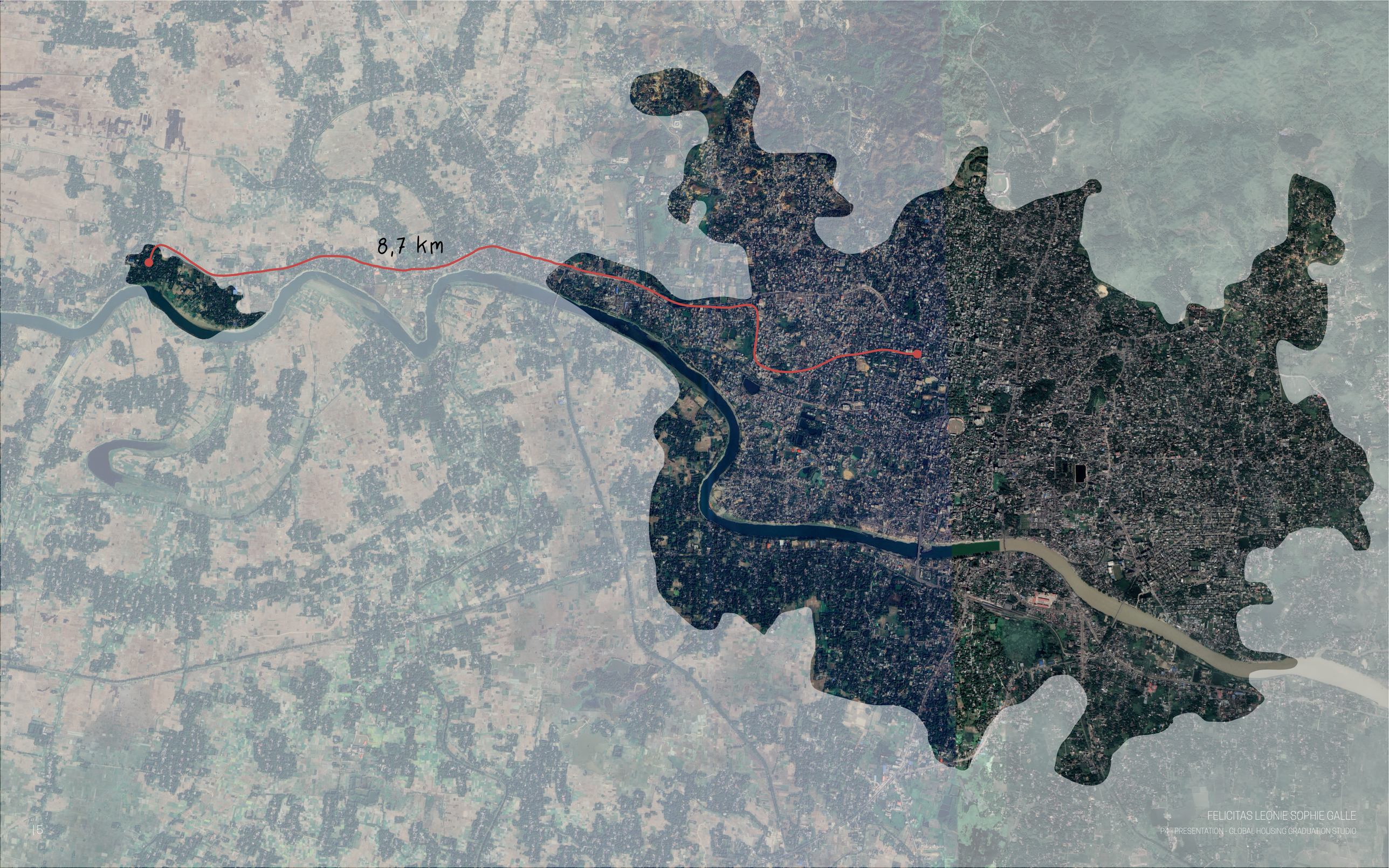
TRANSITION

a sustainable blueprint for Bolawaras urban evolution

FELICITAS LEONIE SOPHIE GALLE


8,7 km

WHO ARE THE LOCALS?

WHAT ARE THEIR HABITS?

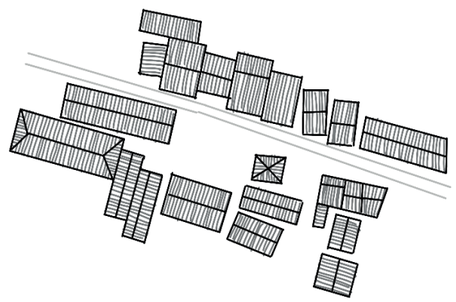
FARMERS

CHILDREN

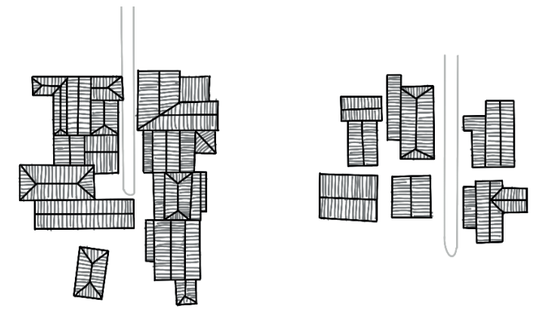
SMALL BUSINESS OWNERS

WOMEN

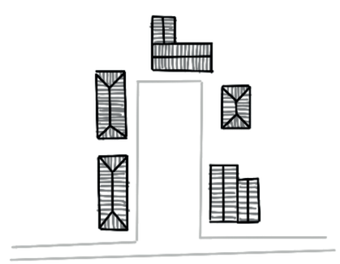
SETTLEMENT TYPES



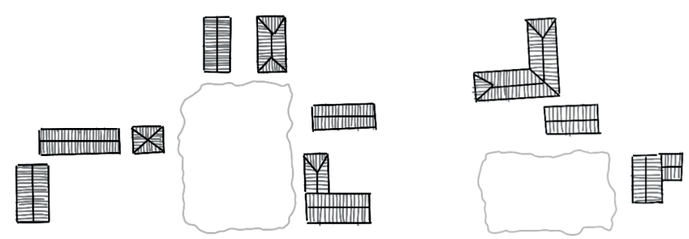
STREET



DEAD END

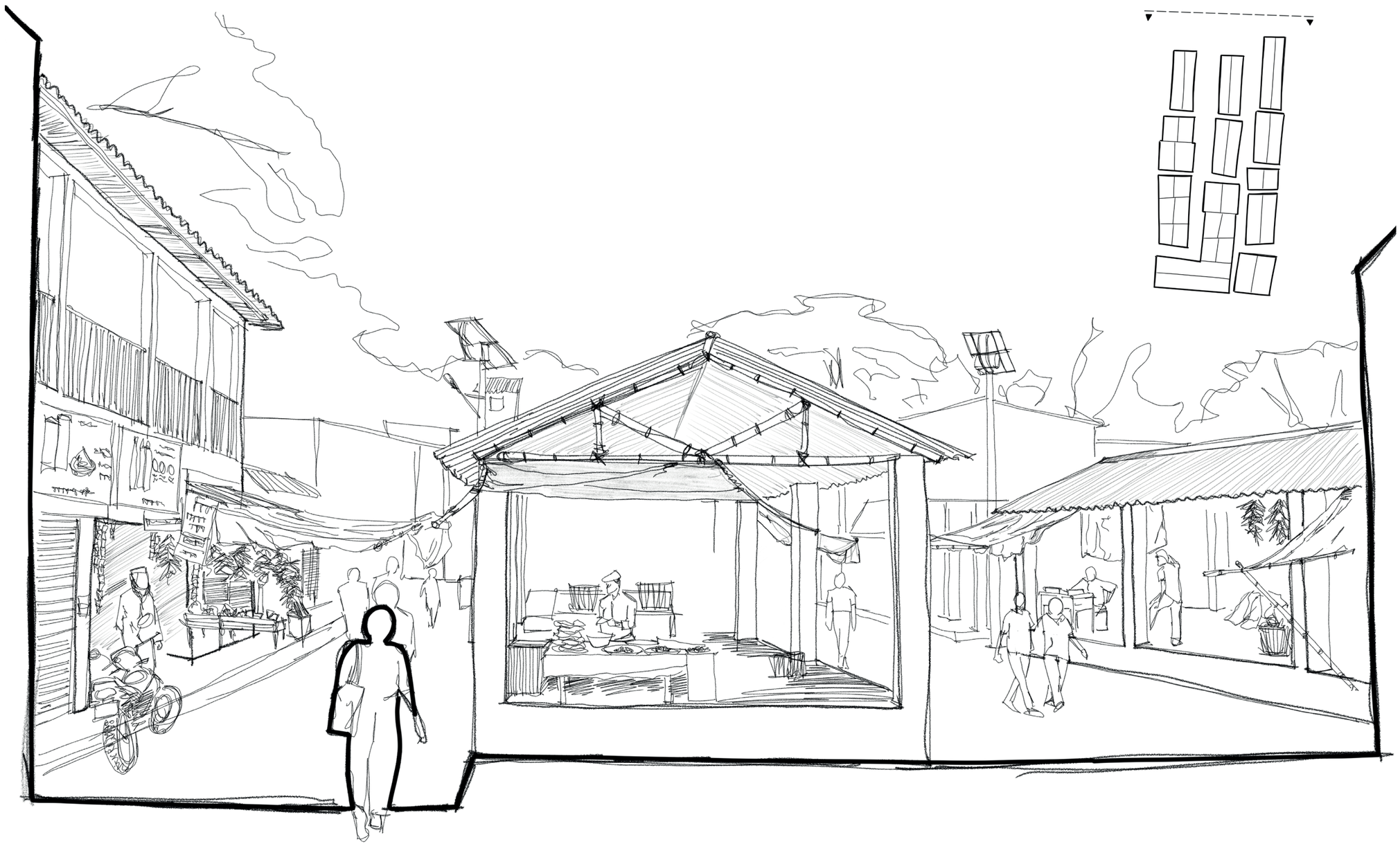


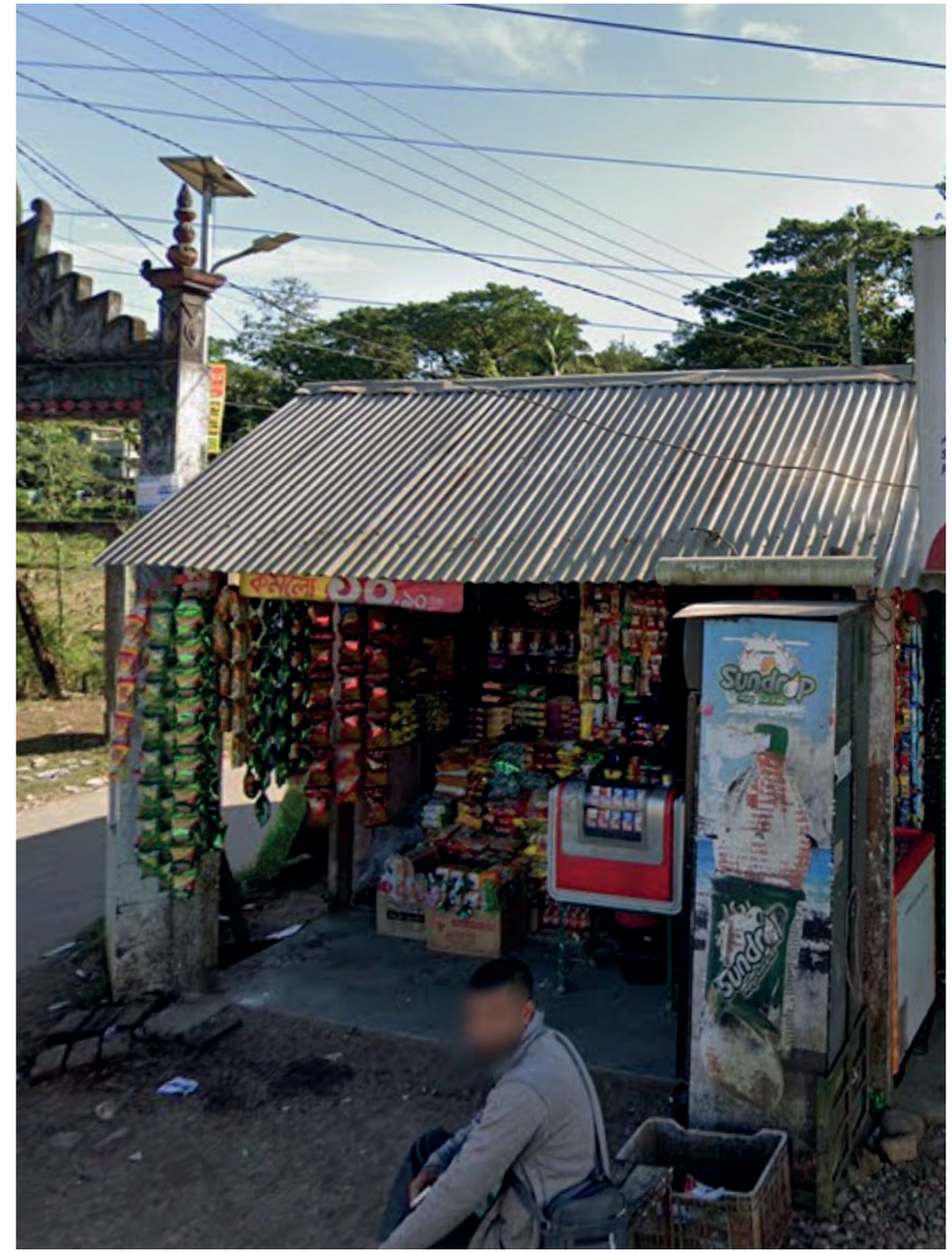
COURTYARD



POND

ফারহানা স্টোর




Sundrop

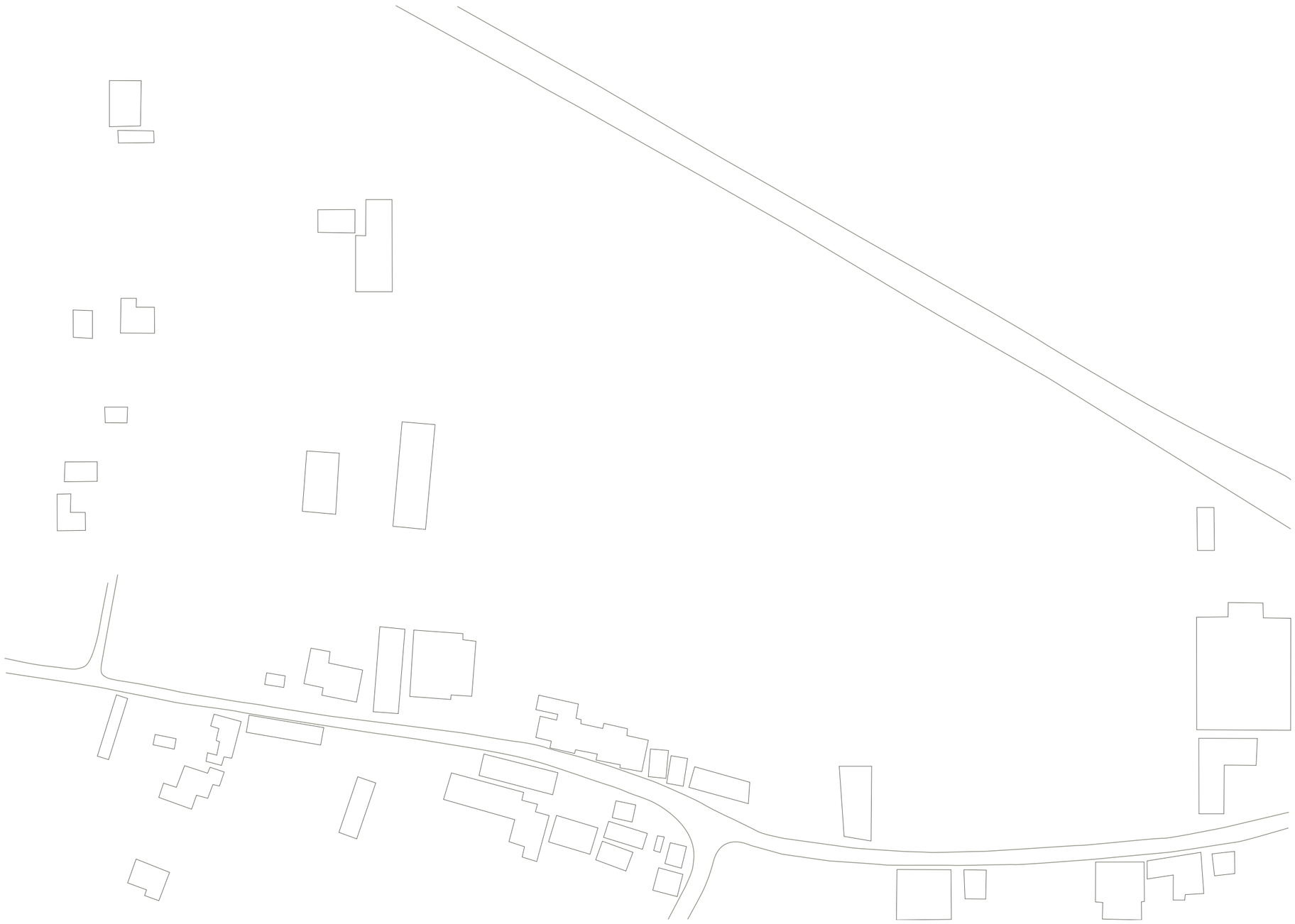
PALM LEAVES

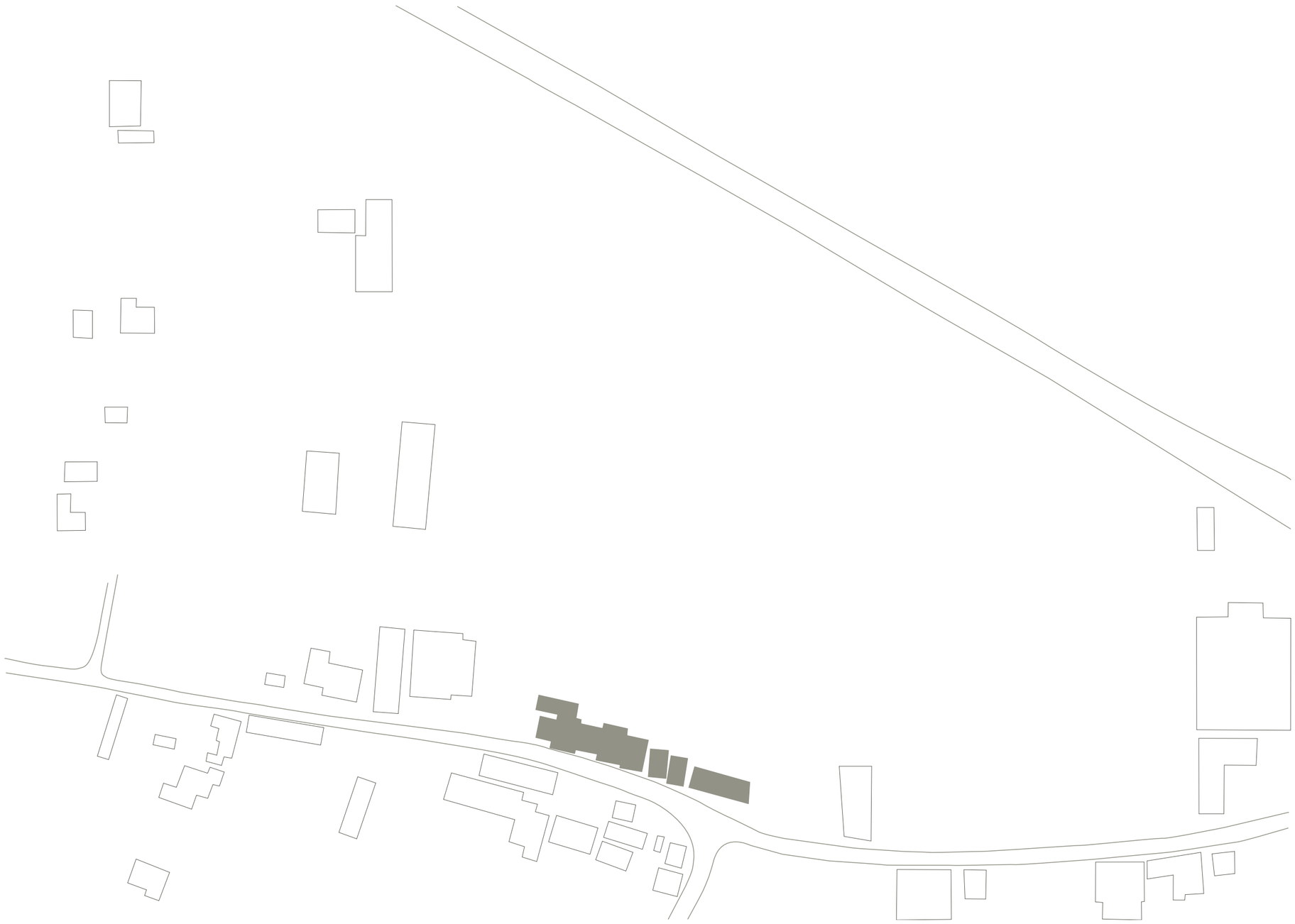
PLASTIC SHEETS

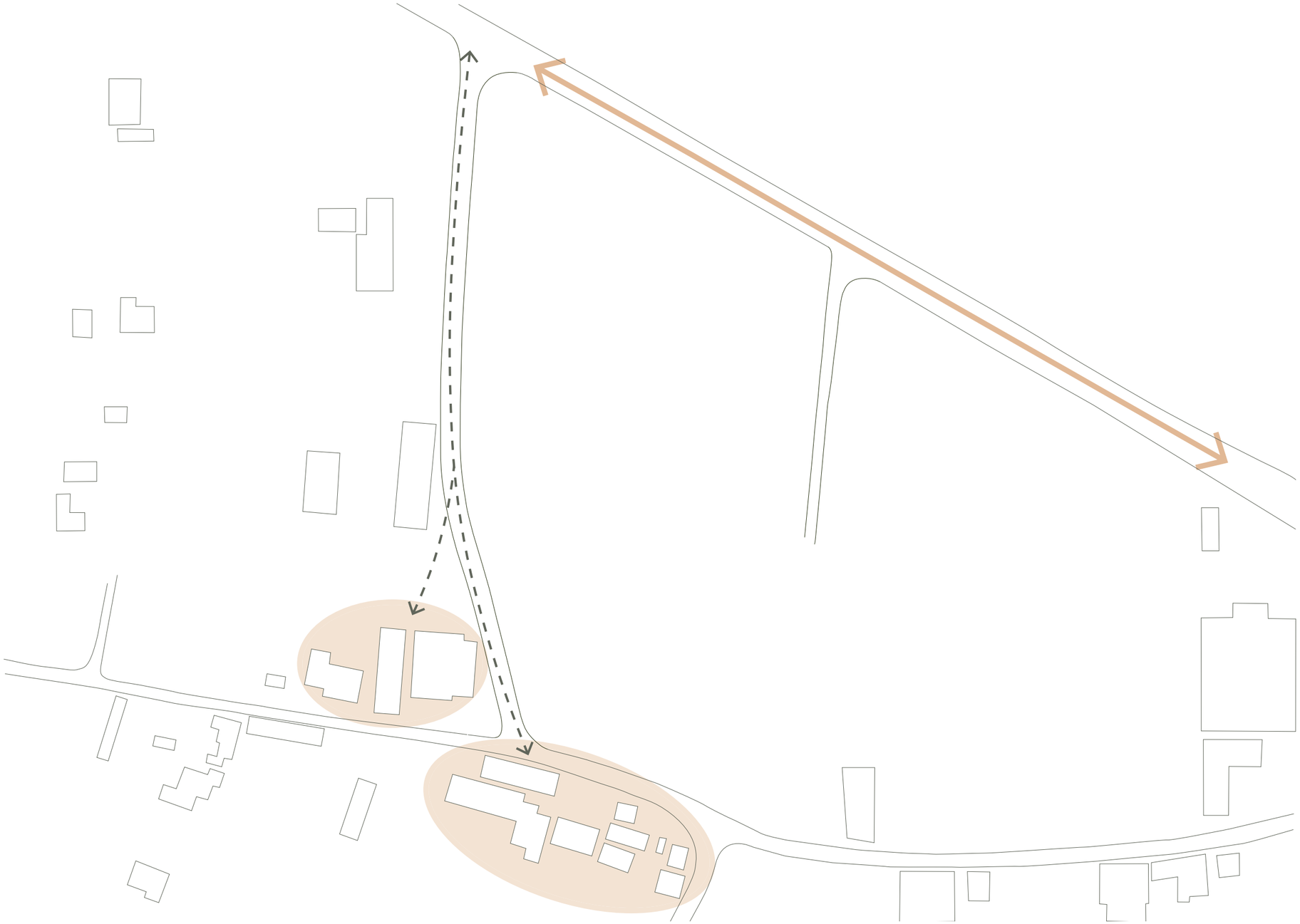
TEXTILES

HOW CAN PREVAILING SETTLEMENT PATTERNS BE IMPLEMENTED?

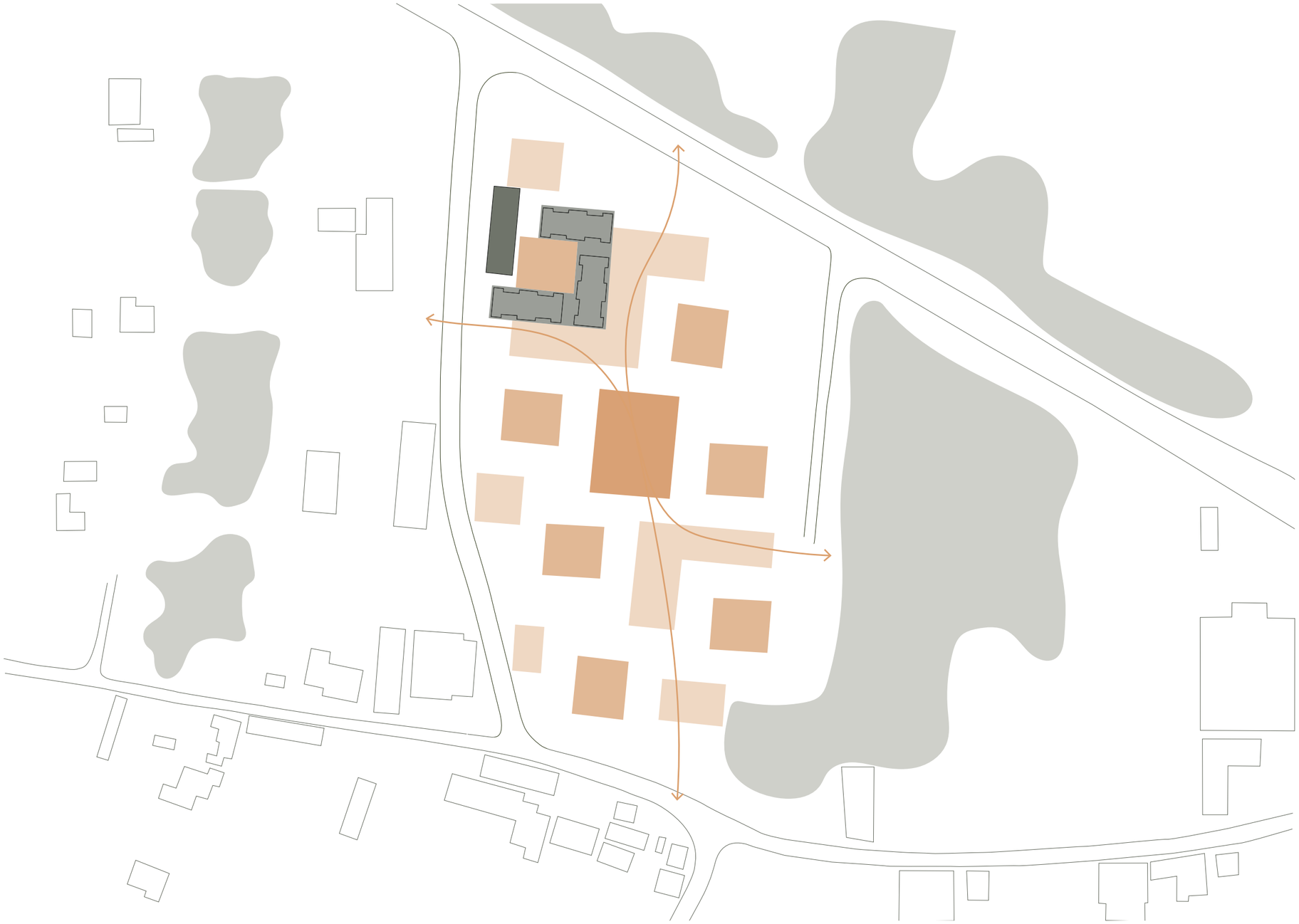
HOW CAN AN URBAN EVOLUTION ADD TO EXISTING STRUCTURES?

