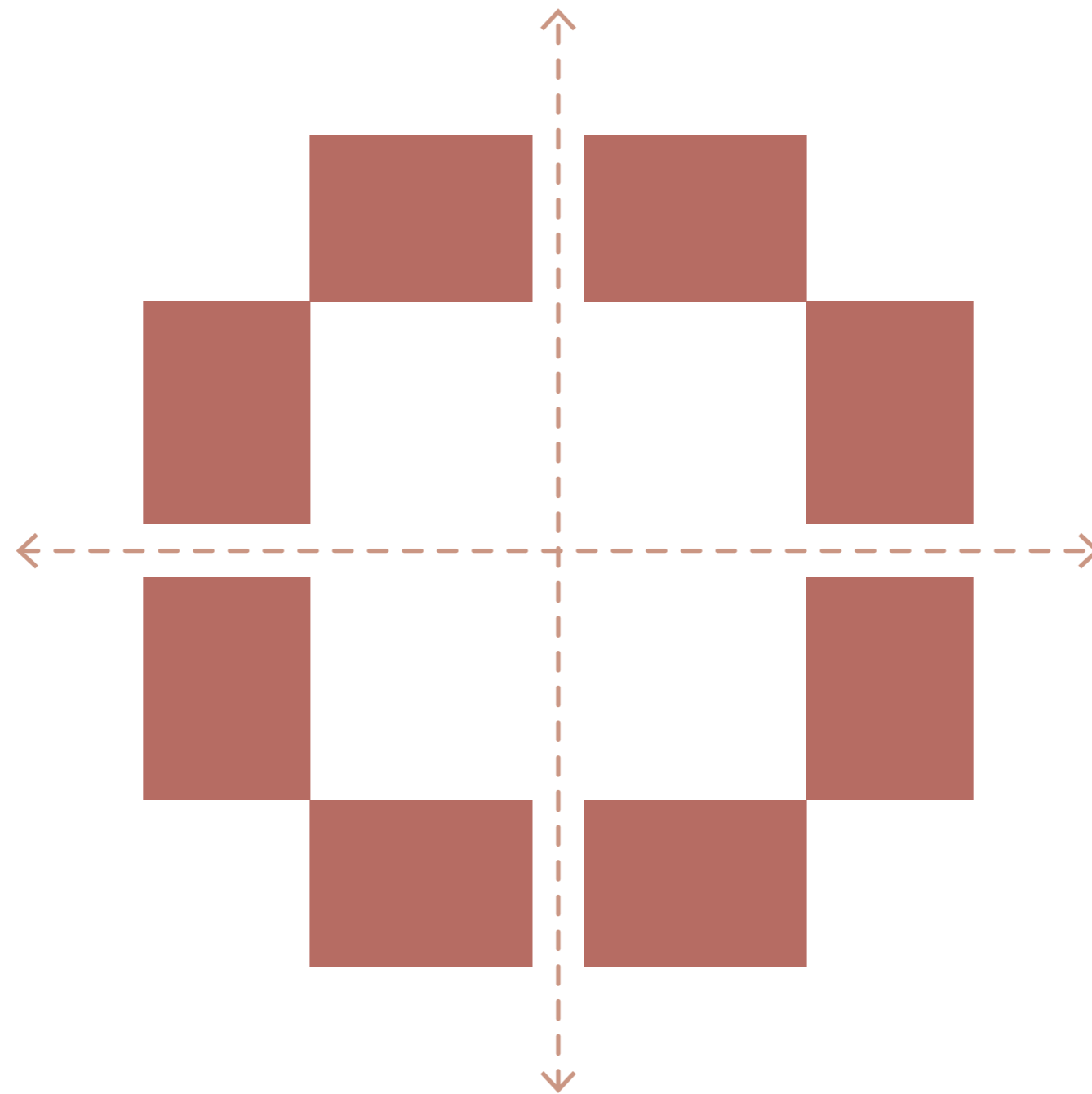
CLUSTER CONCEPT



1. CLUSTER WITH COURTYARD

CLUSTER VILLAGE

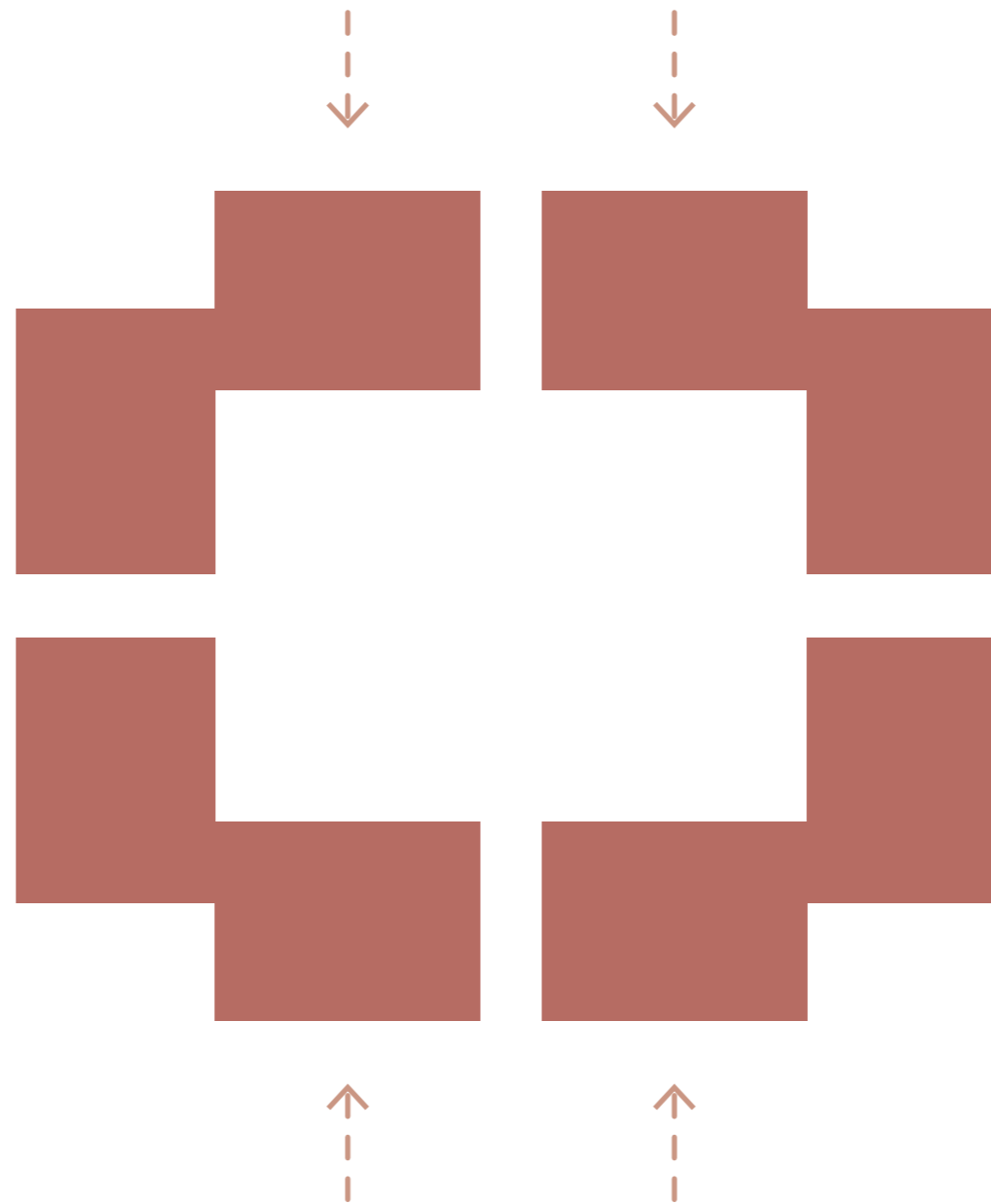
CLUSTER CONCEPT



2. OPENING UP CLUSTER

CLUSTER VILLAGE

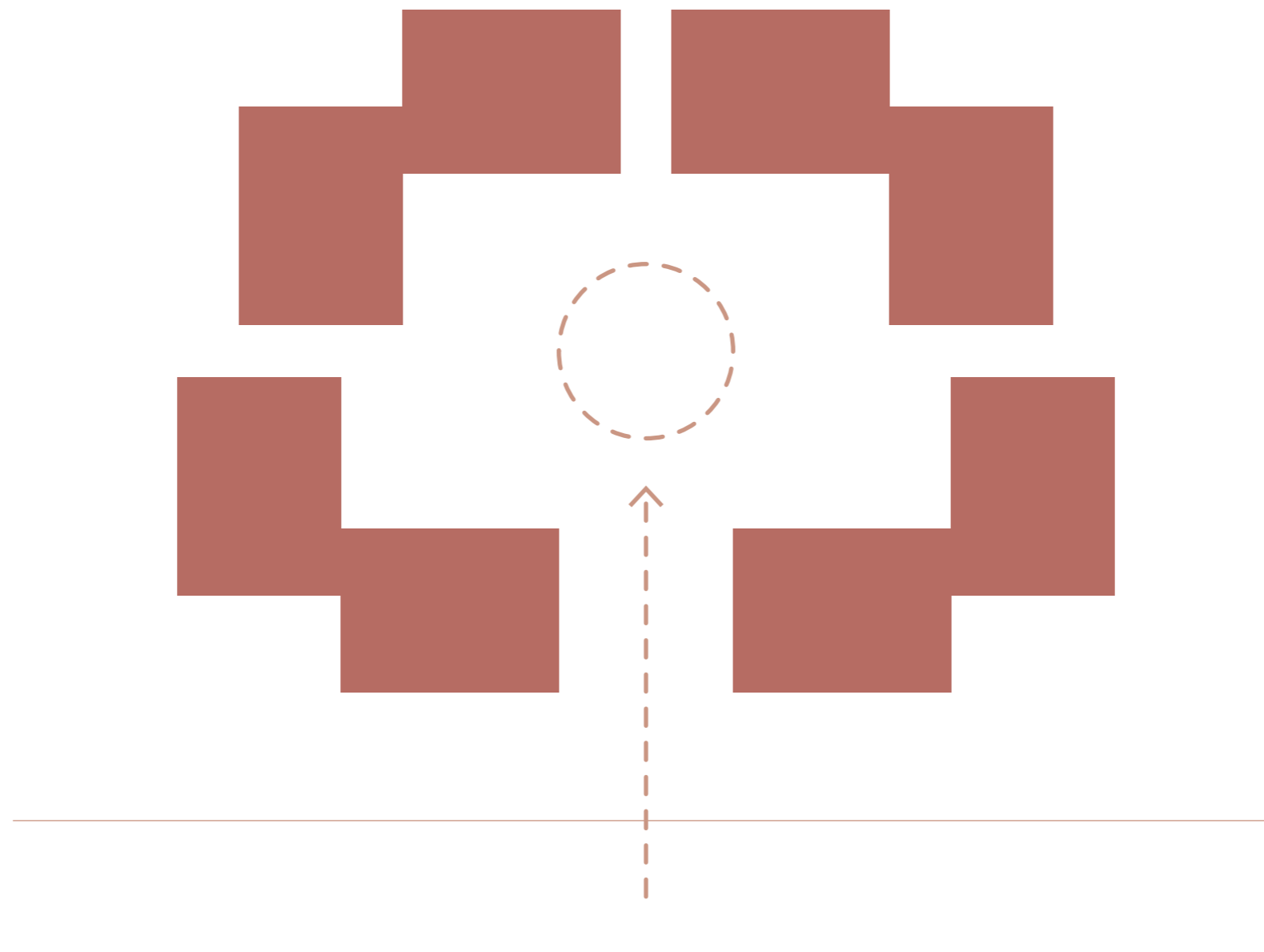
CLUSTER CONCEPT



3. PAIRING UNITS AND SHRINKING COURTYARD

CLUSTER VILLAGE

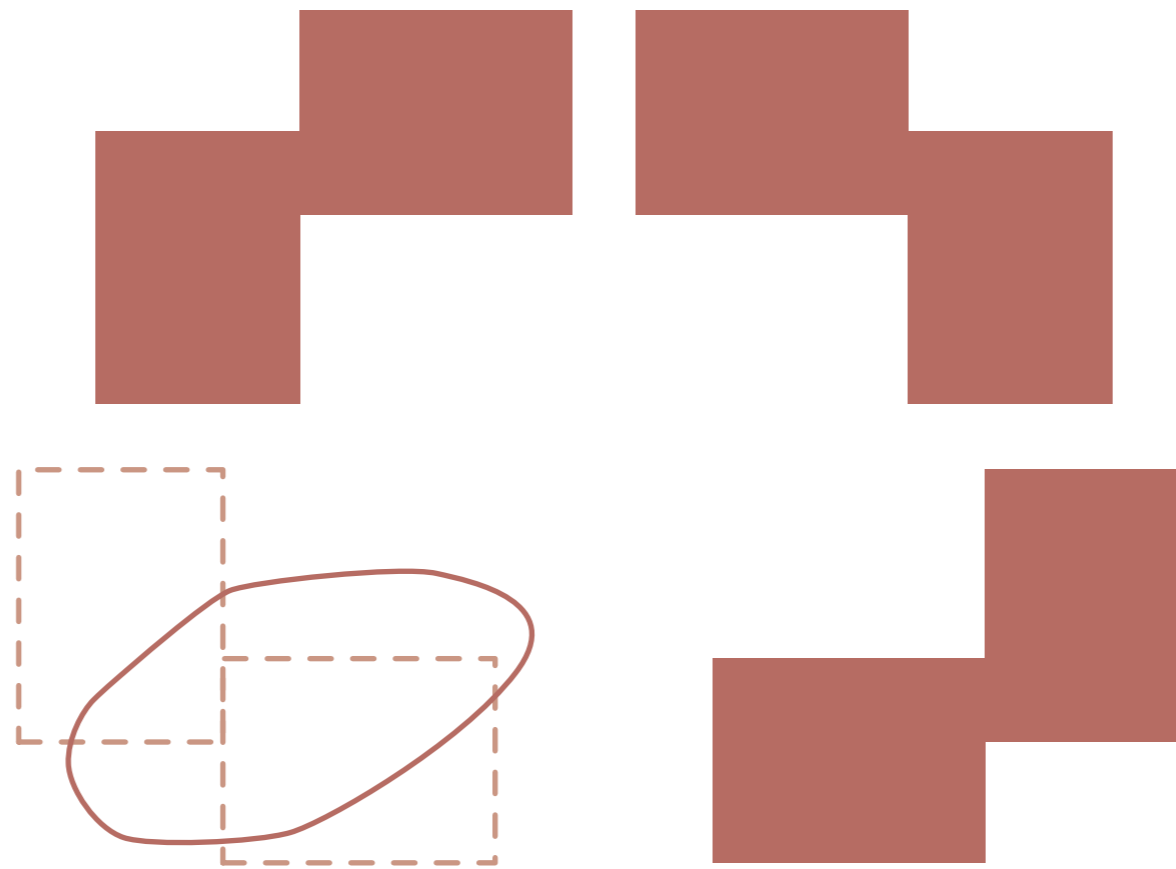
CLUSTER CONCEPT



4. ACCESS FROM PUBLIC STREET

CLUSTER VILLAGE

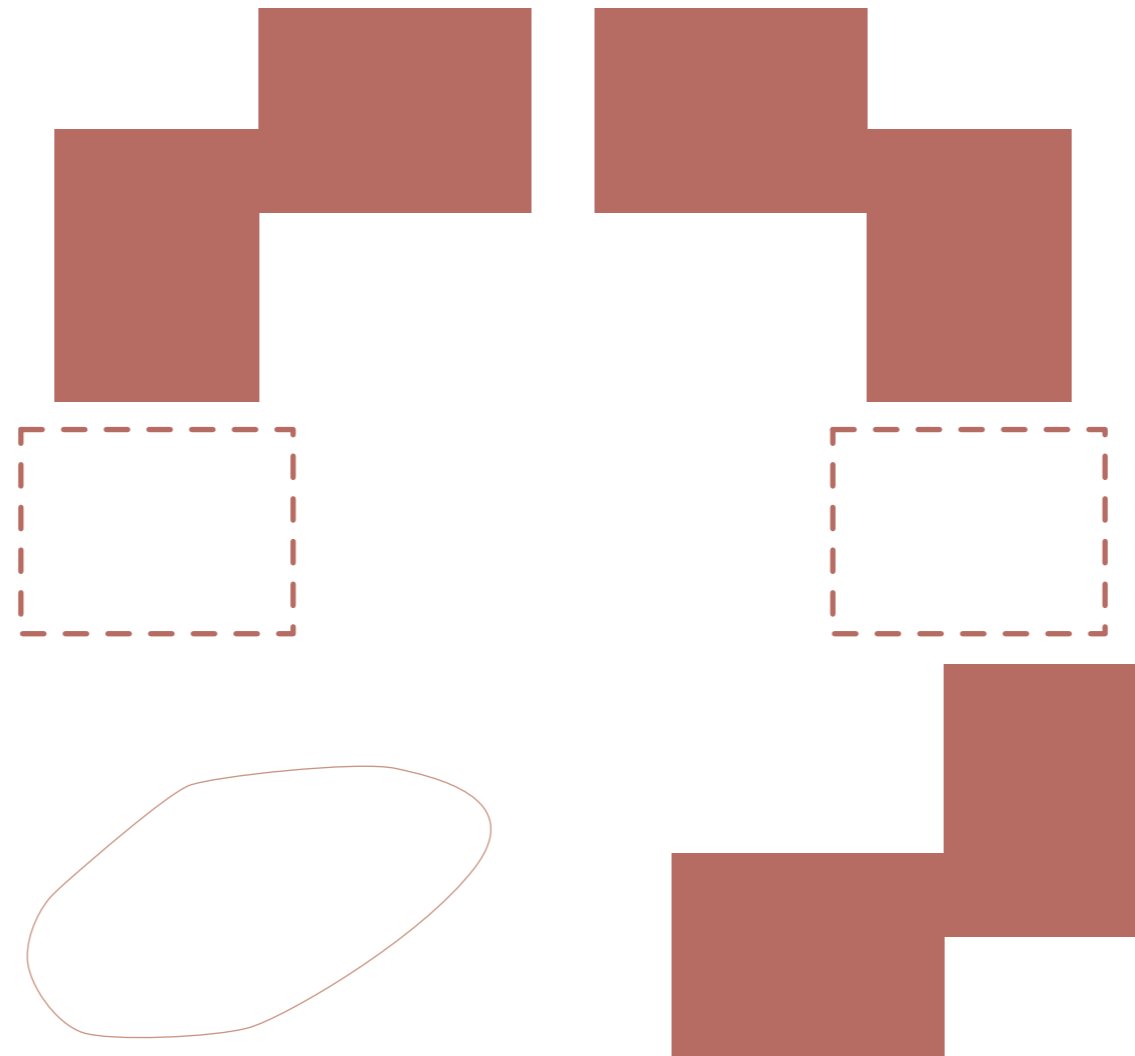
CLUSTER CONCEPT



5. INTEGRATE EXISTING PONDS AND LANDSCAPE CONTOURS

CLUSTER VILLAGE

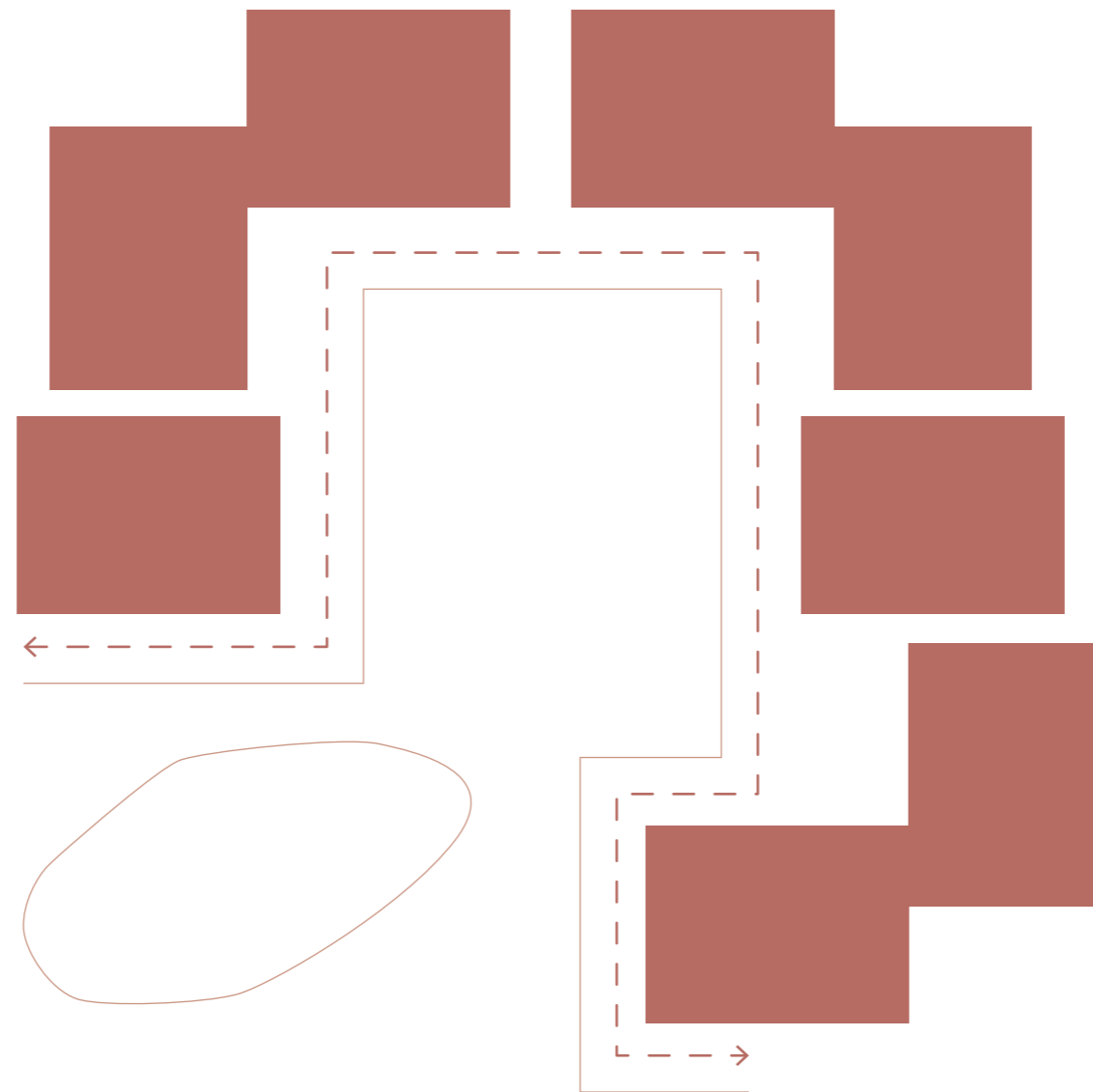
CLUSTER CONCEPT



6. MOVING UNIT FOR CLUSTER OF EIGHT

CLUSTER VILLAGE

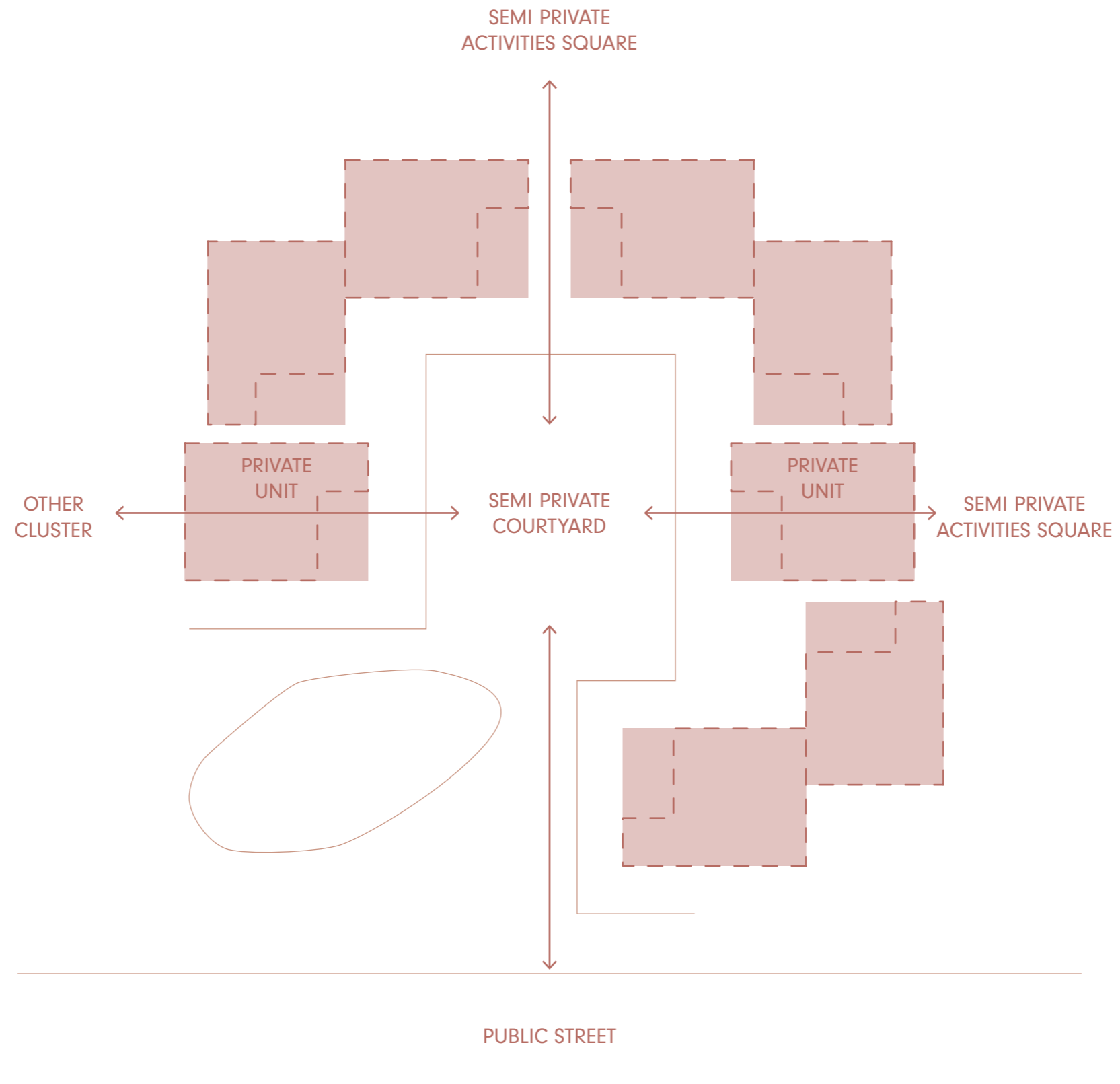
CLUSTER CONCEPT



7. DEFINE MAIN ROUTING

CLUSTER VILLAGE

CLUSTER CONCEPT



8. PRIVATE/PUBLIC TRANSITION

CLUSTER VILLAGE

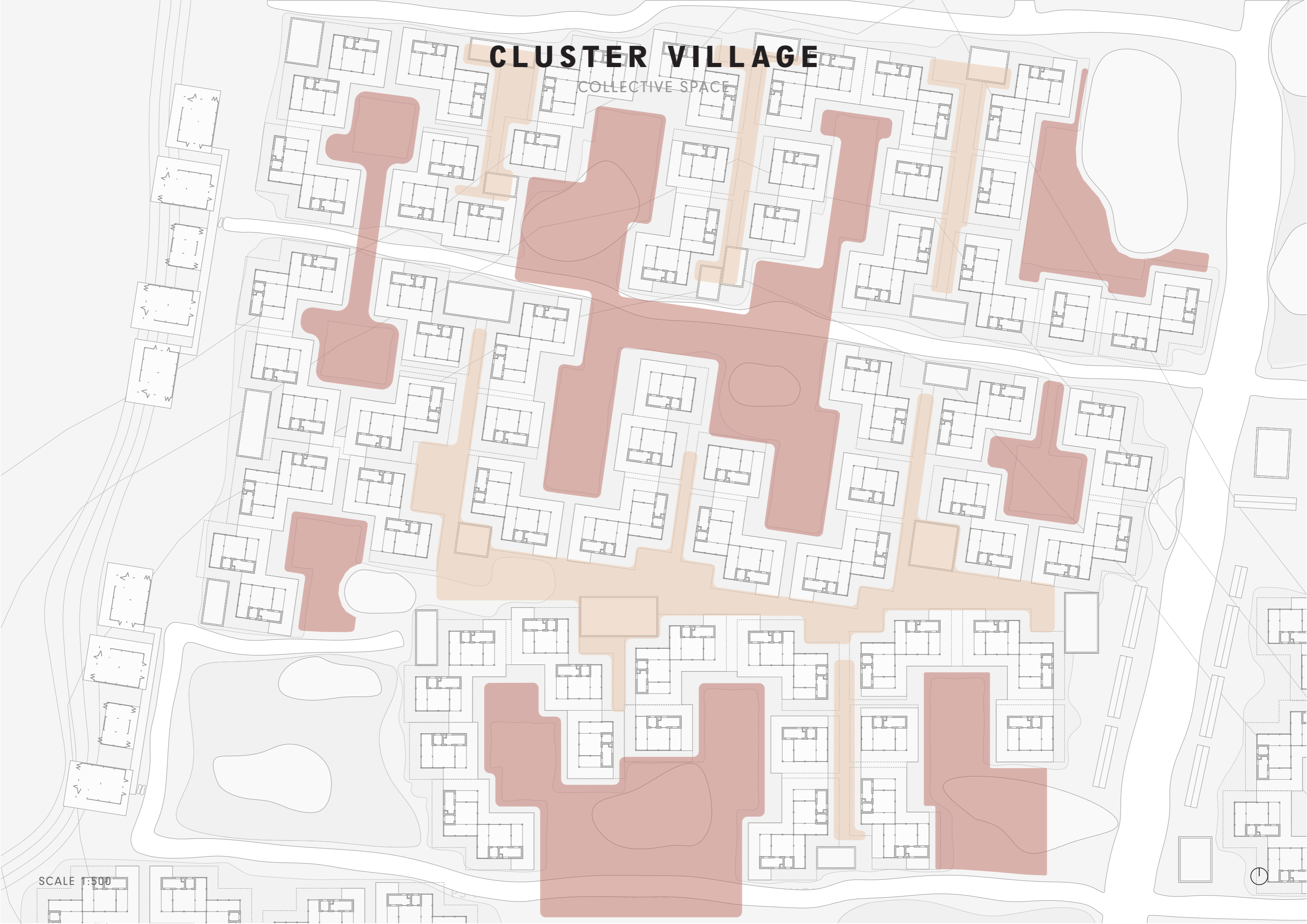
COLLECTIVE SPACE



SCALE : 1:100

CLUSTER VILLAGE

COLLECTIVE SPACE

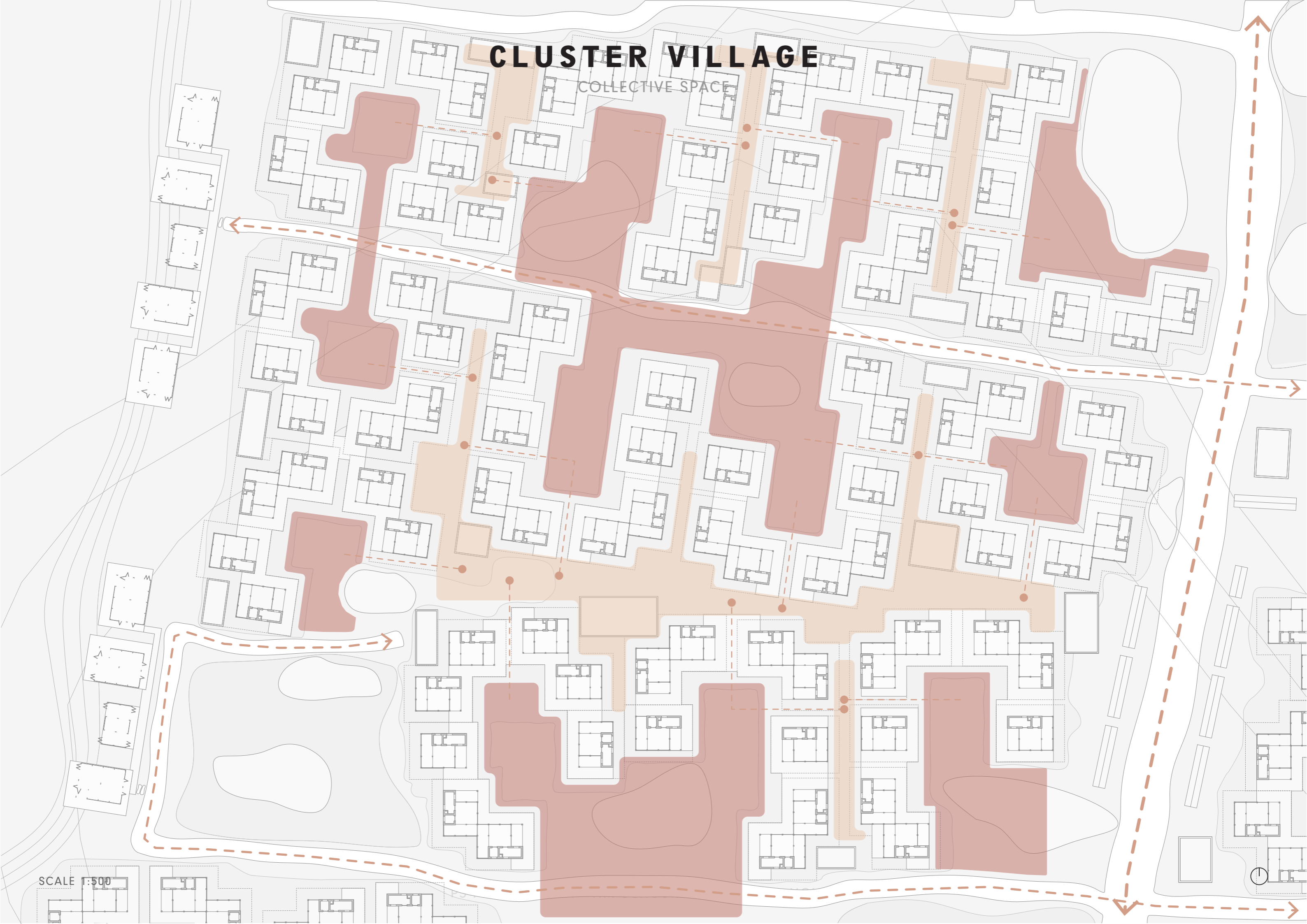


SCALE 1:500



CLUSTER VILLAGE

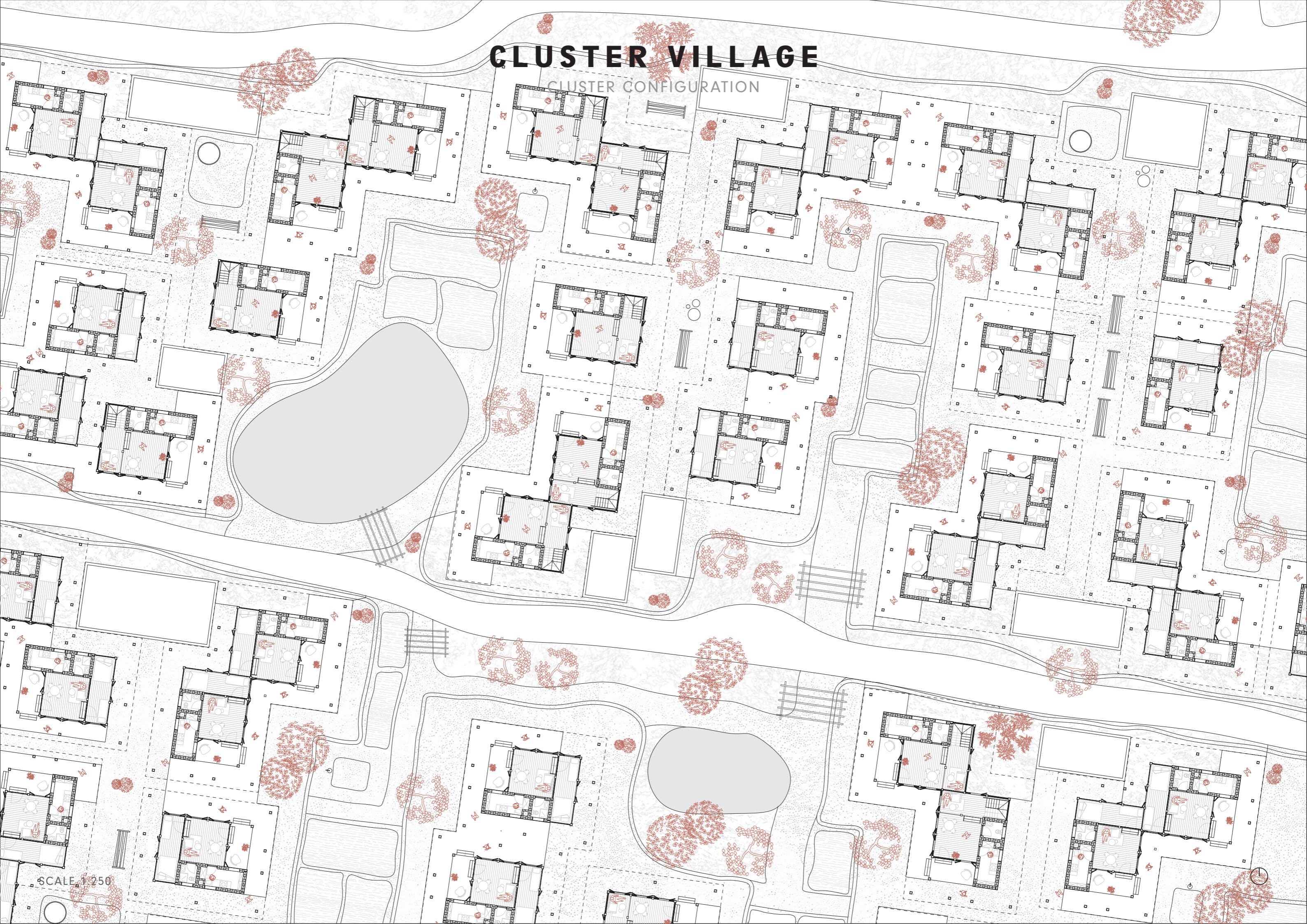
COLLECTIVE SPACE



SCALE 1:500

CLUSTER VILLAGE

CLUSTER CONFIGURATION



SCALE 1:250

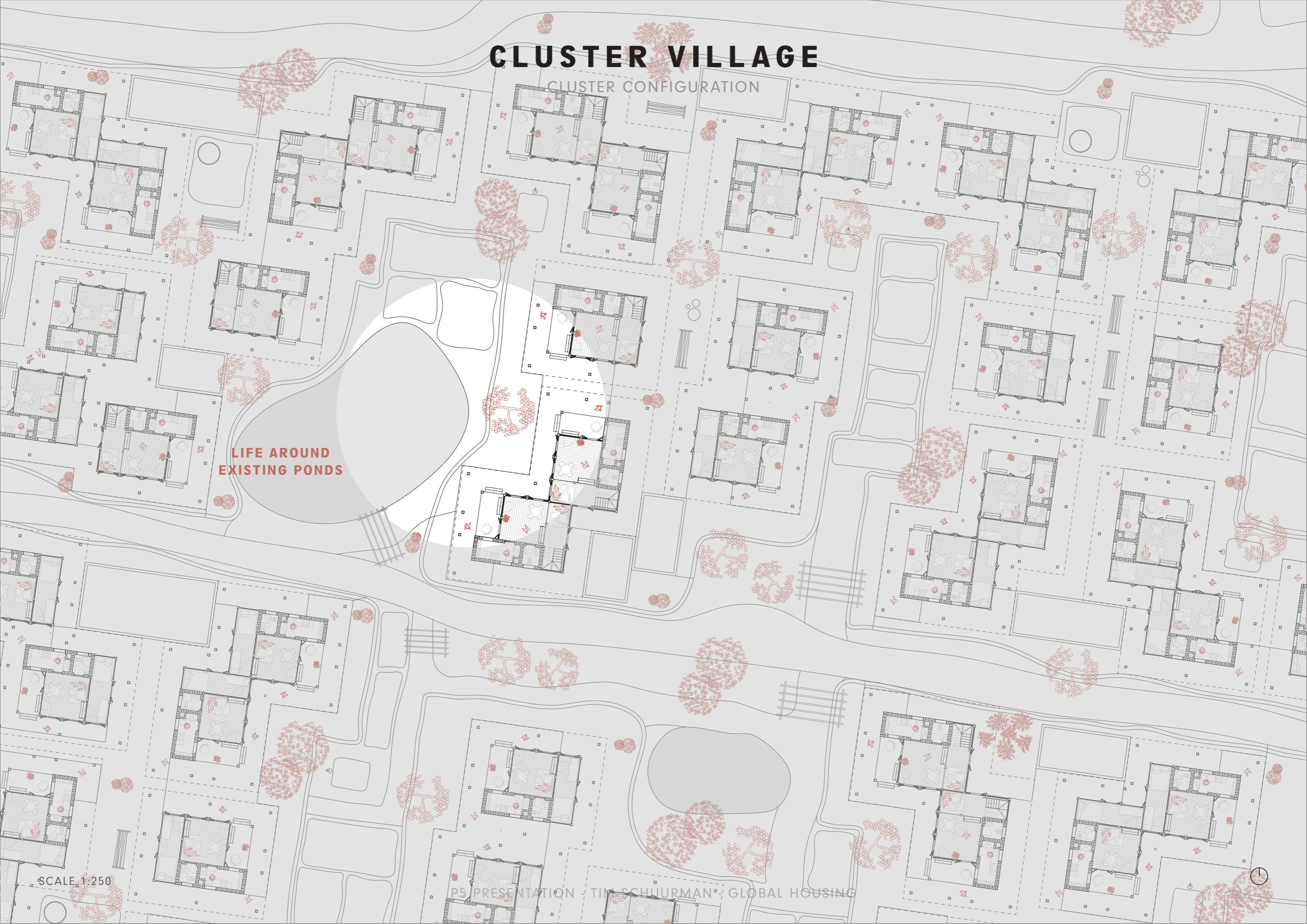
CLUSTER VILLAGE

CLUSTER CONFIGURATION

