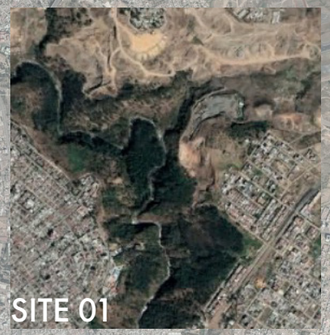
- site -

- SITE LOCATION -

ADDIS ABABA

N

Google Earth
Image © 2020 Maxar Technologies
Image © 2020 CNES / Airbus


SITE 01

SITE 02

SITE 03

SITE 04

SITE 05

- POSSIBLE SITES -
& CONDITIONS

N

- SITE LOCATION -

N

1500m
1500m
1000m
500m
100m
500m
- SITE LOCATION -
scale 1:5000@A1
N

TRANSPORTATION NOD

RIVER AKAKI

PRIMARY ACCESS

100m

500m

- SITE CONTEXT -

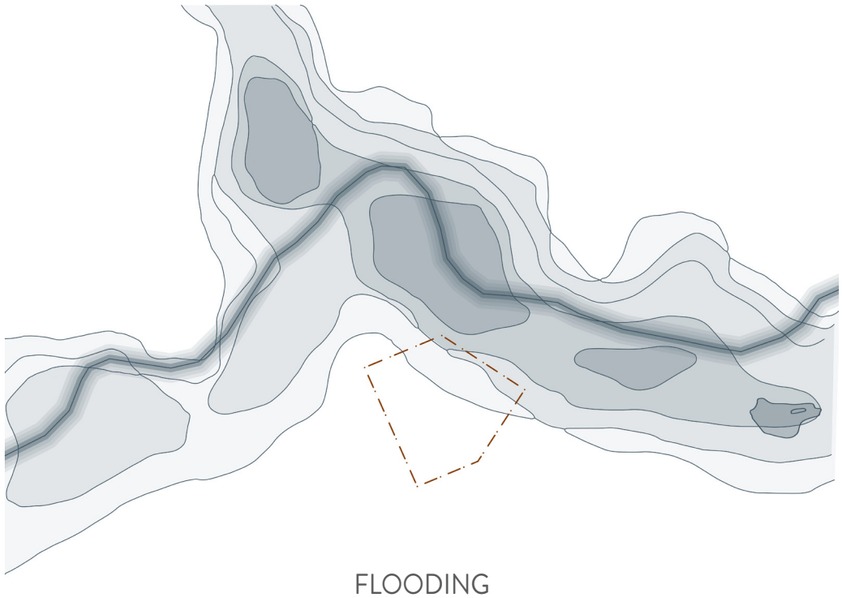
scale 1:2500@A1

N

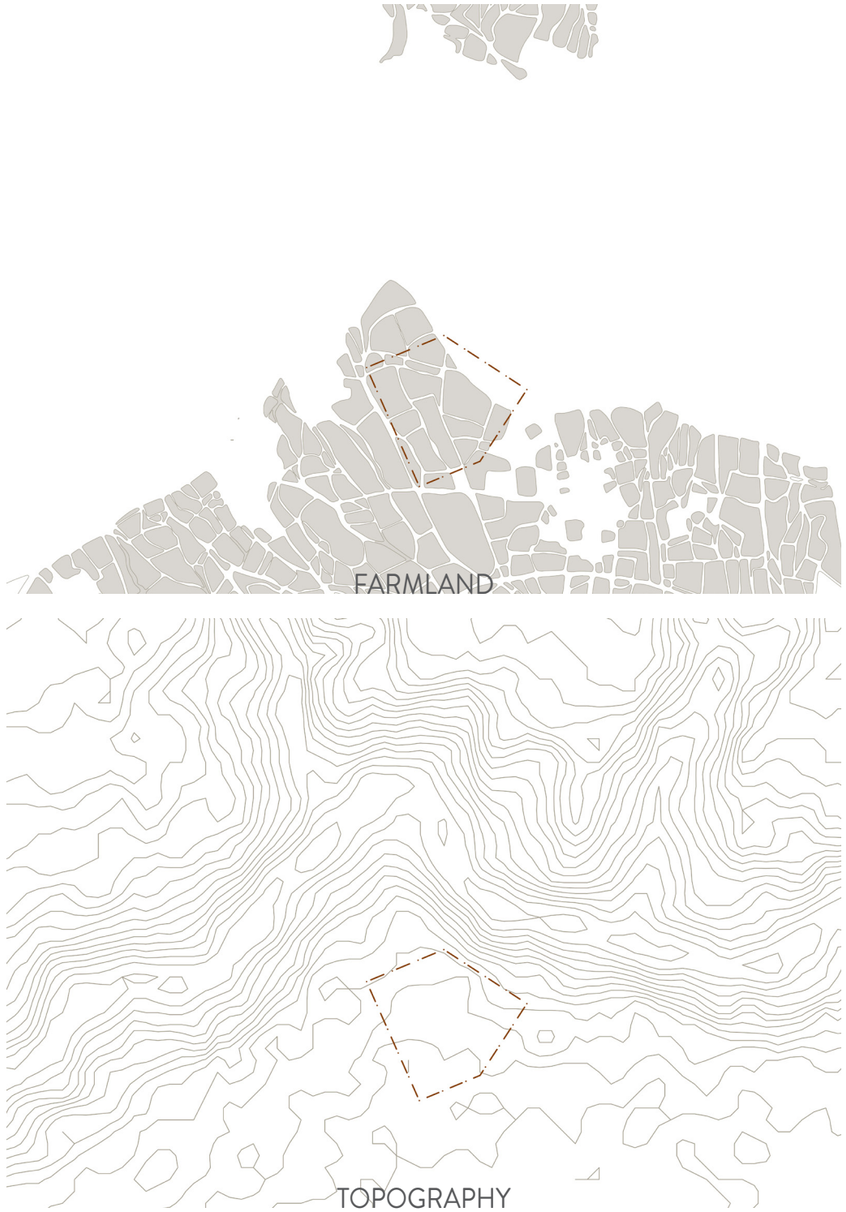
- SITE REPLICABILITY -

scale 1:2500@A1

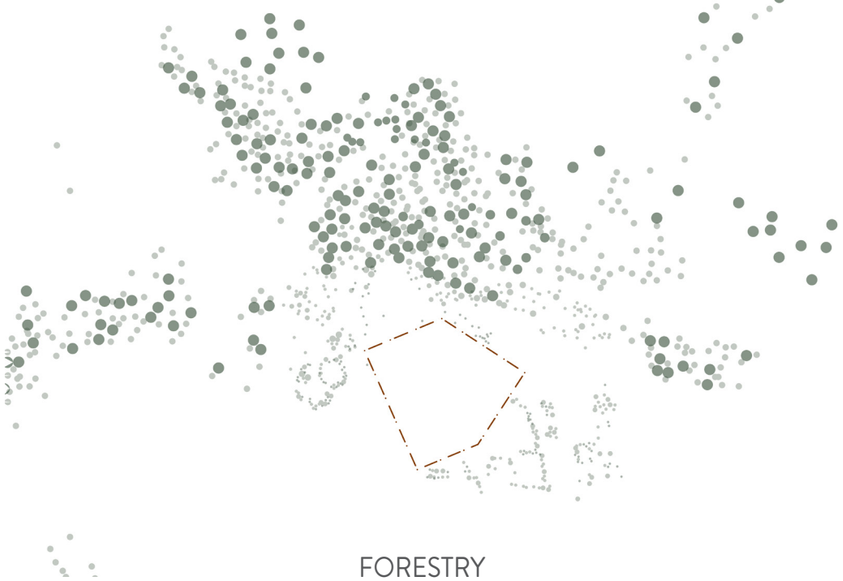
N



FLOODING



FARMLAND



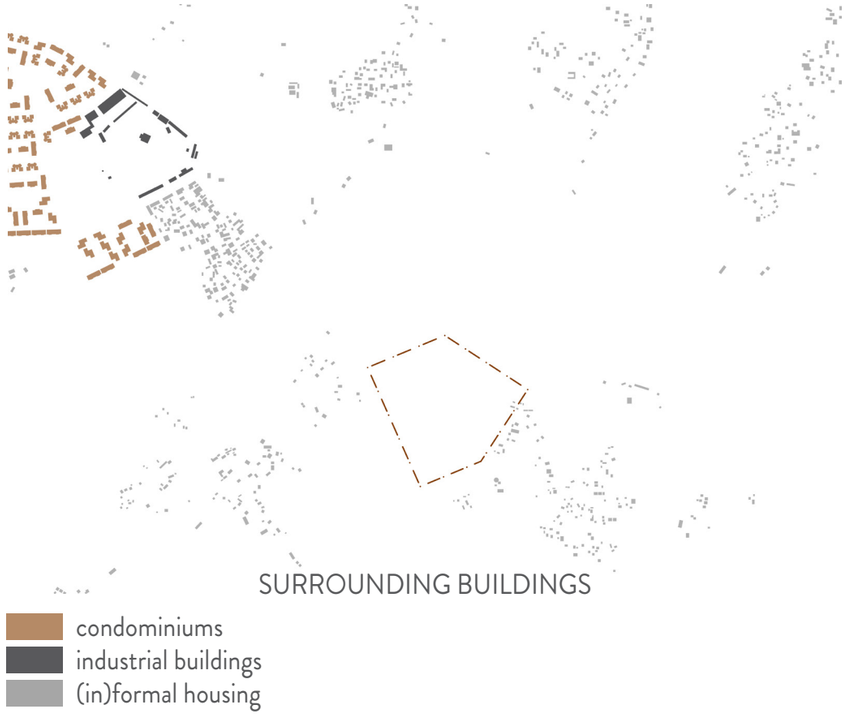
FORESTRY

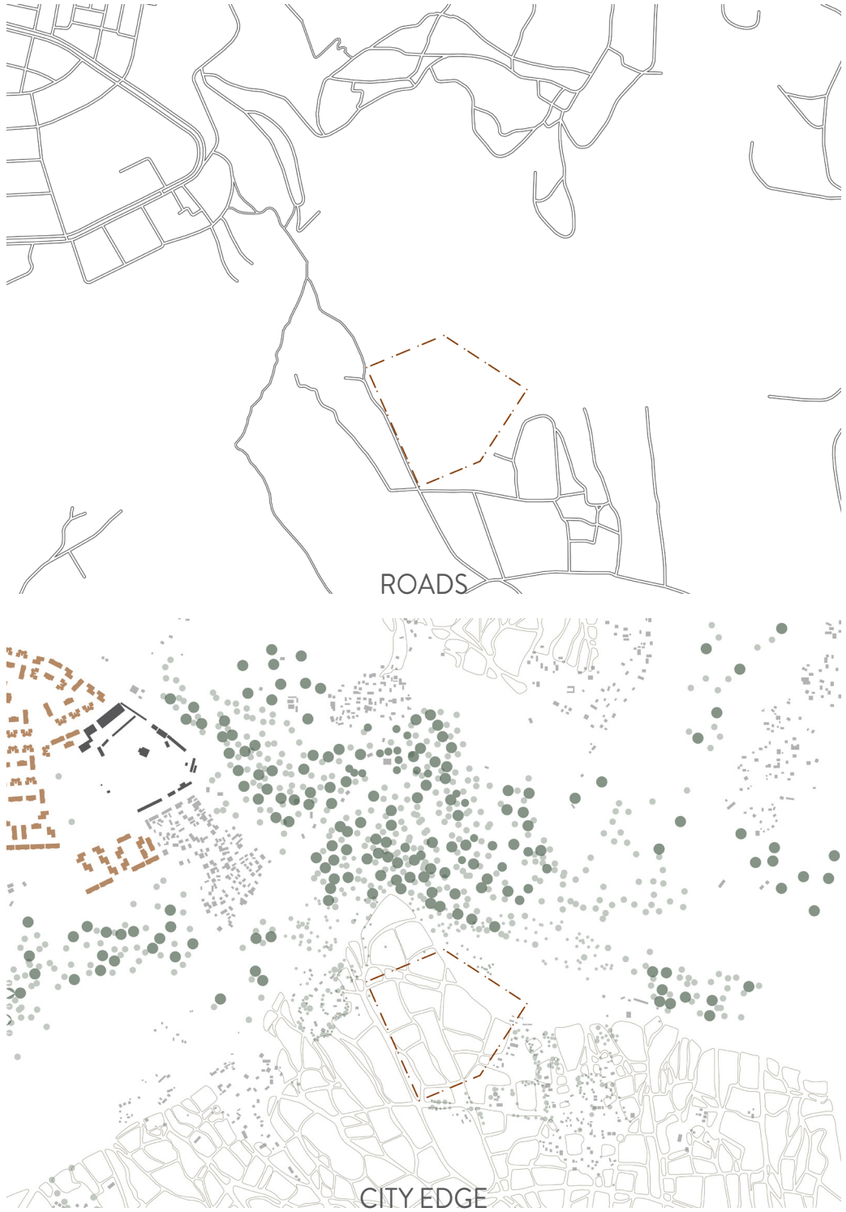
TOPOGRAPHY

- NATURAL CONDITIONS -

scale: 100m

N





- SOCIAL & INFRASTRUCTURAL CONDITIONS -

scale: 100m

N

site information

site area: 88,500m2

dwellings: 800

density: 90dw/ha

FSI: 1.81

GSI: 0.31

- SITE PLAN -

scale: 1:1000@A1

N

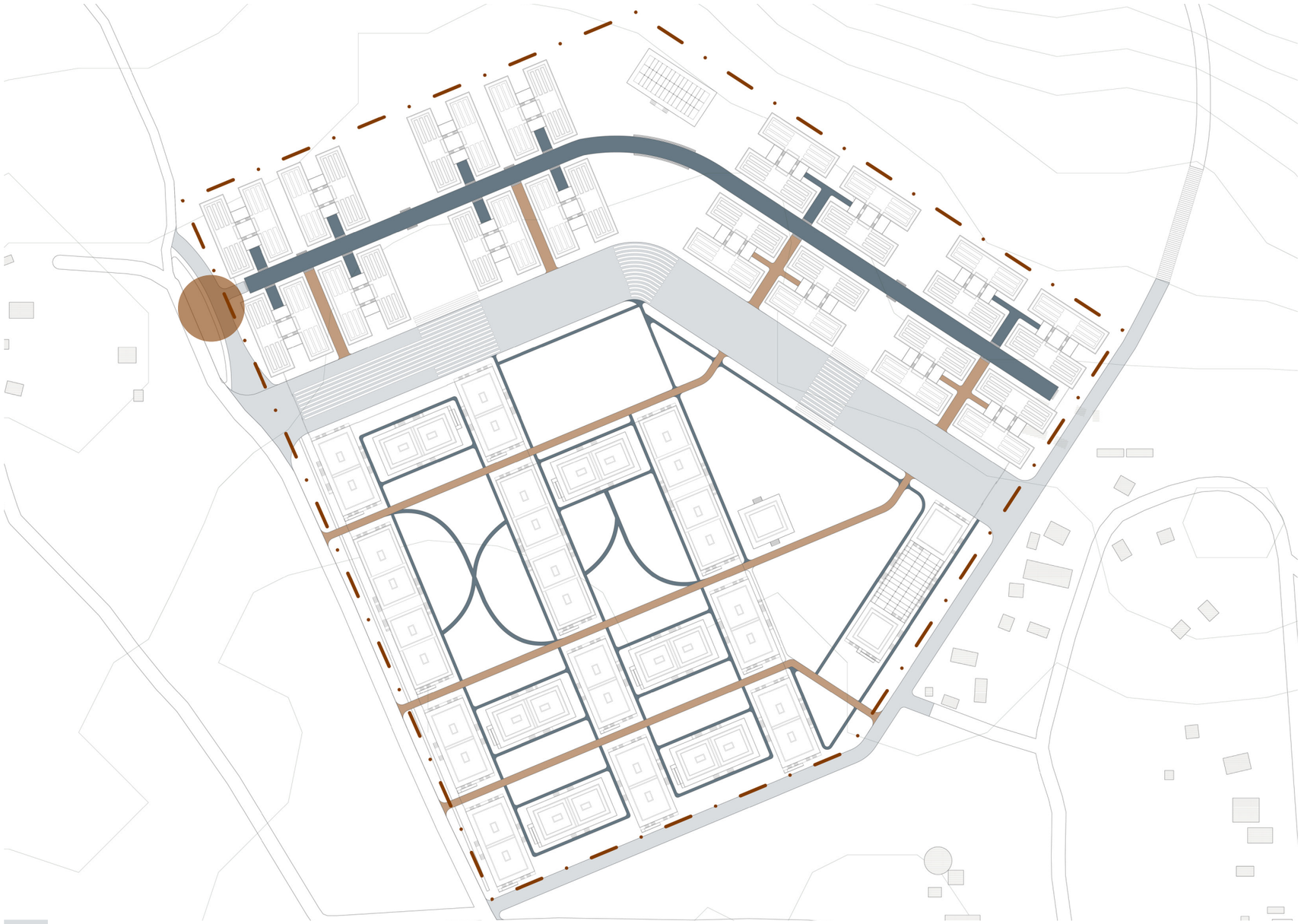
- SITE STRATEGY -
farming

N

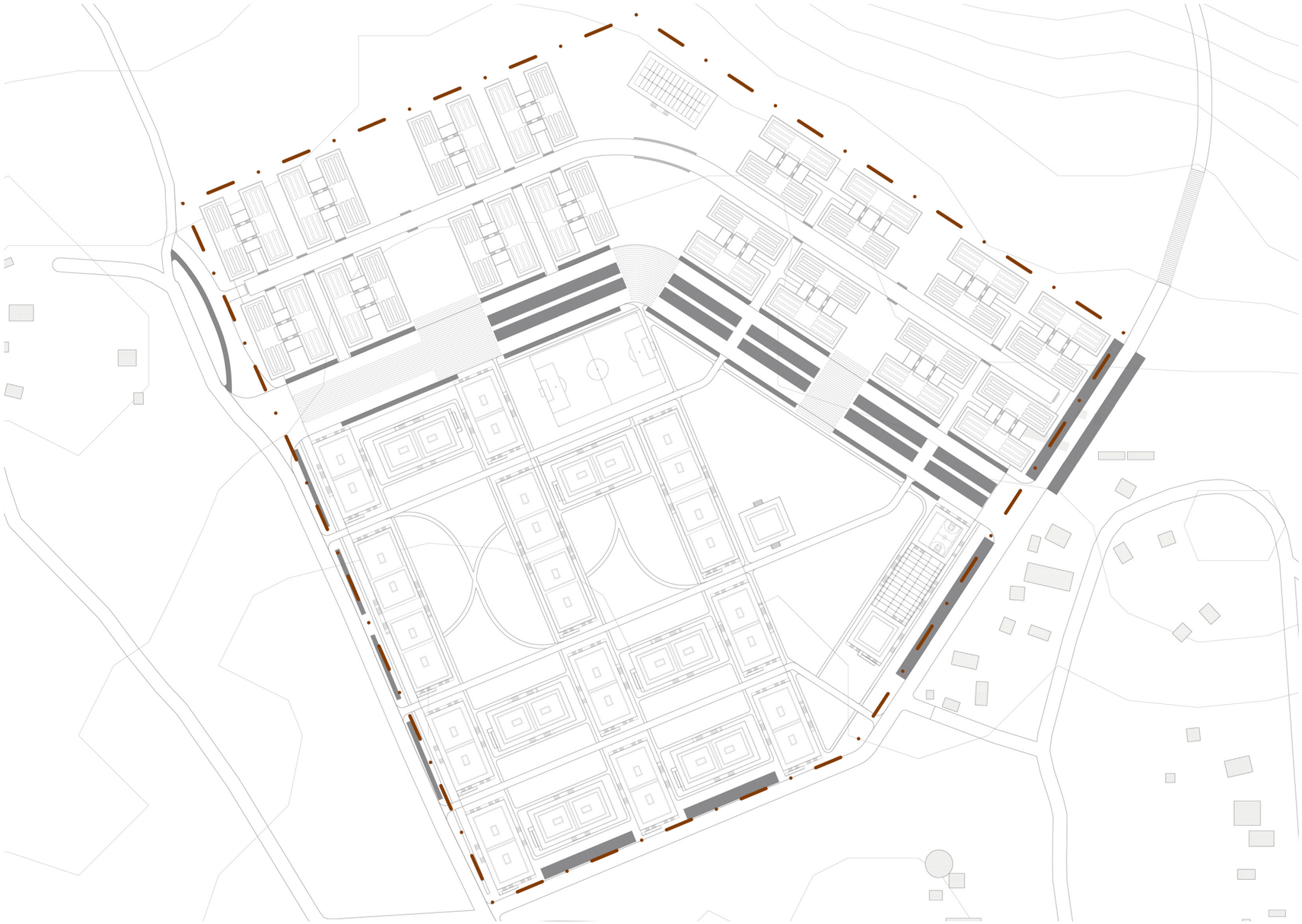
- SITE STRATEGY -
permaculture

N

- SITE CONCEPT -
Church site in South Gonder, North Ethiopia
image: Kieran Dodds/Panos Pictures

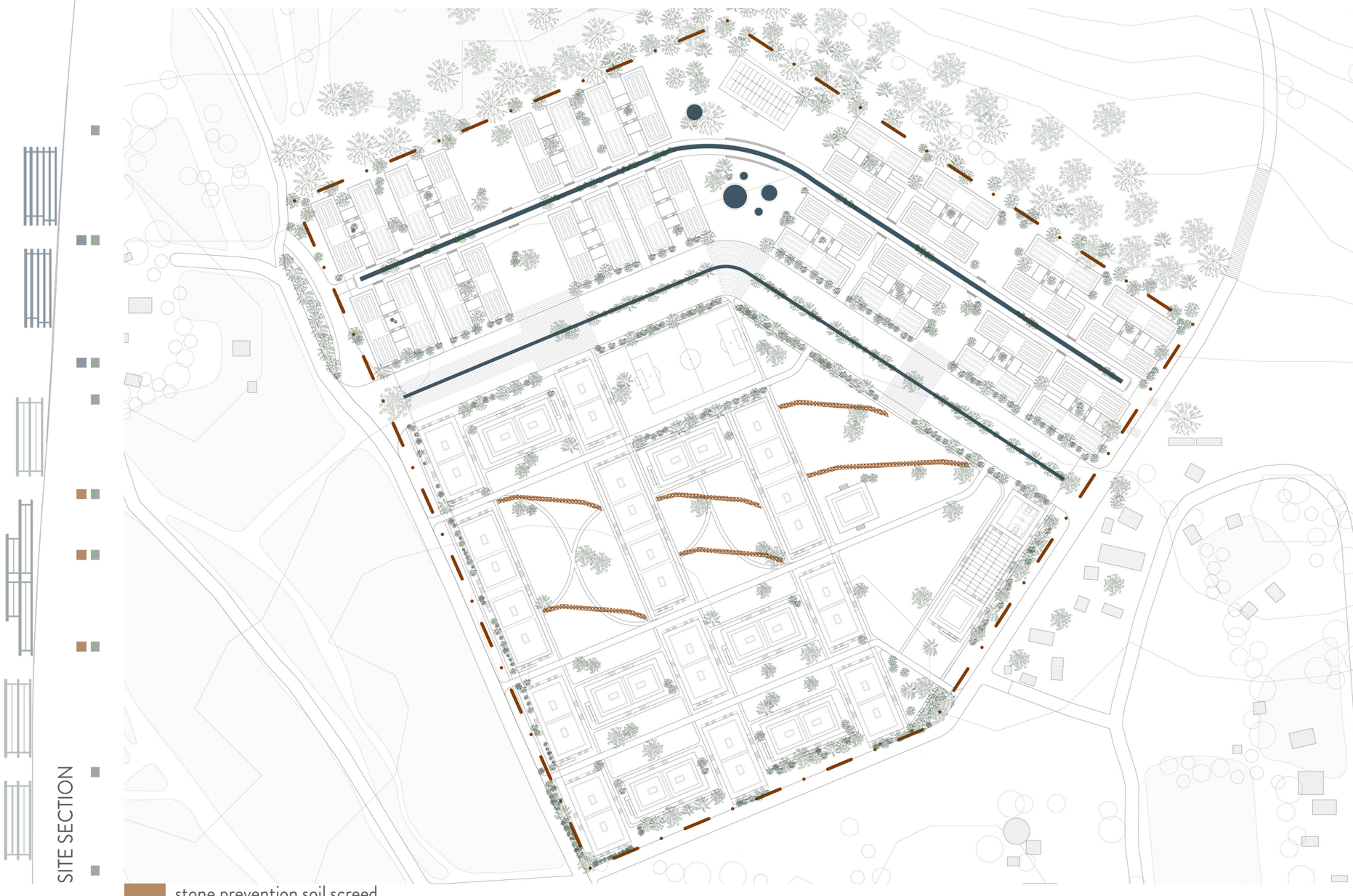


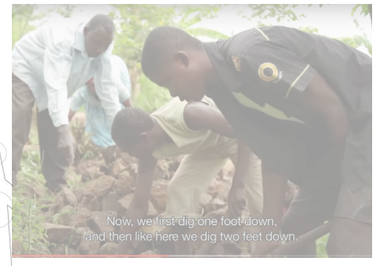
- SITE STRATEGY -
infrastructure



- SITE STRATEGY -
parking - 385 spaces

N





stone prevention soil screed
water collection area
planted green buffer zone

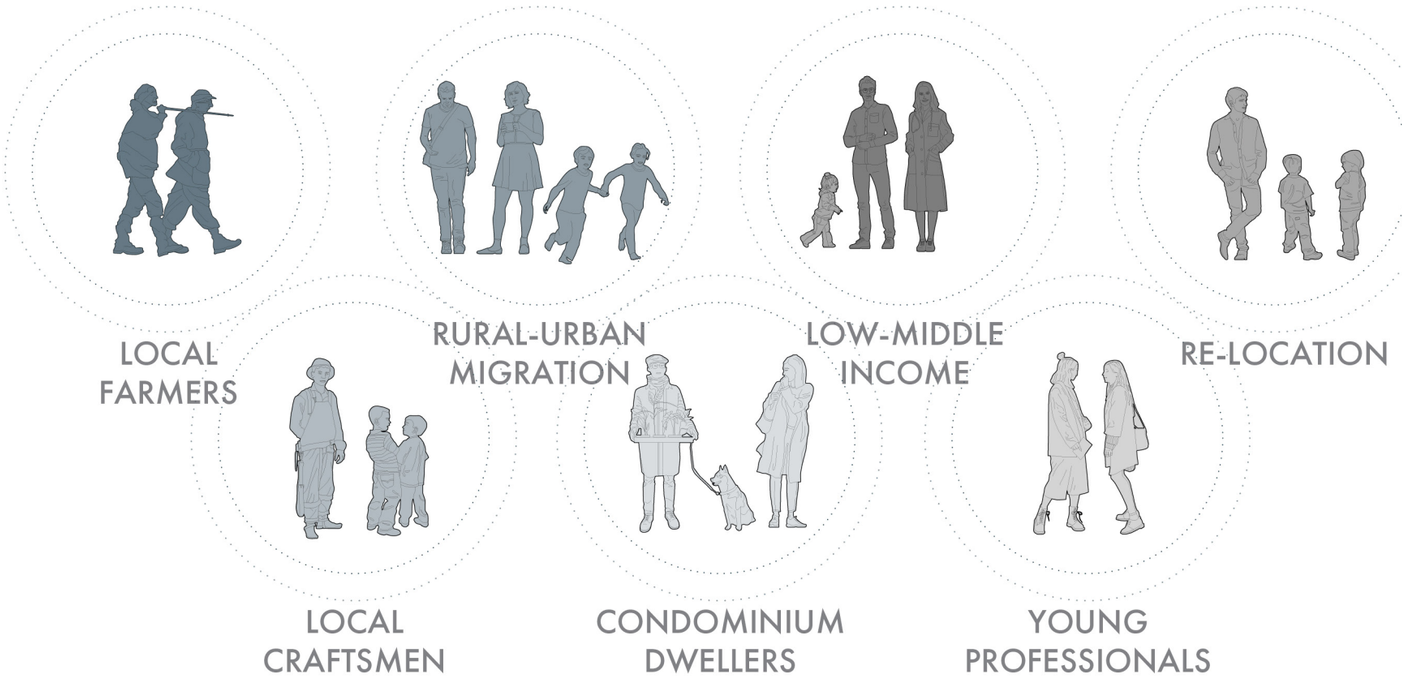
- SITE WATER MANAGEMENT -

scale: 1:1000@A1

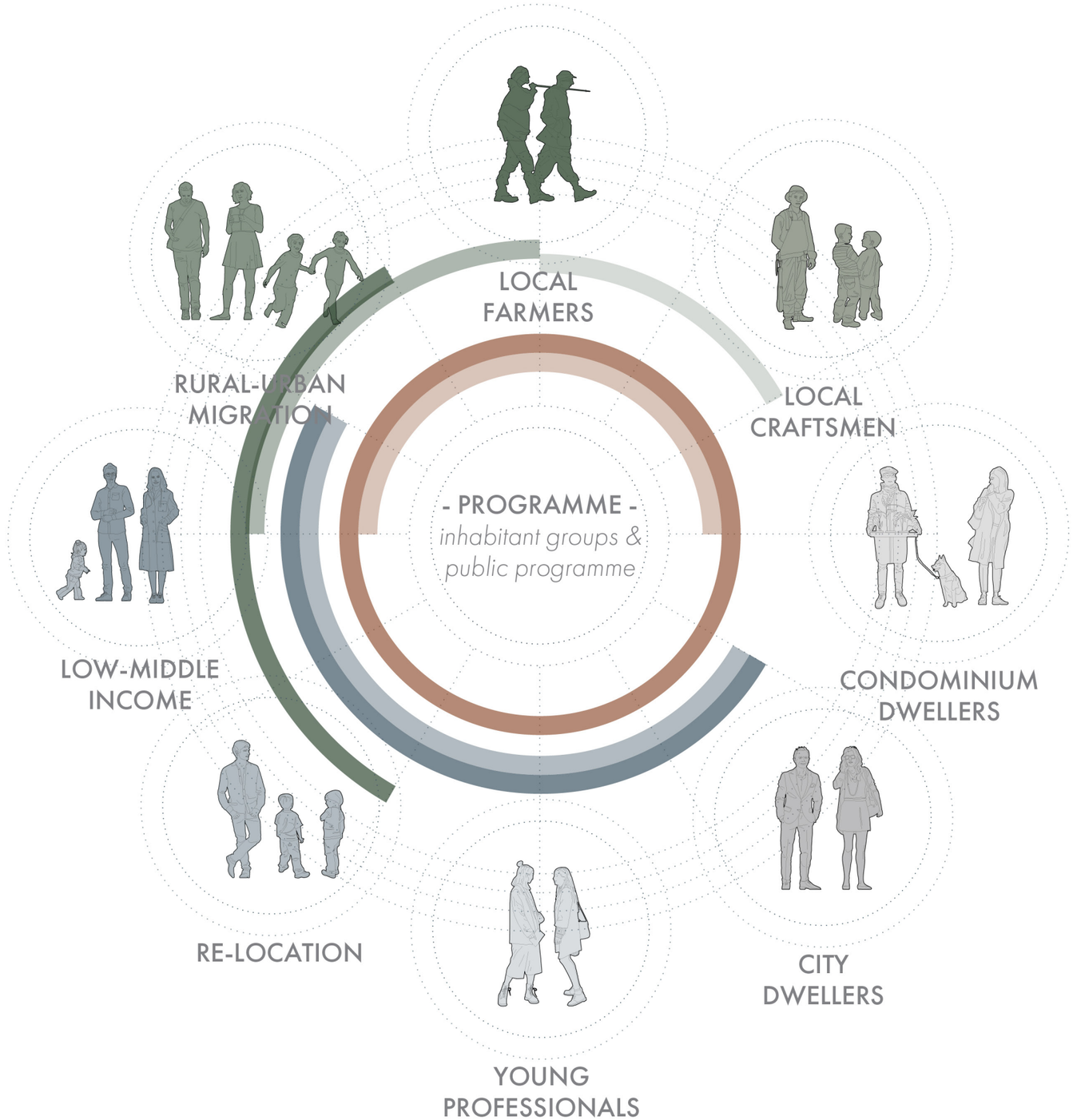
N

source:
www.fao.org
www.sciencedirect.com
"Meet the Rainwater Harvesting Champions of Ethiopia, Kenya and Uganda", www.youtube.com/watch?v=xJLTwJZ2vL8&t=423s

- inhabitant groups -



- INHABITANT GROUP -



- market space
- public programme
- dwelling type 04
- dwelling type 05
- dwelling type 01
- dwelling type 02
- dwelling type 03

- manegerial strategy -

*"the history of the **indigenous land tenure** system known as Atsme Irist reveals a great deal about how peopke in Menz have been able to **regulate use,** but also **preserve, valuble grazing lands and ecosystem services** for more than 400 years."*

- INDIGENOUS ETHIOPIAN COMMONS -

source: Patterns of Commoning - David Bollier

"The Resilience of an Indigenous Ethiopian Commons"

By Zelealem Tefera Ashenafi

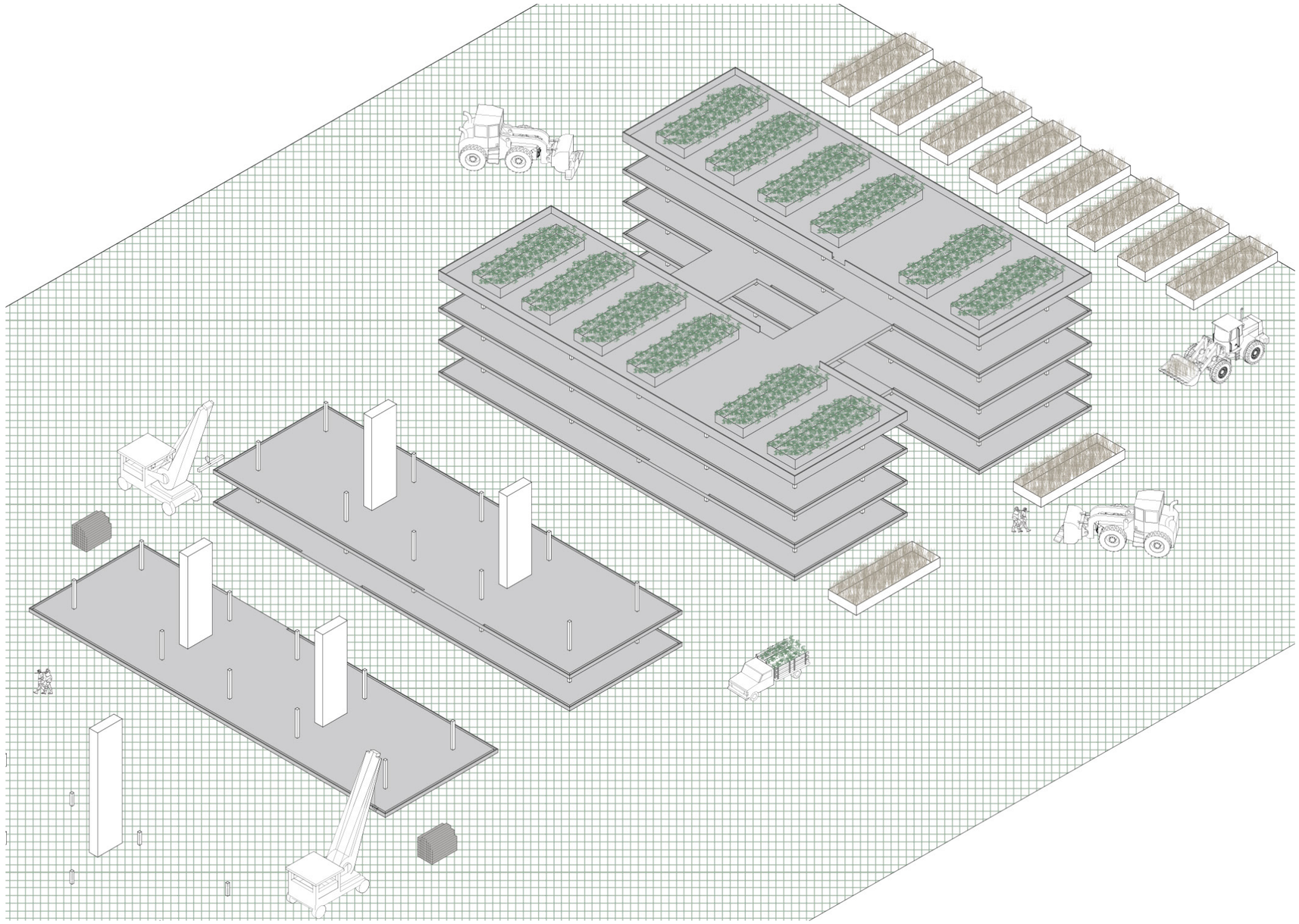
- FARMERS IN ADDIS ABABA -

source: "Ethiopia's farmers forced off land for housing", 2018, BBC

- FARMERS IN ETHIOPIA -

source: "Meet the Rainwater Harvesting Champions of Ethiopia, Kenya and Uganda", 2016, Water Harvesting Champion