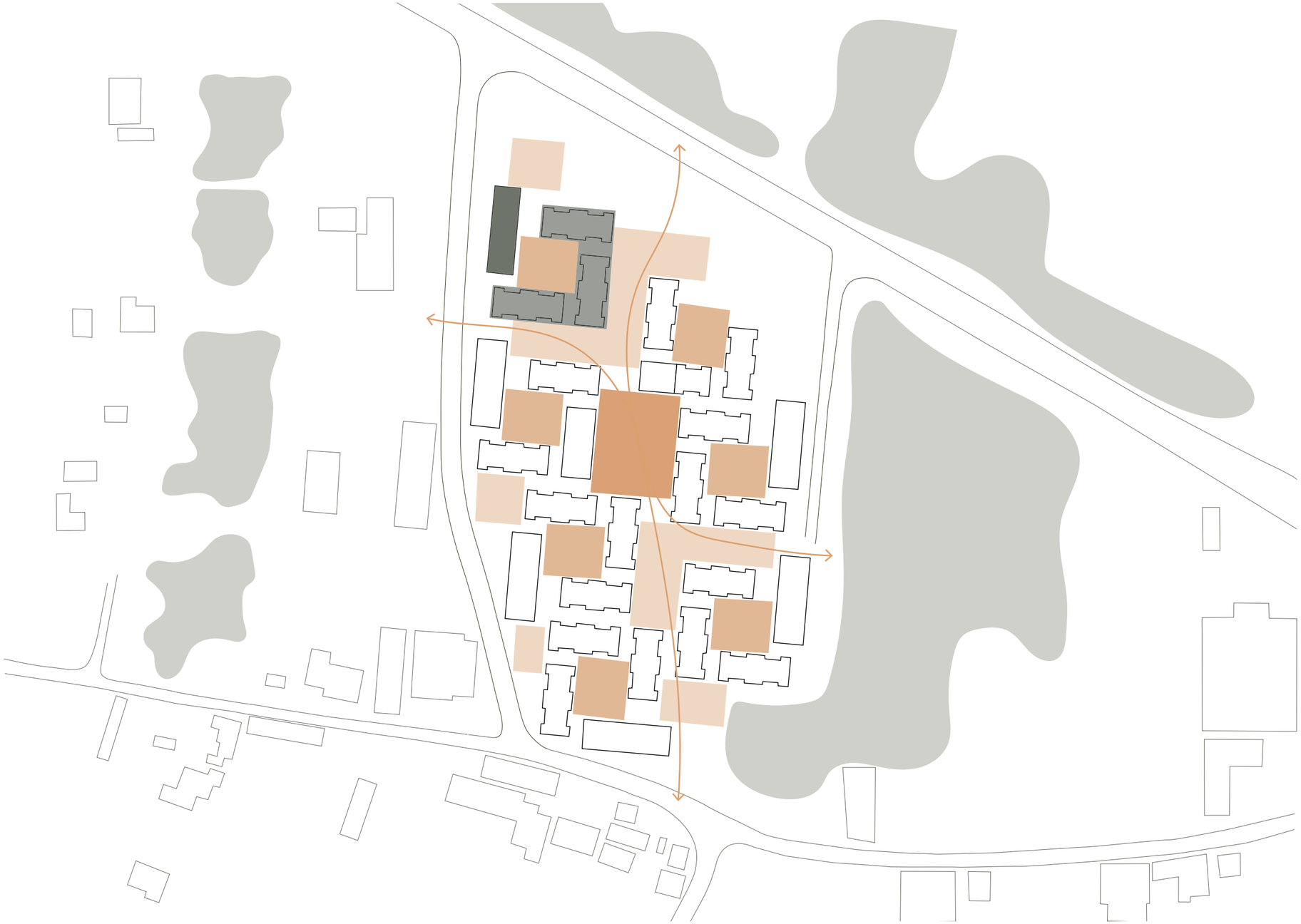


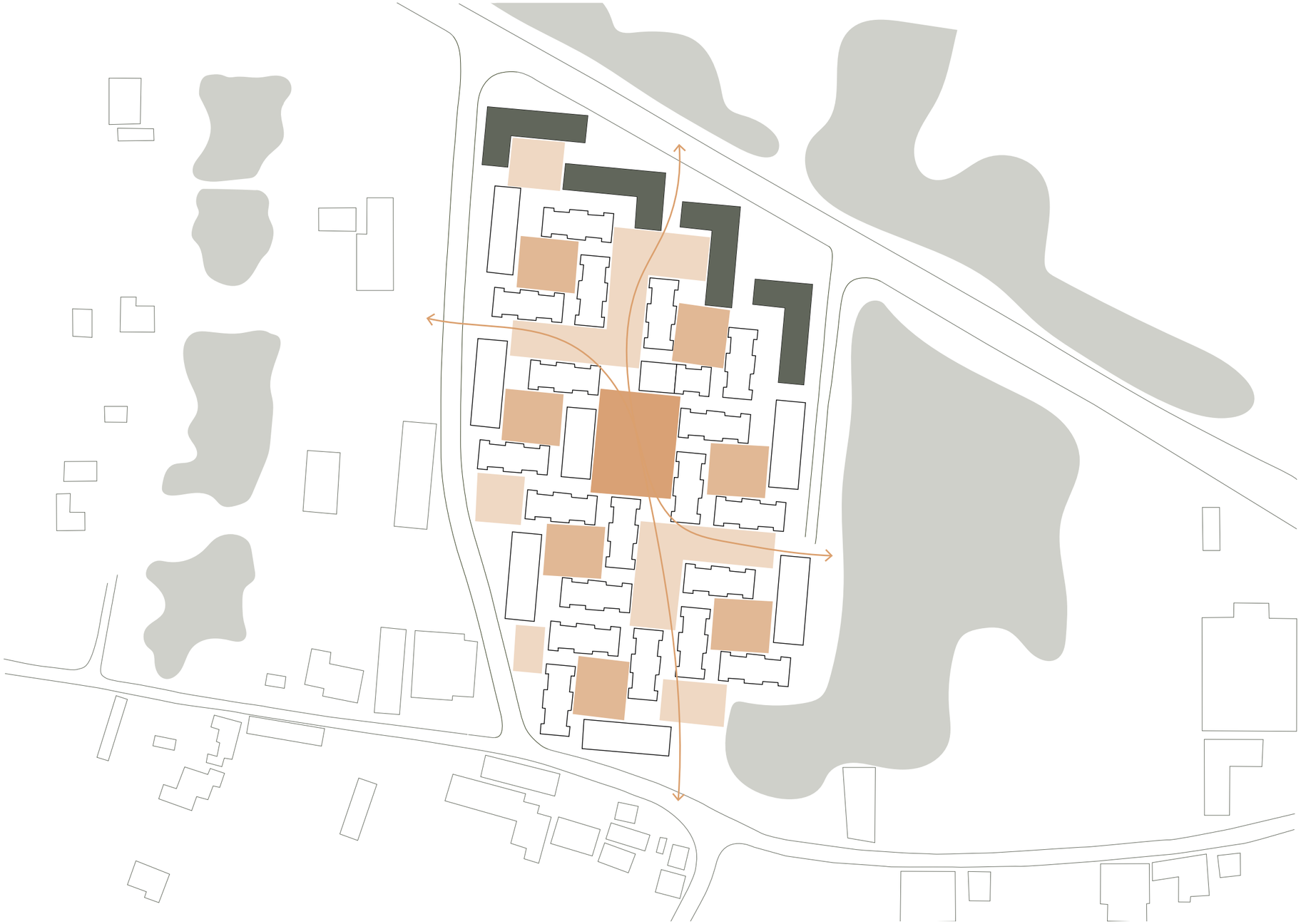


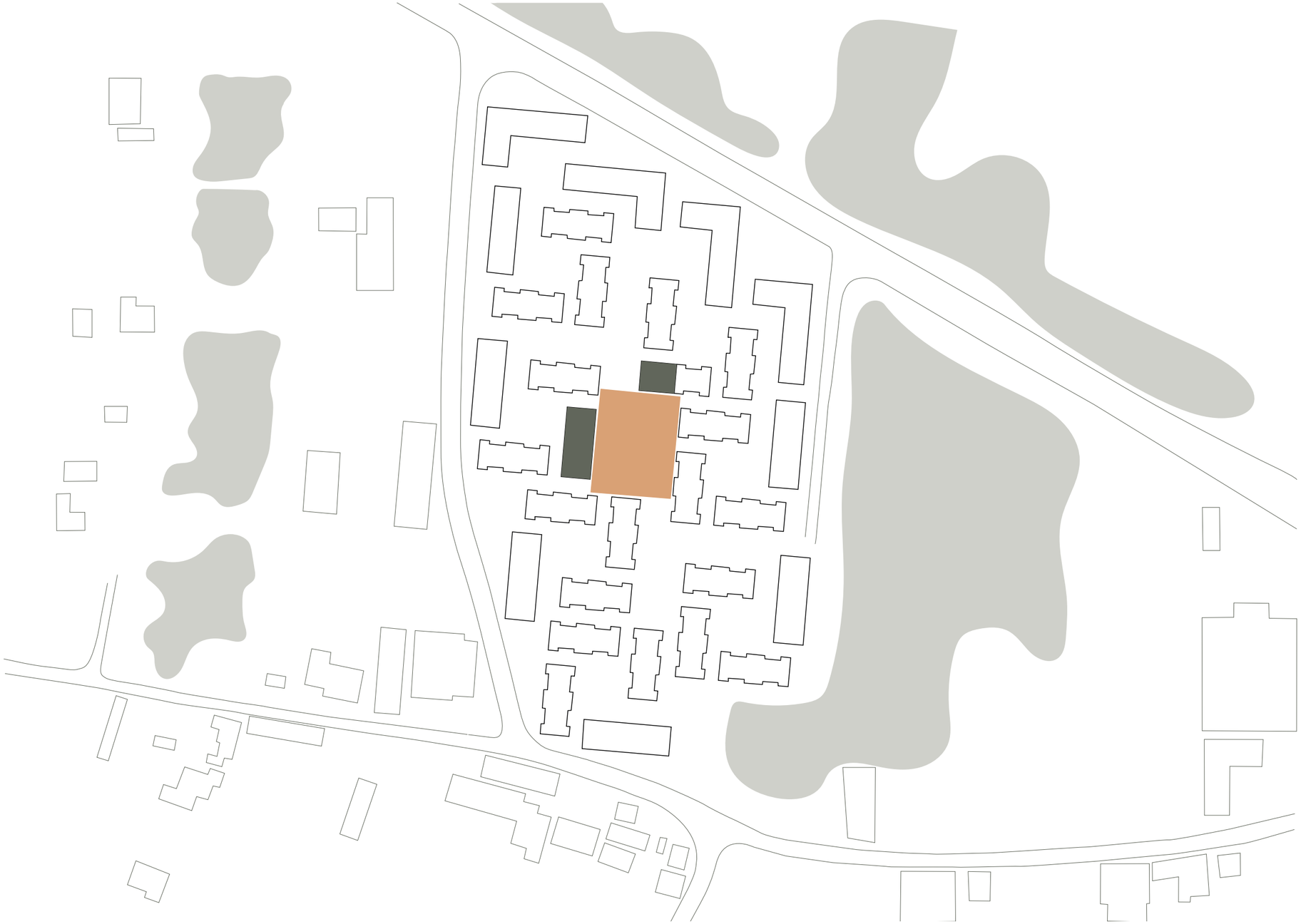


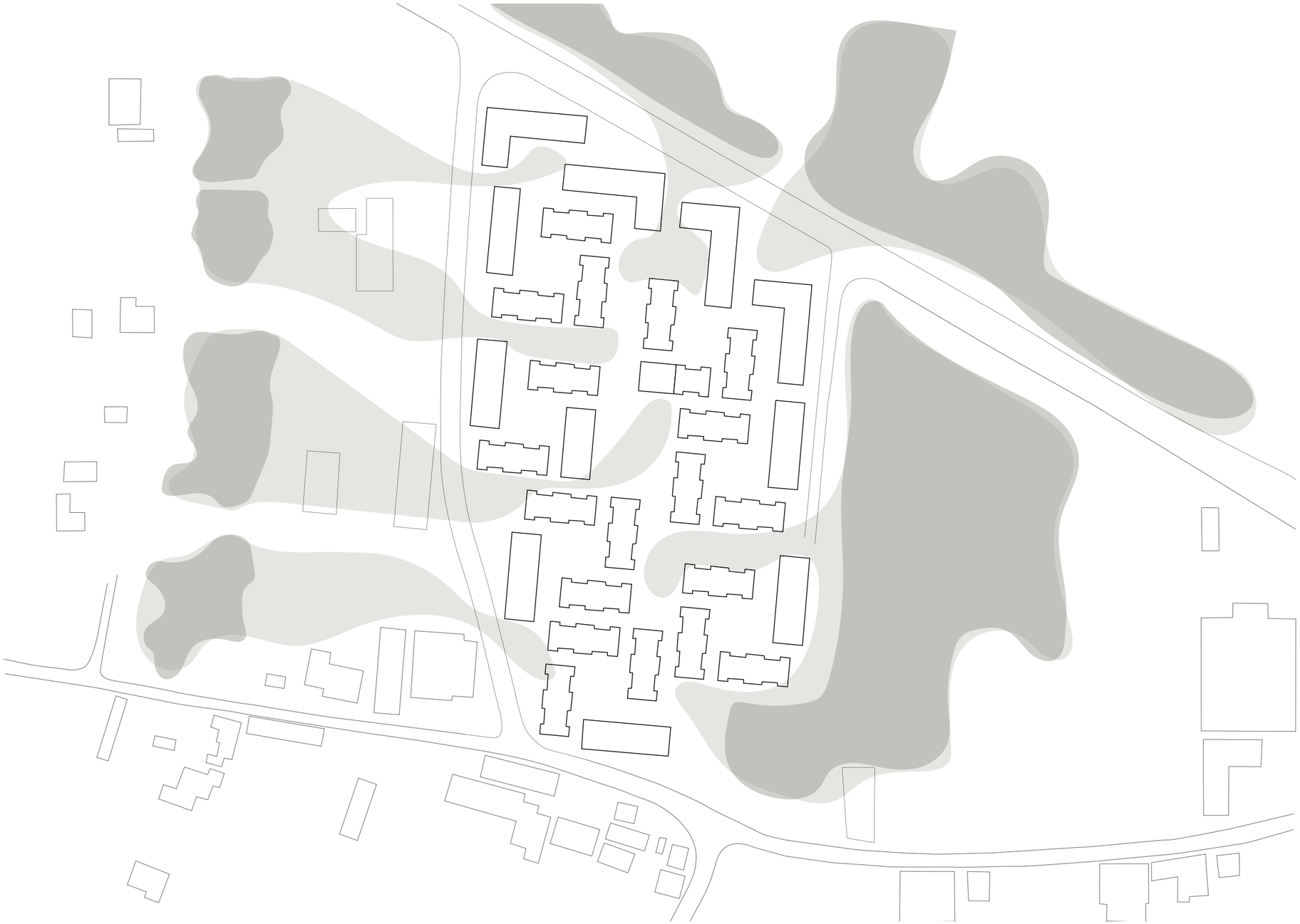
URBAN DEVELOPMENT

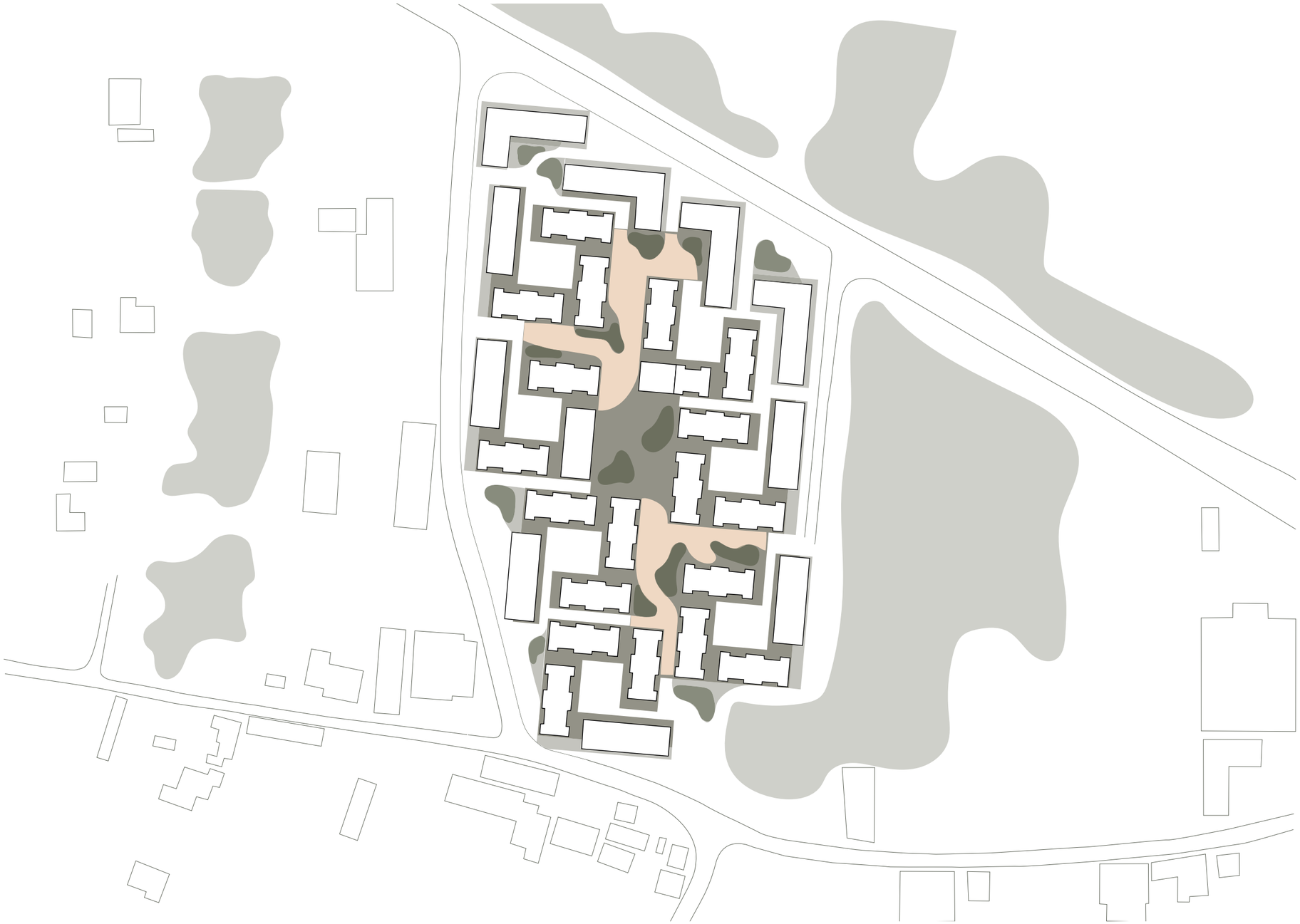


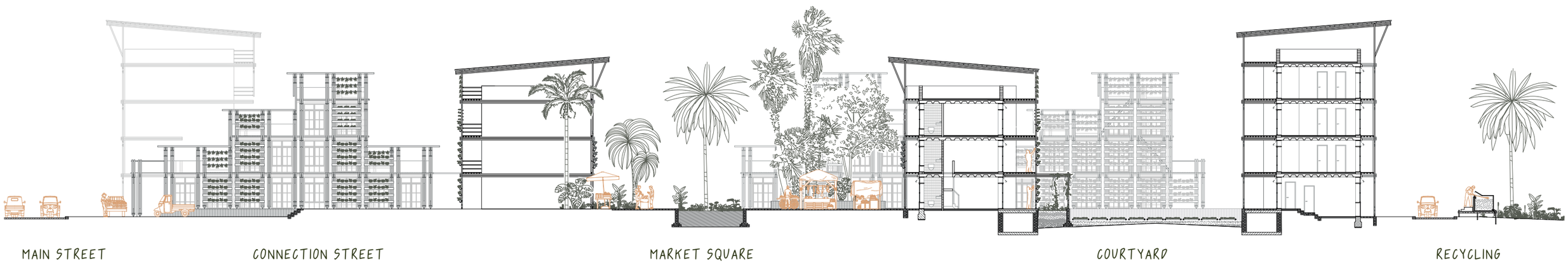




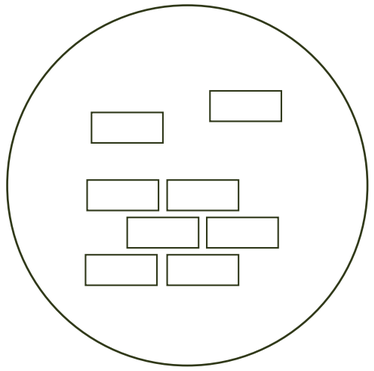






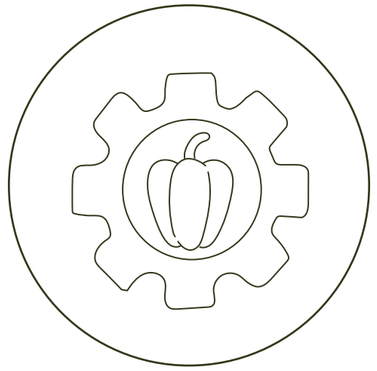

MAIN STREET
CONNECTION STREET
MARKET SQUARE
COURTYARD
RECYCLING

INCREMENTALITY



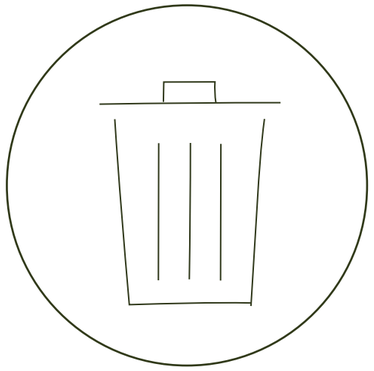
GROWTH

FOOD PRODUCTION



FLOATING FARMS
VERTICAL FARMS

WASTE MANAGEMENT

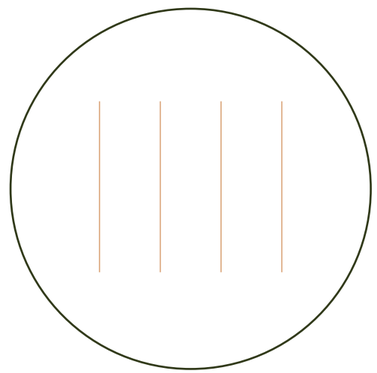


COMPOSTING
RECYCLING

DESIGN

STRONG CORE - LIGHT SKIN

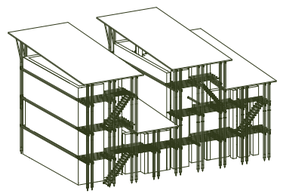
GRID SIZE



INCOME GENERATION

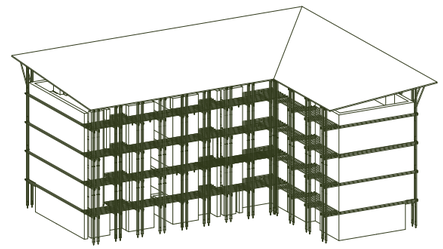
HOUSING TYPES

TYPE A



TYPE B

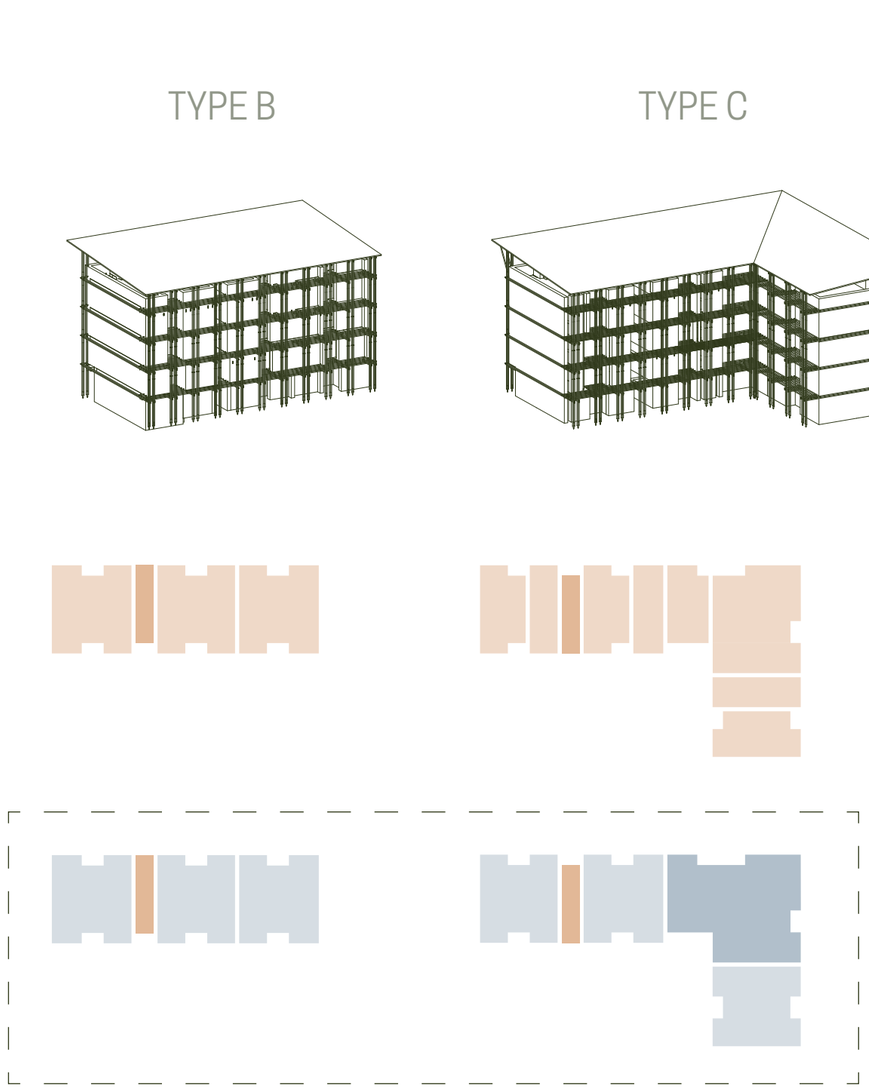
TYPE C



GROUND FLOOR

1. FLOOR

2. FLOOR



STANDARD FLOOR

COMMERCIAL

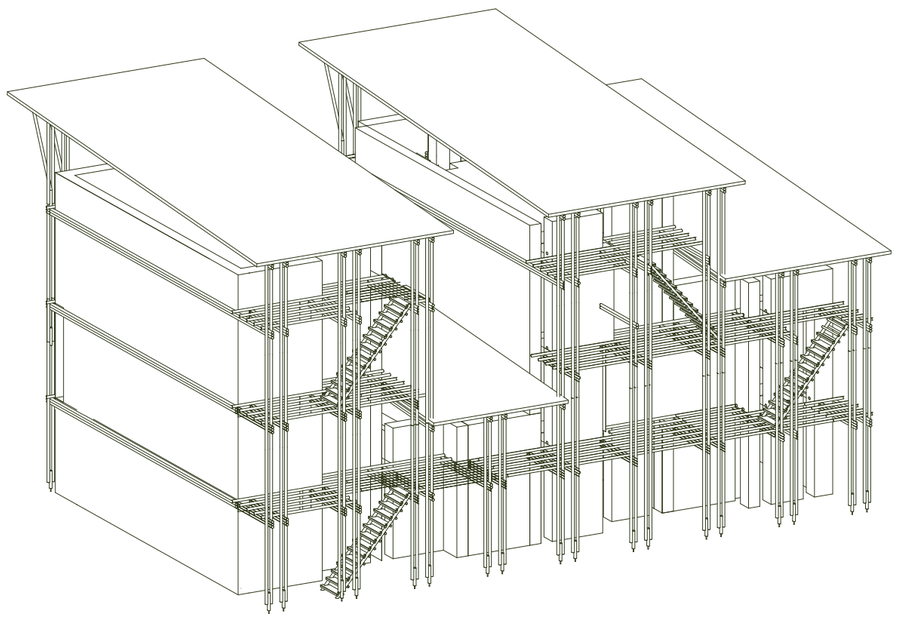
LOW INCOME

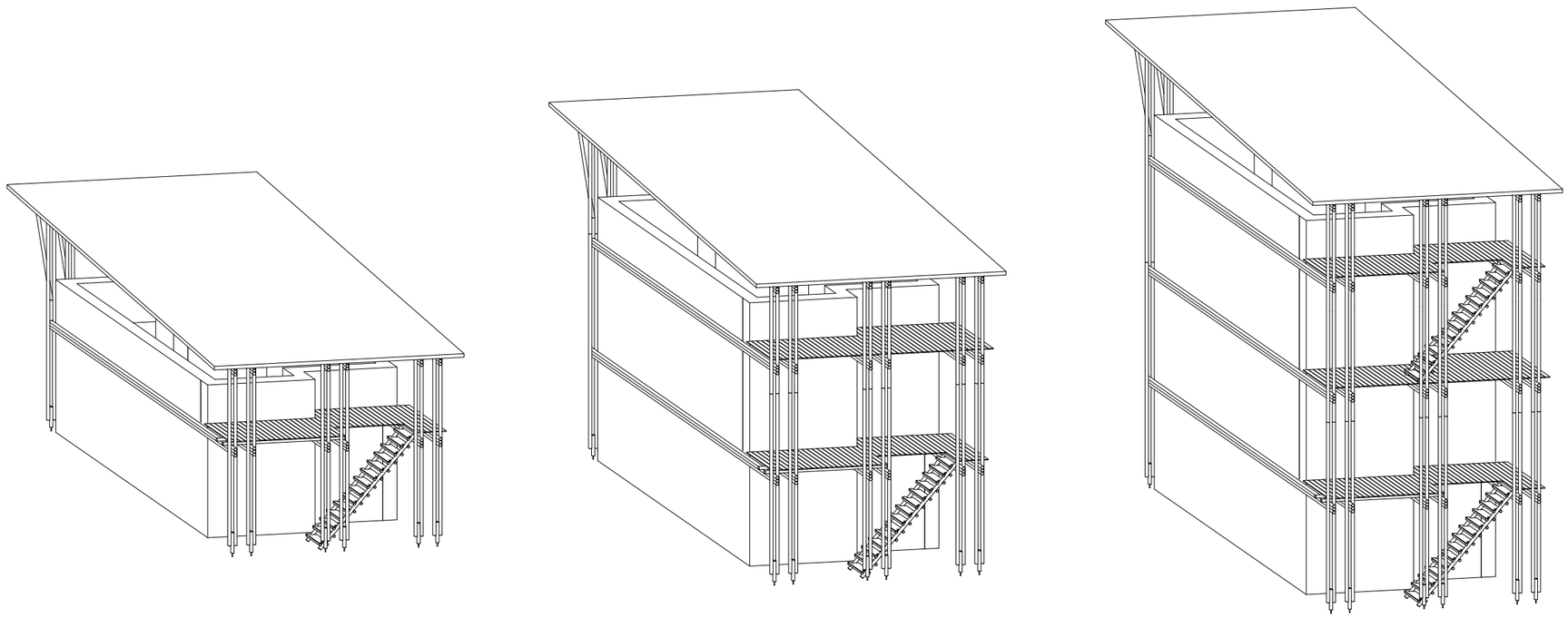
LOW INCOME DUPLEX

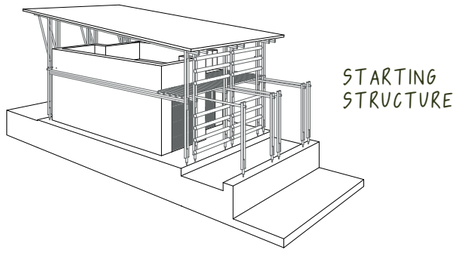
MIDDLE INCOME

MIDDLE INCOME

TYPE A






STARTING
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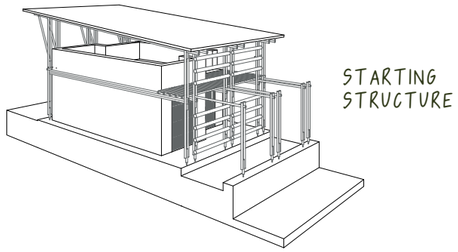
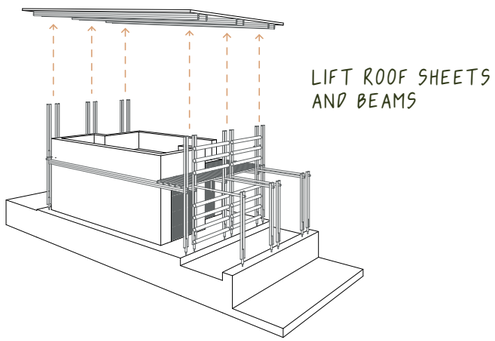
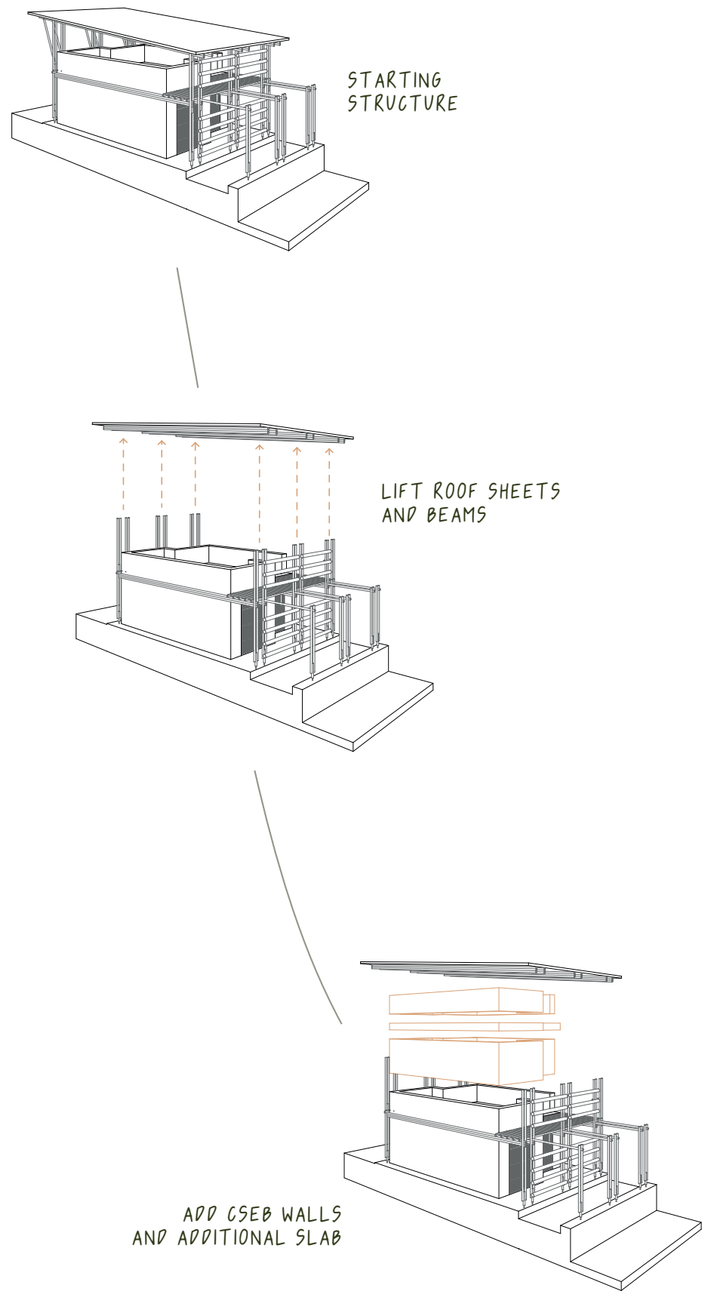

