

redefining schooling:

Co-crafting a community waterscape for the Bajau Laut

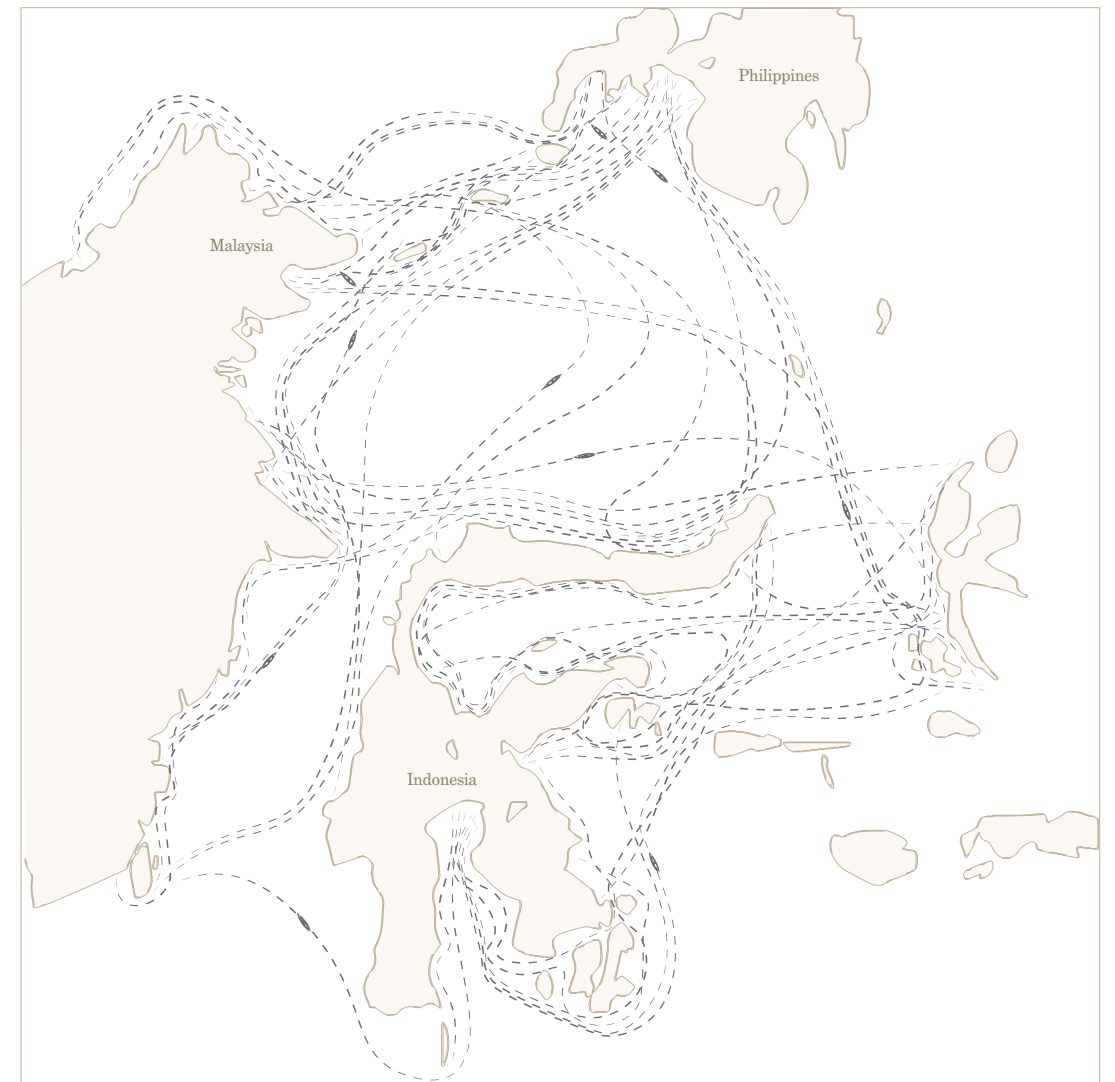


CHRISTINA SARRA | 5611318 | EXPLORE LAB

FACULTY OF ARCHITECTURE AND THE BUILT ENVIRONMENT TU DELFT
MENTORS: ROEL VAN DE PAS | PAUL CHAN | JAN VAN DE VOORT



The Community
© Dimitri Belfiore



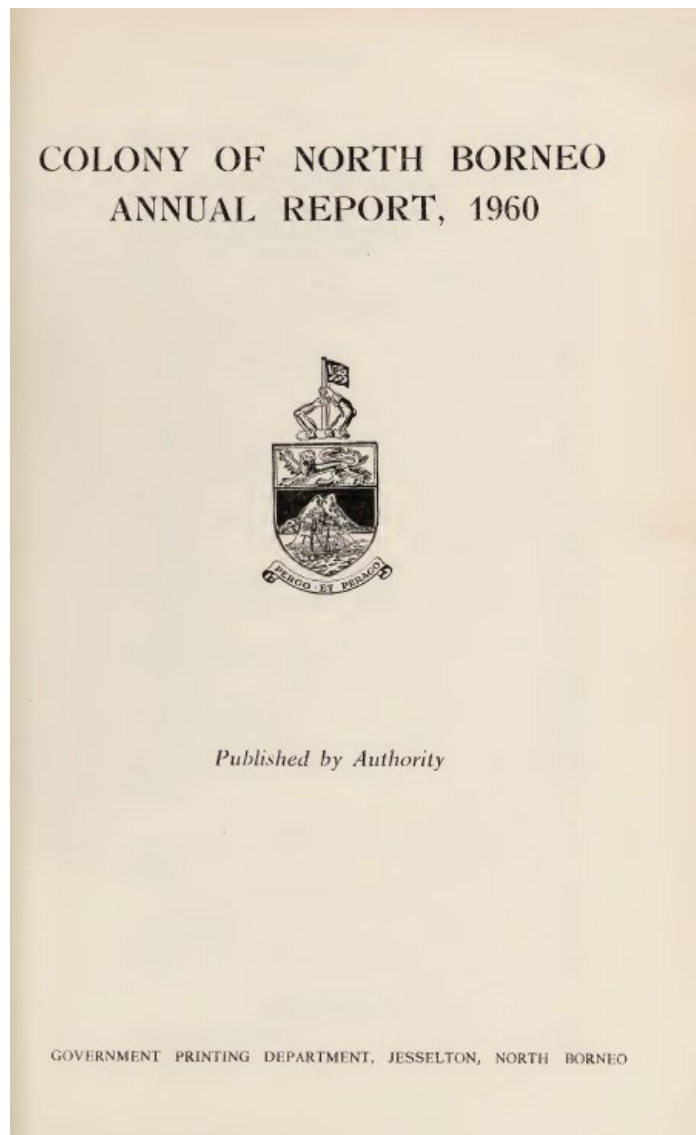
Bajau Laut Routes across the Sulu and Celebes Sea
Diagram Created by Author



© James Morgan



© Dimitri Belfiore



Self-built settlements on Semporna's shoreline
Kampung Bangau Bangau
© Google Maps

“Though undoubtedly of Malay origin, they are much larger in stature, and stronger and darker than ordinary Malays. Not caring to store up property, and rarely troubling themselves as to where next week’s meals are to come from, they pick up a precarious livelihood, along the shore line, by catching fish, finding sea slugs and turtle eggs, spearing sharks, and so forth. They lead a wild, free, roving life in the open air, untroubled by any care or thought for the morrow”.

Handbook of British North Borneo, 1890, pp. 34.