LIFE AROUND
EXISTING PONDS

SCALE 1:250

P5 PRESENTATION - TIM SCHUURMAN - GLOBAL HOUSING



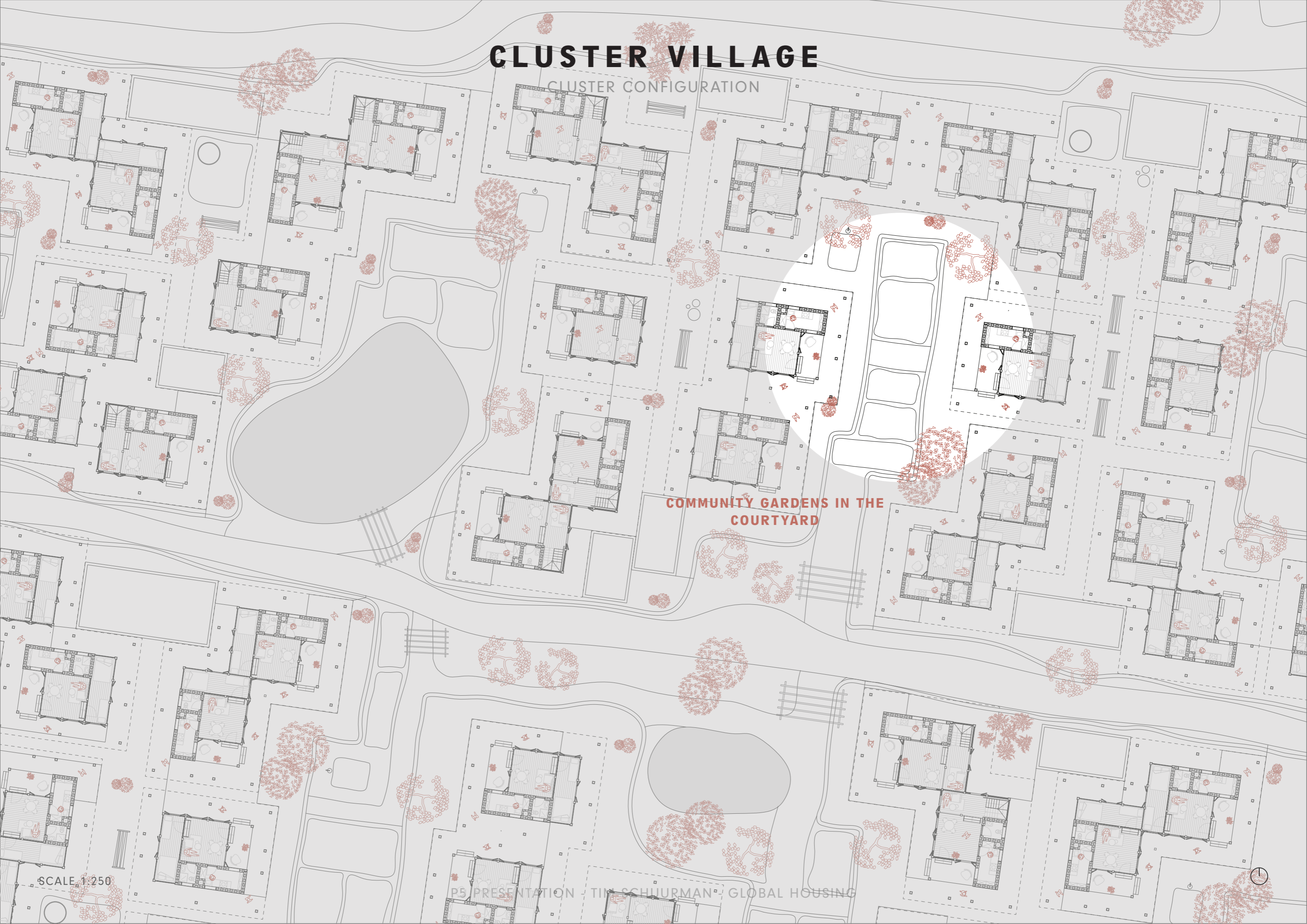
CLUSTER VILLAGE

CLUSTER CONFIGURATION

COMMUNITY GARDENS IN THE COURTYARD

SCALE 1:250

P5 PRESENTATION - TIM SCHUURMAN - GLOBAL HOUSING



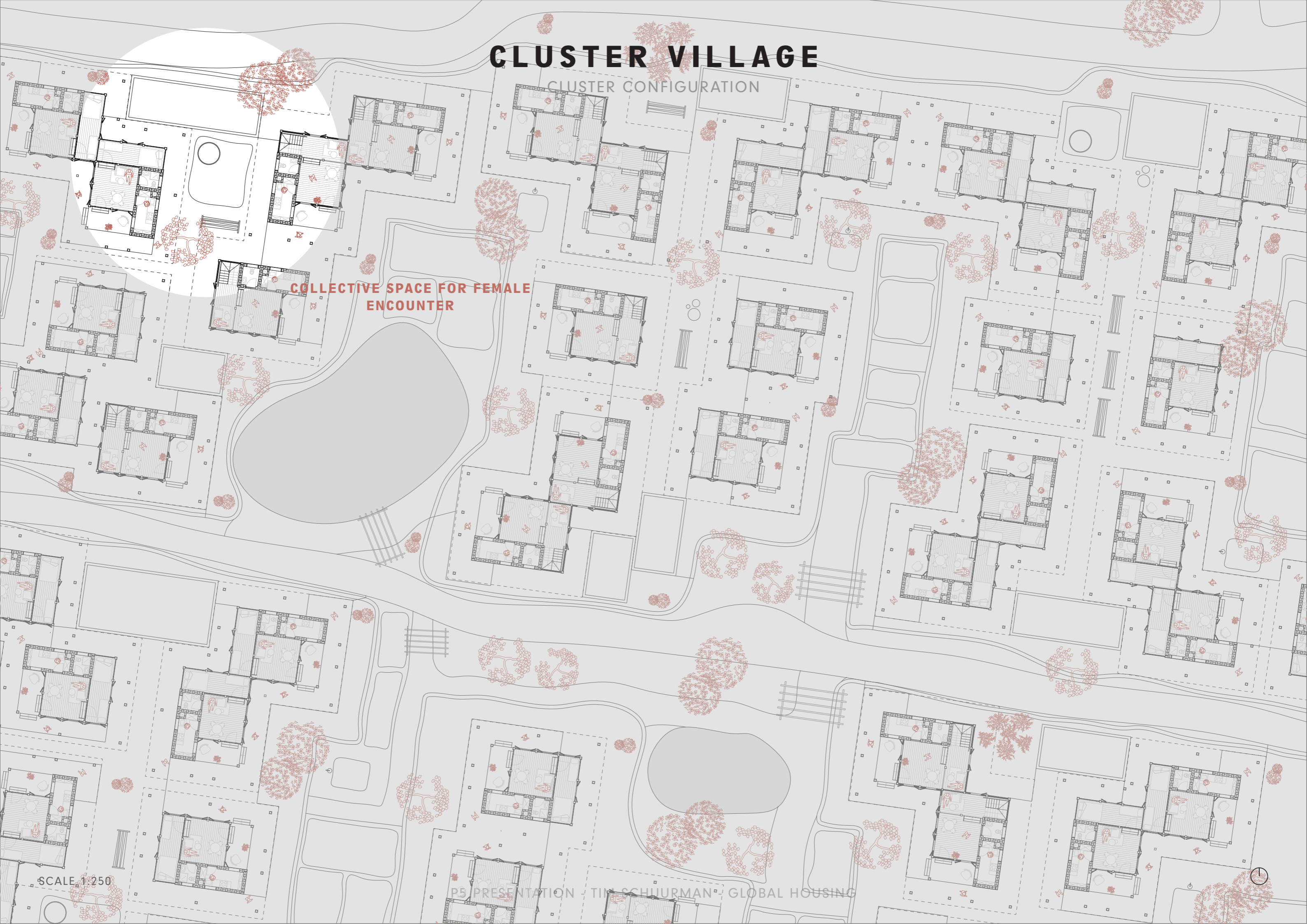
CLUSTER VILLAGE

CLUSTER CONFIGURATION

COLLECTIVE SPACE FOR FEMALE ENCOUNTER

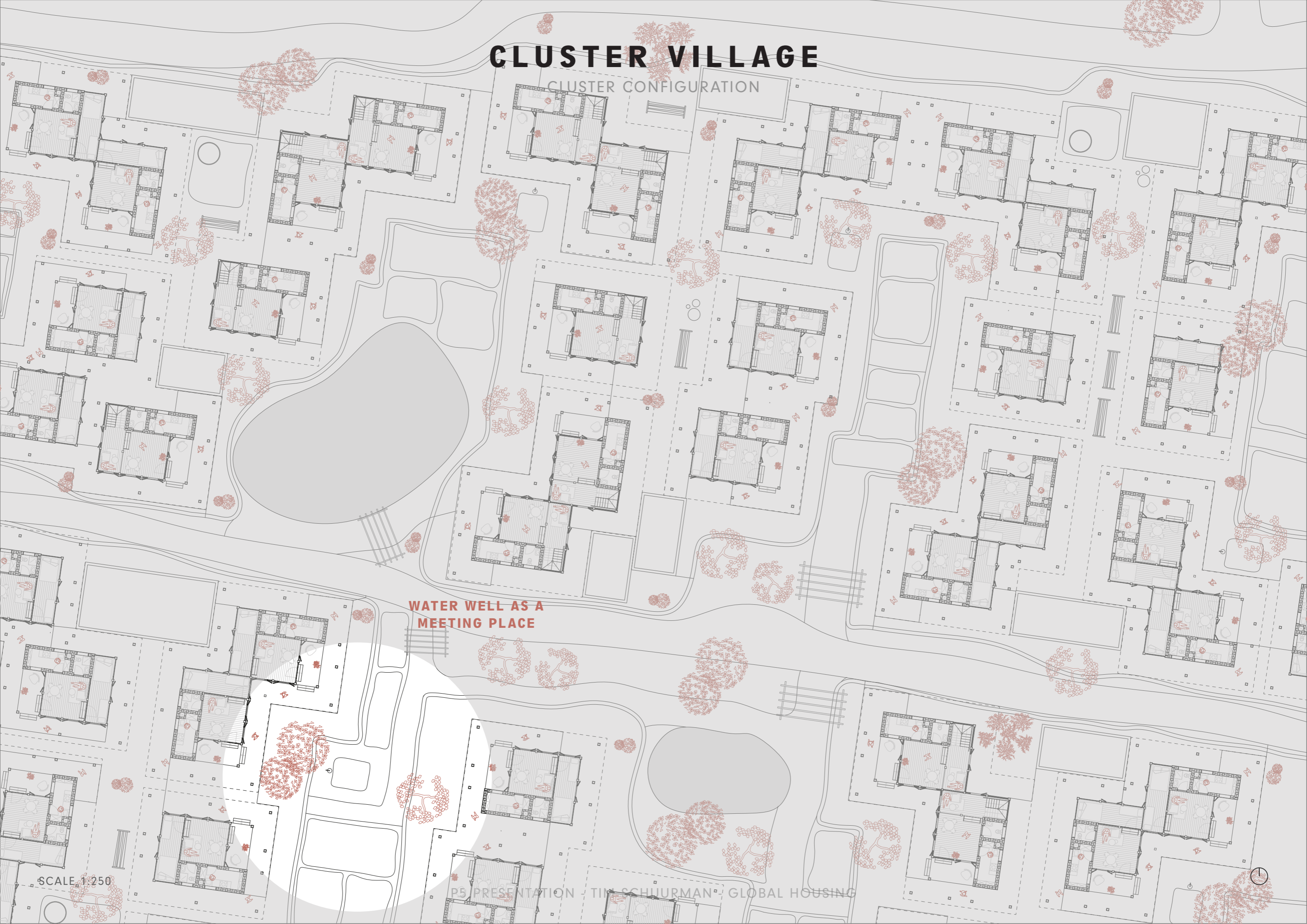
SCALE 1:250

P5 PRESENTATION - TIM SCHUURMAN - GLOBAL HOUSING



CLUSTER VILLAGE

CLUSTER CONFIGURATION

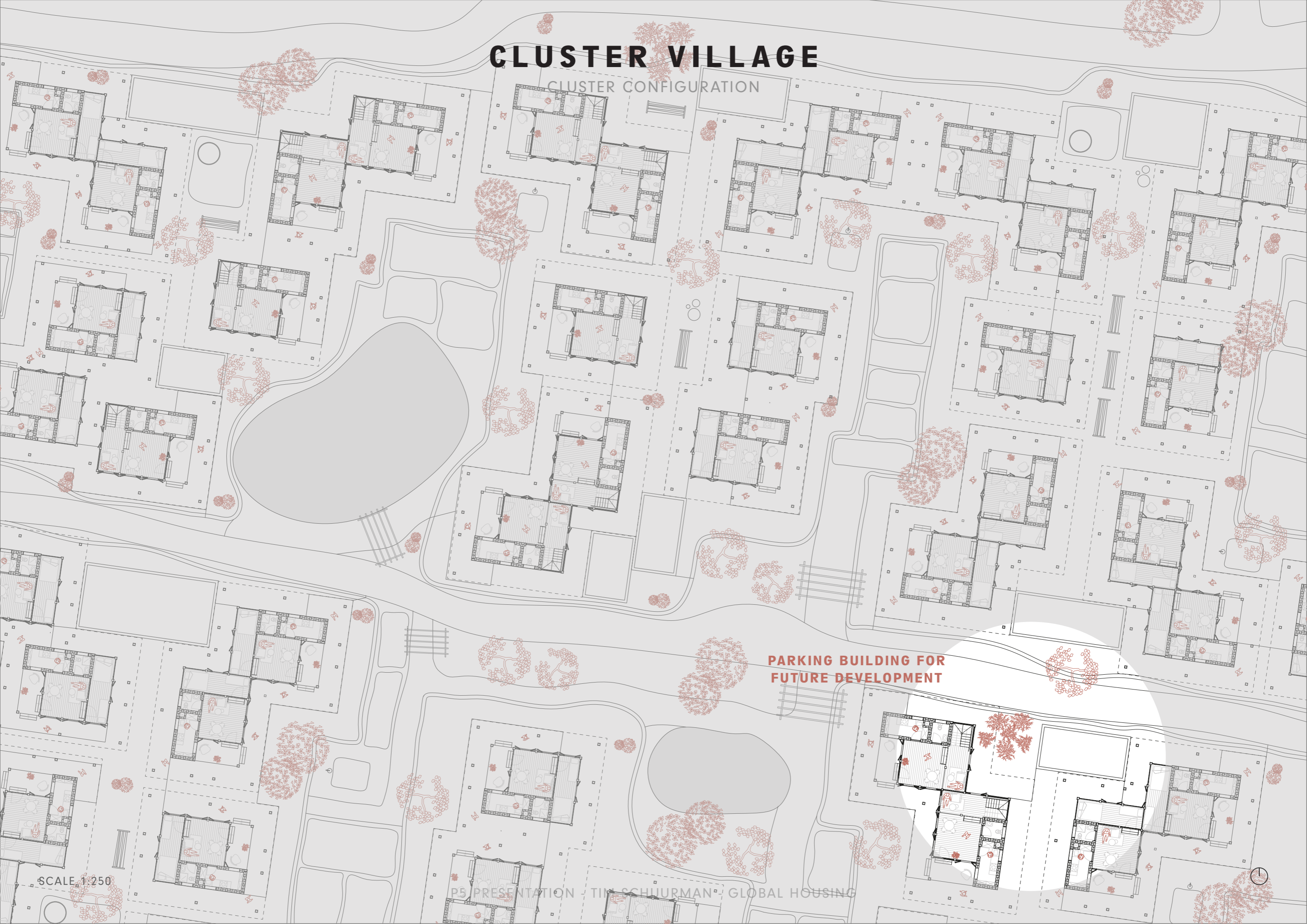


WATER WELL AS A MEETING PLACE

SCALE 1:250

CLUSTER VILLAGE

CLUSTER CONFIGURATION

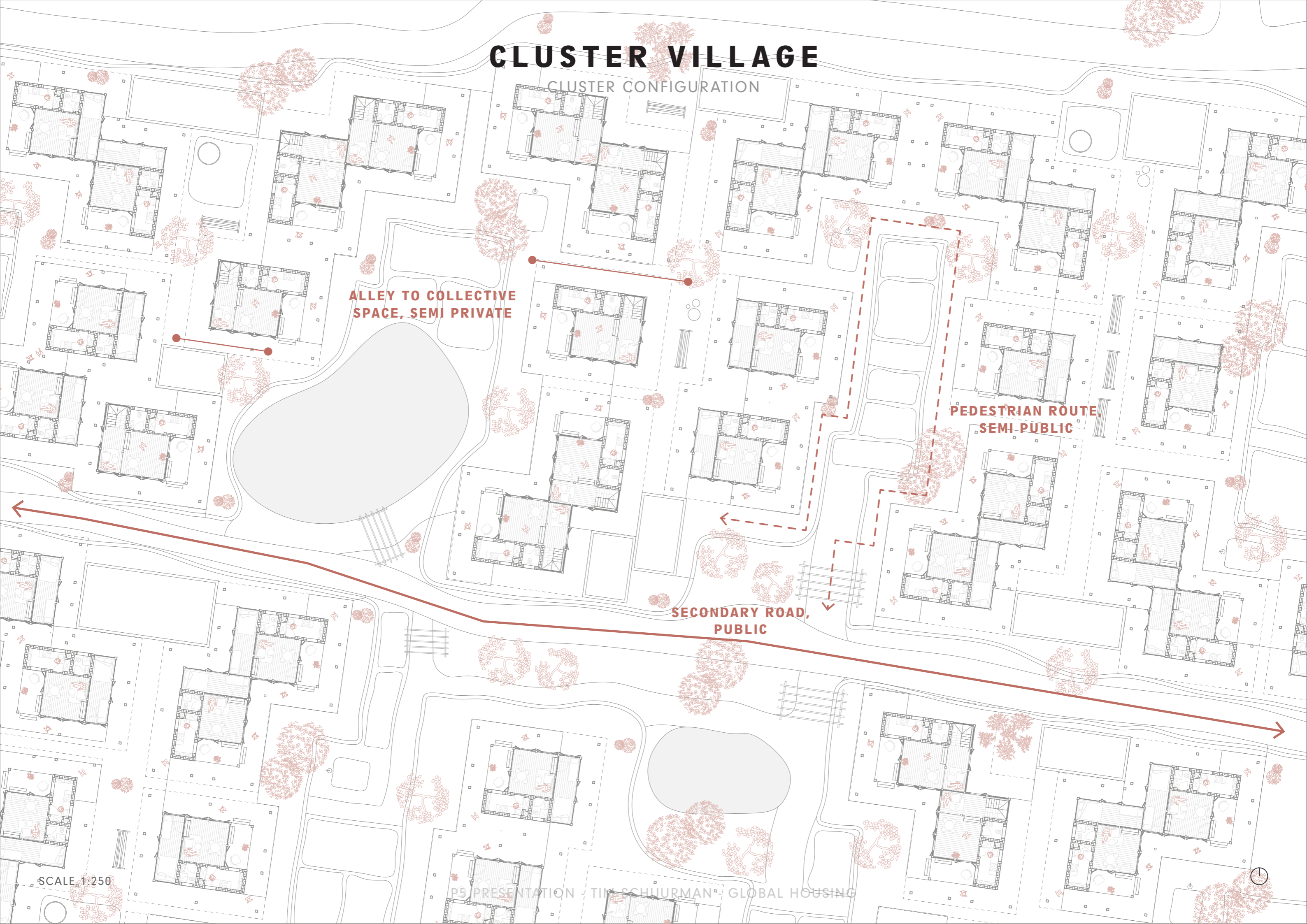


**PARKING BUILDING FOR
FUTURE DEVELOPMENT**

SCALE 1:250

CLUSTER VILLAGE

CLUSTER CONFIGURATION



ALLEY TO COLLECTIVE SPACE, SEMI PRIVATE

PEDESTRIAN ROUTE, SEMI PUBLIC

SECONDARY ROAD, PUBLIC

SCALE 1:250

CLUSTER VILLAGE

MID INCOME CLUSTER IMPRESSION

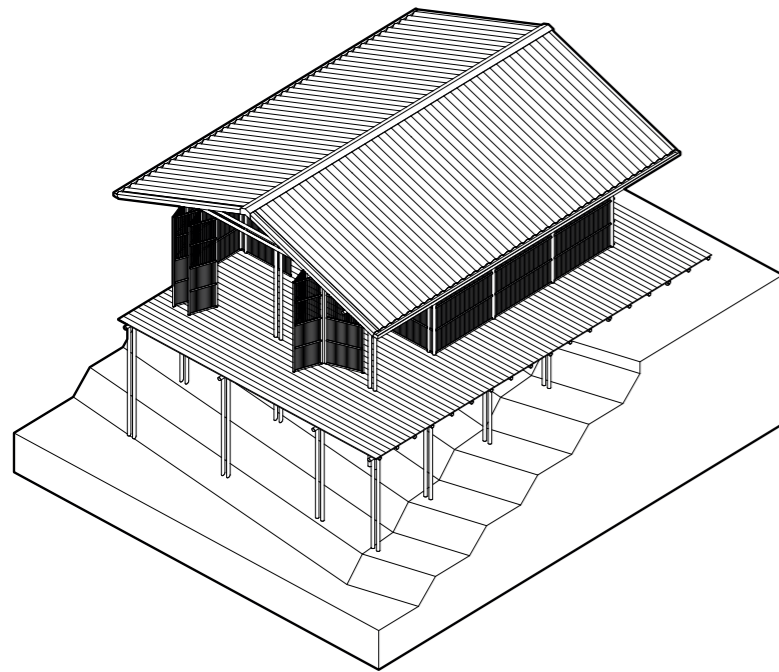


06

UNIT STRATEGY

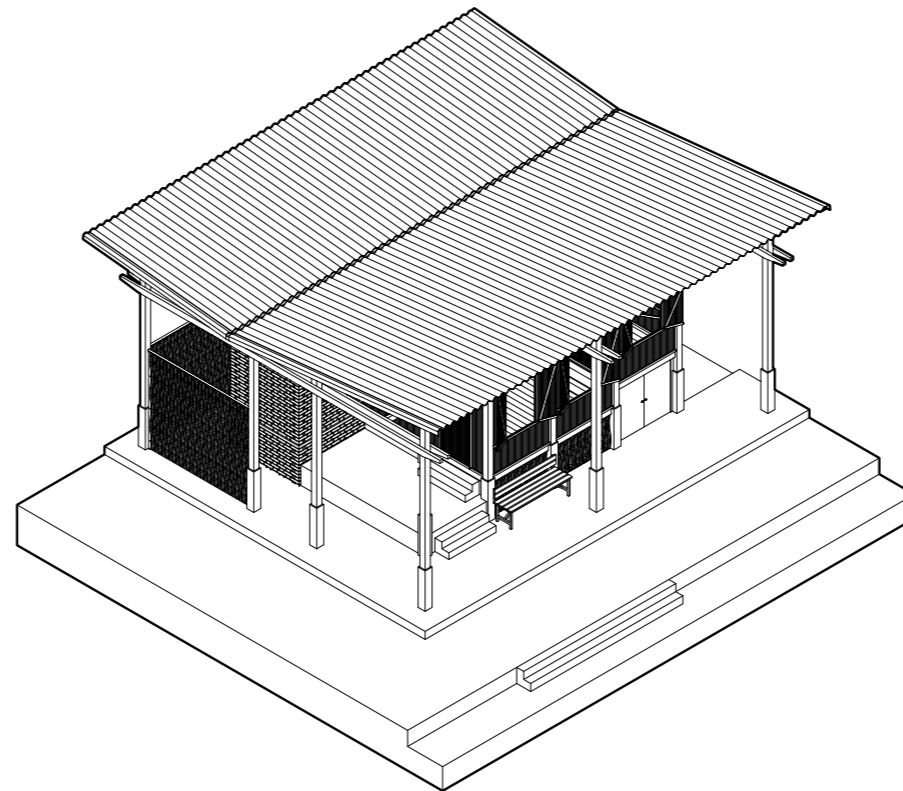
UNIT STRATEGY

DWELLING TYPES



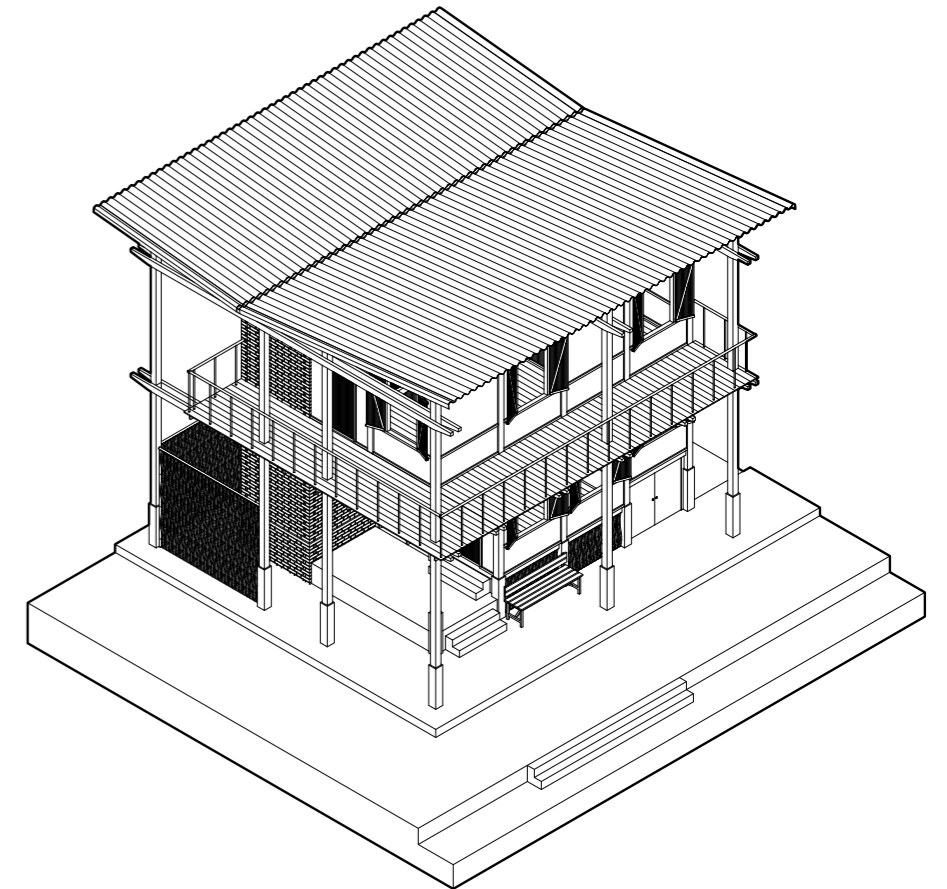
TYPE A - LOW INCOME

1 FLOORS
40 M2
SEASONAL WORKERS



TYPE B - LOW INCOME

1 FLOORS
35 M2