- MANAGERIAL STRATEGY -



- CONSTRUCTION SEQUENCE -

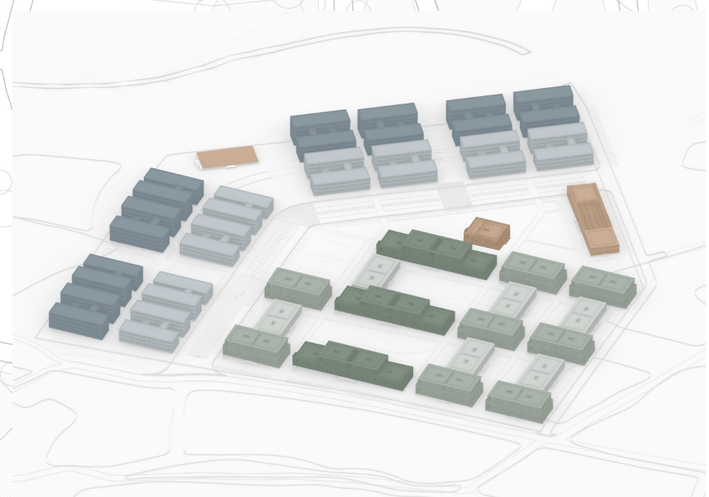
- shared spaces -

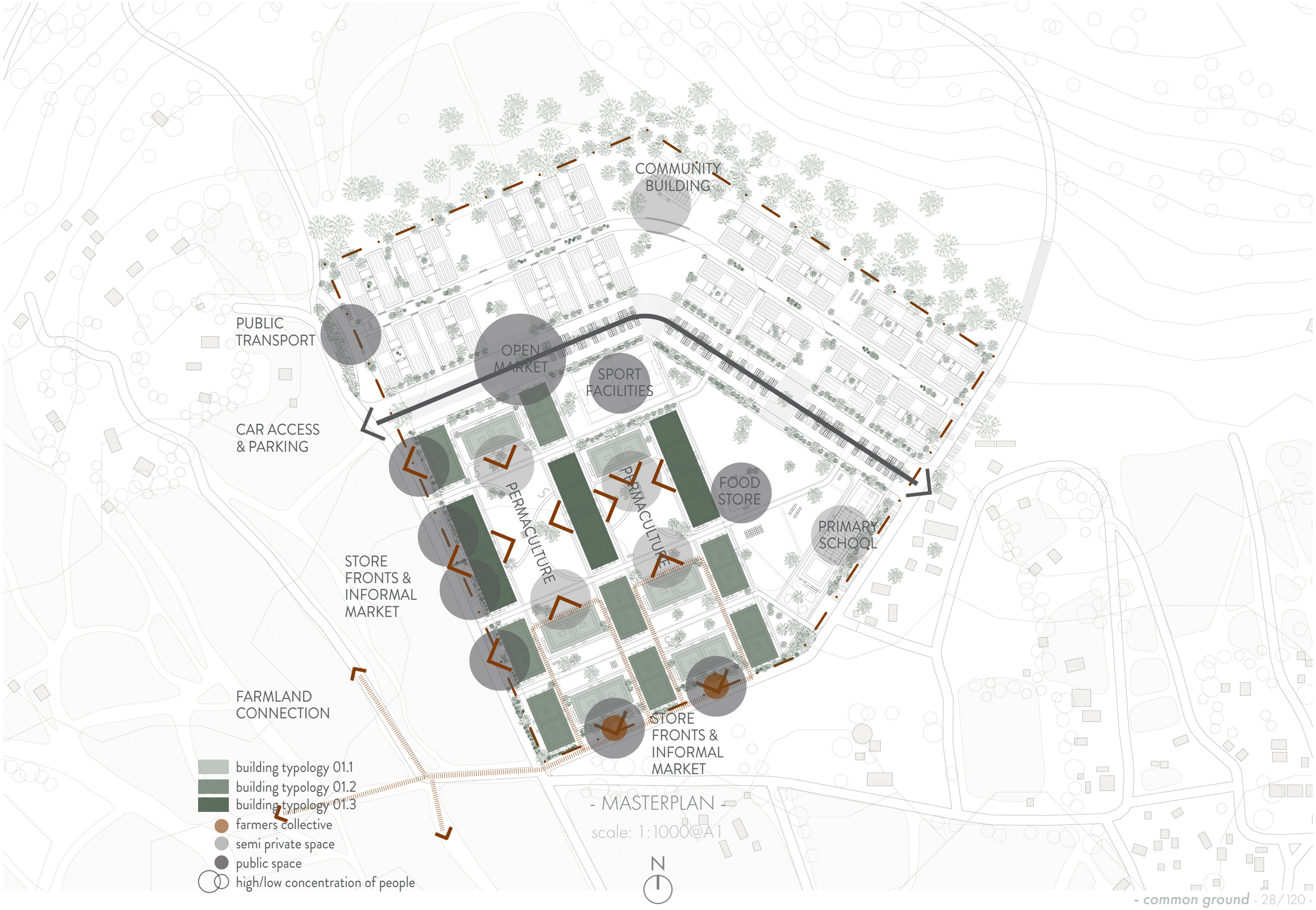
(semi) public buildings
building typology 02.1
building typology 02.2
building typology 01.1
building typology 01.2
building typology 01.3

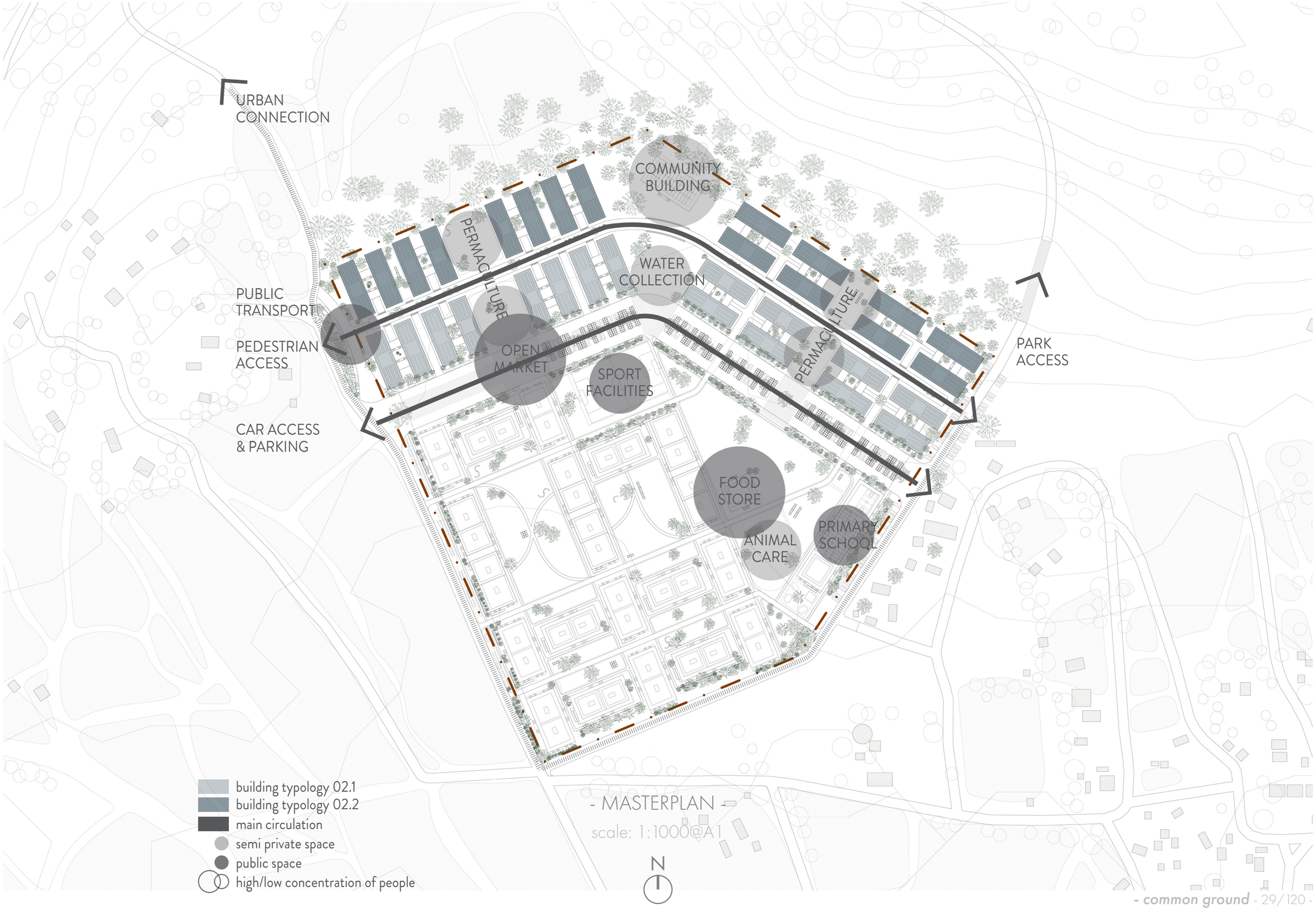
- MASTERPLAN - PROGRAMME -

scale: 1:1000@A1

N

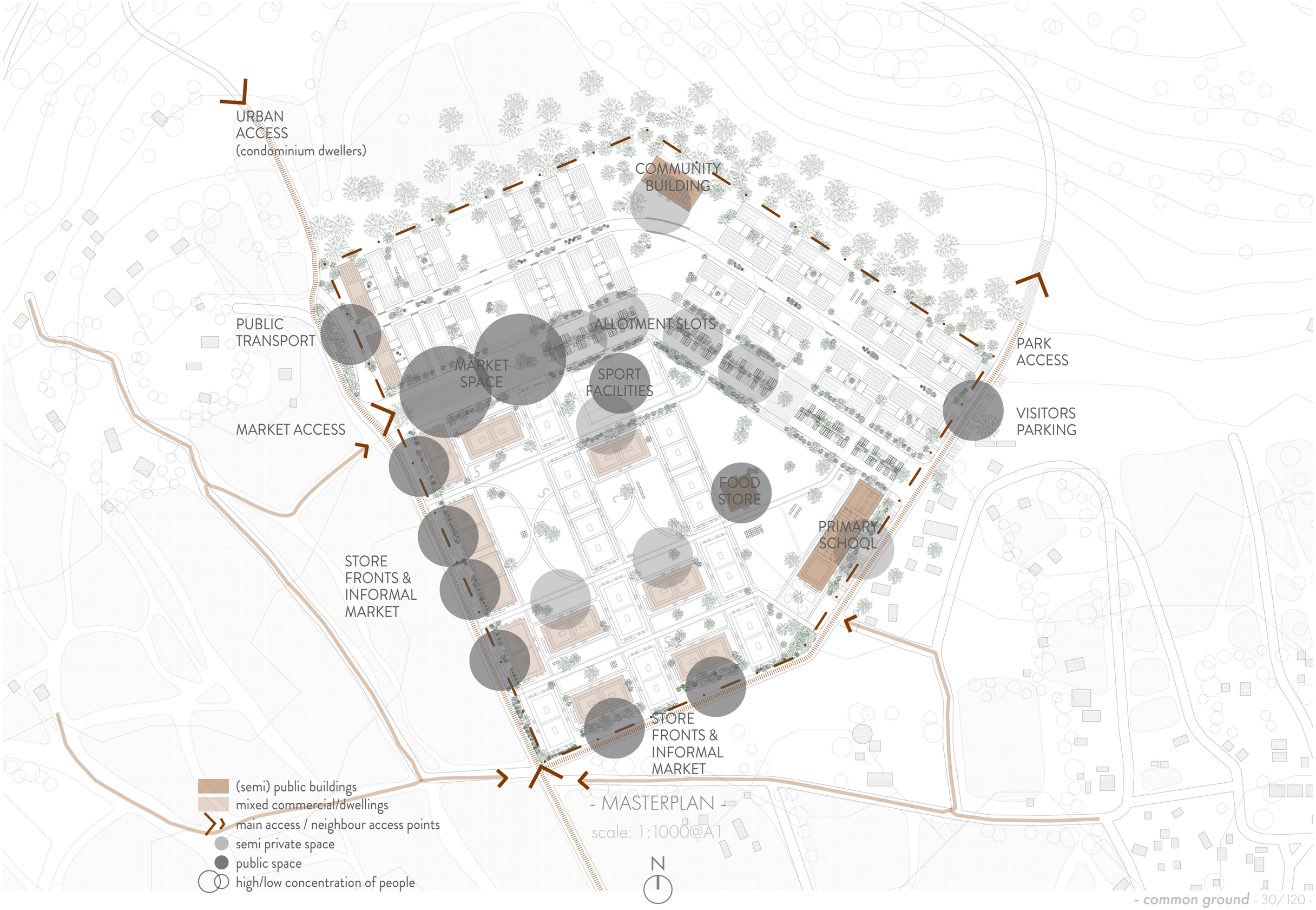


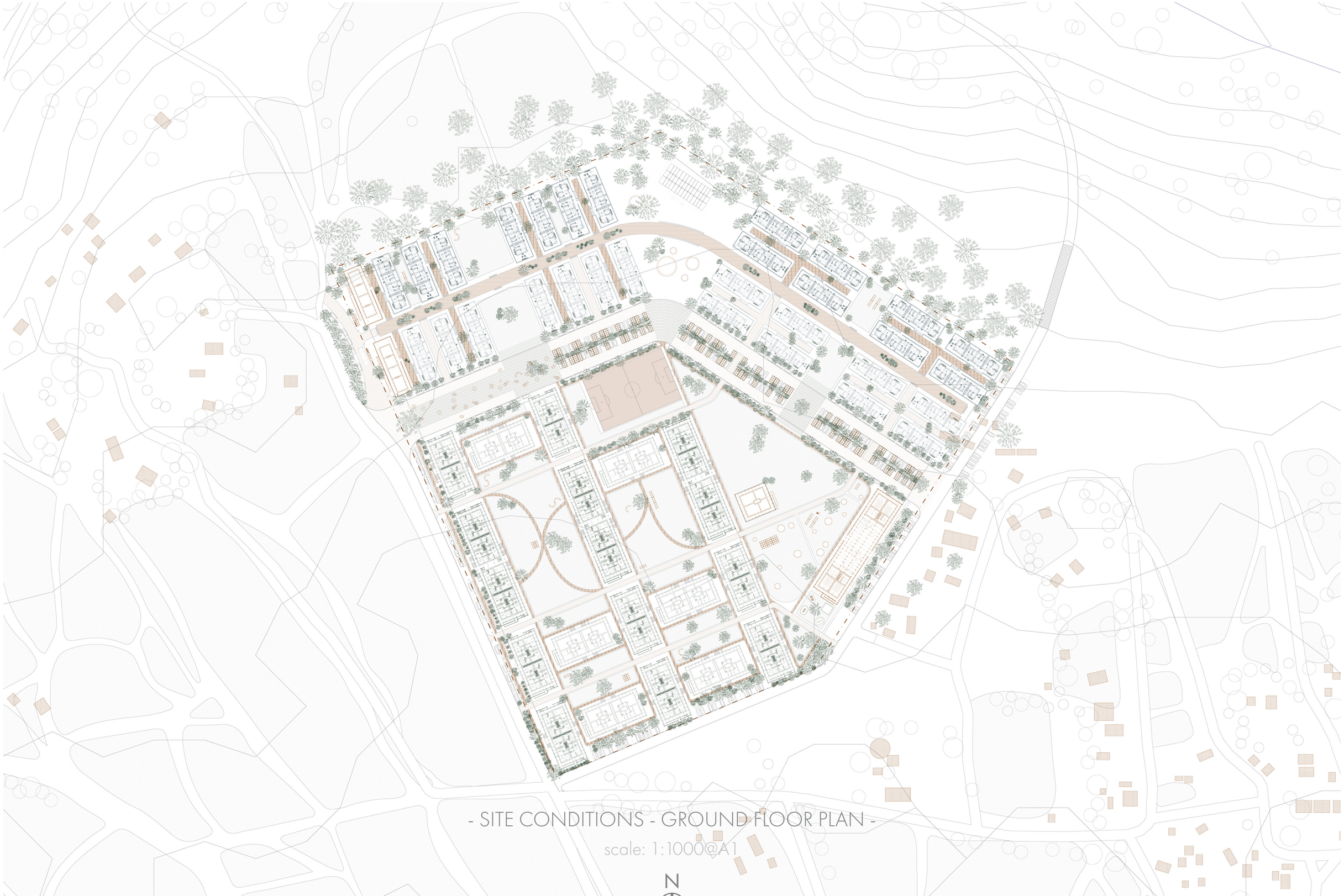

COMMUNITY BUILDING
PUBLIC TRANSPORT
OPEN MARKET
SPORT FACILITIES
CAR ACCESS & PARKING
PERMACULTURE
PERMACULTURE
FOOD STORE
PRIMARY SCHOOL
STORE FRONTS & INFORMAL MARKET
FARMLAND CONNECTION
STORE FRONTS & INFORMAL MARKET
building typology 01.1
building typology 01.2
building typology 01.3
farmers collective
semi private space
public space
high/low concentration of people
- MASTERPLAN -
scale: 1:1000@A1
N



- MASTERPLAN -

scale: 1:1000@A1

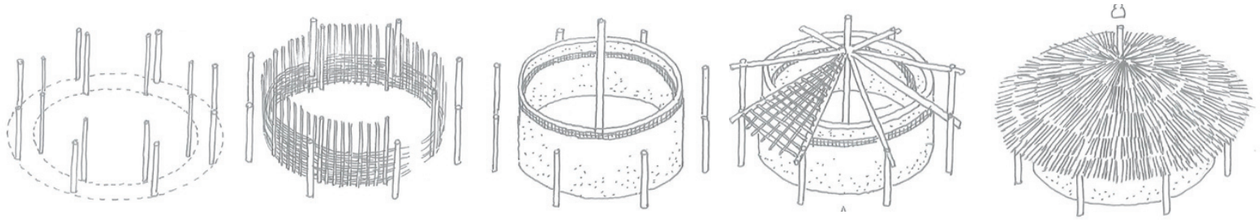

URBAN
ACCESS
(condominium dwellers)
COMMUNITY
BUILDING
PUBLIC
TRANSPORT
ALLOTMENT SLOTS
MARKET
SPACE
SPORT
FACILITIES
PARK
ACCESS
VISITORS
PARKING
MARKET ACCESS
FOOD
STORE
PRIMARY
SCHOOL
STORE
FRONTS &
INFORMAL
MARKET
STORE
FRONTS &
INFORMAL
MARKET
(semi) public buildings
mixed commercial/dwellings
main access / neighbour access points
semi private space
public space
high/low concentration of people
- MASTERPLAN -
scale: 1:1000@A1
N

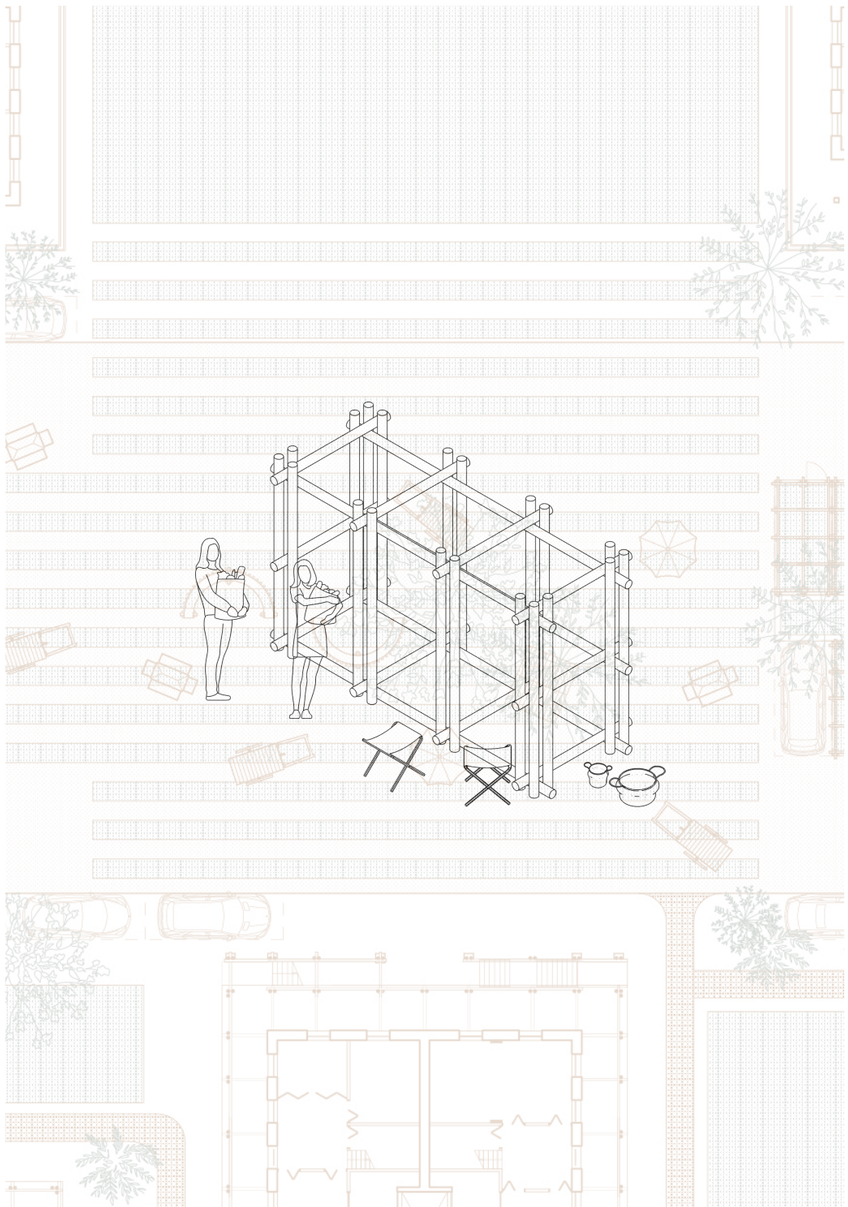


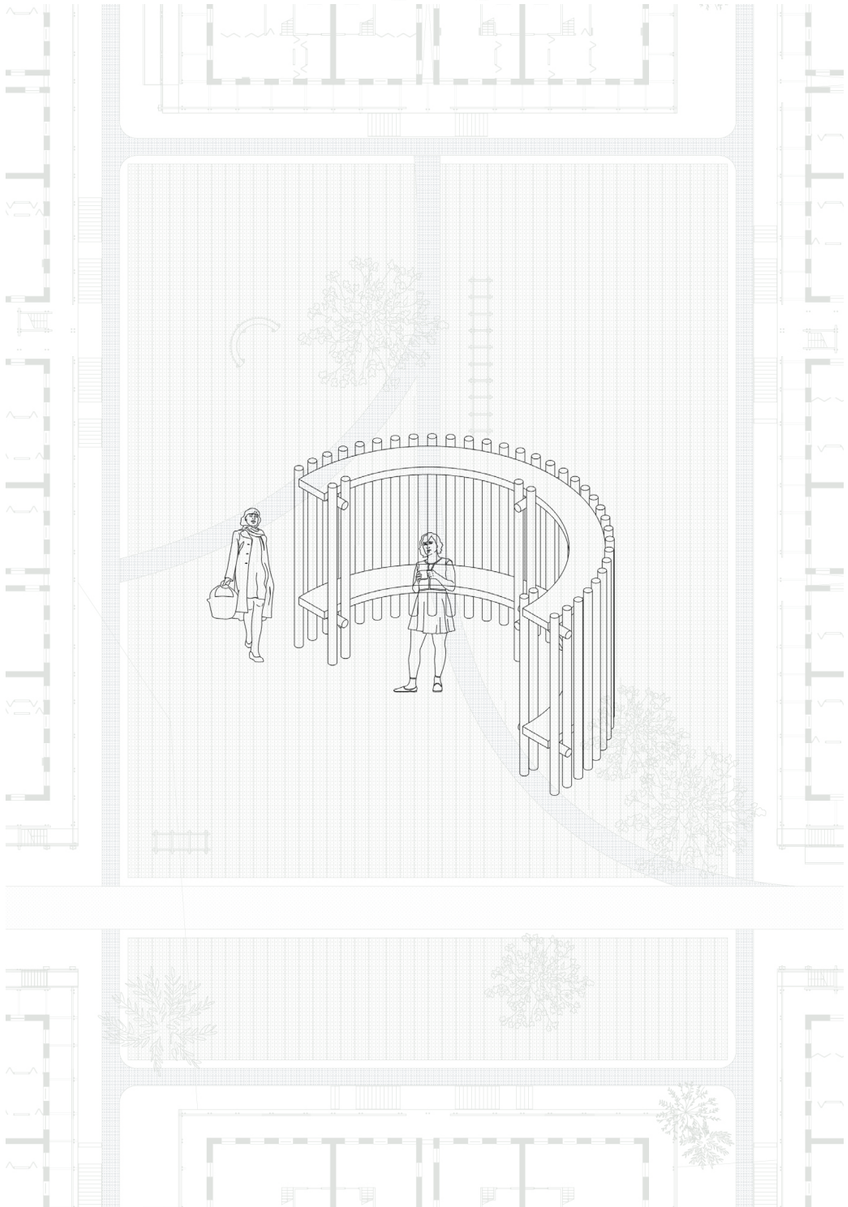
- SITE CONDITIONS - GROUND FLOOR PLAN -

scale: 1:1000@A1

N



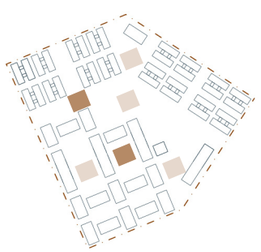


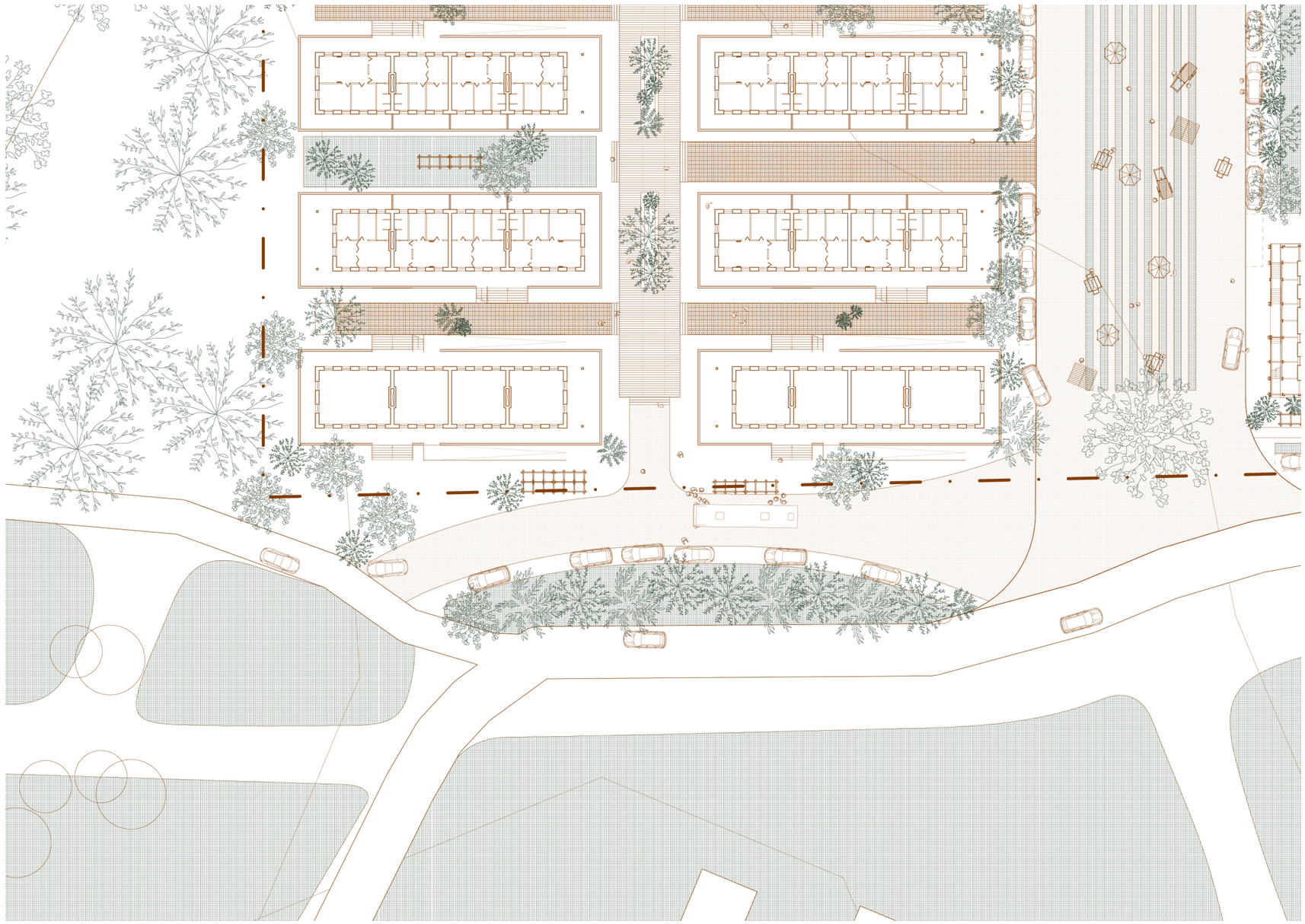


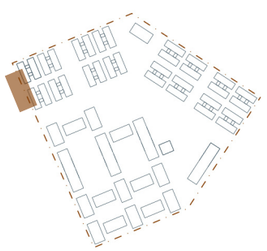
- SOCIAL STRUCTURES -

Oromo Typology

image source: Luca, F. A., et al. (2014-2015). Oromo typology. p. 26.