Stateless

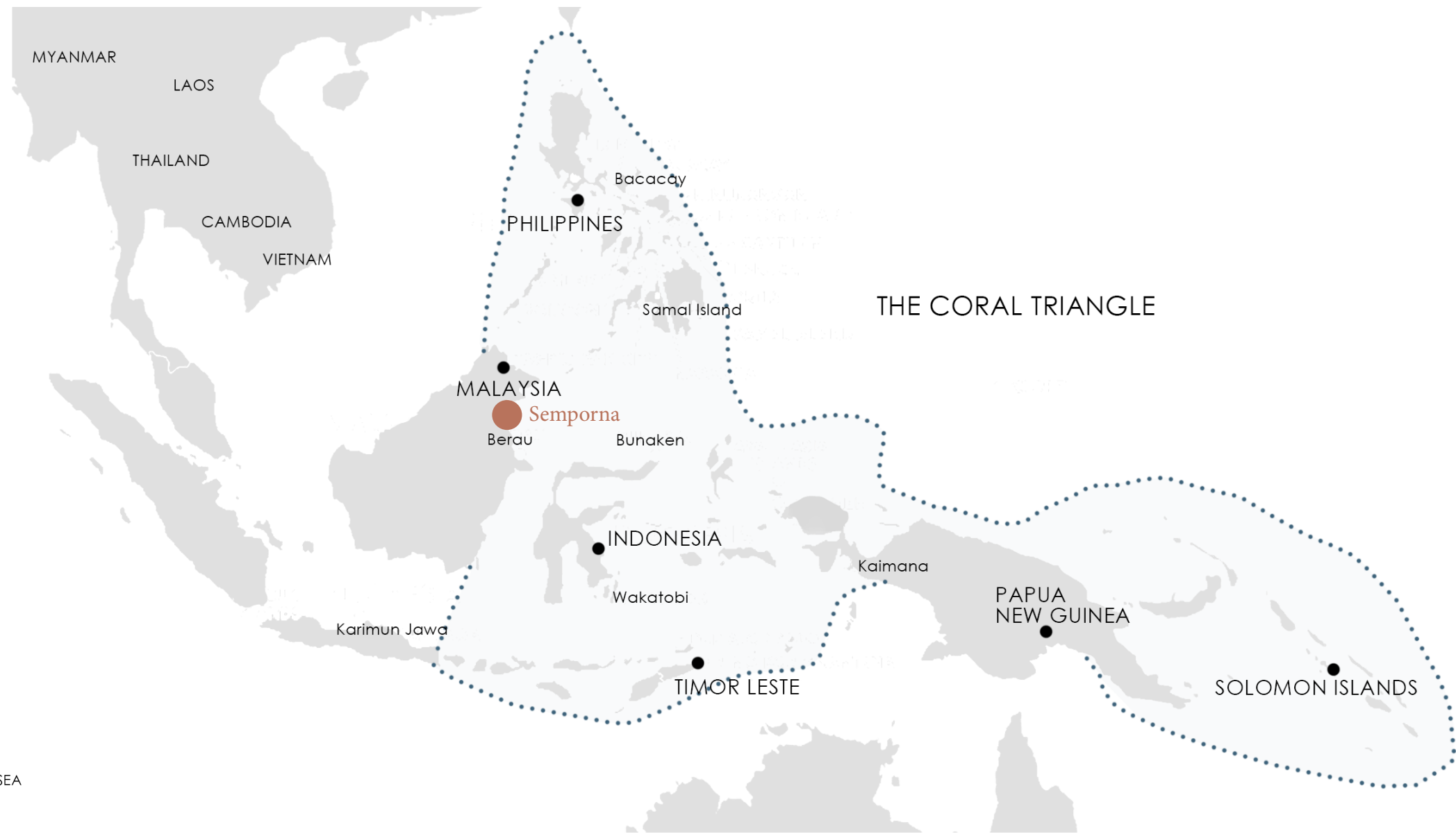
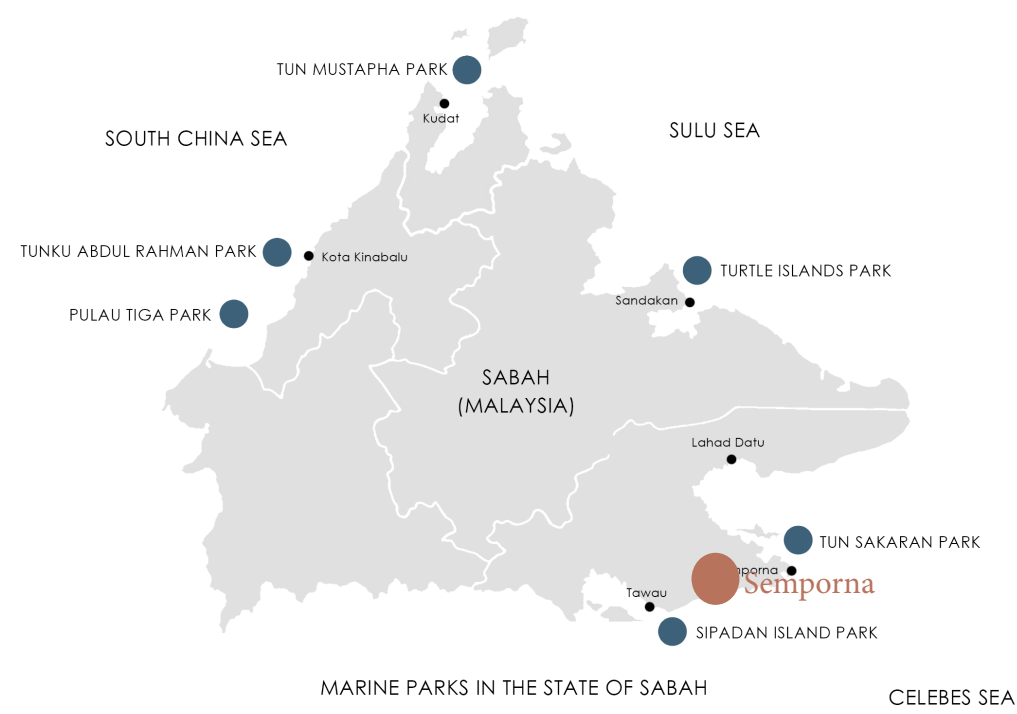
Nomadic Background: Not Recognised as Indigenous by Malaysia or Other SE Asian Countries

Not protected by the UN Declaration of the Rights of Indigenous People

Deprivation of the Rights to Civil Registry, Subsidized Healthcare, Social Protection

Research Question

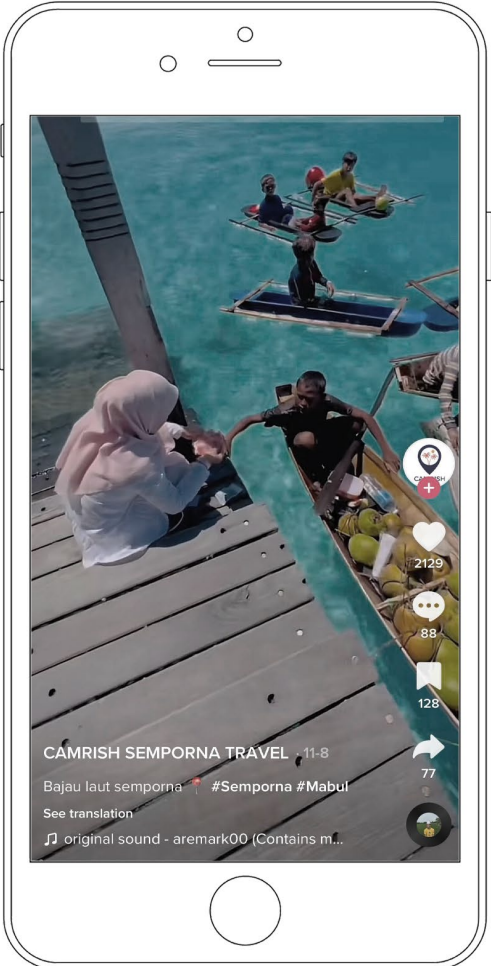
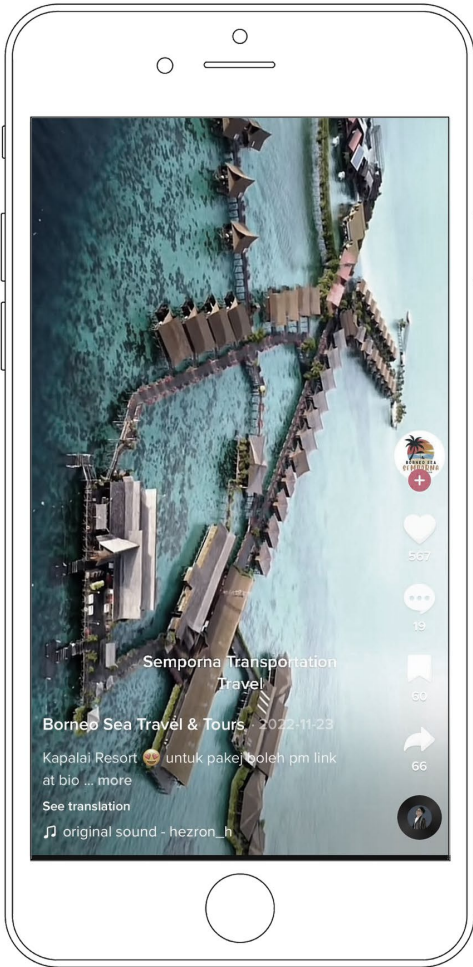
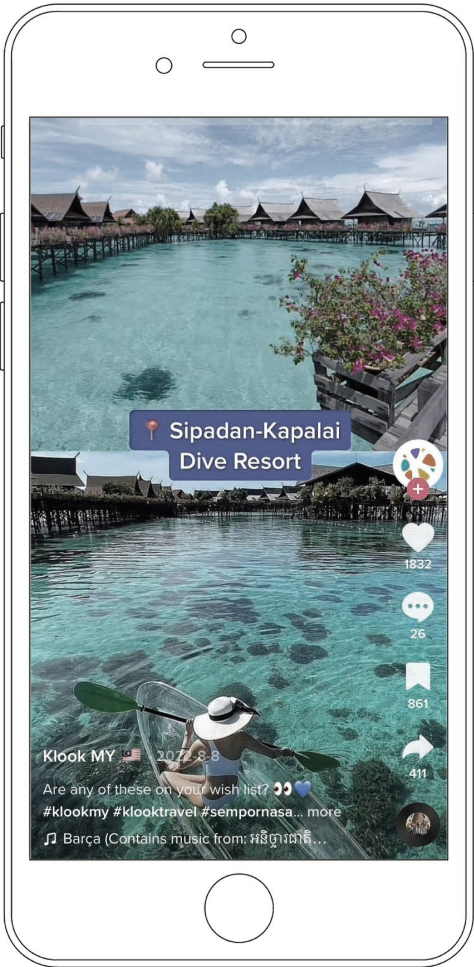
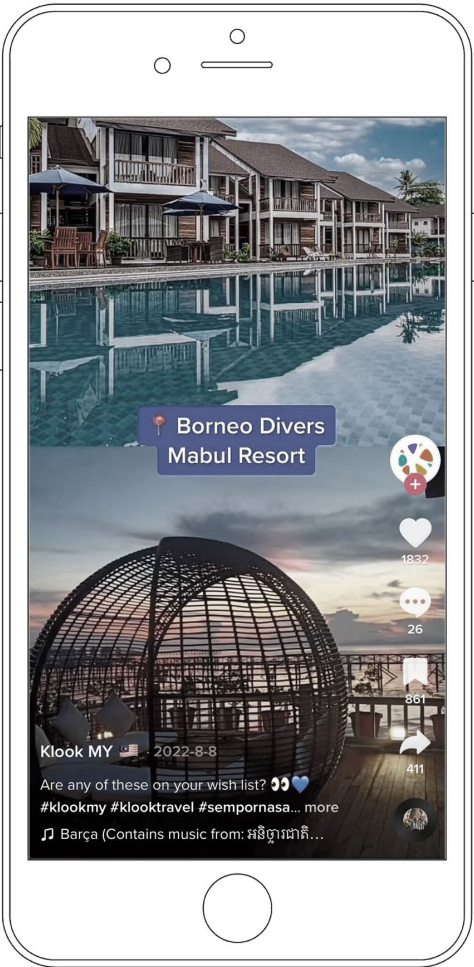
How much authority and involvement do the Bajau Laut have in natural resource conservation efforts and the ecotourism sector?