EXISTING FAMILIES & NEW RESIDENTS

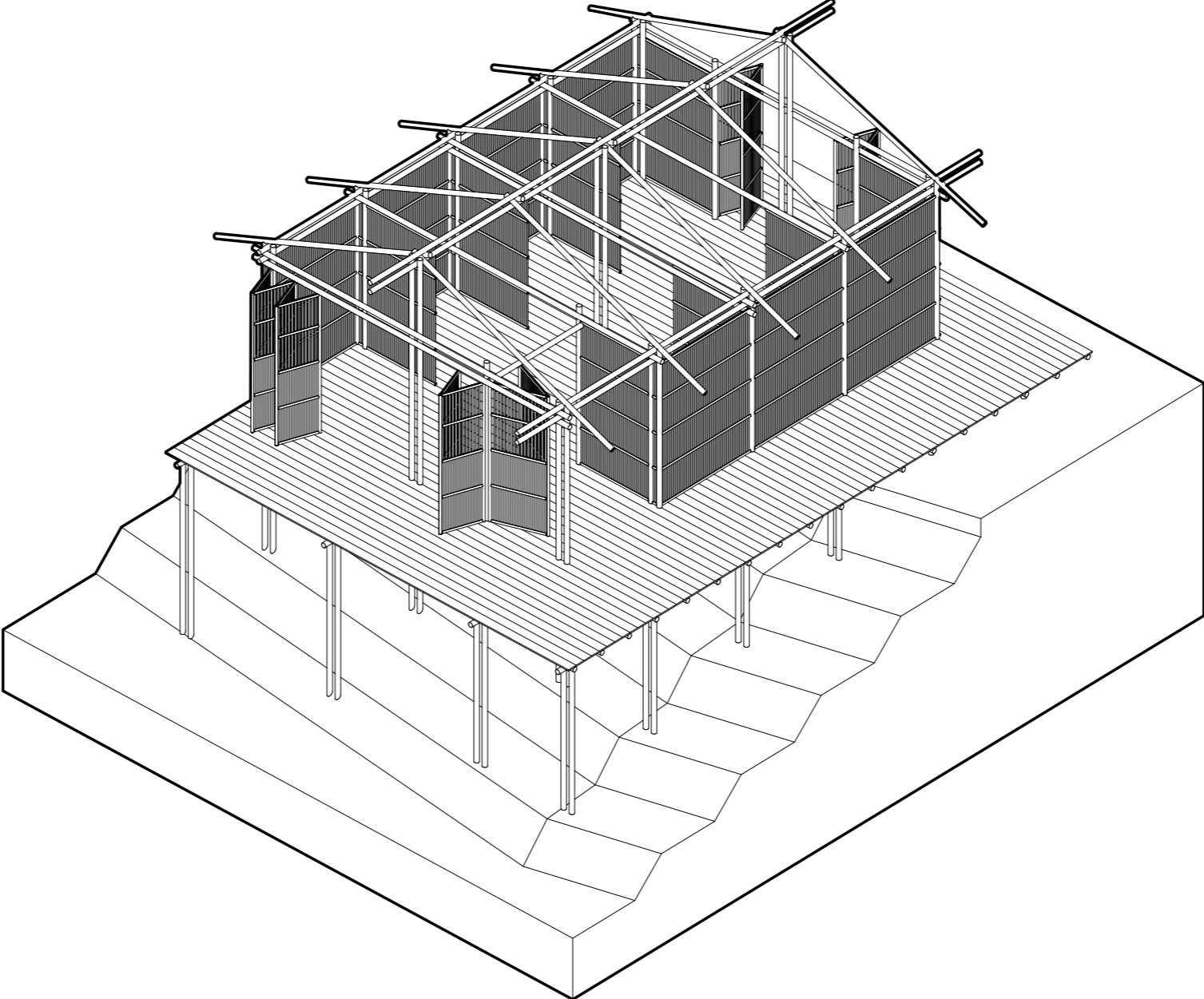


TYPE C - MID INCOME

2 FLOORS
75 M2
EXISTING FAMILIES & NEW RESIDENTS

RURAL UNIT

TYPE A



RURAL UNIT

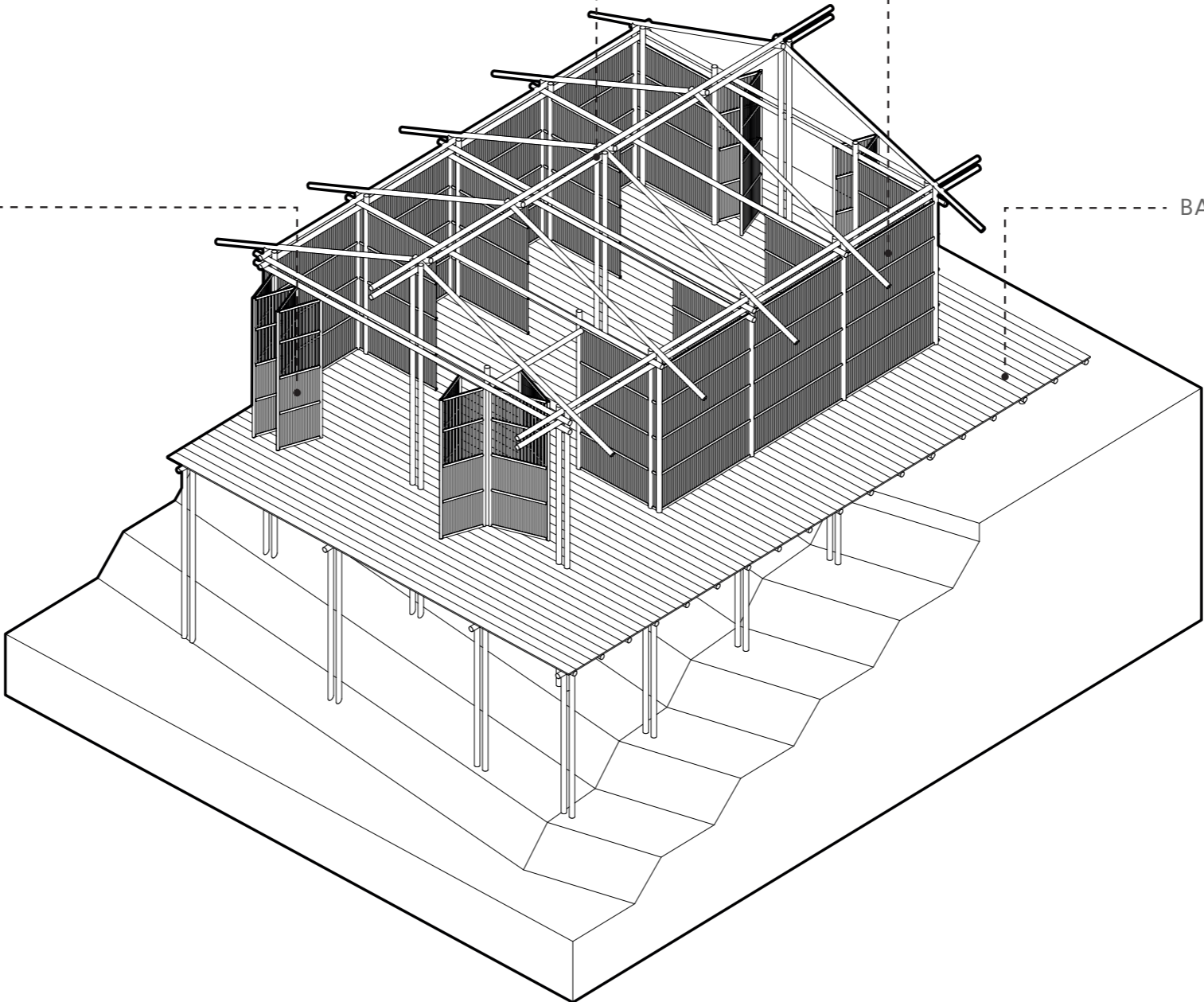
TYPE A - MATERIALS

LIGHTWEIGHT BAMBOO
CONSTRUCTION

WOVEN BAMBOO WALL
PANELS

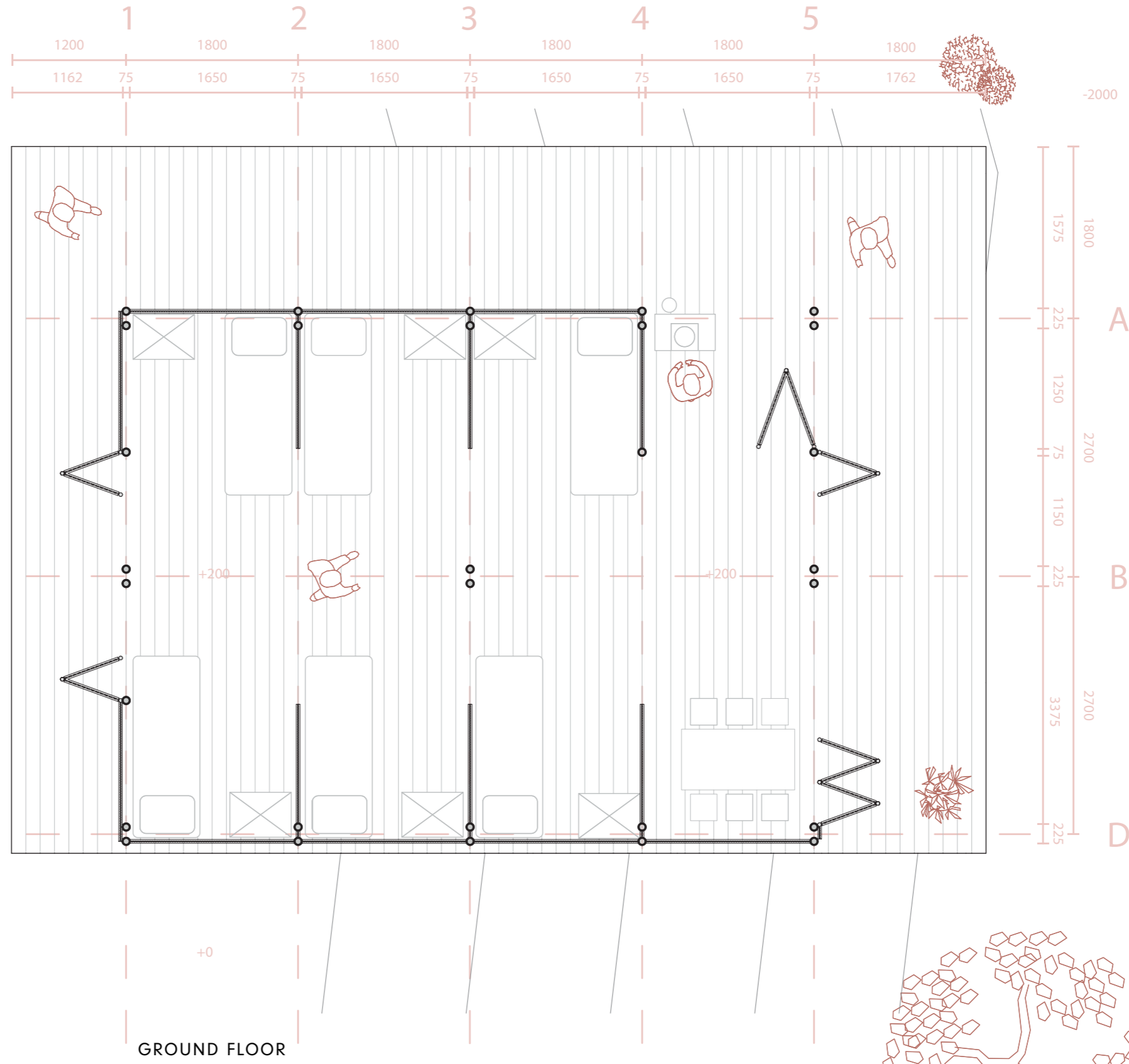
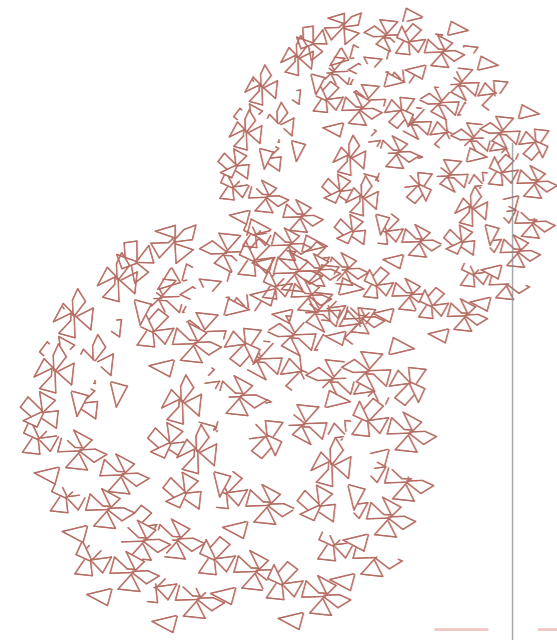
BAMBOO SLIDING PANELS

BAMBOO FLOORING



RURAL UNIT

TYPE A - DWELLING

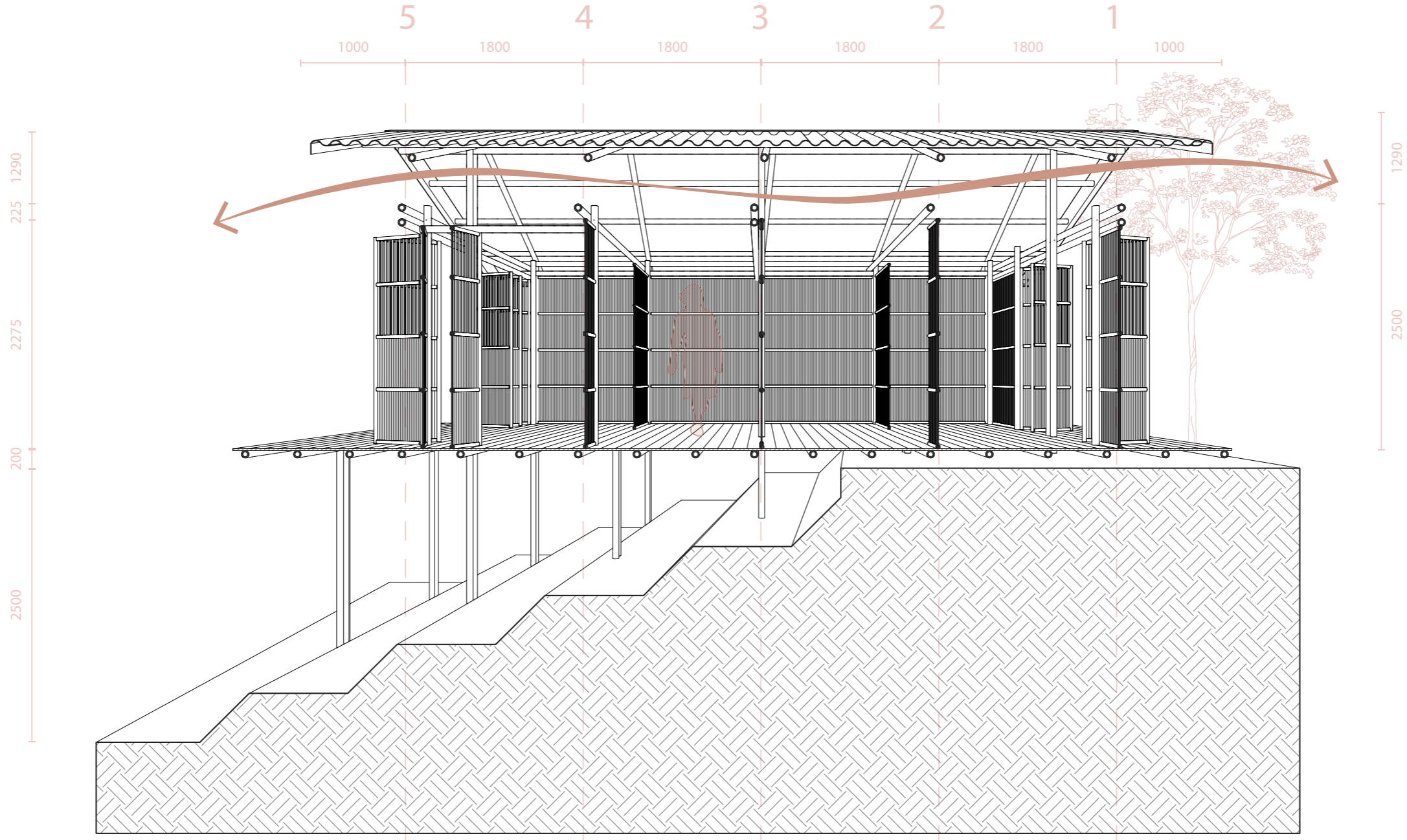


SCALE 1:50



RURAL UNIT

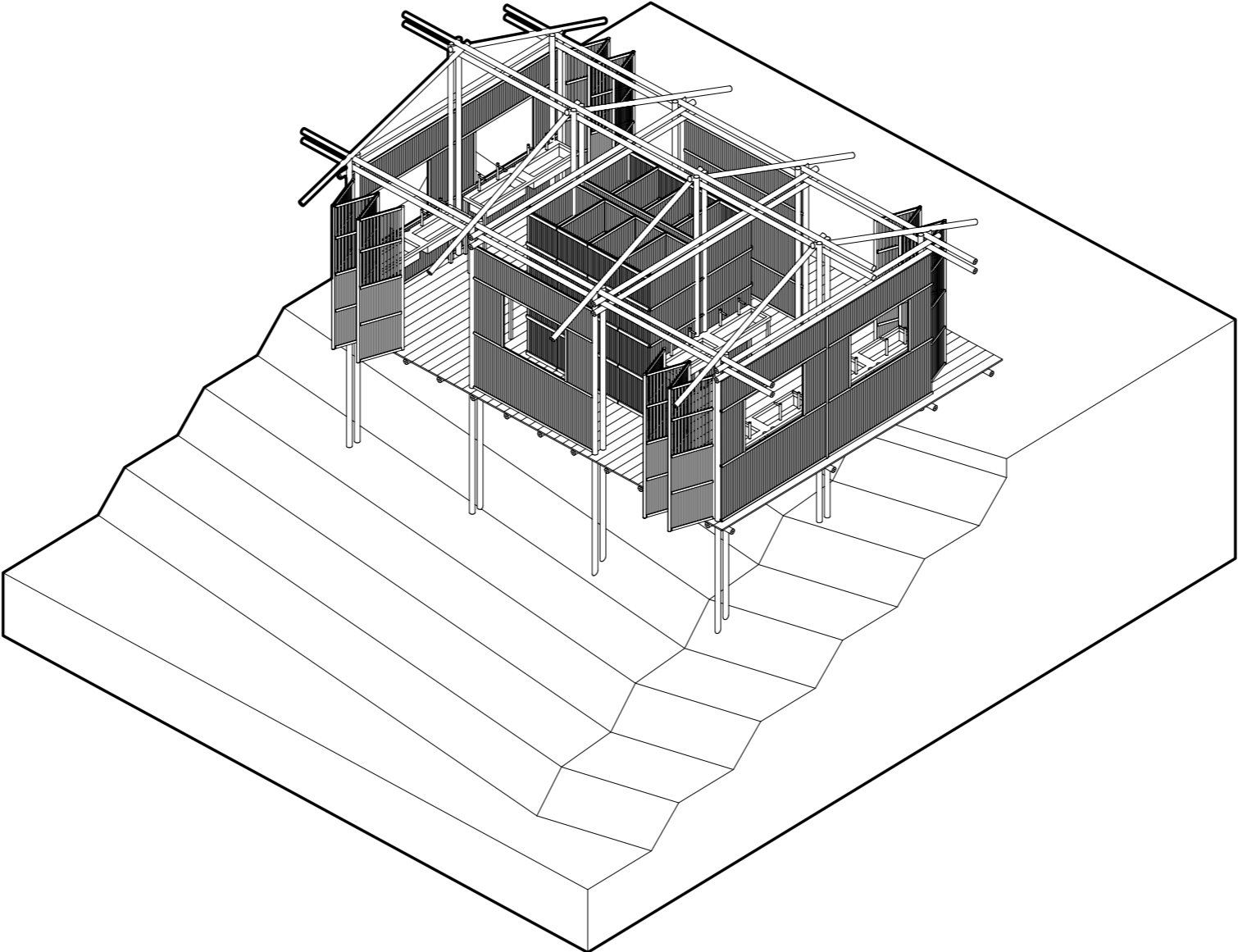
TYPE A - PRINCIPAL



CROSS-SECTION UNIT A

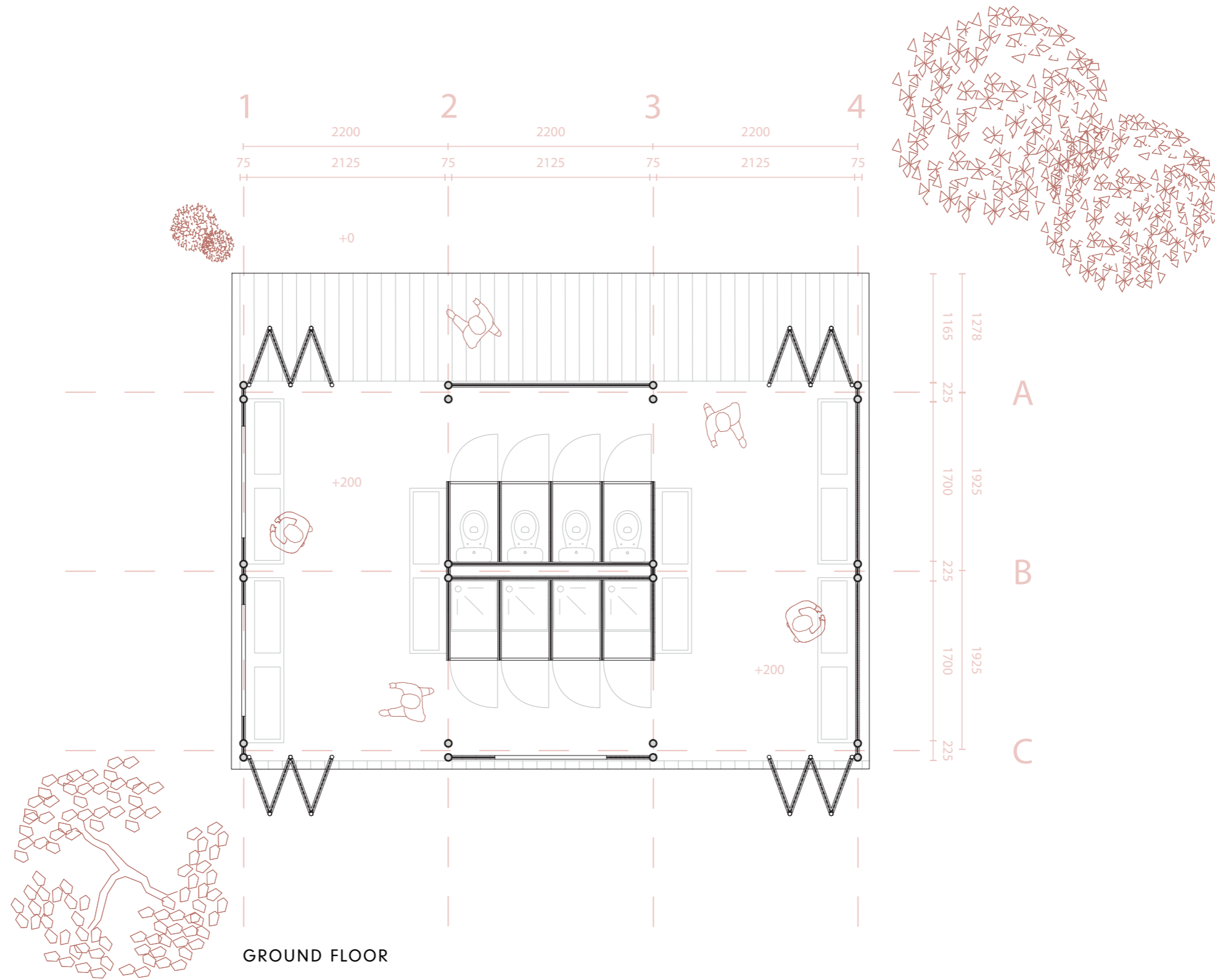
RURAL UNIT

TYPE A - TOILET BUILDING



RURAL UNIT

TYPE A - TOILET BUILDING

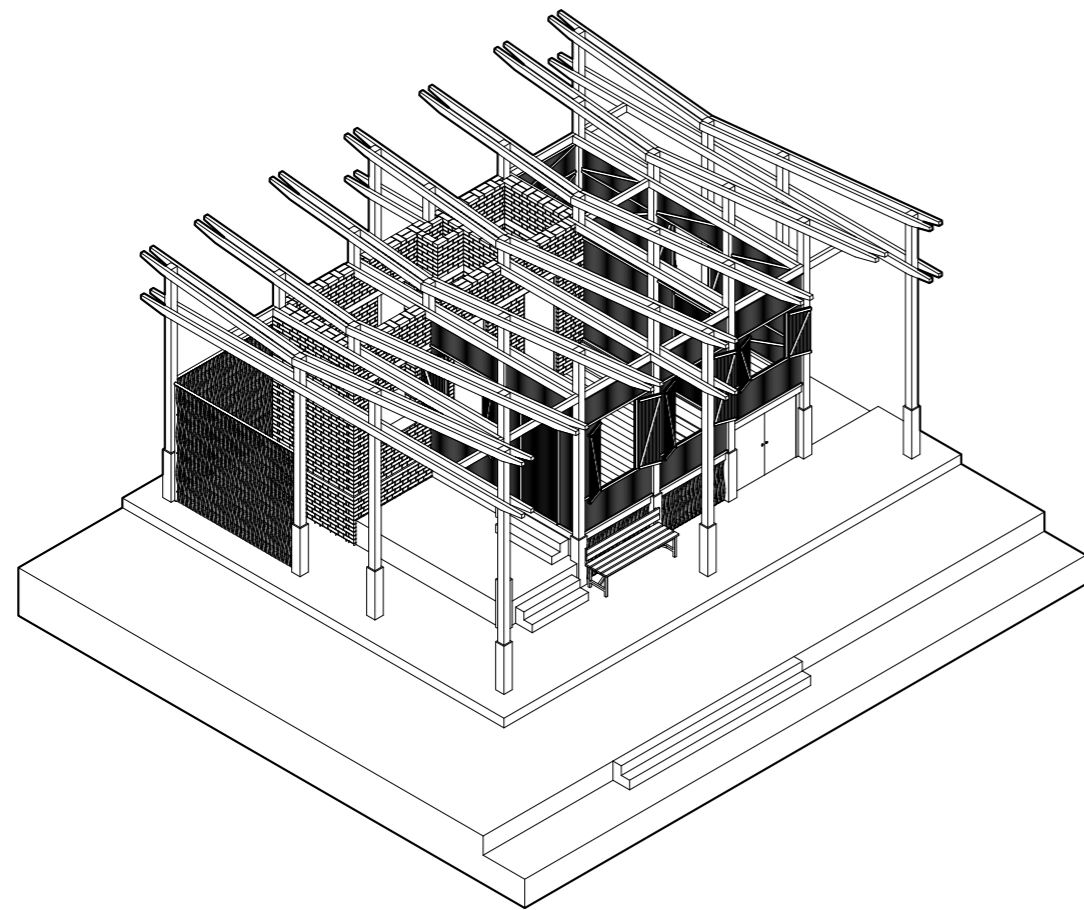


SCALE 1:50

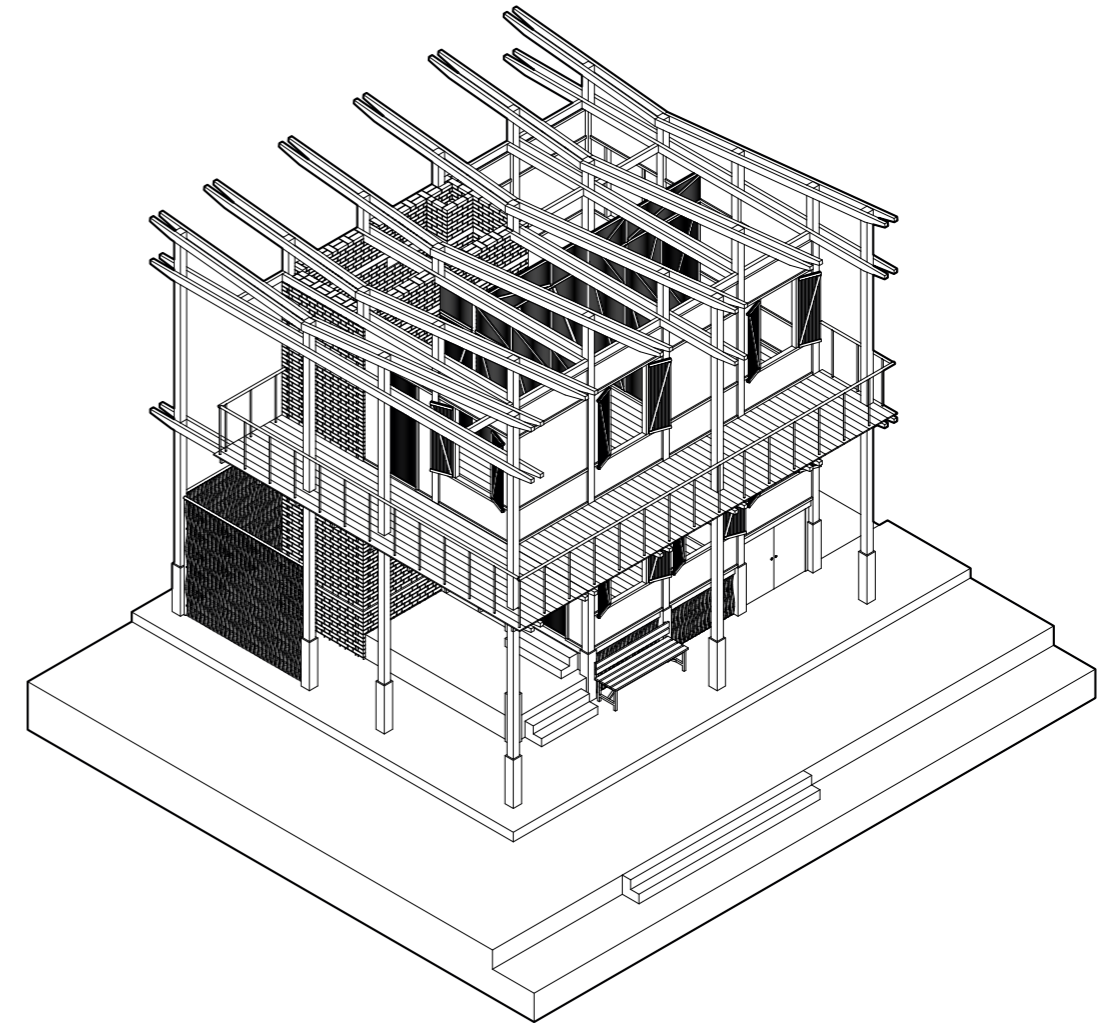


VILLAGE UNIT

TYPE B & C



TYPE B - LOW INCOME



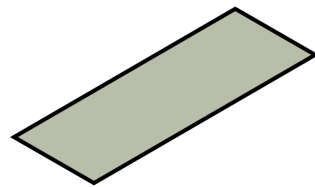
TYPE C - MID INCOME

LIVING CONDITIONS

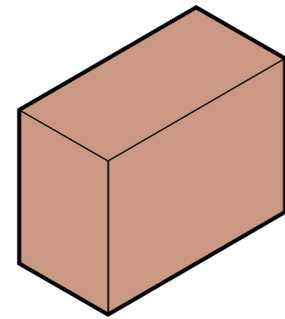
PHILOSOPHY HOUSING FOR THE POOR

"A WELL-DESIGNED HOUSING UNIT, EVEN WITHIN A MODEST 25-30 SQUARE METERS, CAN INCORPORATE ALL THE BASIC AMENITIES—KITCHEN, TOILET, AND SLEEPING SPACES—WHEN INTELLIGENTLY PLANNED WITH EFFICIENCY AND DIGNITY IN MIND."