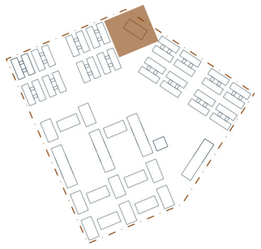




- SHARED SPACES -

edge condition - transport nod

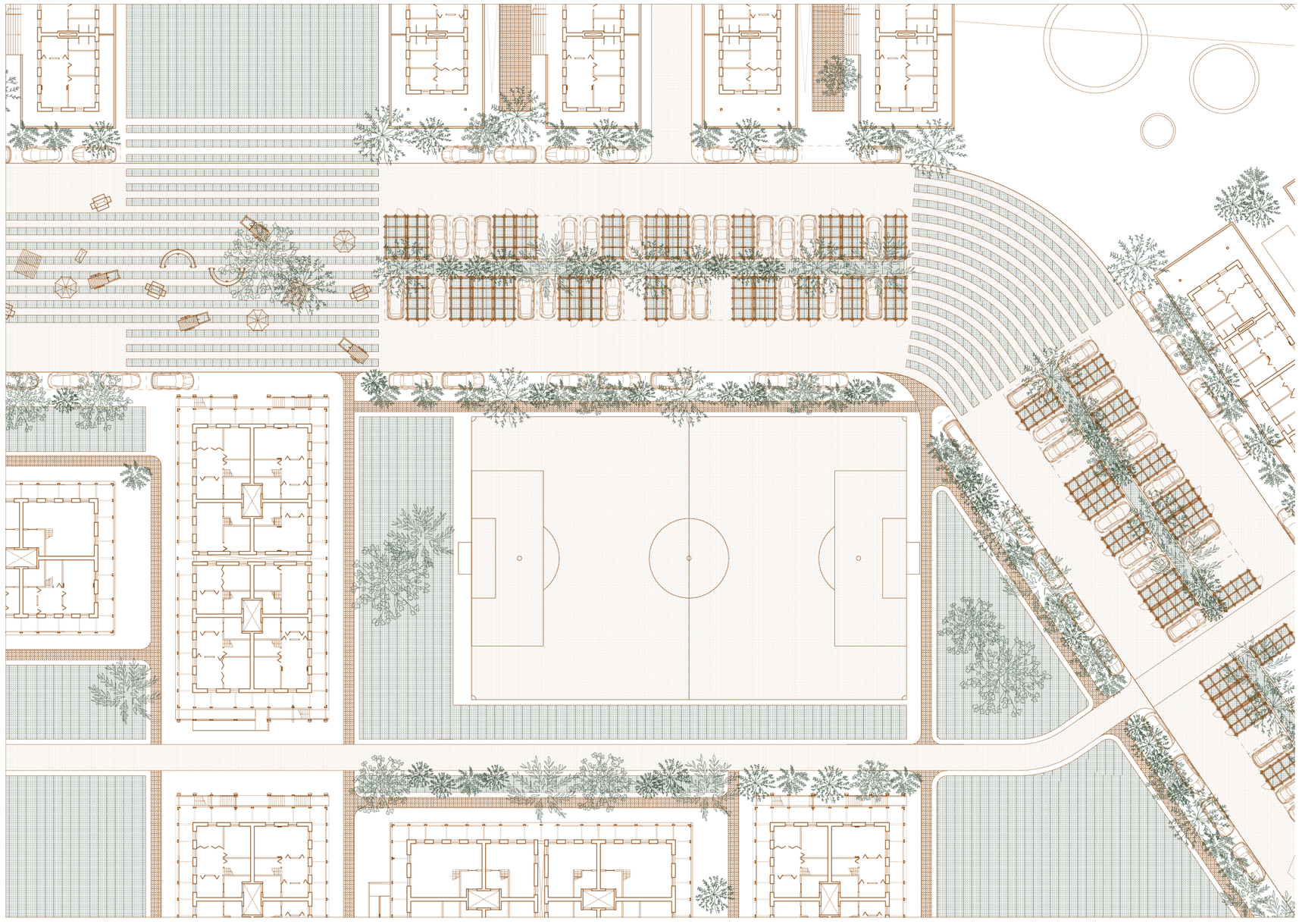
scale: 1:200@A3

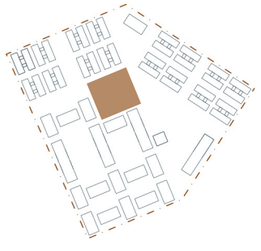


- SHARED SPACES -

community building & workshop garden

scale: 1:200@A3

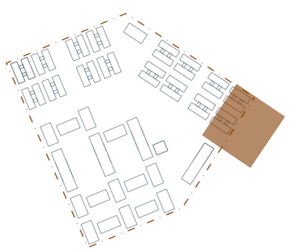




- SHARED SPACES -

sport/youth

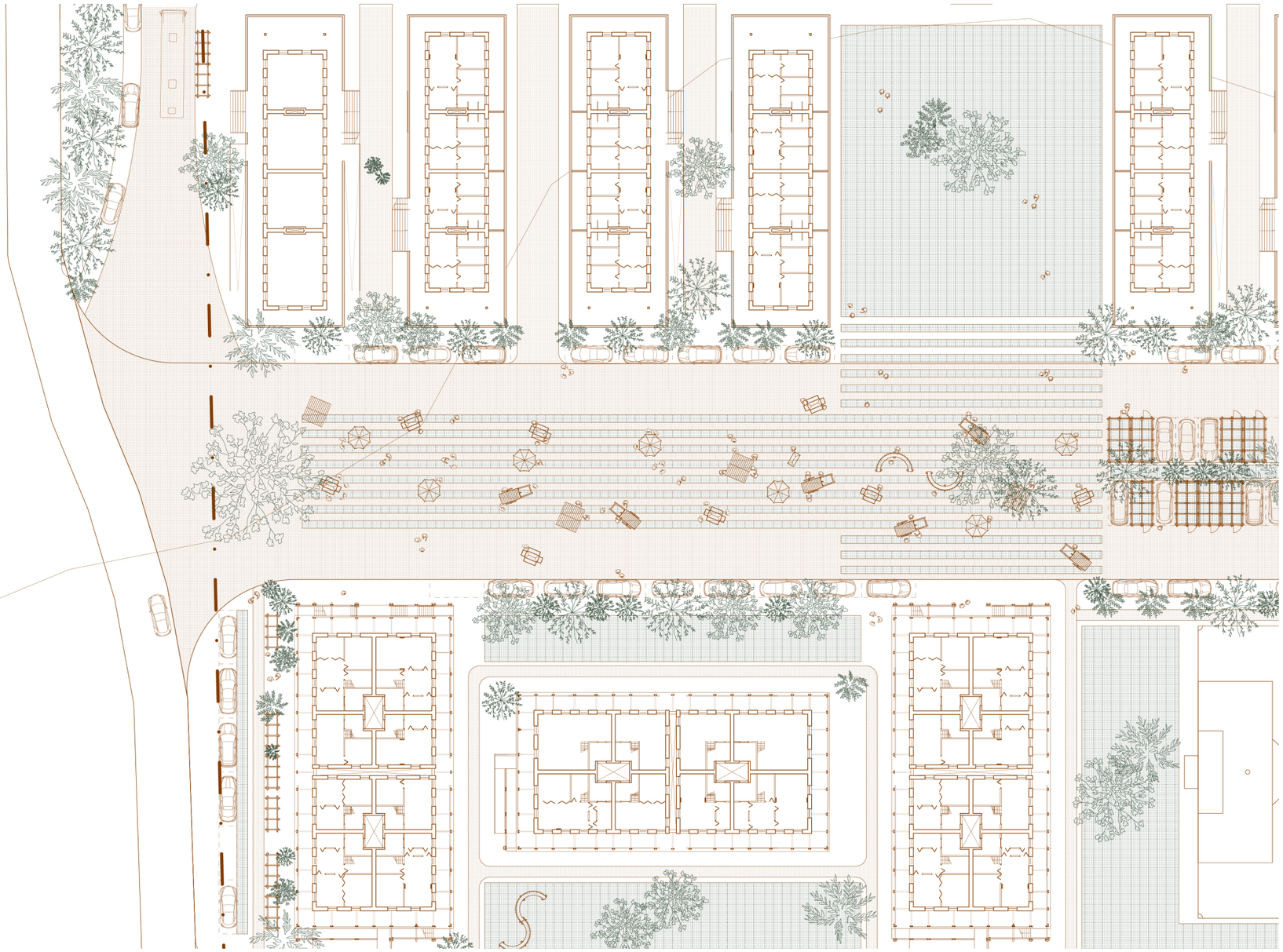
scale: 1:200@A3

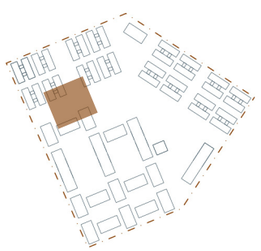


- SHARED SPACES -

forest connection & visitors parking

scale: 1:200@A3

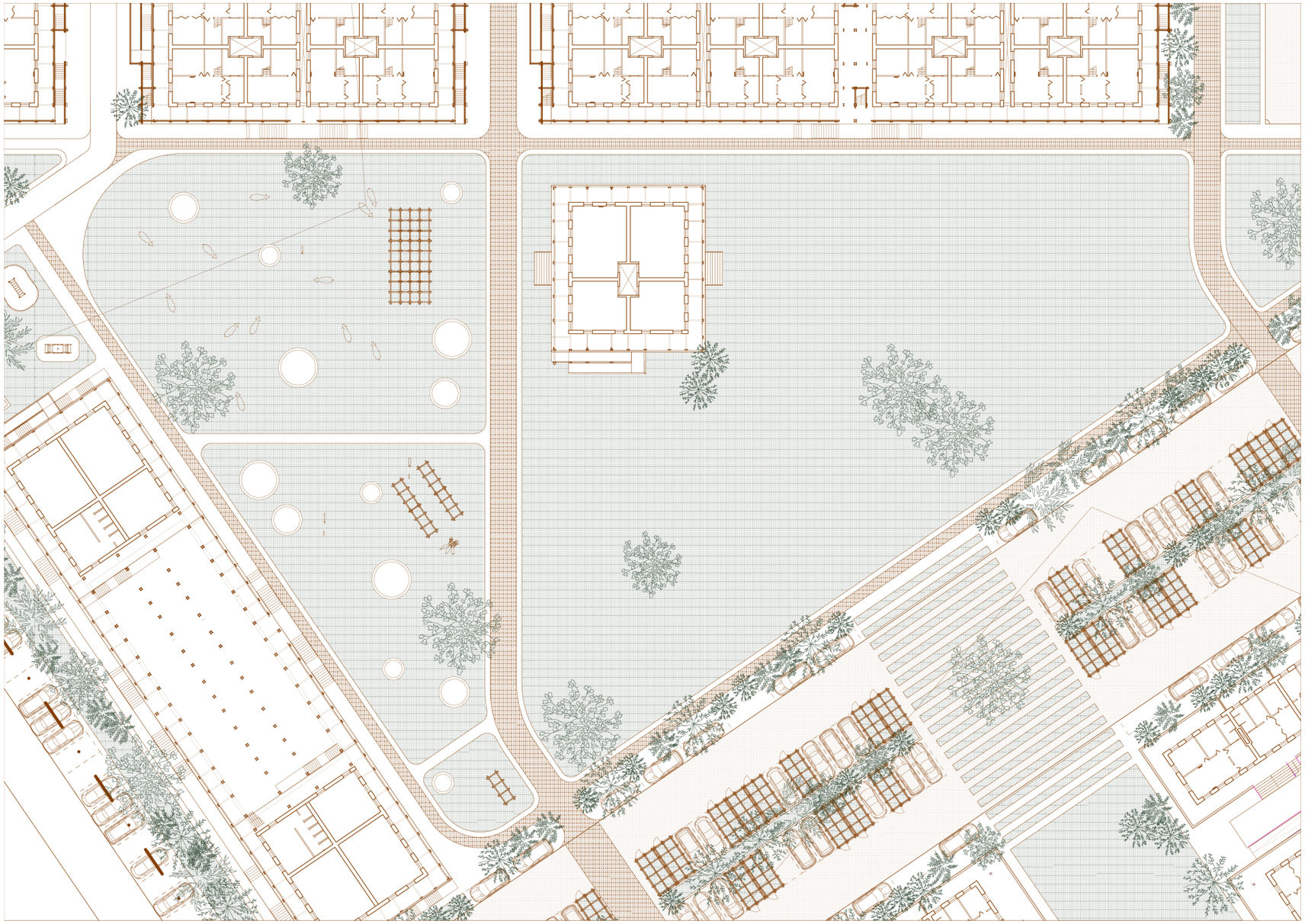


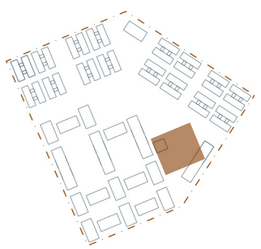


- SHARED SPACES -

weekly market space

scale: 1:200@A3

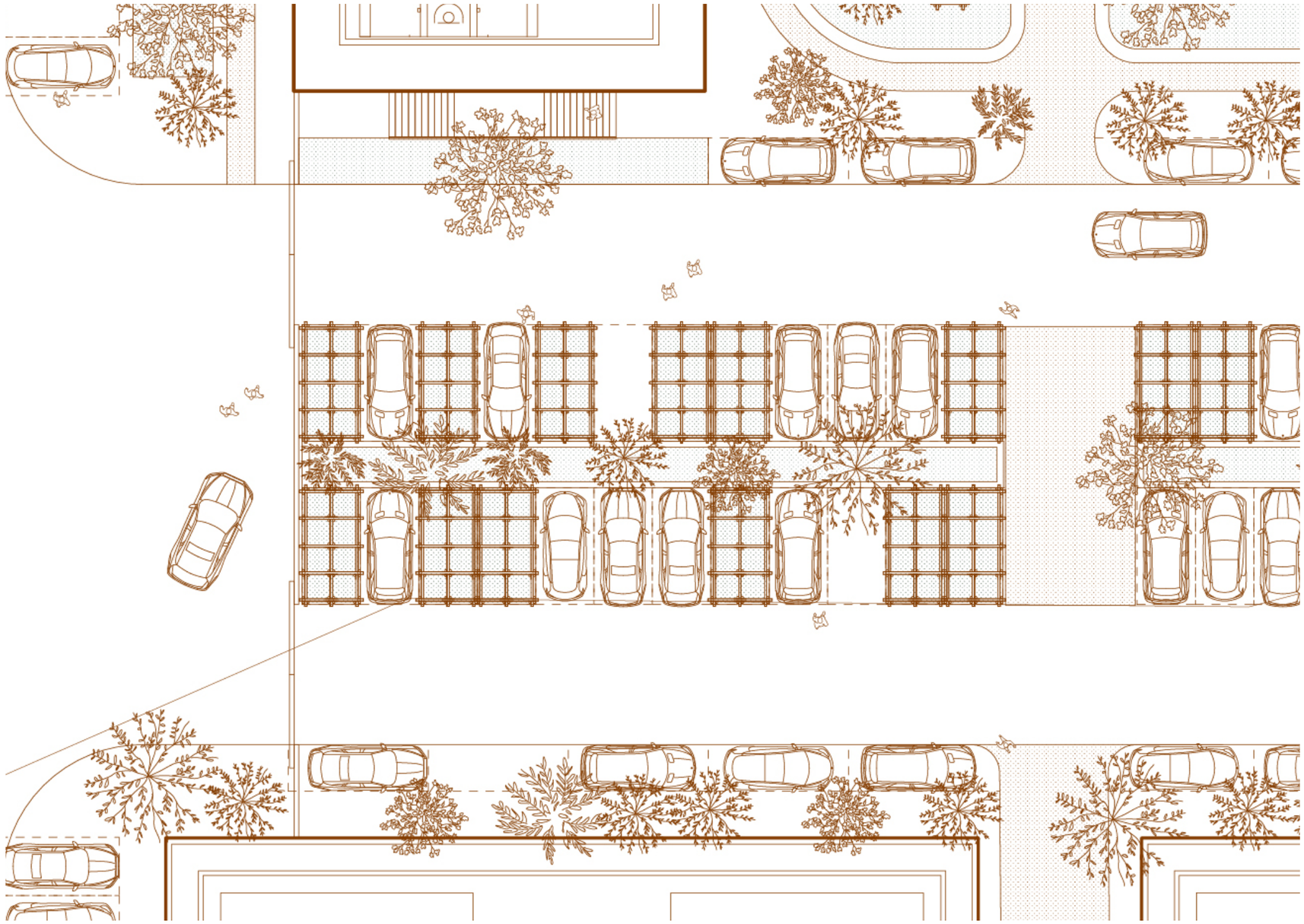


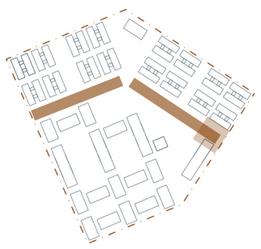


- SHARED SPACES -

farmers market & animals

scale: 1:200@A3

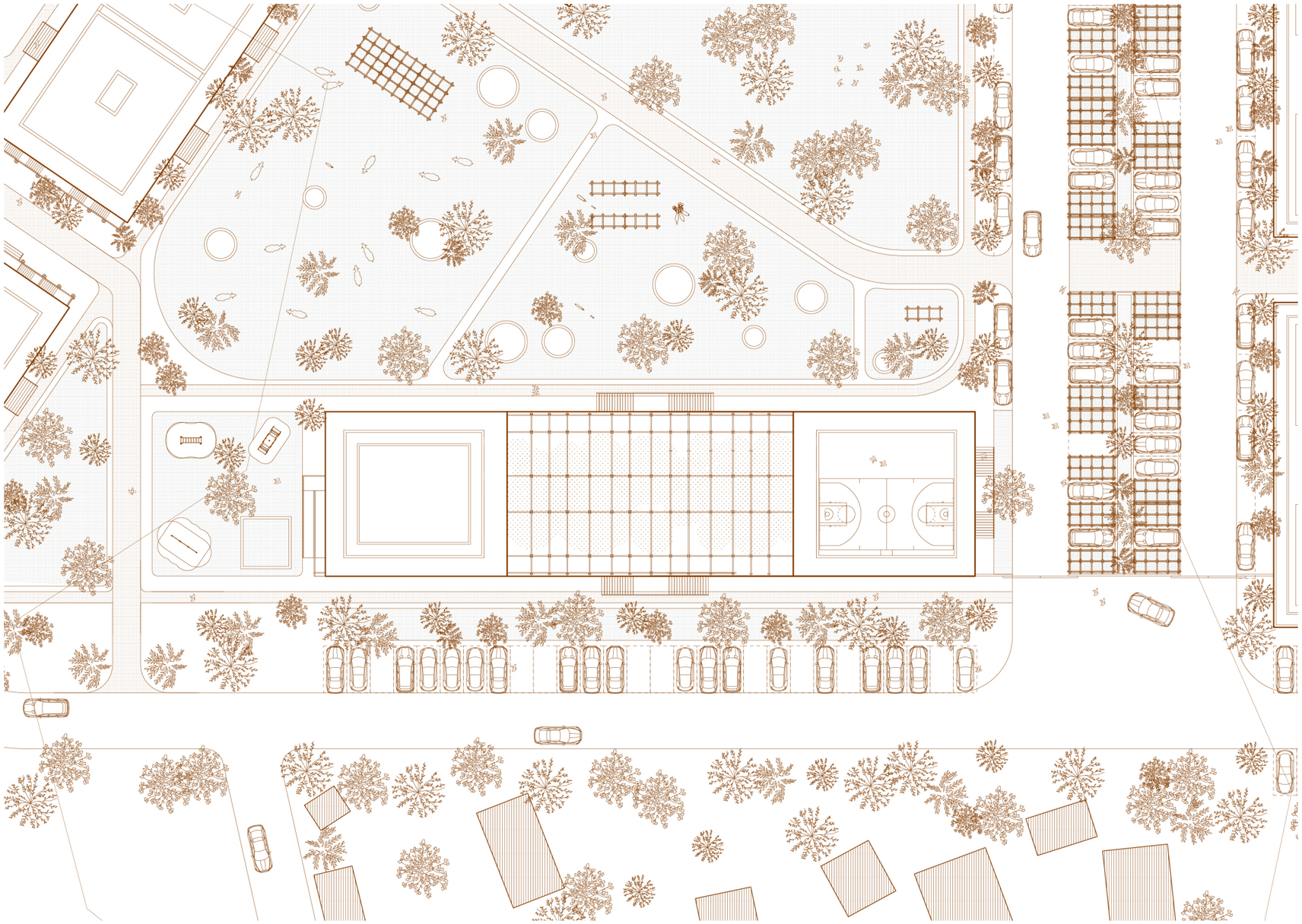


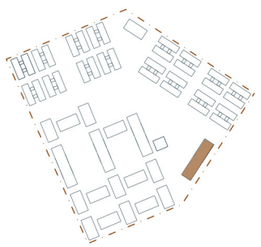


- SHARED SPACES -

PARK(ing) - parking & allotment garden concept

scale: 1:100@A4

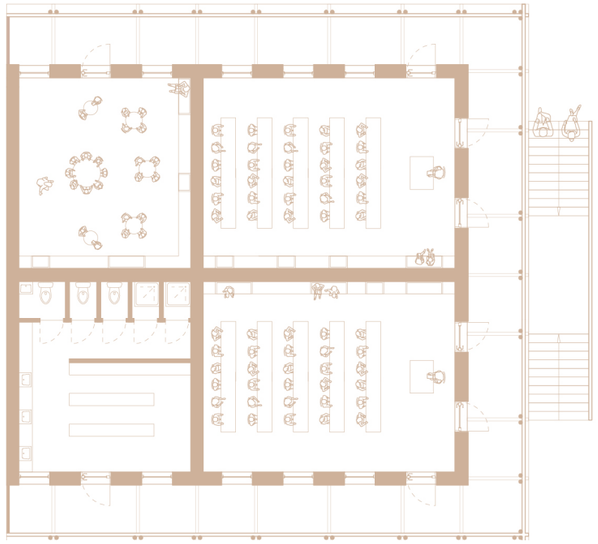




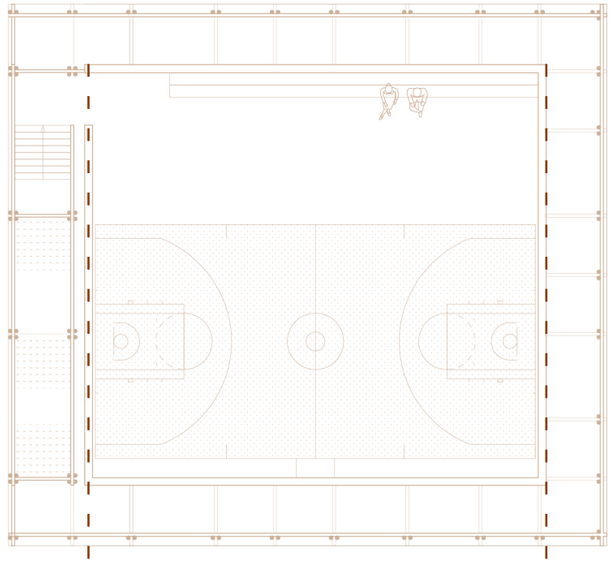
- PRIMARY SCHOOL -

context plan

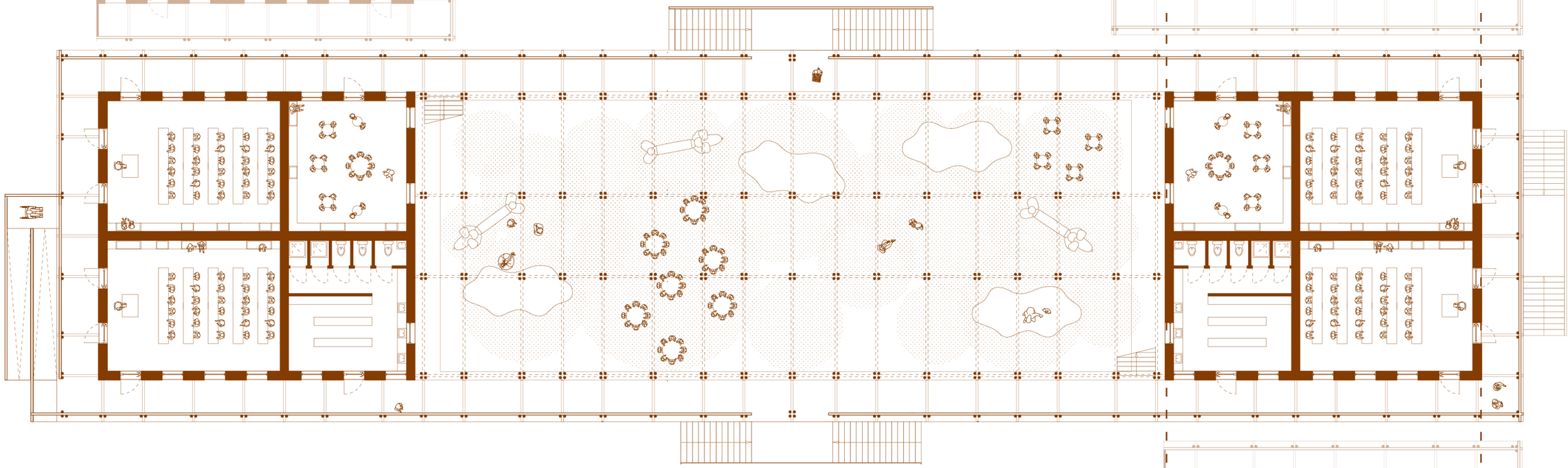
scale: 1:500@A3



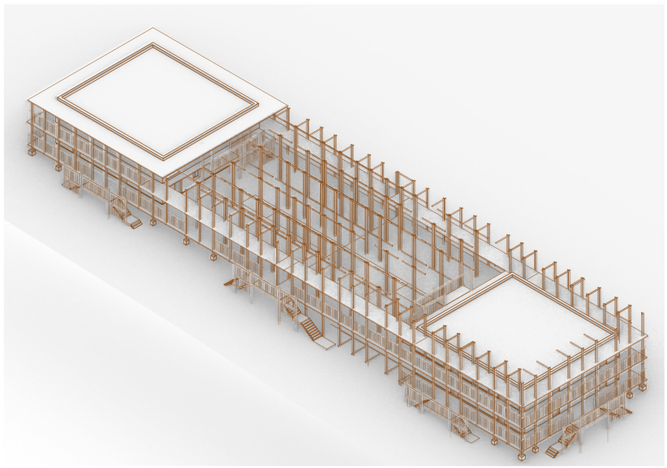
FLOOR 01

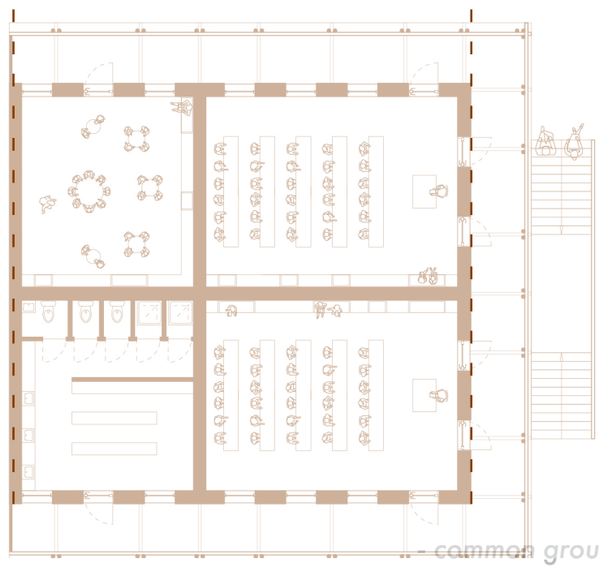


ROOF PLAN



FLOOR 00





FLOOR -01

- PRIMARY SCHOOL -

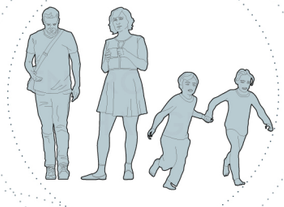
floor plans

scale: 1:200@A3

- building design -

FAMILIES & SINGLE / COUPLE HOUSEHOLDS

LOCAL FARMERS



RURAL-URBAN MIGRATION

LOW-MIDDLE INCOME

RE-LOCATION

LIVELIHOODS

RURAL LIVELIHOODS

URBAN LIVELIHOODS

FARMING

FARMING AS INCOME SOURCE

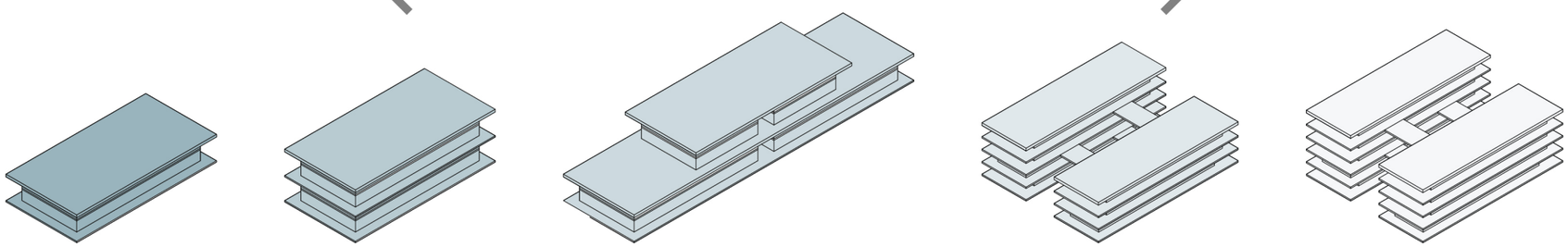
FARMING FOR THE HOUSEHOLD

LIMITED PLANTING/ URBAN FARMING

DEPENDENCY ON GROUND CONNECTION

high

low

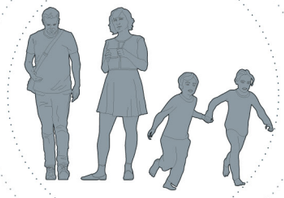


DENSITY

low

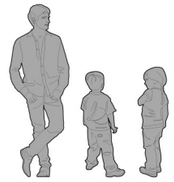
high

LOCAL
FARMERS



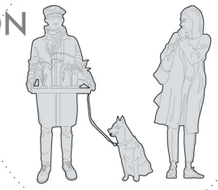
RURAL-URBAN
MIGRATION

LOW-MIDDLE
INCOME



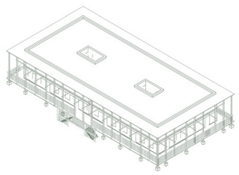
RE-LOCATION

LOCAL
CRAFTSMEN



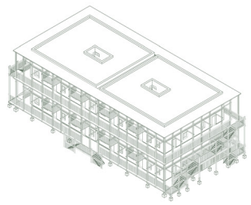
CONDOMINIUM
DWELLERS

YOUNG
PROFESSIONALS



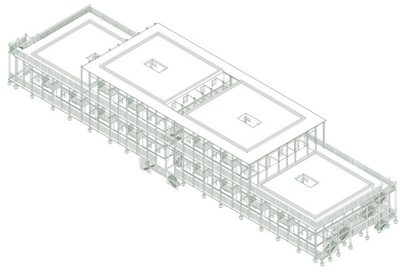
TYPE 01.1

dwellings: 4
sizes:
storeys: 2 (1 duplex)
contract: mixed ownership/rentals
inhabitant group: farmers



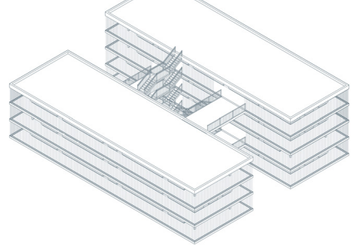
TYPE 01.2

dwellings: 16
sizes: sizes: 66m2, 98m2
storeys: 4 (2 duplex)
contract: mixed ownership/rentals
inhabitant group: mixed,
rural-urban migration



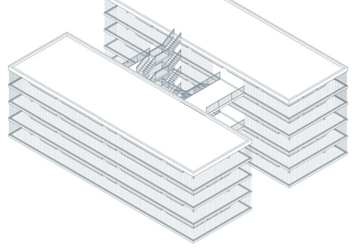
TYPE 01.3

dwellings: 24
sizes: sizes: 66m2, 98m2
storeys: 2-4 (1-2 duplex)
contract: mixed ownership/rentals
inhabitant group: mixed,
rural-urban migration



TYPE 02.1

dwellings: 28
sizes: 38m2, 50m2
storeys: 3-4
contract: mixed ownership/rentals
inhabitant group: mixed,
city dwellers



TYPE 02.2

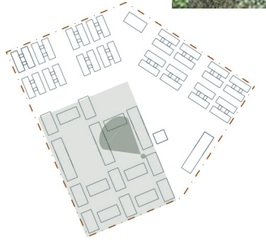
dwellings: 36
sizes: 38m2, 50m2
storeys: 4-5
contract: mixed ownership/rentals
inhabitant group: mixed,
city dwellers

- BUILDING TYPOLOGIES -

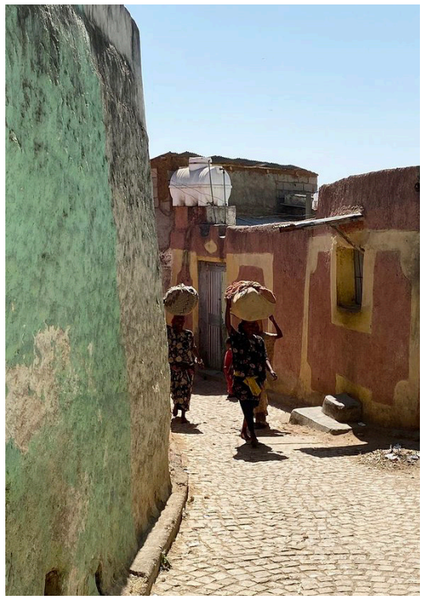
isometric view

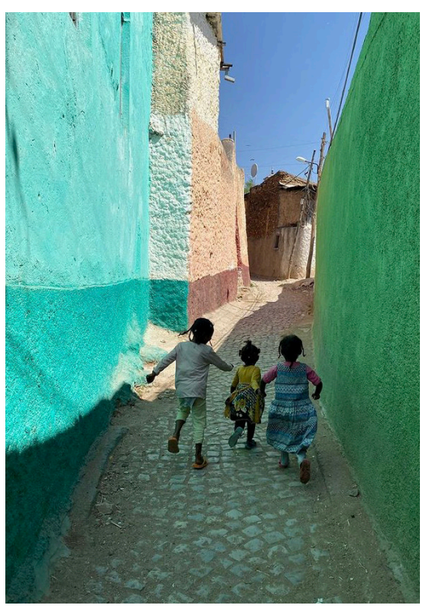
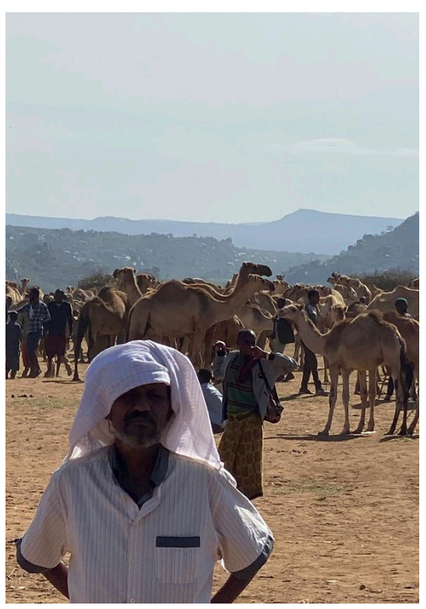
scale: 1:1000@A3

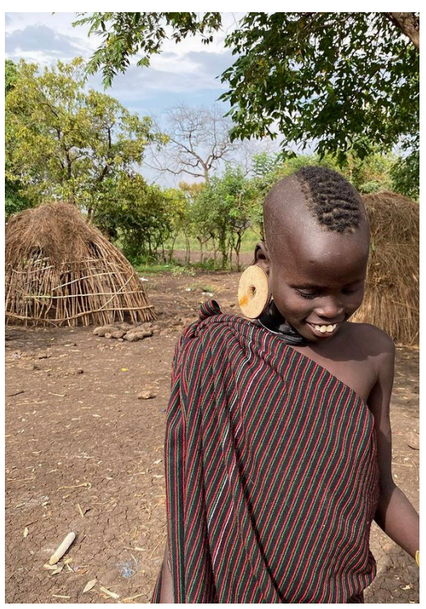
- building design -
typology 01



- TYPOLOGY 01 -
courtyard view





- INHABITANT GROUP -

rural urban migration

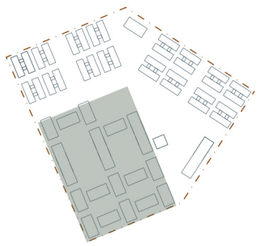
source: Allison Wong

- INHABITANT GROUP -

low- middle income group

source: Video "Emerging Spaces – a day in Addis Ababa's condominiums"