The Coral Triangle Area
Diagram created by the author

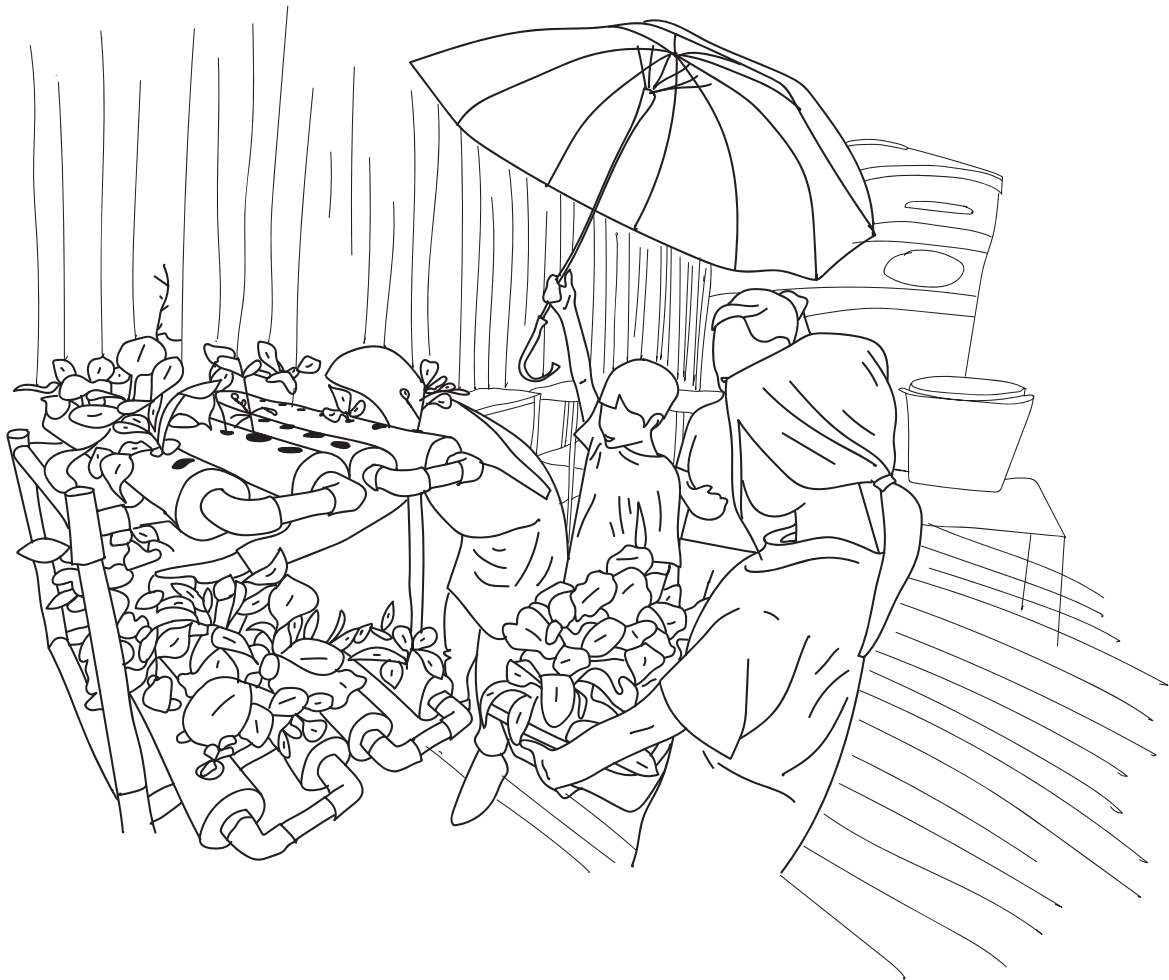
“Although our park management has evolved to engage with and include these communities in things that we do, problems still persist. The communities in and around the parks’ boundaries could become important allies if cultivated properly”

Sabah Parks



Research Question

What is the position of Alternative Learning Centers regarding indigenous education and the importance of school as an establishment?