STARTING
STRUCTURE

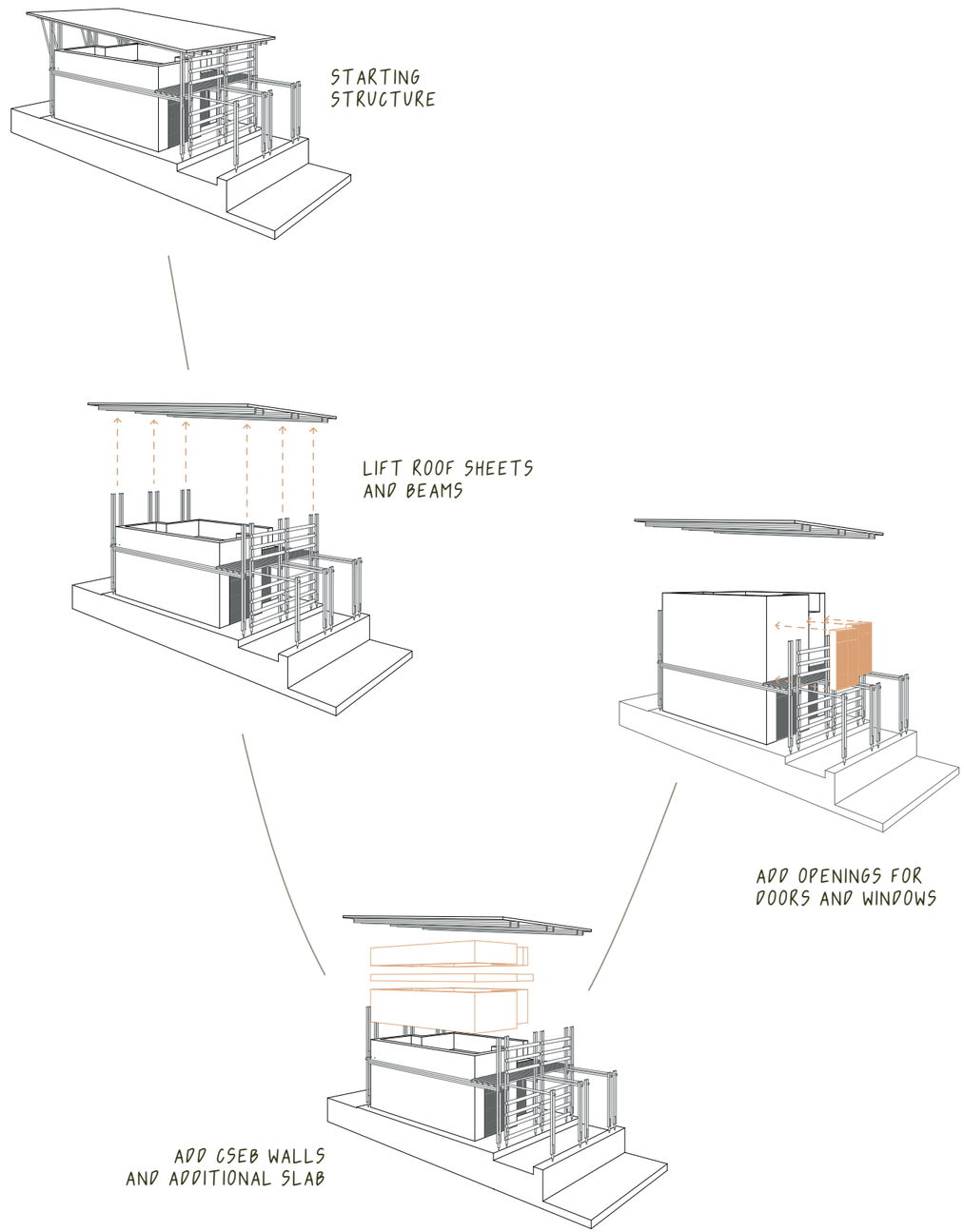

LIFT ROOF SHEETS
AND BEAMS

INCREMENTALITY

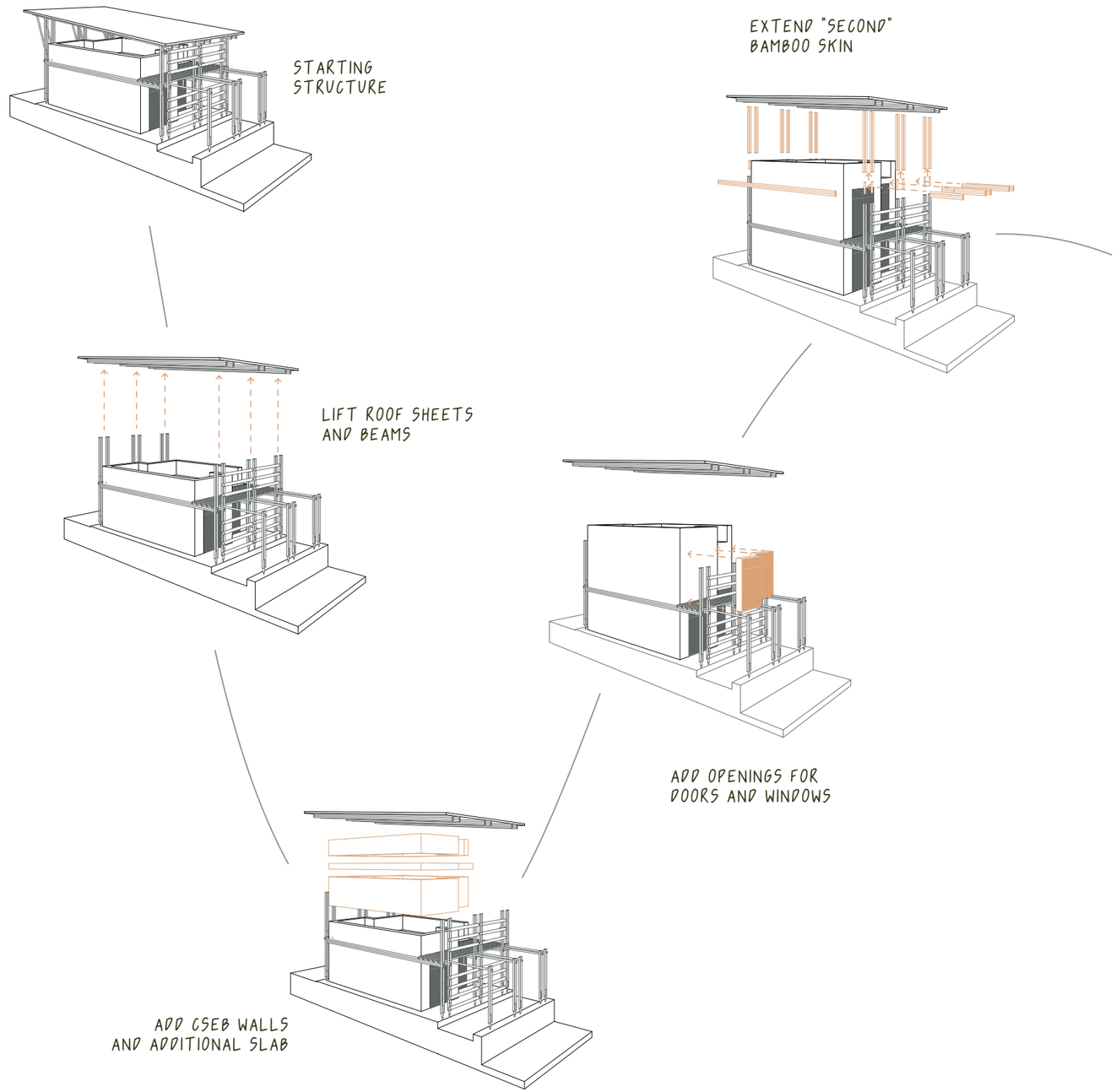


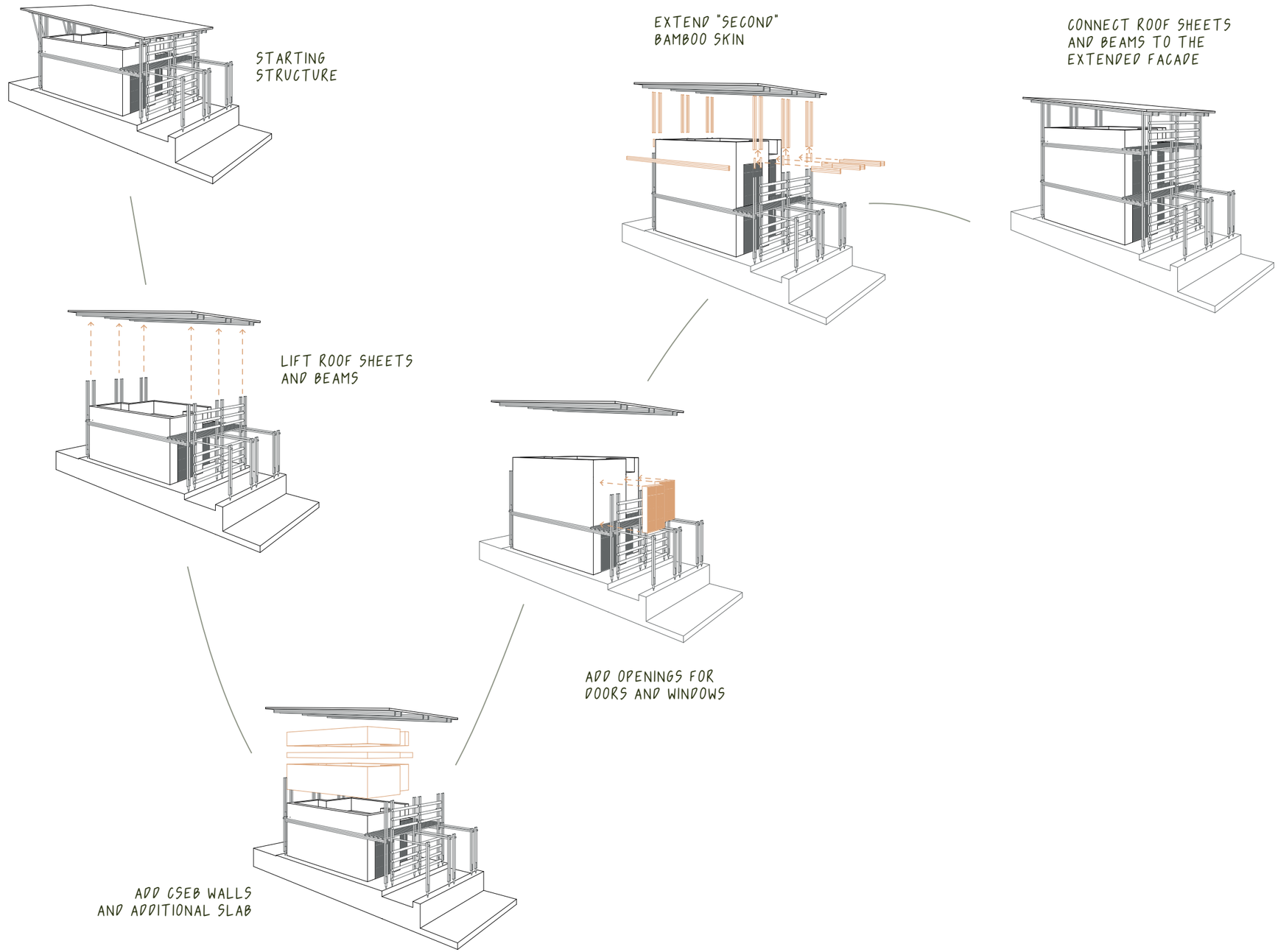
FELICITAS LEONIE SOPHIE GALLE

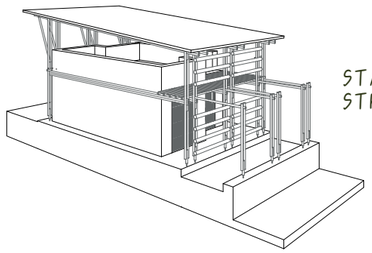
INCREMENTALITY



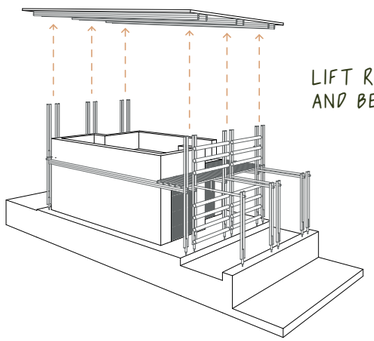
FELICITAS LEONIE SOPHIE GALLE


STARTING
STRUCTURE
EXTEND "SECOND"
BAMBOO SKIN
LIFT ROOF SHEETS
AND BEAMS
ADD OPENINGS FOR
DOORS AND WINDOWS
ADD CSEB WALLS
AND ADDITIONAL SLAB

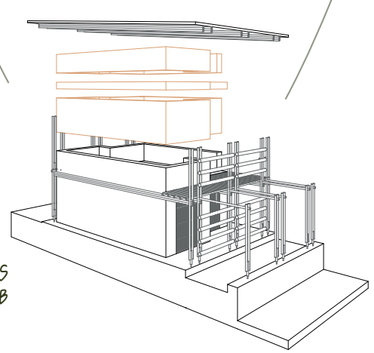

STARTING STRUCTURE
EXTEND "SECOND" BAMBOO SKIN
CONNECT ROOF SHEETS AND BEAMS TO THE EXTENDED FACADE
LIFT ROOF SHEETS AND BEAMS
ADD OPENINGS FOR DOORS AND WINDOWS
ADD CSEB WALLS AND ADDITIONAL SLAB



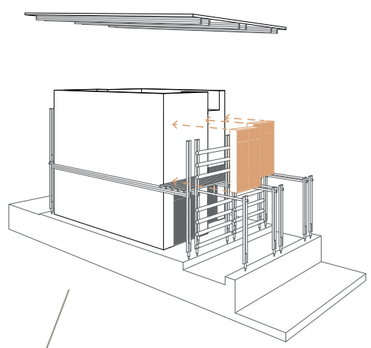
STARTING STRUCTURE



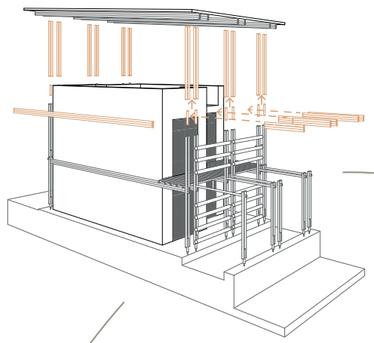
LIFT ROOF SHEETS AND BEAMS



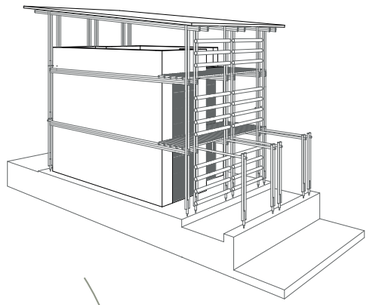
ADD CSEB WALLS AND ADDITIONAL SLAB



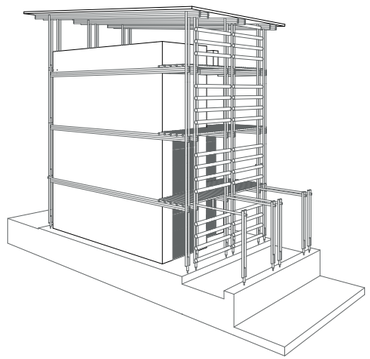
ADD OPENINGS FOR DOORS AND WINDOWS



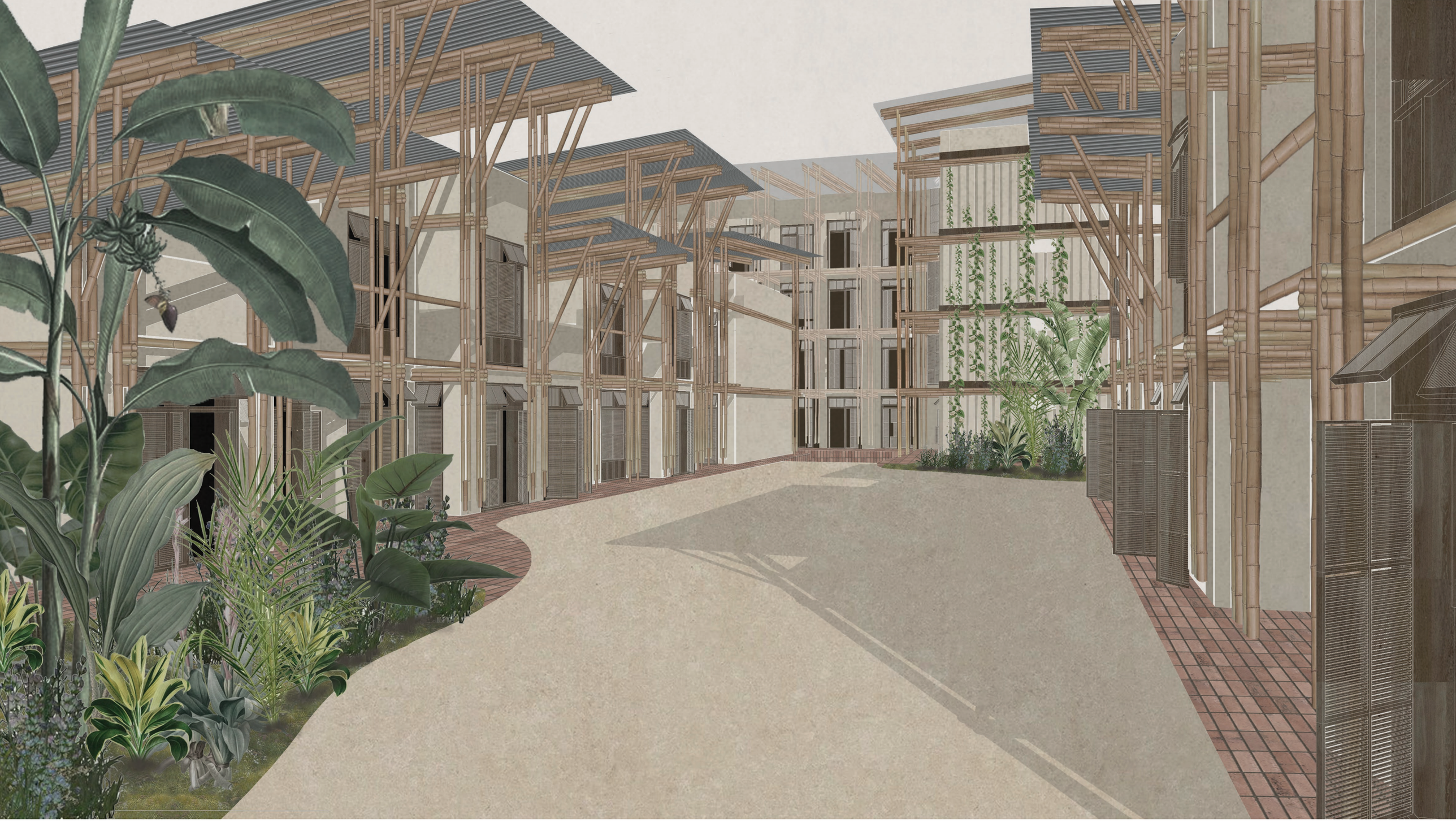
EXTEND "SECOND" BAMBOO SKIN



CONNECT ROOF SHEETS AND BEAMS TO THE EXTENDED FACADE



REPEAT FOR THIRD FLOOR EXTENTION



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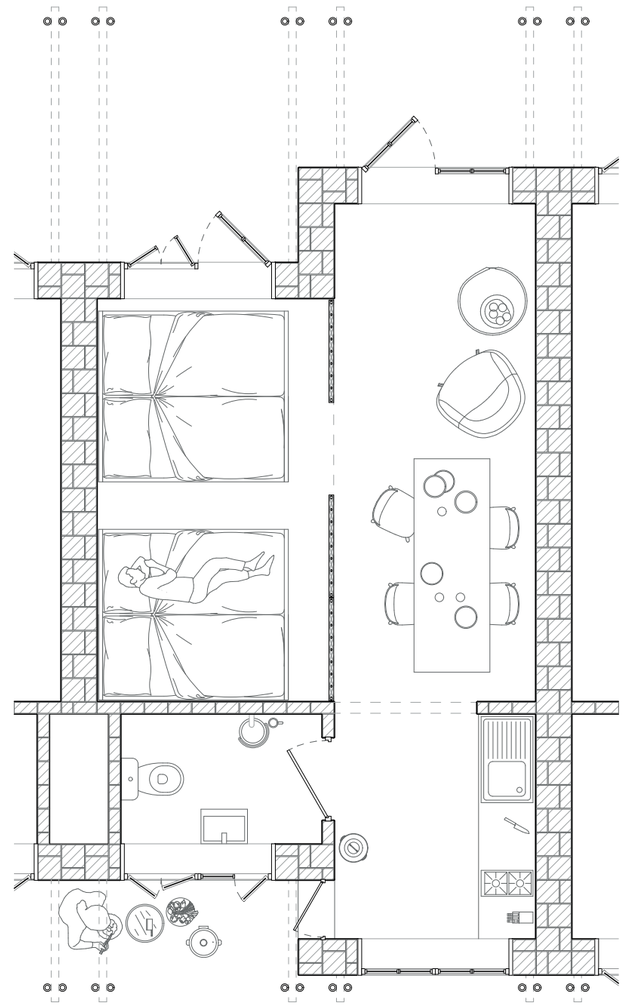