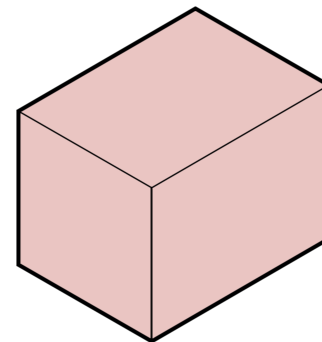
-CHARLES CORREA-



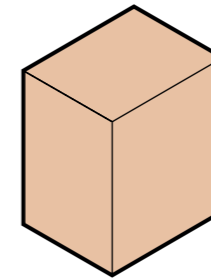
OUTDOOR SPACE
7M²



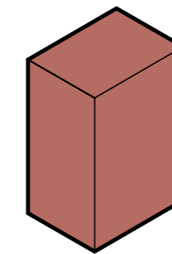
BEDROOM
8M²



LIVING SPACE
12M²



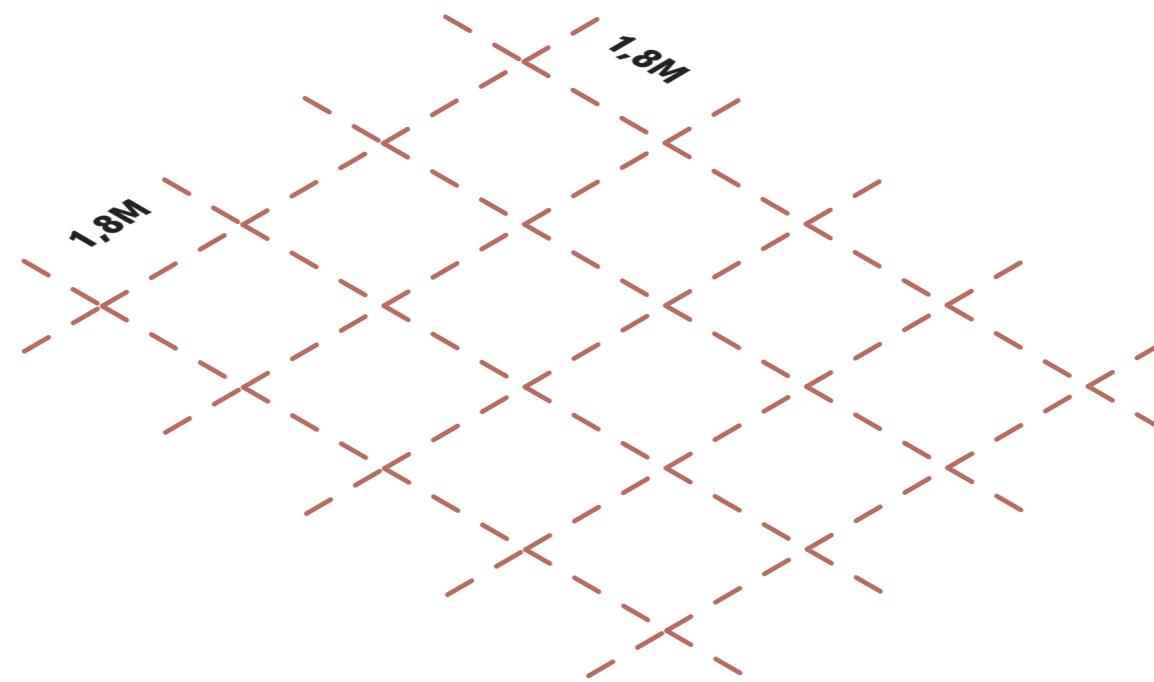
KITCHEN
5M²



TOILET/BATHROOM
3M²

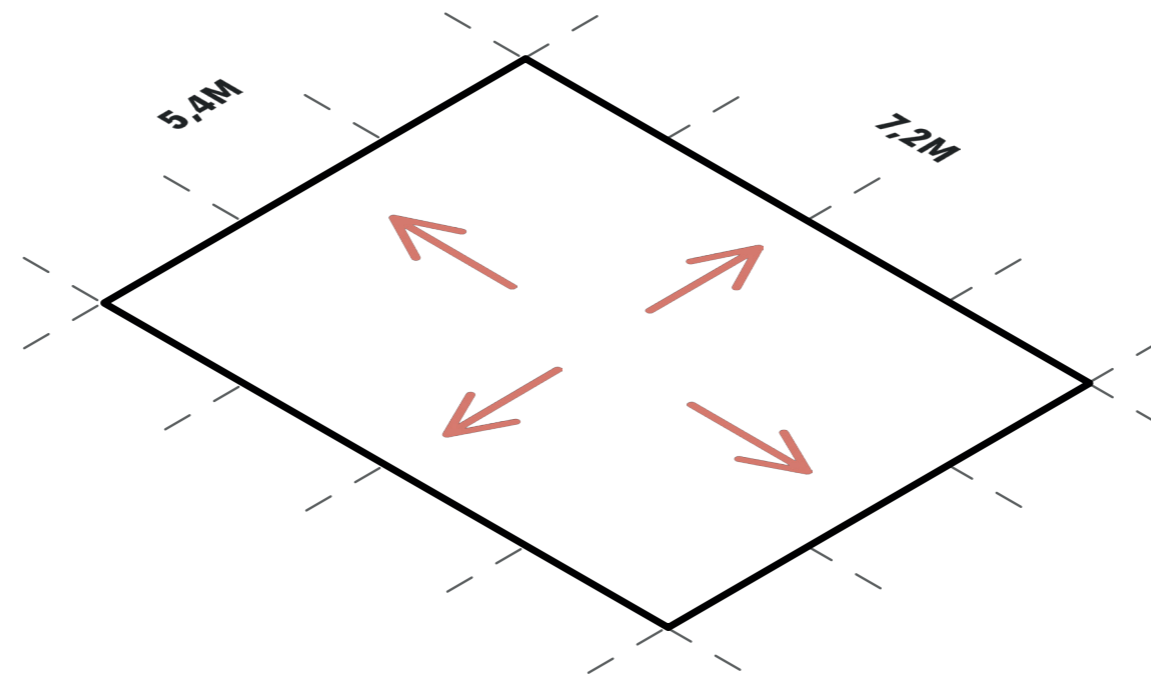
VILLAGE UNIT

CONCEPT TYPE B



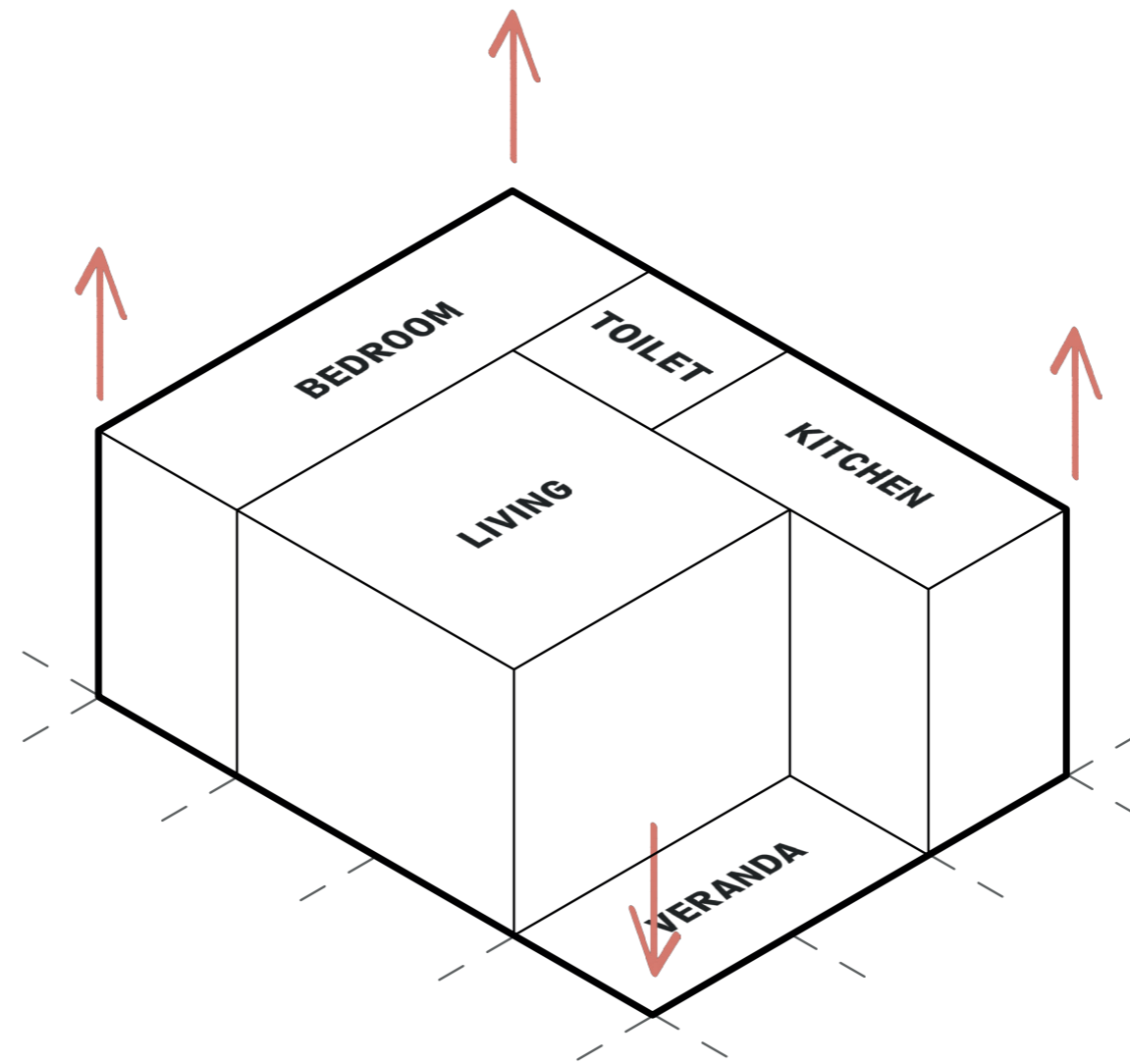
VILLAGE UNIT

CONCEPT TYPE B



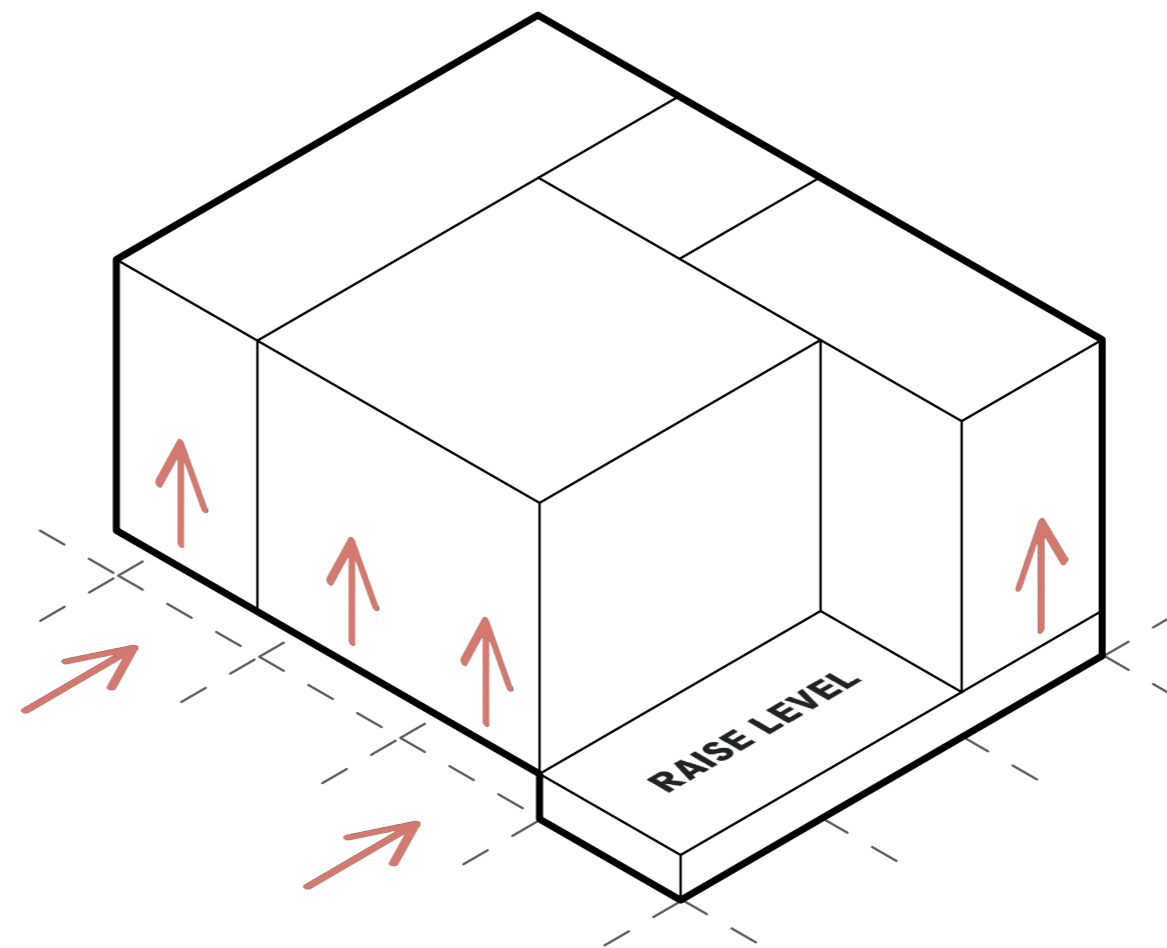
VILLAGE UNIT

CONCEPT TYPE B



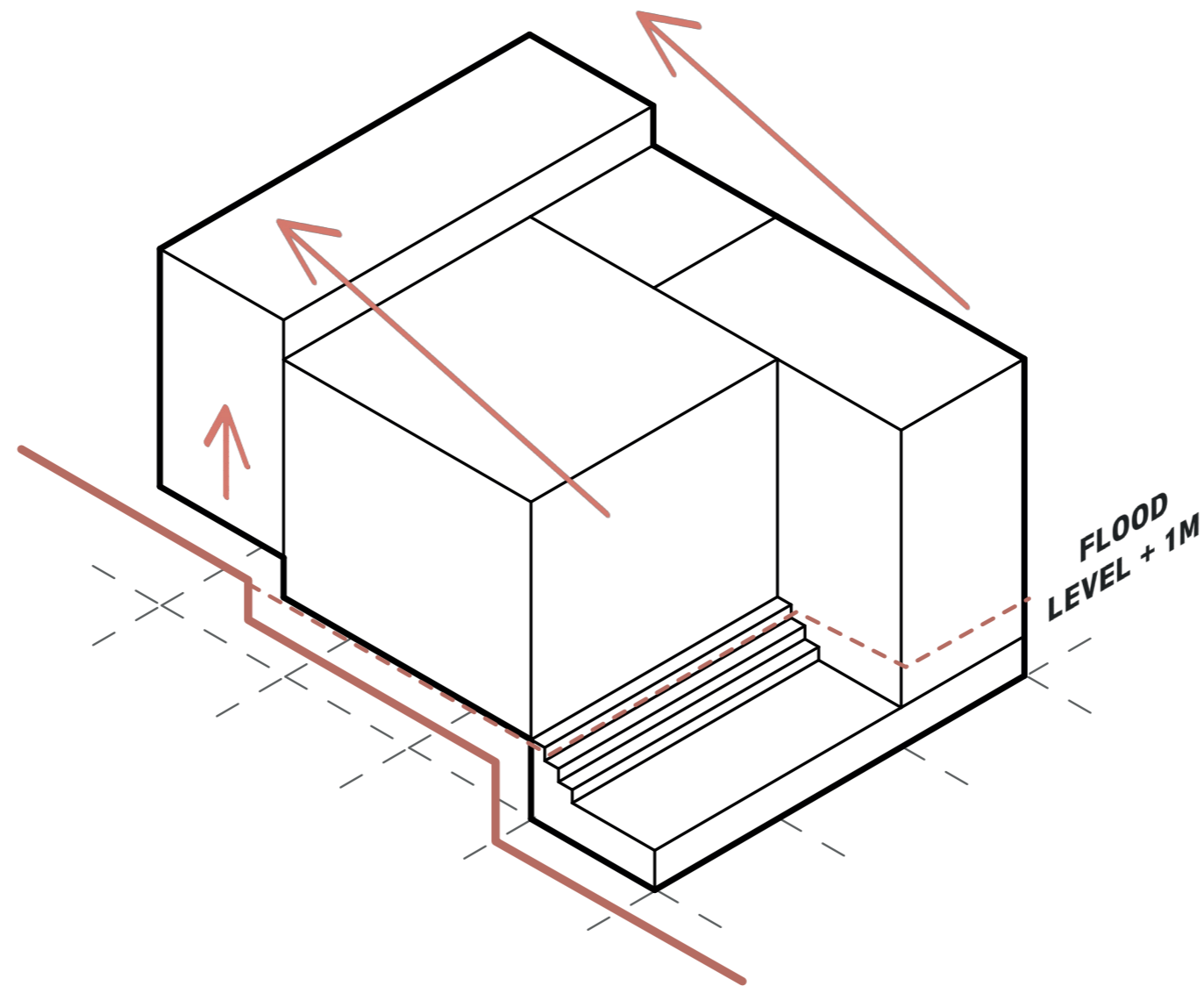
VILLAGE UNIT

CONCEPT TYPE B



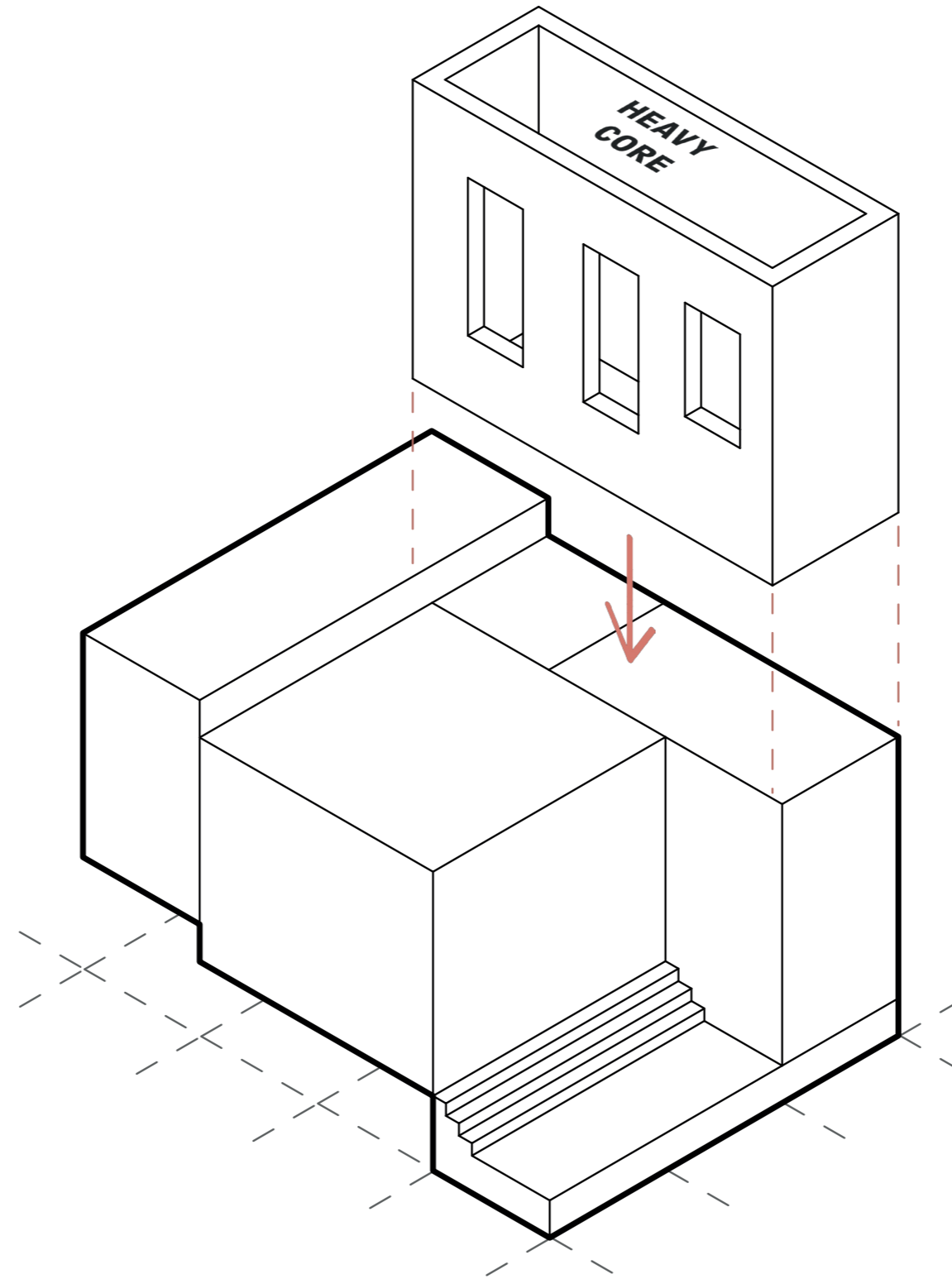
VILLAGE UNIT

CONCEPT TYPE B



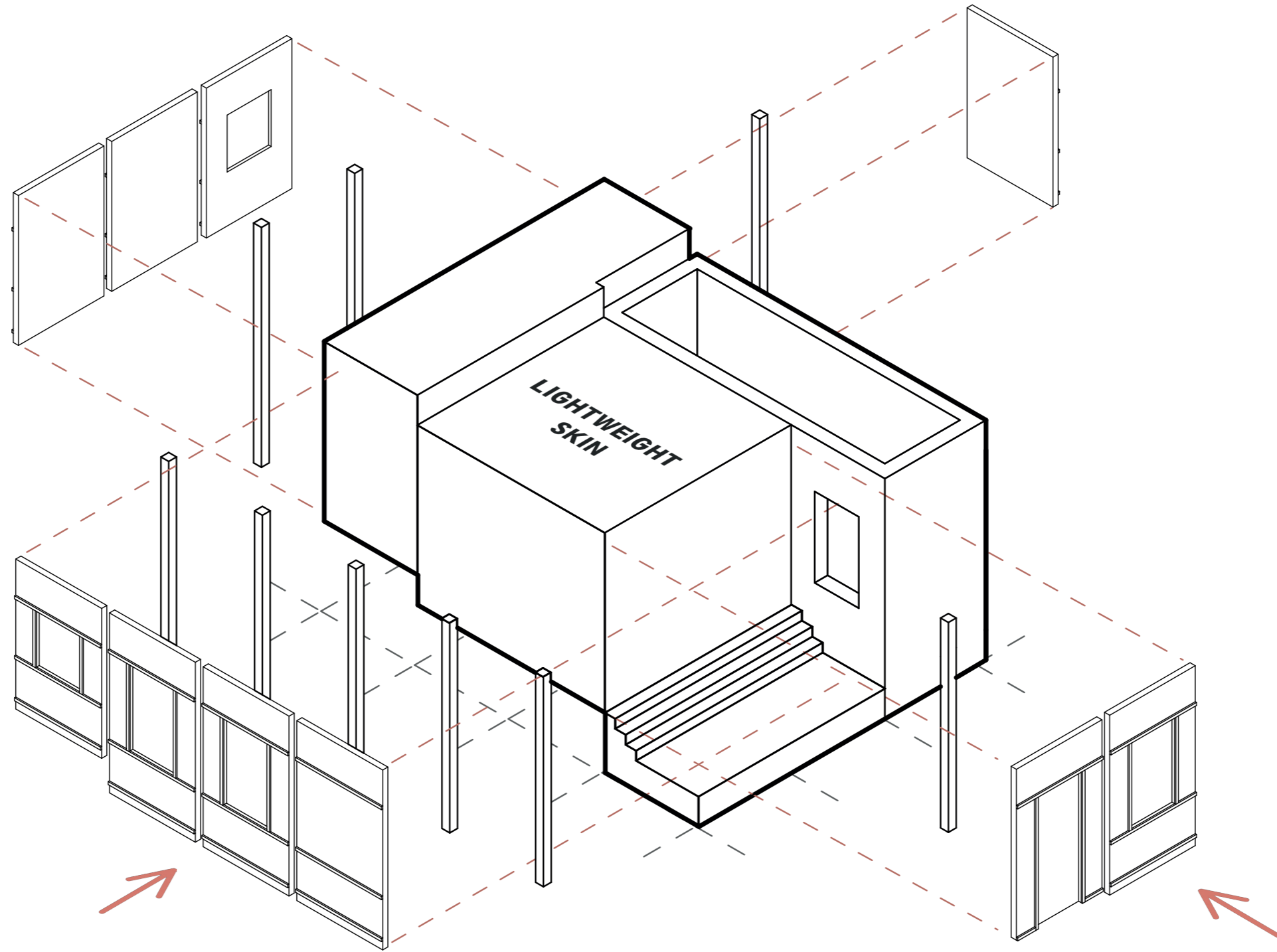
VILLAGE UNIT

CONCEPT TYPE B



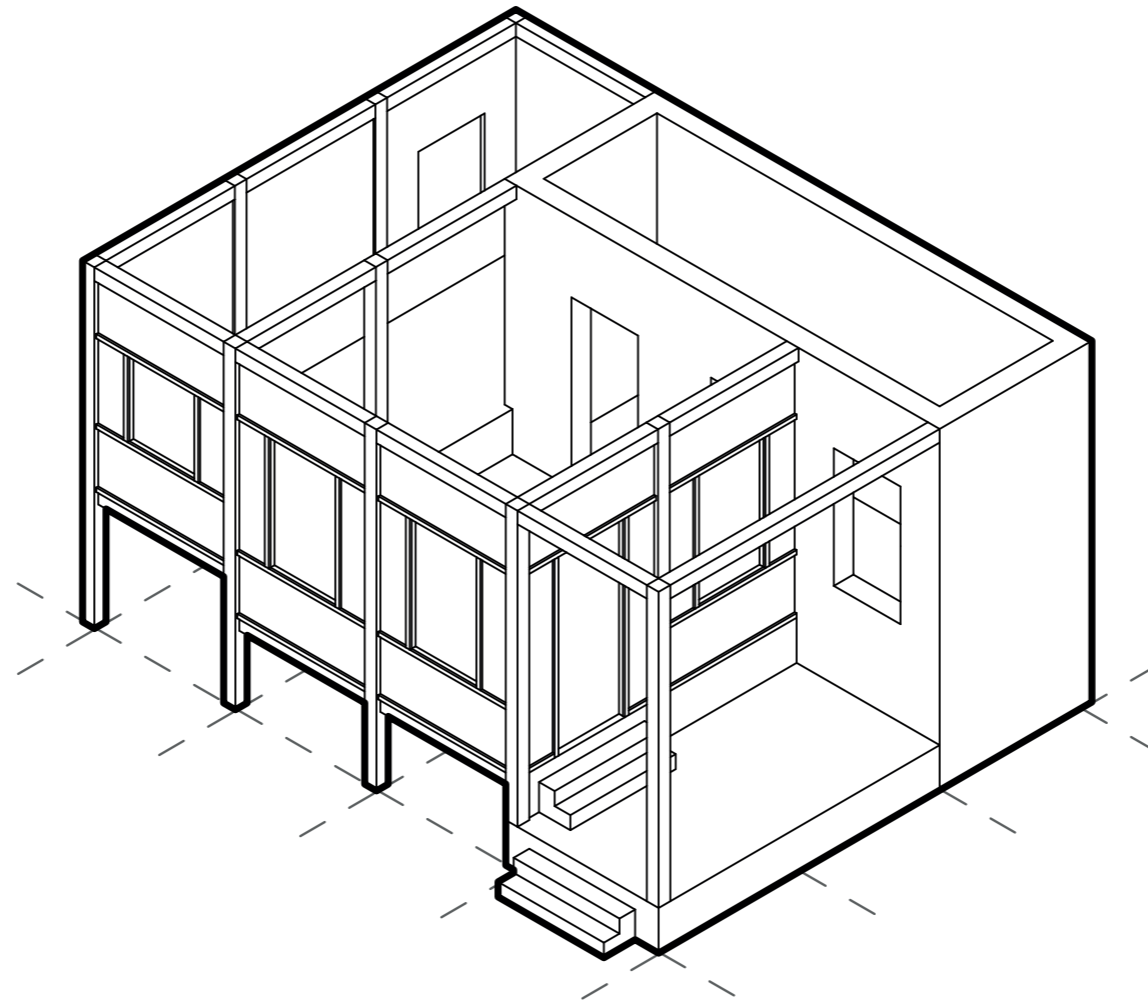
VILLAGE UNIT

CONCEPT TYPE B



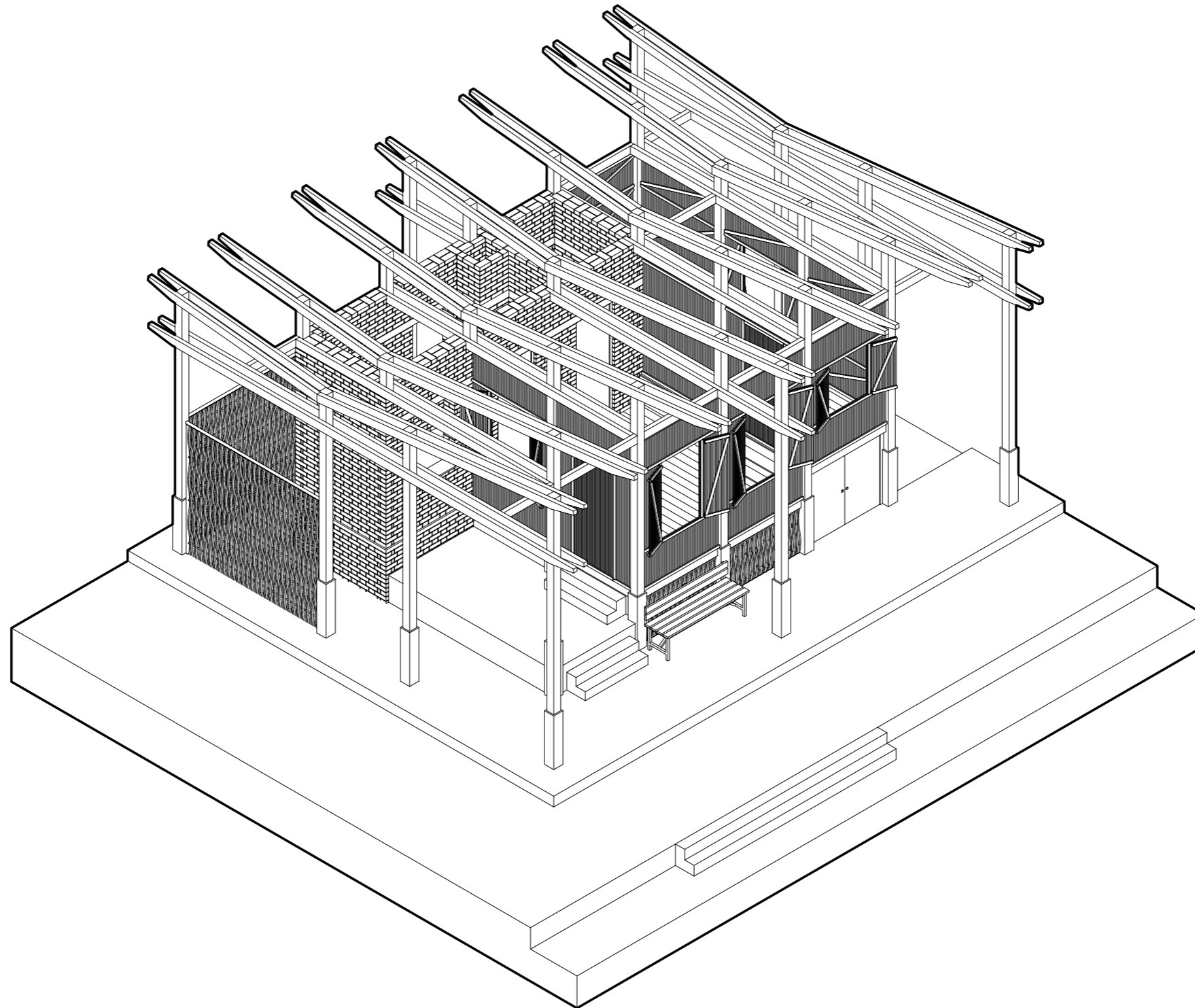
VILLAGE UNIT

CONCEPT TYPE B



VILLAGE UNIT

TYPE B



VILLAGE UNIT

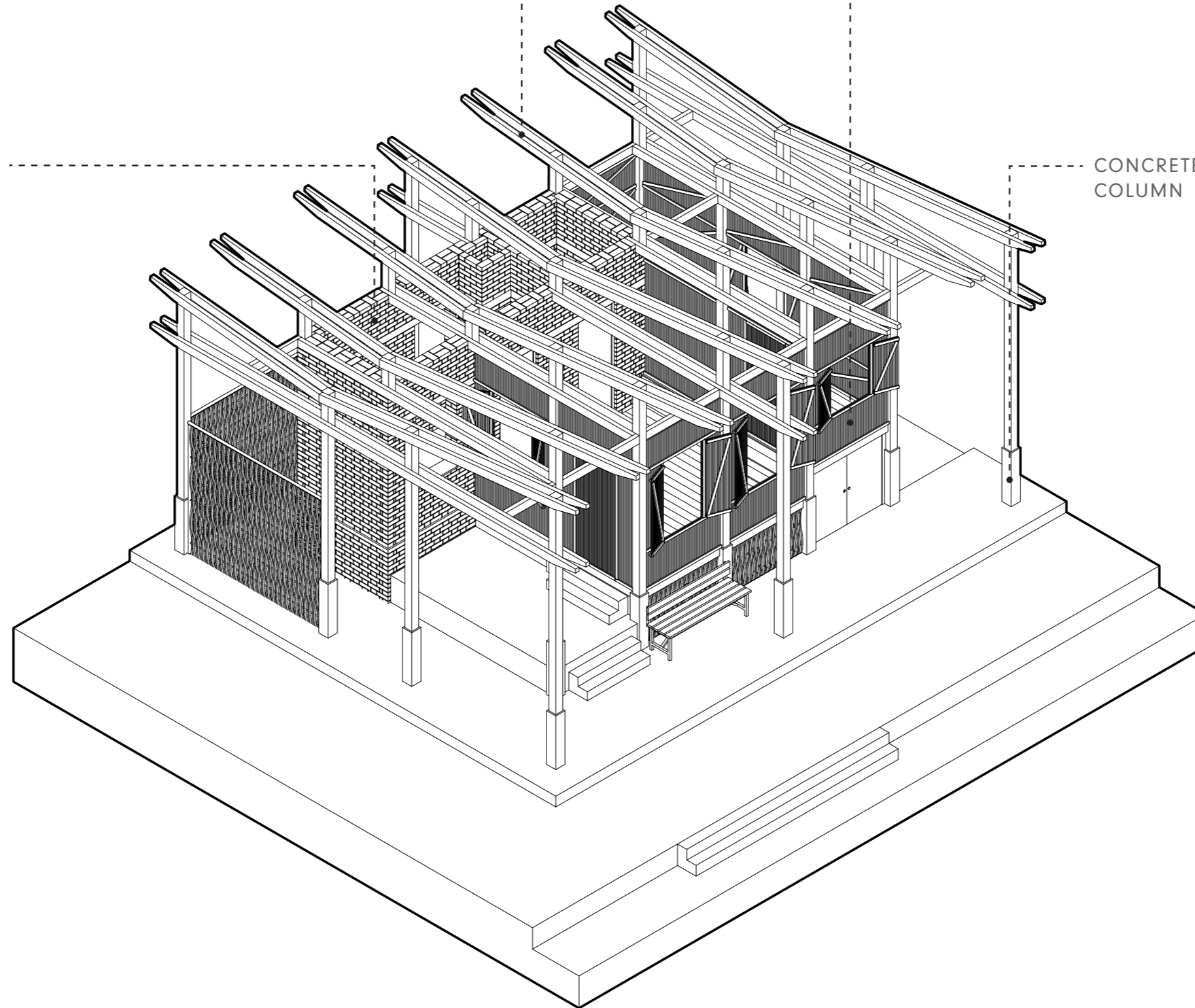
TYPE B - MATERIALS

WOODEN BEAM
CONSTRUCTION

LIGHTWEIGHT BAMBOO WALL
PANELS

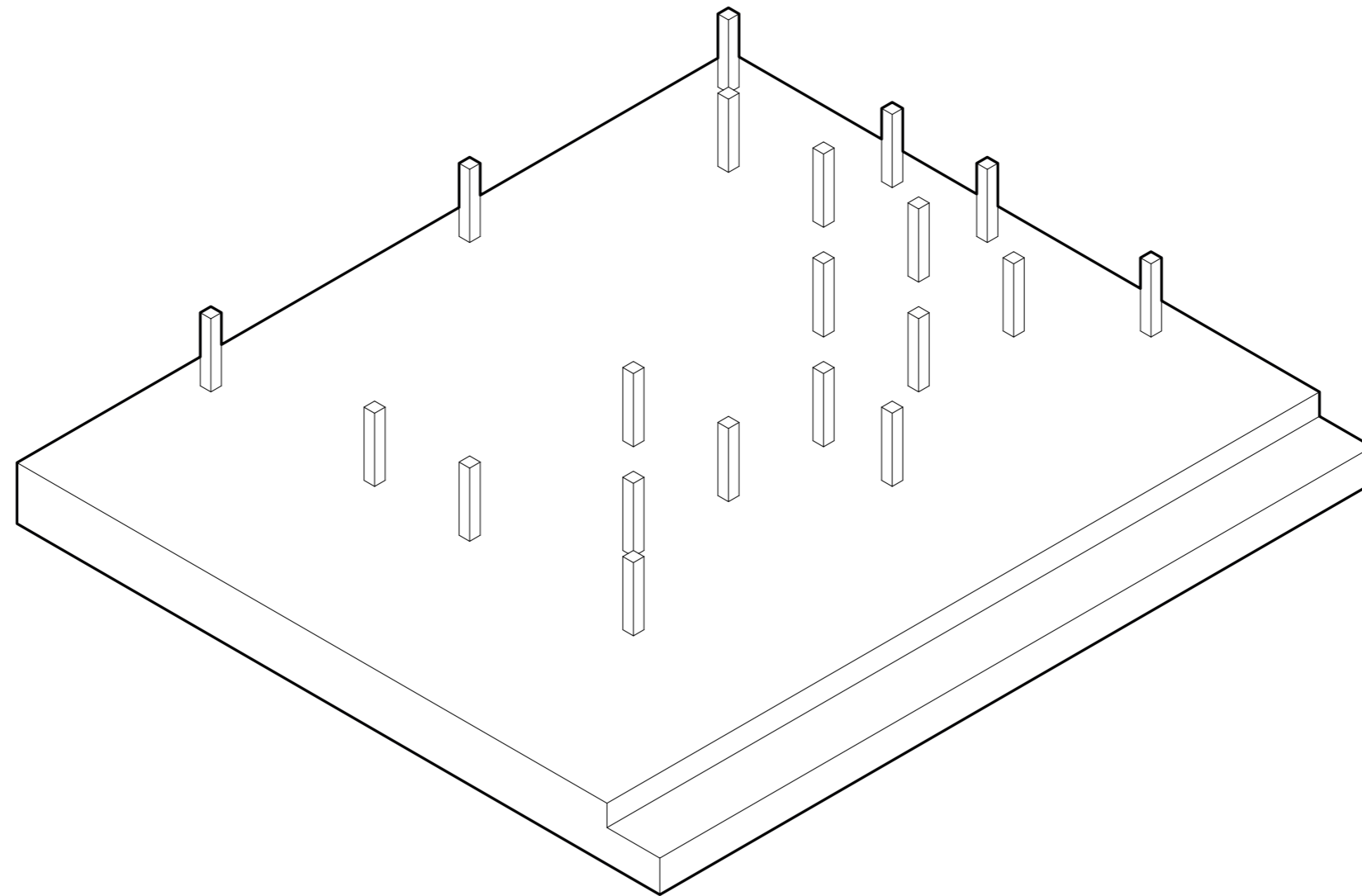
BRICK CORE CONSTRUCTION