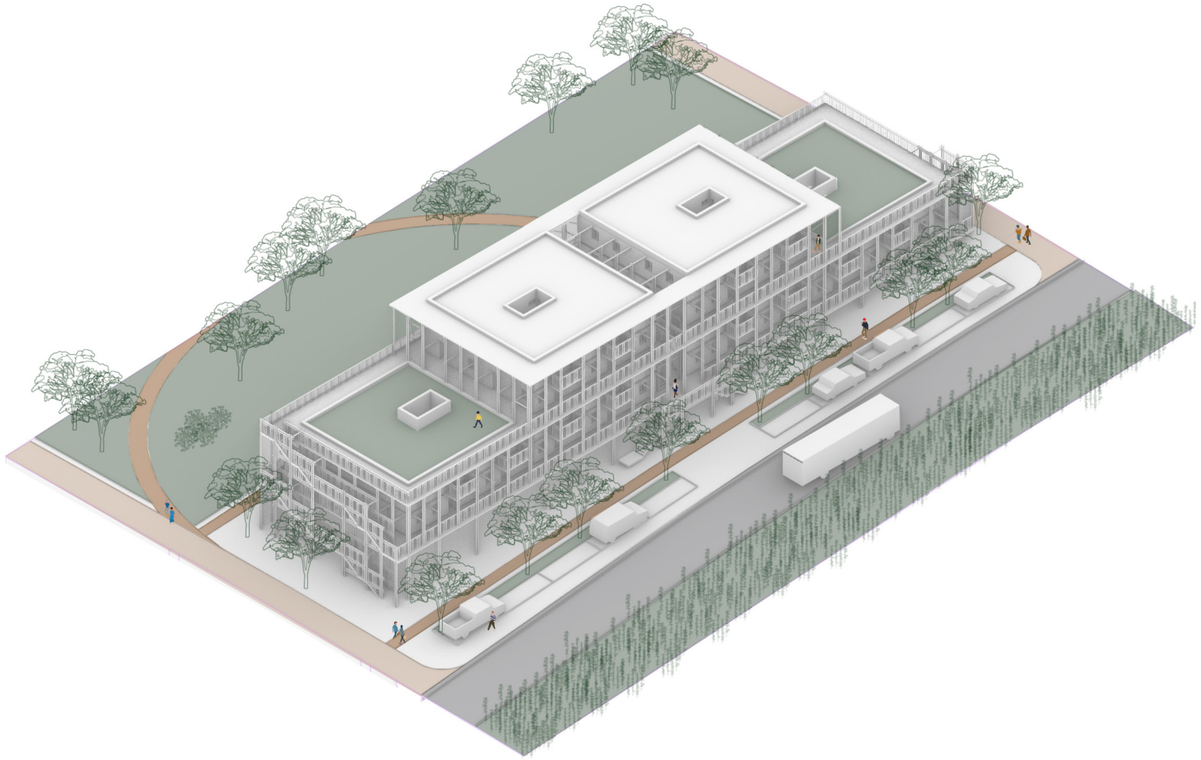
2012, _Spaces

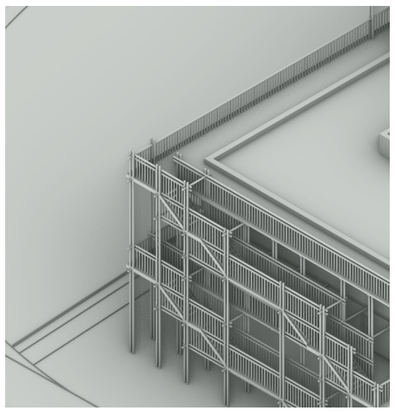


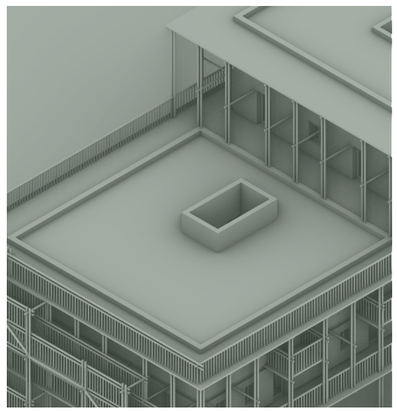
- TYPIOLOGY 01 -

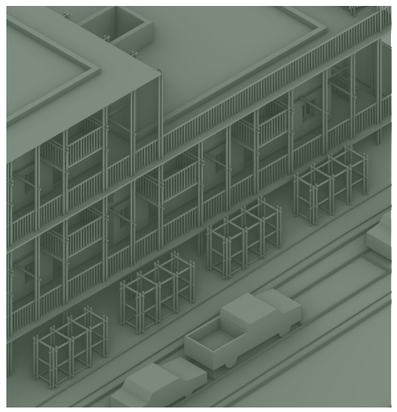
contextual ground floor plan

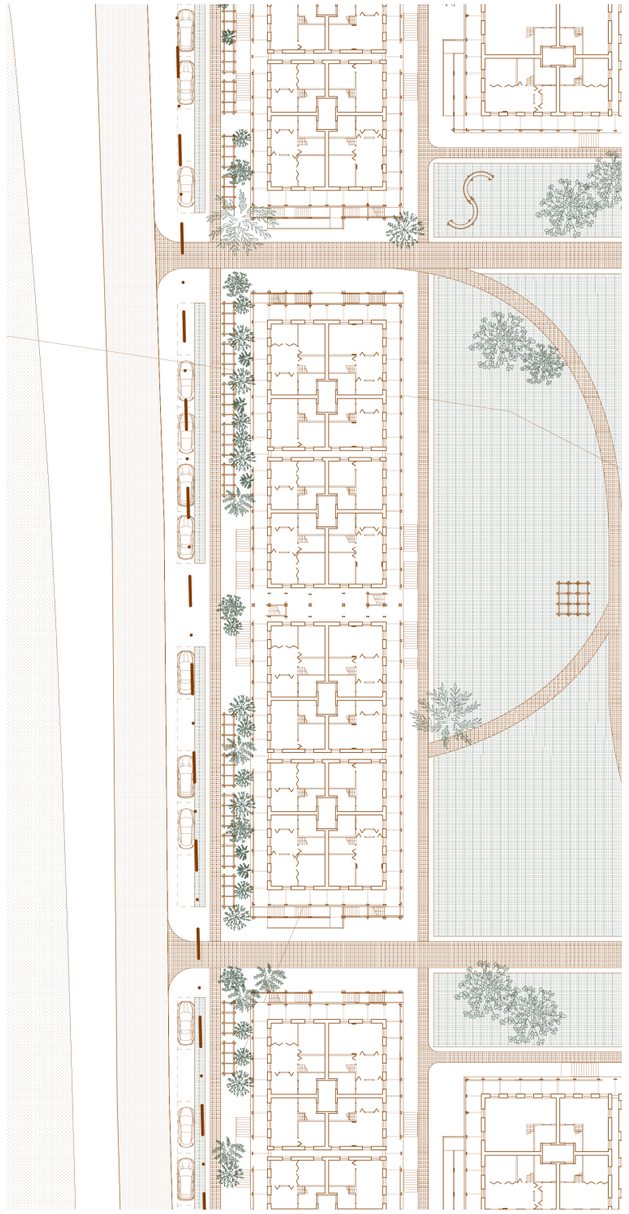
scale: 1:500@A2

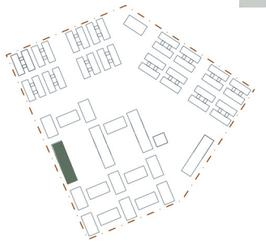




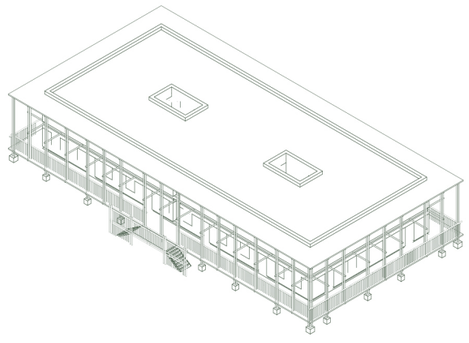




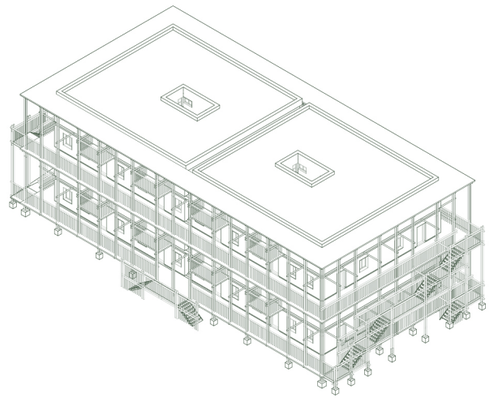




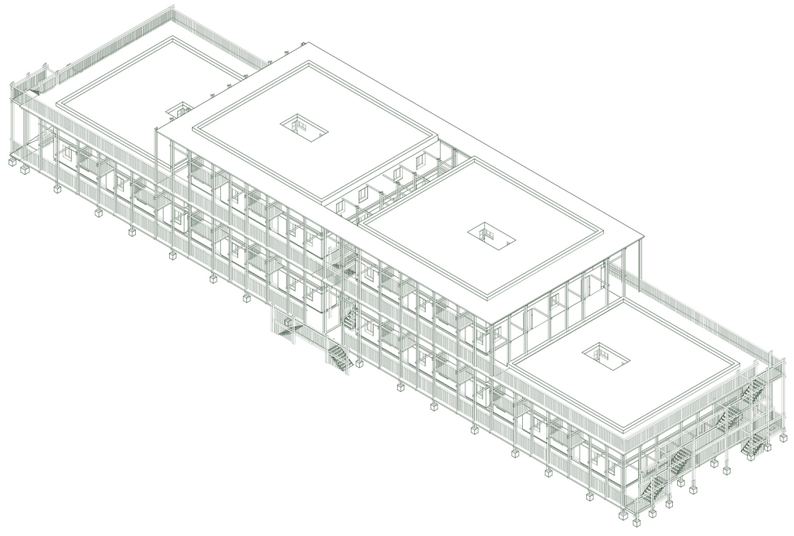
- TYPIOLOGY 01 -
permaculture/commercial edge condition



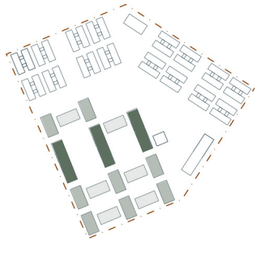
TYPE 01.1



TYPE 01.2



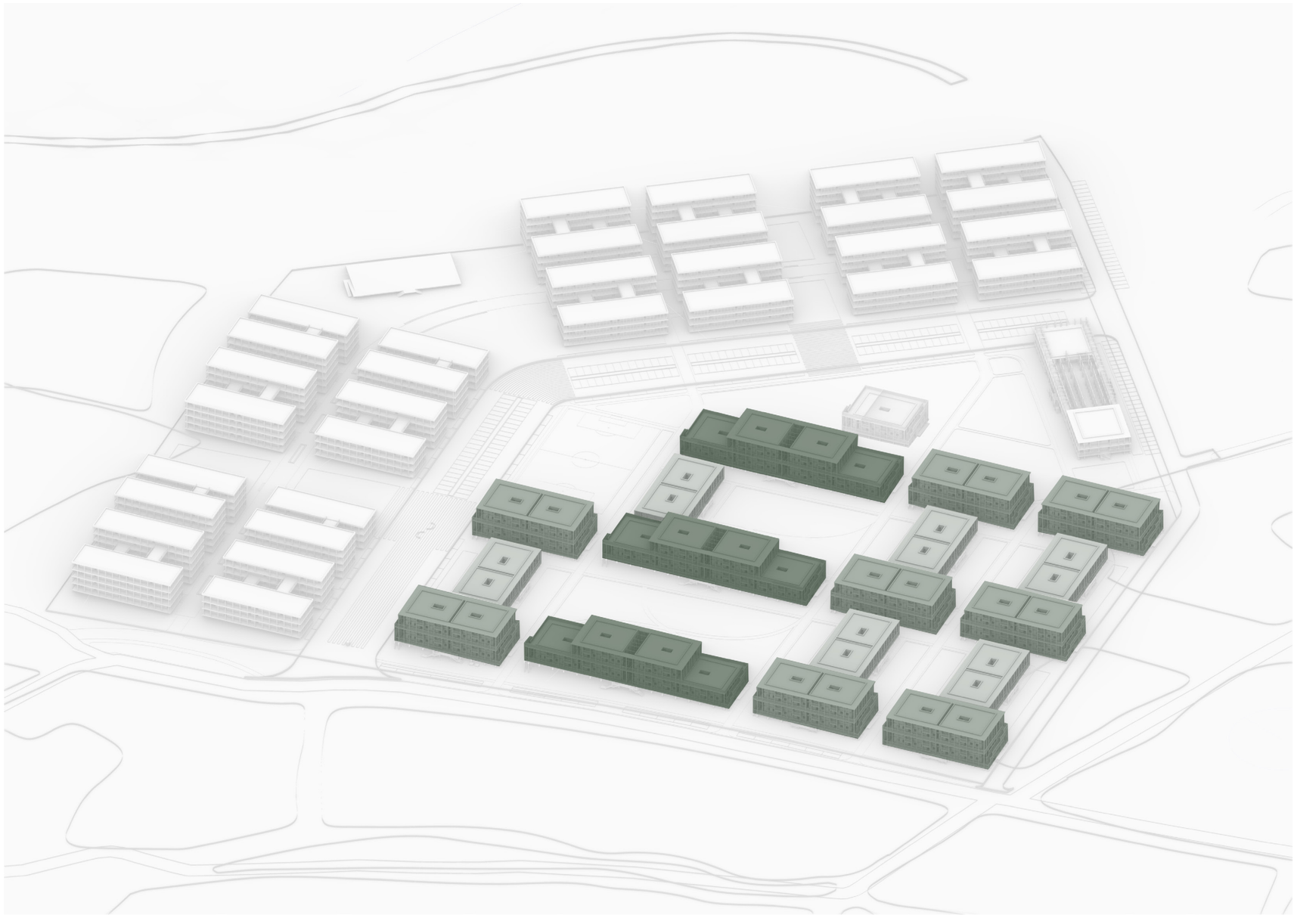
TYPE 01.3



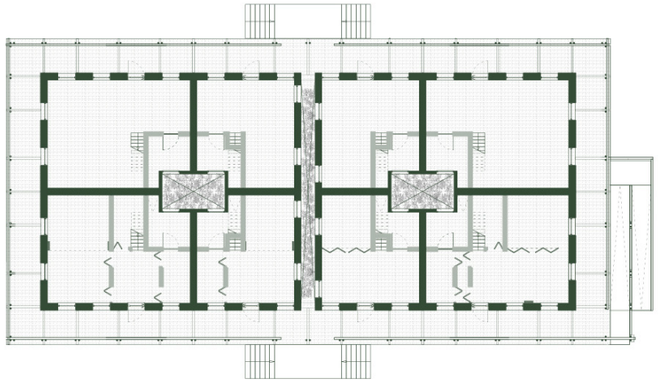
- TYPIOLOGY 01 -

building variations - isometric view

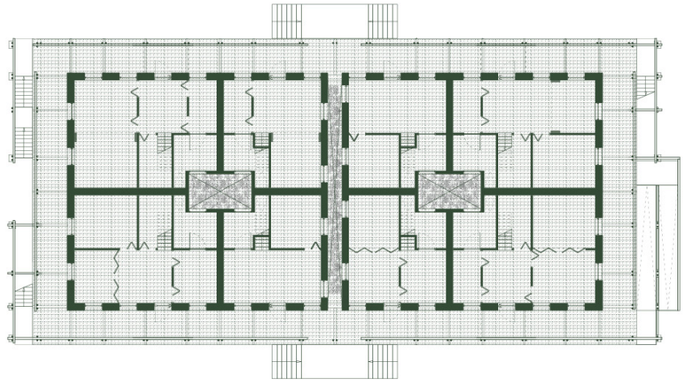
scale: 1:500@A3



- TYPIOLOGY 01 -
building variations in context - isometric view



TYPE 01.1



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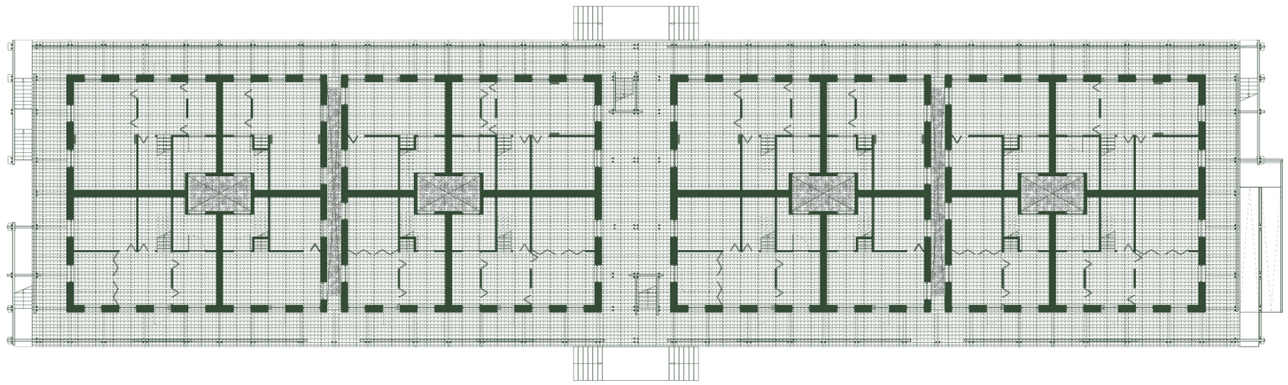
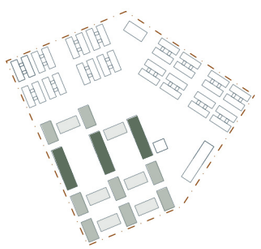


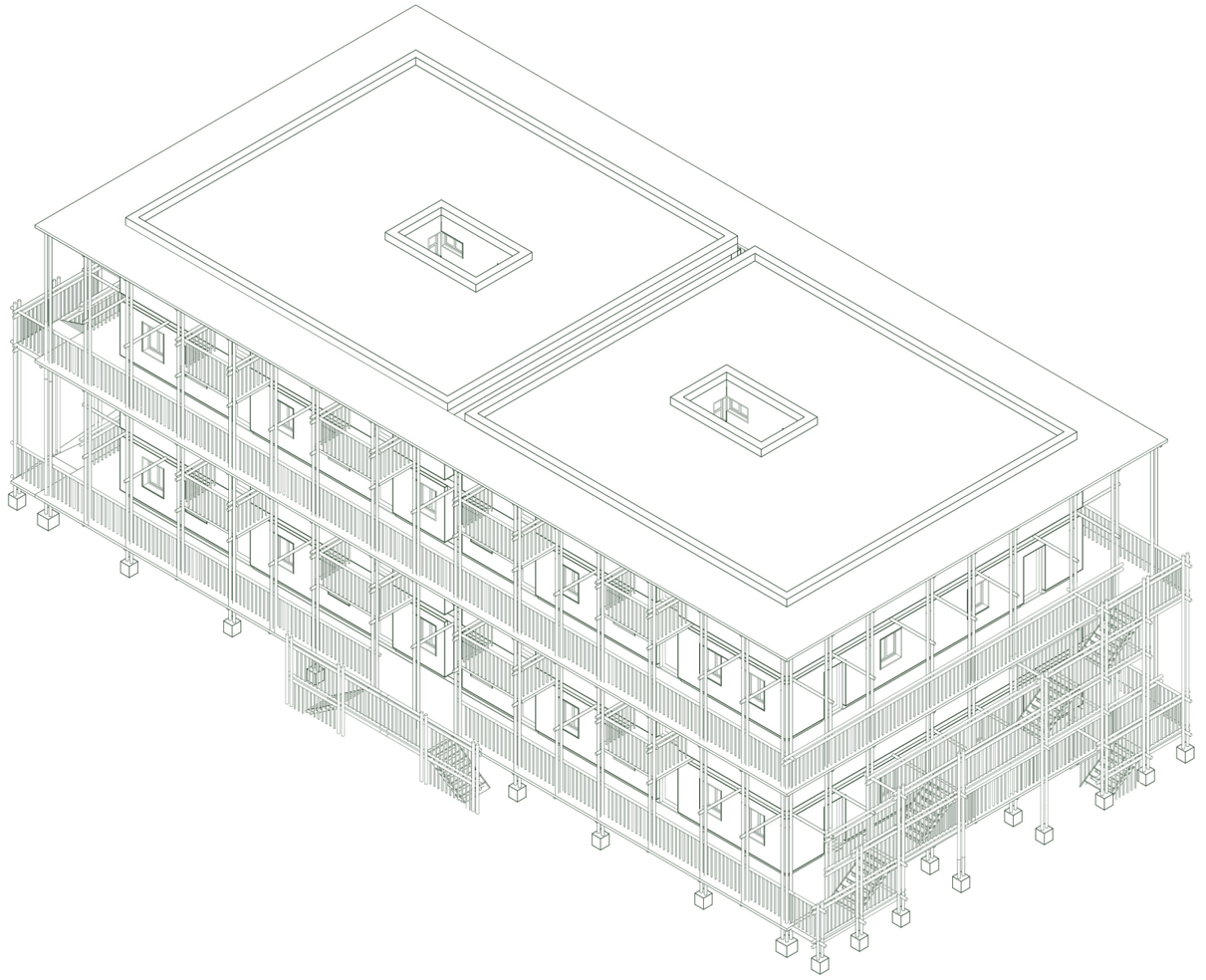
TYPE 01.3

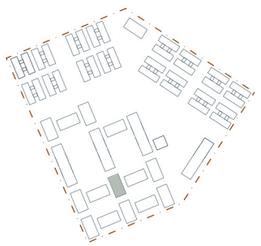


- TYPIOLOGY 01 -

ground floor plans

scale: 1:500@A4

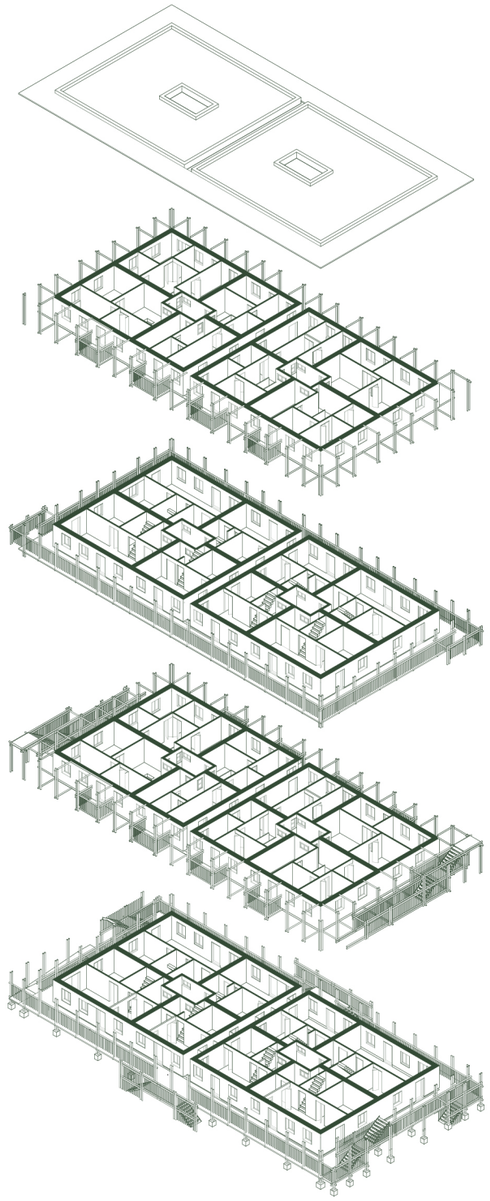




- TYPOLOGY 01 -

type 01.2 - isometric view

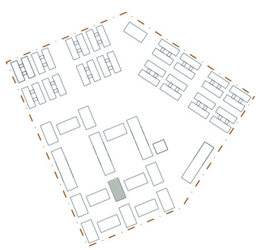
scale: 1:200@A3

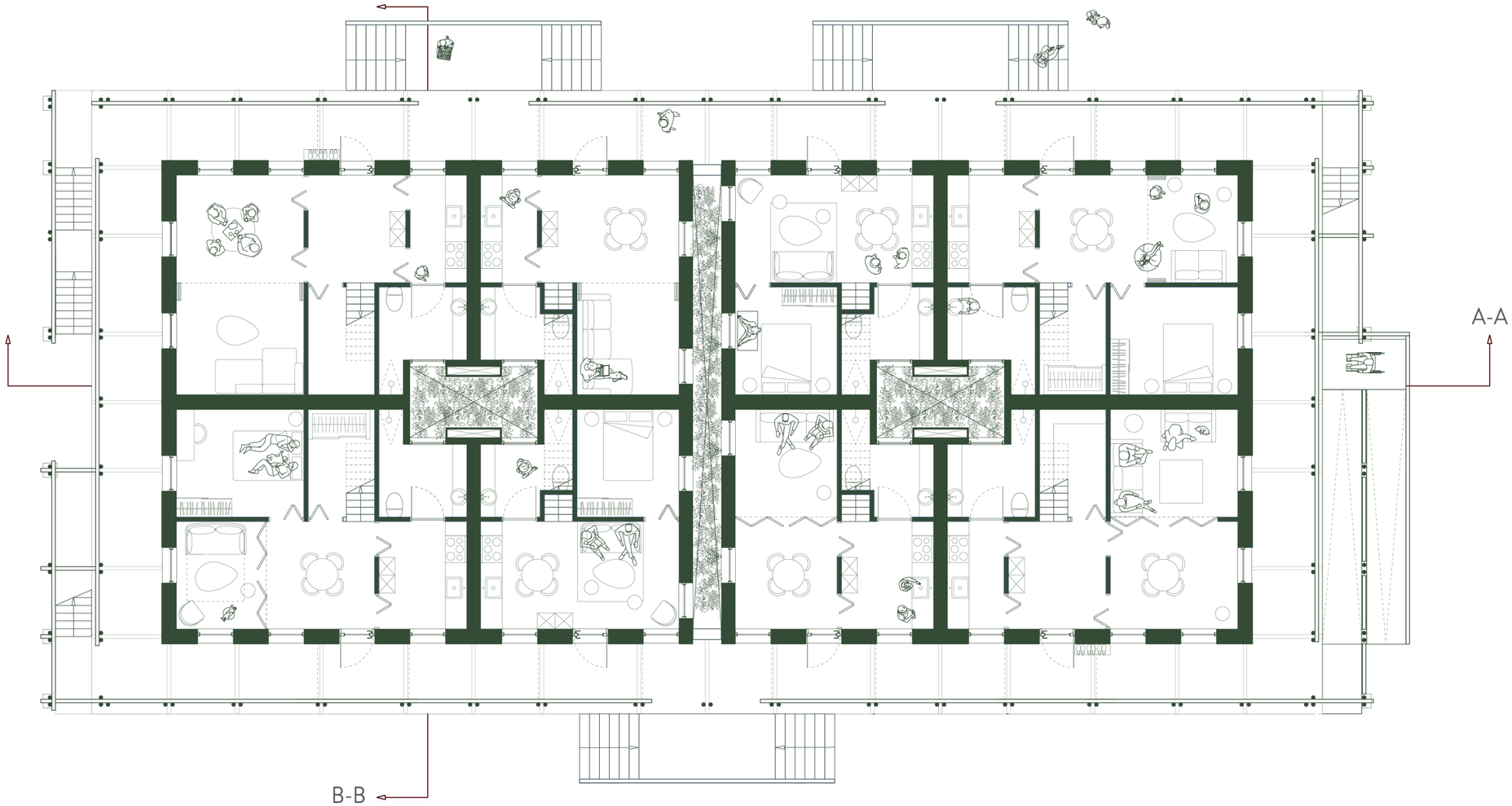


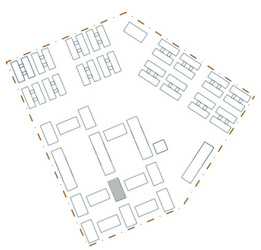
- TYPIOLOGY 01 -

type 01.2 - exploded isometric view

scale: 1:500@A3



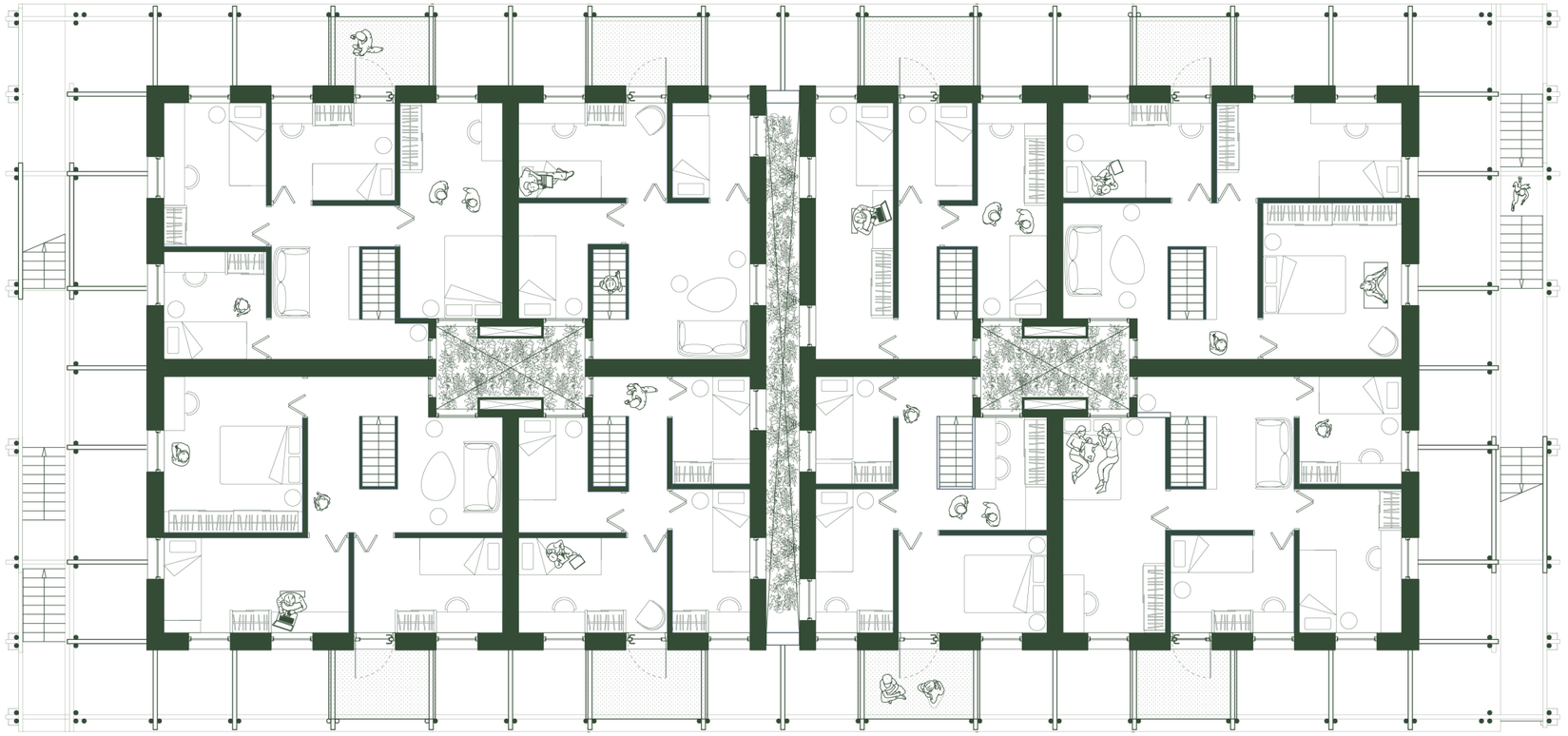


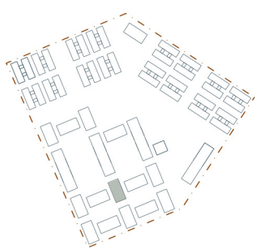


- TYPOLOGY 01 -

typical ground floor plan

scale: 1:100@A2

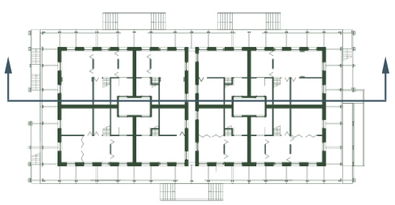




- TYPOLOGY 01 -

typical floor plan duplex

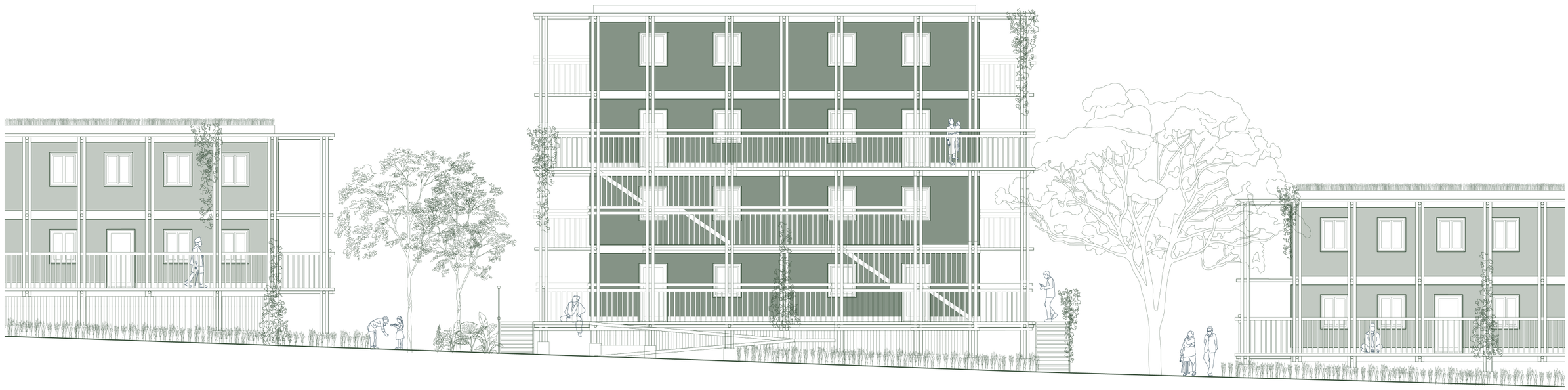
scale: 1:100@A2

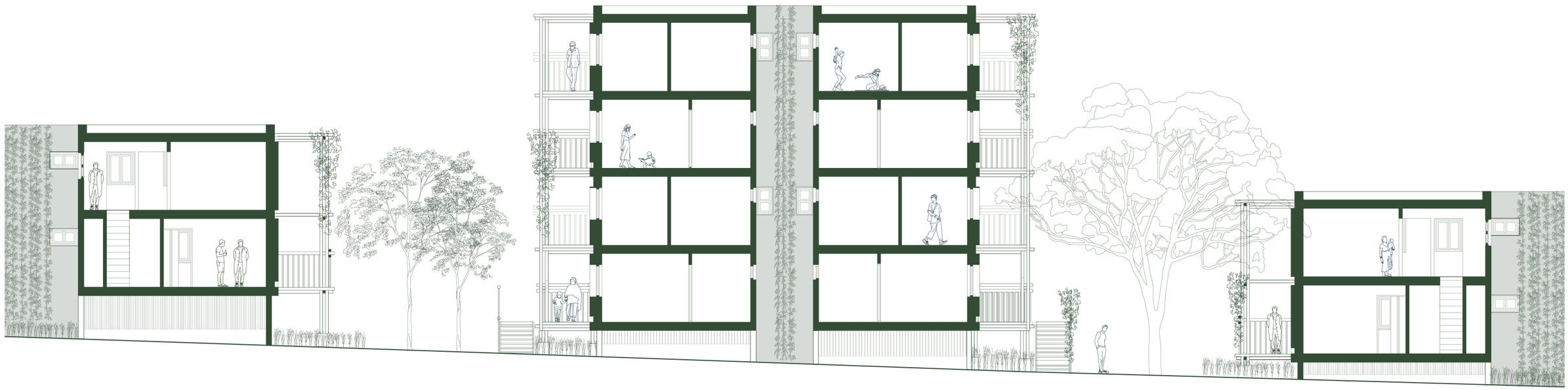


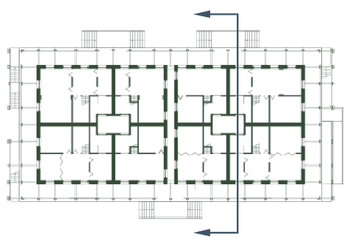
- TYPOLOGY 01.2 -

West elevation & section A-A

scale: 1:100@A2





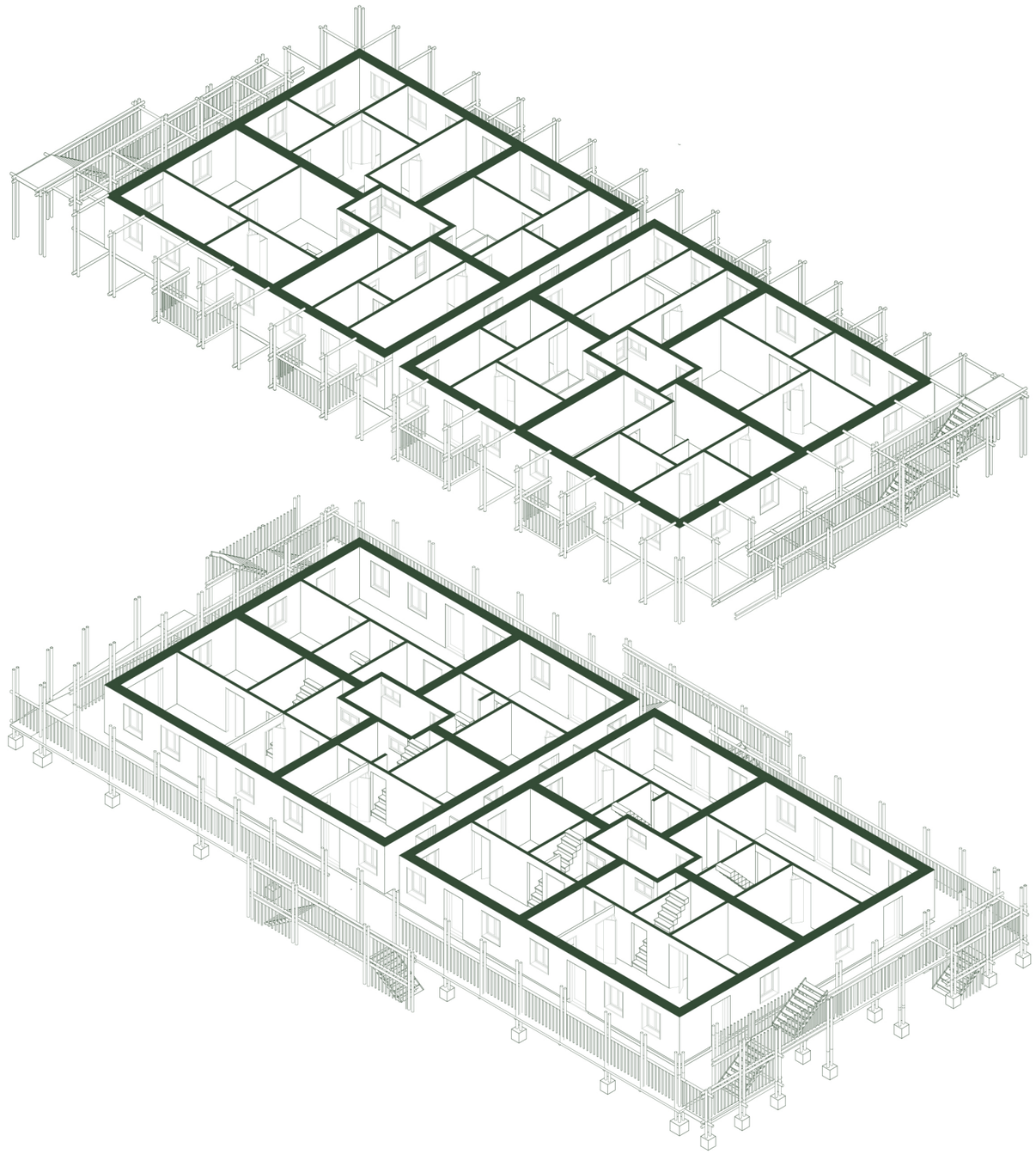


- TYPOLOGY 01.2 -

South elevation & section B-B

scale: 1:100@A2

- TYPOLOGY 01 -
gallery view



- TYPOLOGY 01 -

isometric view - dwellings

scale: 1:200@A3

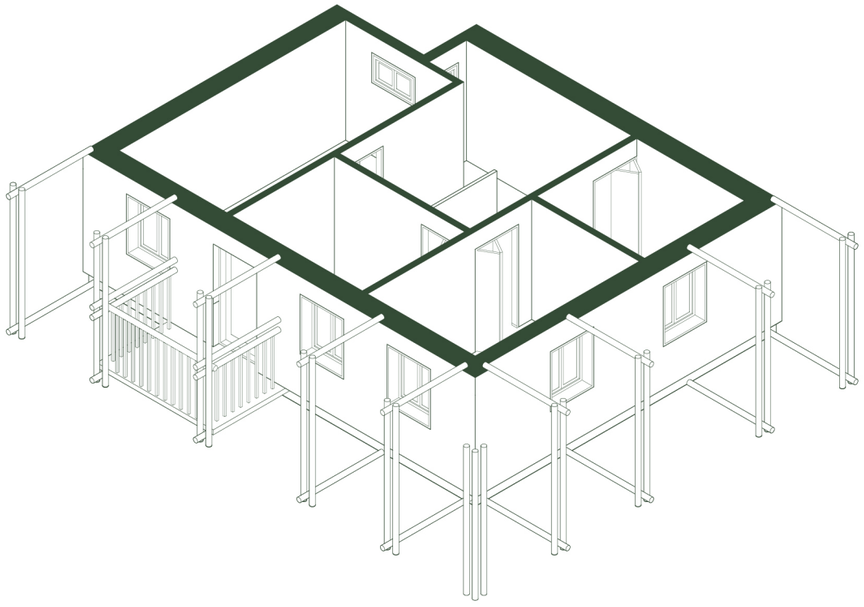
Polyvalence

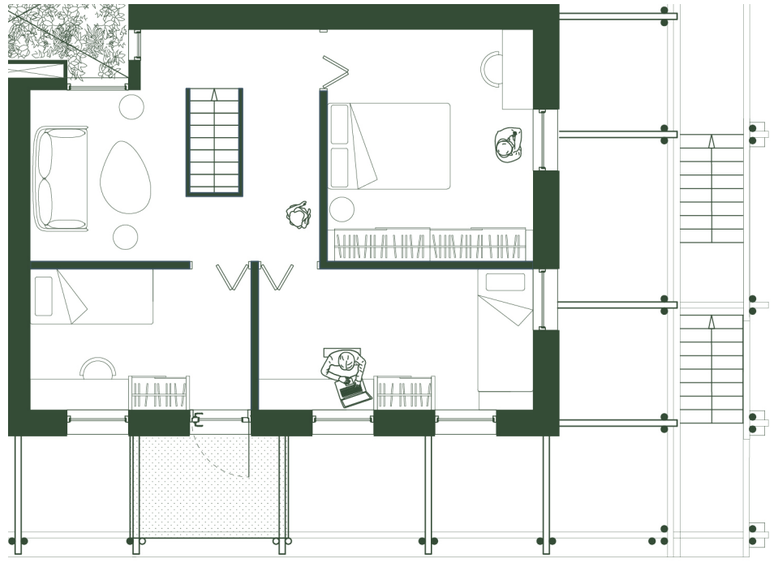
"The Competence of Form and Space with Regard to Different Interpretations"