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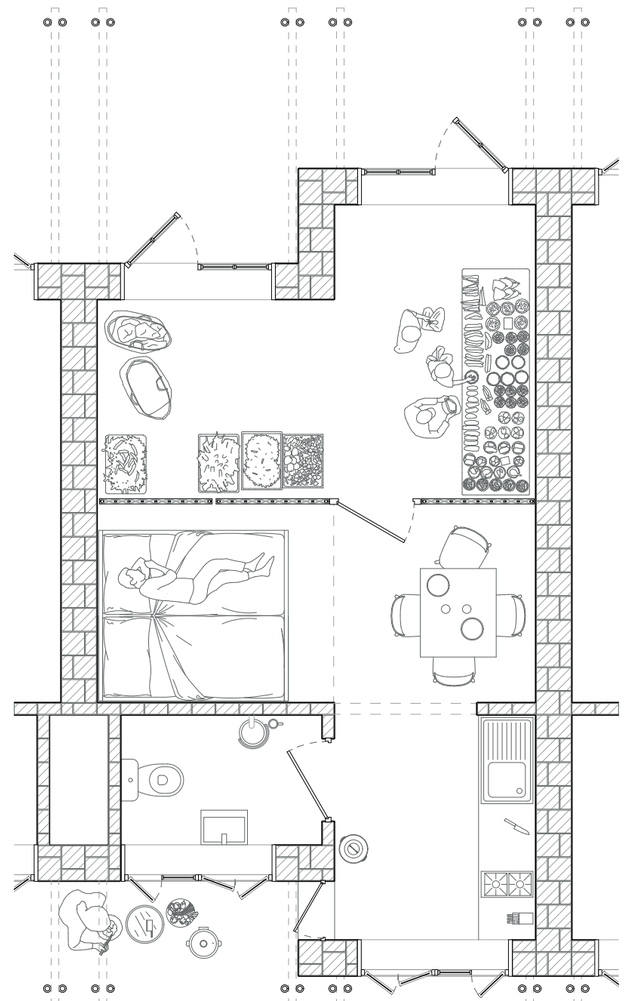

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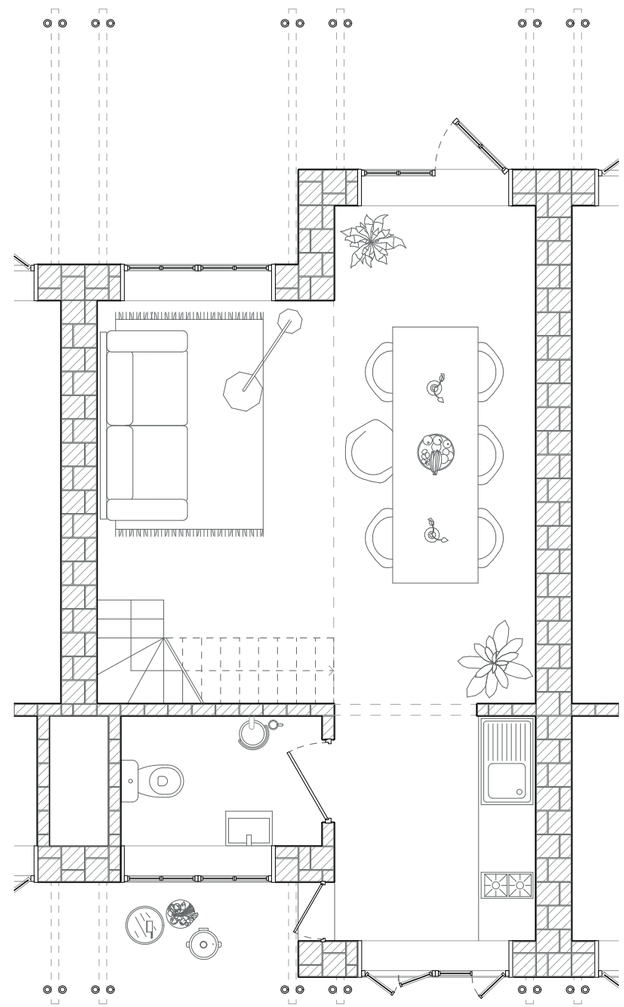

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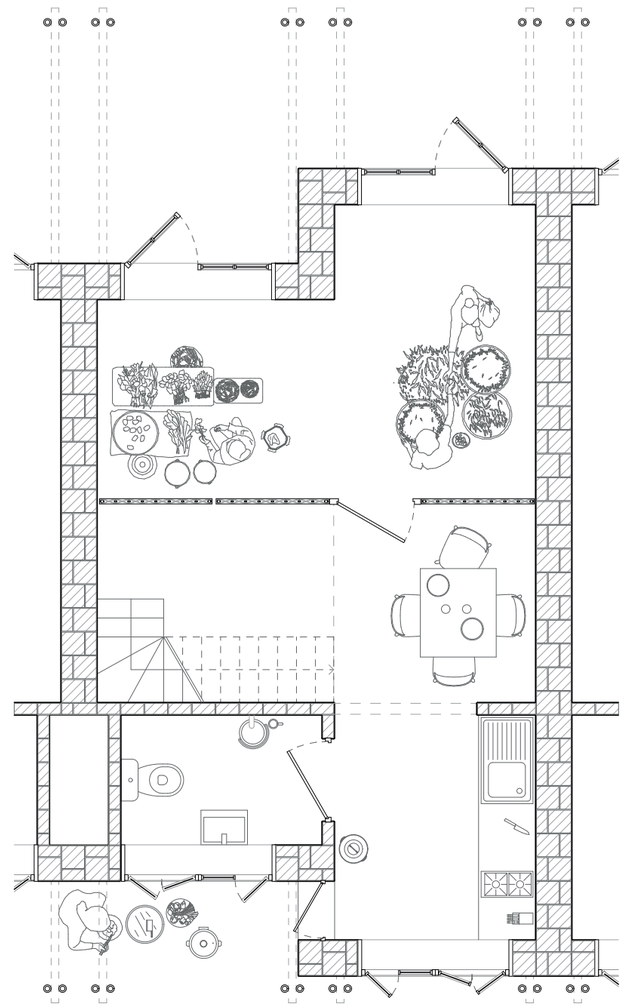
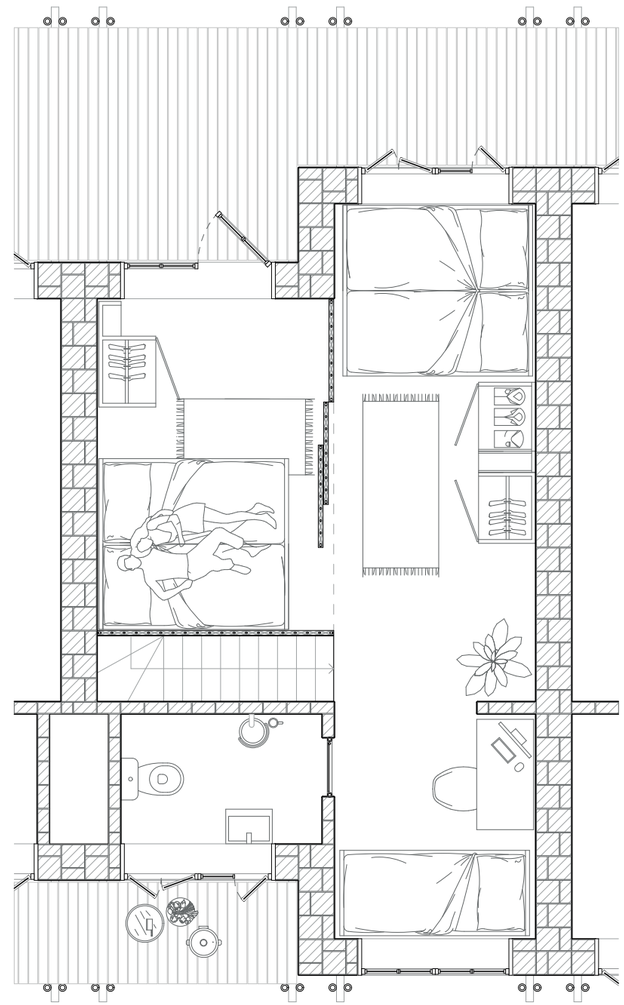


TYPE A



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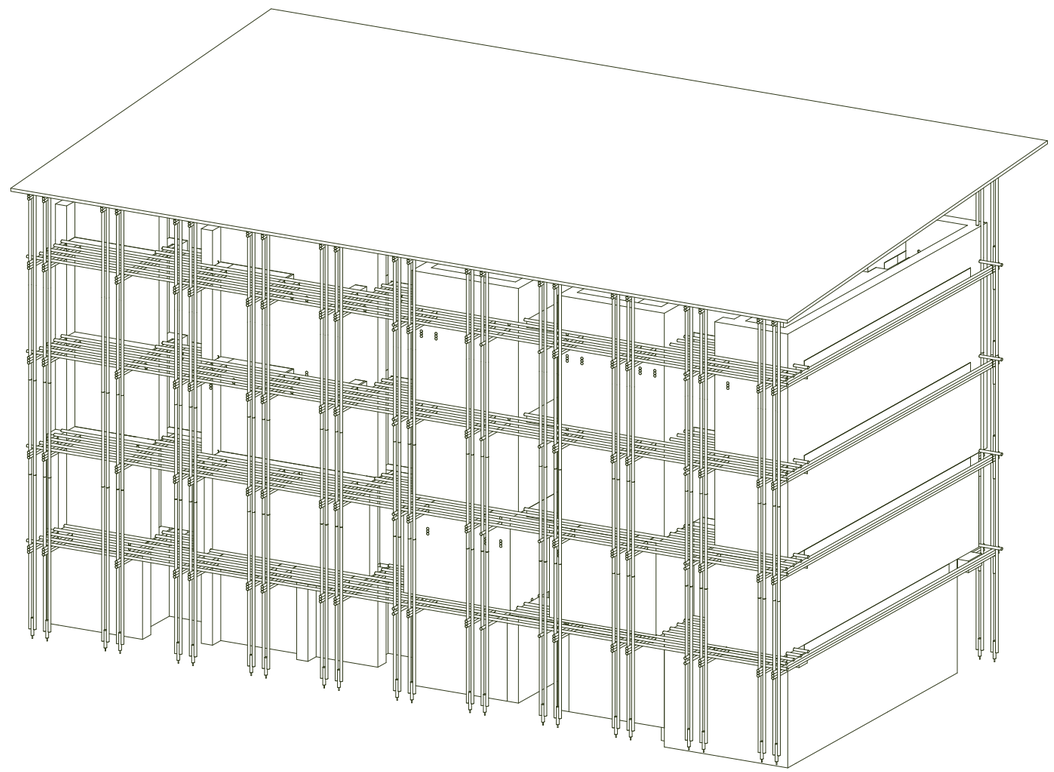

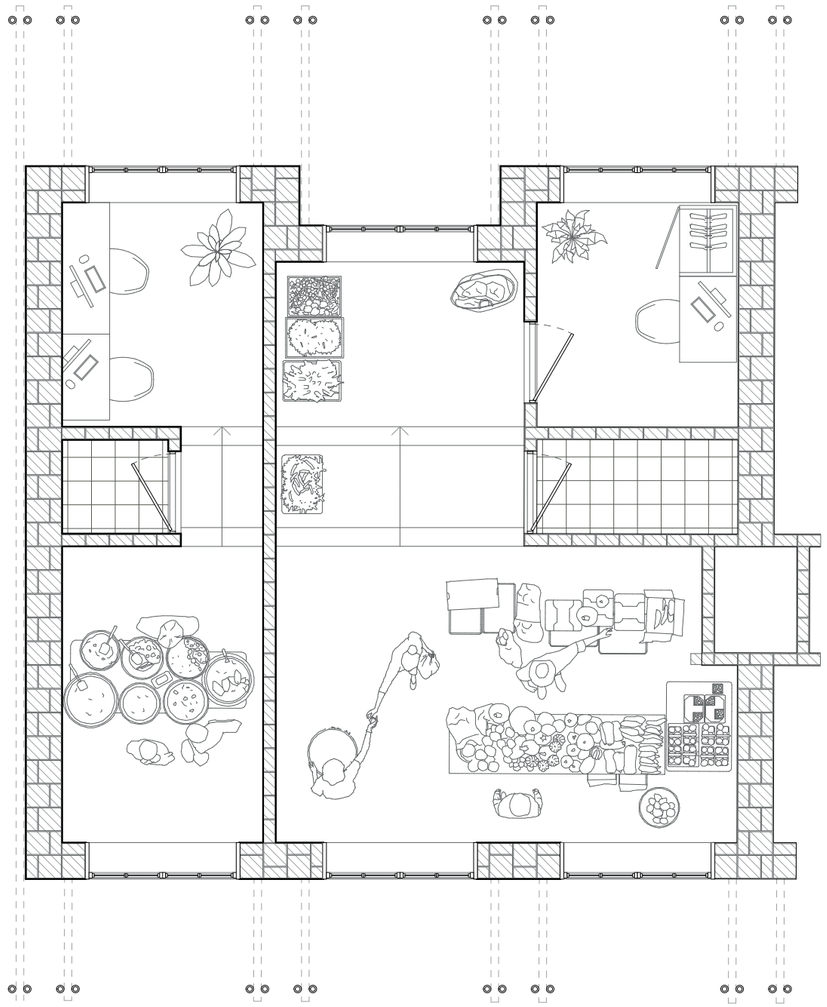

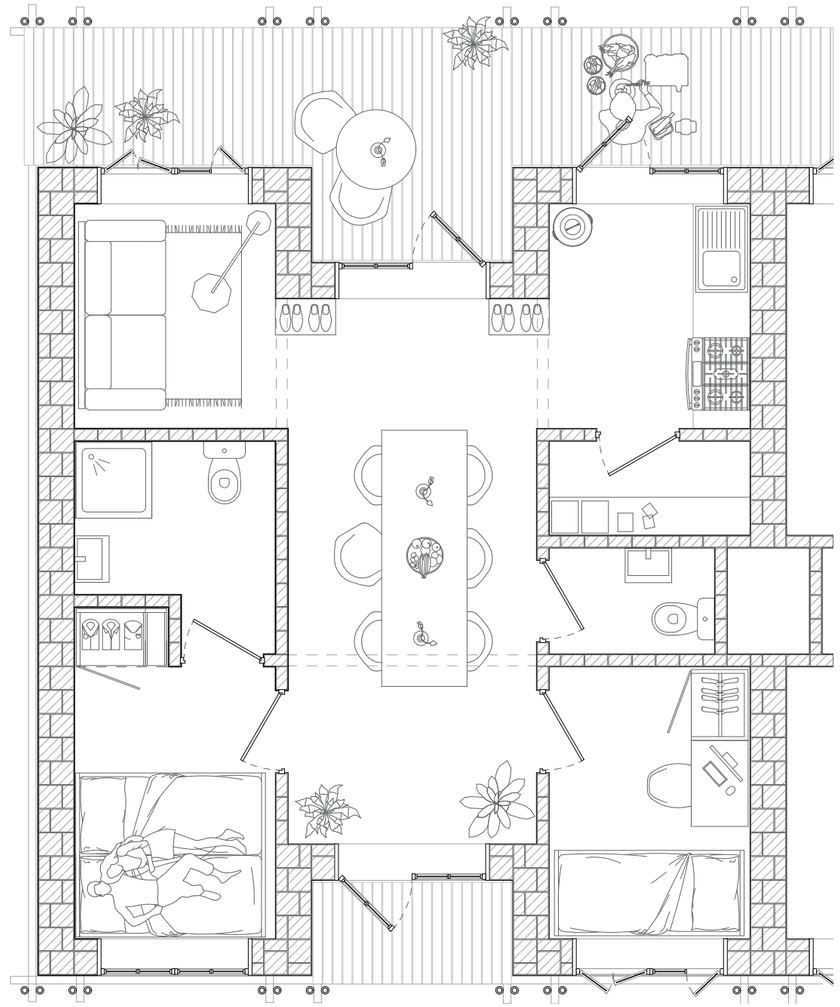

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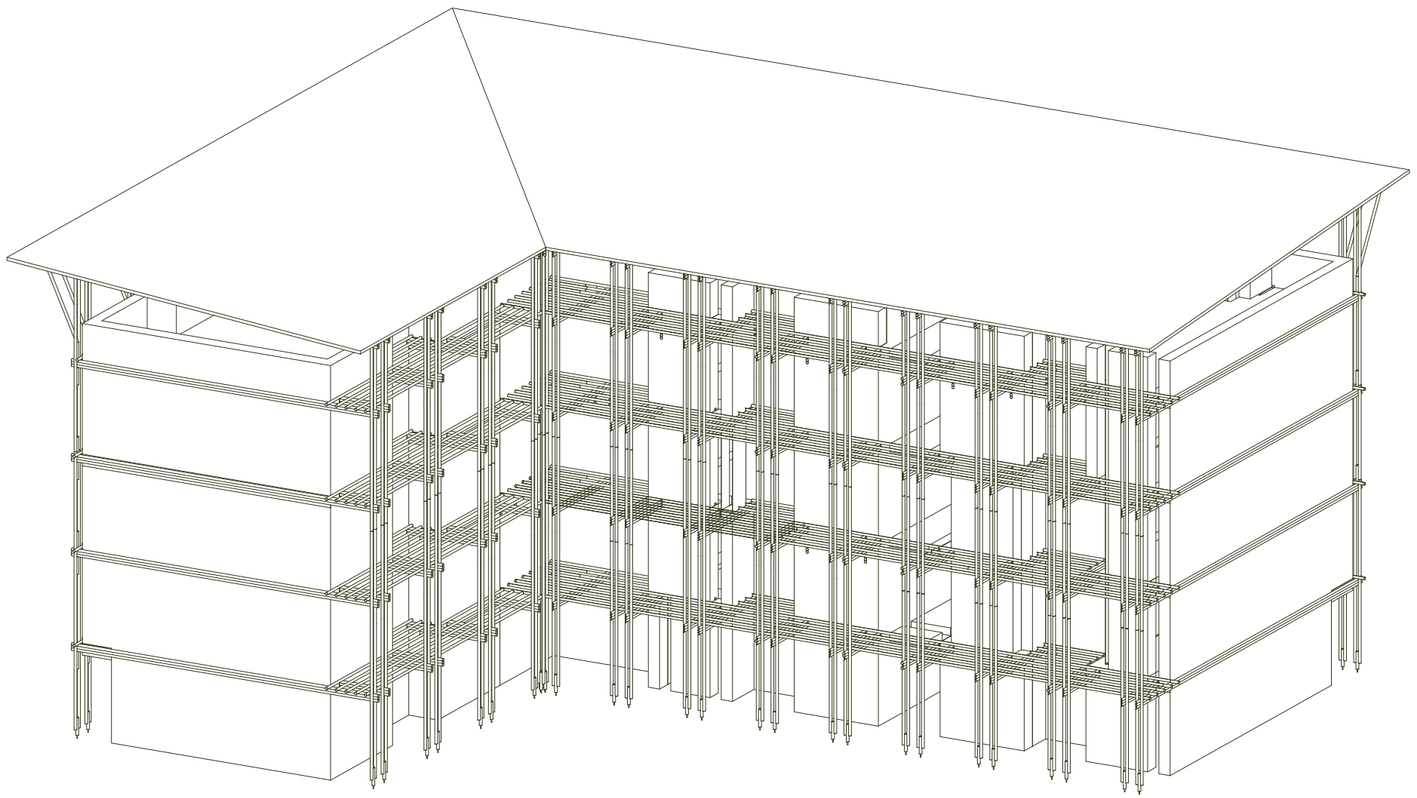
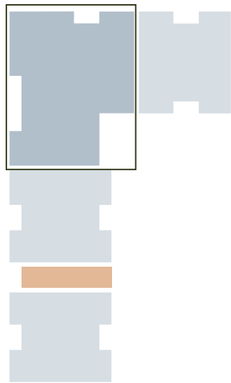
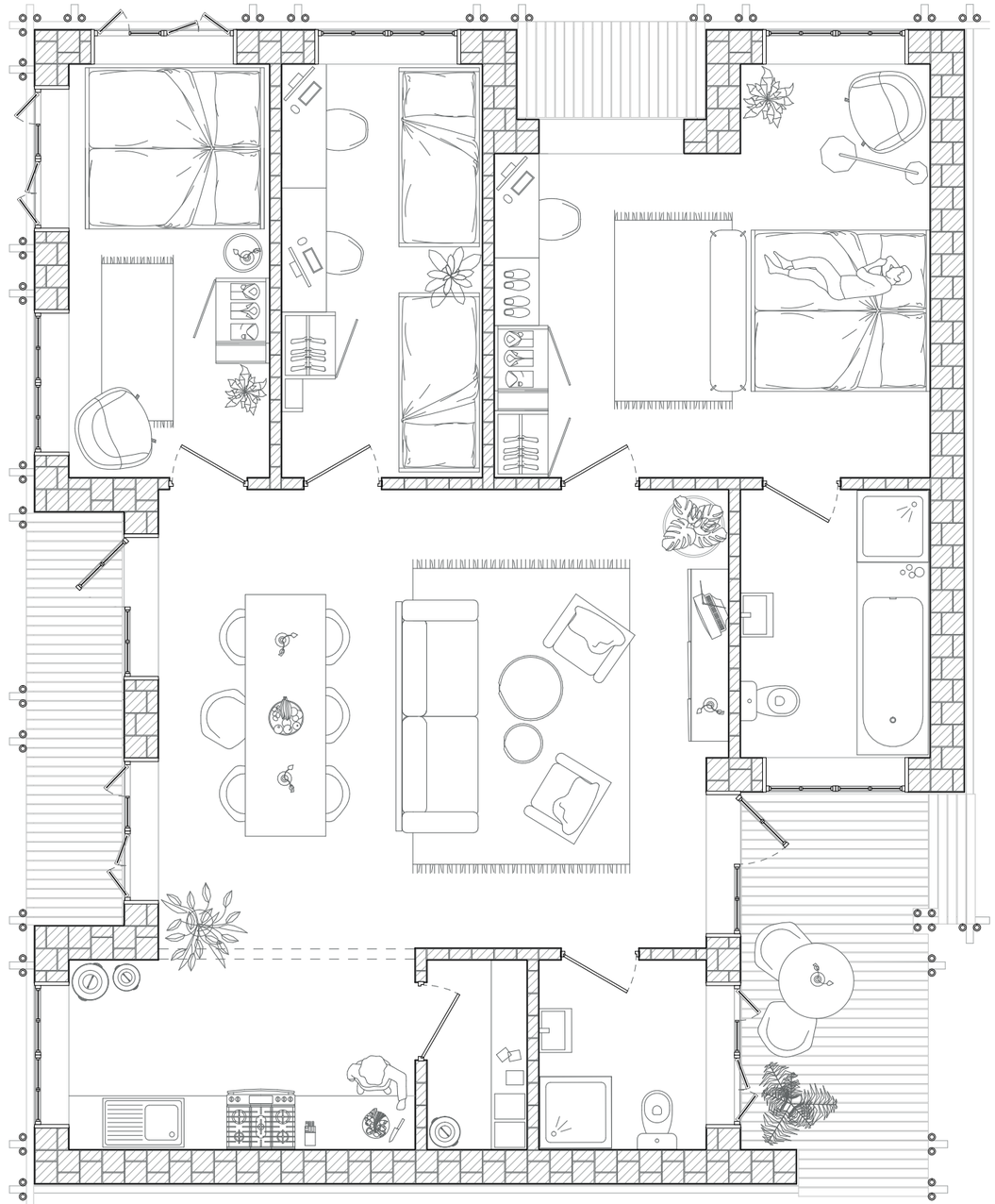
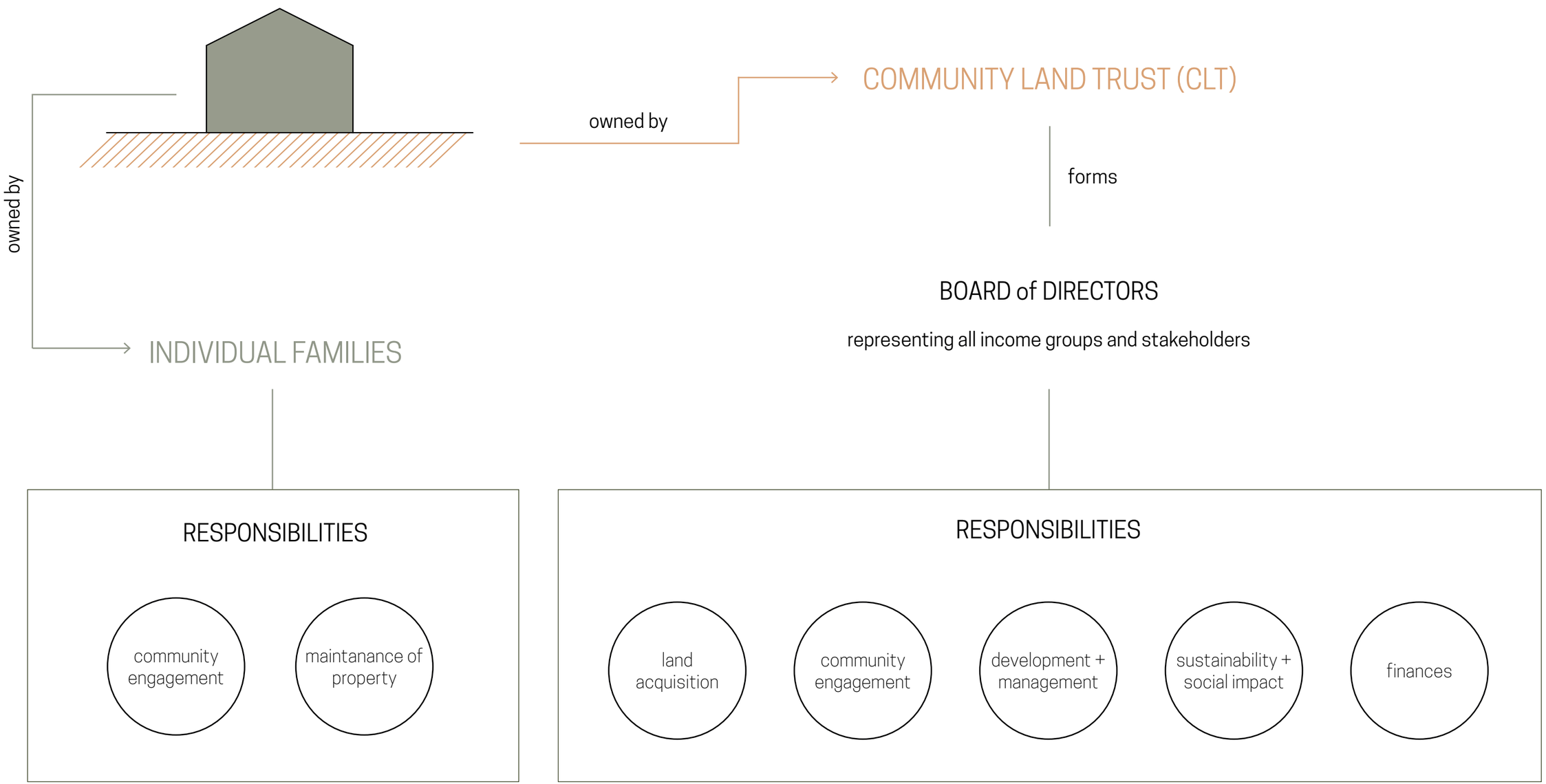
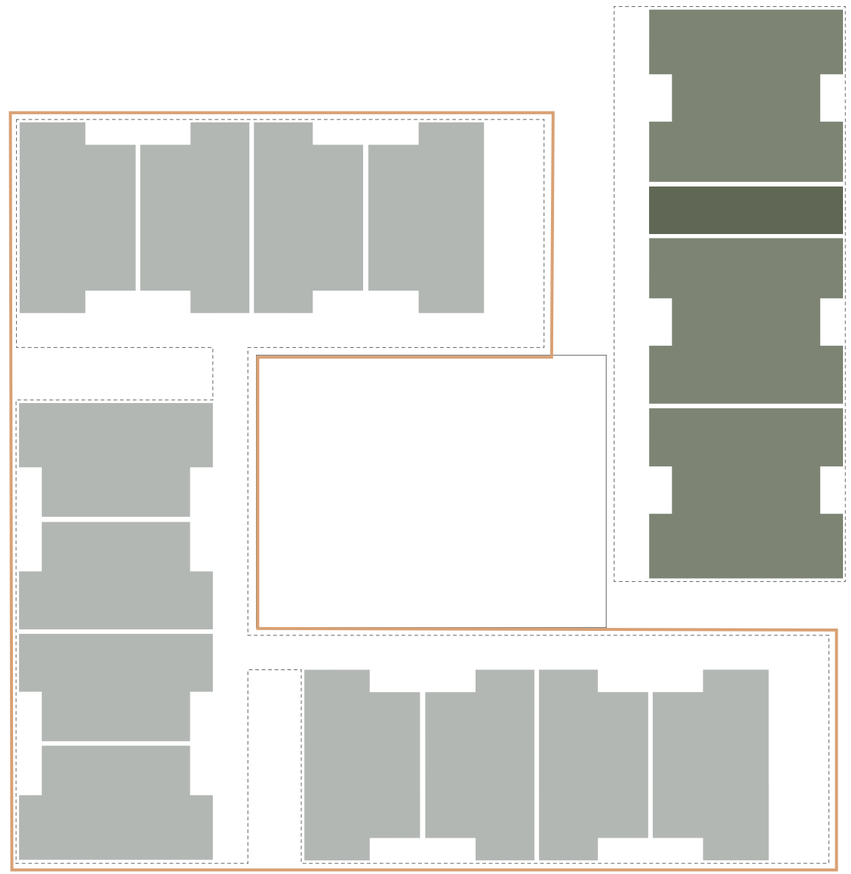