CONCRETE FOUNDATION
COLUMN



VILLAGE UNIT

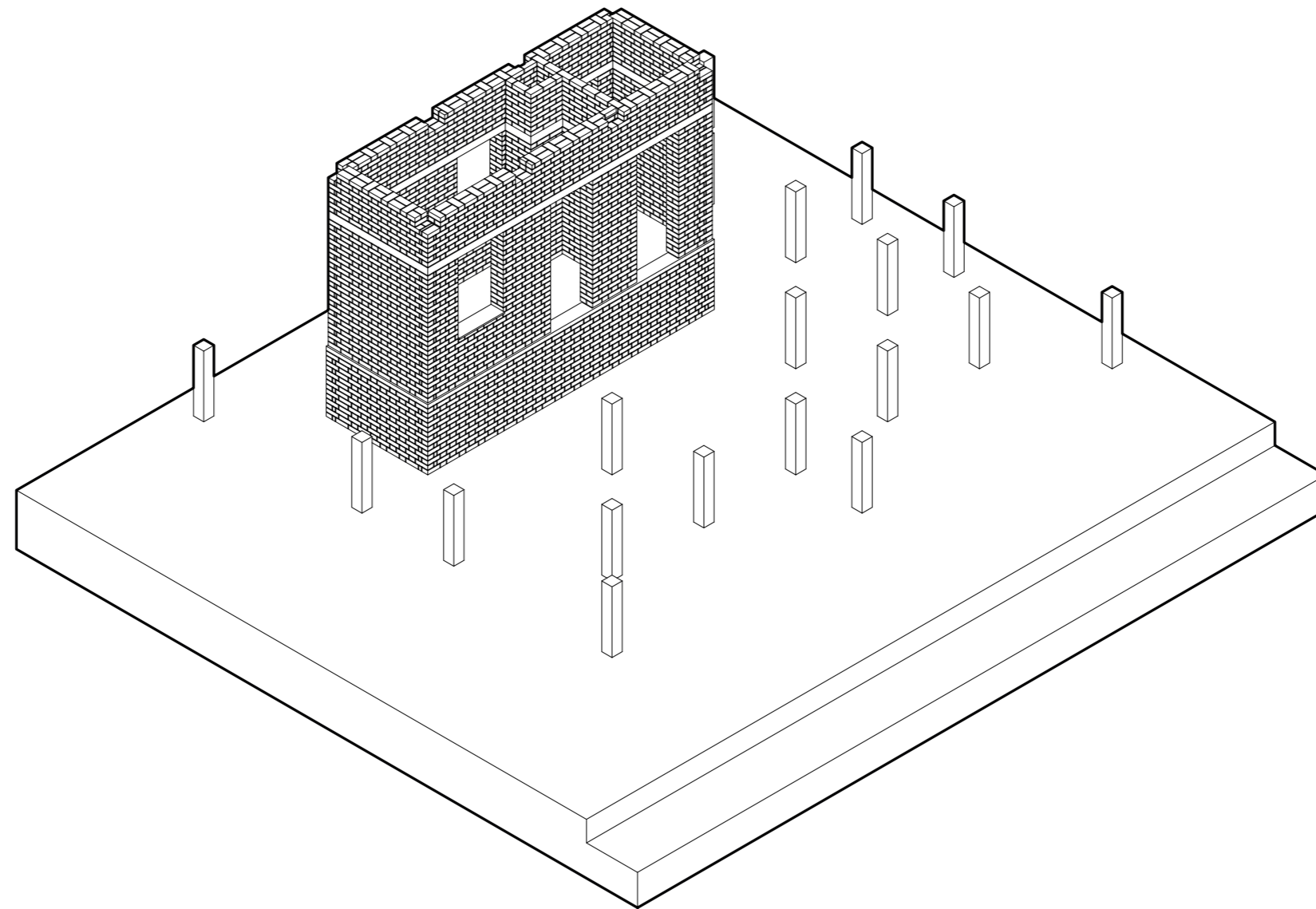
CONSTRUCTION PROCESS



1. CREATE CONCRETE COLUMN FOUNDATION

VILLAGE UNIT

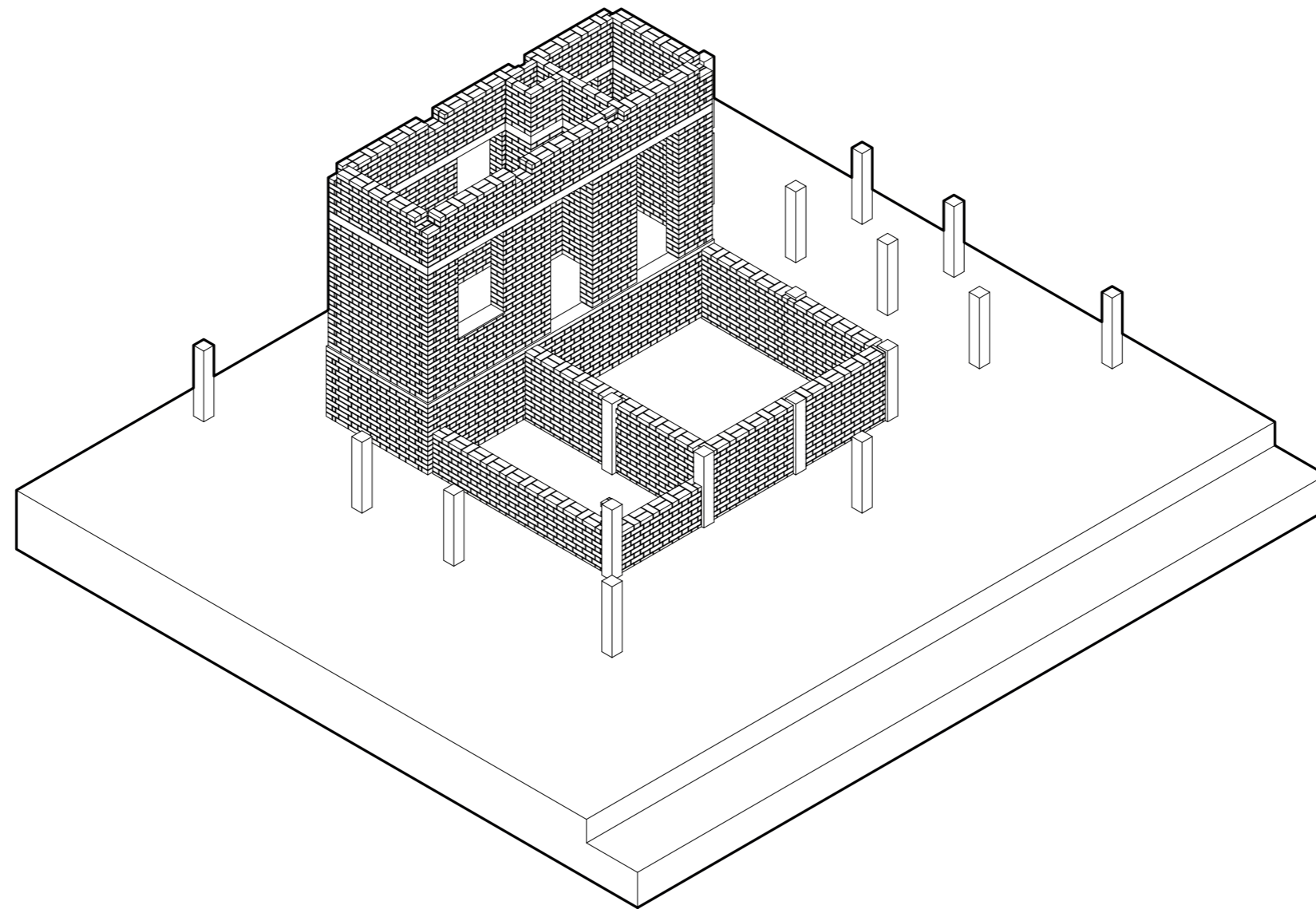
CONSTRUCTION PROCESS



2. MASONRY OF FIRED BRICK CORE

VILLAGE UNIT

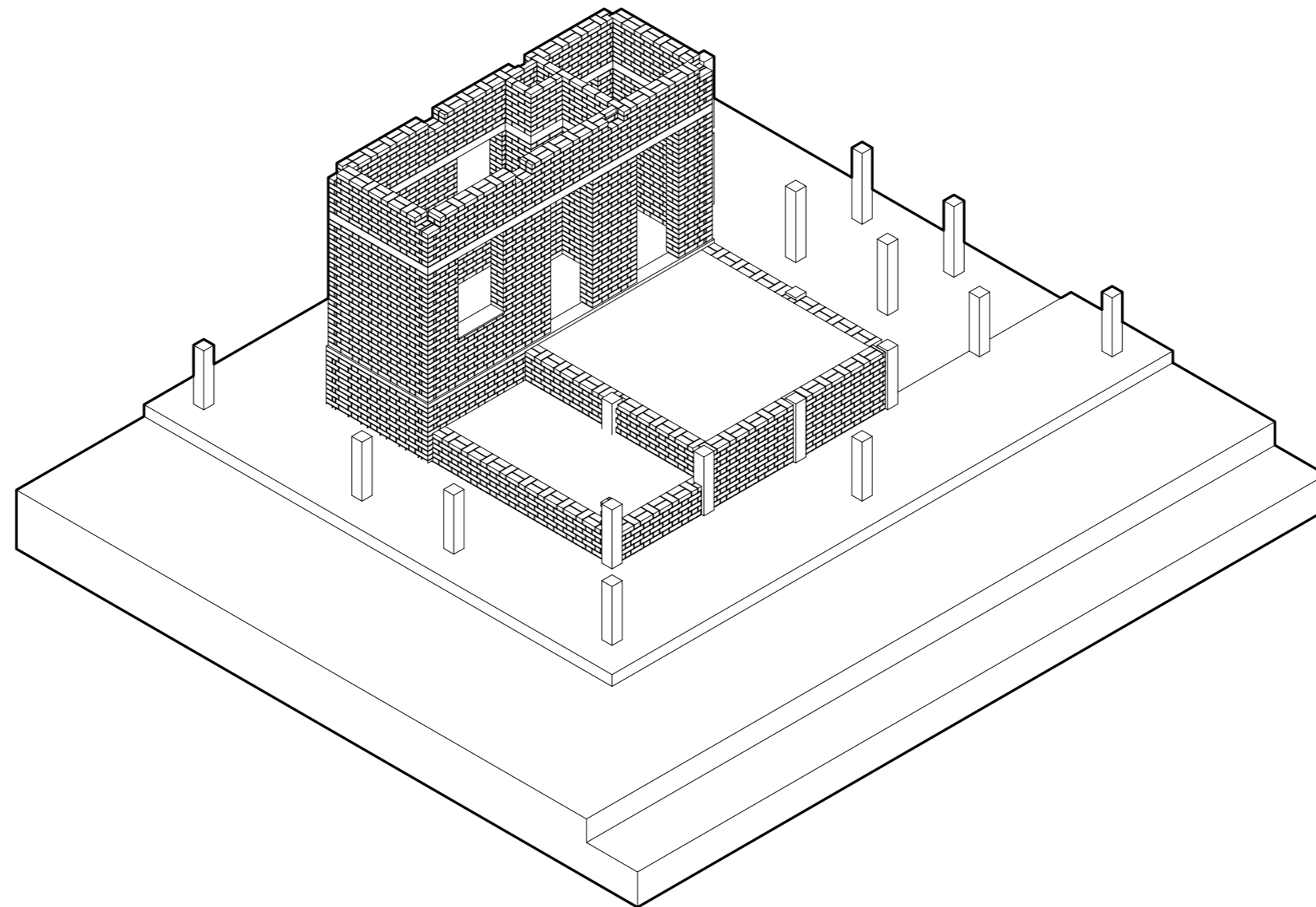
CONSTRUCTION PROCESS



3. BRICK WALL FOR FLOOR CONSTRUCTION

VILLAGE UNIT

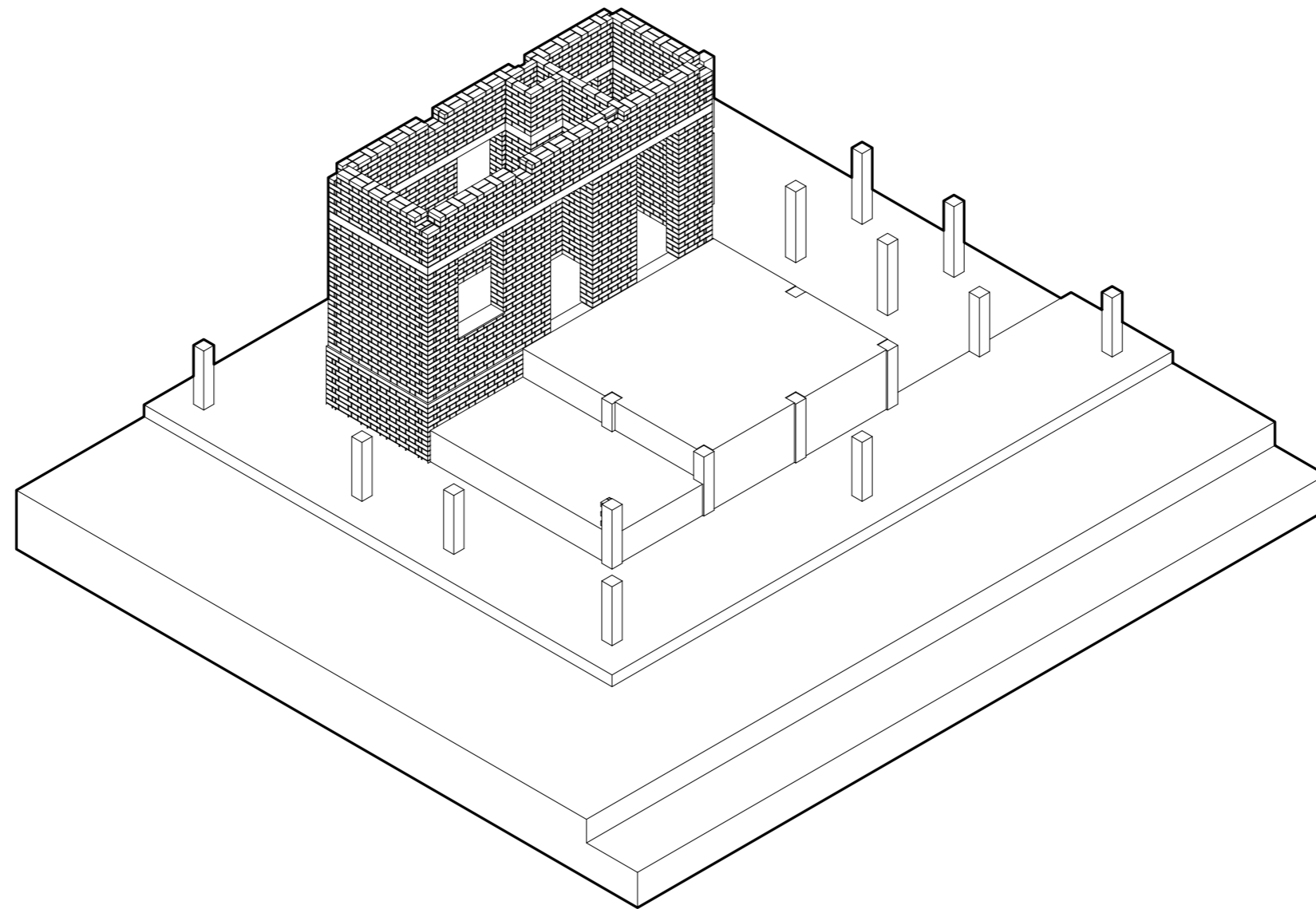
CONSTRUCTION PROCESS



4. BACKFILLING WITH GRAVEL WASTE, BRICK BATS AND SAND

VILLAGE UNIT

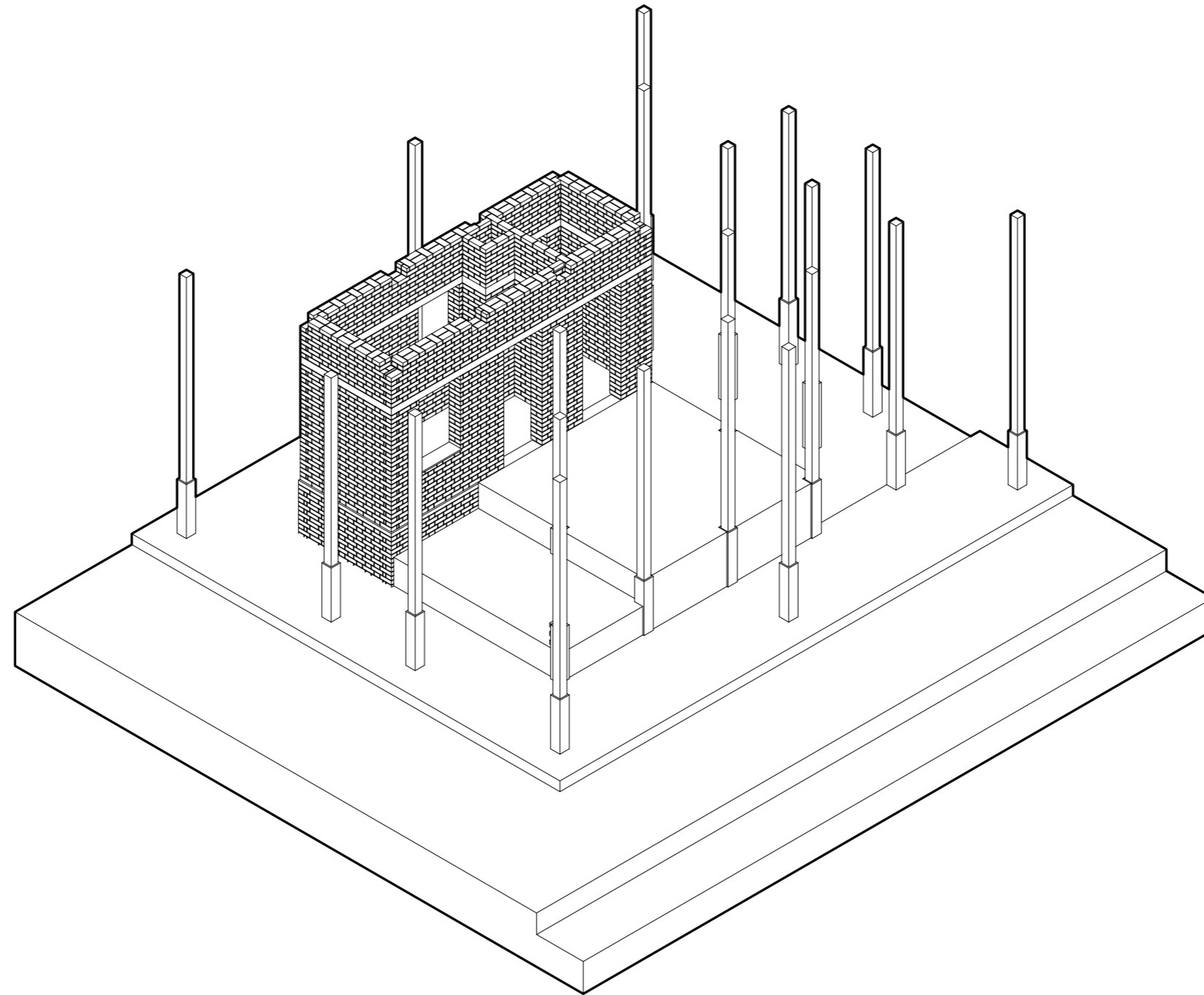
CONSTRUCTION PROCESS



5. FINISH FLOOR WITH CONCRETE CEMENT LAYER

VILLAGE UNIT

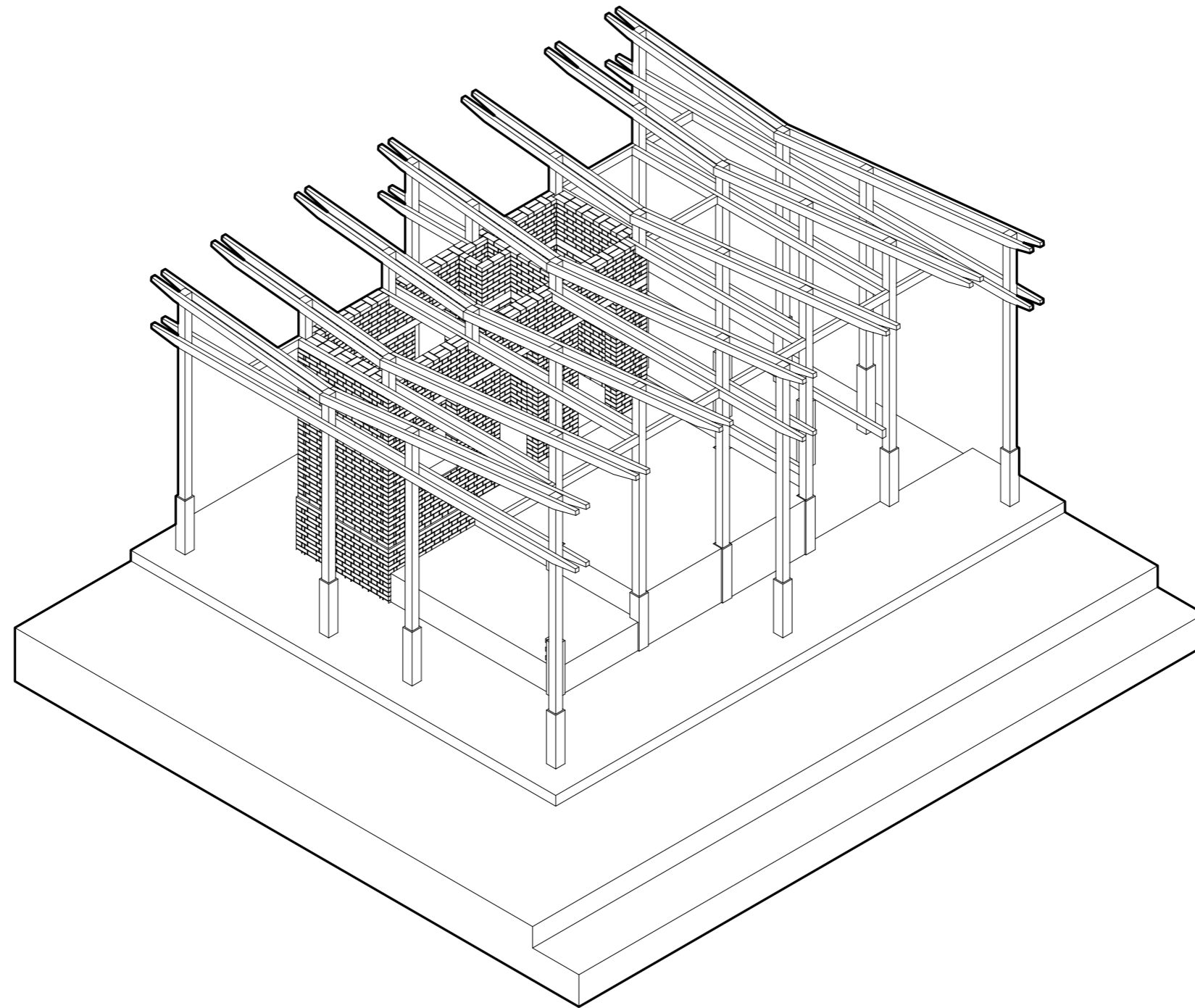
CONSTRUCTION PROCESS



6. FIXING WOODEN COLUMNS ON CONCRETE
FOUNDATION

VILLAGE UNIT

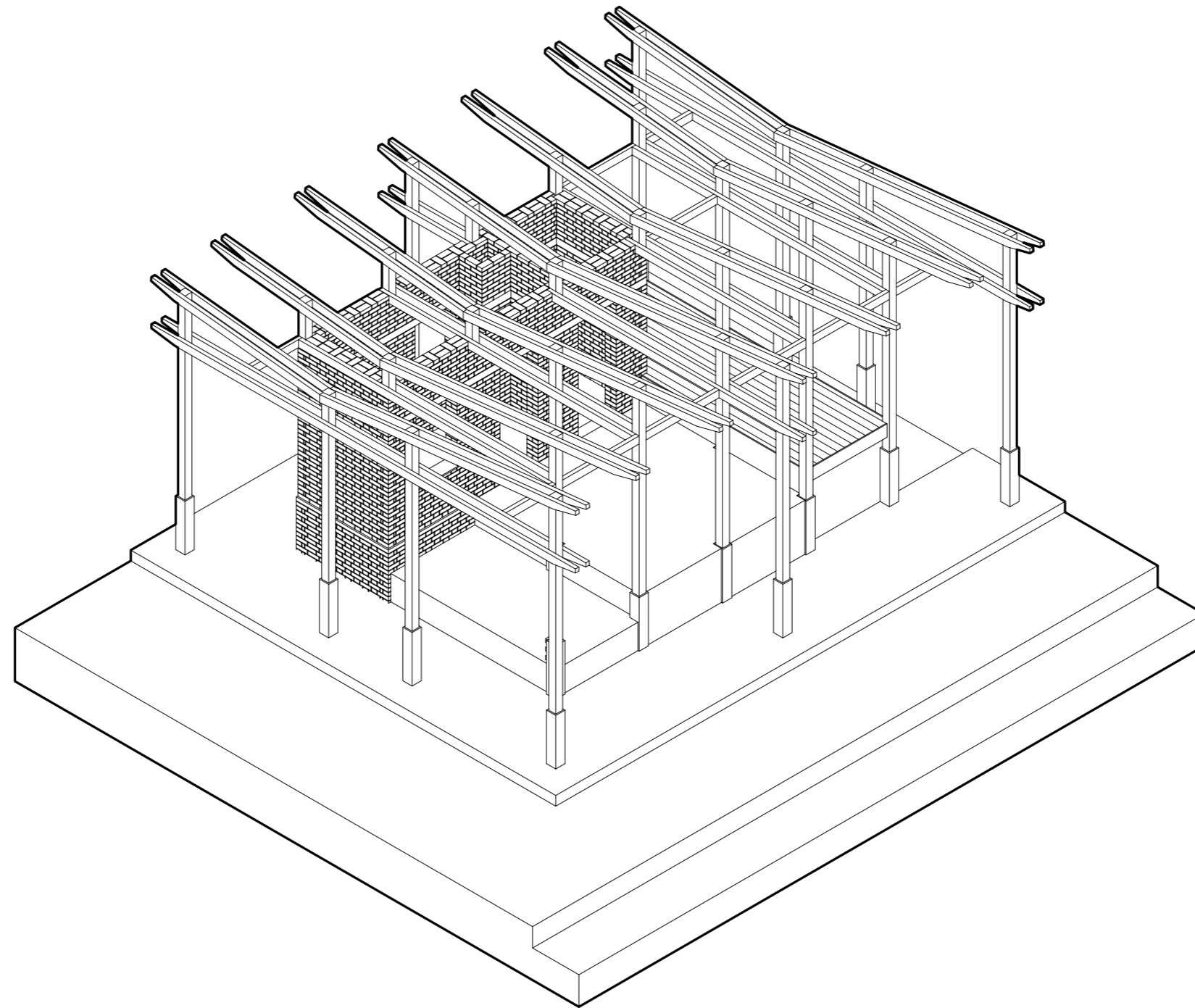
CONSTRUCTION PROCESS



7. COMPLETE WOODEN BEAM CONSTRUCTION FOR
ROOFSTRUCTURE

VILLAGE UNIT

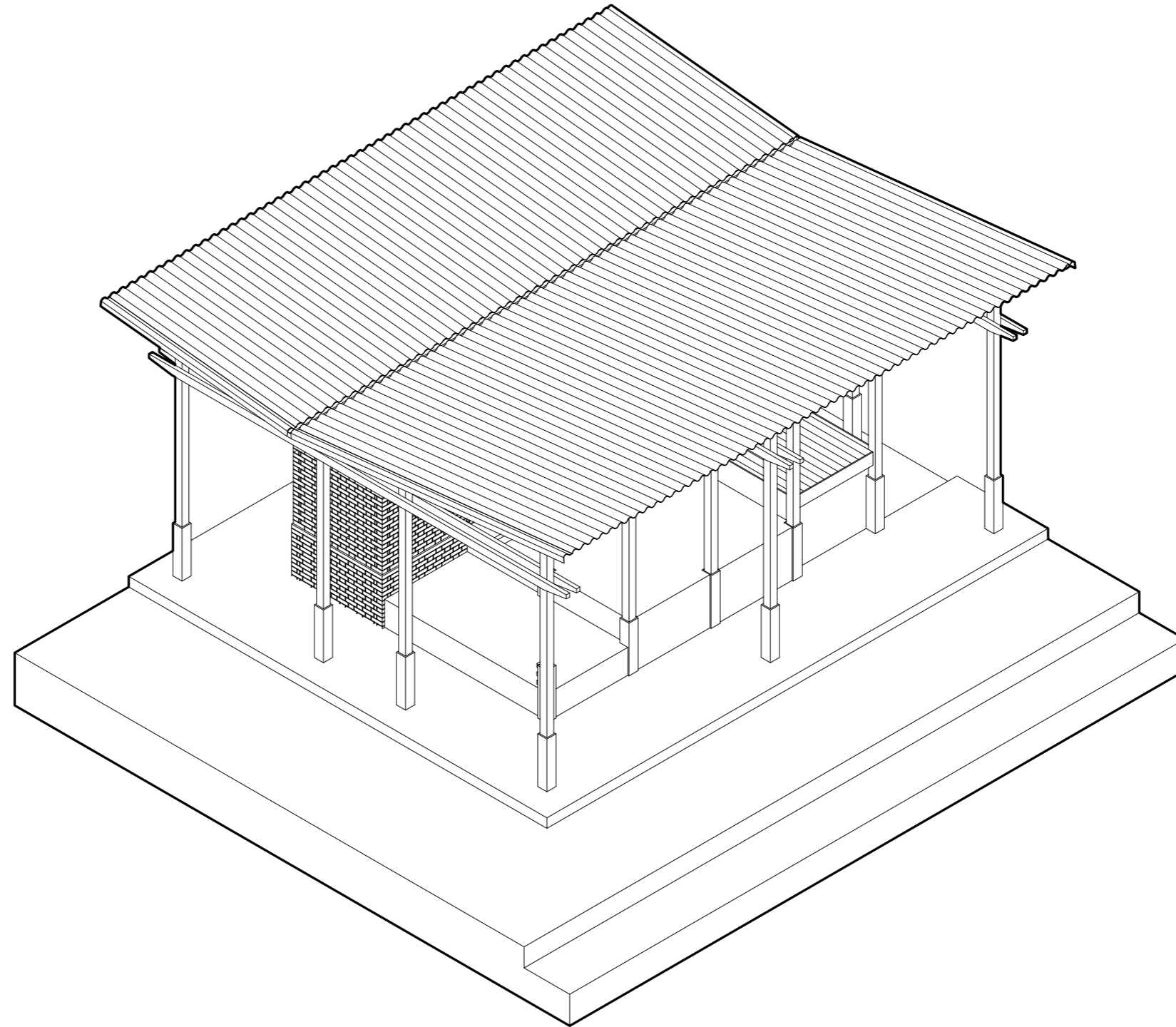
CONSTRUCTION PROCESS



8. FIXING WOODEN FLOORING TO STRUCTURE

VILLAGE UNIT

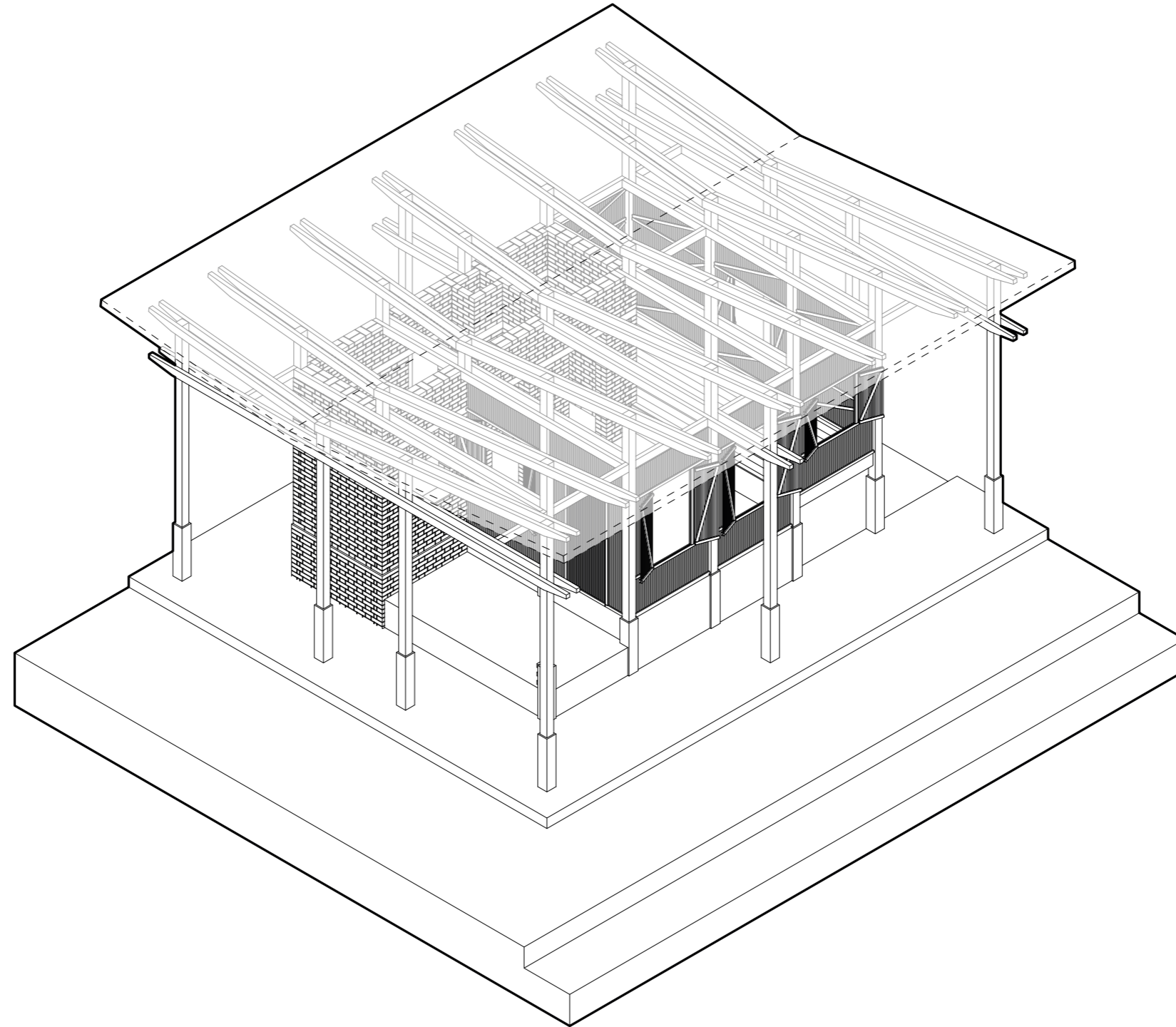