Hydroponic Farming



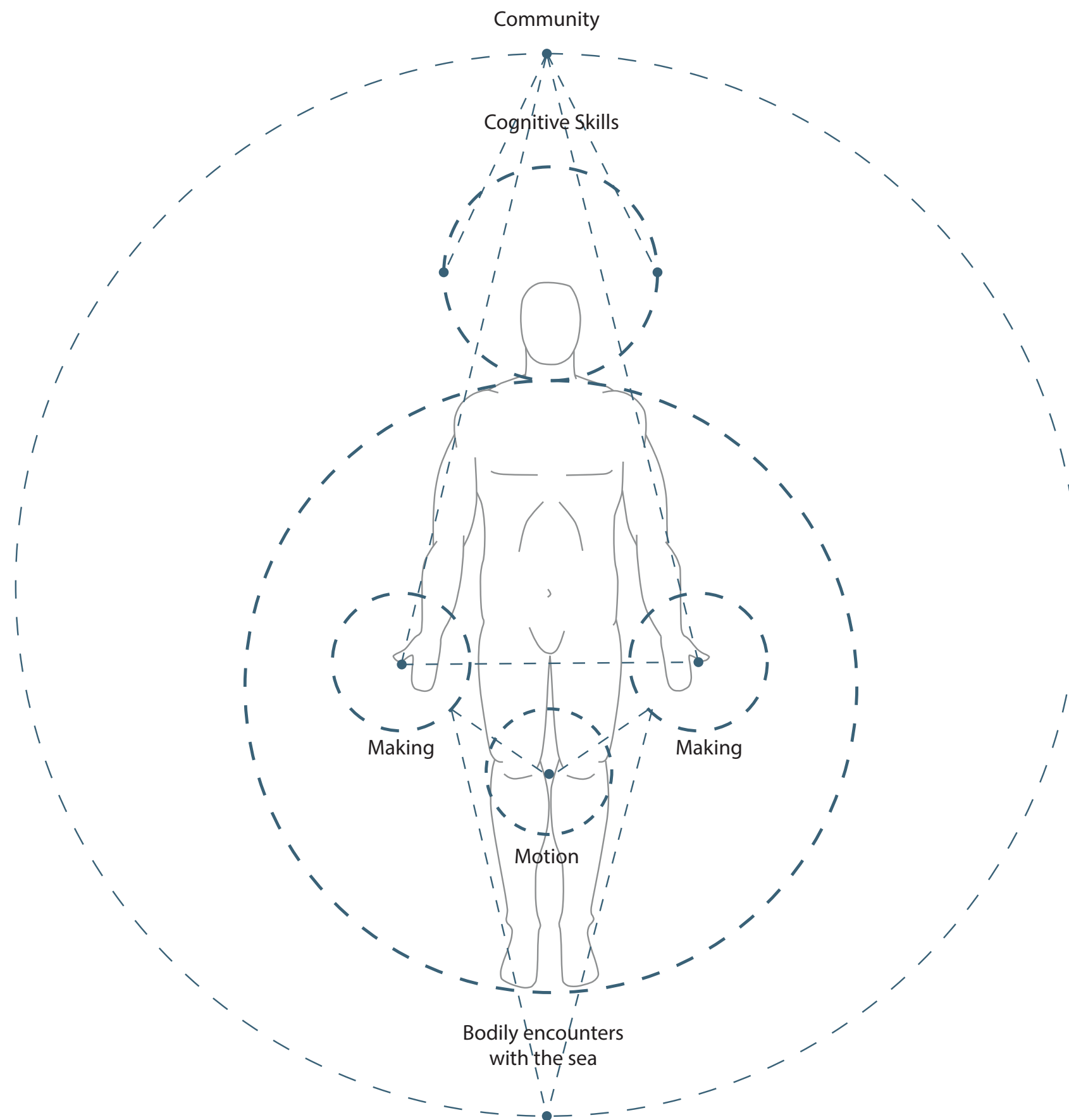
Outdoor Drawing Classes



Music/Singing Classes

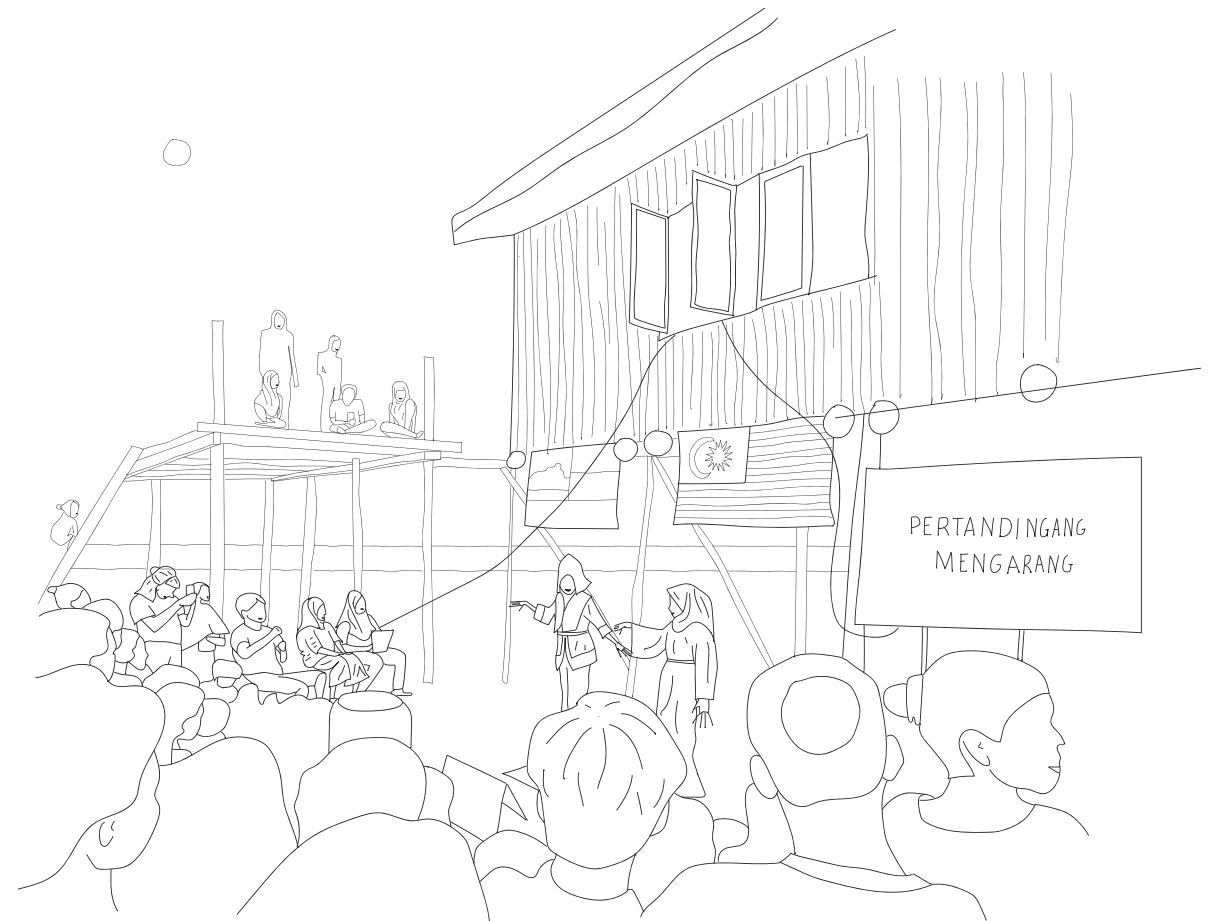
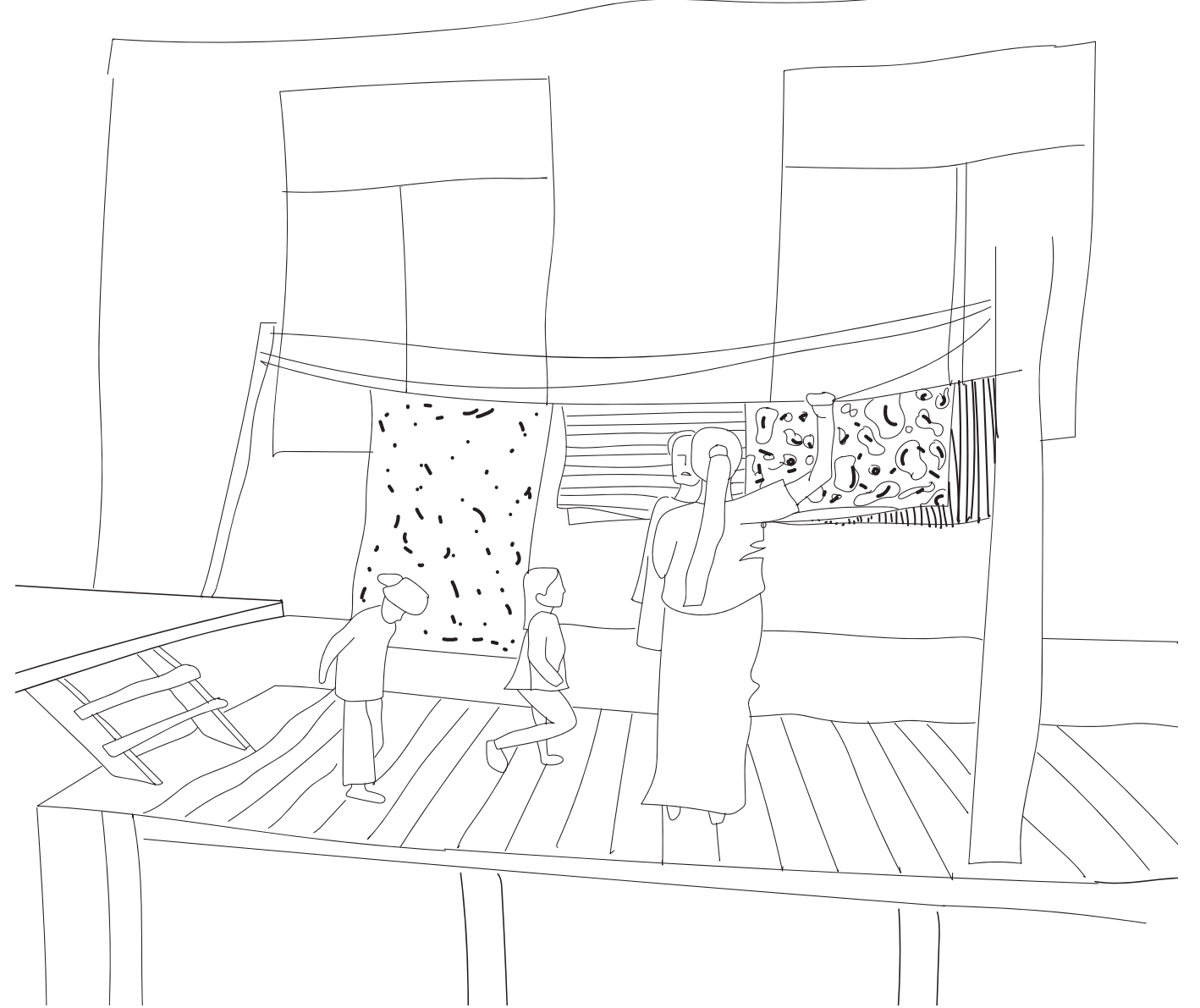
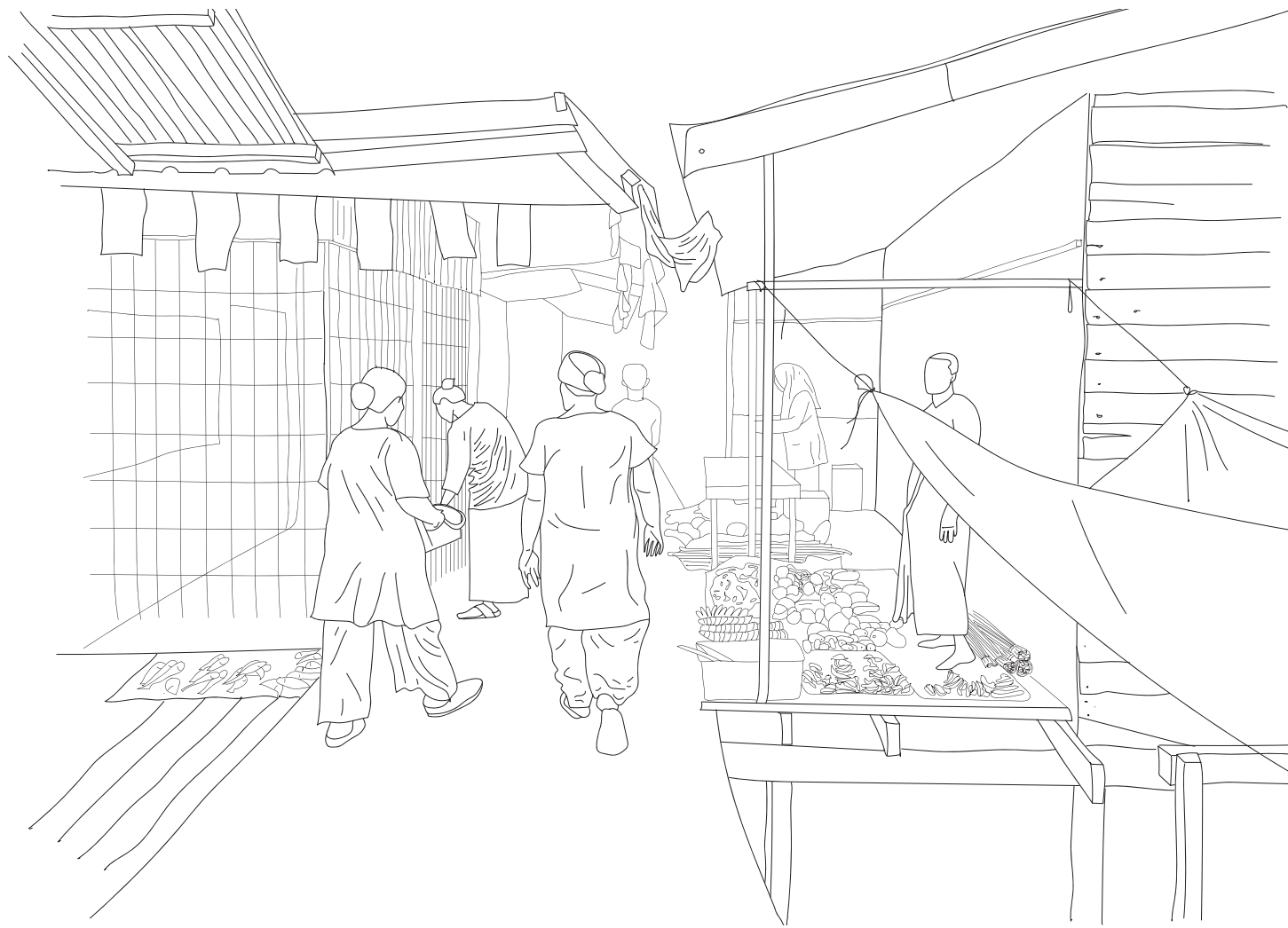