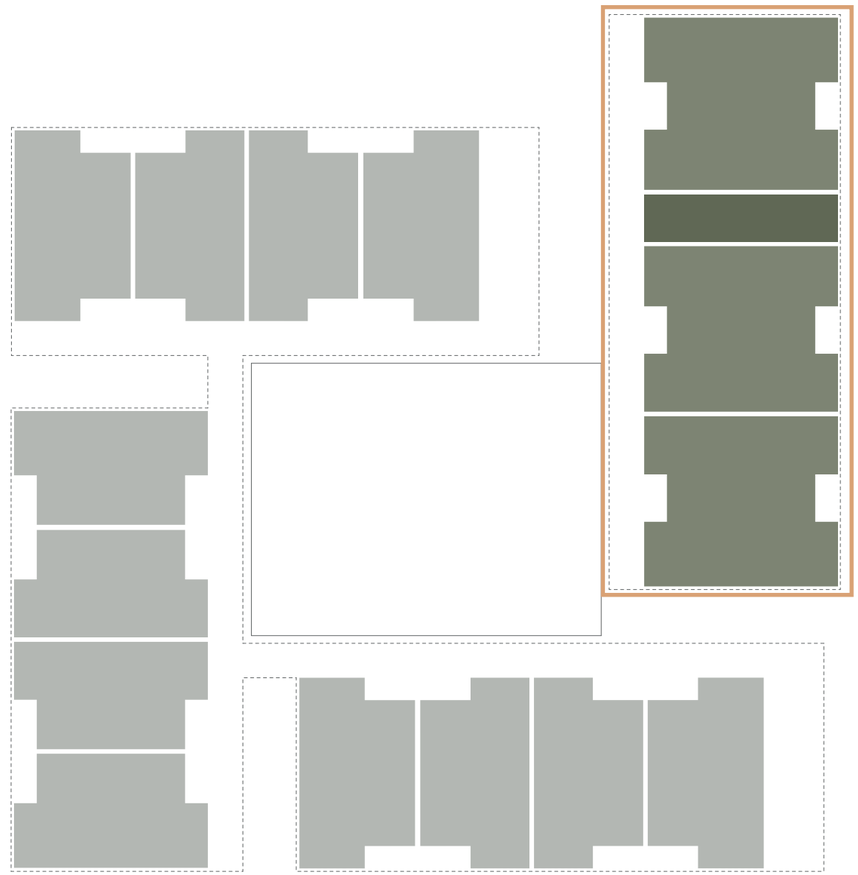


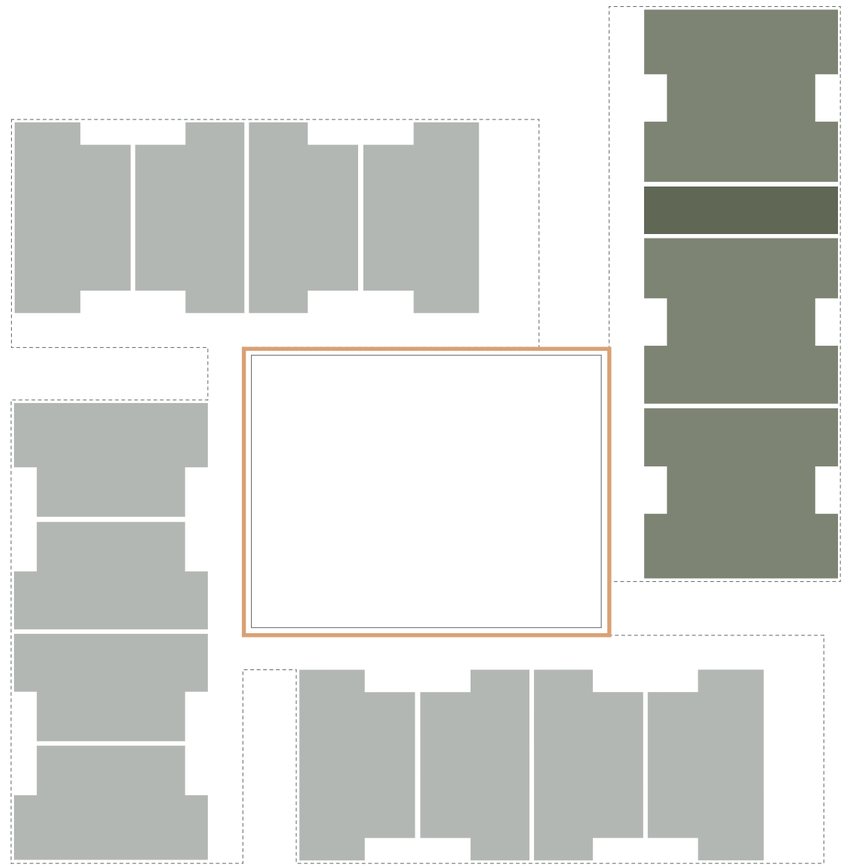


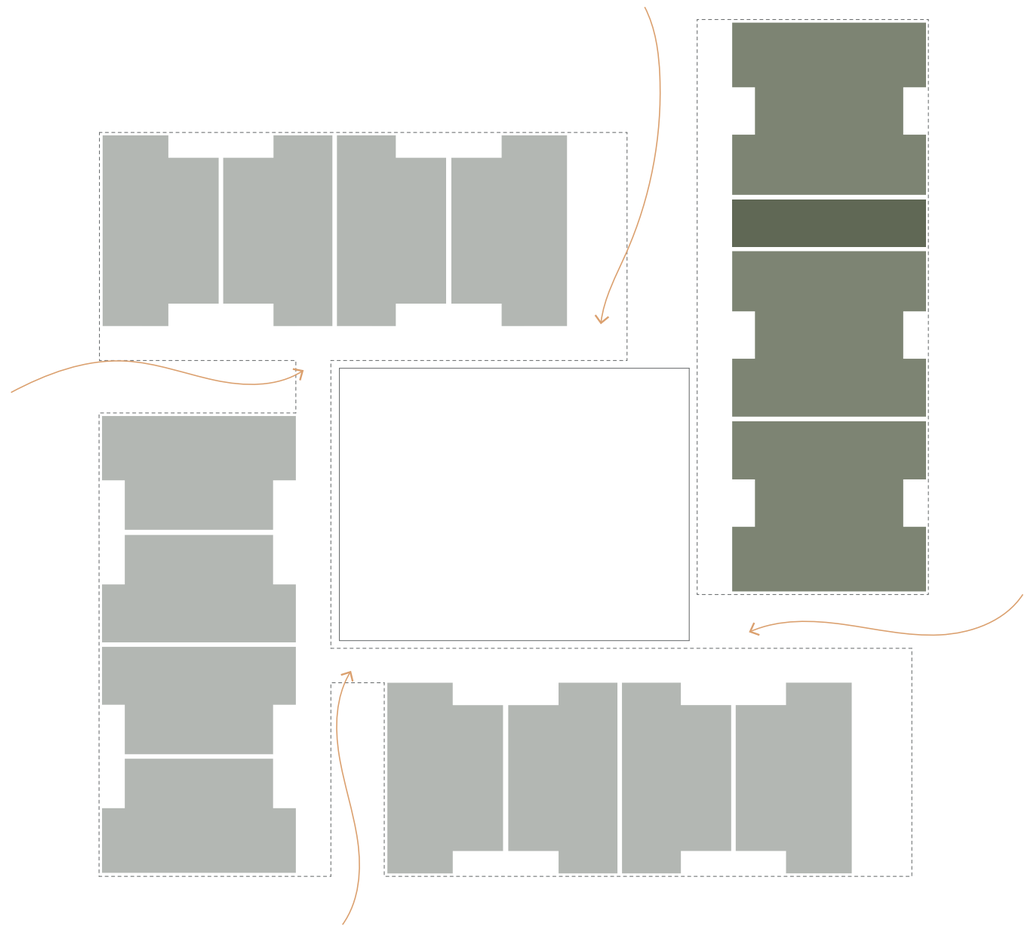
HOW CAN A COMMUNITY BASED ORGANIZATION LOOK LIKE?

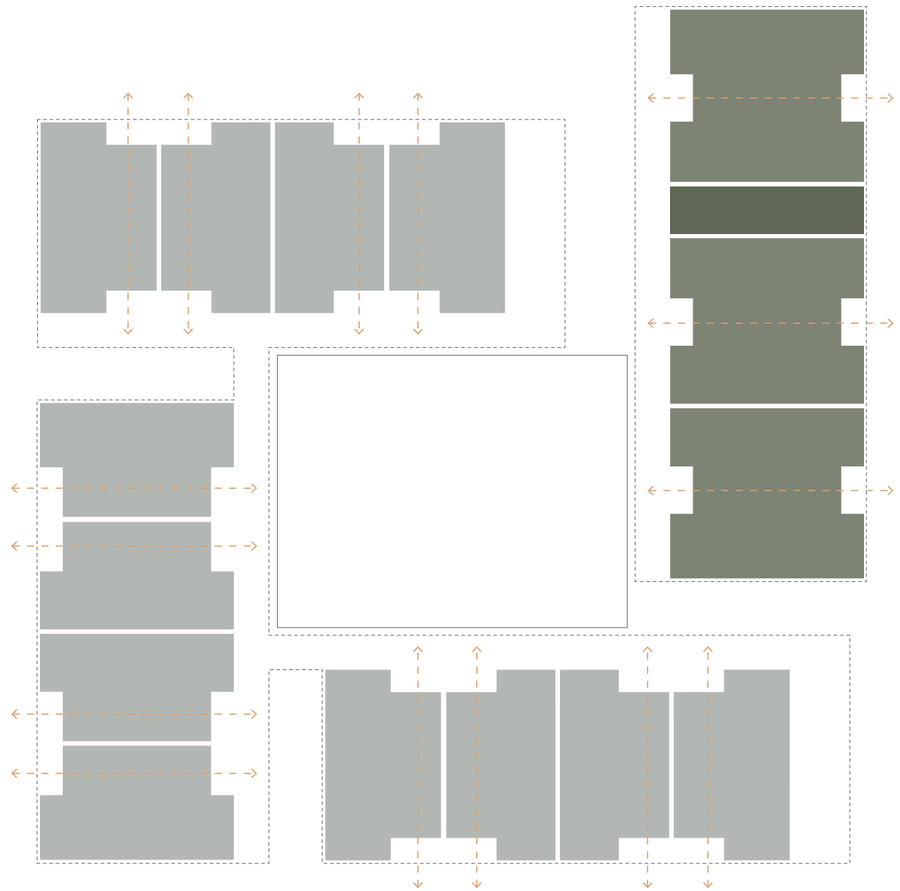

owned by
owned by
COMMUNITY LAND TRUST (CLT)
forms
BOARD of DIRECTORS
representing all income groups and stakeholders
INDIVIDUAL FAMILIES
RESPONSIBILITIES
community engagement
maintanance of property
RESPONSIBILITIES
land acquisition
community engagement
development + management
sustainability + social impact
finances

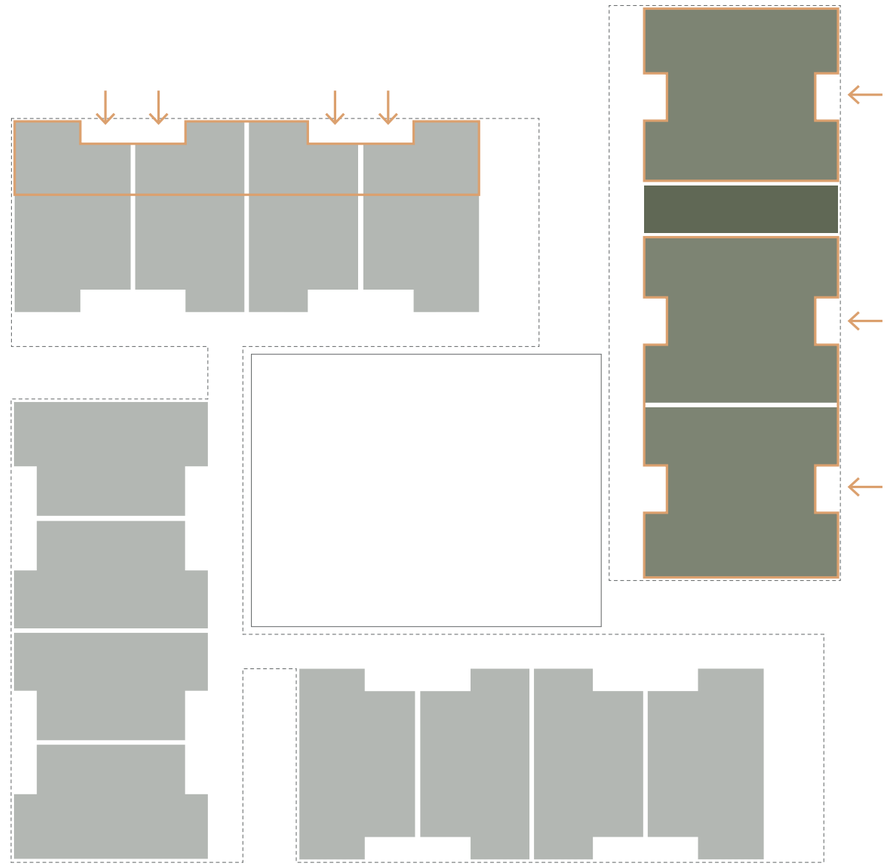


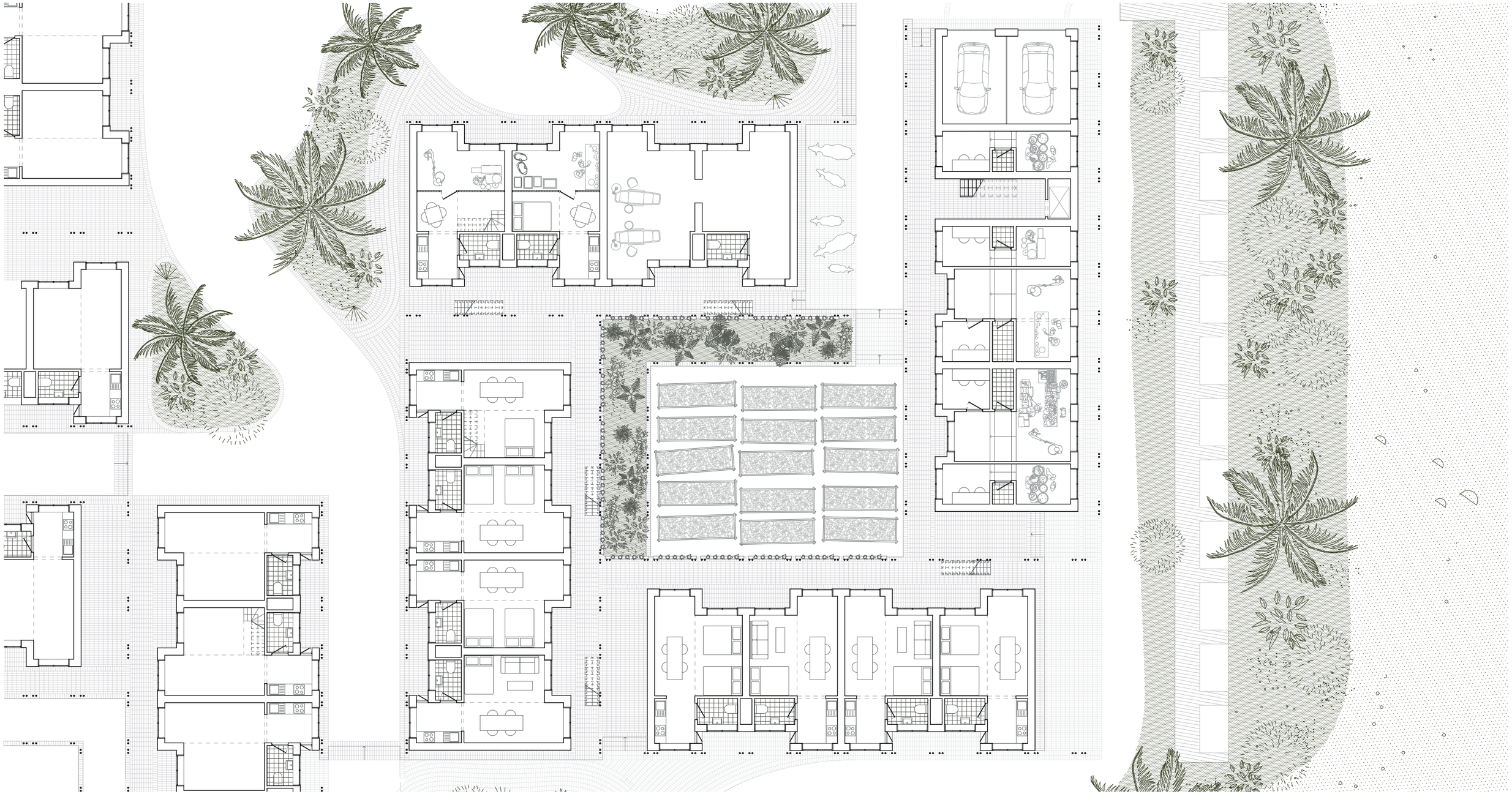




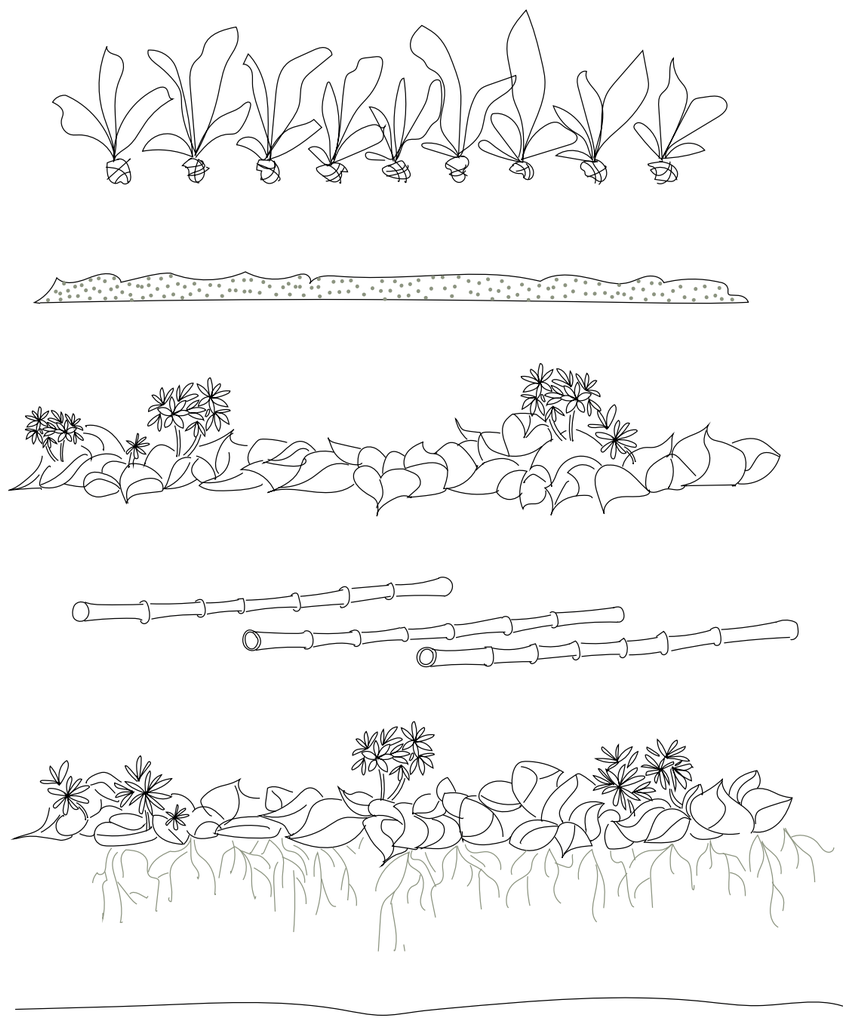


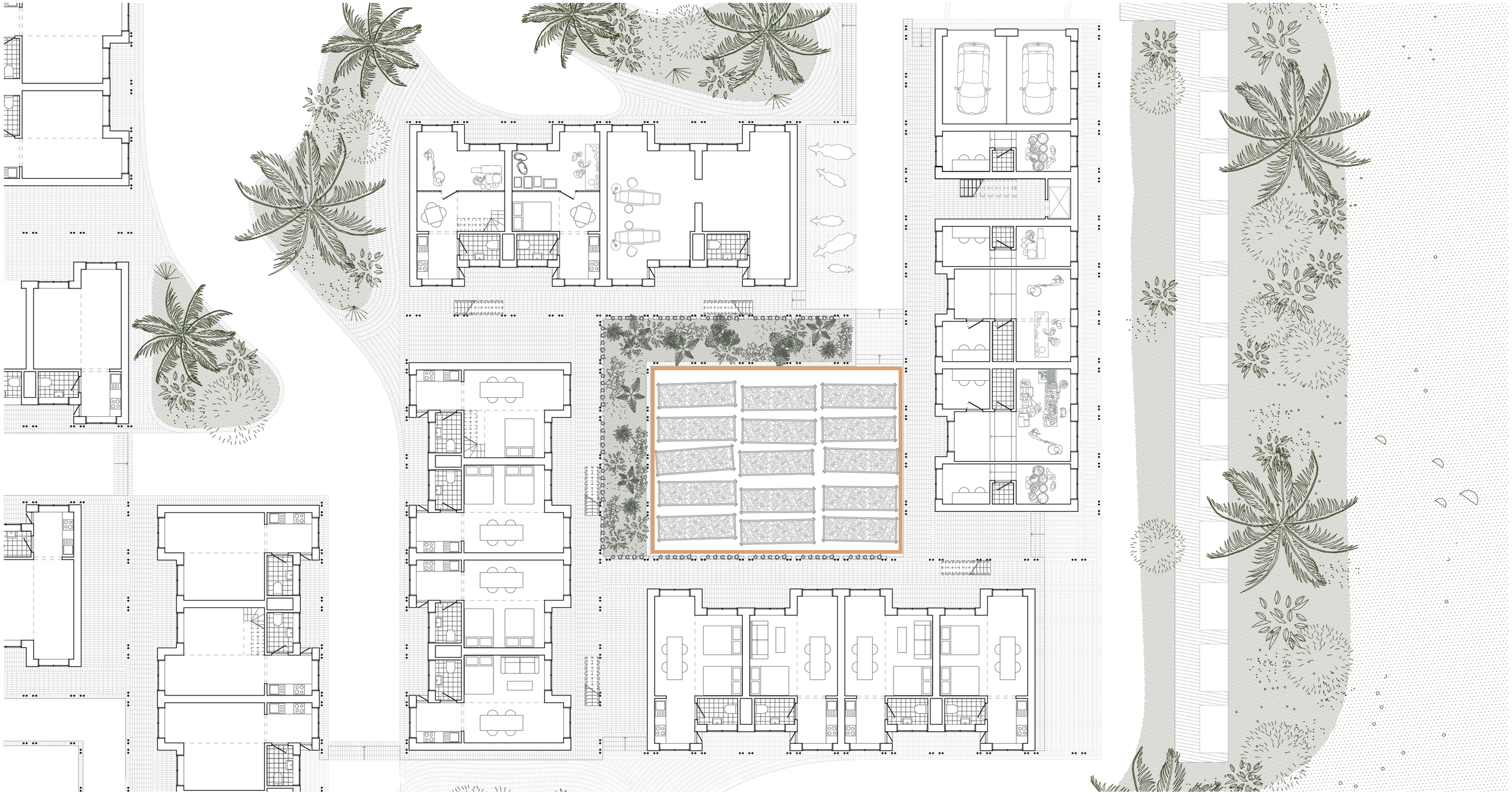


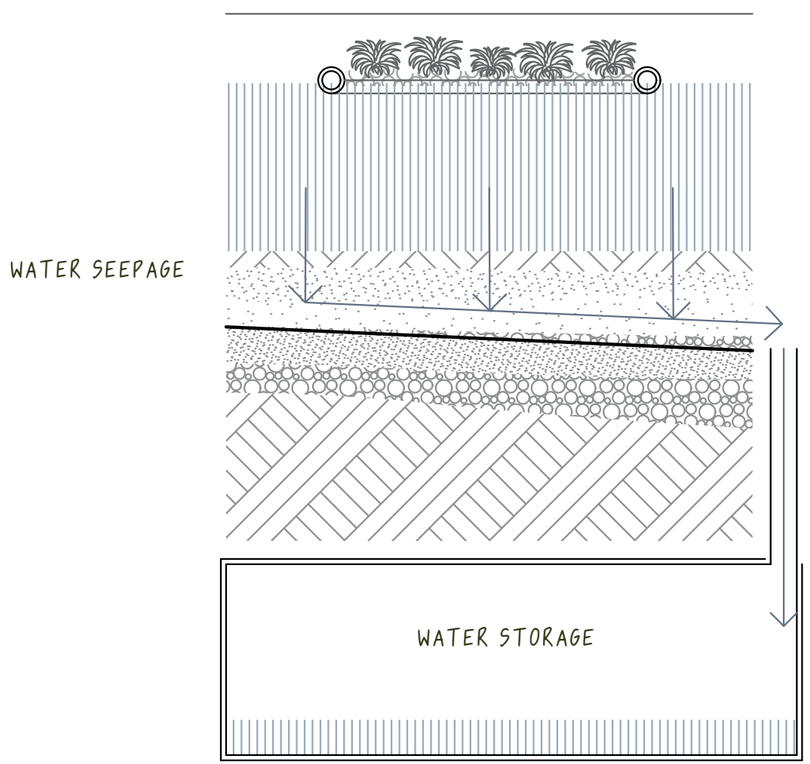




FOOD PRODUCTION

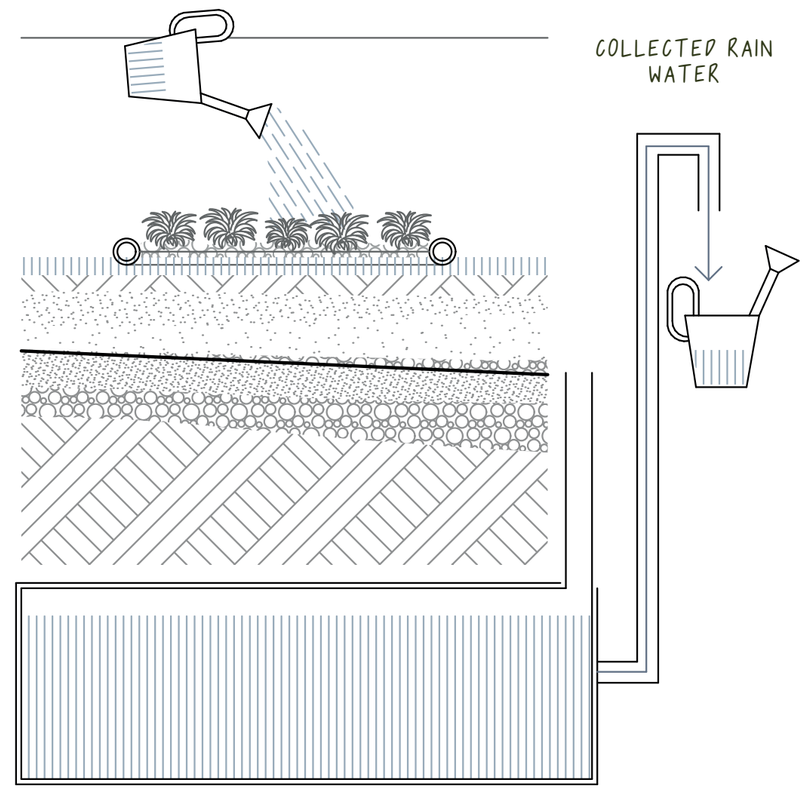

SEEDLINGS IN WATER HYACINTH BALLS
COMPOST + FERTILIZER
WATER HYACINTHS
BAMBOO CONSTRUCTION + WIRE FRAME
WATER HYACINTHS
WATER