CONSTRUCTION PROCESS



9. FIXING CORRUGATED STEEL ROOF

VILLAGE UNIT

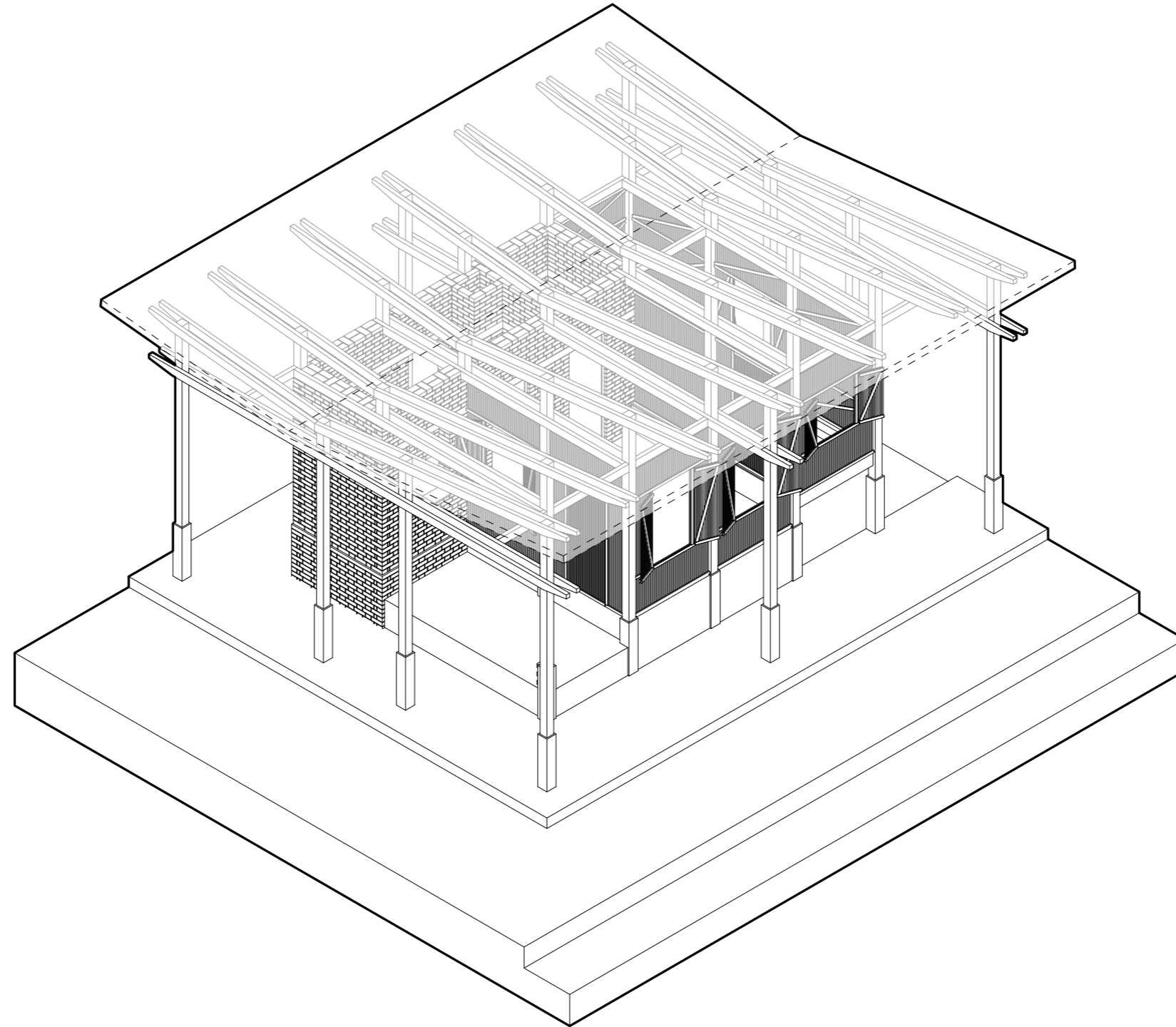
CONSTRUCTION PROCESS



10. INSTALLATION OF BAMBOO WALL PANELS

VILLAGE UNIT

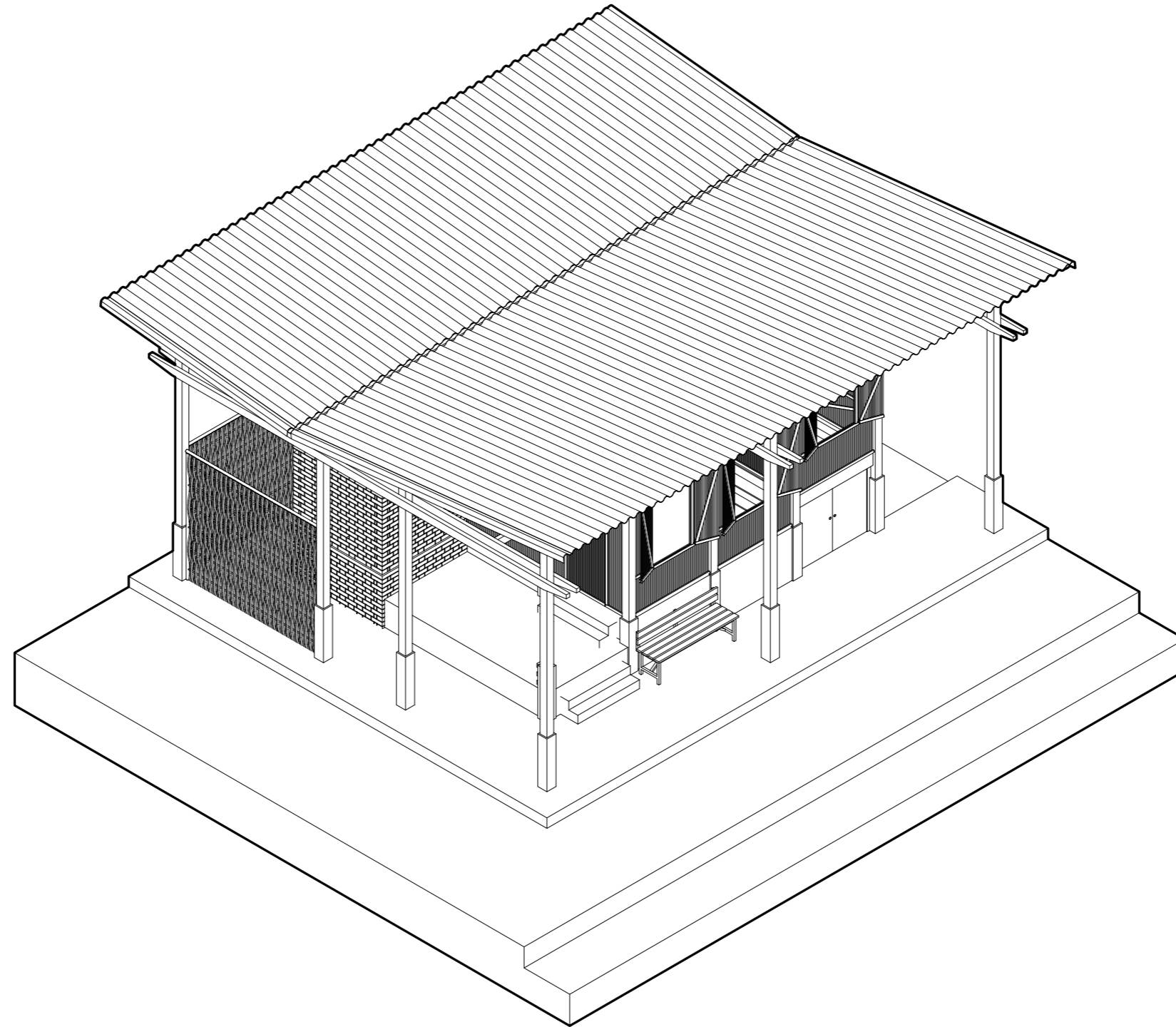
CONSTRUCTION PROCESS



11. FINISH LAYOUT WITH PARTITION WALLS

VILLAGE UNIT

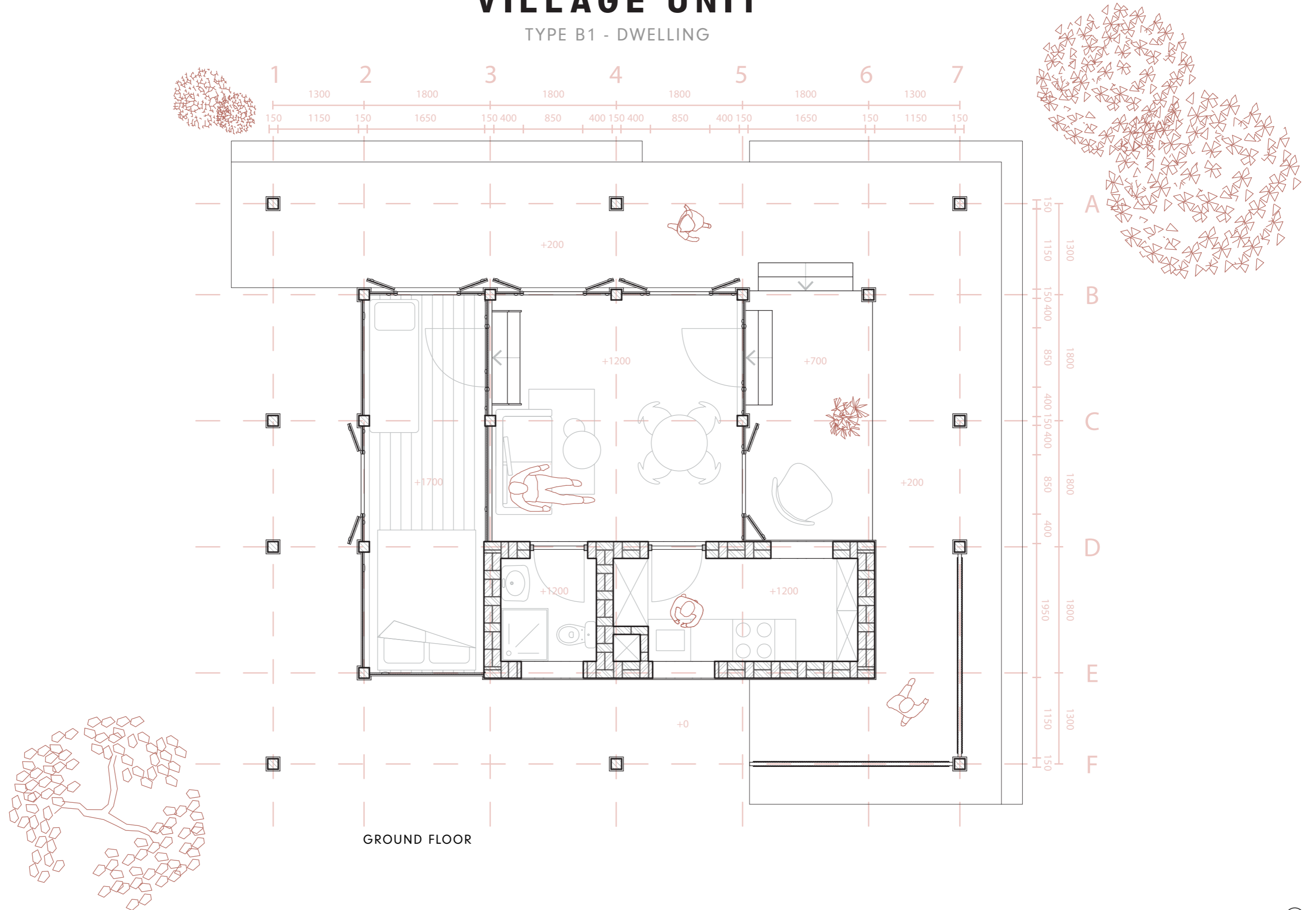
CONSTRUCTION PROCESS



12. PERSONALISATION OF USER

VILLAGE UNIT

TYPE B1 - DWELLING



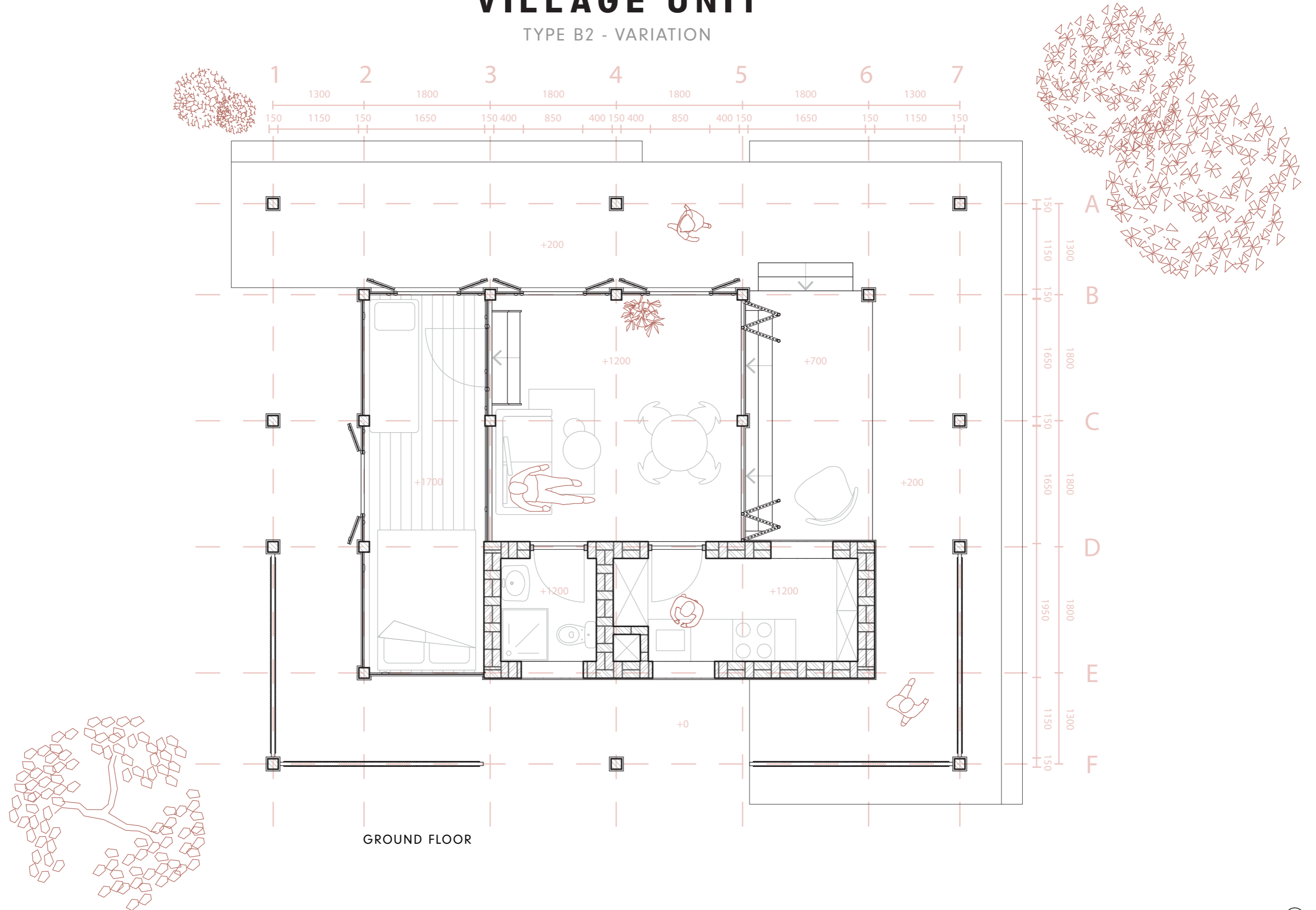
GROUND FLOOR

SCALE 1:50



VILLAGE UNIT

TYPE B2 - VARIATION



SCALE 1:50



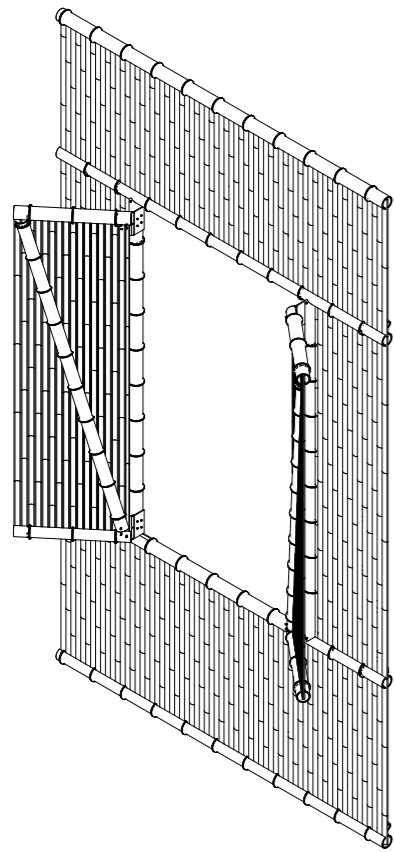
VILLAGE UNIT

LOW INCOME IMPRESSION

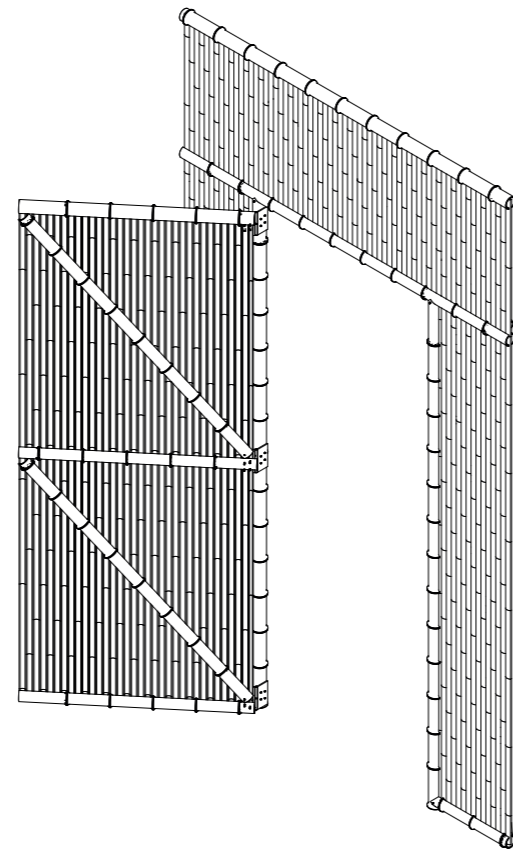


VILLAGE UNIT

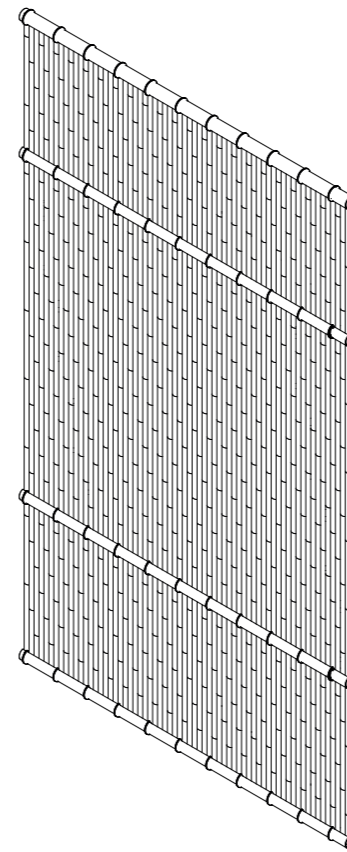
FLEXIBLE CHOICE OF PARTS



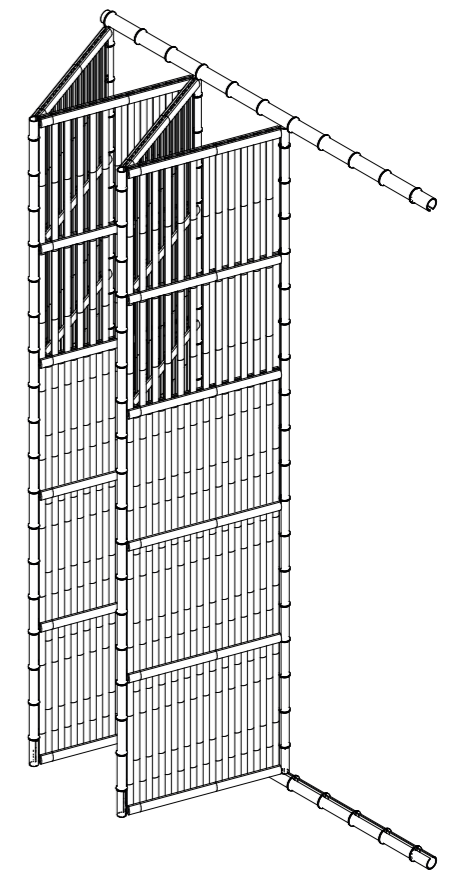
1. WINDOW PANEL BAMBOO



2. DOOR PANEL BAMBOO



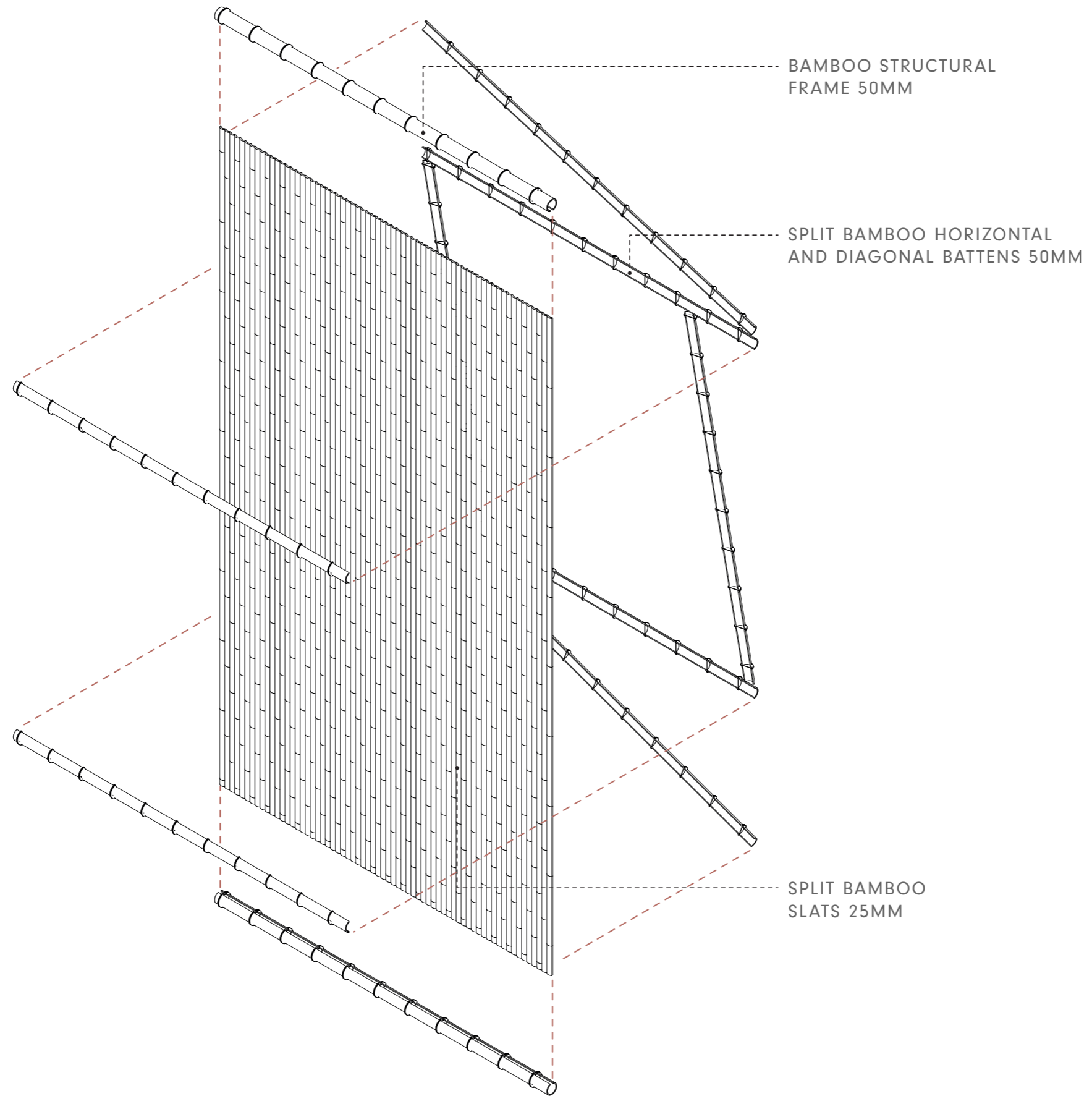
3. CLOSED PANEL BAMBOO



4. FOLDING PANEL BAMBOO

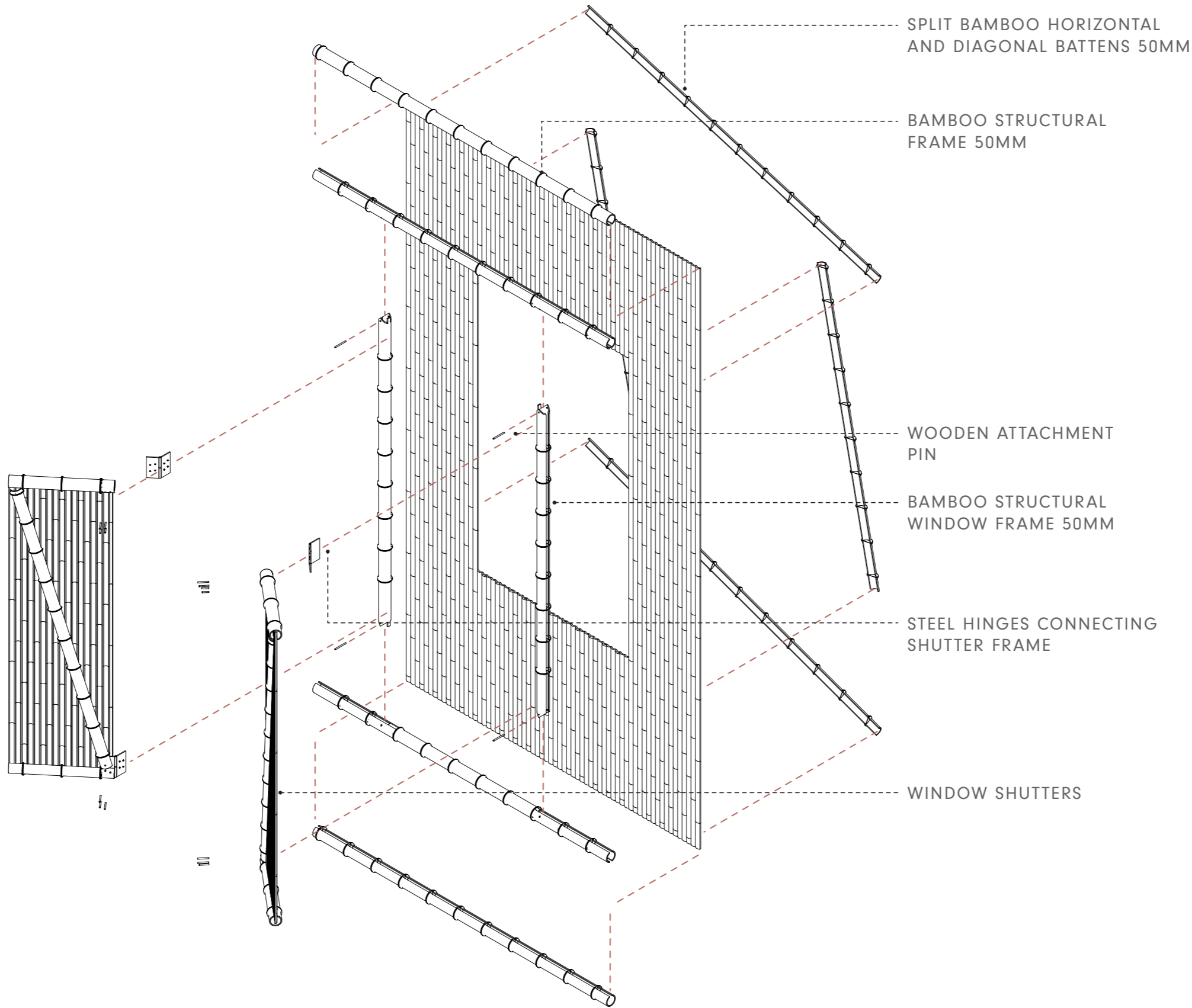
VILLAGE UNIT

LIGHTWEIGHT BAMBOO FACADE PANEL



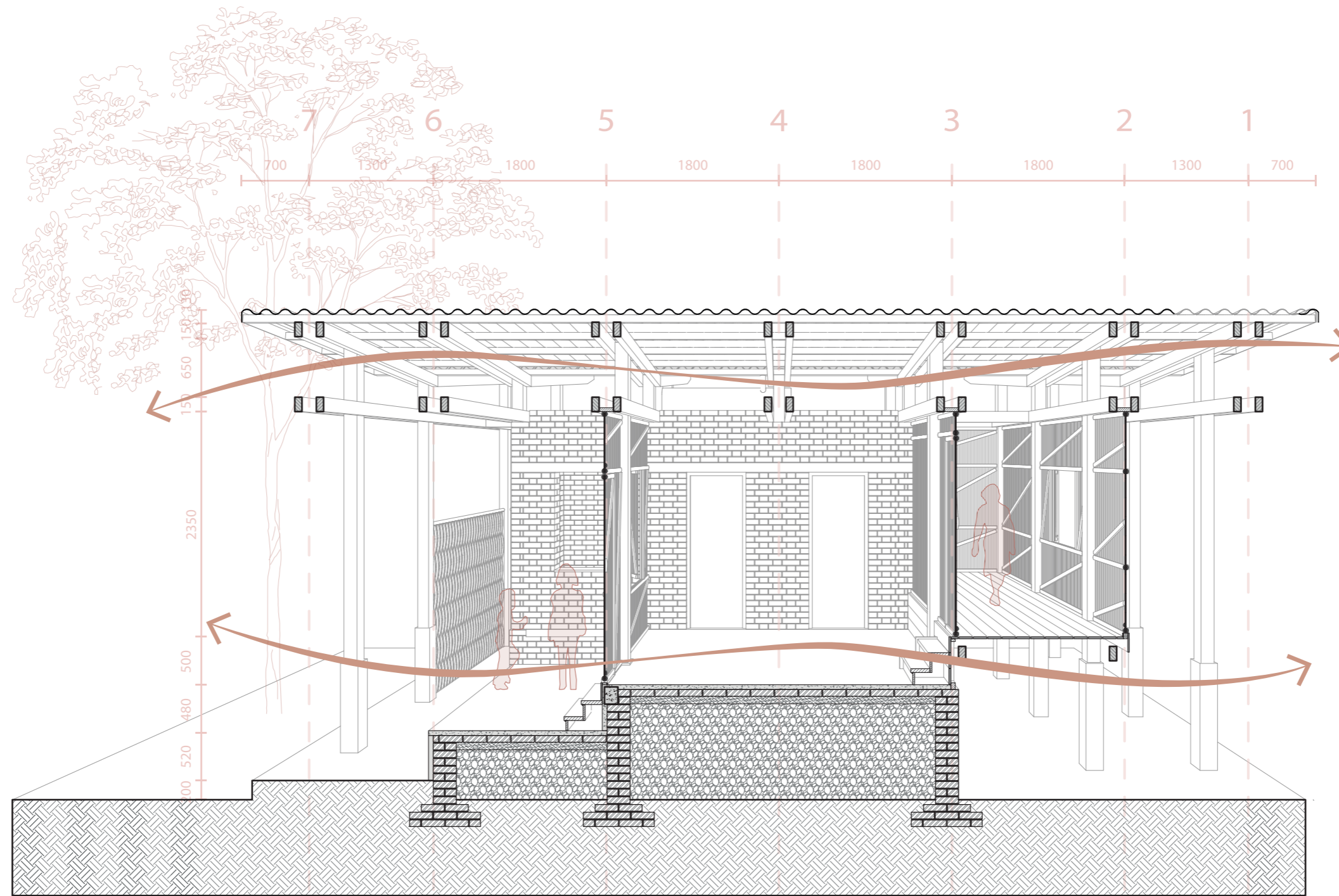