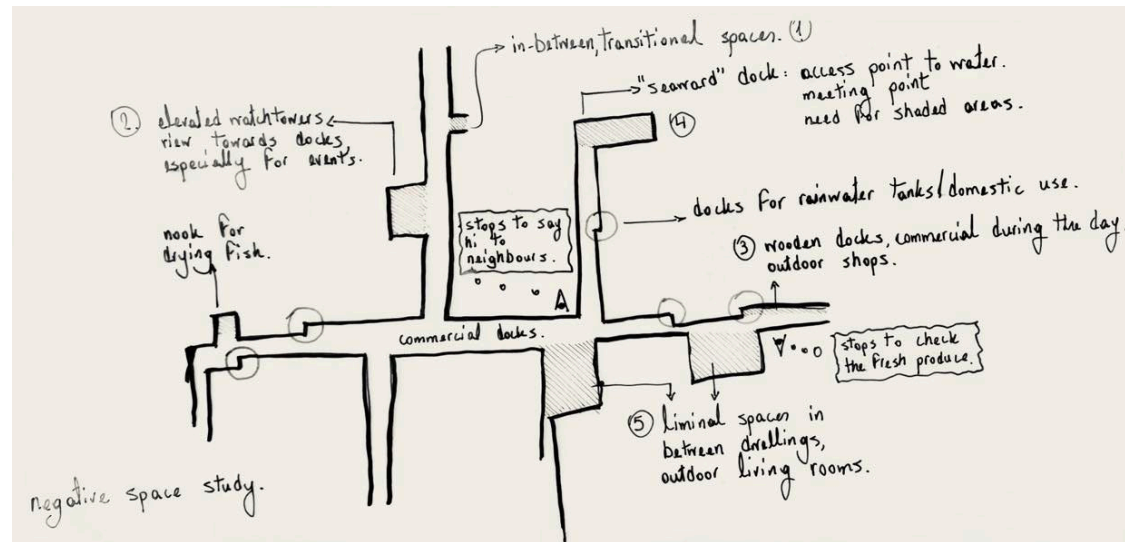
Making soy/cassava products



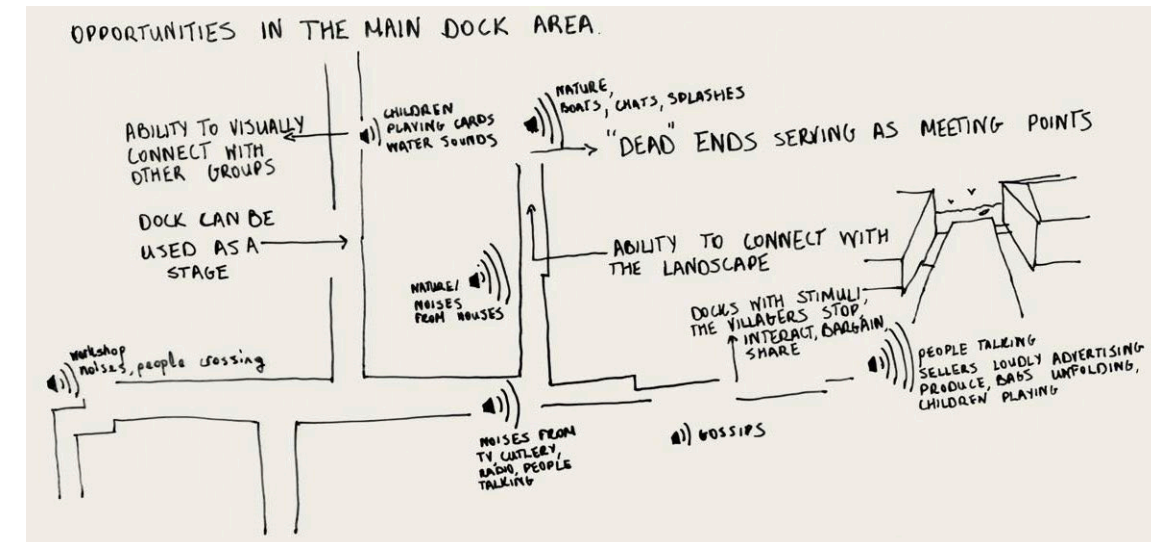
design programme

communal kitchen	marine specimen archive +
food processing/preservation area	laboratory
fishing equipment workspace	library
creative workshops	classroom space
small market	
playground	