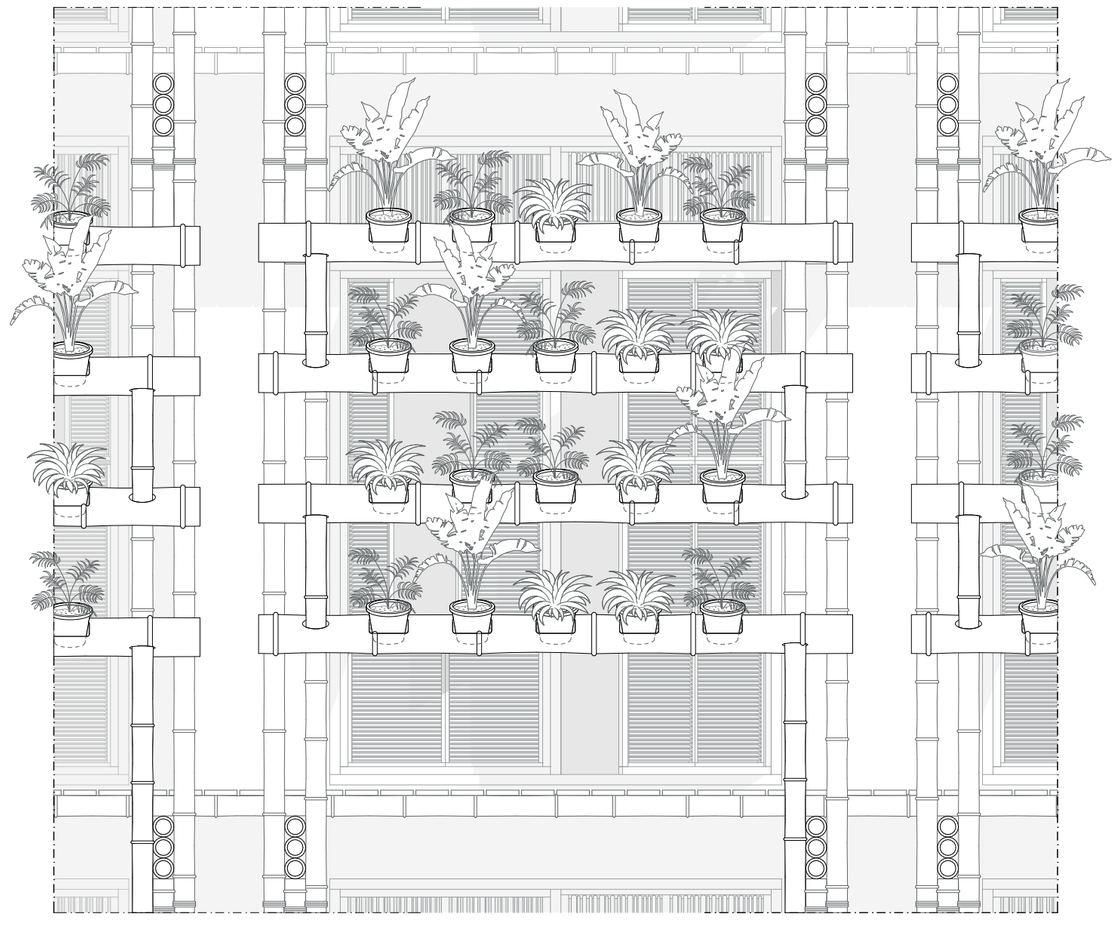
MONSOON SEASON

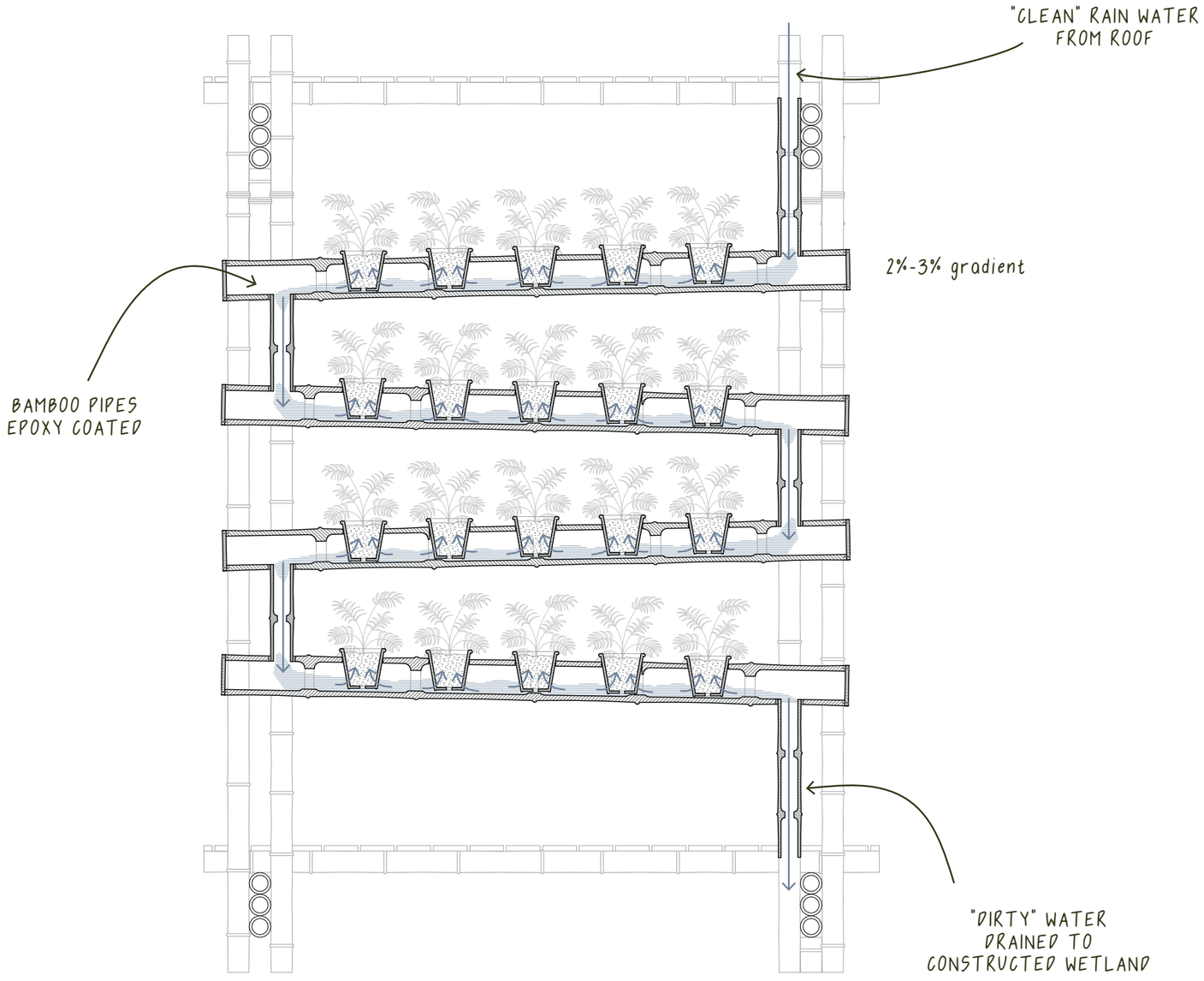
FLOATING ON WATER



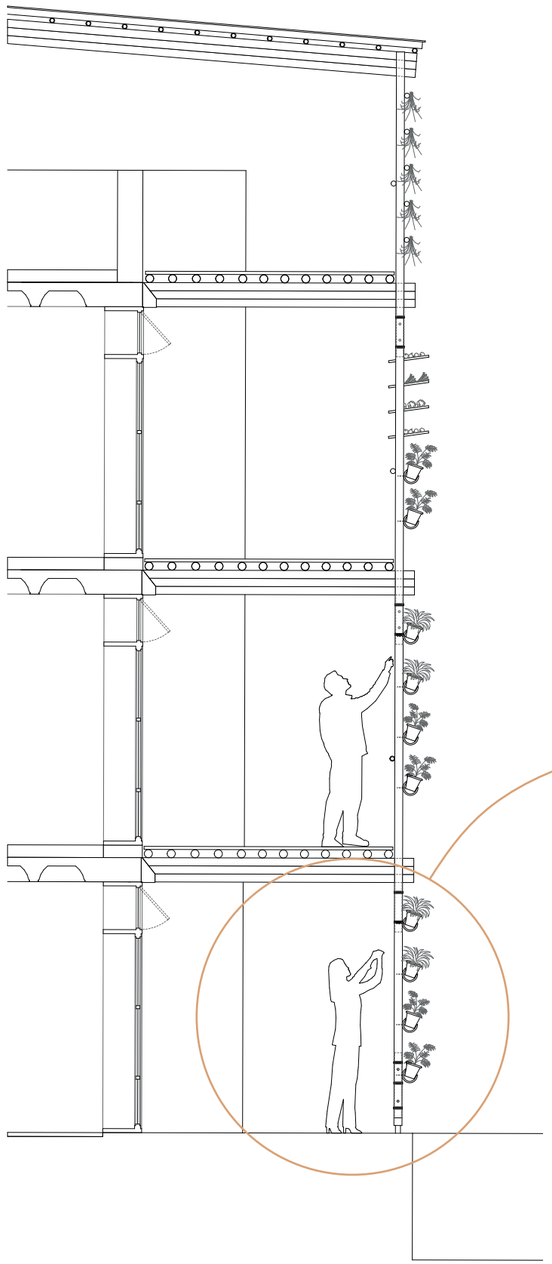
DRY SEASON

CONNECTED TO GROUND

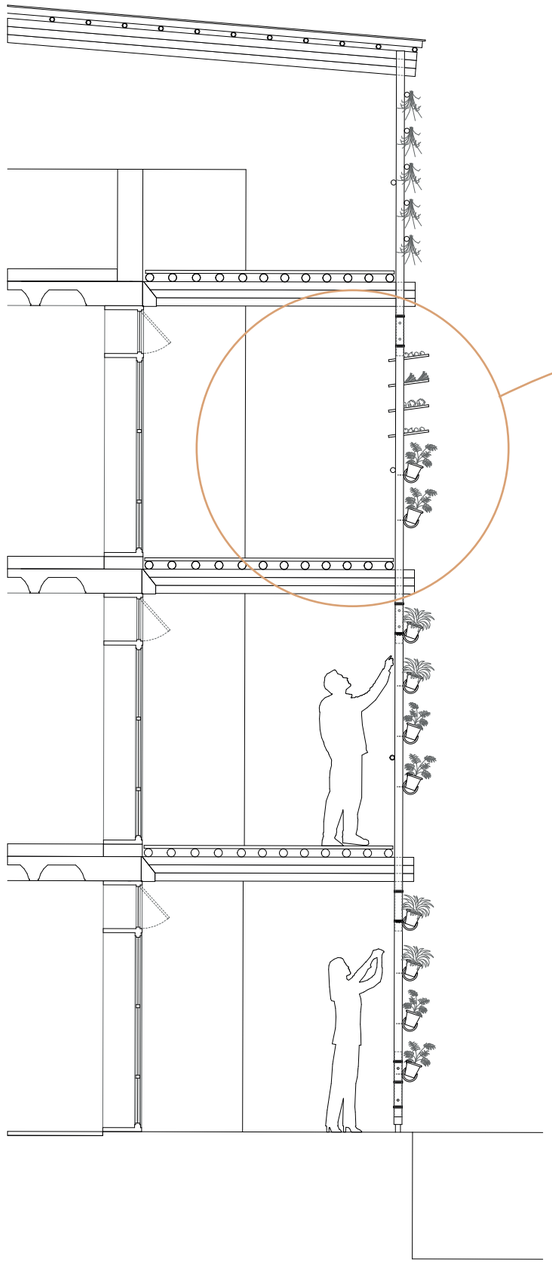


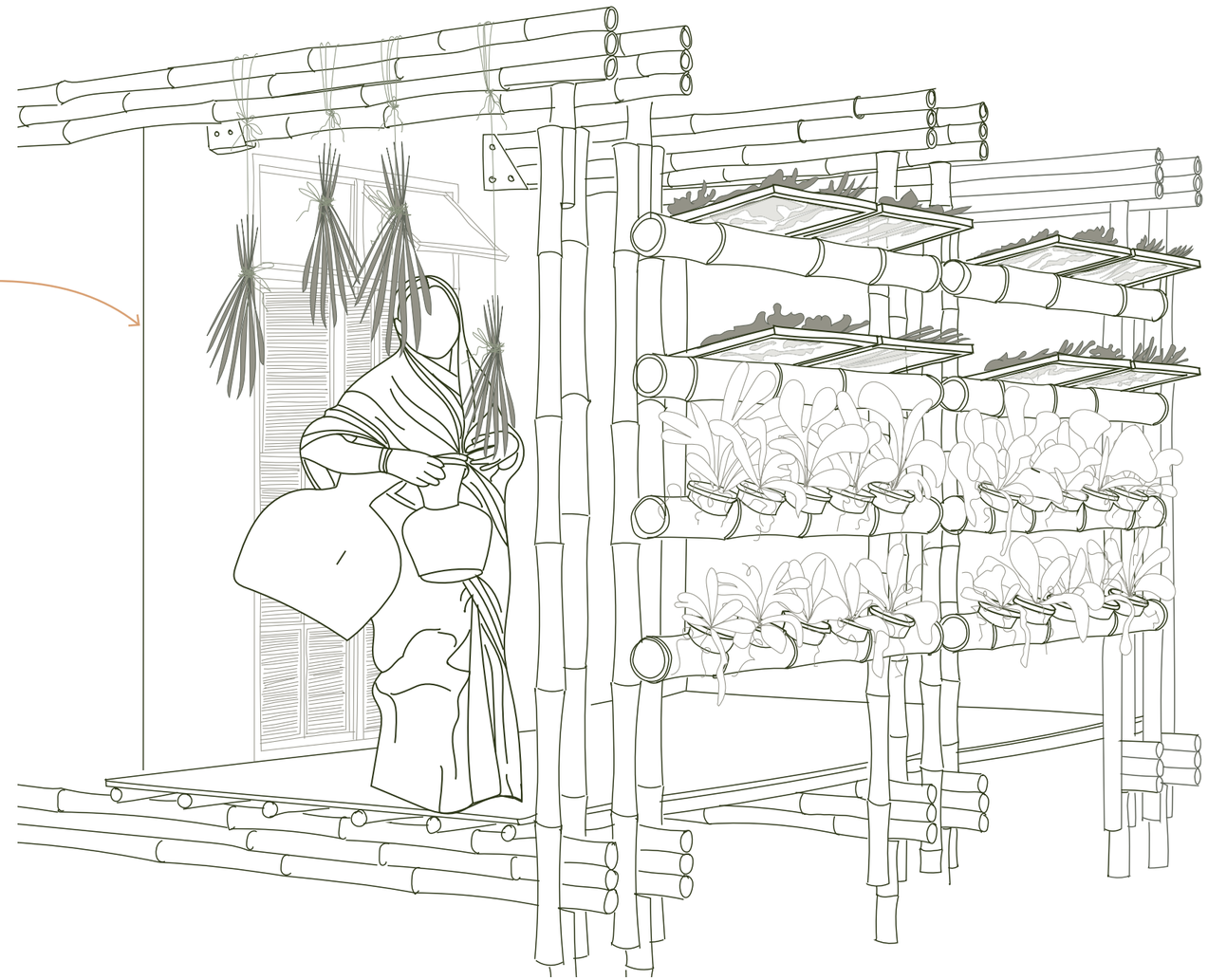

"CLEAN" RAIN WATER
FROM ROOF
2%-3% gradient
BAMBOO PIPES
EPOXY COATED
"DIRTY" WATER
DRAINED TO
CONSTRUCTED WETLAND

PLANTING | HARVESTING

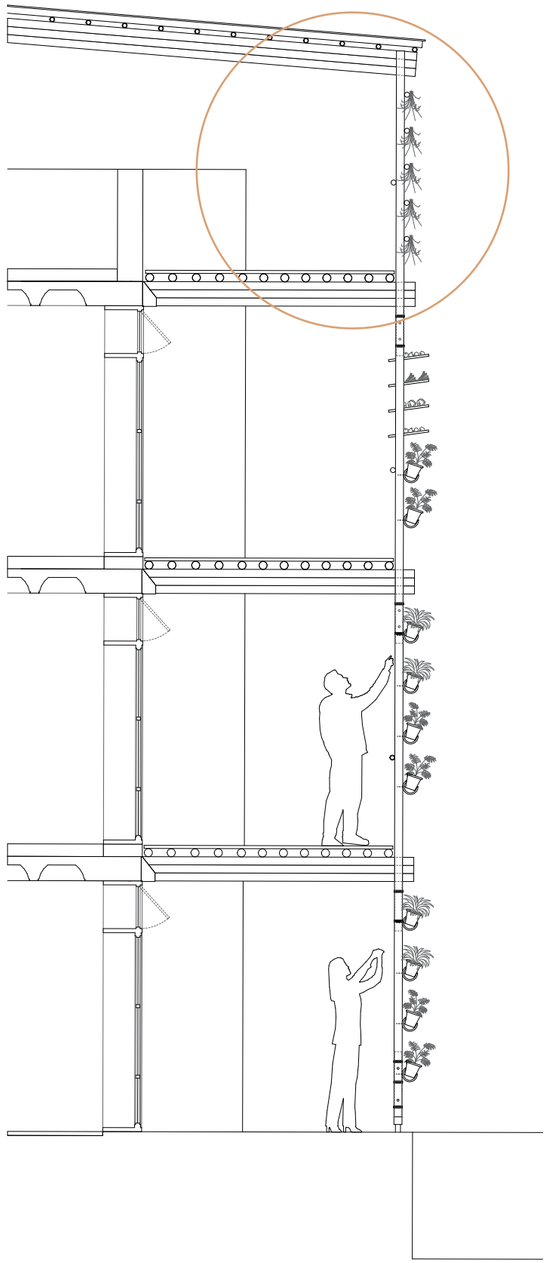


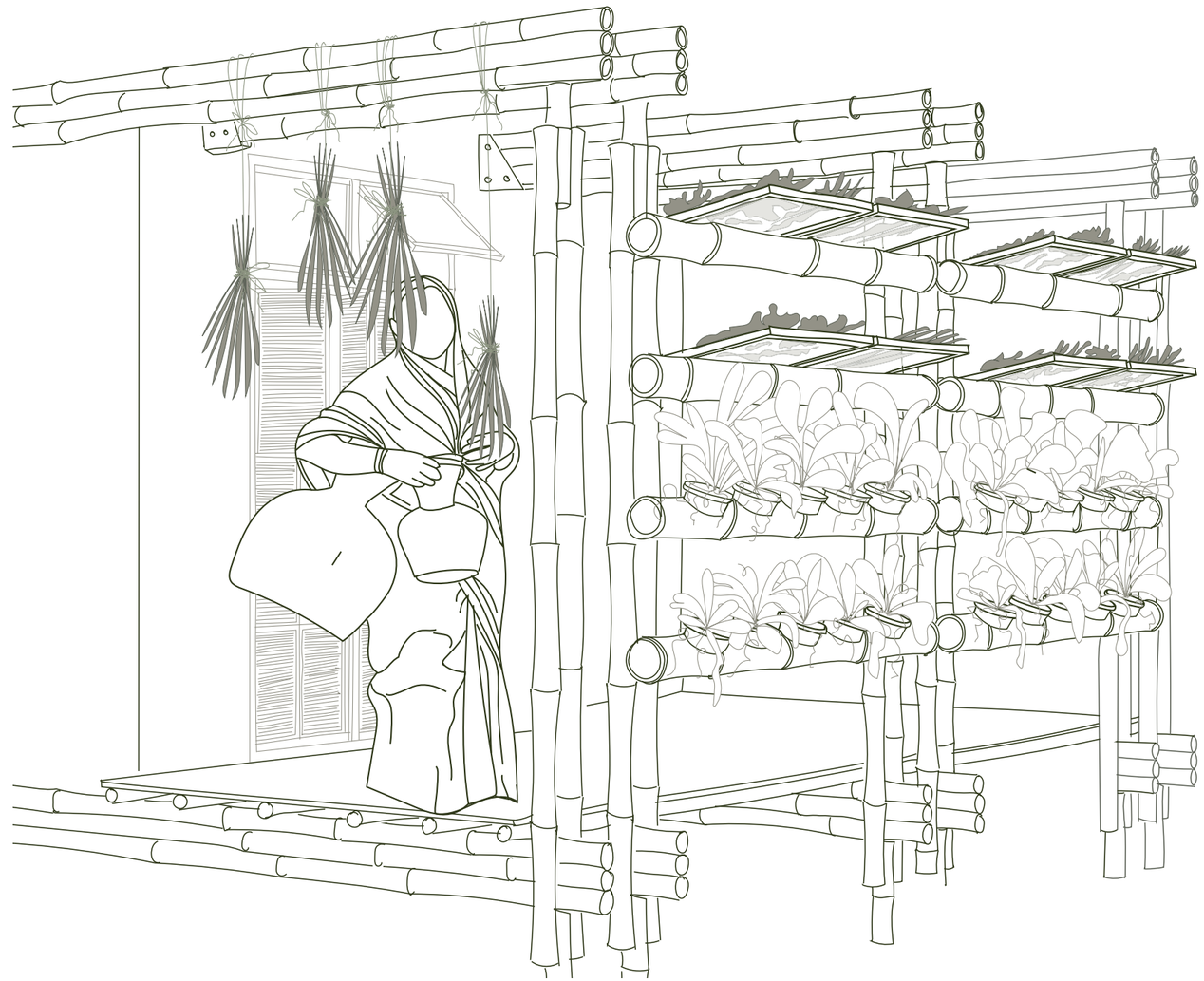
DRYING





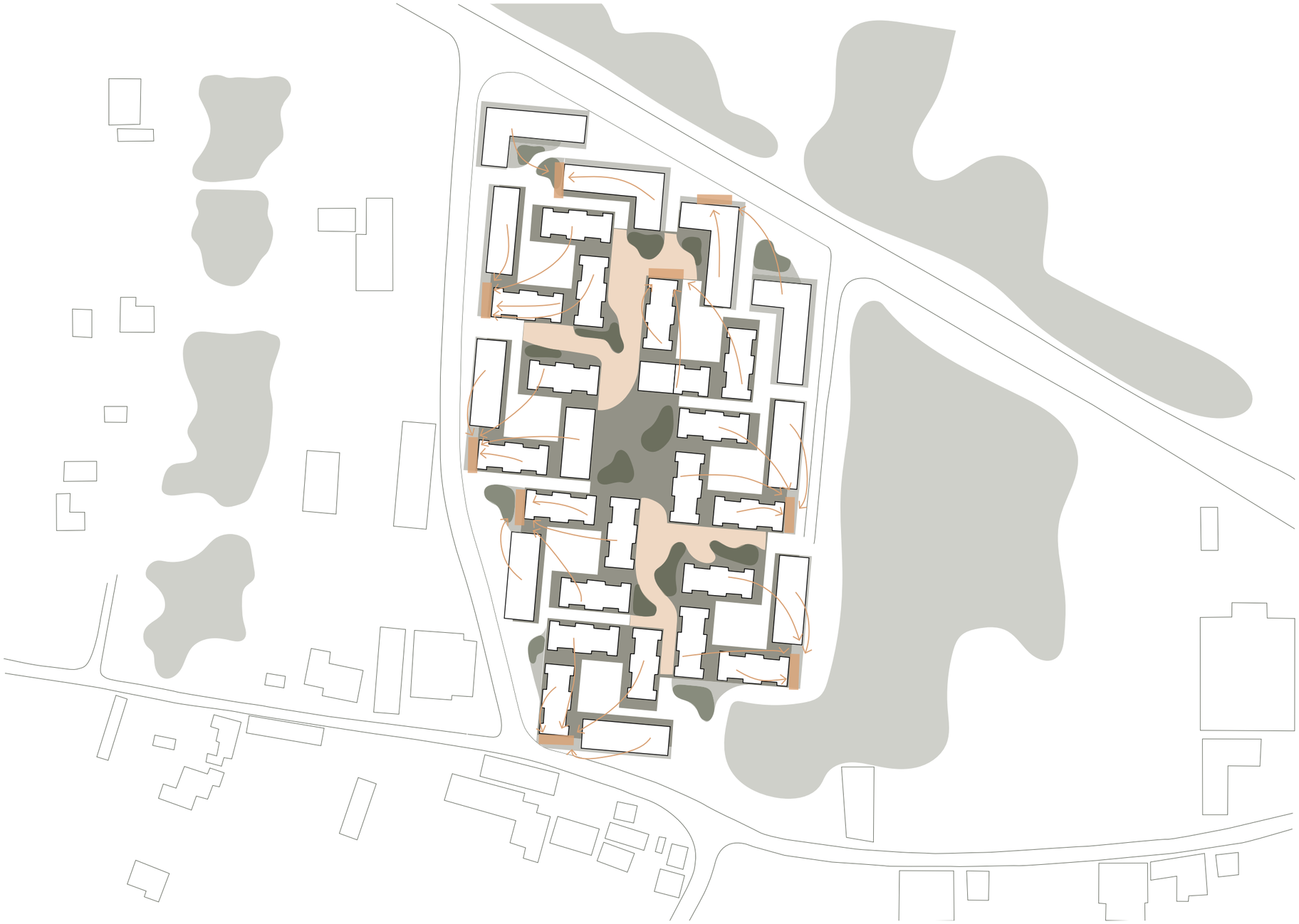
STORING



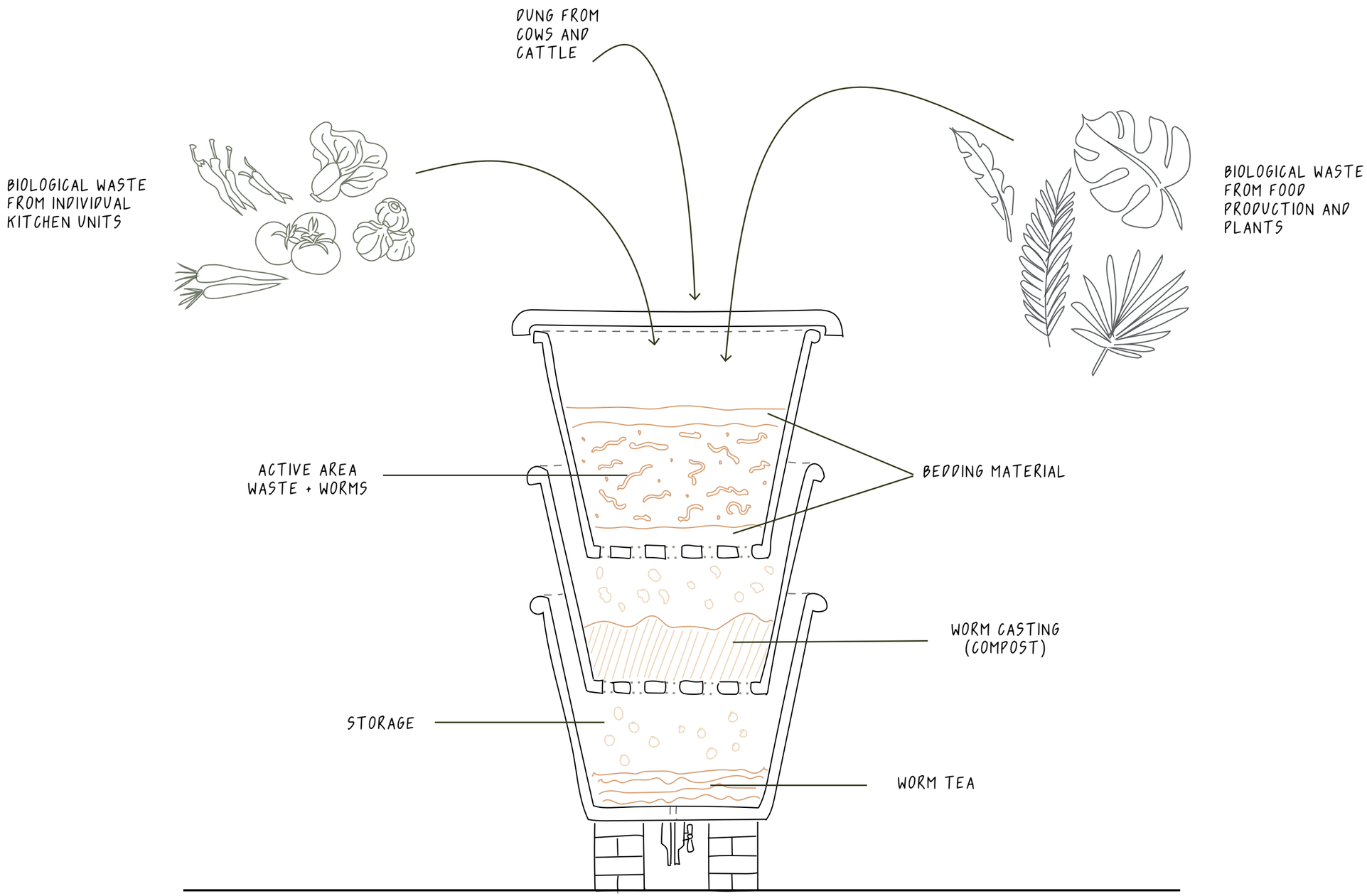


WASTE MANAGEMENT

BIOLOGICAL WASTE FROM INDIVIDUAL KITCHEN UNITS
DUNG FROM COWS AND CATTLE
BIOLOGICAL WASTE FROM FOOD PRODUCTION AND PLANTS
COMPOSTING STATION WITH TIGER WORMS