VILLAGE UNIT

BAMBOO WINDOW FACADE PANEL



VILLAGE UNIT

TYPE B - PRINCIPAL

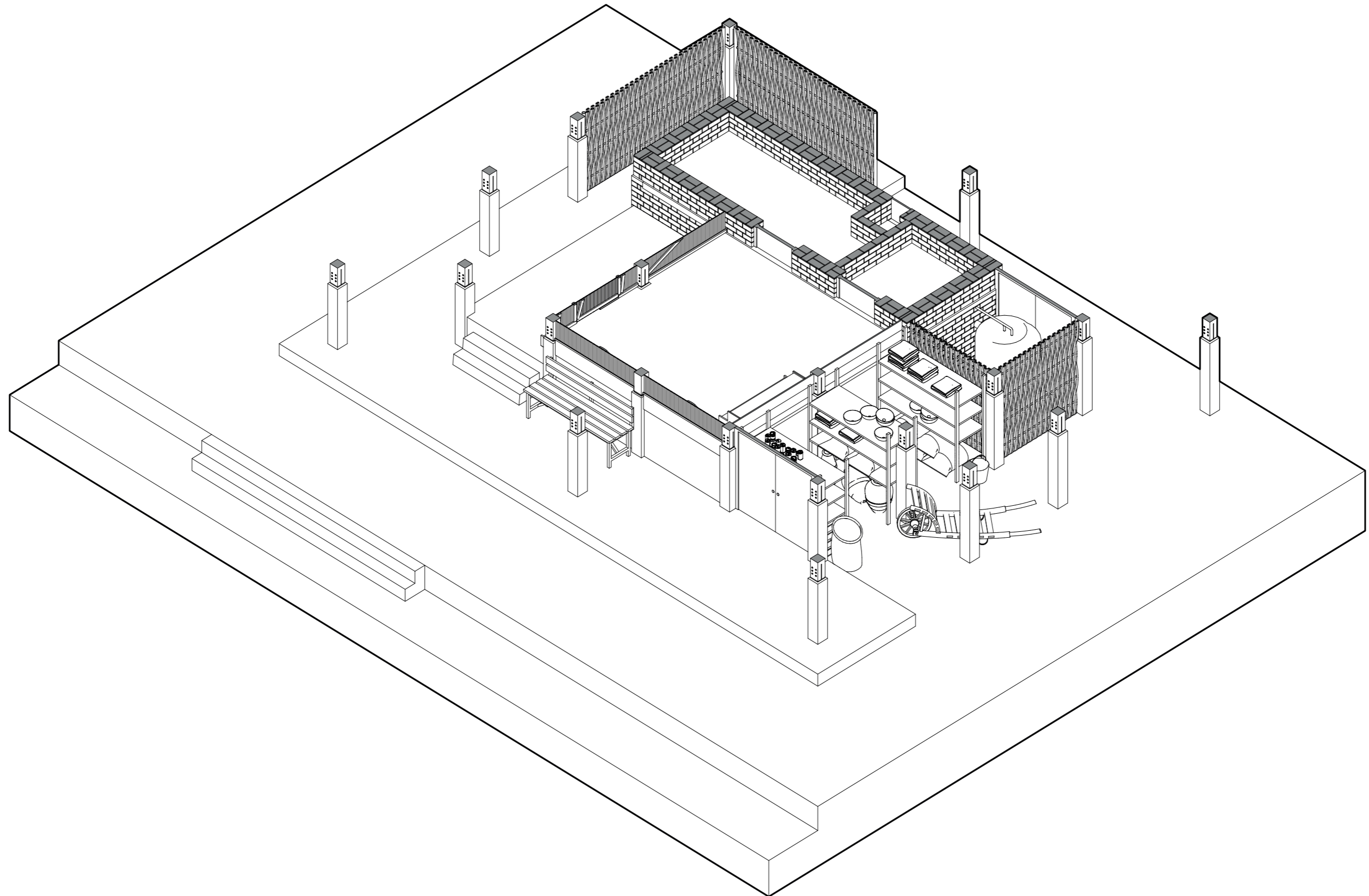


CROSS-SECTION UNIT B

SCALE 1:50

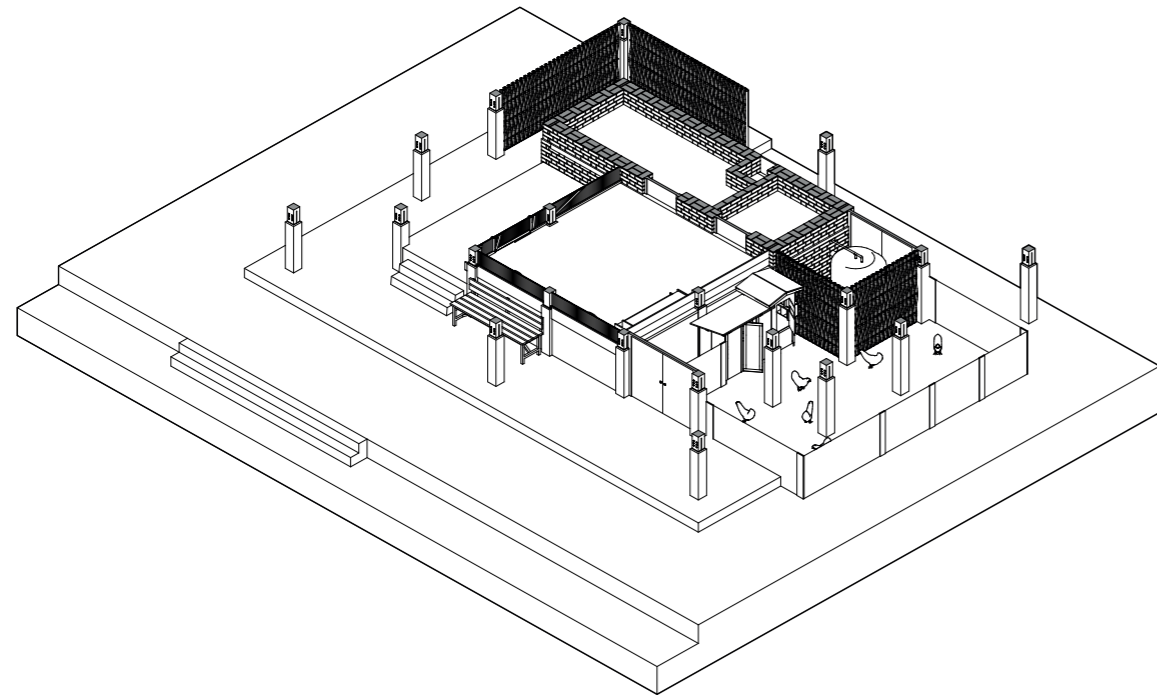
VILLAGE UNIT

OPEN SPACE USED AS STORAGE

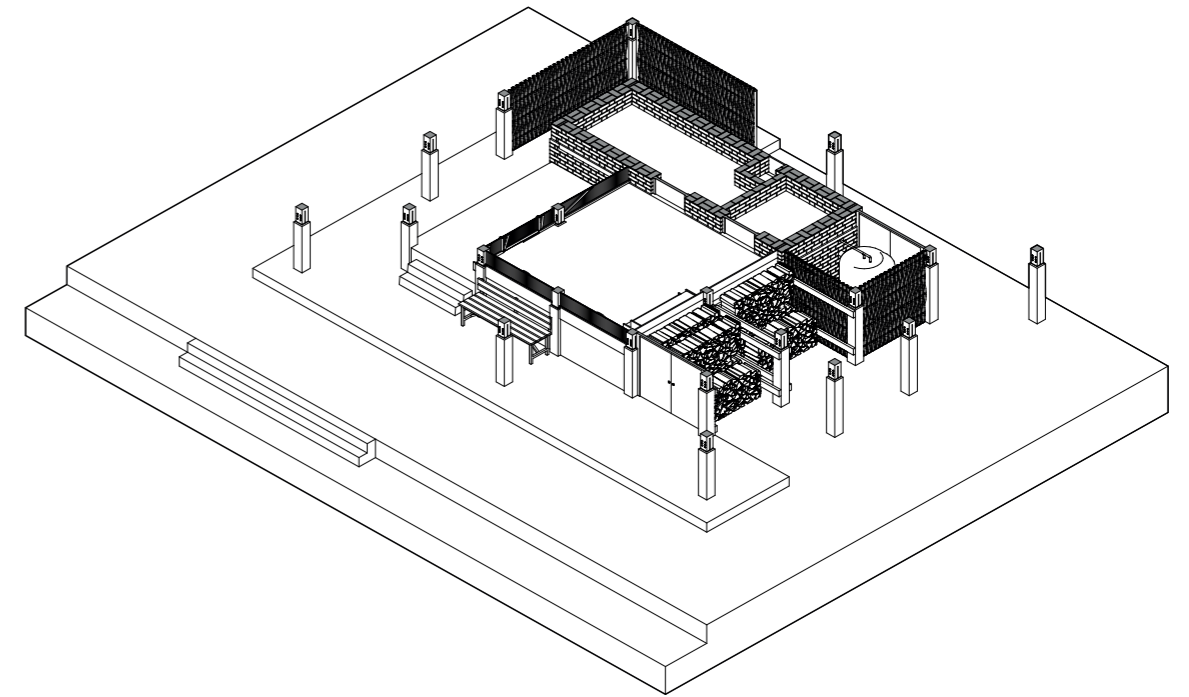


VILLAGE UNIT

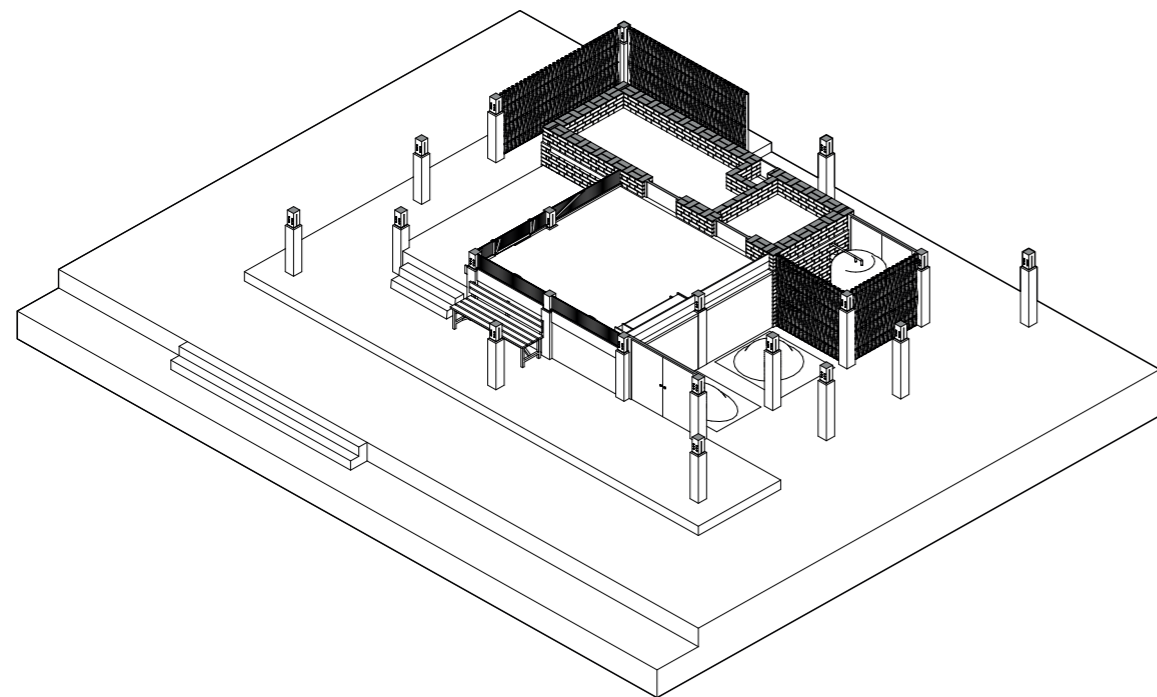
VARIATION OPEN-SPACE



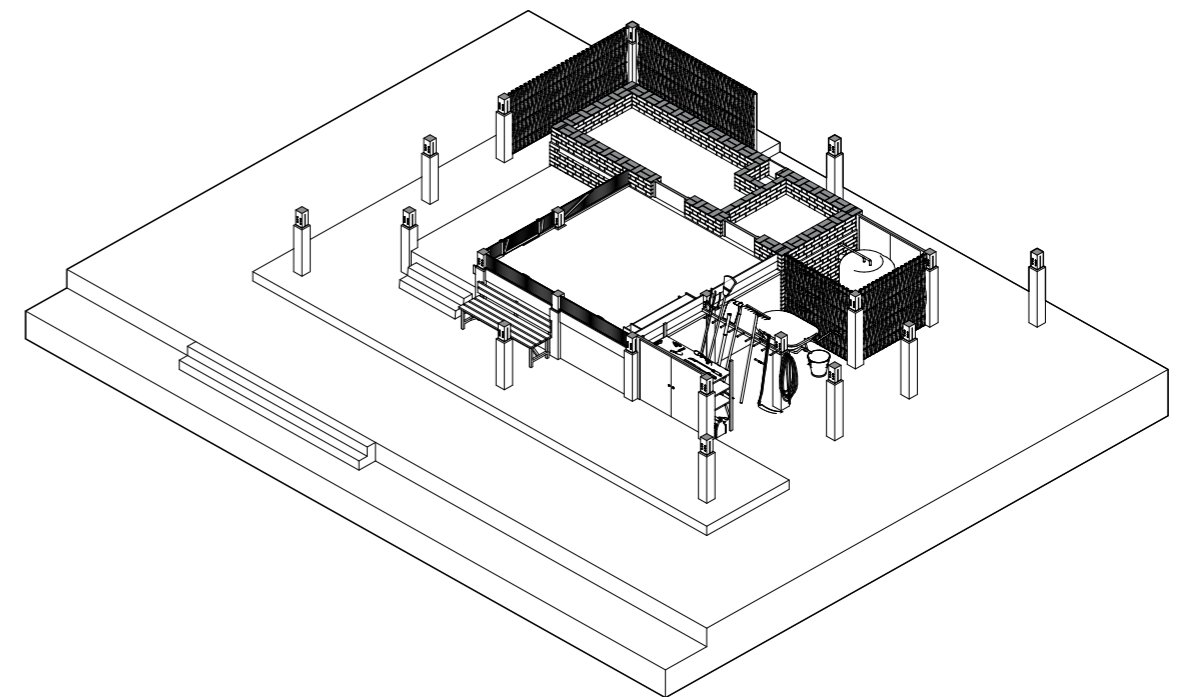
LIVESTOCK SHELTER



FIREWOOD STORAGE



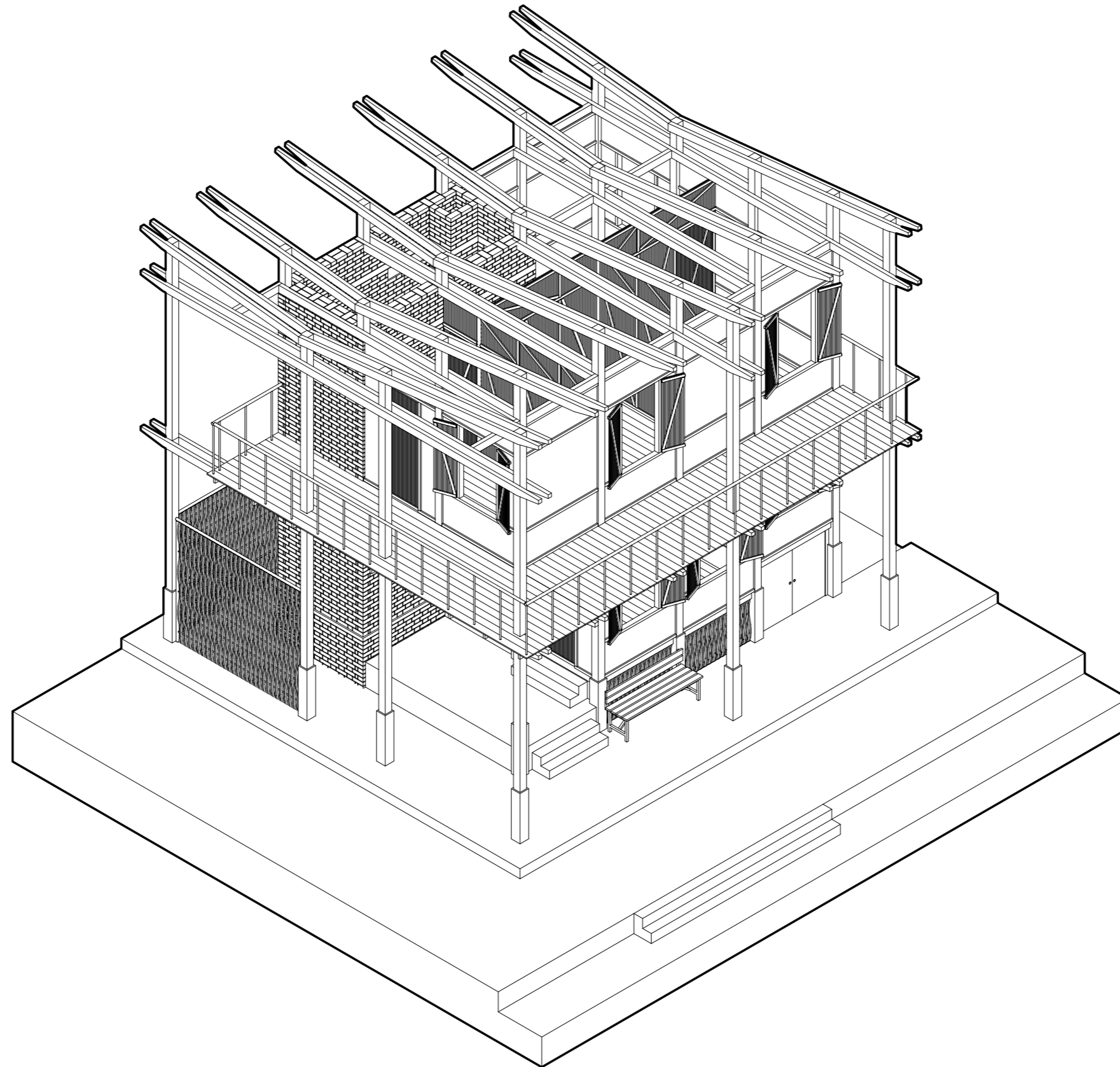
DRYING SPACE



WORKSHOP AND TOOL STORAGE

VILLAGE UNIT

TYPE C



VILLAGE UNIT

TYPE C - MATERIALS

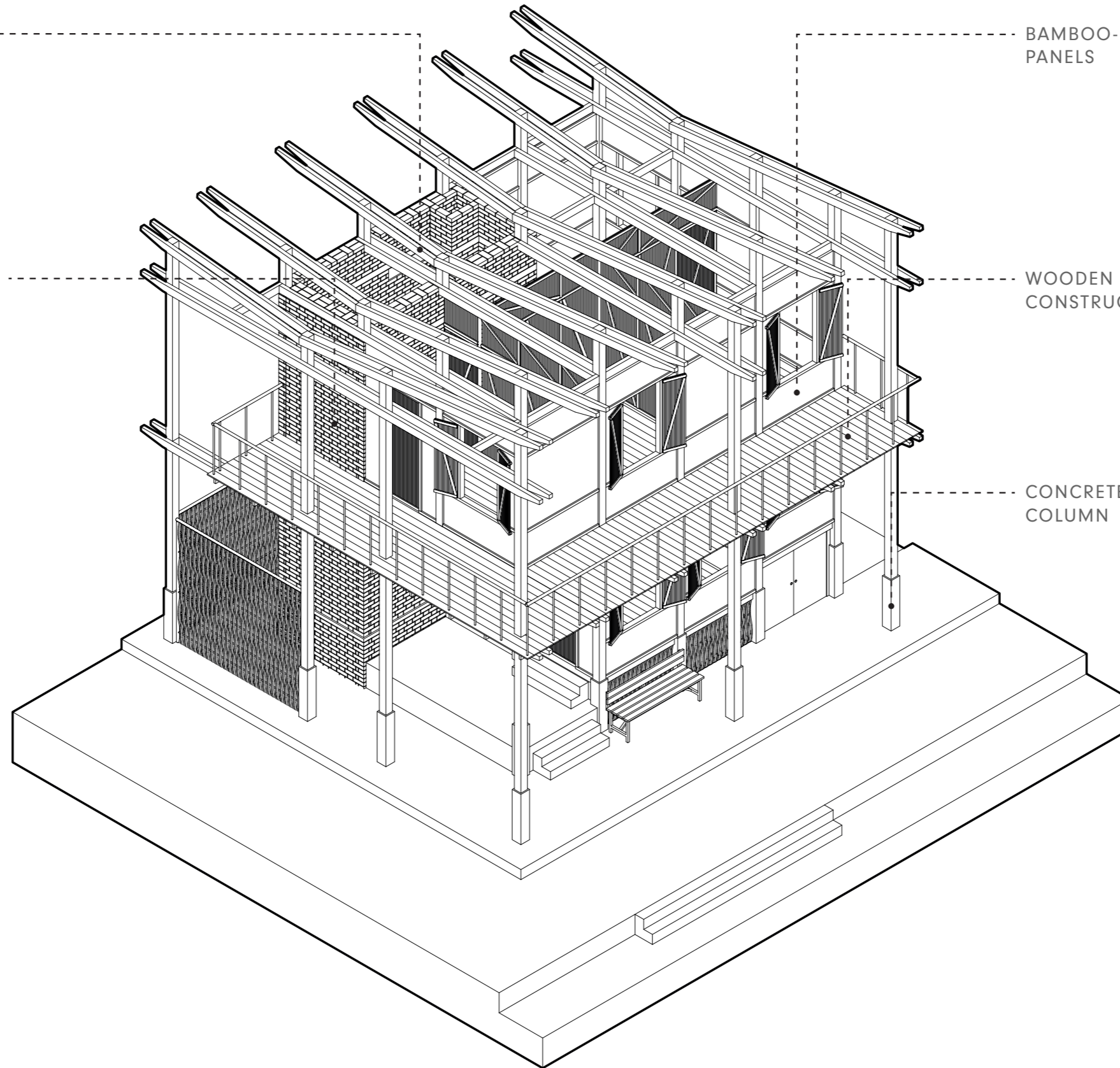
WOODEN BEAM
CONSTRUCTION

BAMBOO-CLAY FAÇADE
PANELS

BRICK CORE CONSTRUCTION

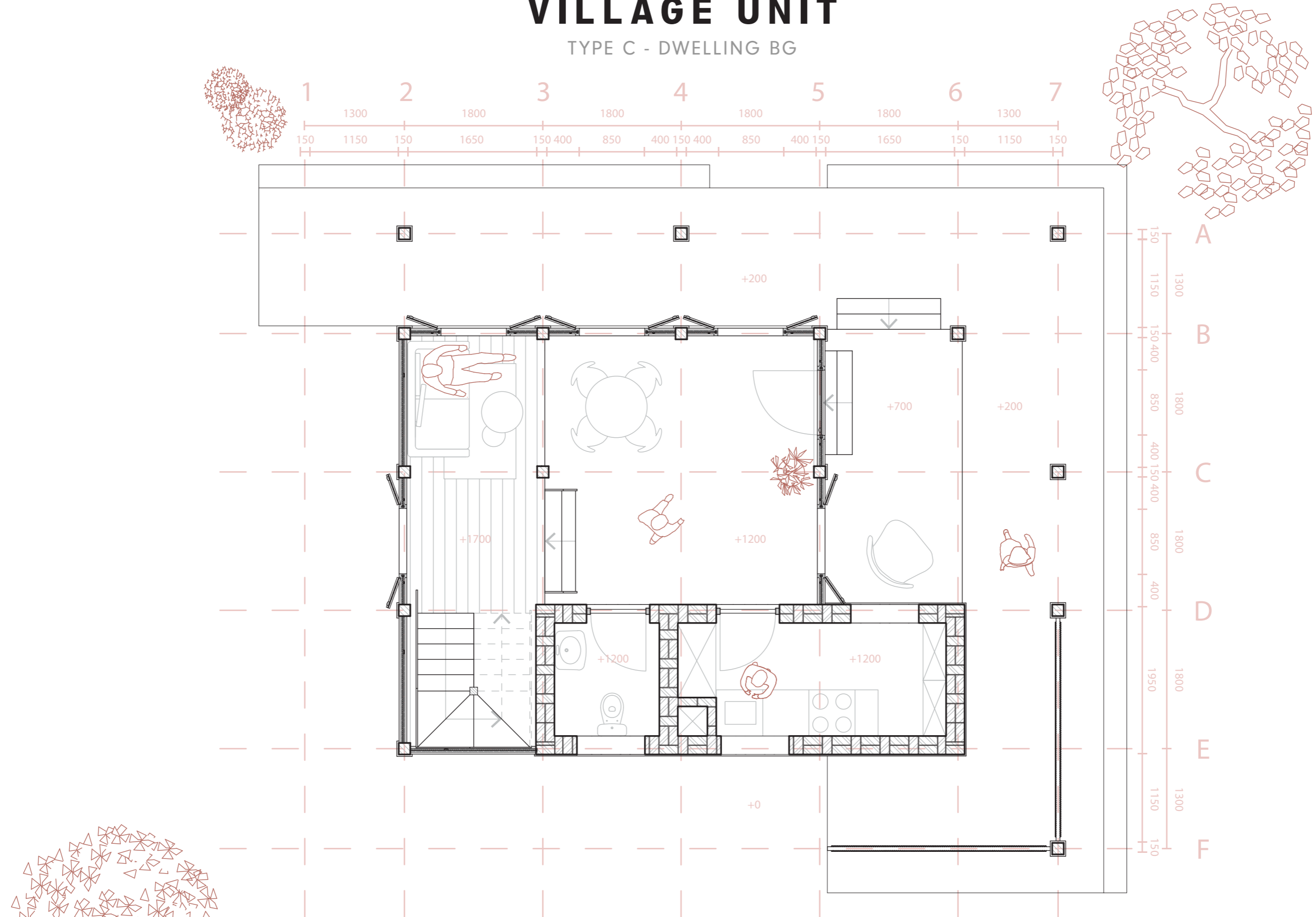
WOODEN FLOOR
CONSTRUCTION

CONCRETE FOUNDATION
COLUMN



VILLAGE UNIT

TYPE C - DWELLING BG



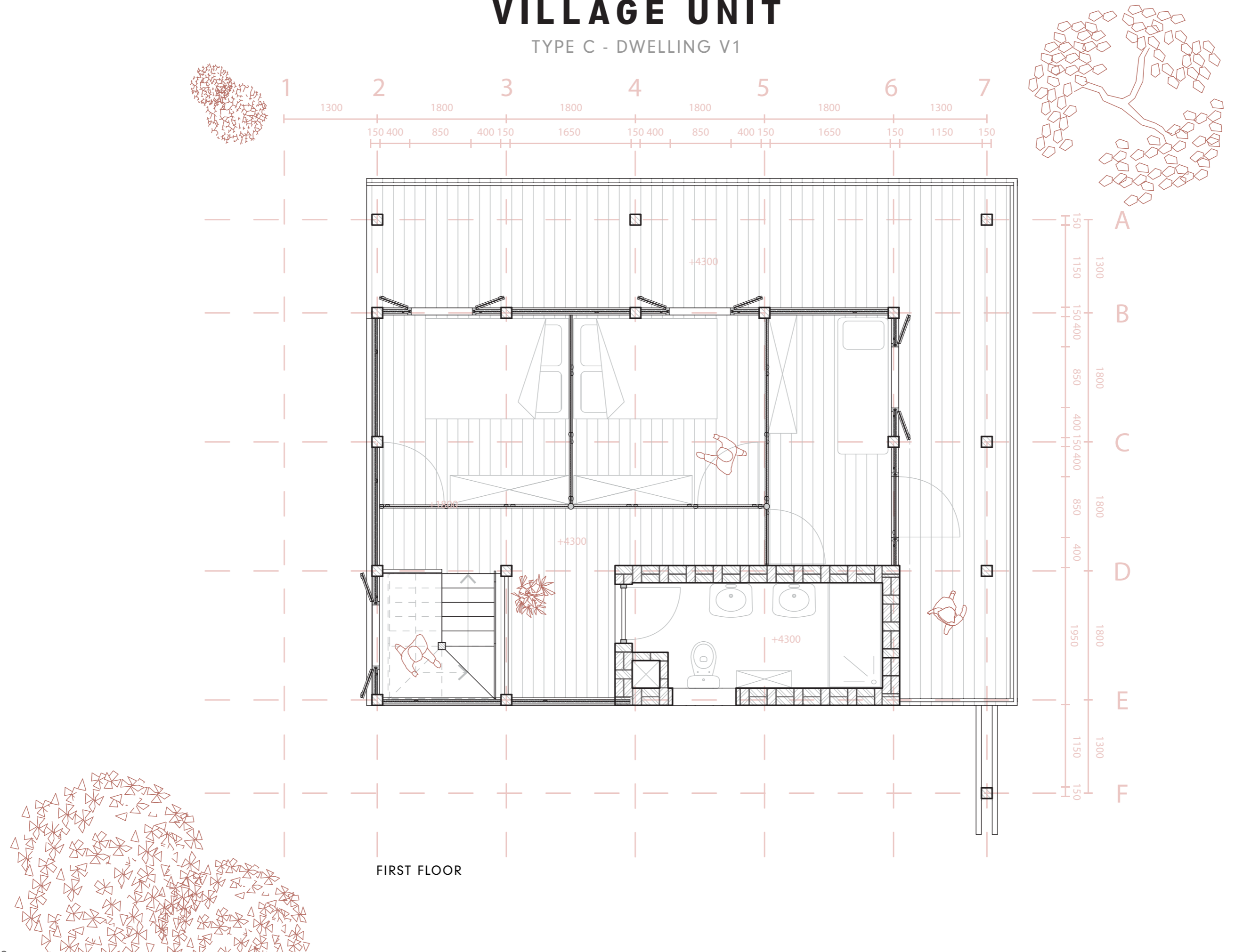
GROUND FLOOR

SCALE 1:50



VILLAGE UNIT

TYPE C - DWELLING V1



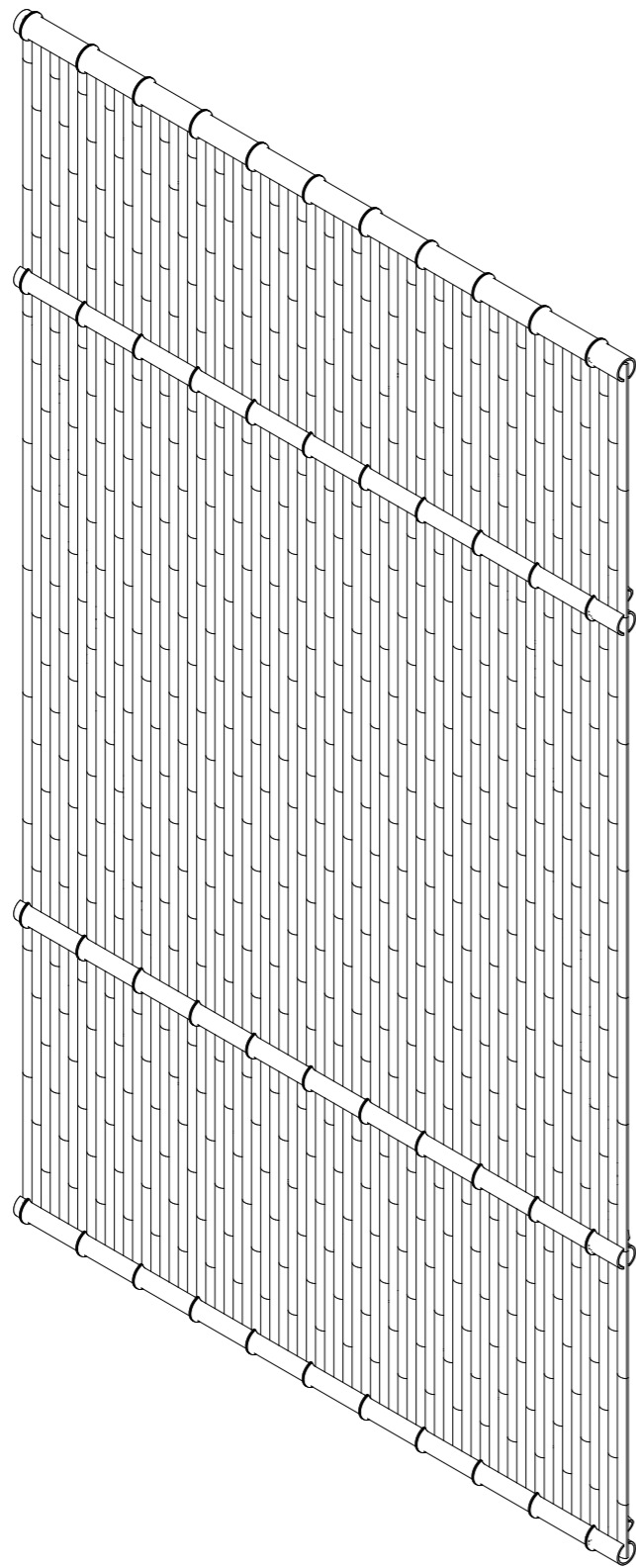
SCALE 1:50

P5 PRESENTATION - TIM SCHUURMAN - GLOBAL HOUSING