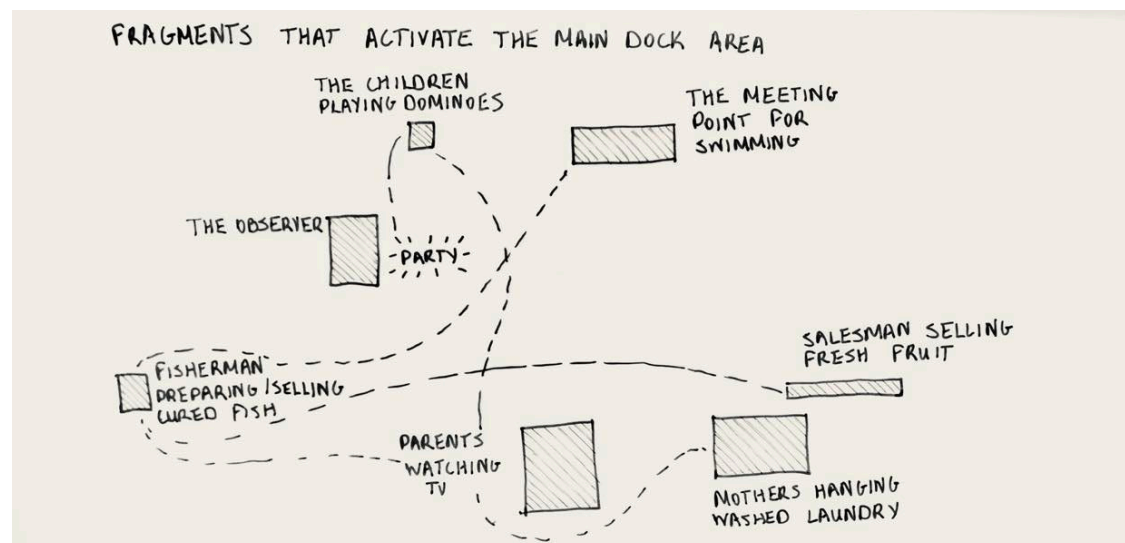




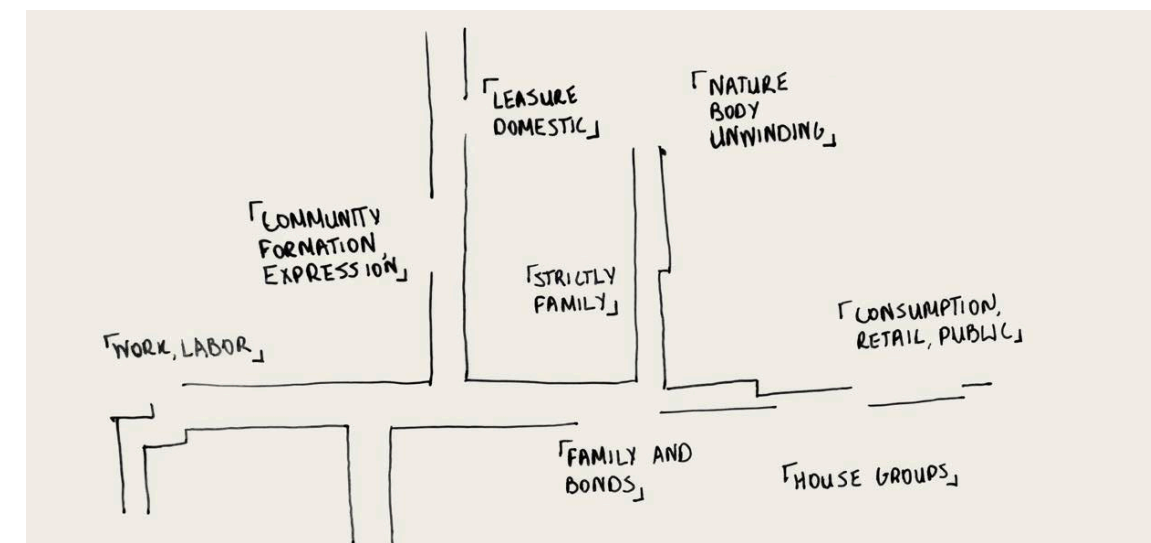
1. platform typologies



2. sound volumes



3. users and activities

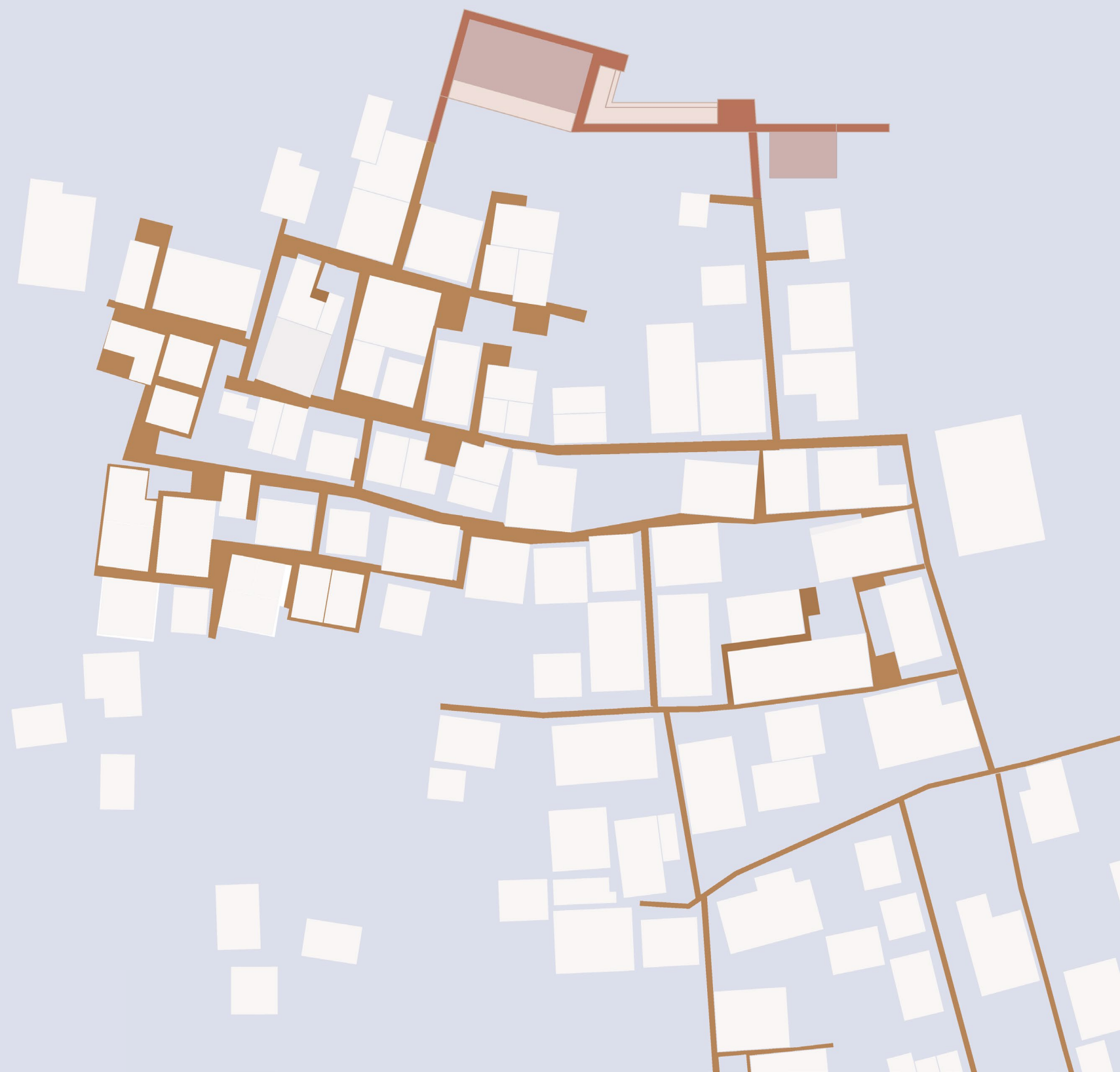


4. use categories

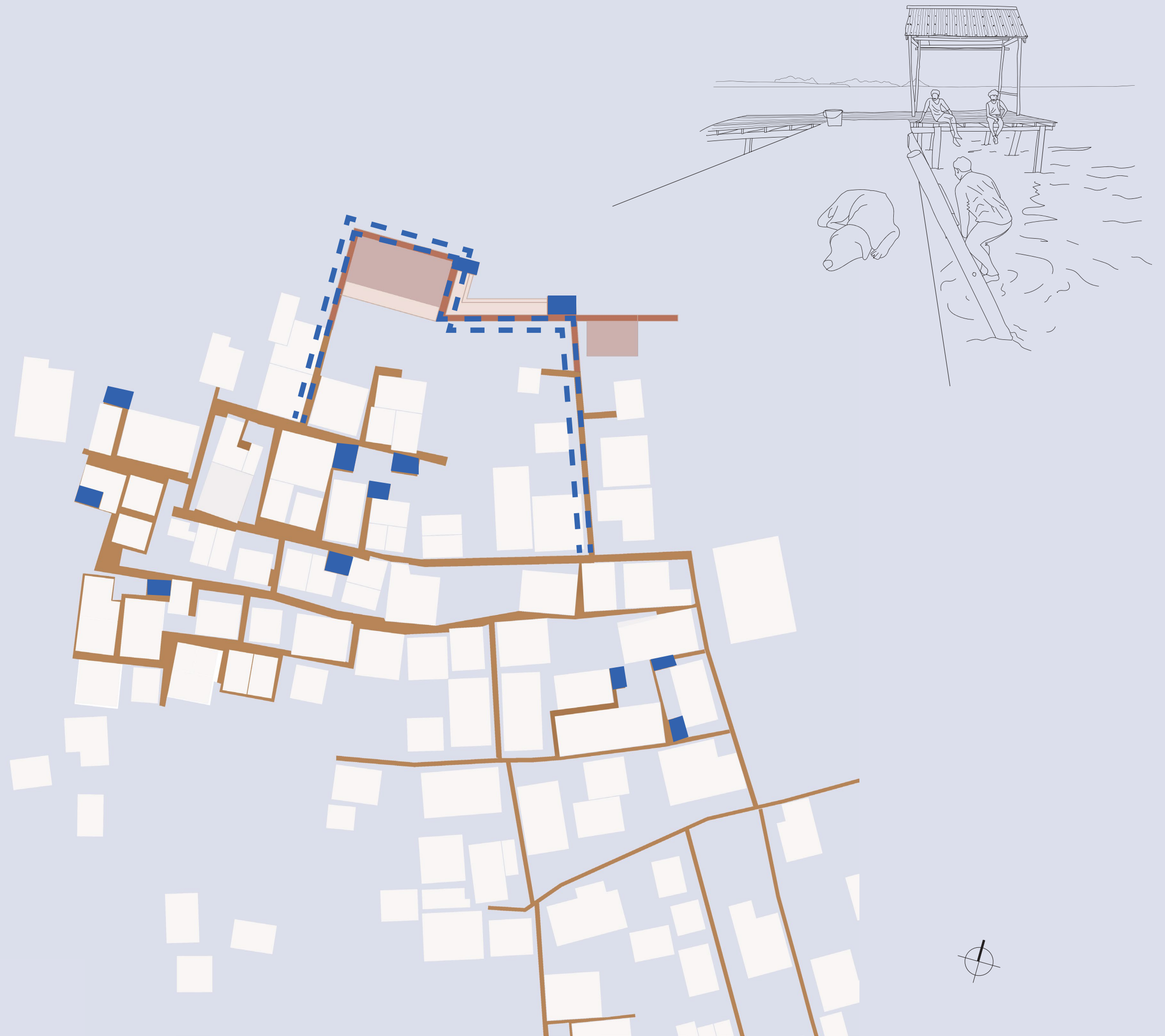
mapping: activities on platforms and their position in relation to the sea