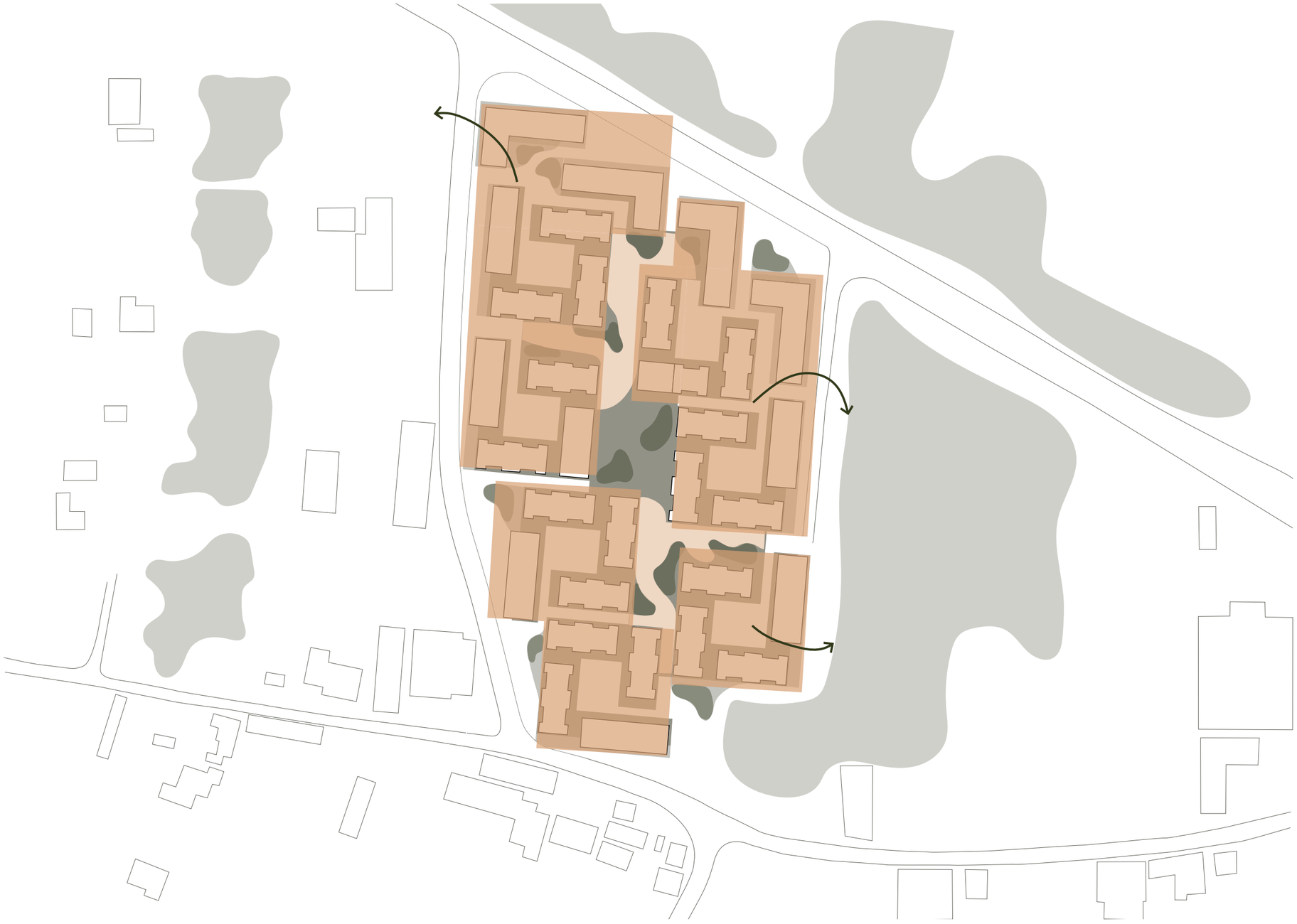


COMPOSTING



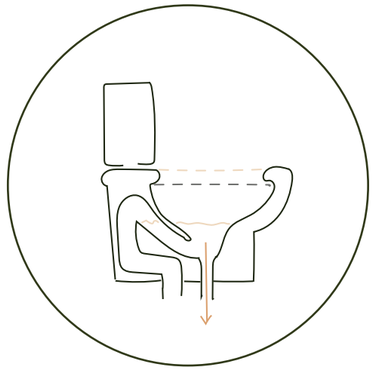
FELICITAS LEONIE SOPHIE GALLE

STATION 2 - SITE



COMPOST COMPONENTS

TOILET LIQUIDS



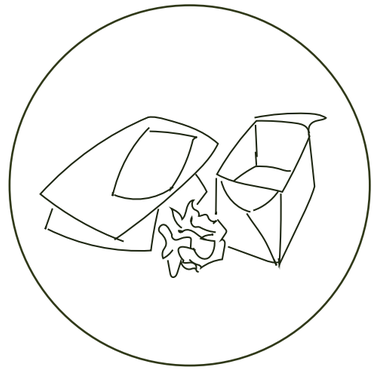
LIQUIDS SEPERATED
IN SEPTIC TANK

NITROGEN

POTASSIUM

PHOSPHORUS

PAPER WASTE



PAPER + CARTON

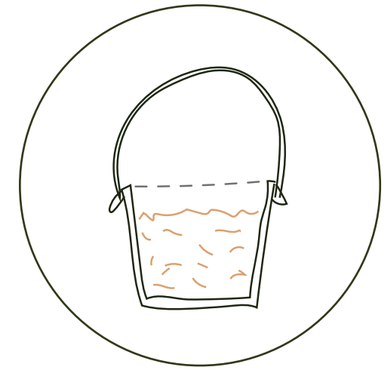
FIBRES

PLANTS | FIBRES

PLANTS + WASTE FROM
RICE PRODUCTION

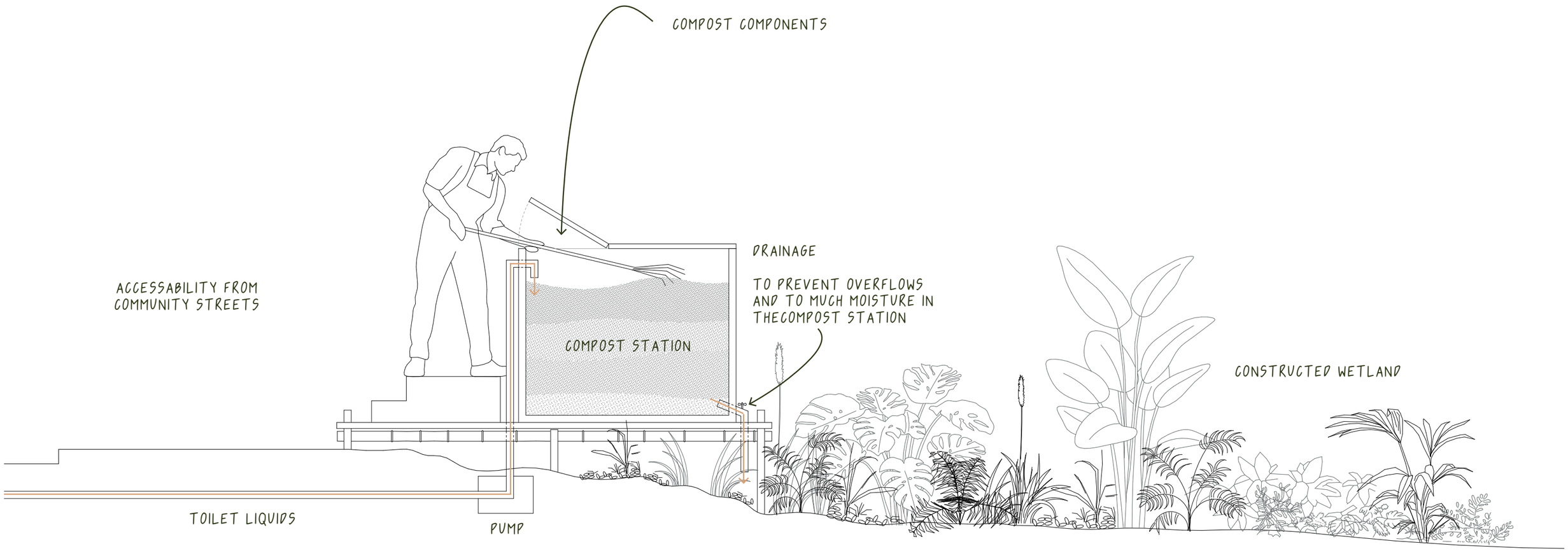
FIBRES

COMPOST

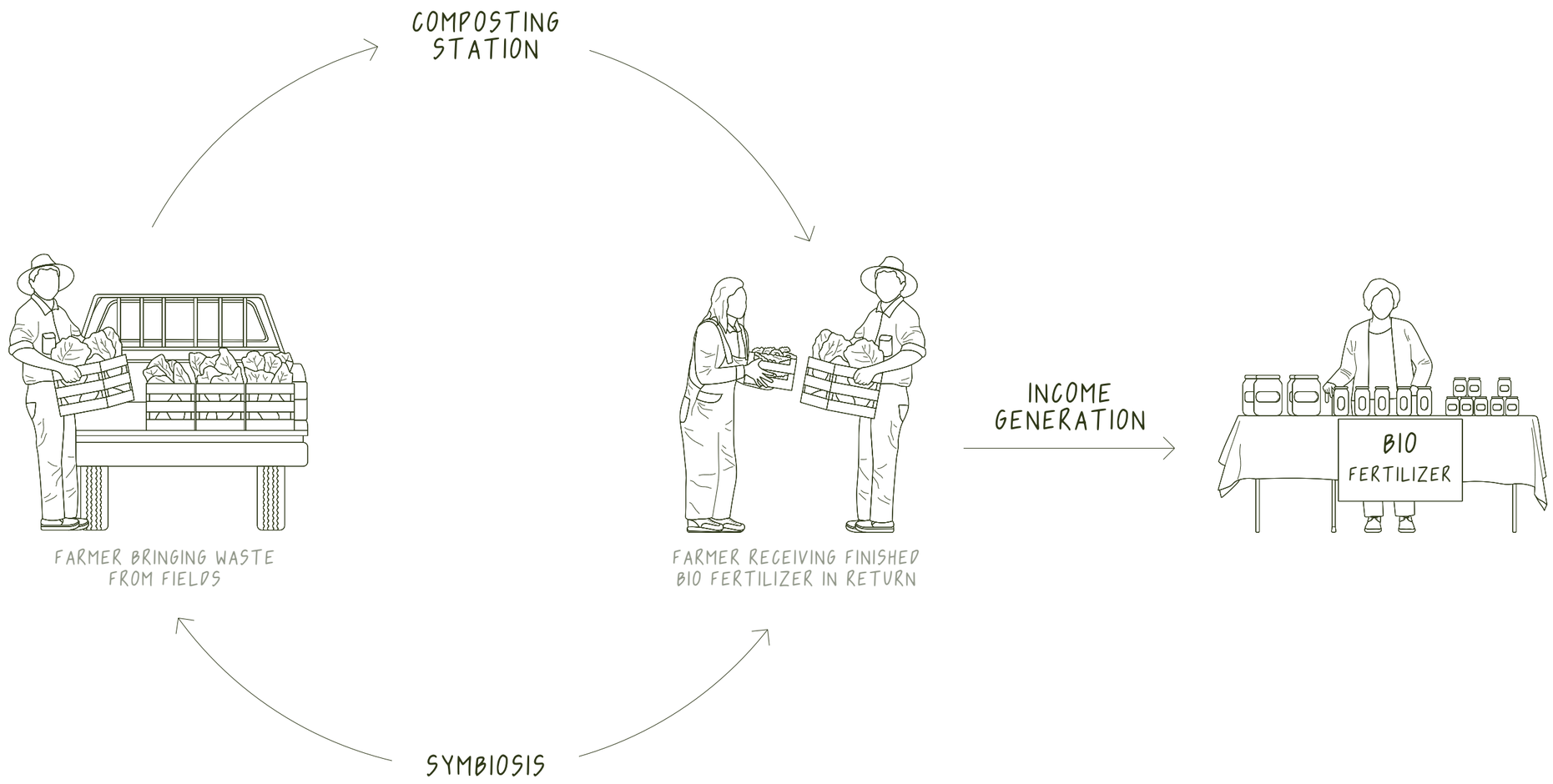


FINISHED COMPOST FROM
CLUSTER STATION

FIBRES


COMPOST COMPONENTS
DRAINAGE
TO PREVENT OVERFLOWS AND TO MUCH MOISTURE IN THECOMPOST STATION
ACCESSABILITY FROM COMMUNITY STREETS
COMPOST STATION
CONSTRUCTED WETLAND
TOILET LIQUIDS
PUMP

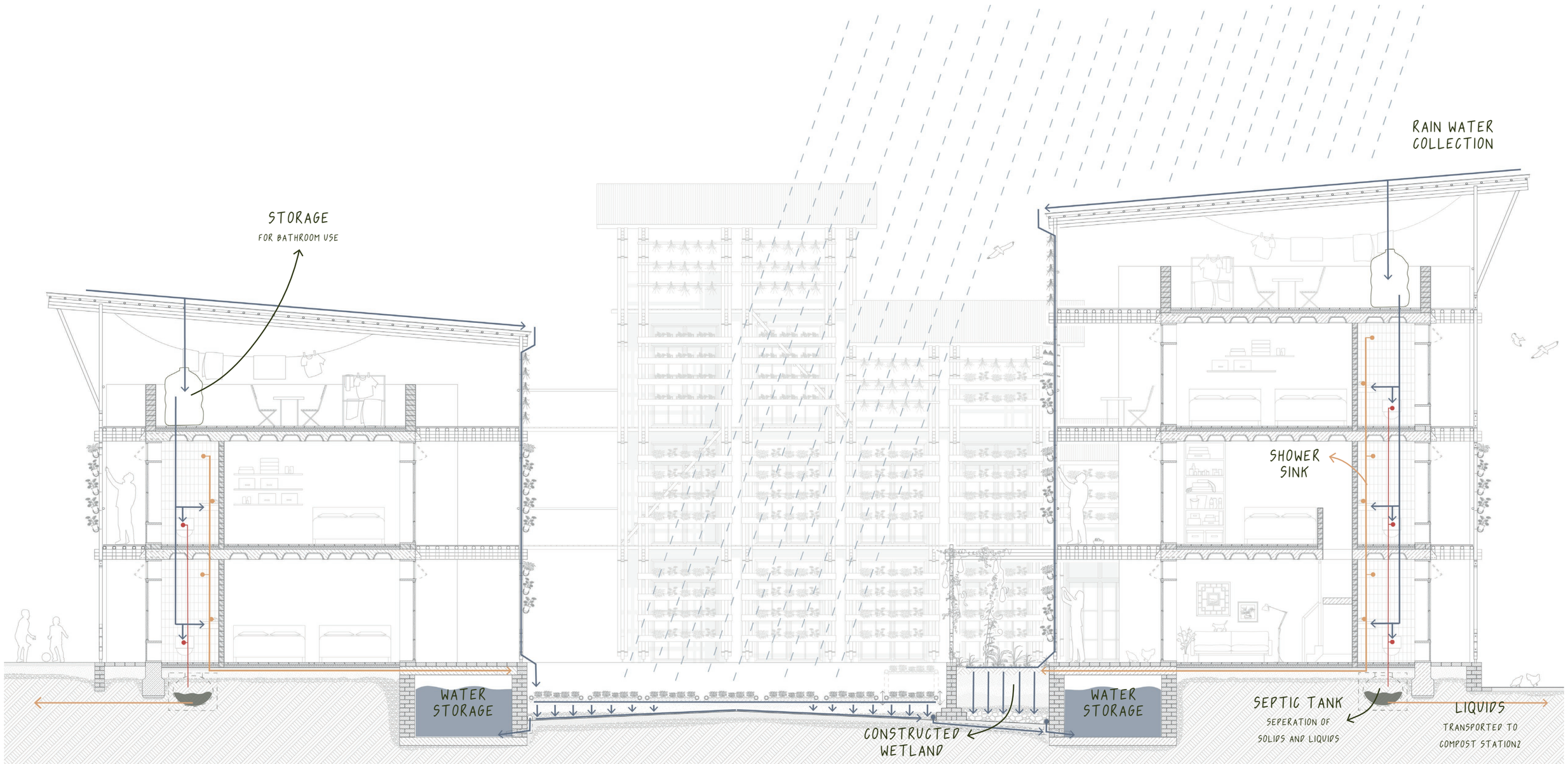
INCOME GENERATION

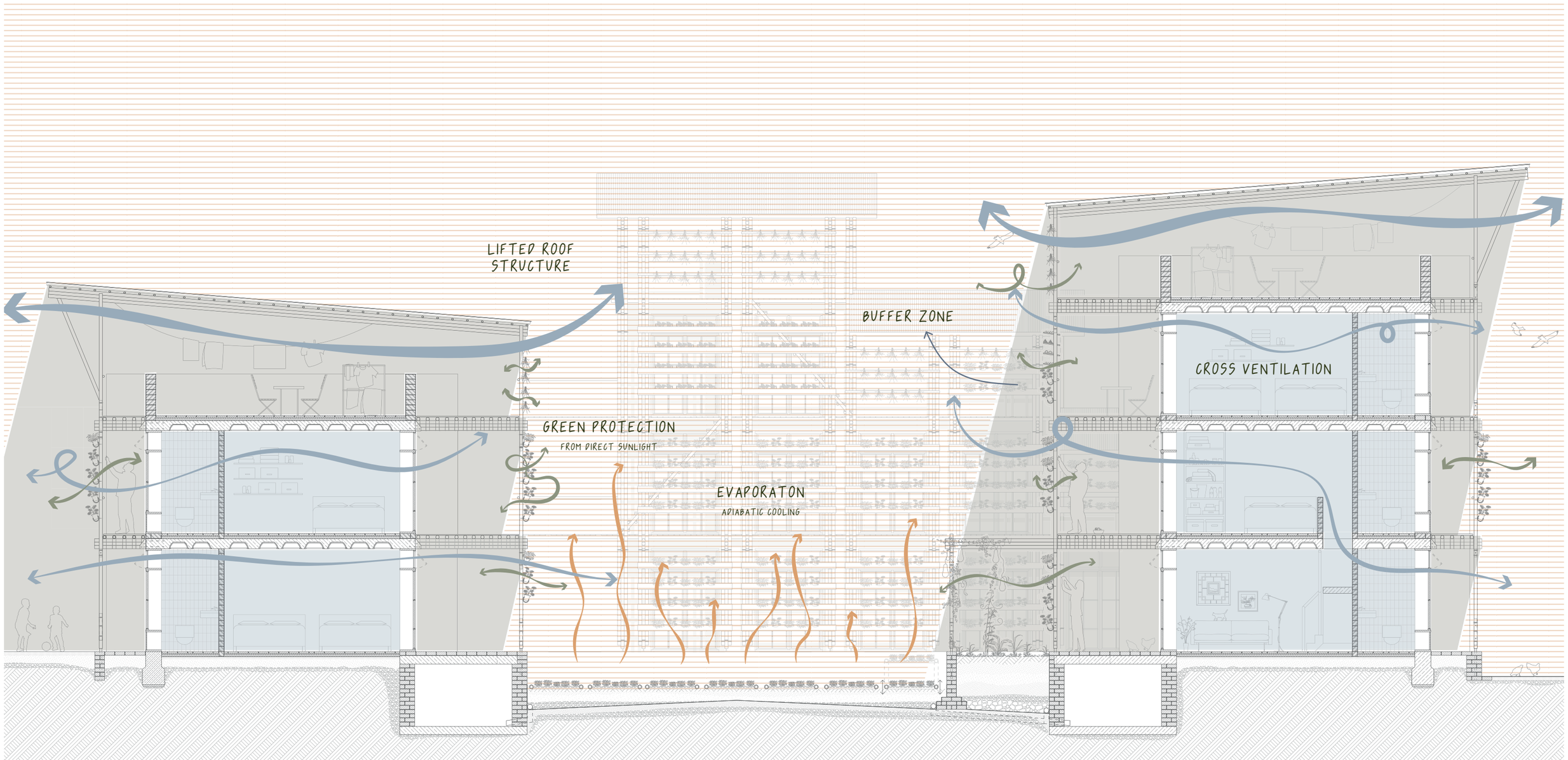


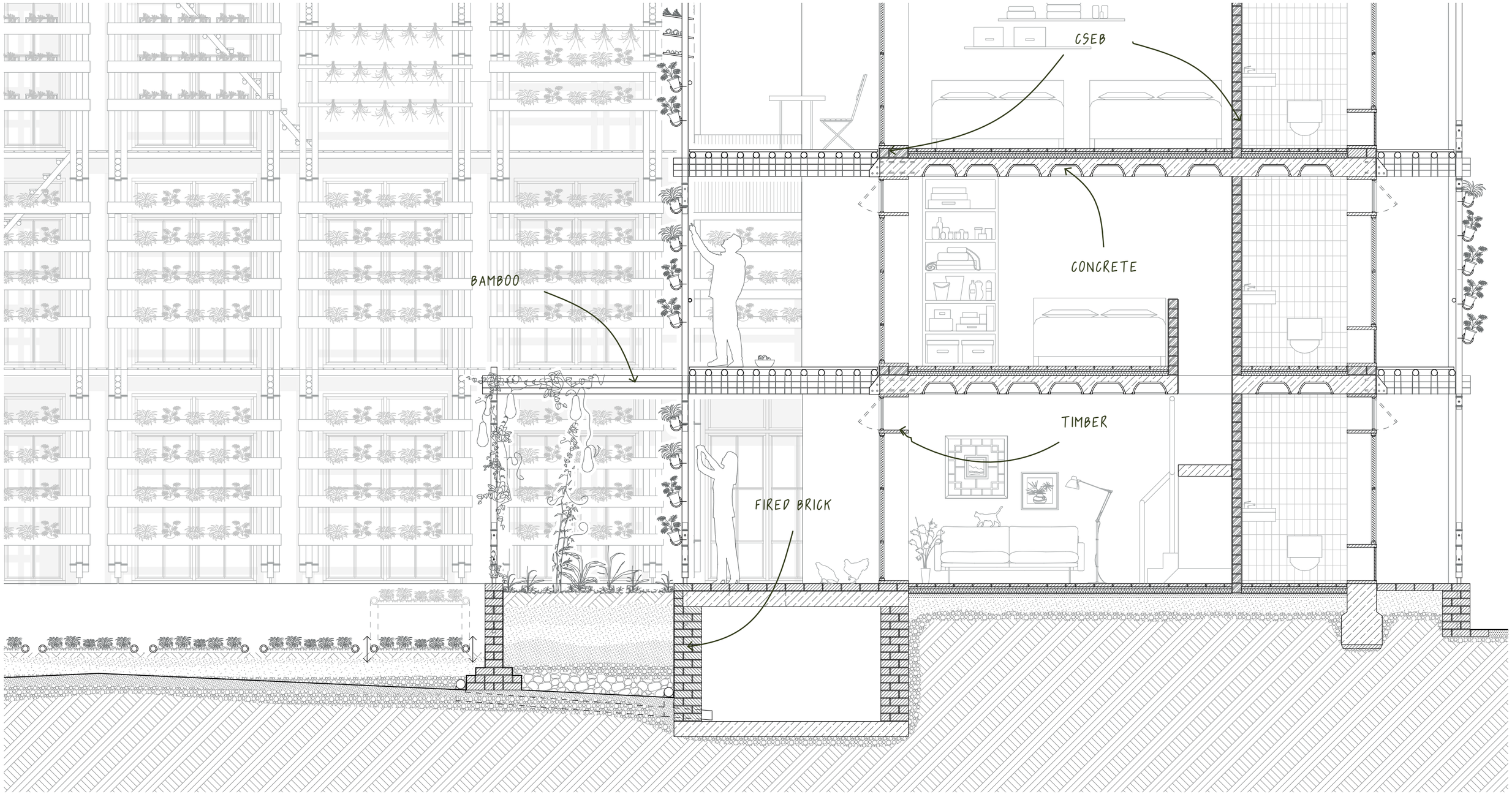
FELICITAS LEONIE SOPHIE GALLE

HOW CAN NATURE AND ARCHITECTURE COMPLEMENT EACH OTHER?

DETAIL SECTION


STORAGE
FOR BATHROOM USE
RAIN WATER COLLECTION
SHOWER SINK
WATER STORAGE
WATER STORAGE
CONSTRUCTED WETLAND
SEPTIC TANK
SEPERATION OF SOLIDS AND LIQUIDS
LIQUIDS
TRANSPORTED TO COMPOST STATION2