*"...to be effective space needs to be **flexible**, **organic** and **open to interpretation**, **fit for purpose** in an increasingly dynamic and **uncertain world**."*

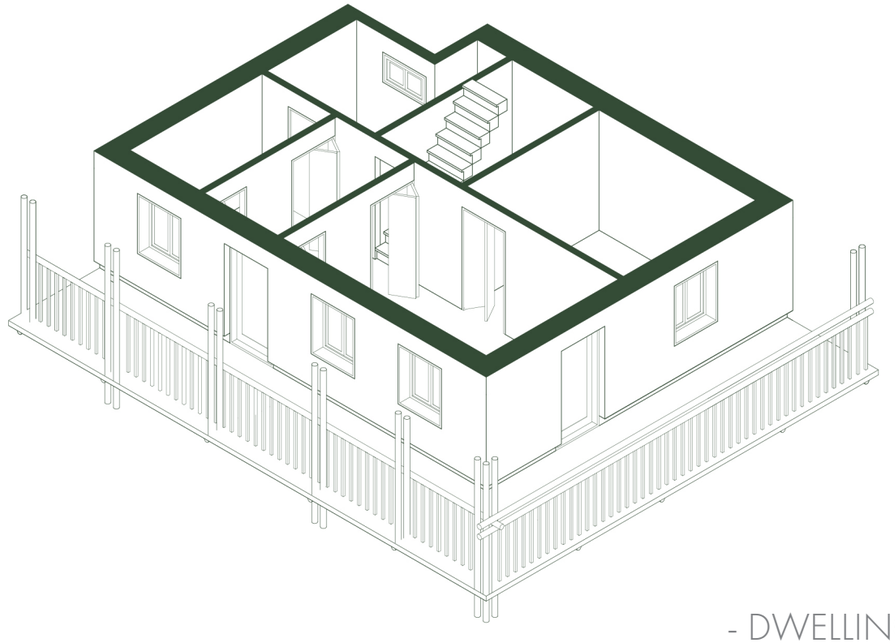
- HERMAN HERTZBERGER -

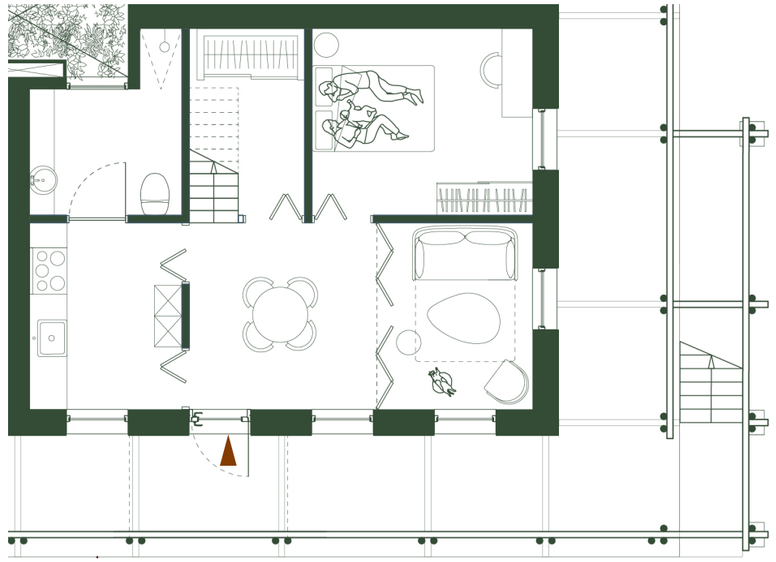
source:
https://onlinelibrary.wiley.com/doi/abs/10.1002/ad.1816



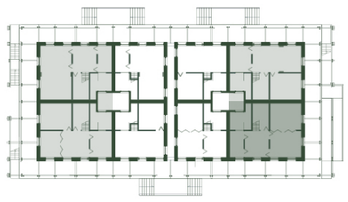


DUPLEX FLOOR





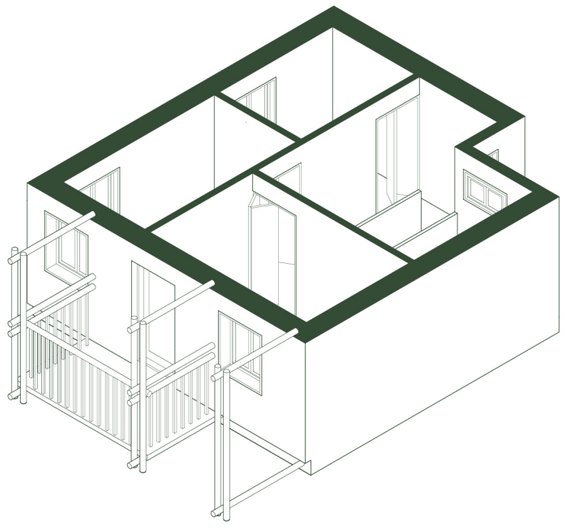
ENTRANCE FLOOR

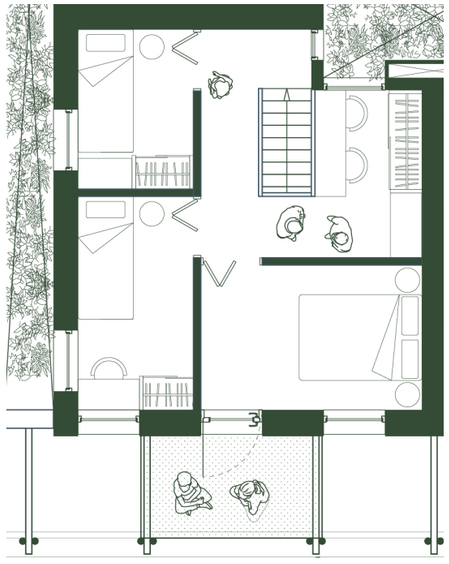


- DWELLING TYPE A -

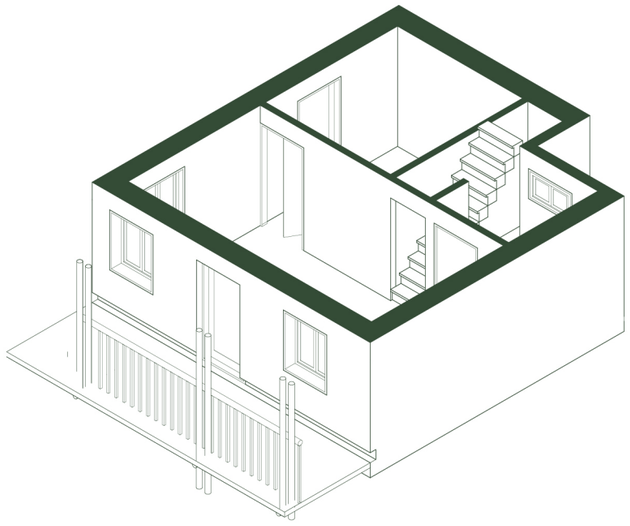
98m2 - 3-5 bedrooms

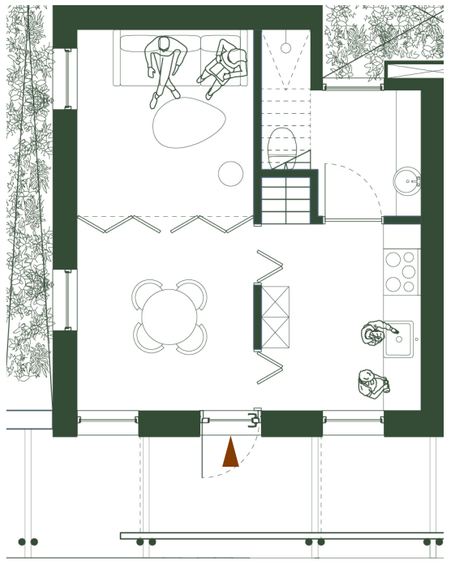
scale: 1:200@A3



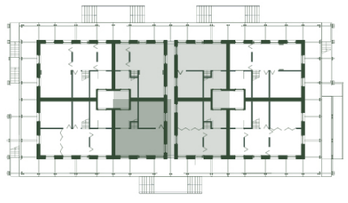


DUPLEX FLOOR





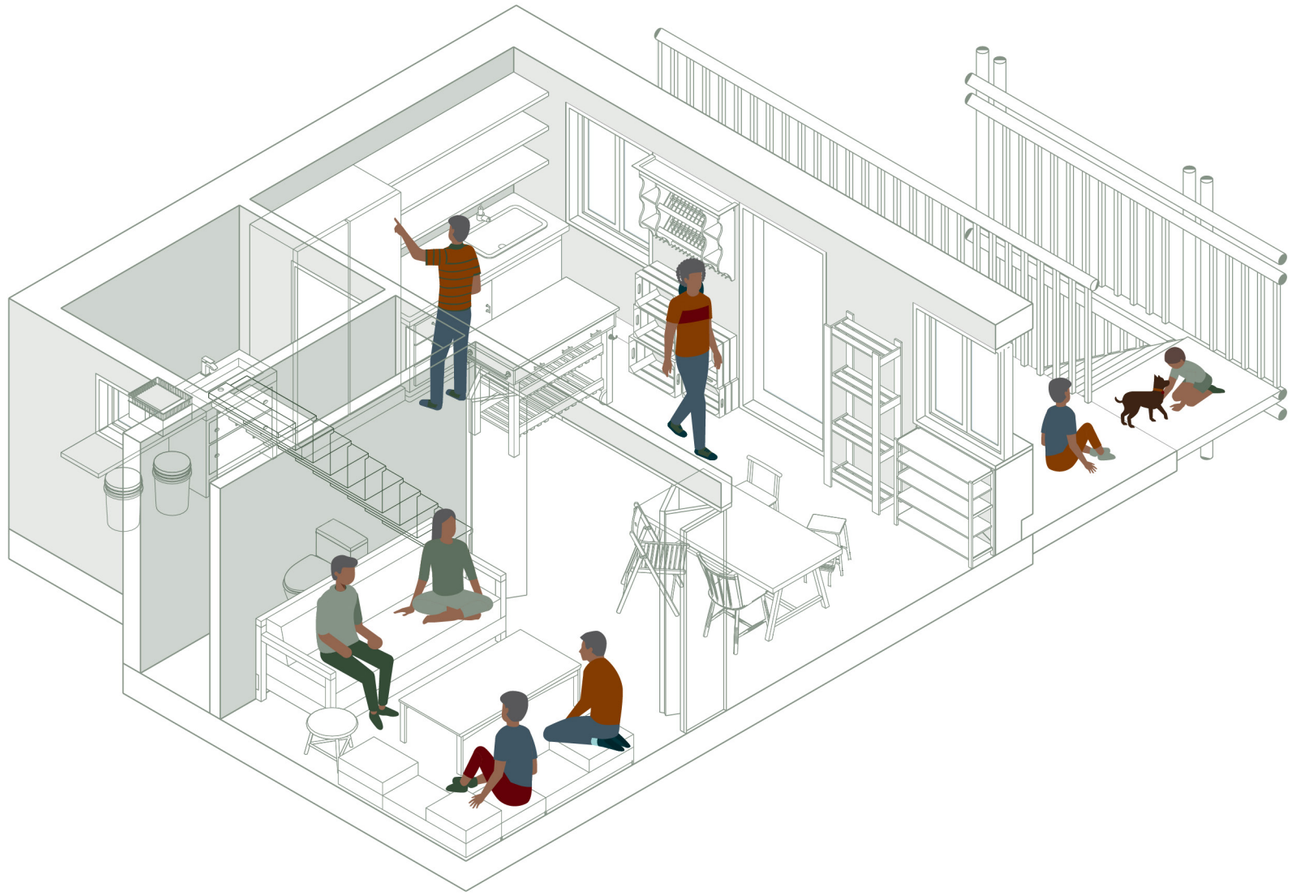
ENTRANCE FLOOR

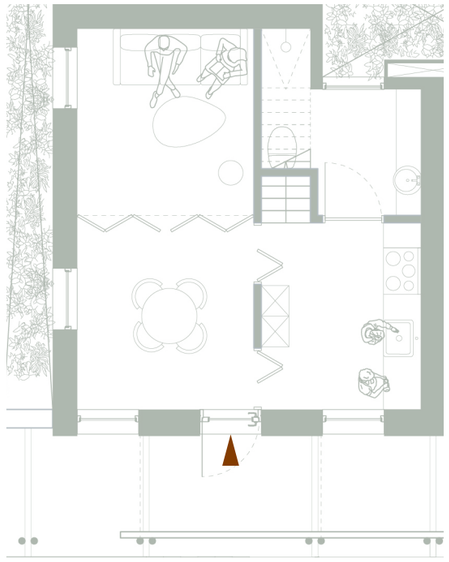


- DWELLING TYPE B -

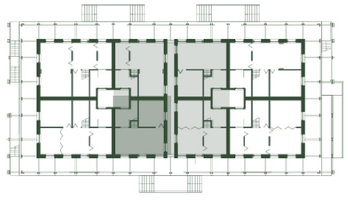
66m2 - 3-5 bedrooms

scale: 1:200@A3





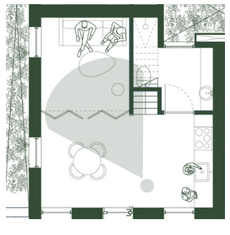
ENTRANCE FLOOR



- DWELLING TYPE B -

66m2 - 3-5 bedrooms

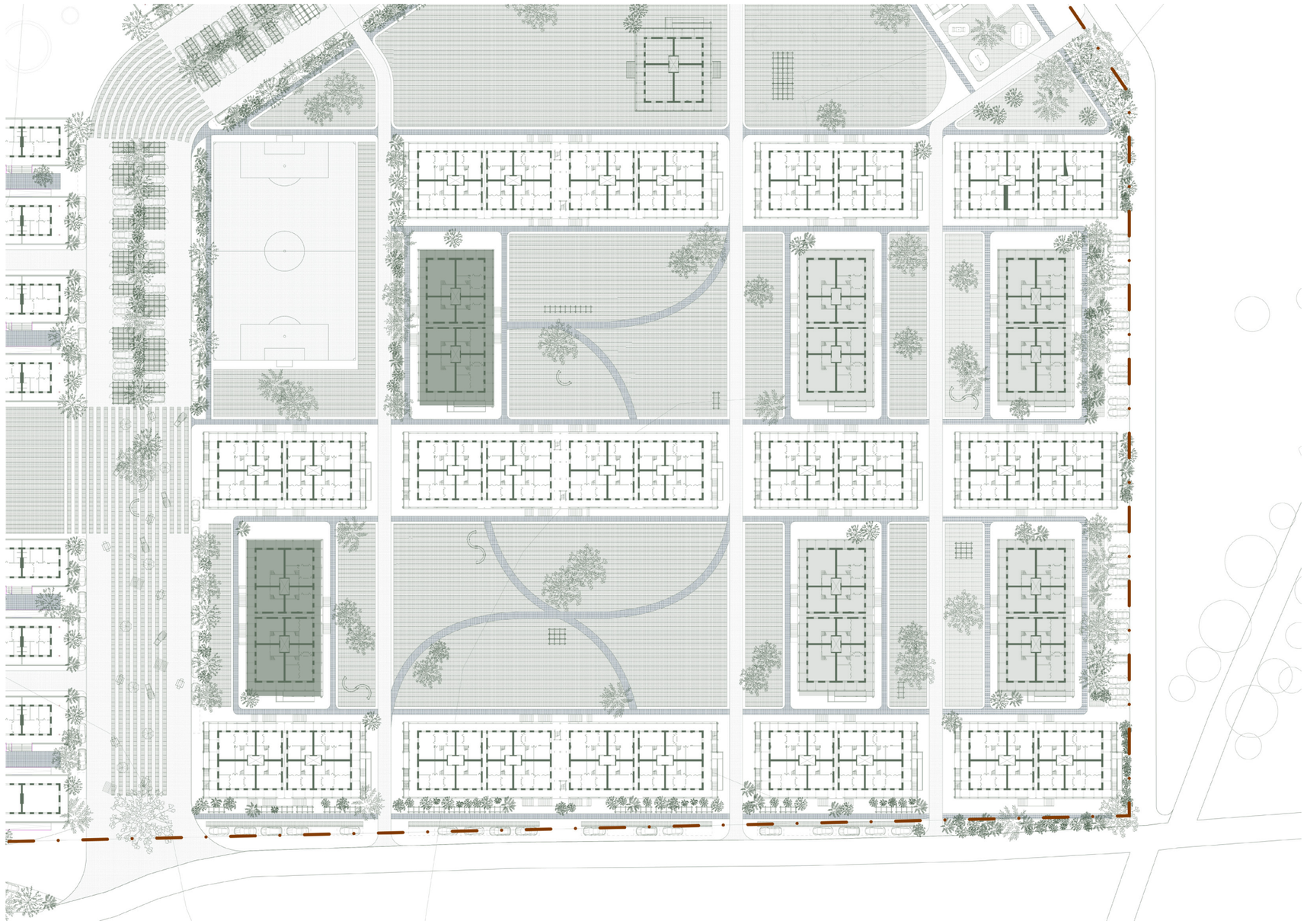
scale: 1:200@A3

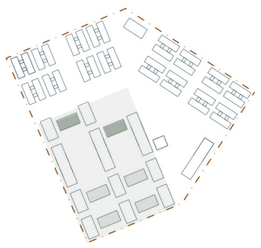


- DWELLING TYPE B -
living area

- DWELLING TYPE B -
kitchen & entrance area

- building design -
typology 01
farmers

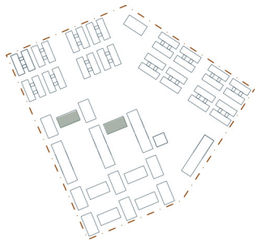




- TYPIOLOGY 01 -

contextual ground floor plan

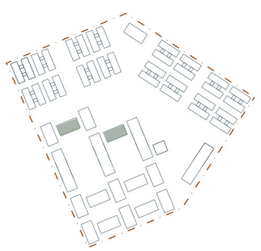
scale: 1:500@A2



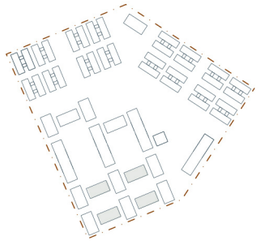
- INHABITANT GROUP -

rural-urban group

source: "Sowing the seeds of success: Ethiopia on a new path to explore global malt markets", 2015



- INHABITANT GROUP -
rural-urban group

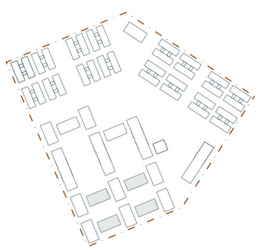


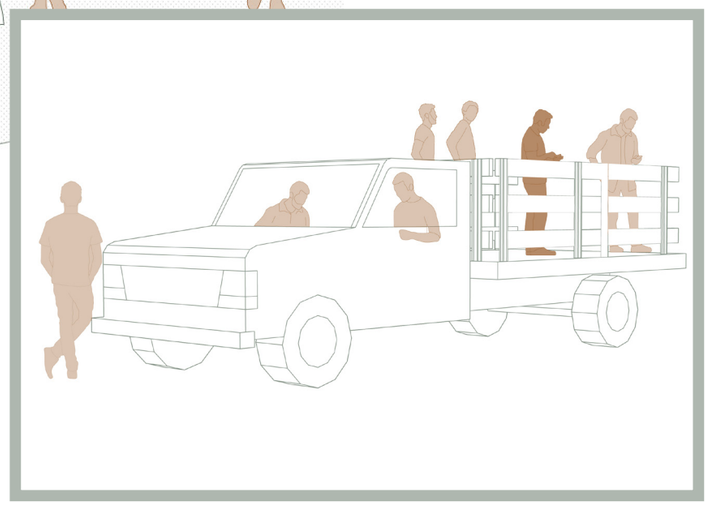
- INHABITANT GROUP -

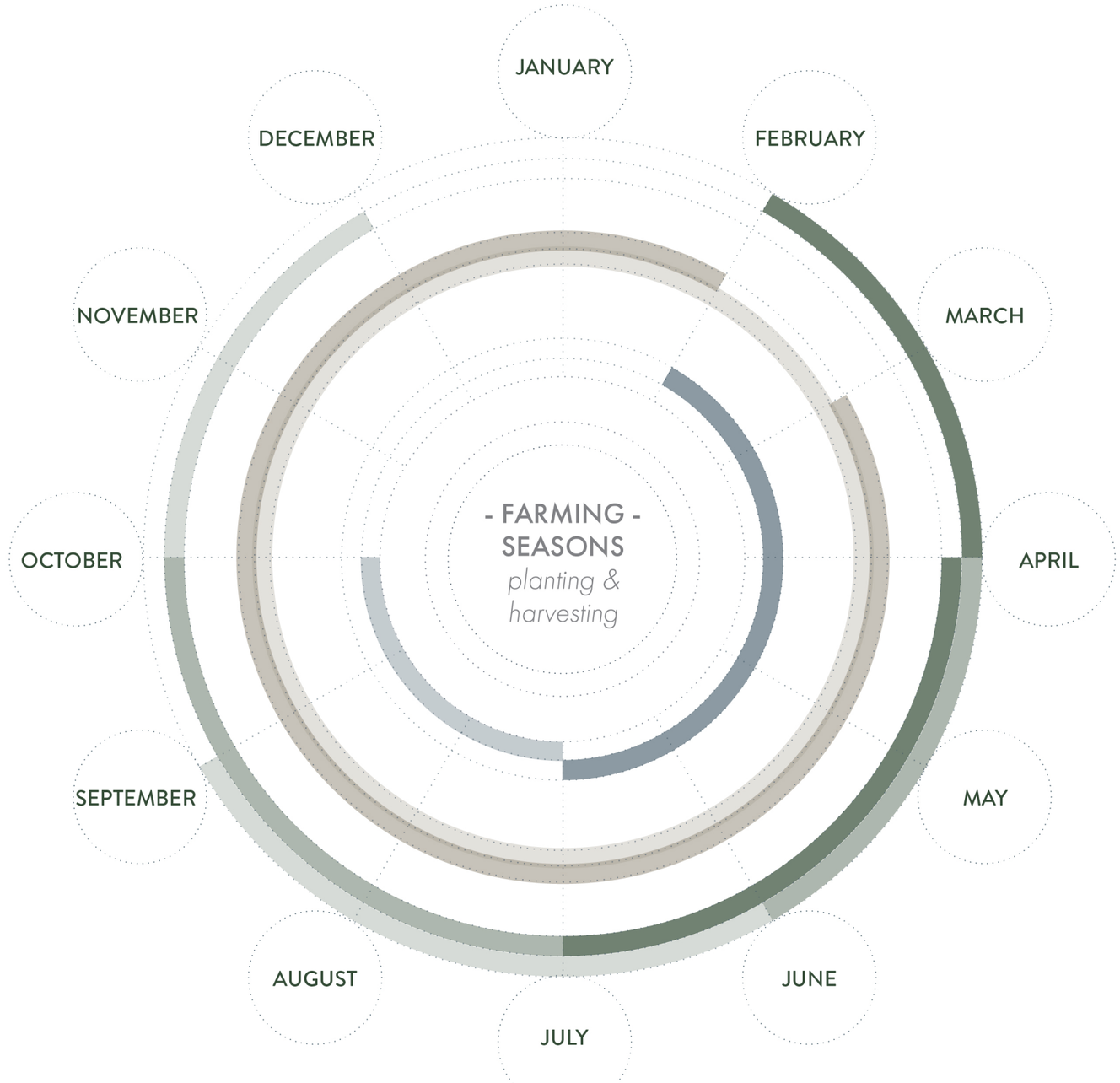
farmers

source: "Inside a Village Guesthouse in Ethiopia", 202

- TYPOLOGY 01.1 -
farmers housing



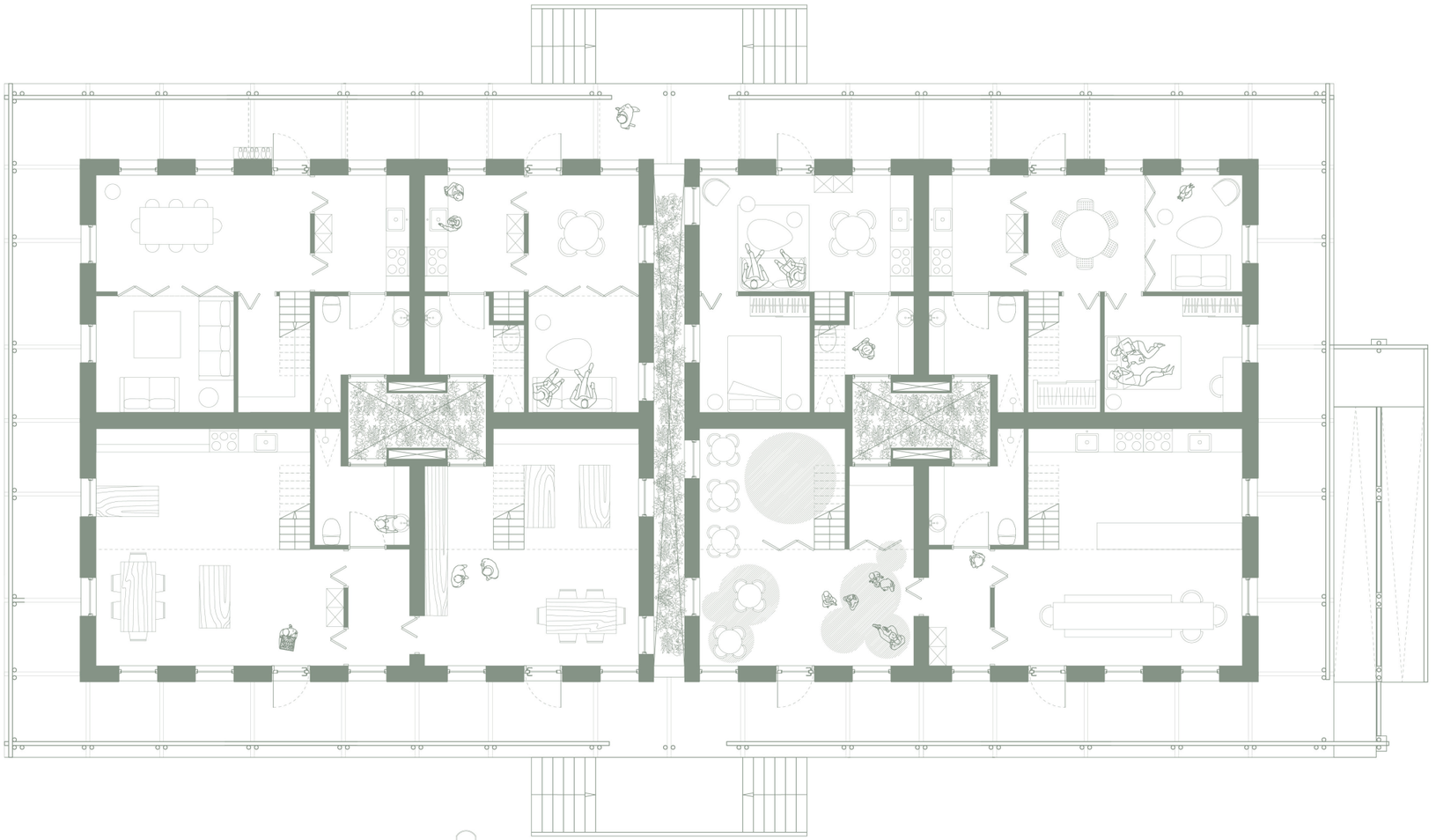


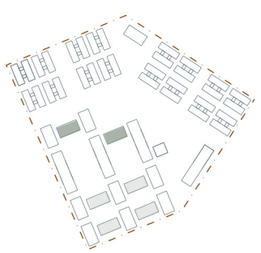


- FARMING -

yearly farming diagram

source: University of Alabama in Huntsville Earth Systems Science Center. (n.d.). Ethiopia Climate and Agriculture. Partnership for Resilience and Preparedness. Retrieved June 15, 2021, from https://www.prepdata.org/stories/ethiopia-climate-and-agriculture