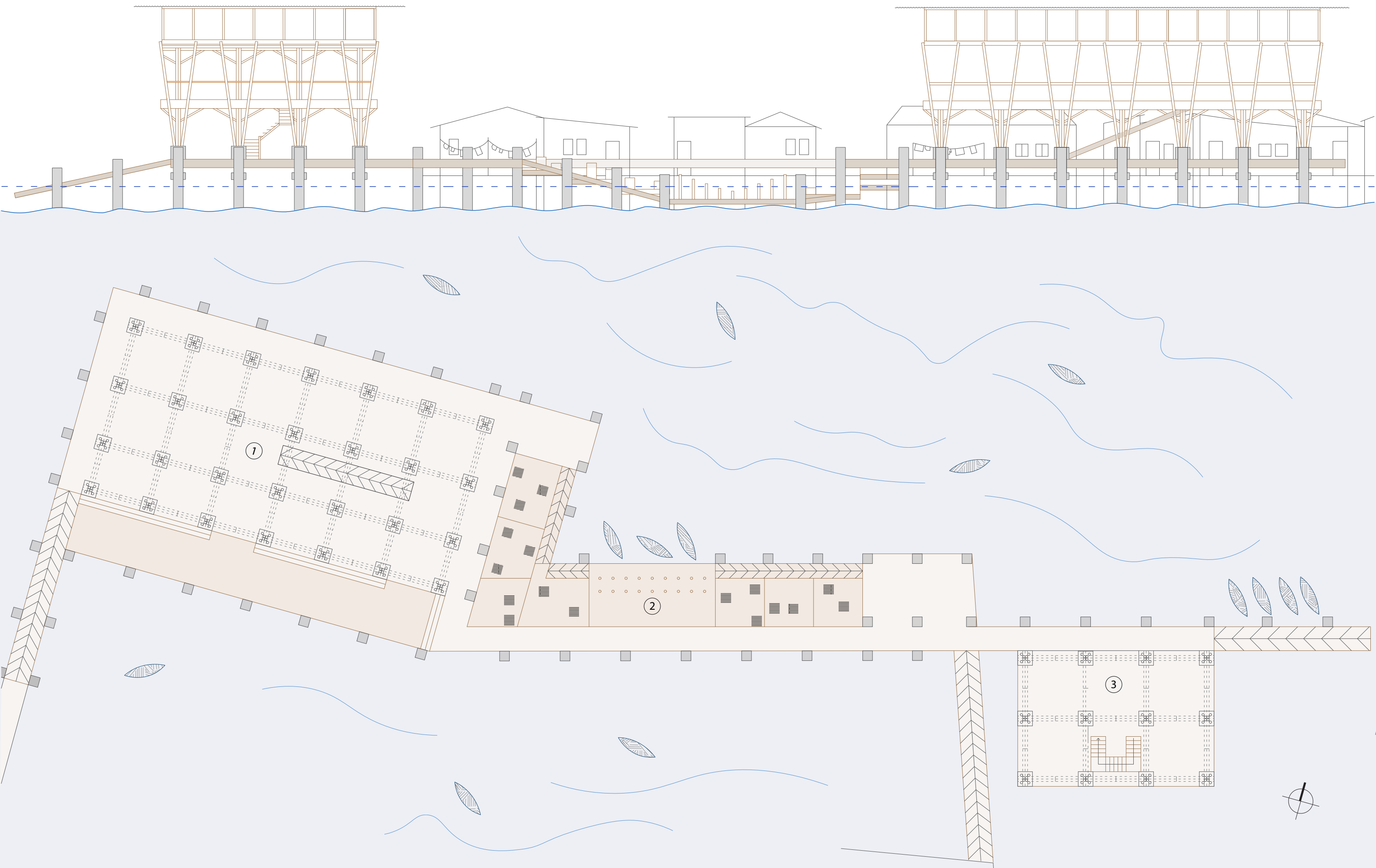
design question

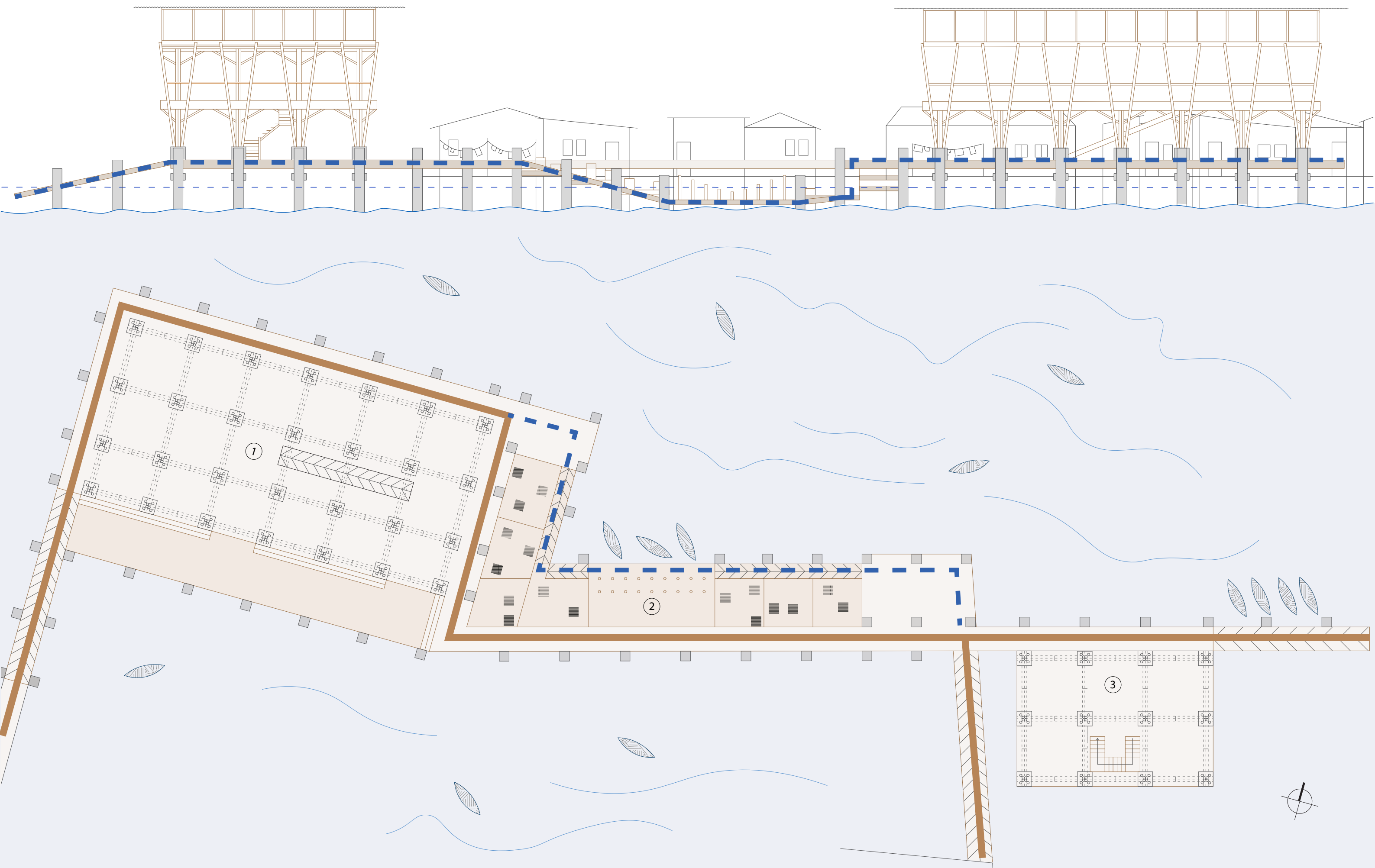
Which kind of typologies would optimize the use of the primary spaces of the school, and in what ways do these become incorporated within the landscape and in relationship to the village?