LIFTED ROOF STRUCTURE
BUFFER ZONE
CROSS VENTILATION
GREEN PROTECTION
FROM DIRECT SUNLIGHT
EVAPORATON
ADIABATIC COOLING

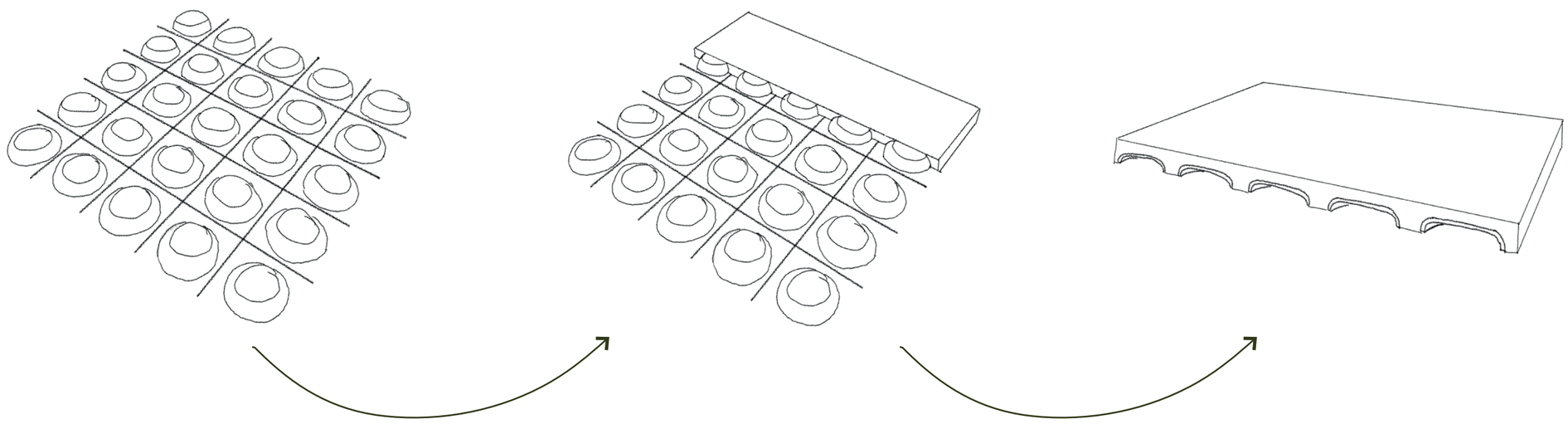

CSEB
CONCRETE
BAMBOO
TIMBER
FIRED BRICK

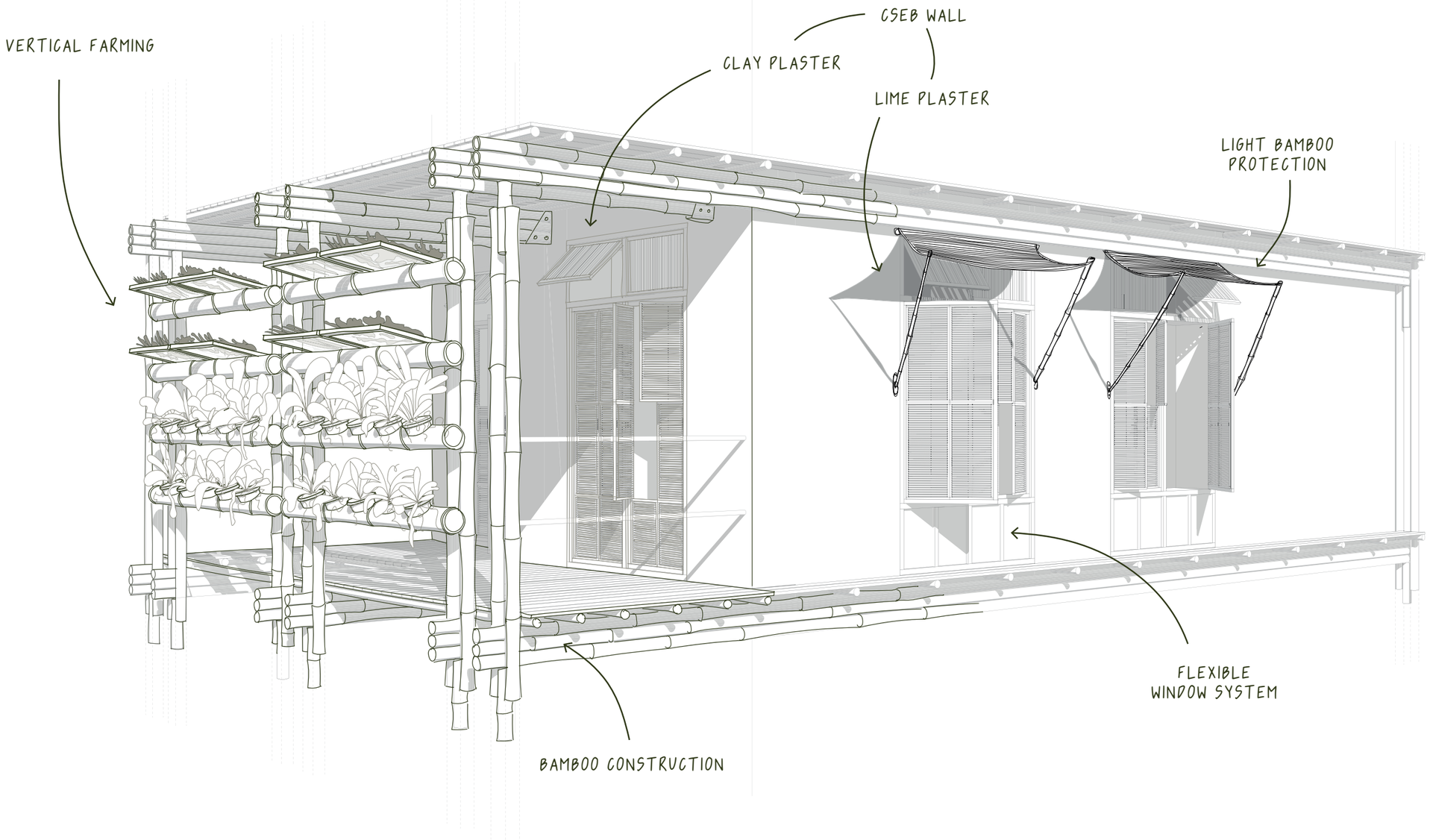
ca. 20%

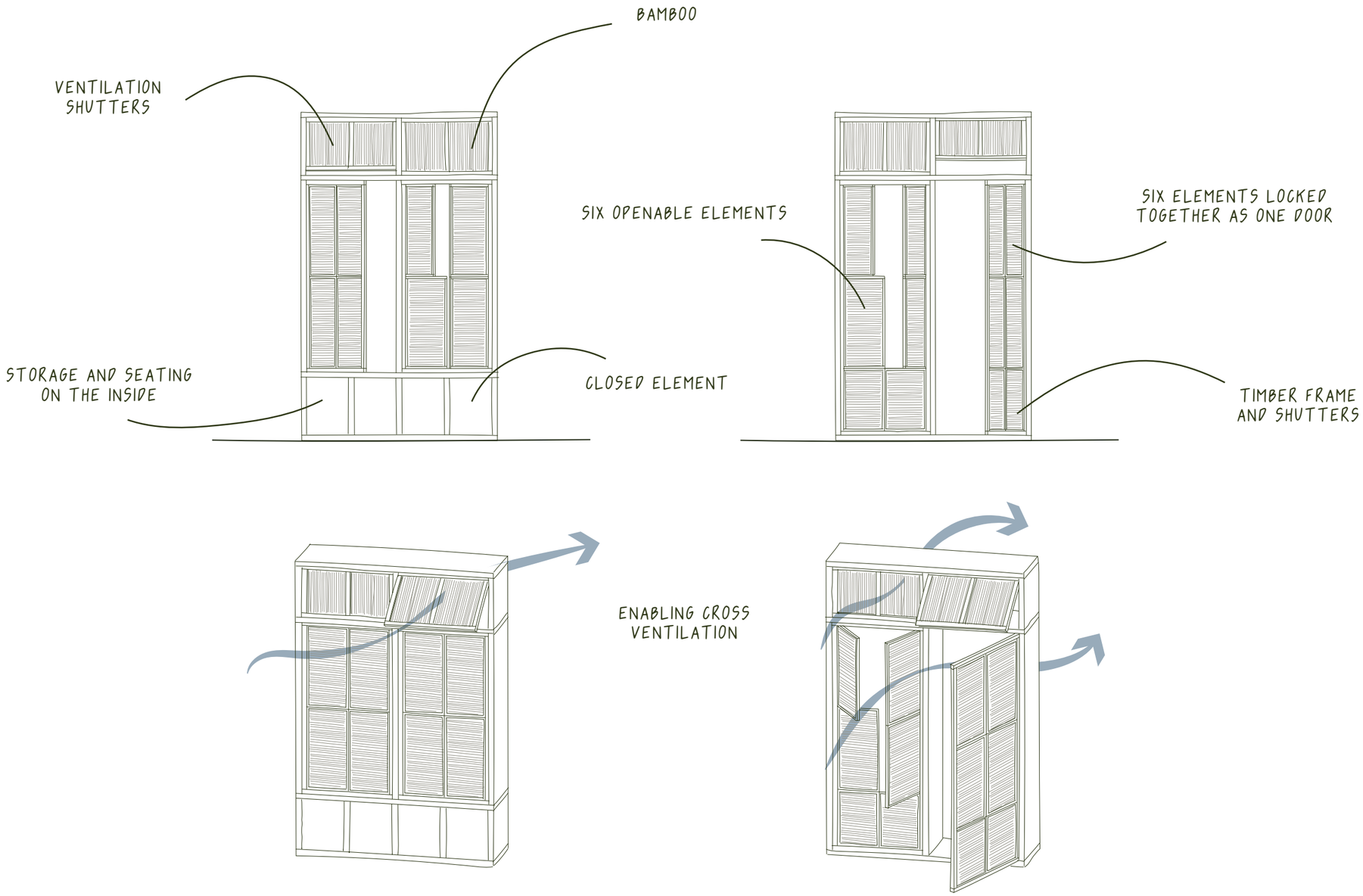
LESS CONCRETE

ca. 30%

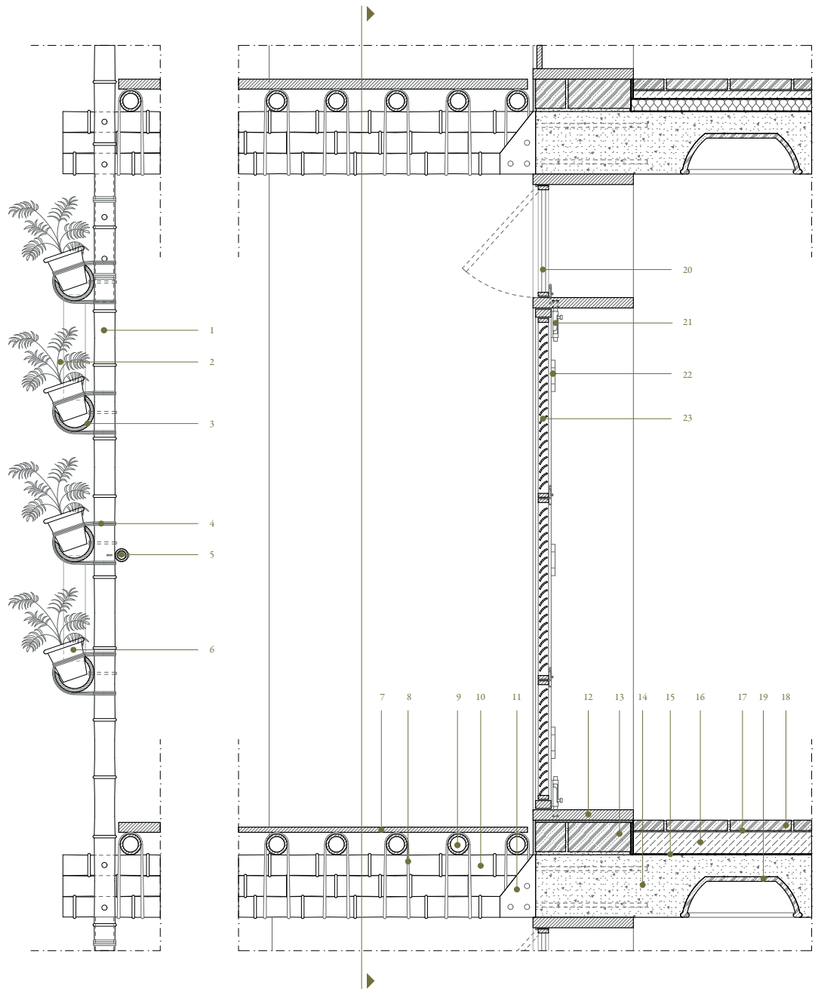
LESS STEEL REINFORCEMENT

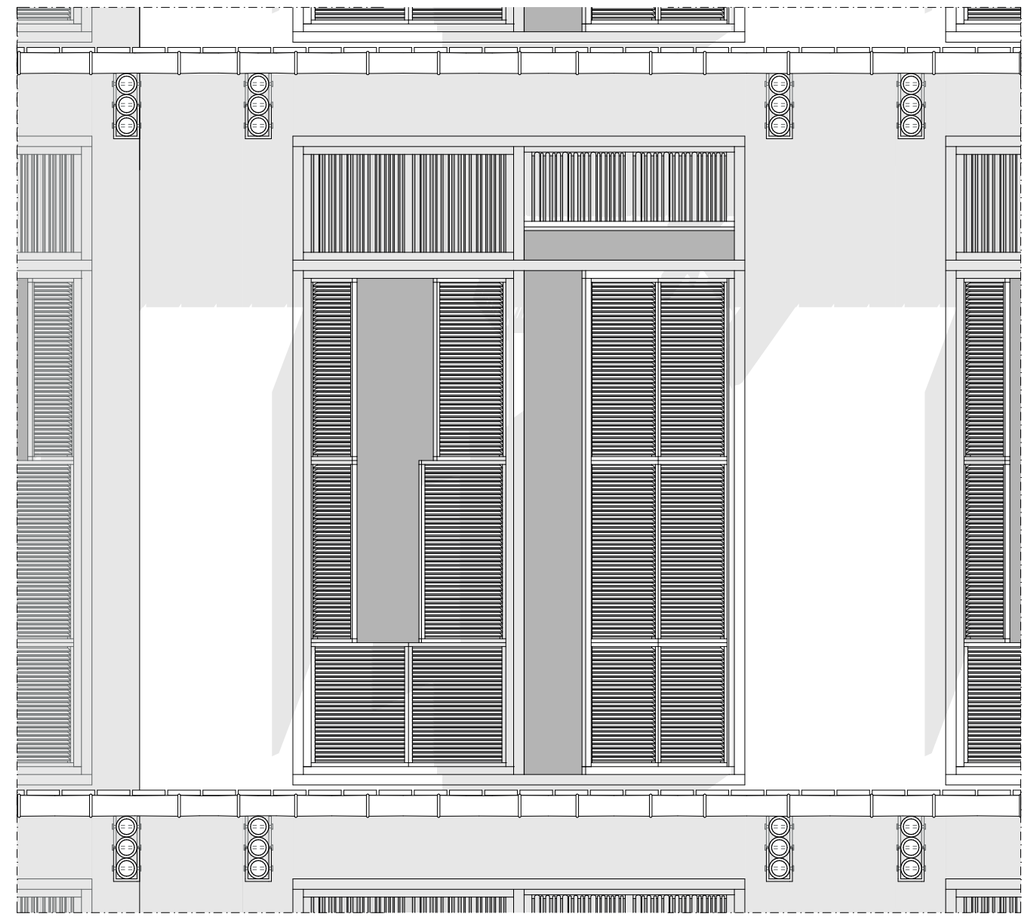



VERTICAL FARMING
CSEB WALL
CLAY PLASTER
LIME PLASTER
LIGHT BAMBOO PROTECTION
FLEXIBLE WINDOW SYSTEM
BAMBOO CONSTRUCTION

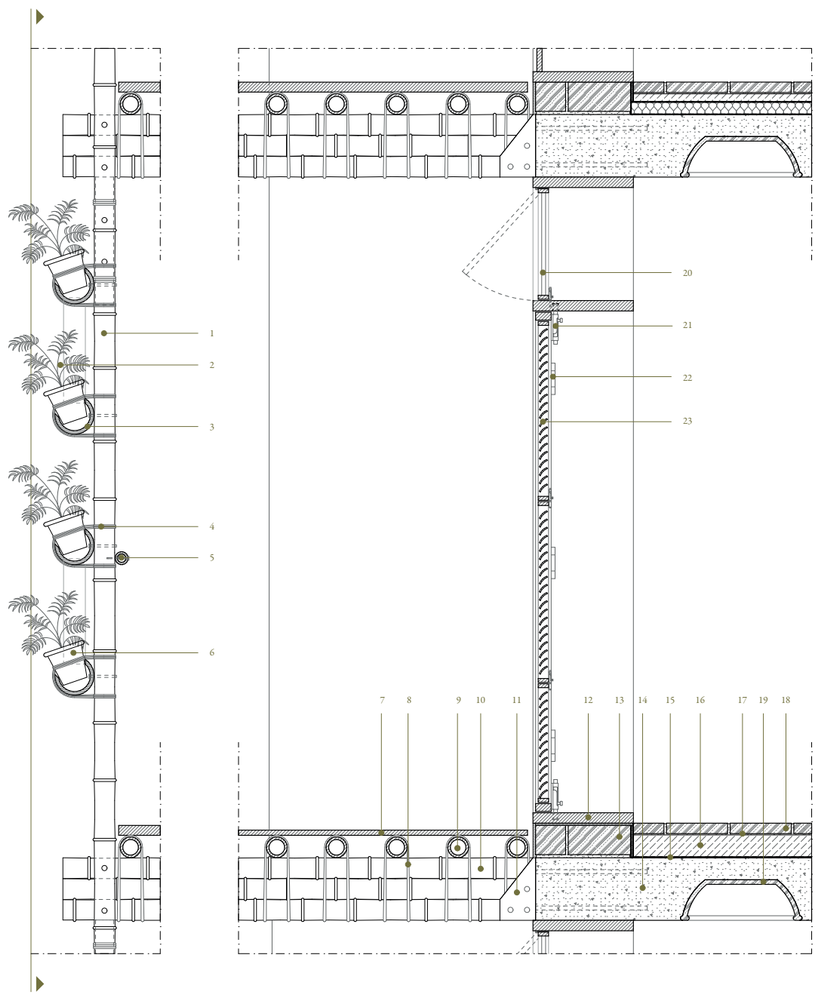

BAMBOO
VENTILATION SHUTTERS
SIX OPENABLE ELEMENTS
SIX ELEMENTS LOCKED TOGETHER AS ONE DOOR
STORAGE AND SEATING ON THE INSIDE
CLOSED ELEMENT
TIMBER FRAME AND SHUTTERS
ENABLING CROSS VENTILATION

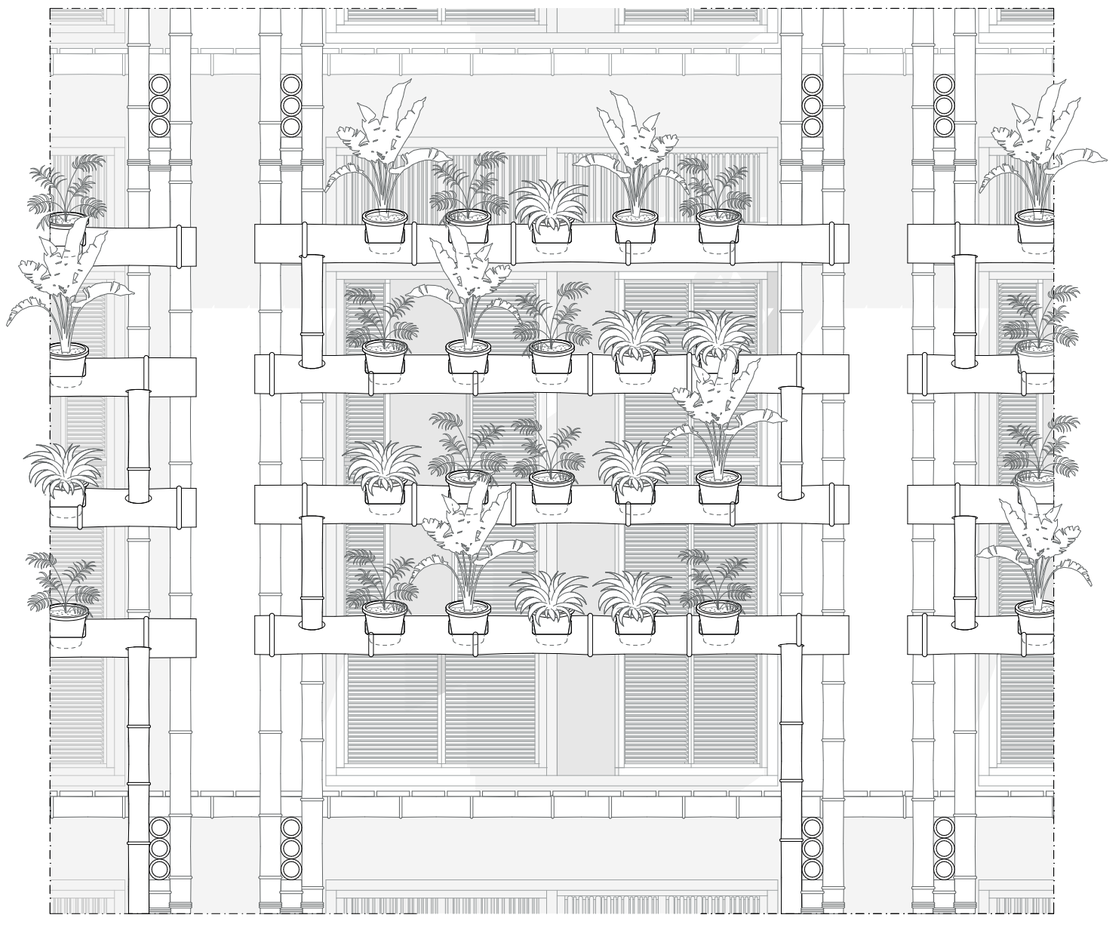
DETAIL FACADE

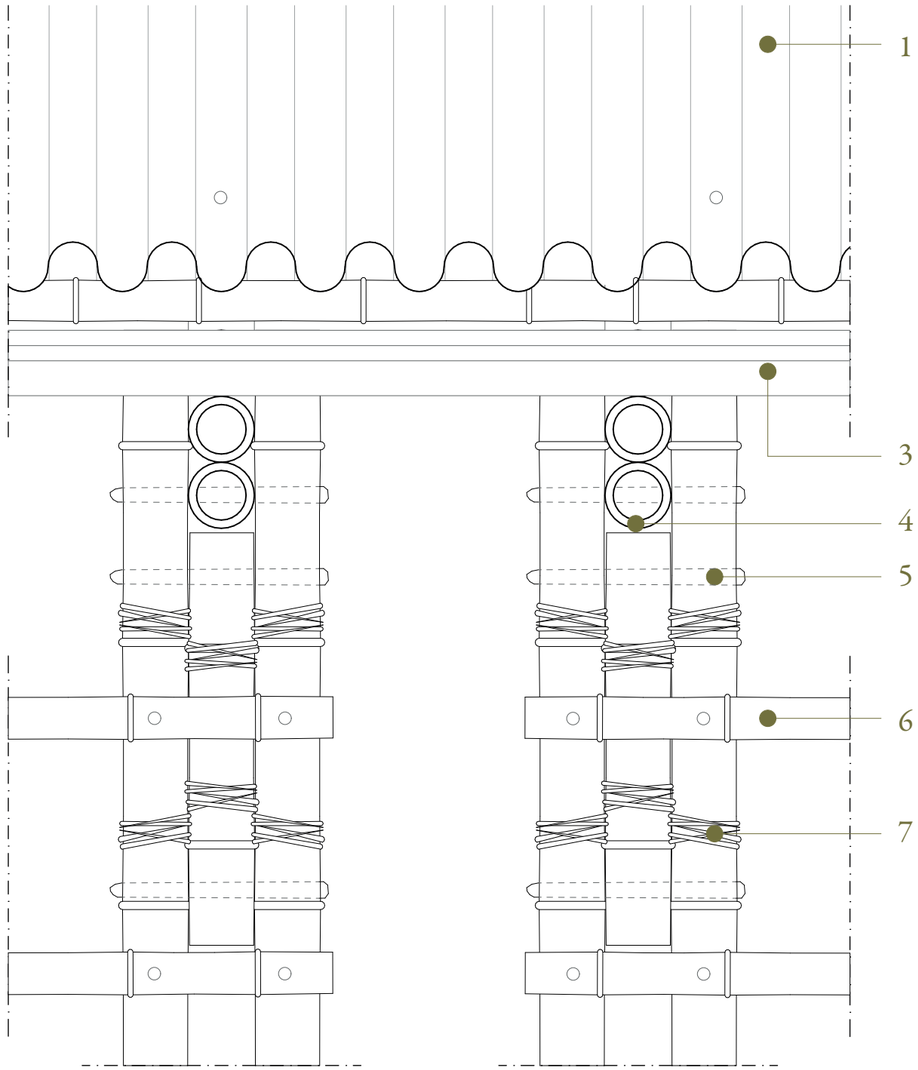




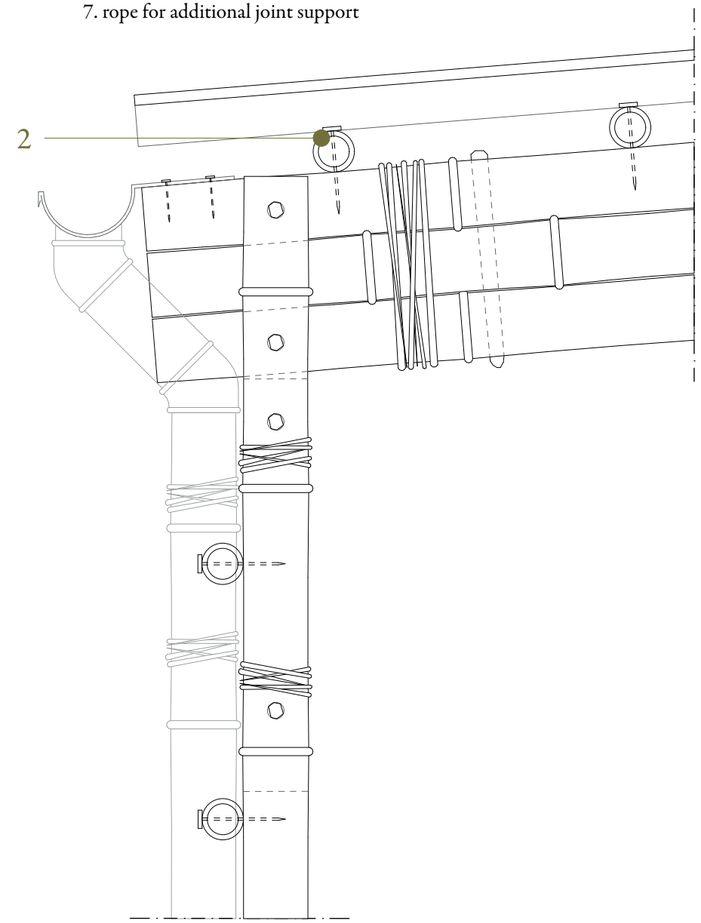
DETAIL FACADE

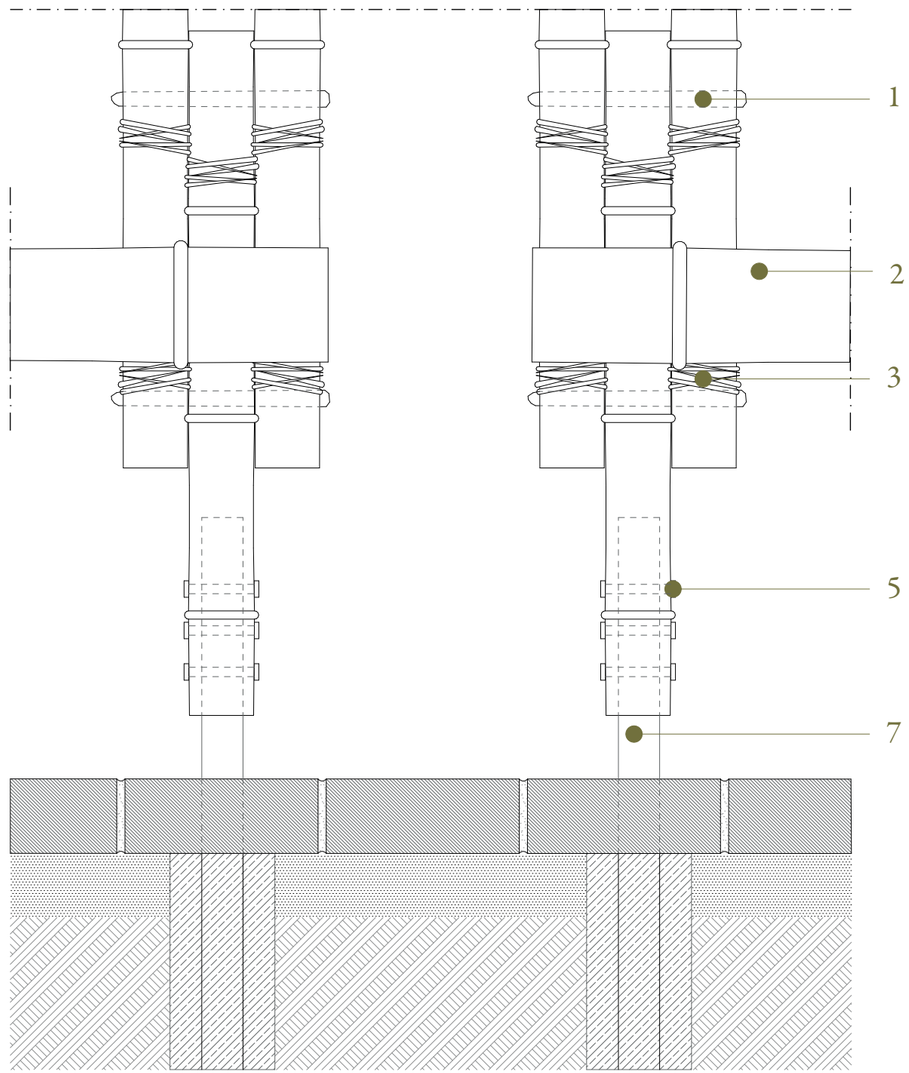


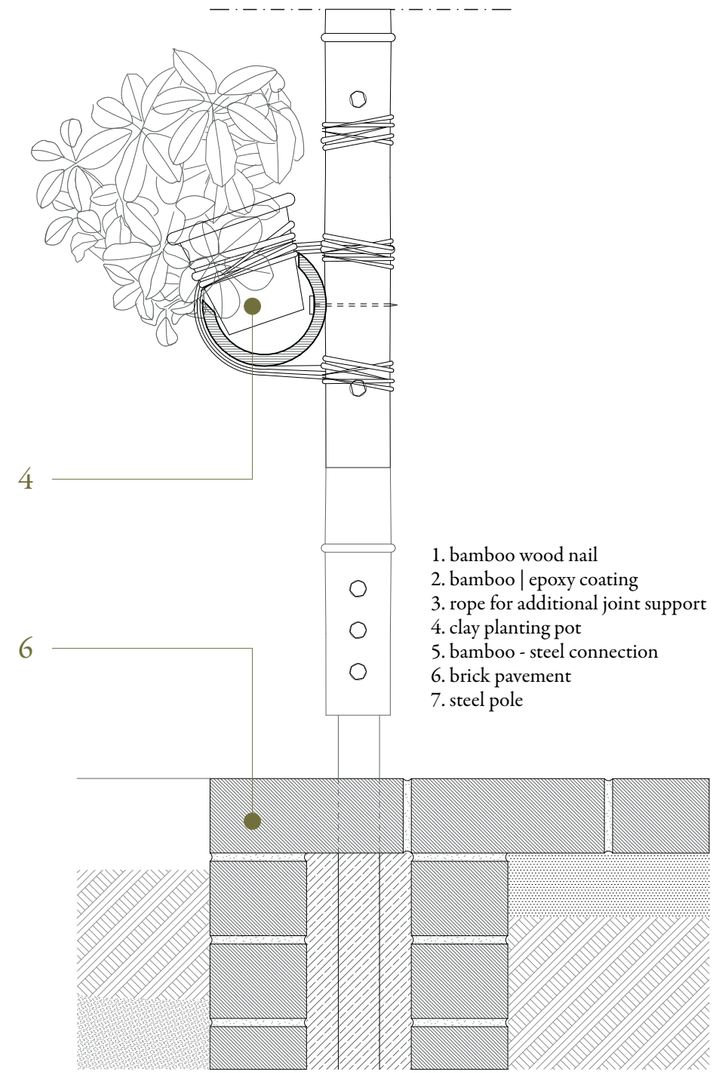




1. corrigated iron sheet	3 x ø 8 cm
2. bamboo	ø 5 cm
3. rain gutter	
4. bamboo beam - 3 connnected bamboo poles	3 x ø 8 cm = 24 cm x 8 cm
5. bamboo wood nail	
6. horizontal bamboo (drying support)	ø 6 cm
7. rope for additional joint support	







1. bamboo wood nail
2. bamboo | epoxy coating
3. rope for additional joint support
4. clay planting pot
5. bamboo - steel connection
6. brick pavement
7. steel pole