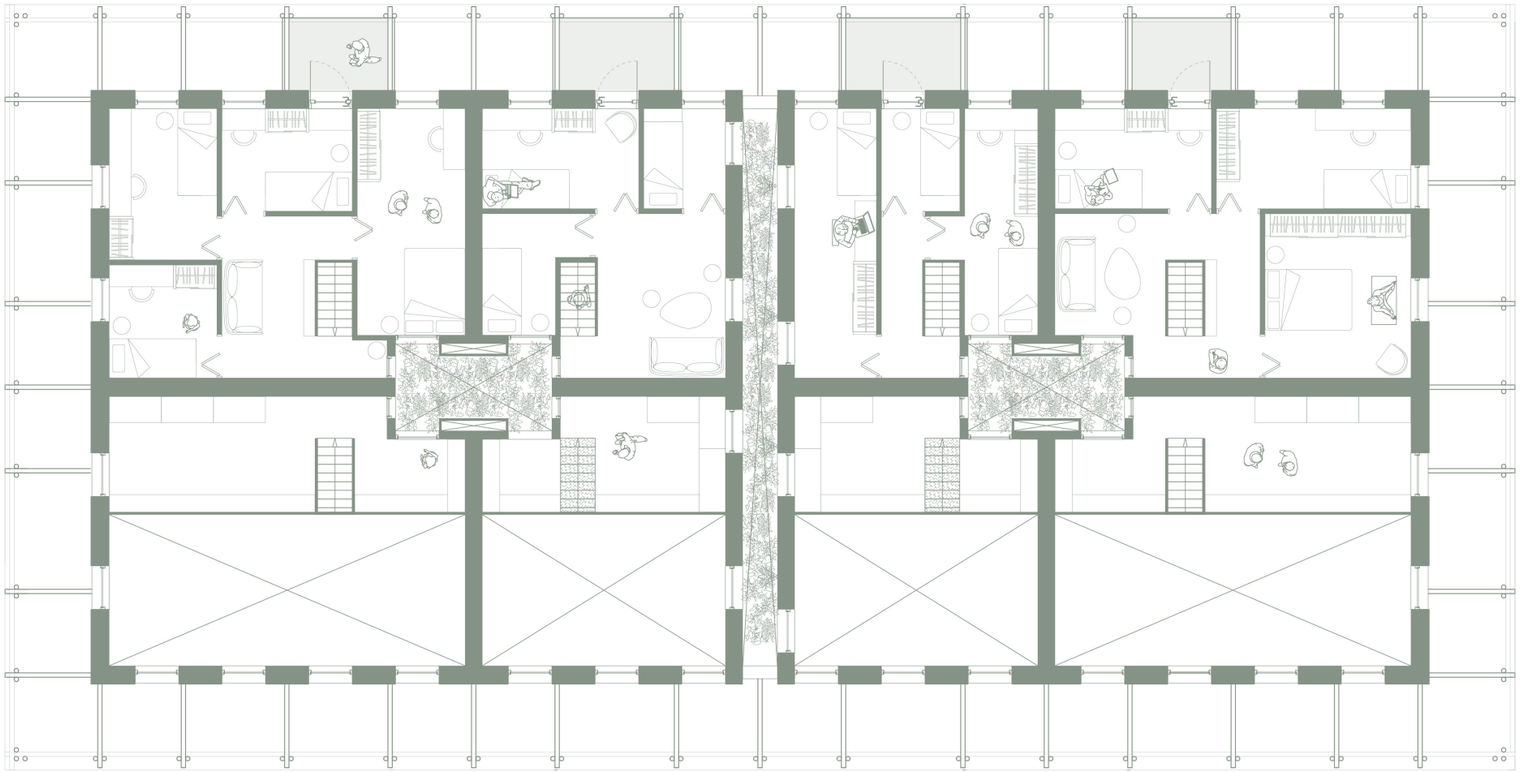


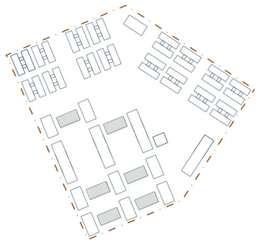


- TYPOLOGY 01.1 -

farmers ground floor plan

scale: 1:100@A2

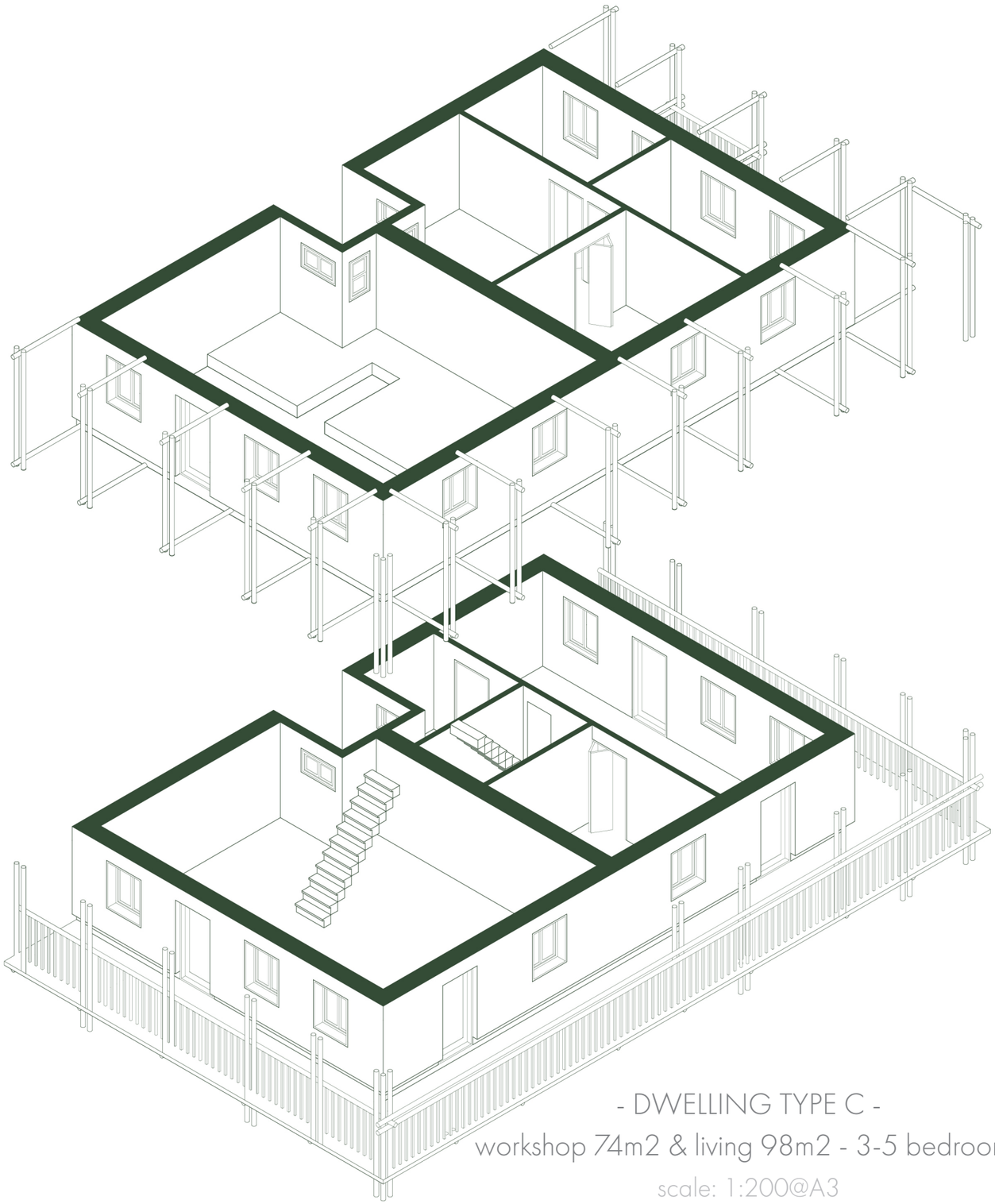


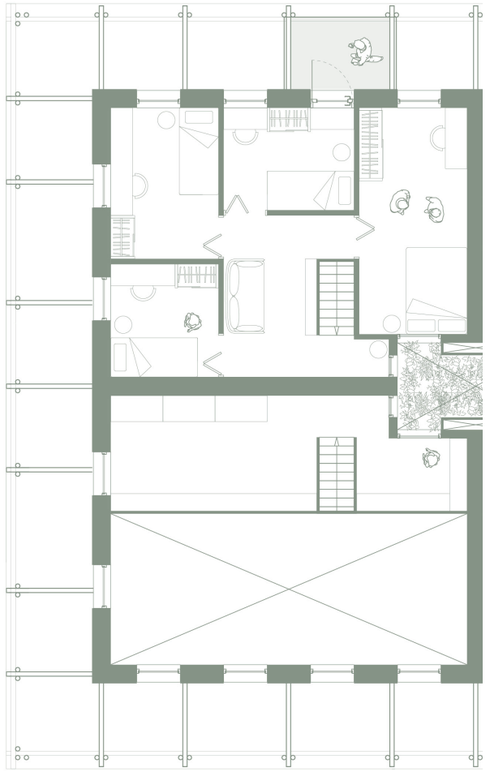


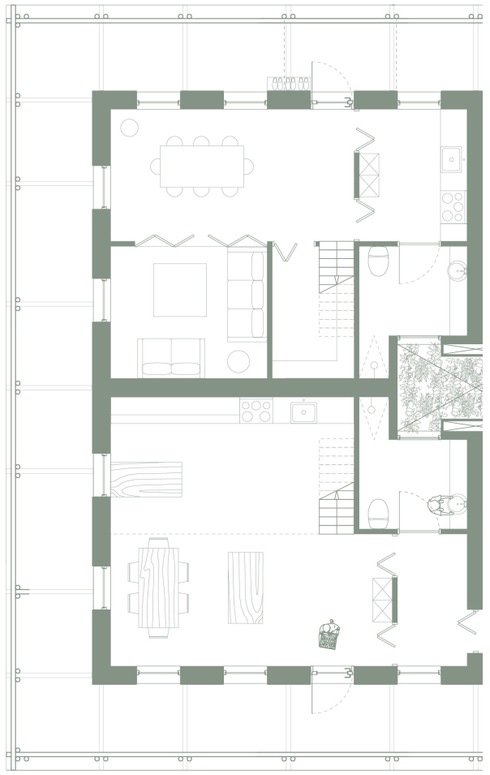
- TYPOLOGY 01.1 -

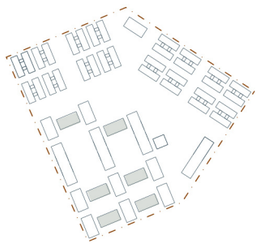
farmers duplex floor plan

scale: 1:100@A2









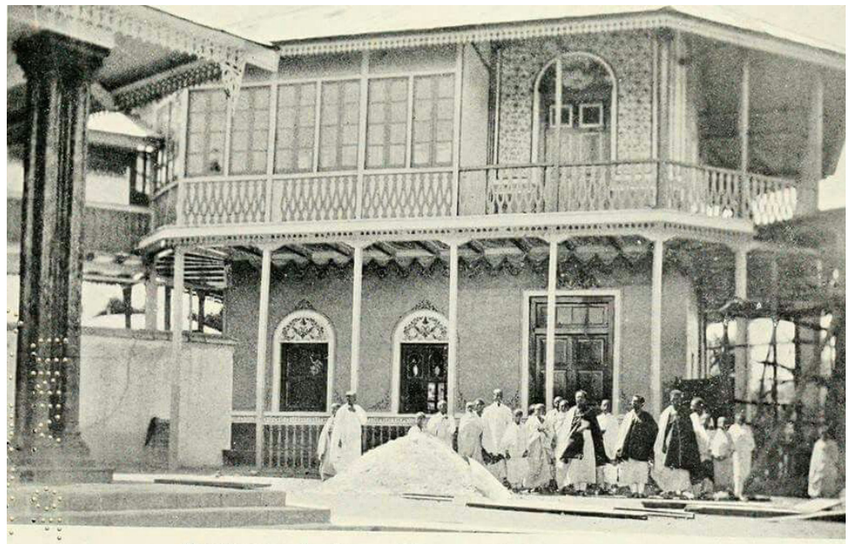
- DWELLING TYPE C -

workshop 74m2 & living 98m2 - 3-5 bedroom

scale: 1:200@A3

- DWELLING TYPE C -
living area

- building technology -
typology 01

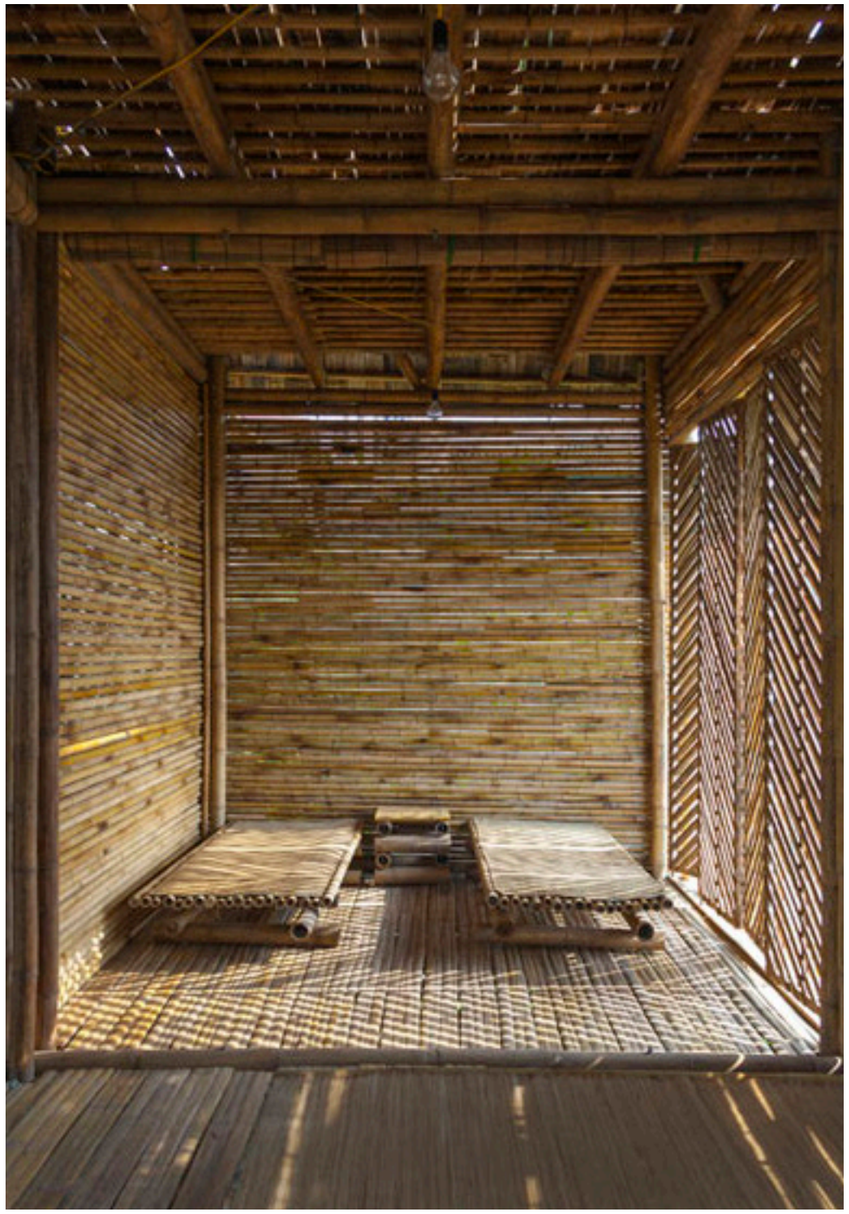


Reception room for European Ministers at the Palace, Addis-Ababa

- TYPOLOGY 01 -

concept - "Addis Ababa vernacular"

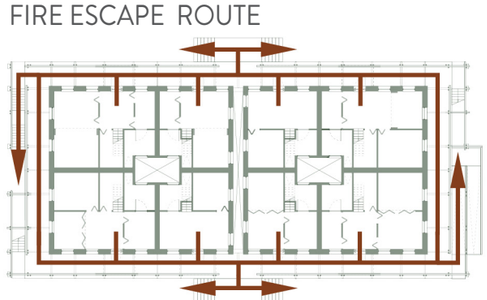
source: www.addisababa.gov.et



- TYPOLOGY 01 -

precedents

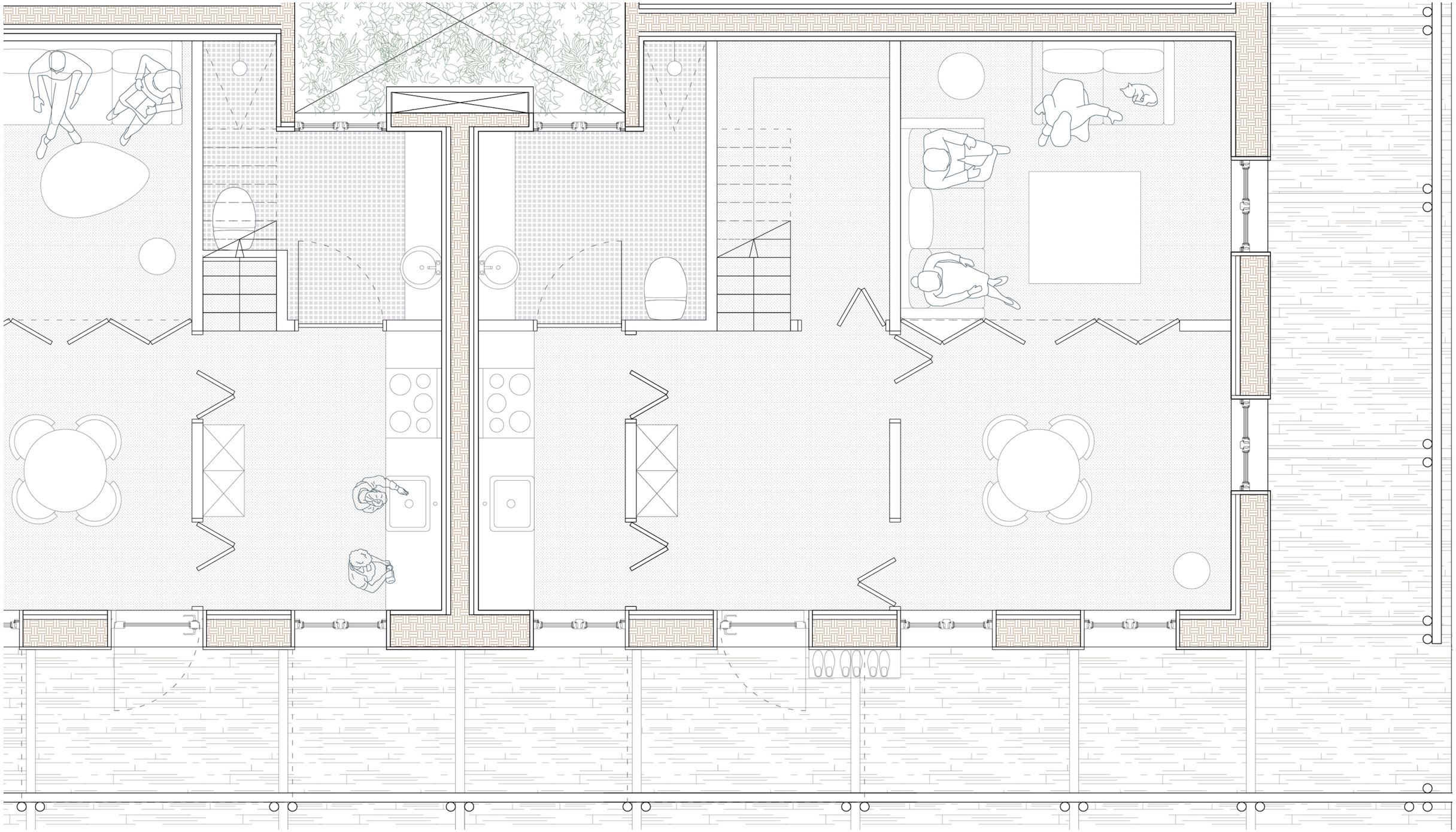
FIRE ESCAPE ROUTE



- TYPOLOGY 01 -

ground floor plan

scale: 1:50@A1



- TYPOLOGY 01 -

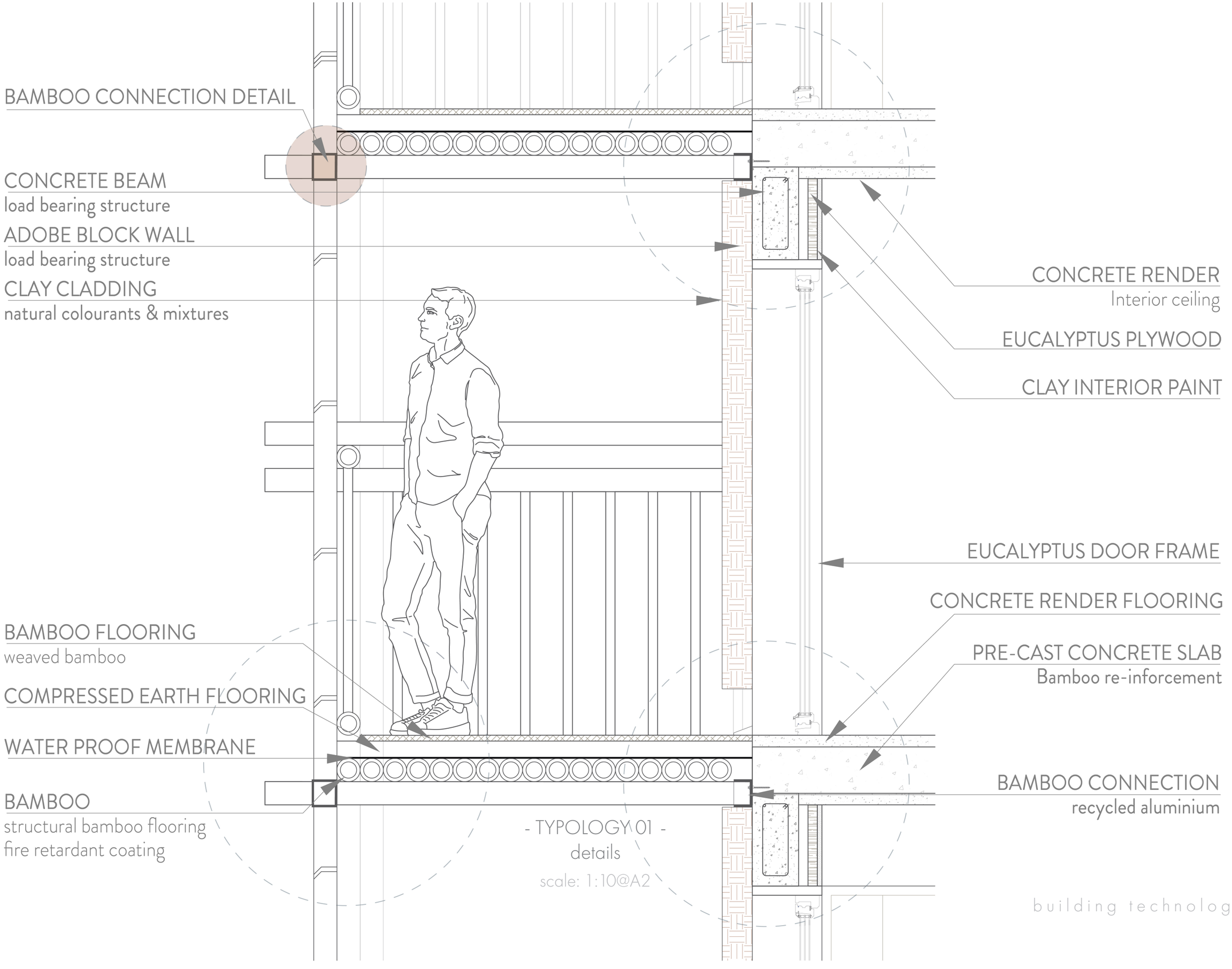
part floor plan

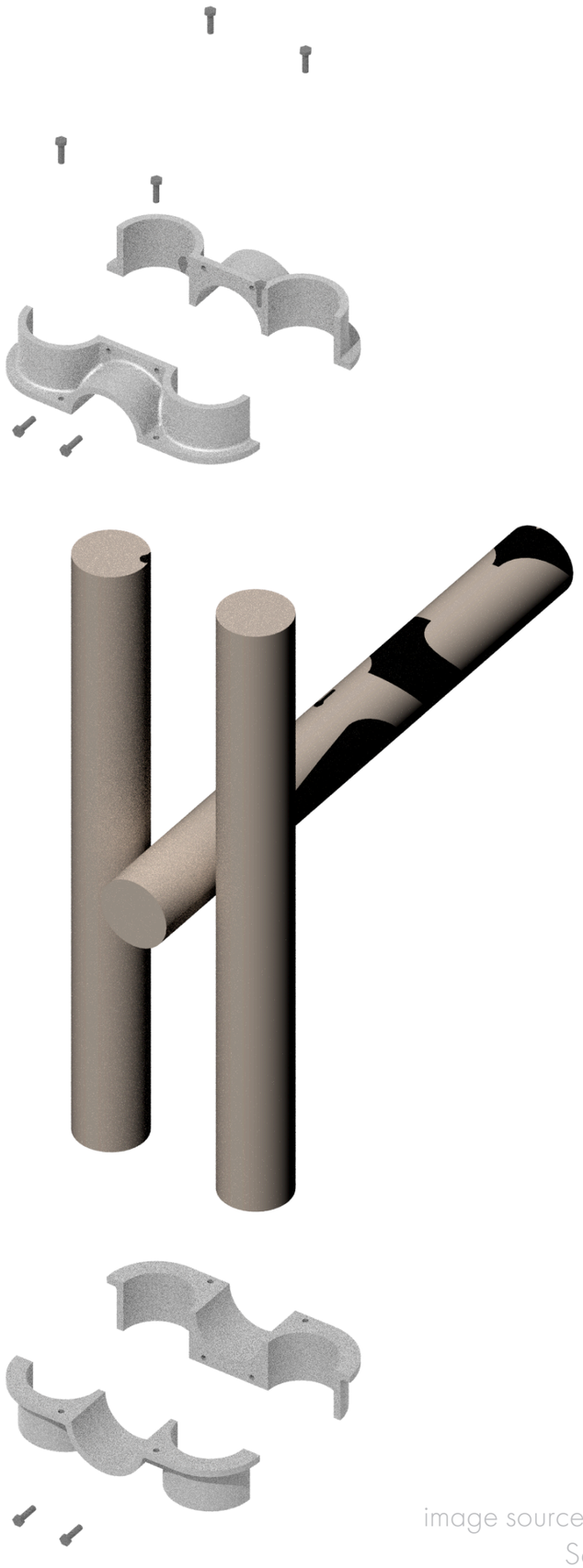
scale: 1:20@A1

- TYPOLOGY 01 -

part section & elevation

scale: 1:20@A0


BAMBOO CONNECTION DETAIL
CONCRETE BEAM
load bearing structure
ADOBE BLOCK WALL
load bearing structure
CLAY CLADDING
natural colourants & mixtures
CONCRETE RENDER
Interior ceiling
EUCALYPTUS PLYWOOD
CLAY INTERIOR PAINT
EUCALYPTUS DOOR FRAME
CONCRETE RENDER FLOORING
PRE-CAST CONCRETE SLAB
Bamboo re-inforcement
BAMBOO CONNECTION
recycled aluminium
BAMBOO FLOORING
weaved bamboo
COMPRESSED EARTH FLOORING
WATER PROOF MEMBRANE
BAMBOO
structural bamboo flooring
fire retardant coating
- TYPOLOGY 01 -
details
scale: 1:10@A2

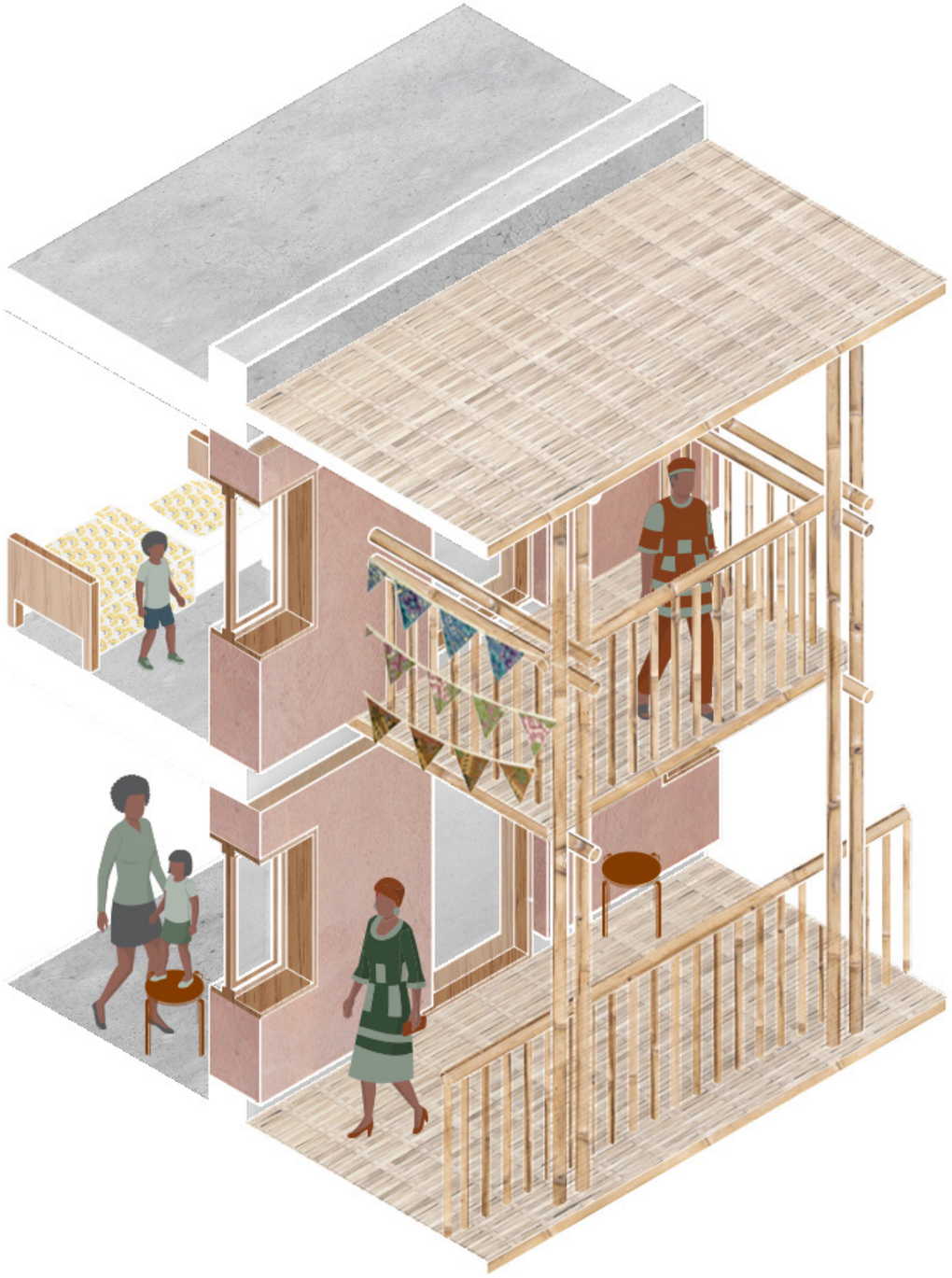


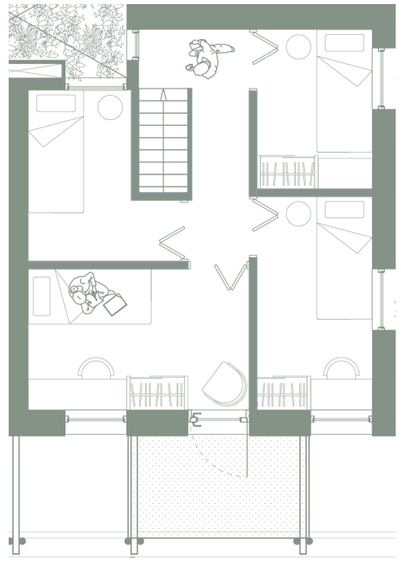
- TYPOLOGY 02 -

low tech - high tech

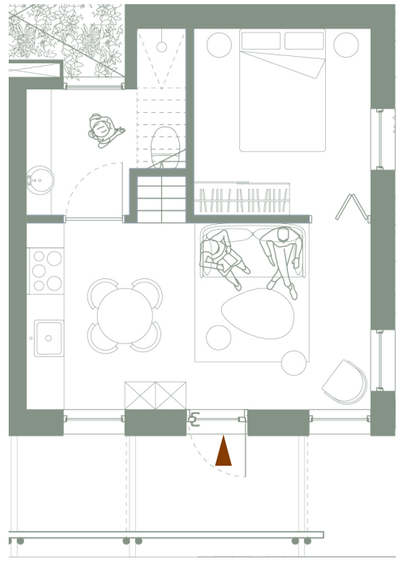
detail scale: 1:10@A4

image source: YouTube "Metal Casting Process Using Sand Mold Technique", 2019





DUPLEX FLOOR

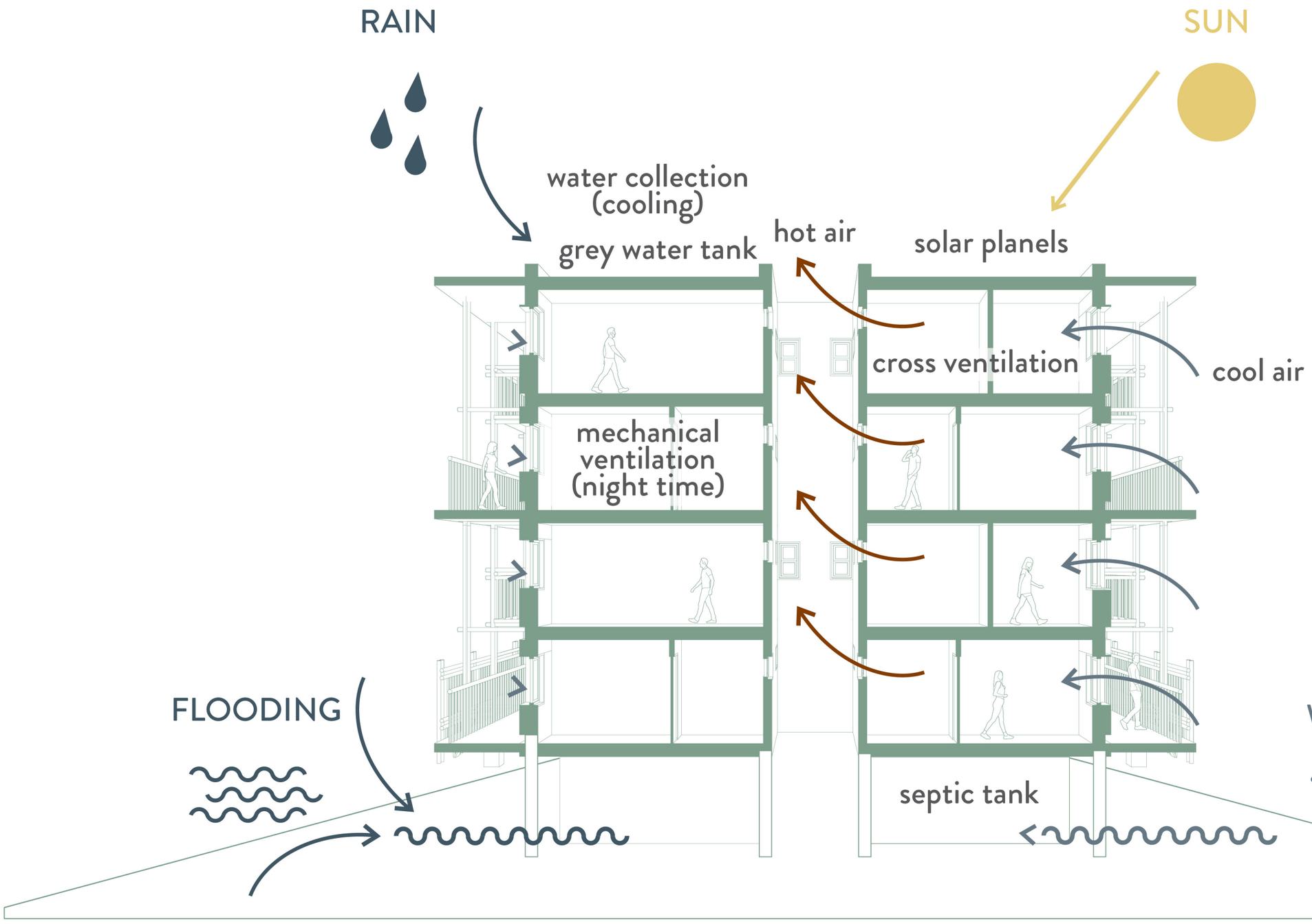


ENTRANCE FLOOR

- TYPOLOGY 01 -

materiality & threshold part isometric view

scale: 1:50@A4



- TYPOLOGY 01 -

climate design perspective section

scale: 1:100@A3

- building design -
typology 02

- TYPOLOGY 02 -
visual impression

- INHABITANT GROUP -

low- middle income groups

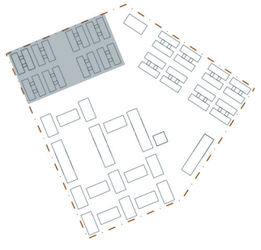
source: "Sowing the seeds of success: Ethiopia on a new path to explore global malt markets", 2015

- INHABITANT GROUP -

low-midle income group

source: Video “Emerging Spaces – a day in Addis Ababa’s condominiums”

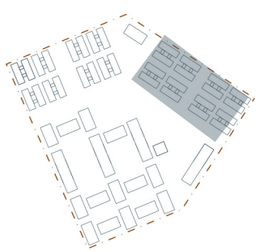
2012, _Spaces



- TYPIOLOGY 02 -

contextual ground floor plan

scale: 1:500@A3



- TYPIOLOGY 02 -

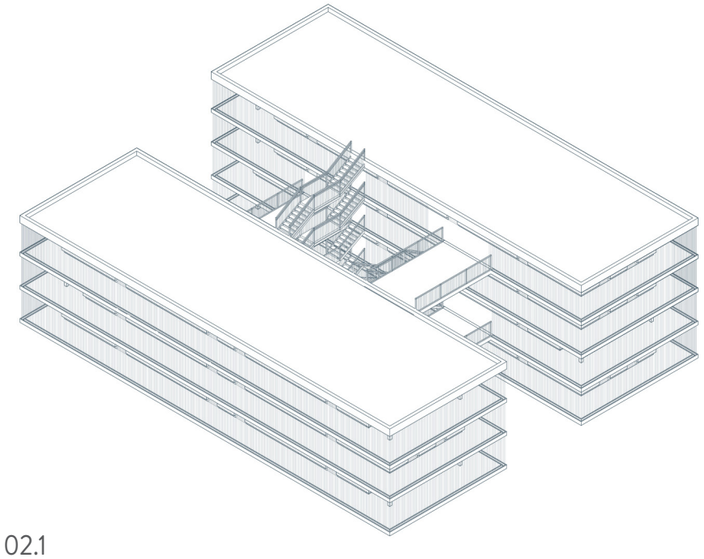
contextual ground floor plan

scale: 1:500@A3

- TYPOLOGY 02 -

concept - rural Enshi, China

photos: Anna Grenestedt



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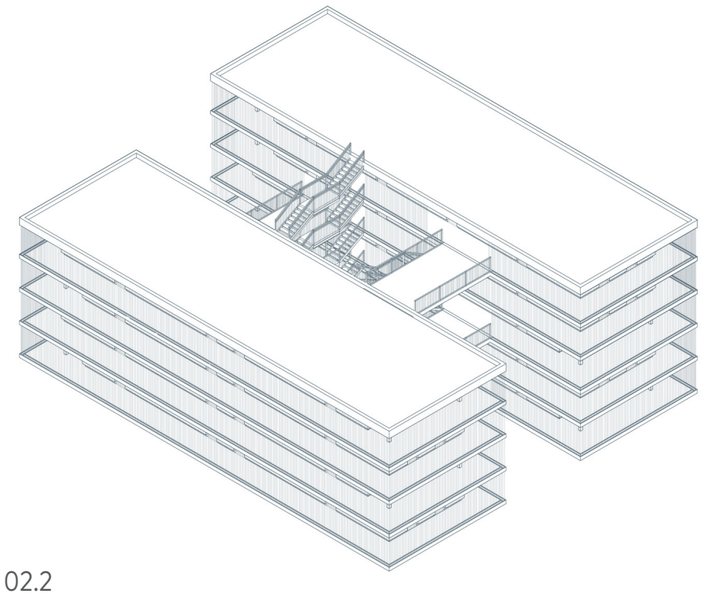
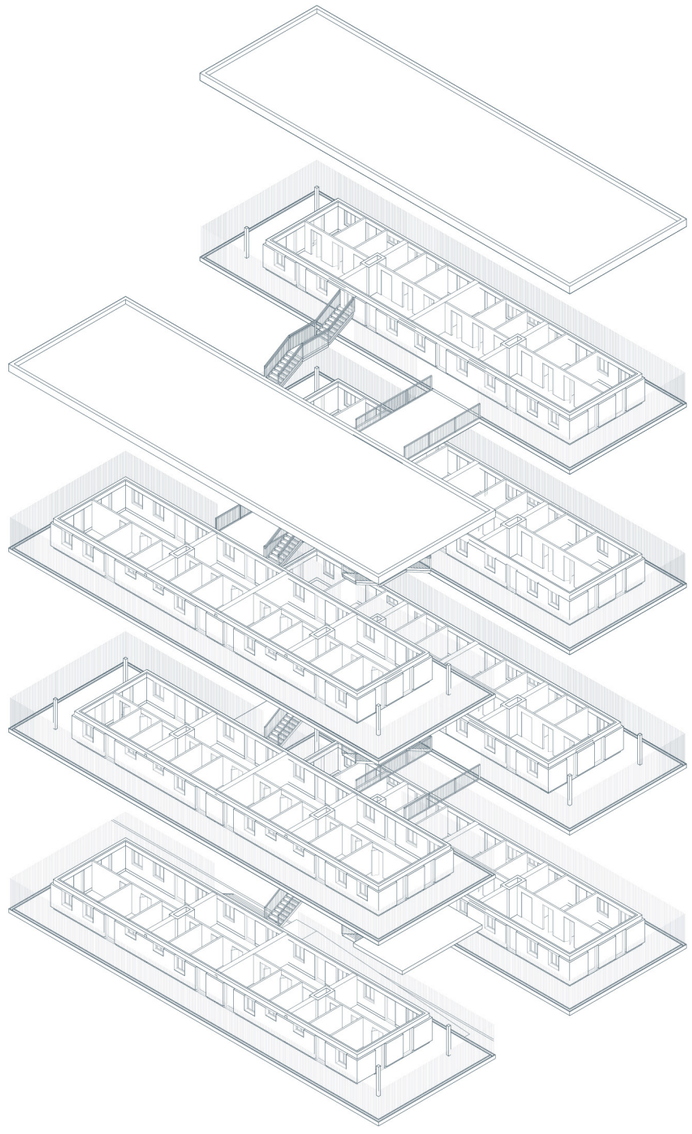