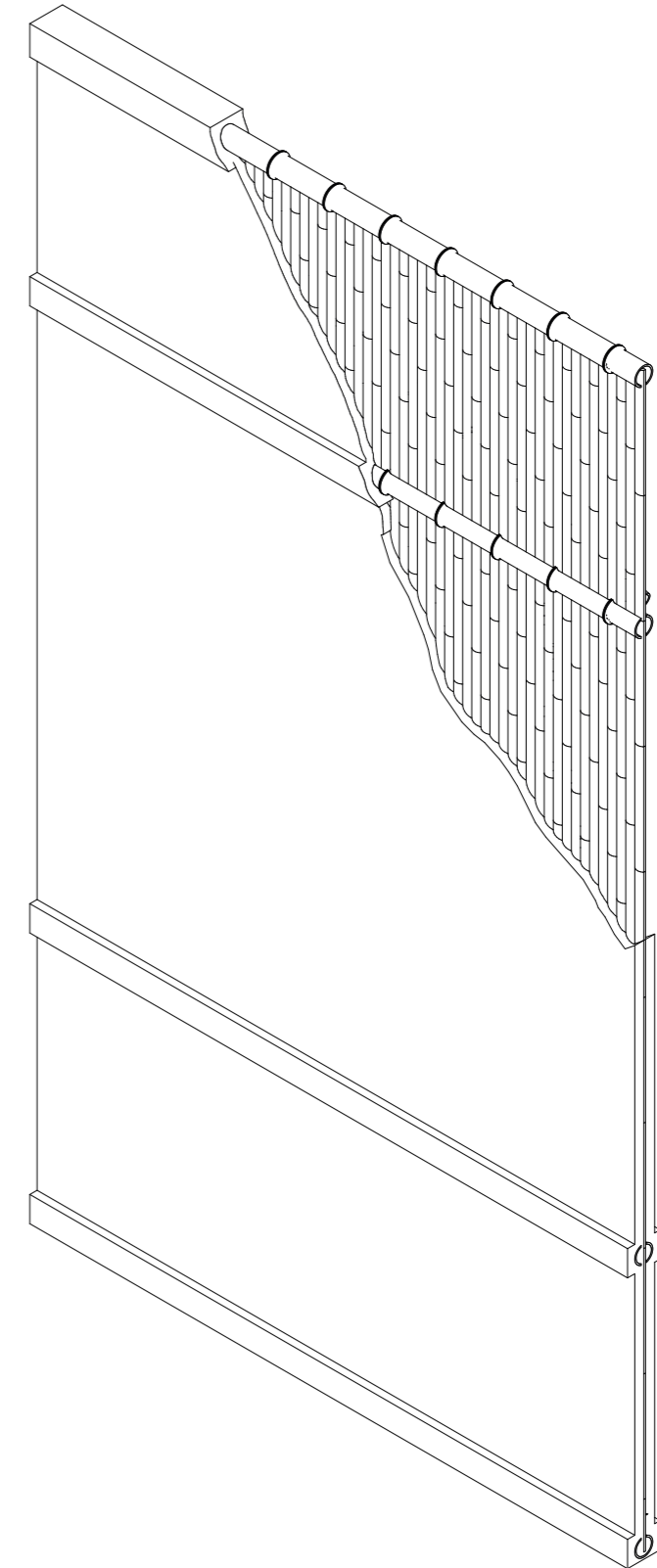


VILLAGE UNIT

UPGRADE FACADE PANELS



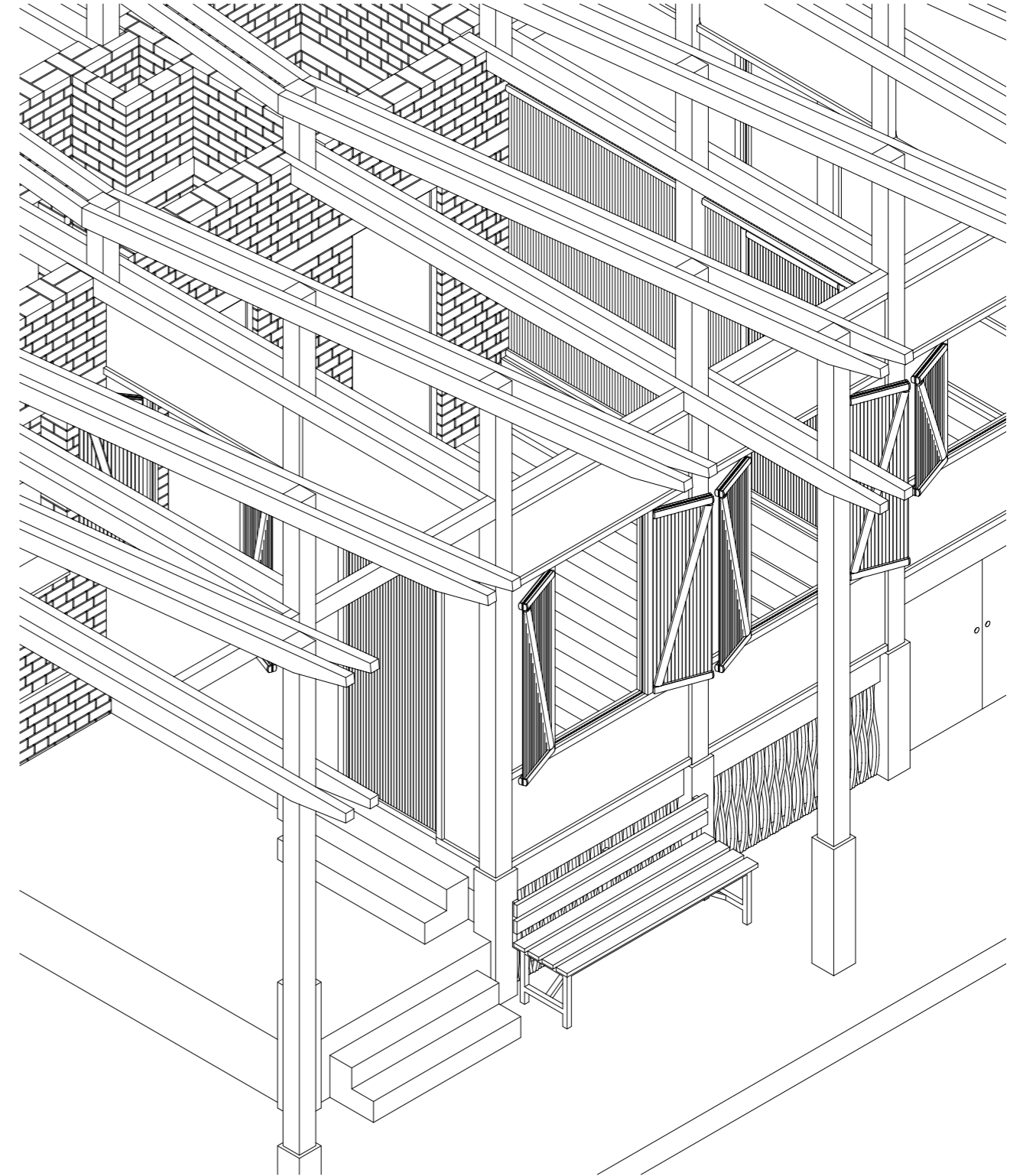
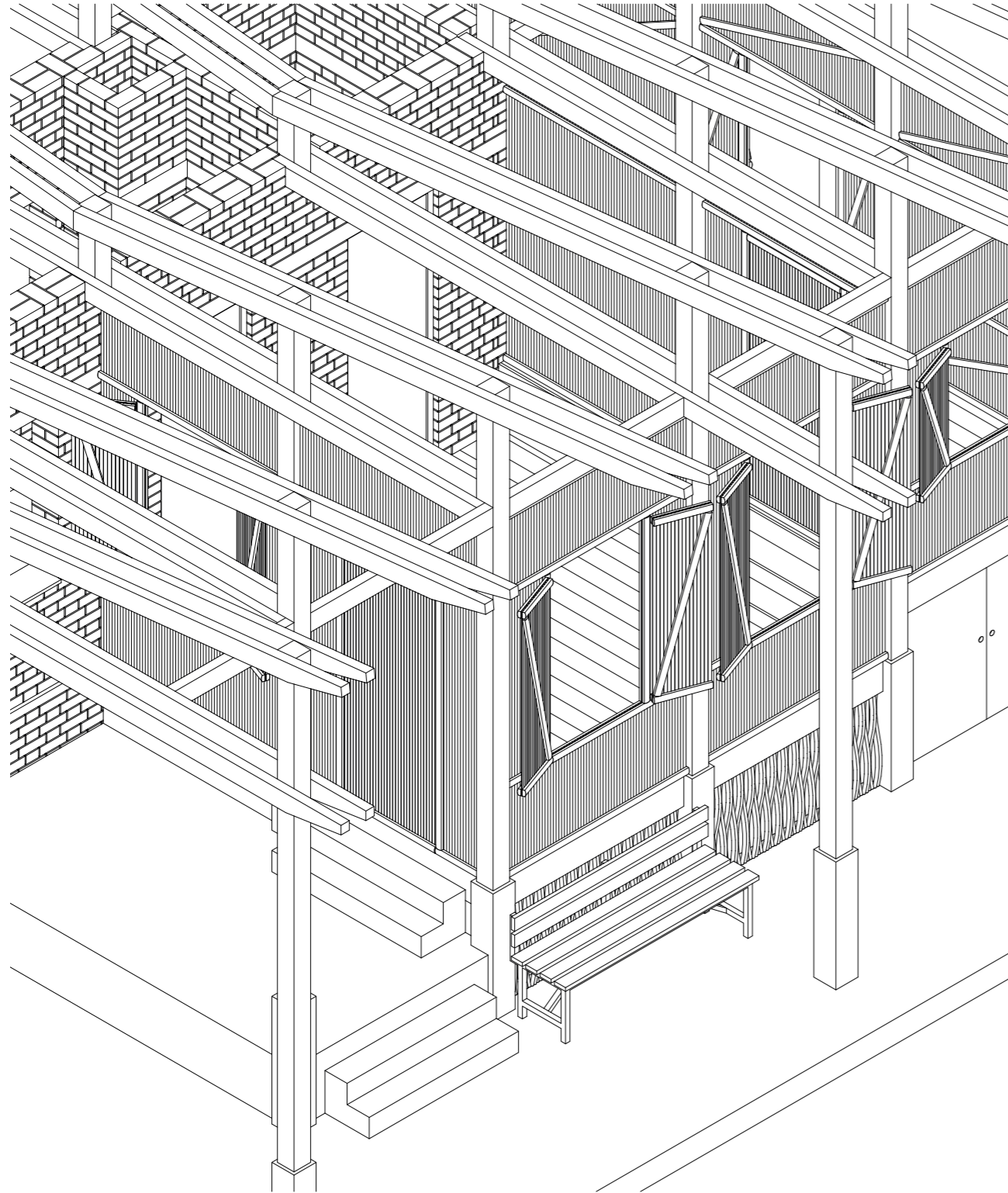
START WITH BASIC BAMBOO
ELEMENT



UPGRADE OVER TIME TO CLAY
FINISH

VILLAGE UNIT

UPGRADE FACADE PANELS

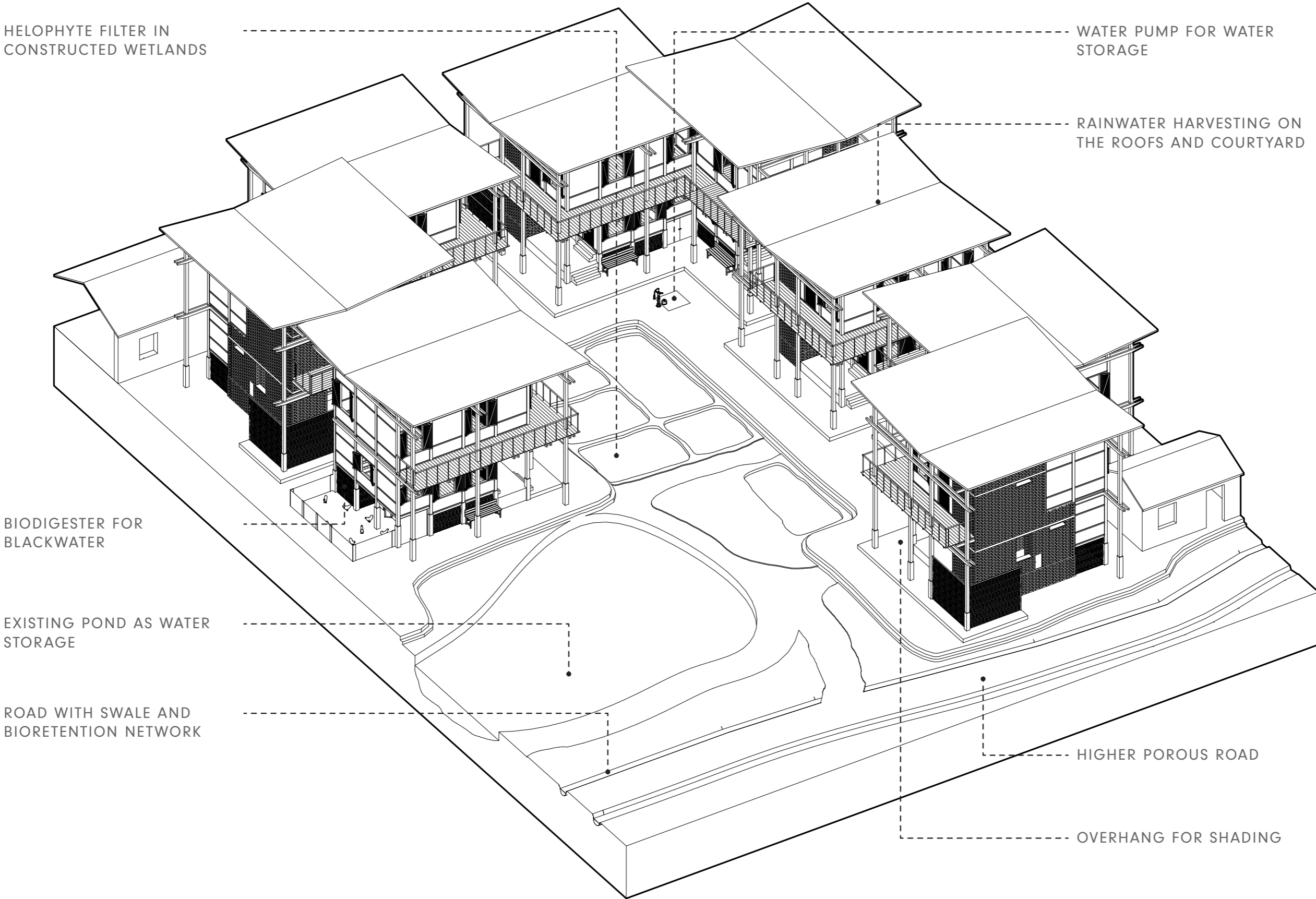


07

CLIMATE STRATEGY

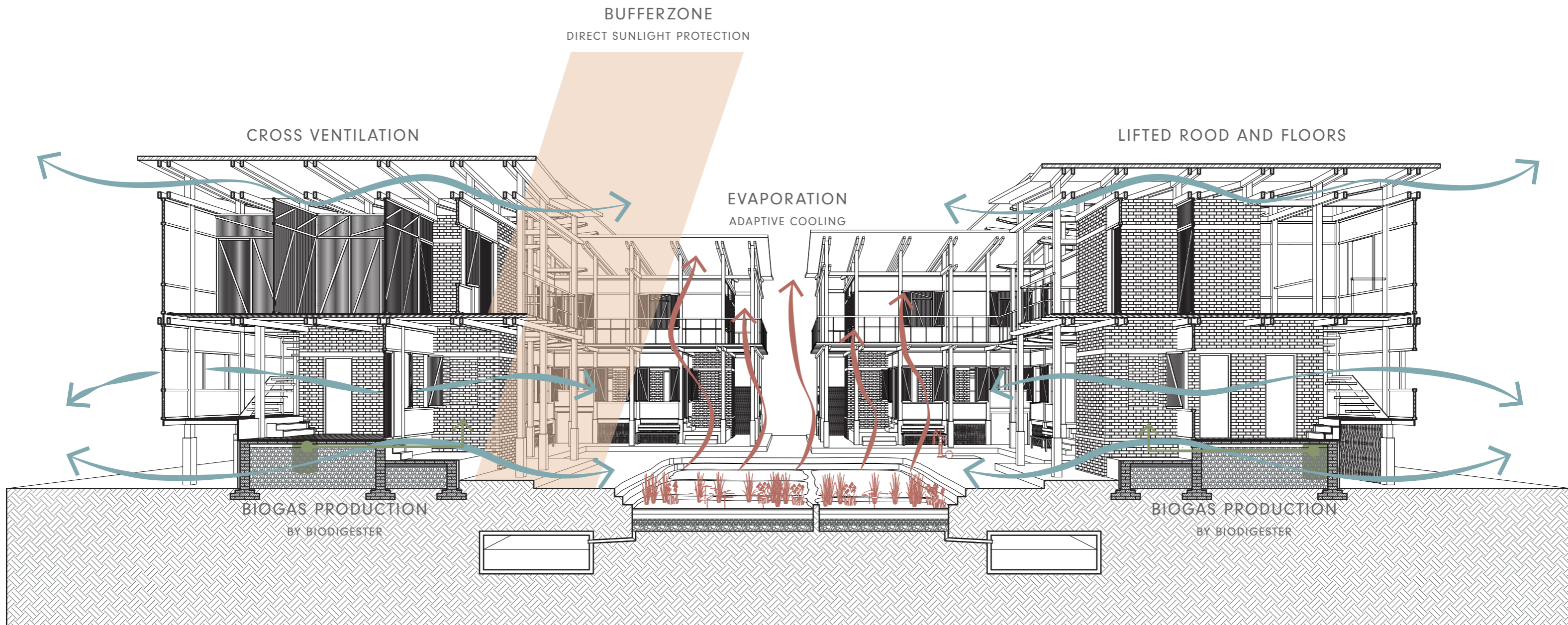
CLUSTER VILLAGE

CLUSTER CLIMATE DESIGN



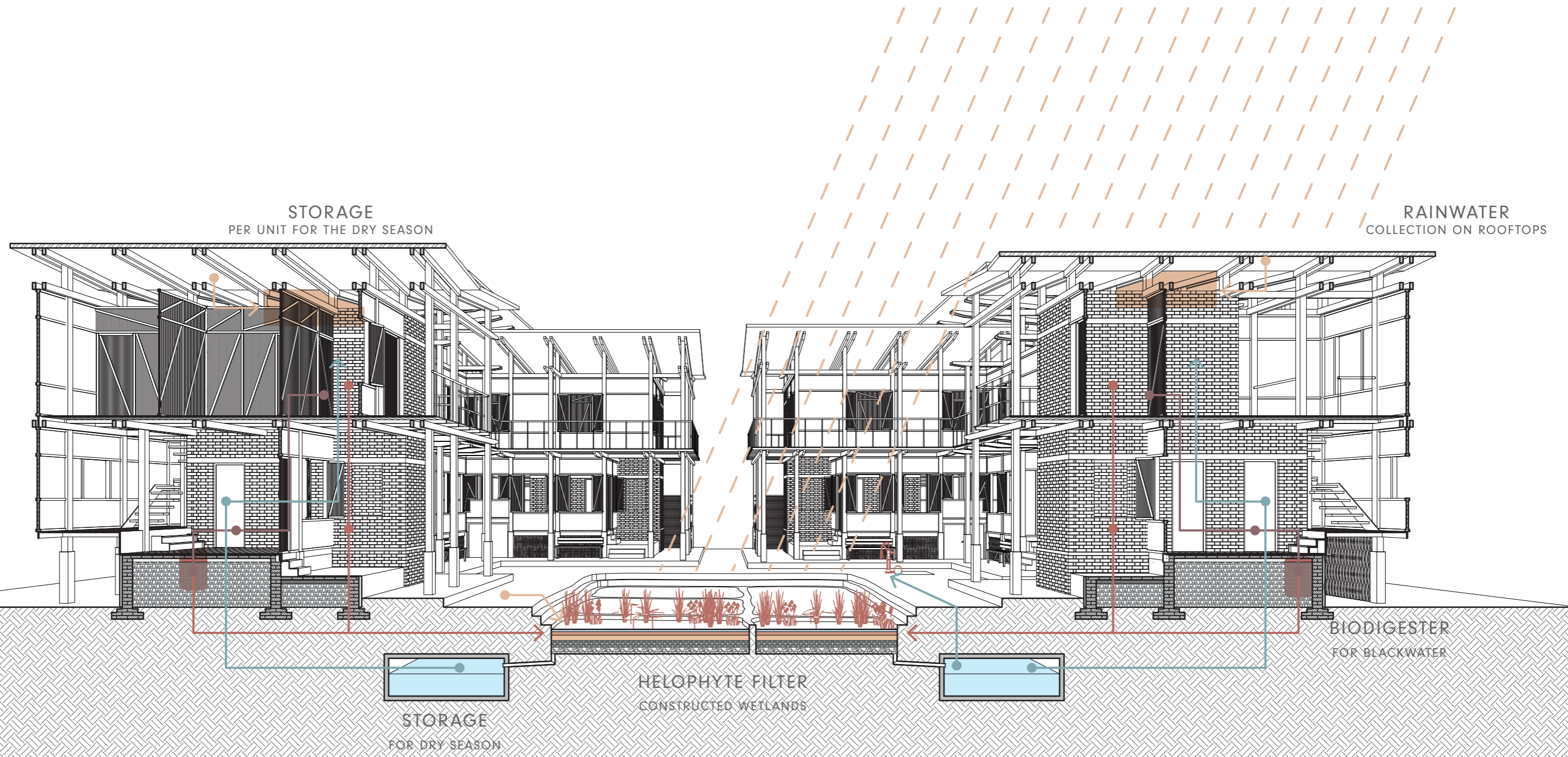
CLUSTER VILLAGE

CLUSTER CLIMATE DESIGN



CLUSTER VILLAGE

CLUSTER WATER MANAGEMENT

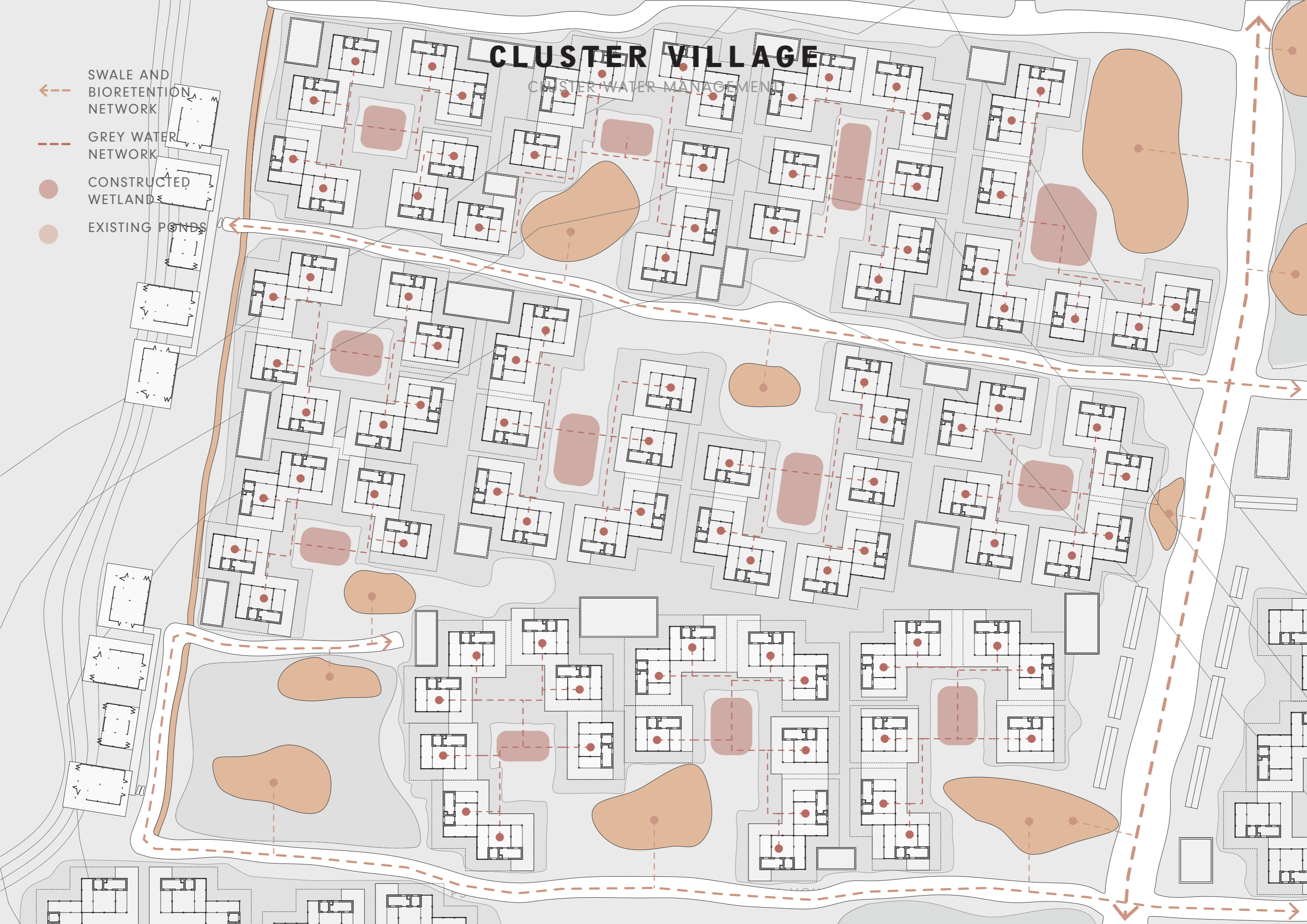


- RAINWATER HARVESTING
- BLACKWATER FLOW
- GREYWATER FLOW
- CLEAN WATER SUPPLY

CLUSTER VILLAGE

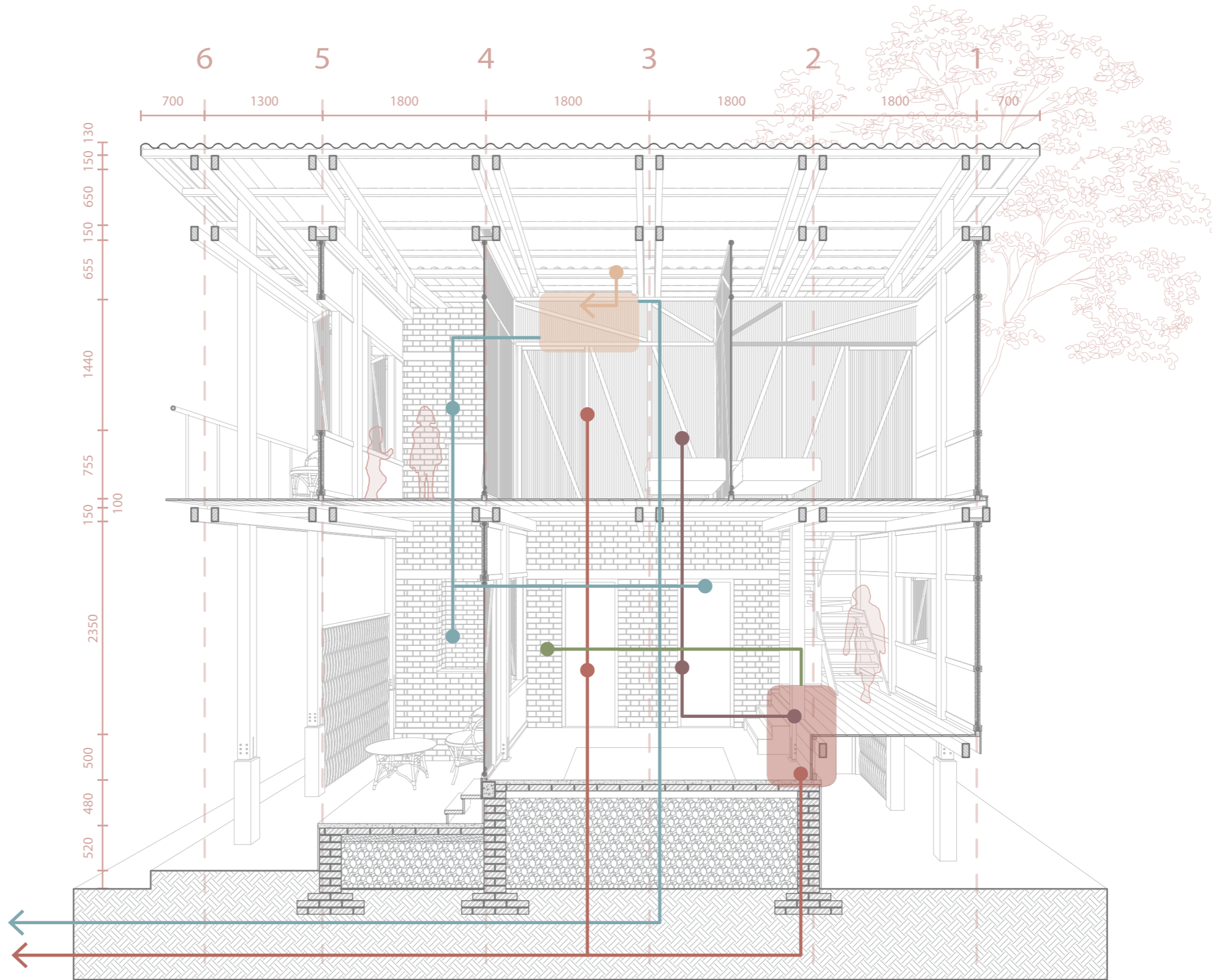
CLUSTER WATER MANAGEMENT

- ← - - - SWALE AND BIORETENTION NETWORK
- - - GREY WATER NETWORK
- CONSTRUCTED WETLANDS
- EXISTING PONDS



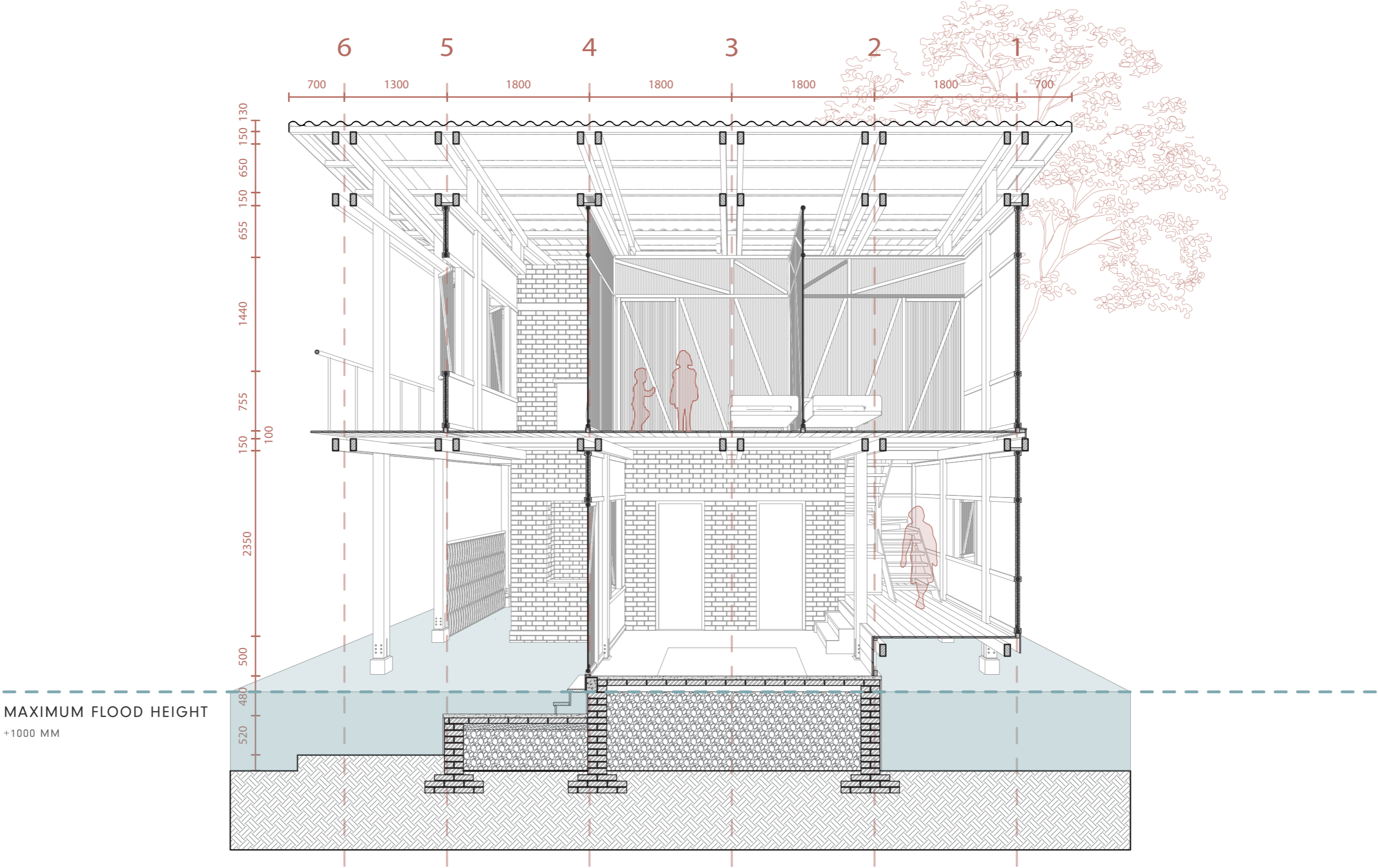
VILLAGE UNIT

CLIMATE DESIGN



FLOOD MANAGEMENT

FLOOD PROOF



FLOOD MANAGEMENT

BOAT SYSTEM

← - - - BOATING ROUTE DURING FLOODING

● BOAT PICK-UP POINTS

● BOAT STORAGE PLACE