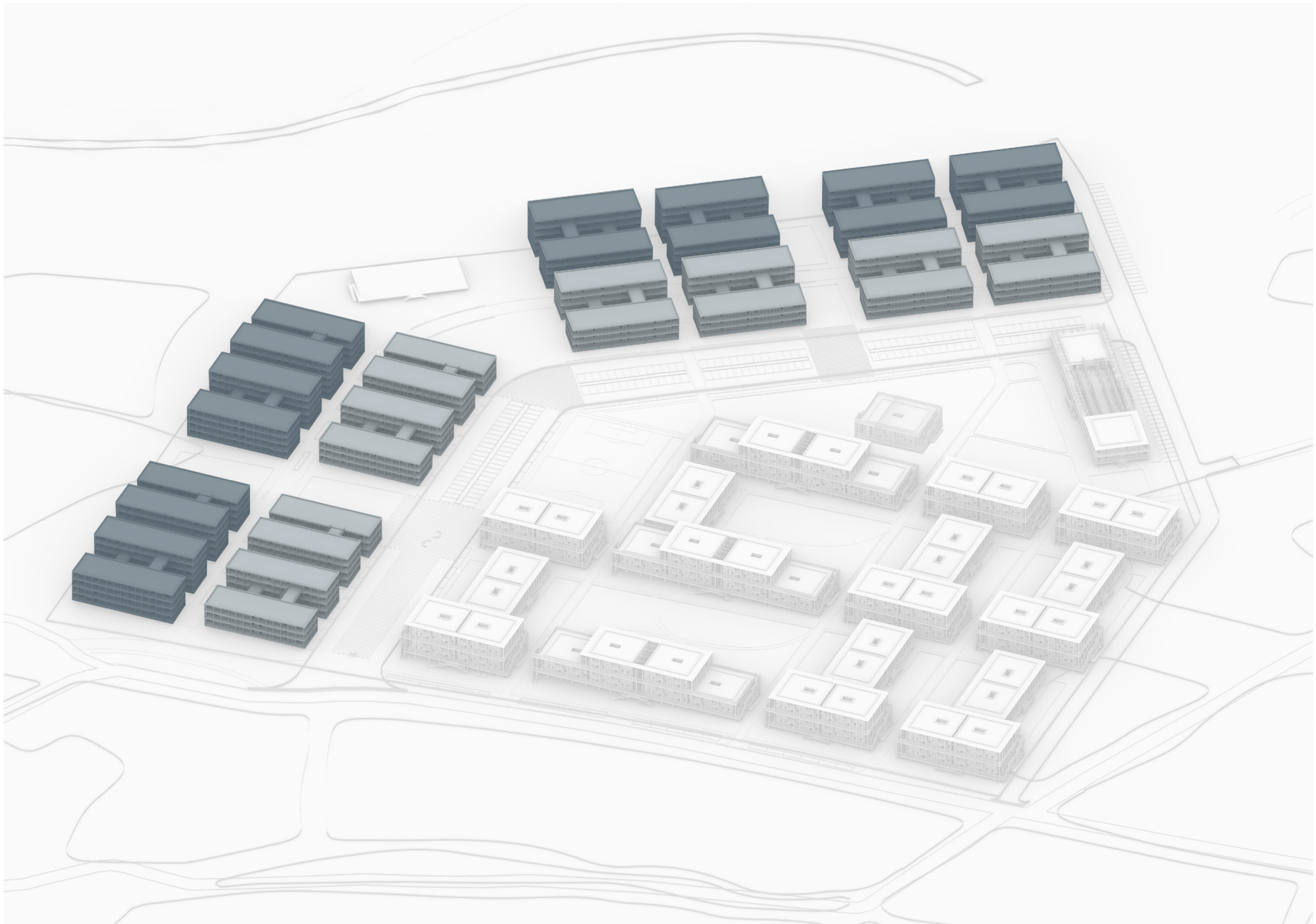
TYPE 02.2



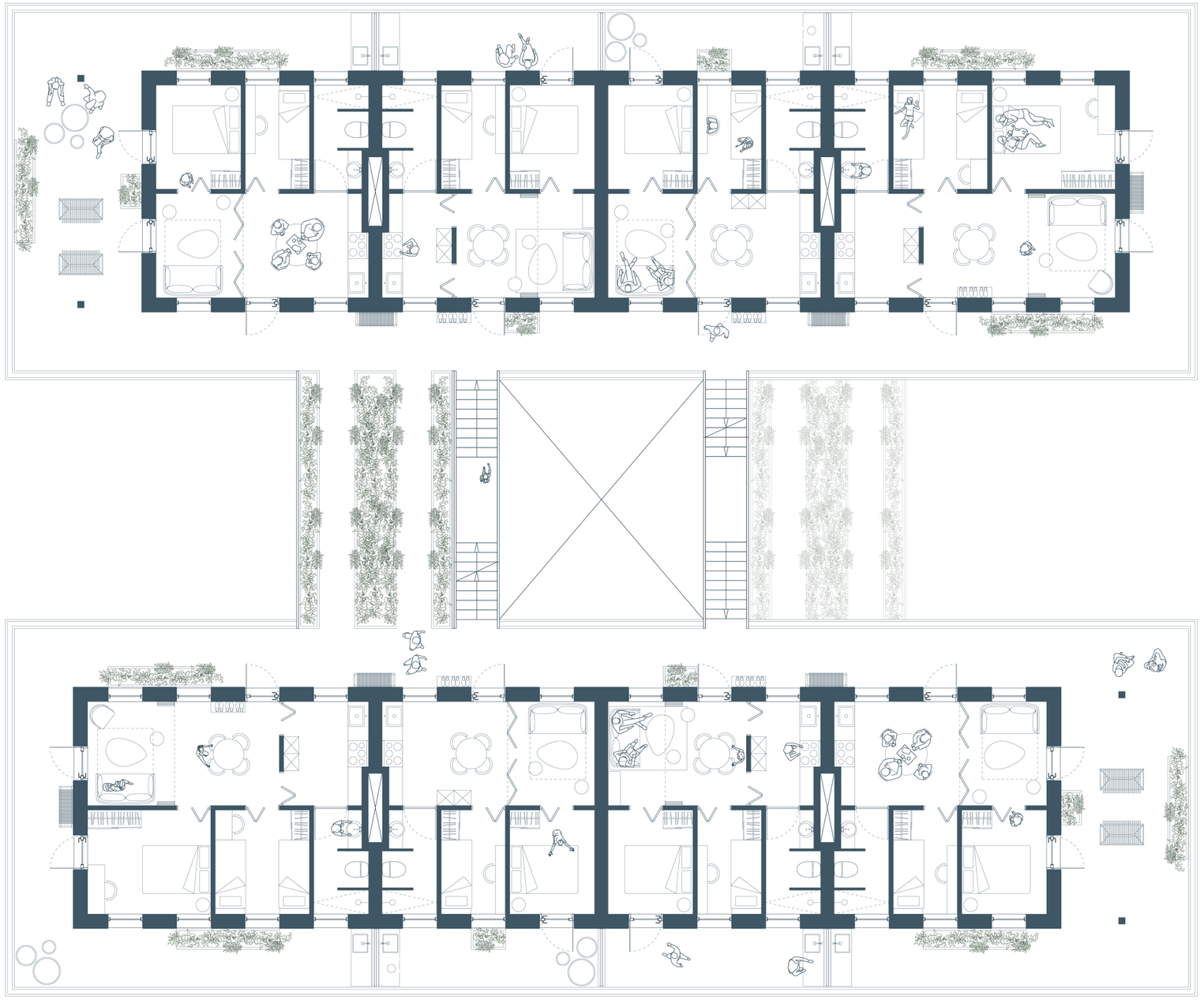
- TYPOLOGY 02 -

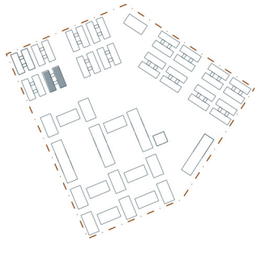
isometric view - building variations

scale: 1:500@A3



- TYPIOLOGY 01 -
building variations in context - isometric view

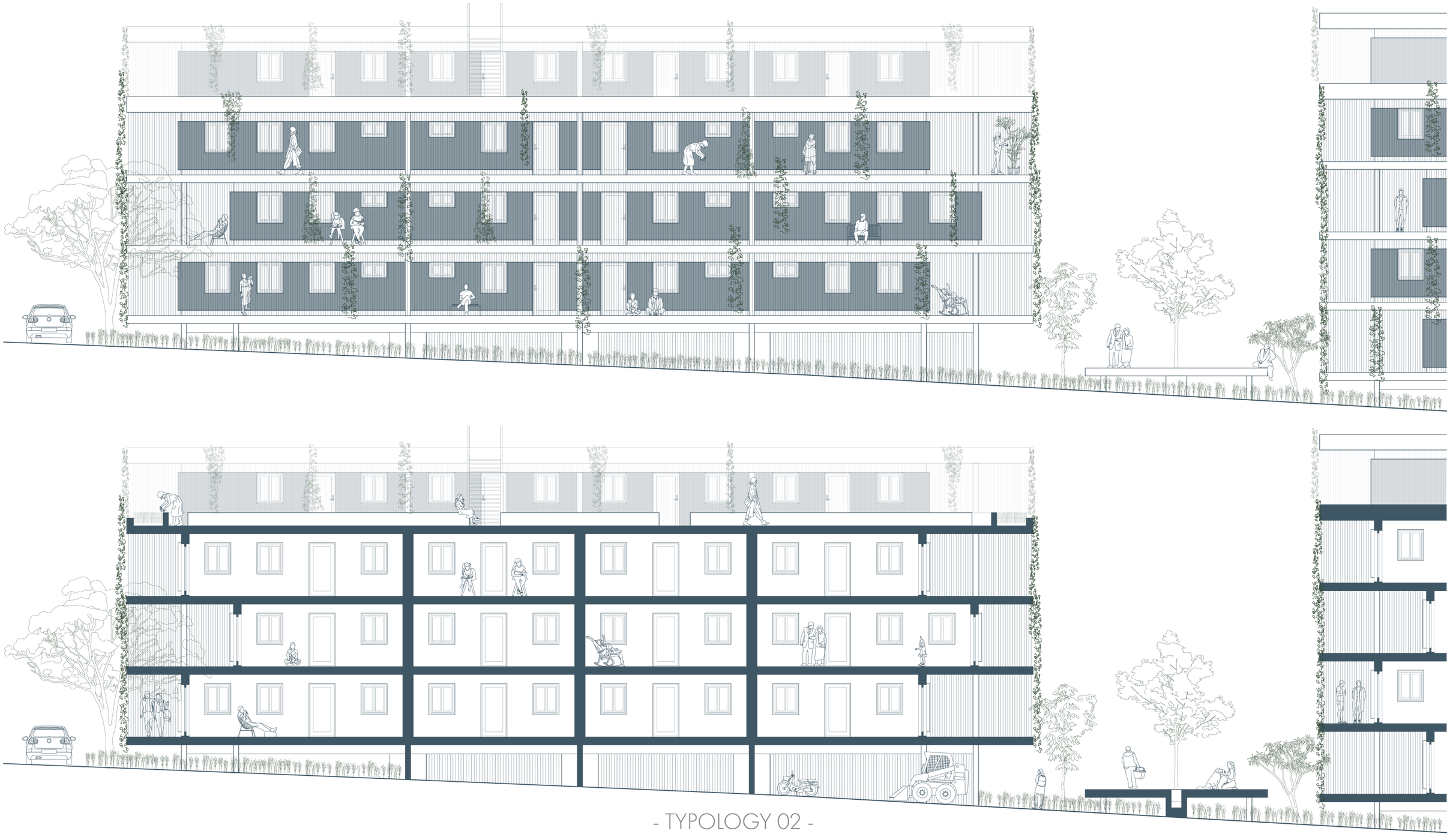




- TYPOLOGY 02 -

typical floor plan

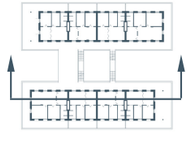
scale: 1:100@A2

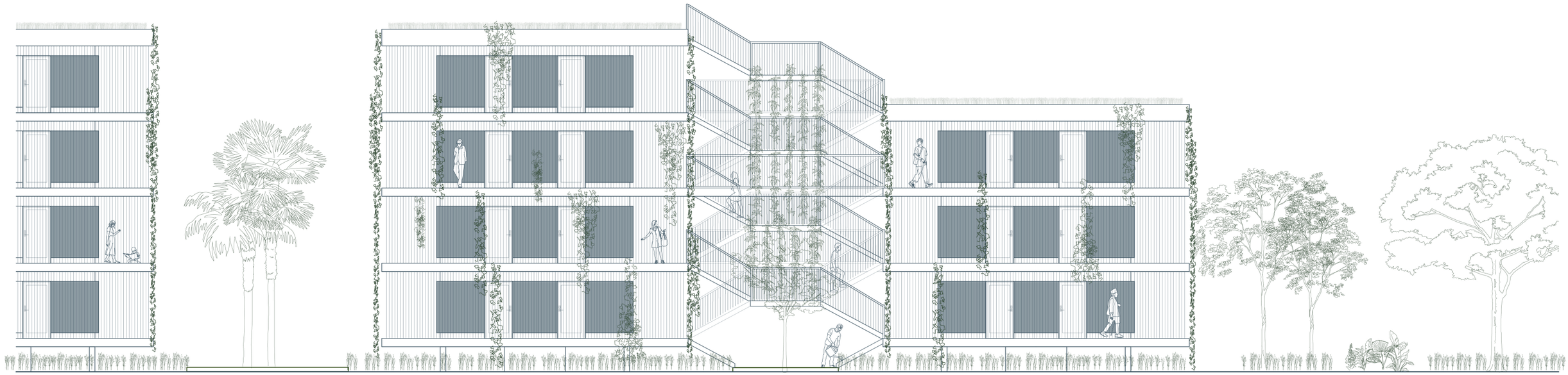


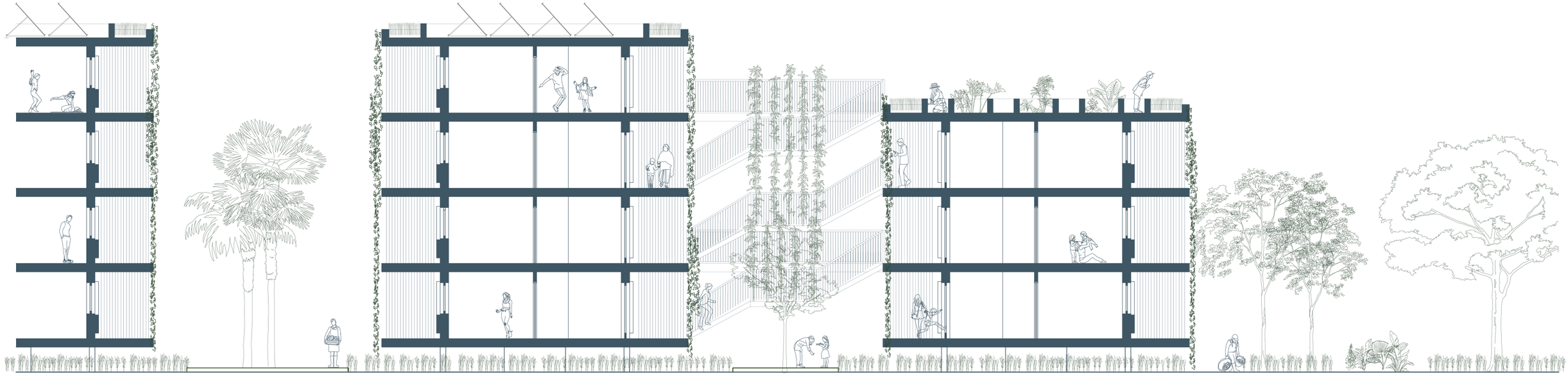
- TYPOLOGY 02 -

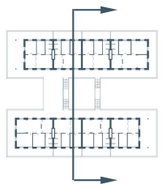
East elevation & section A-A

scale: 1:100@A2









- TYPOLOGY 02 -

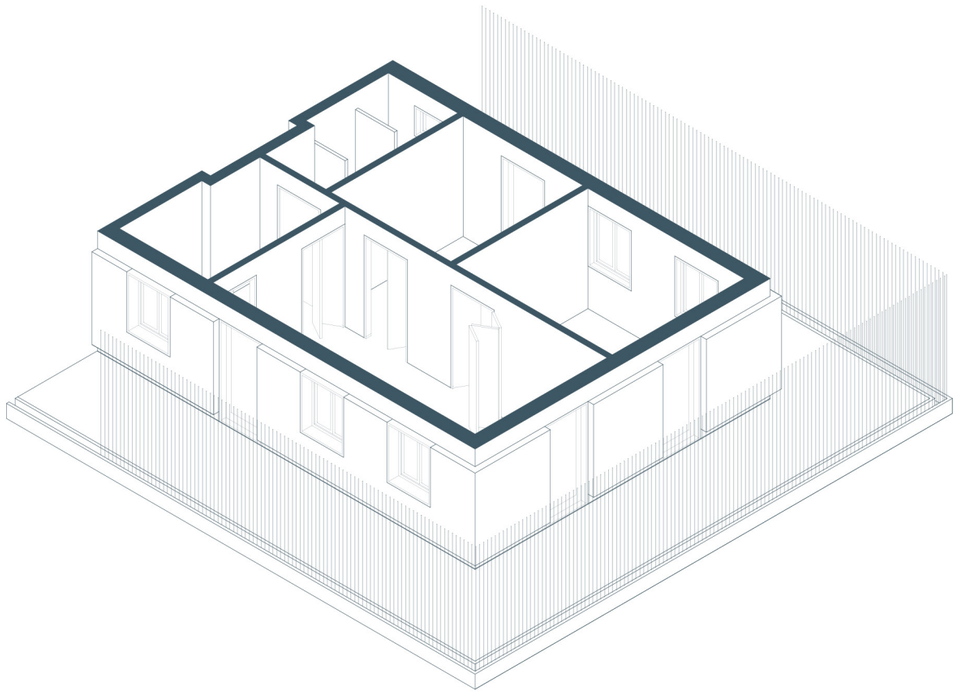
South elevation & section B-B

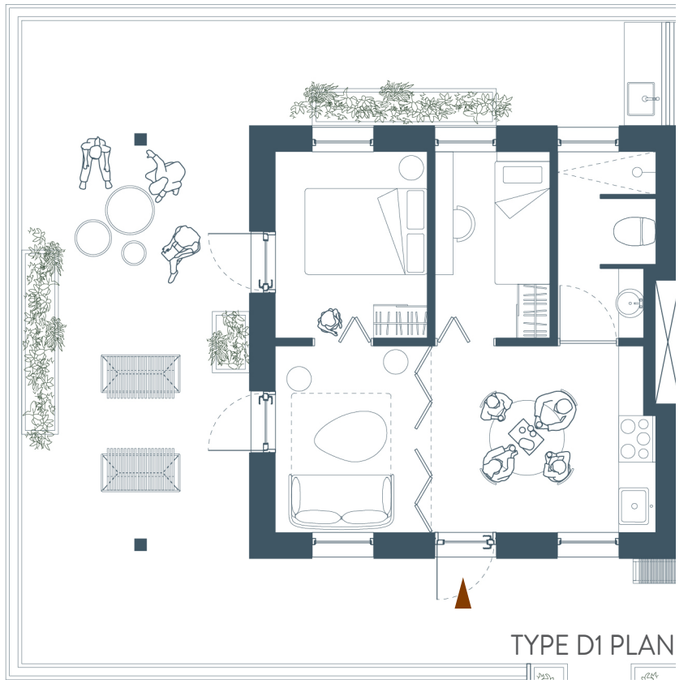
scale: 1:100@A2

design

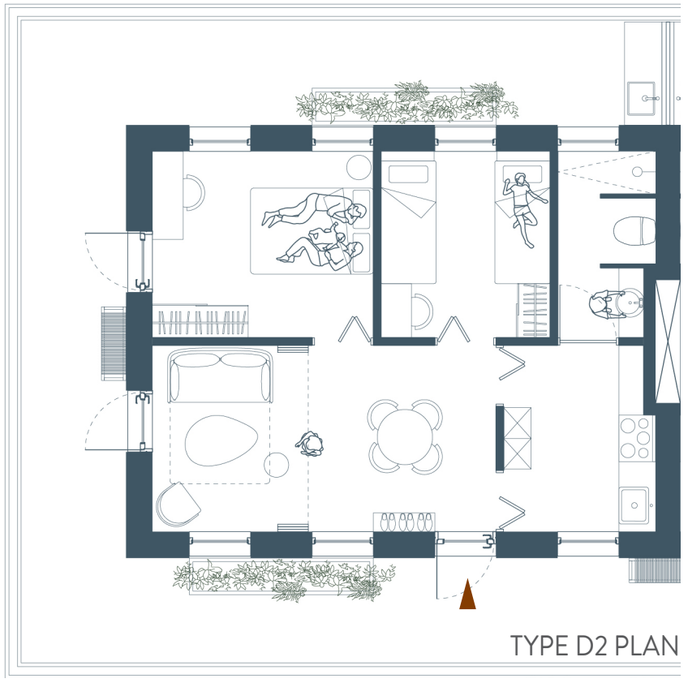
- common ground - 100/120 -

- TYPOLOGY 02 -
visualisation - gallery view

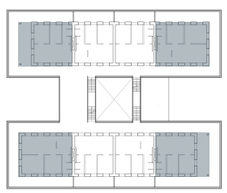




TYPE D1 PLAN



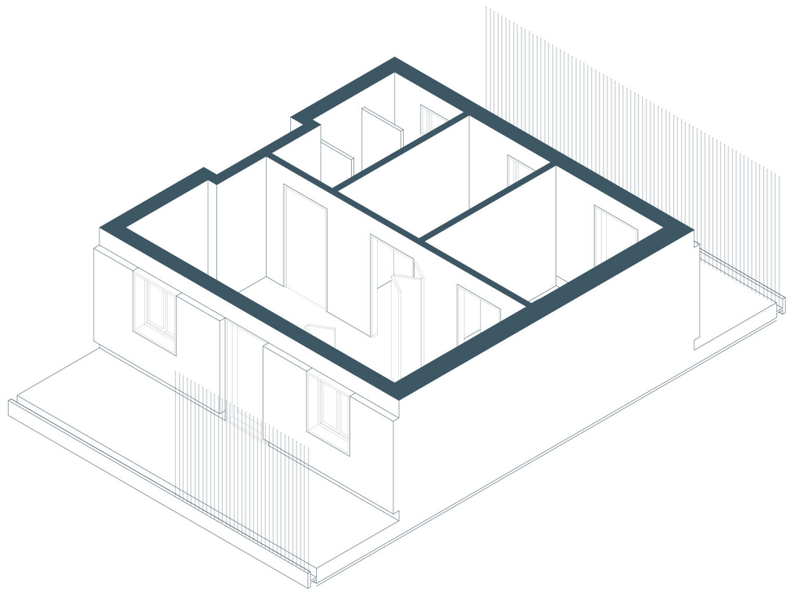
TYPE D2 PLAN

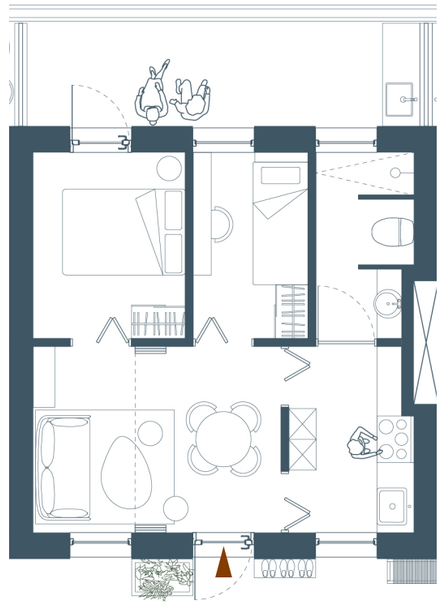


- DWELLING TYPE D -

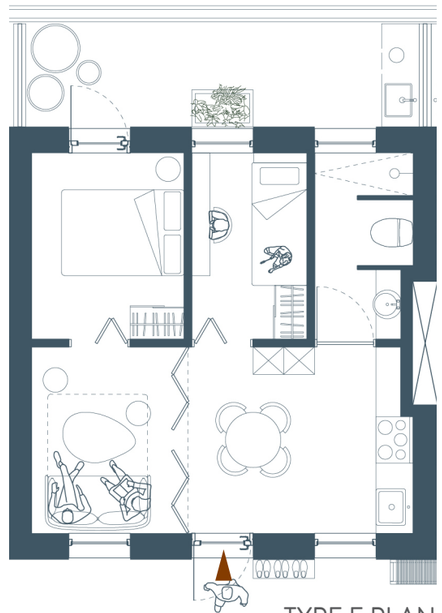
38m2-50m2 - 2-3 bedrooms

scale: 1:200@A3

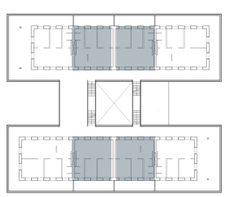




TYPE E PLAN



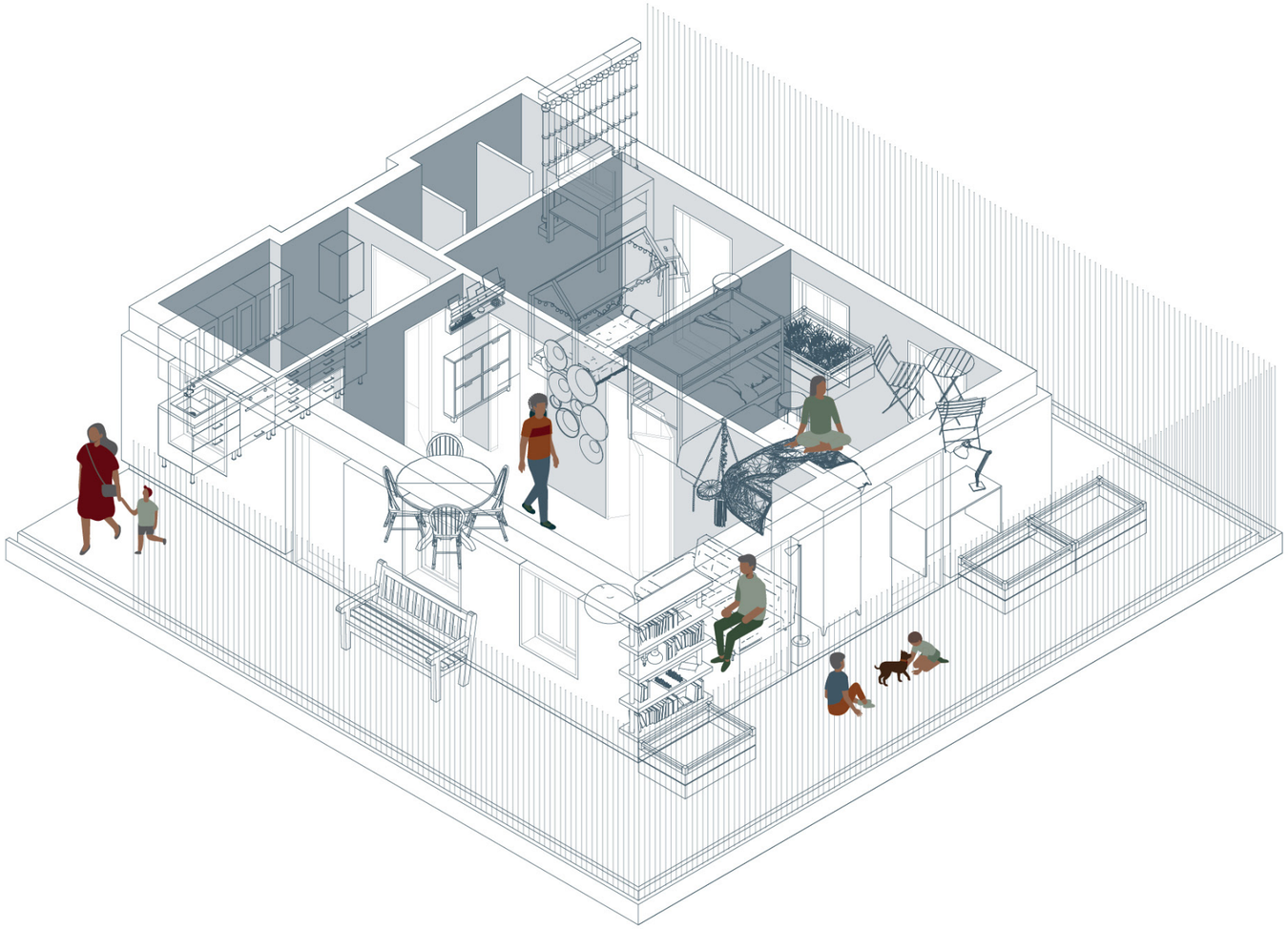
TYPE E PLAN



- DWELLING TYPE E -

38m2 - 2 bedrooms

scale: 1:200@A3



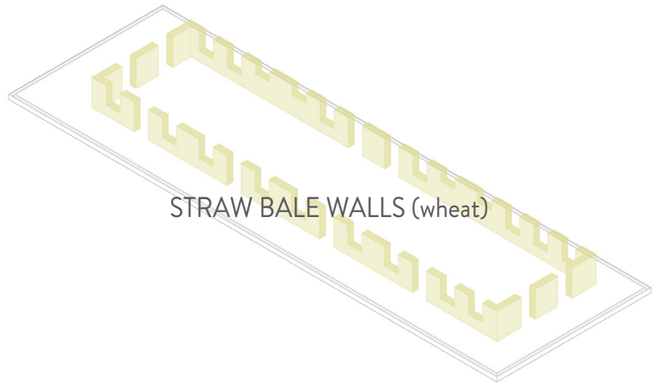
- DWELLING TYPE D -

38m2-50m2 - 2-3 bedrooms

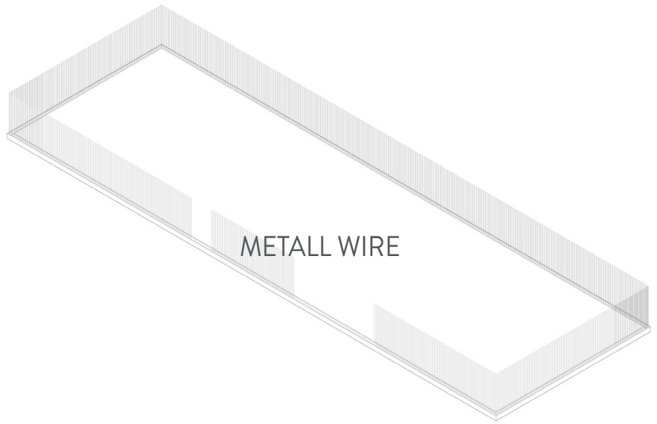
scale: 1:200@A3

- DWELLING TYPE D -
living space - visual impression

- building technology -
typology 02

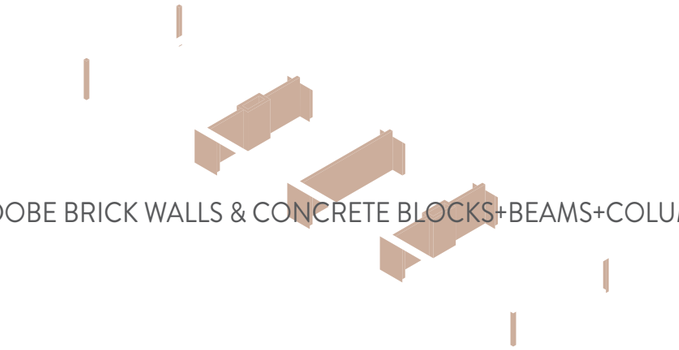


STRAW BALE WALLS (wheat)

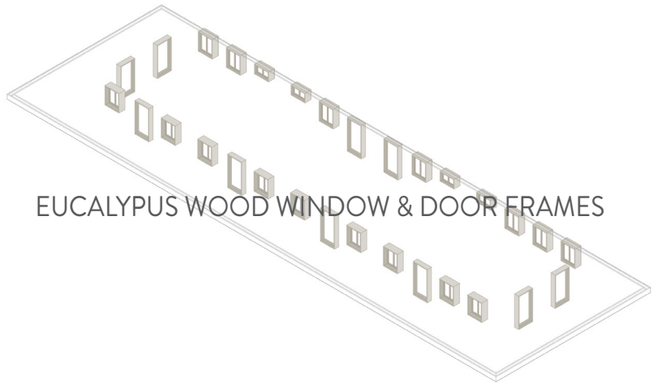


METALL WIRE

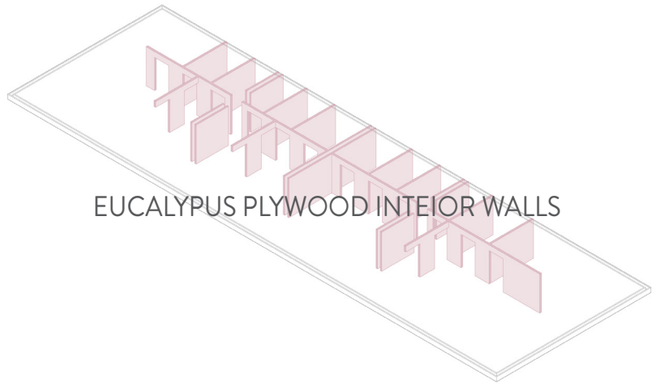
BAMBOO INTERIOR DOORS



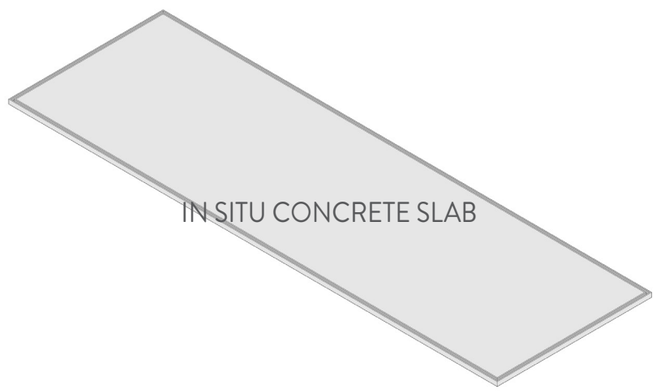
ADOBE BRICK WALLS & CONCRETE BLOCKS+BEAMS+COLUMNS



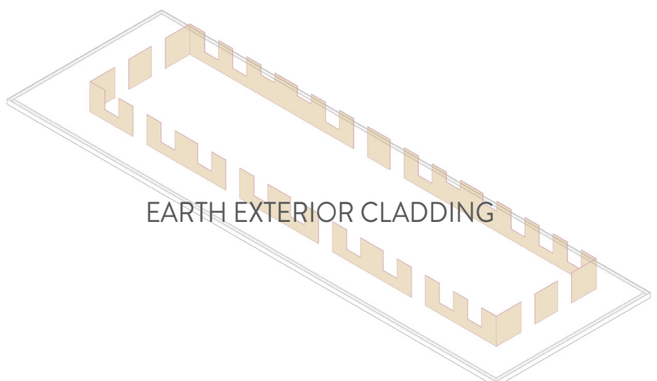
EUCALYPUS WOOD WINDOW & DOOR FRAMES



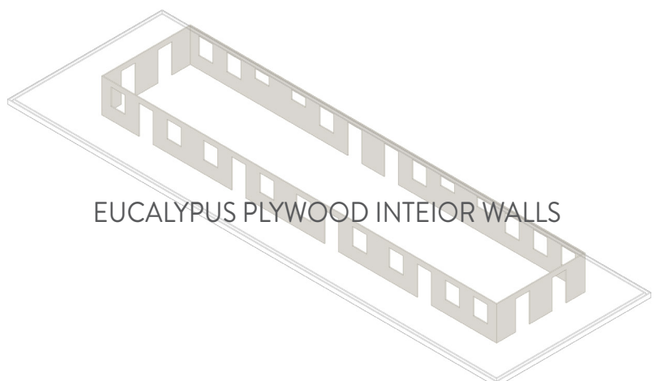
EUCALYPUS PLYWOOD INTEIOR WALLS



IN SITU CONCRETE SLAB



EARTH EXTERIOR CLADDING



EUCALYPUS PLYWOOD INTEIOR WALLS

- TYPOLOGY 02 -

materiality concept - isometric view

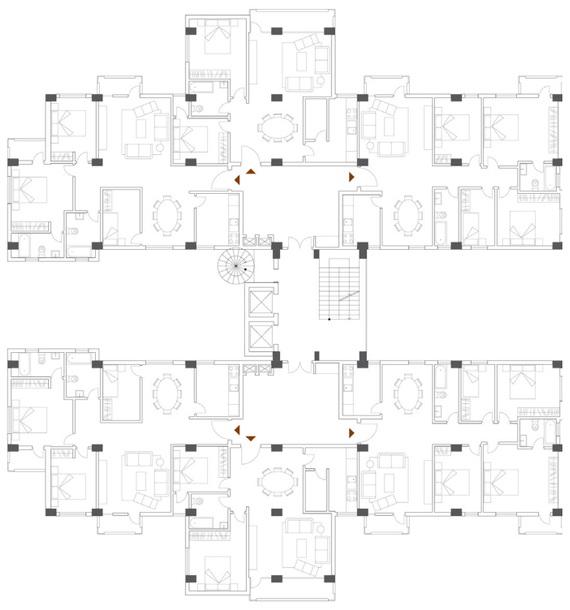
CONDOMINIUM BLOCK 40/60

dwellings per building: **60**
people per building: **≈ 300**
floors: **2 floor basement - 3 floor shop - 10 floor apartment**
apartment types: **2 bed, 4 bed**

apartment floor area: **718m2**
dwellings per floor: **6**

material usage - concrete & steel / floor:
columns concrete: **31.49m3**
columns steel: **3.49m3**
-
floor slab concrete: **129.24m3**
floor slab steel: **14.36m3**

concrete per dwelling: **26.78m3**
steel per dwelling: **2.97m3**



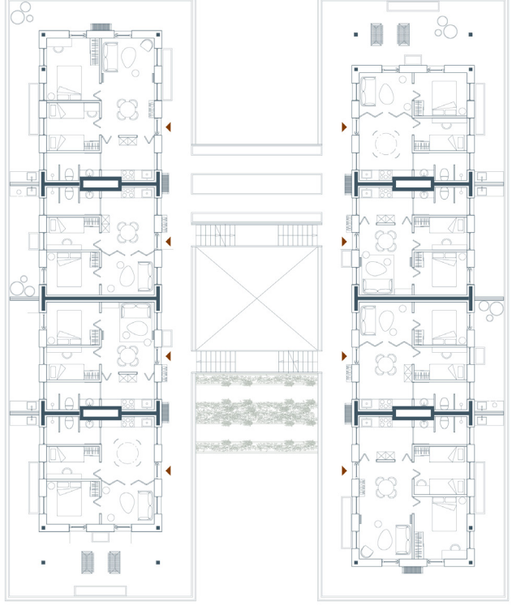
PROJECT BLOCK

dwellings per building: **36**
people per building: **≈ 126**
floors: **4-5 floor apartment**
apartment types: **2 bed, 2,5 bed**

apartment floor area: **808.25m2**
dwellings per floor: **8**

material usage - concrete & steel / floor:
columns concrete: **3.31m3**
columns steel: **0.38m3**
load-bearing wall: **10.45m3**
floor slab concrete: **145.48m3** **0.65 plastic bottles* = **94.56m3**
floor slab steel: **16.16m3**

concrete per dwelling: **19.89 / 13.53m3**
steel per dwelling: **2.06m3**



CONDOMINIUM BLOCK 20/80

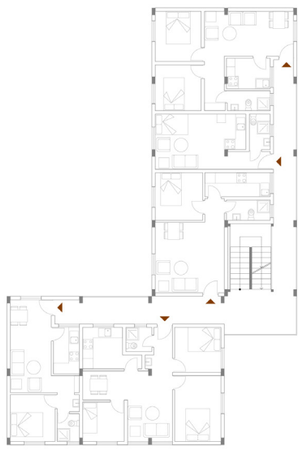
dwellings per building: **15**
people per building: **≈ 45**
floors: **3 floor apartment**
apartment types: **studio - 1 bed - 2 bed - 3 bed**

apartment floor area: **255.31m2**
dwellings per floor: **5**

material usage - concrete & steel / floor:
columns concrete: **5.69m3**
columns steel: **0.63m3**

floor slab concrete: **45.95m3**
floor slab steel: **5.10m3**

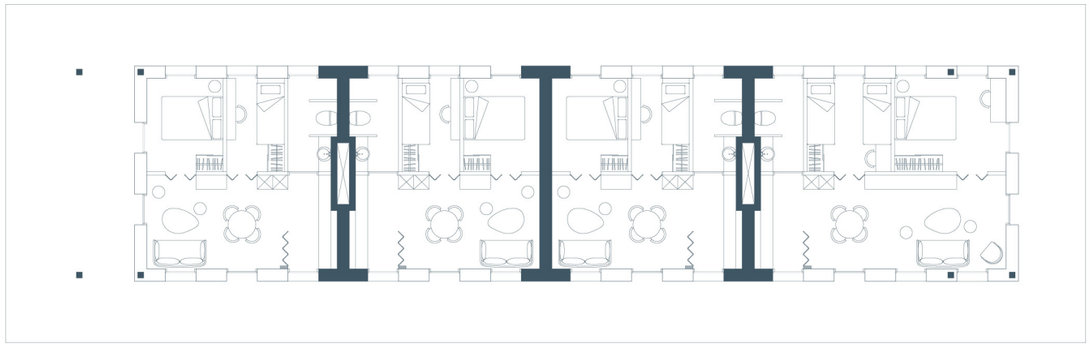
concrete per dwelling: **10.32m3**
steel per dwelling: **1.14m3**



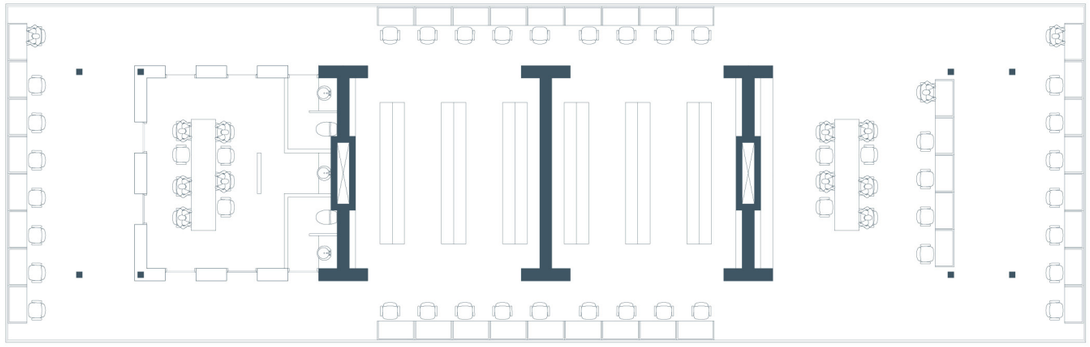
- TYPOLOGY 02 -

condominium comparison

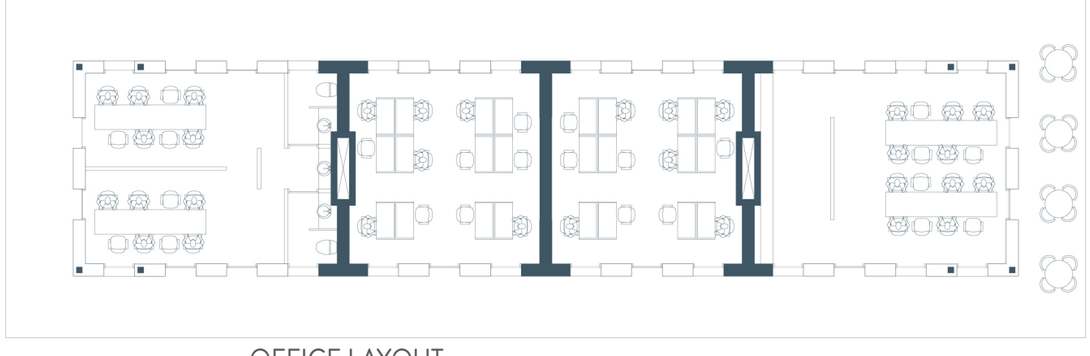
scale: 1:500@A3



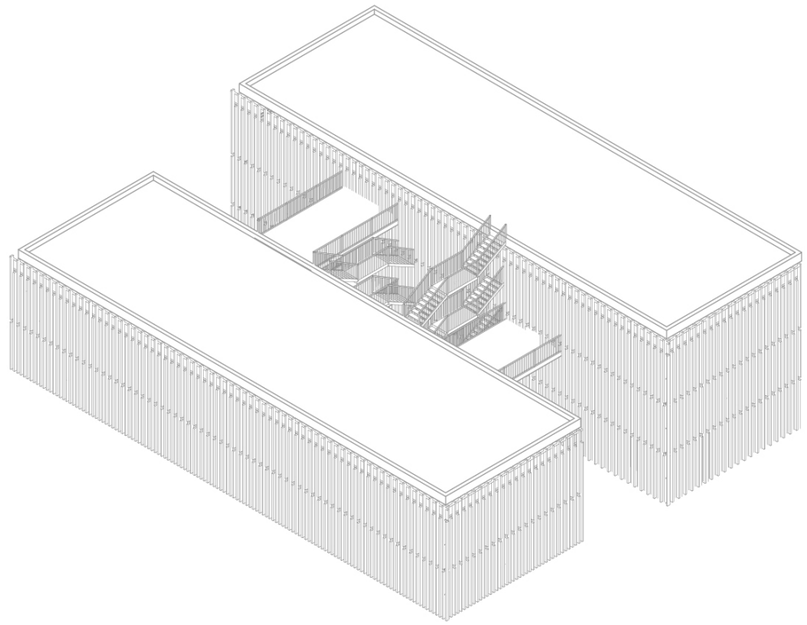
DWELLINGS LAYOUT



LIBRARY LAYOUT



OFFICE LAYOUT



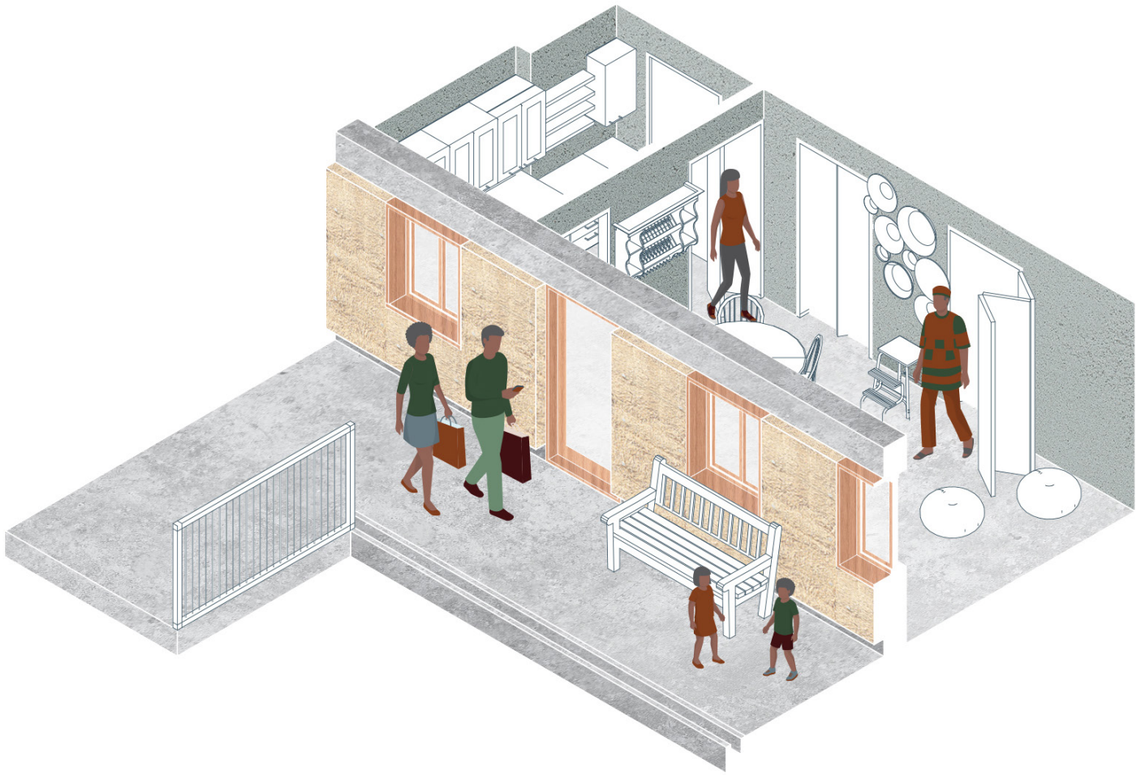
metal

bamboo

timber

source:
https://archello.com/
www.archdaily.com

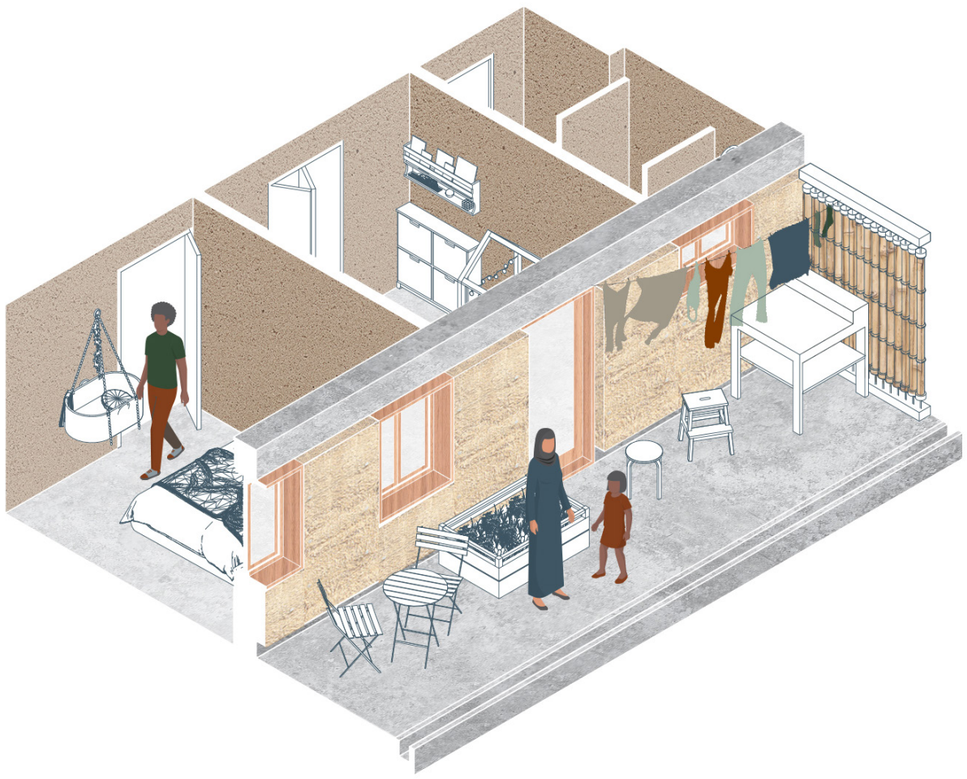
- TYPOLOGY 02 -
building modifications
scale: 1:500@A3



- TYPOLOGY 02 -

materiality & threshold part isometric view

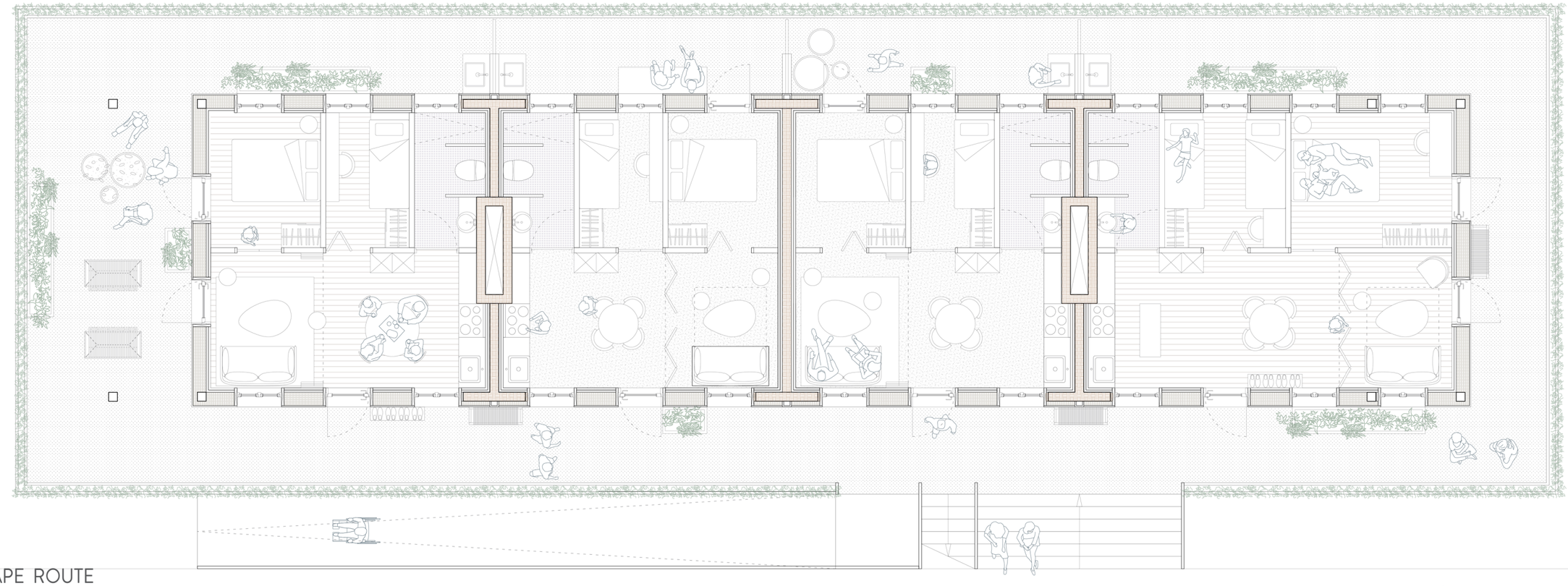
scale: 1:100@A4



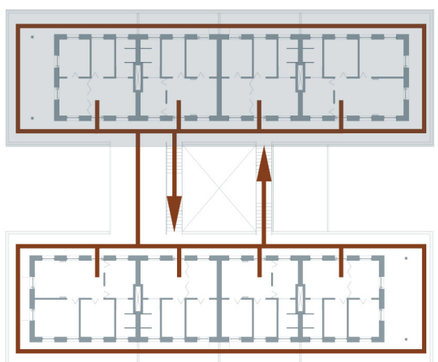
- TYPOLOGY 02 -

materiality & threshold part isometric view

scale: 1:100@A4



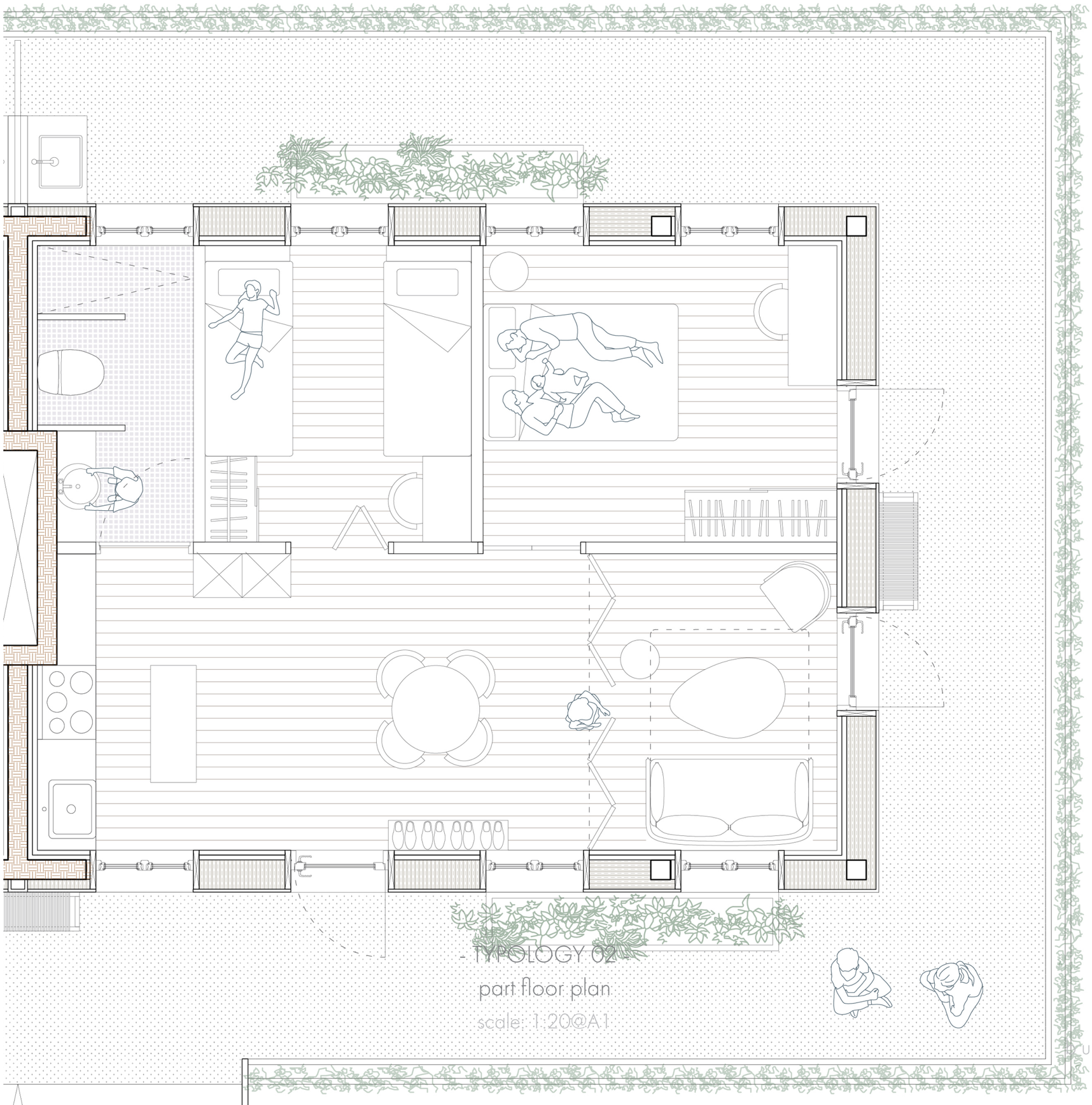
FIRE ESCAPE ROUTE



- TYPOLOGY 02 -

ground floor connection

scale: 1:50@A1



- TYPOLOGY 02 -

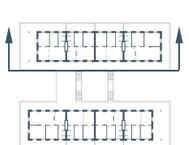
part floor plan

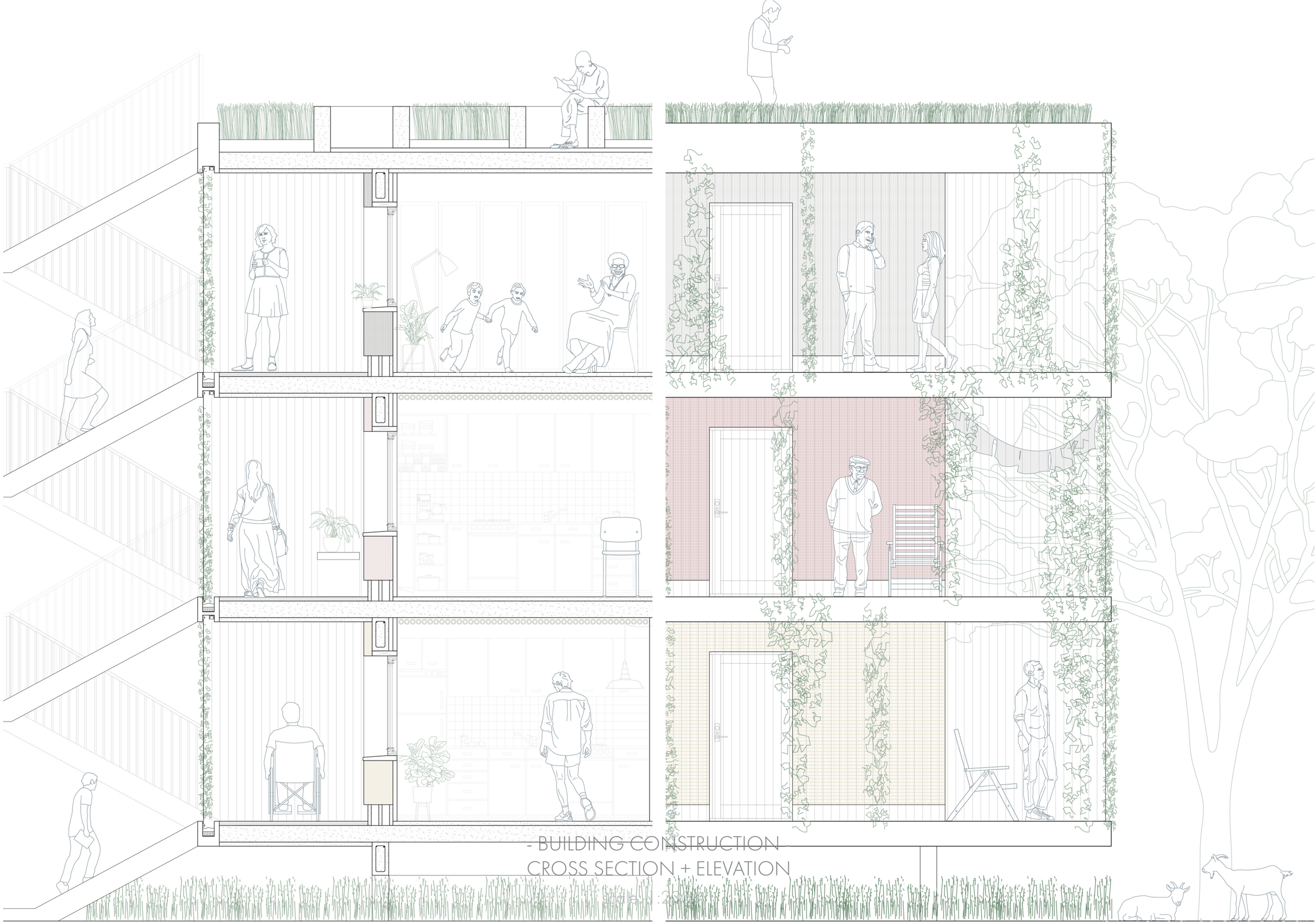
scale: 1:20@A1

- TYPOLOGY 02 -

elevation

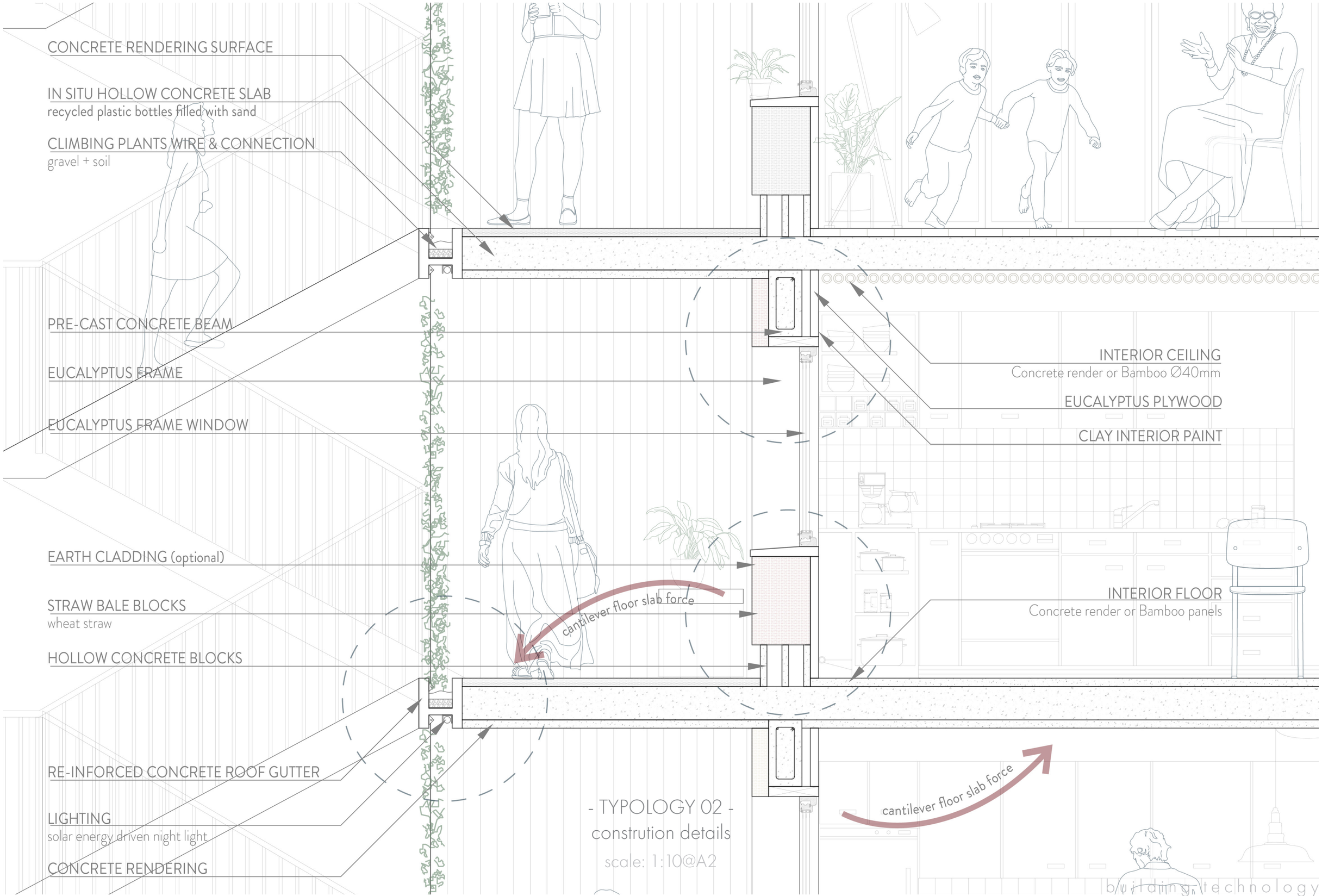
scale: 1:50@A1



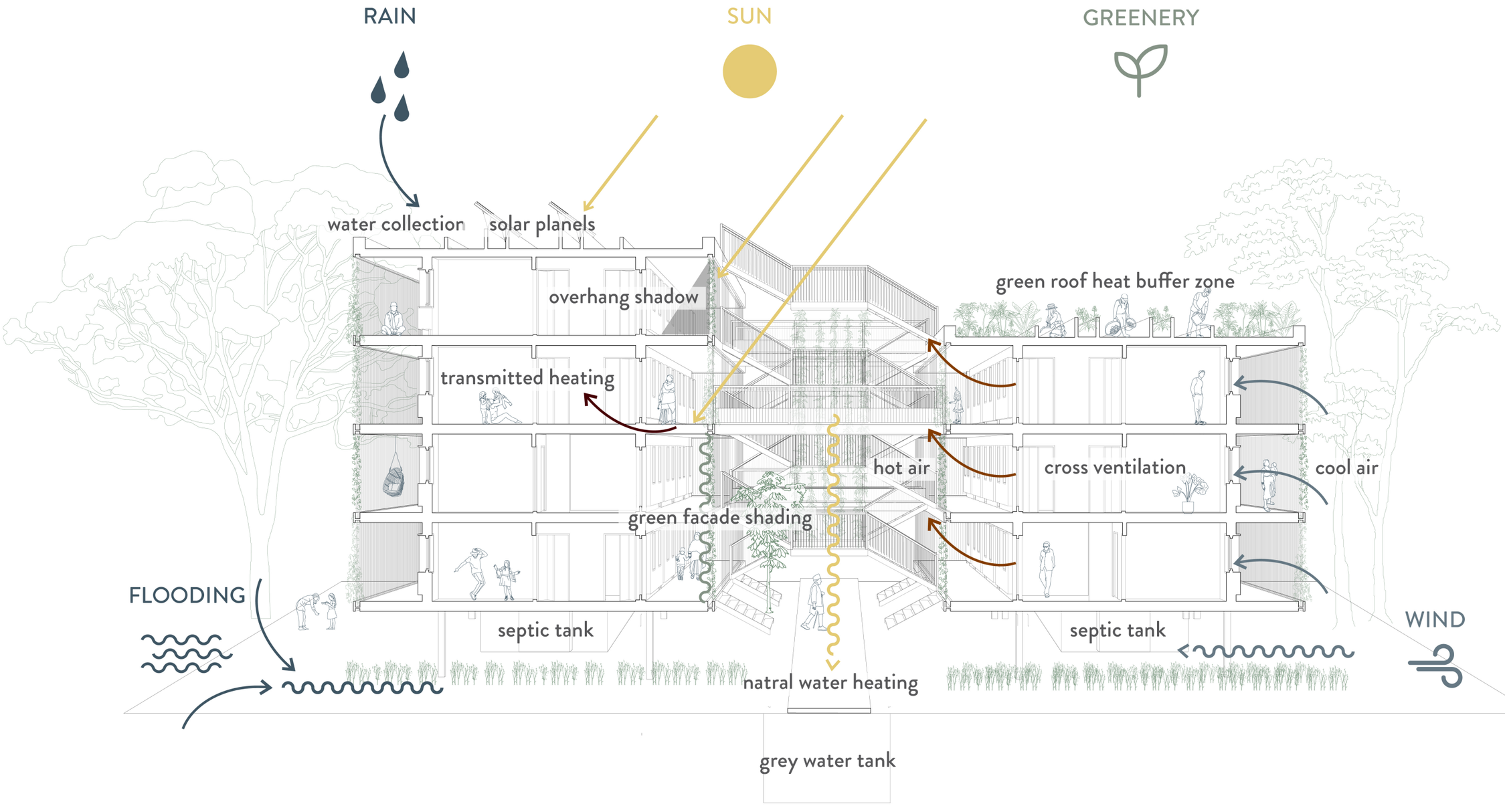


- BUILDING CONSTRUCTION -
CROSS SECTION + ELEVATION

scale 1:25



- TYPOLOGY 02 -
construtions details
scale: 1:10@A2



- TYPOLOGY 02 -

climate design perspective section

scale: 1:100@A2

- MARKET VIEW -

thank you!