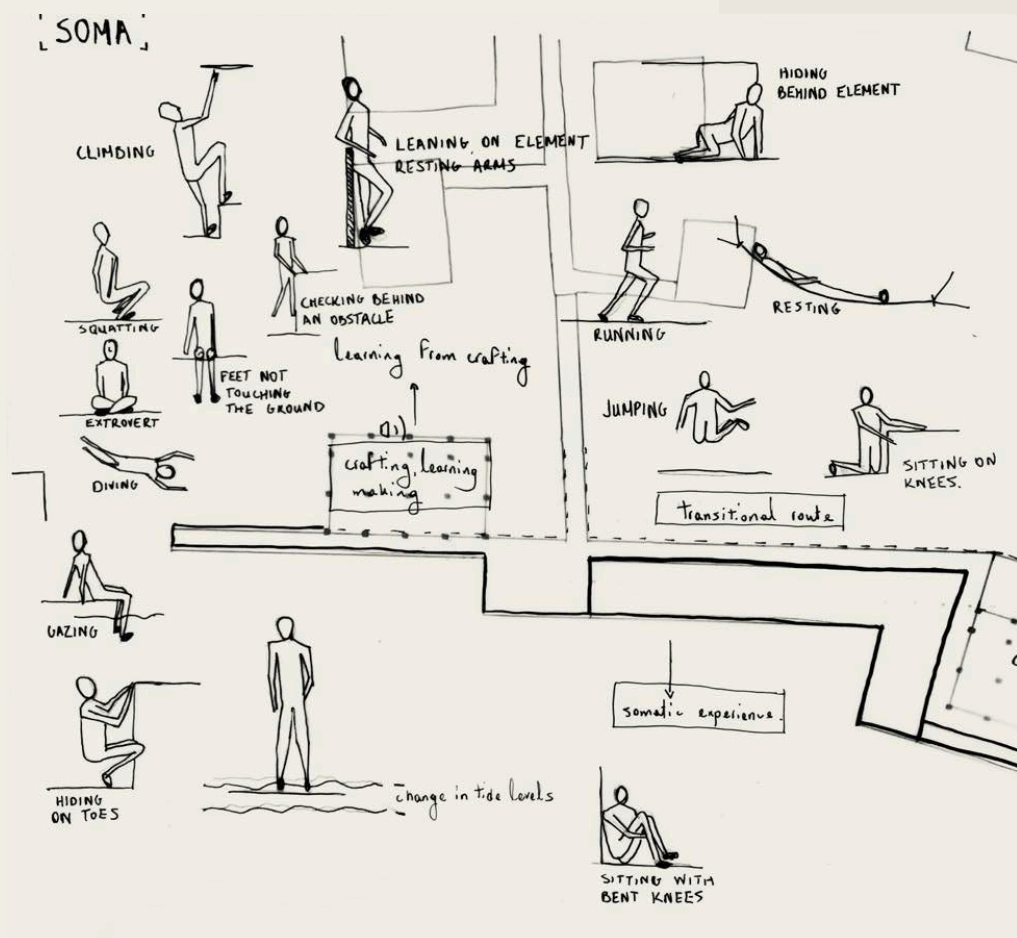








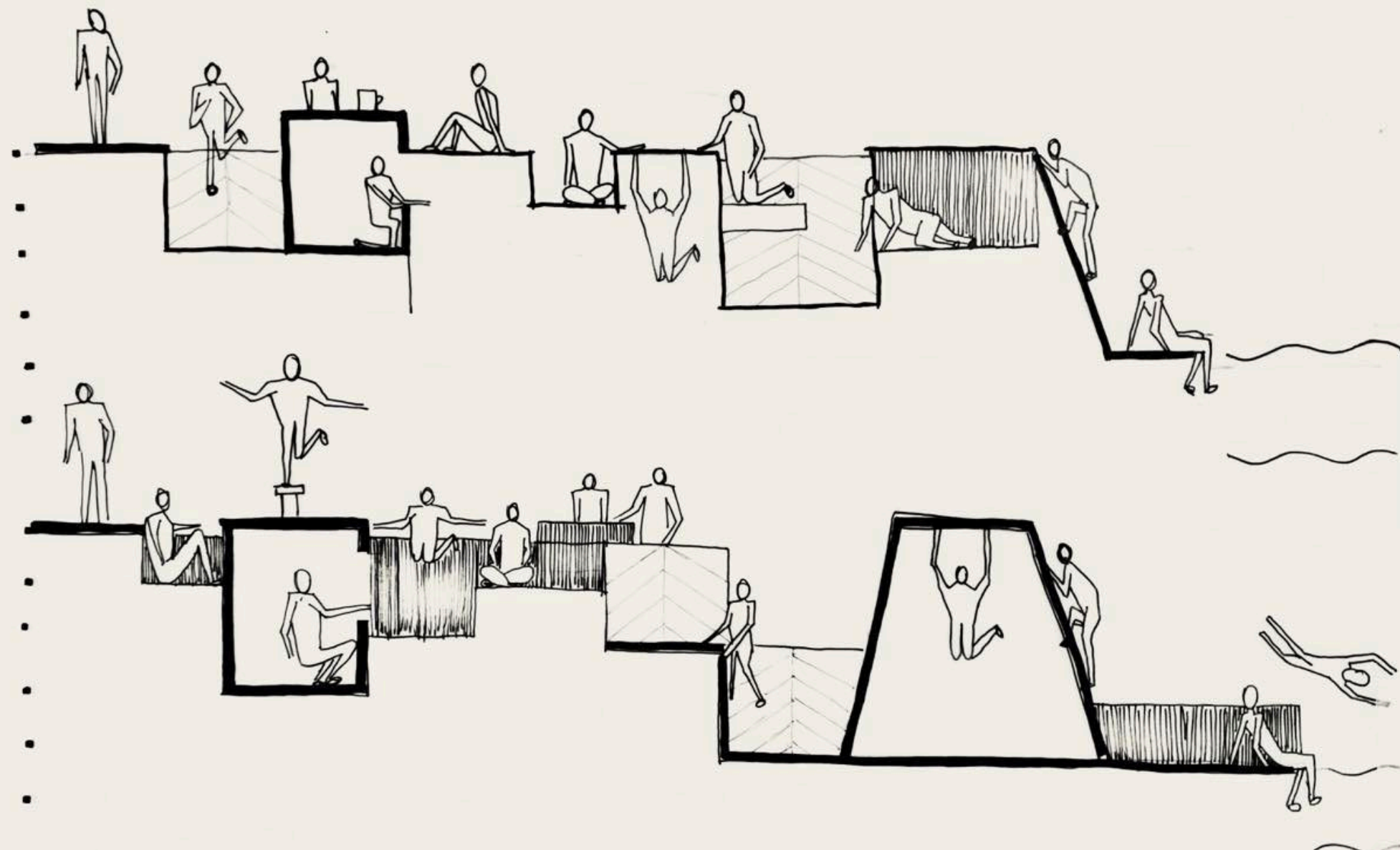
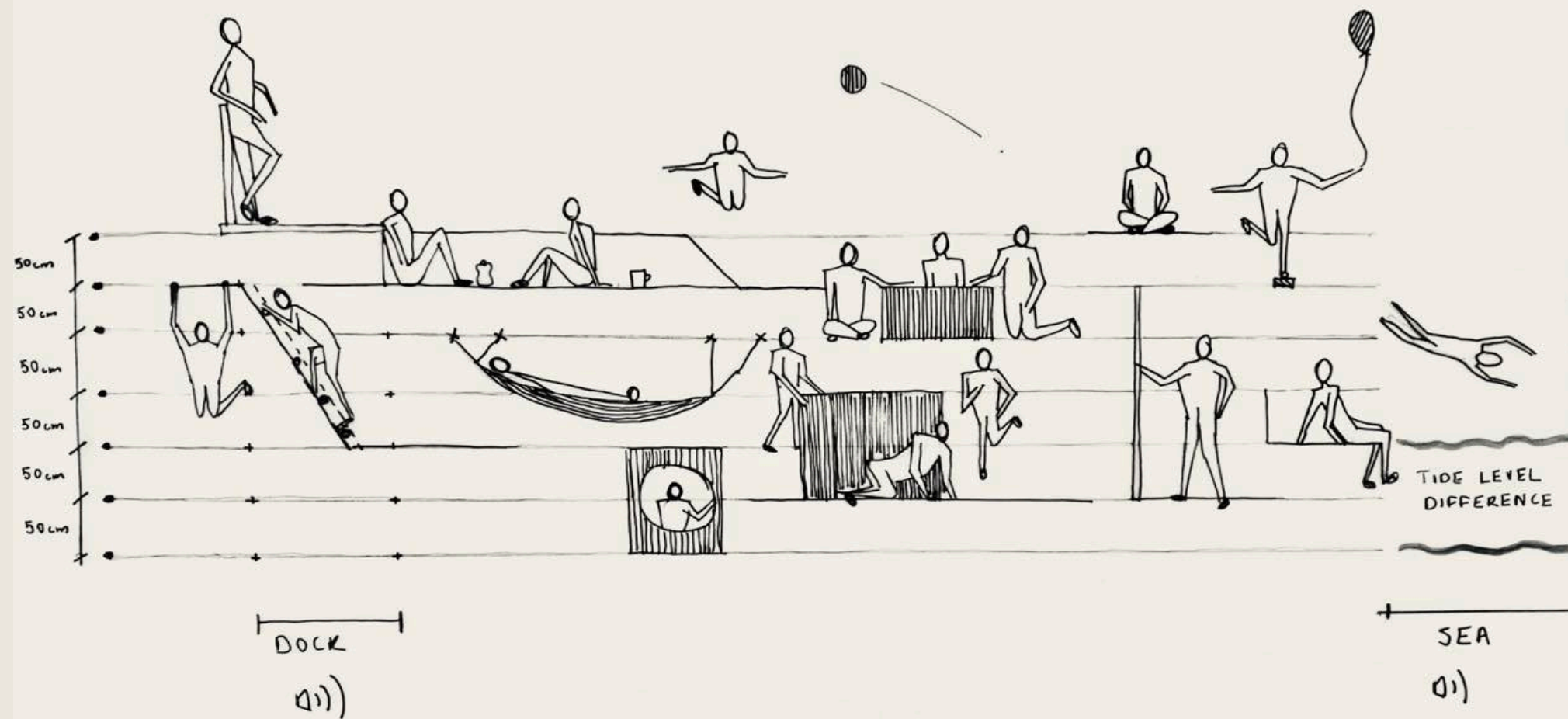


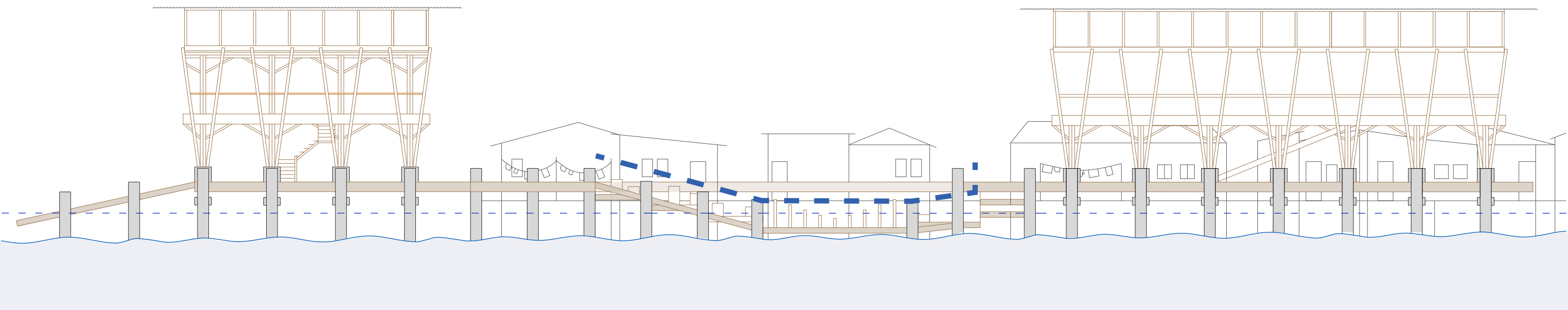


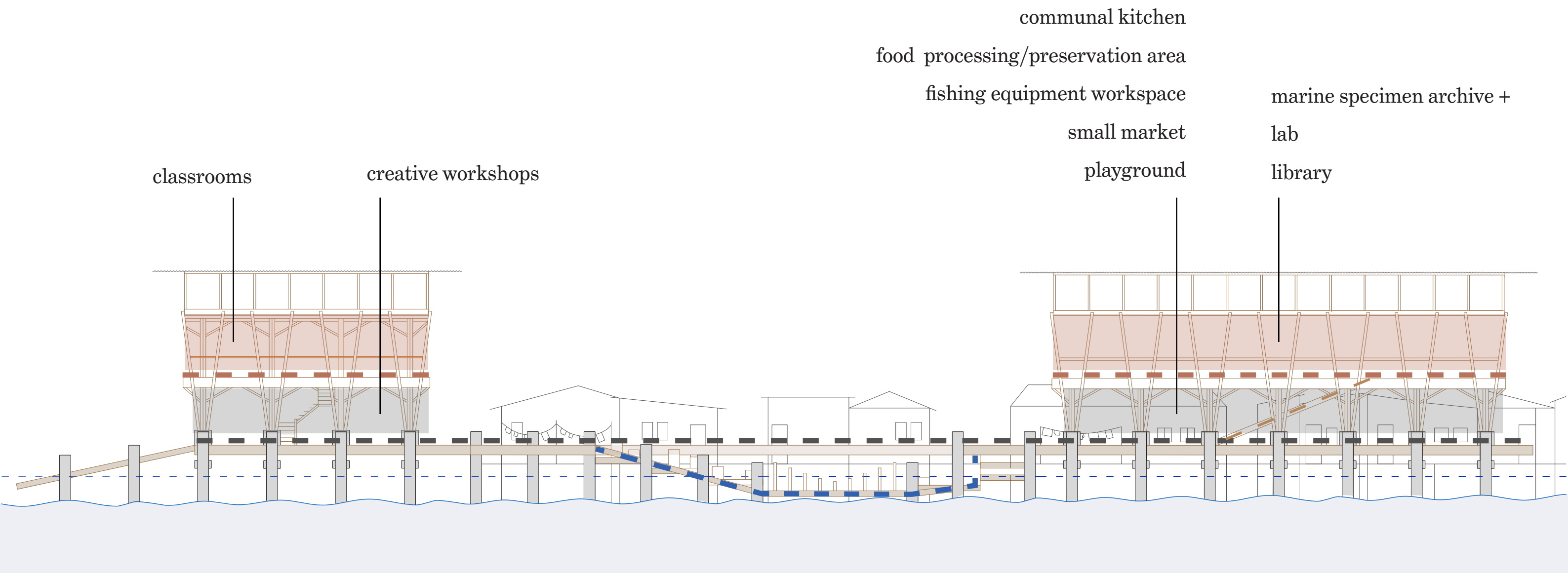
exploration of bodily movements when playing



Kampung Bangau Bangau: the cemetery as the only playing space



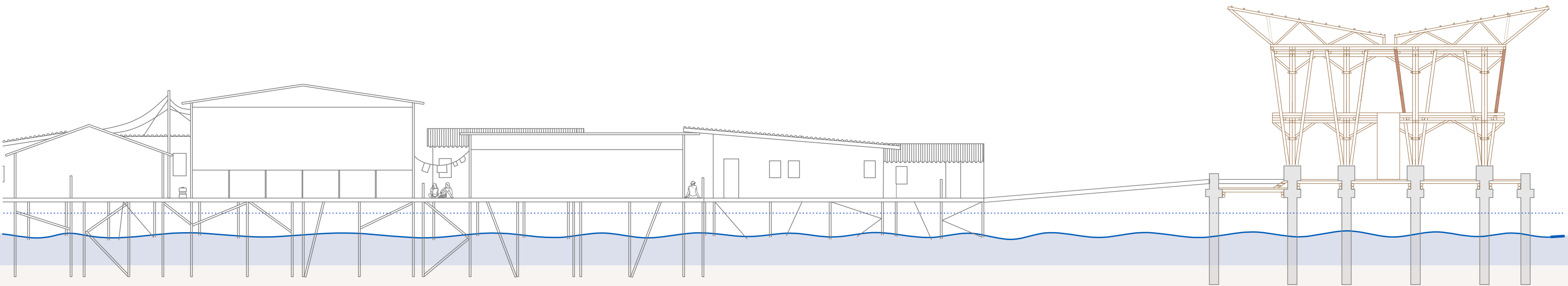


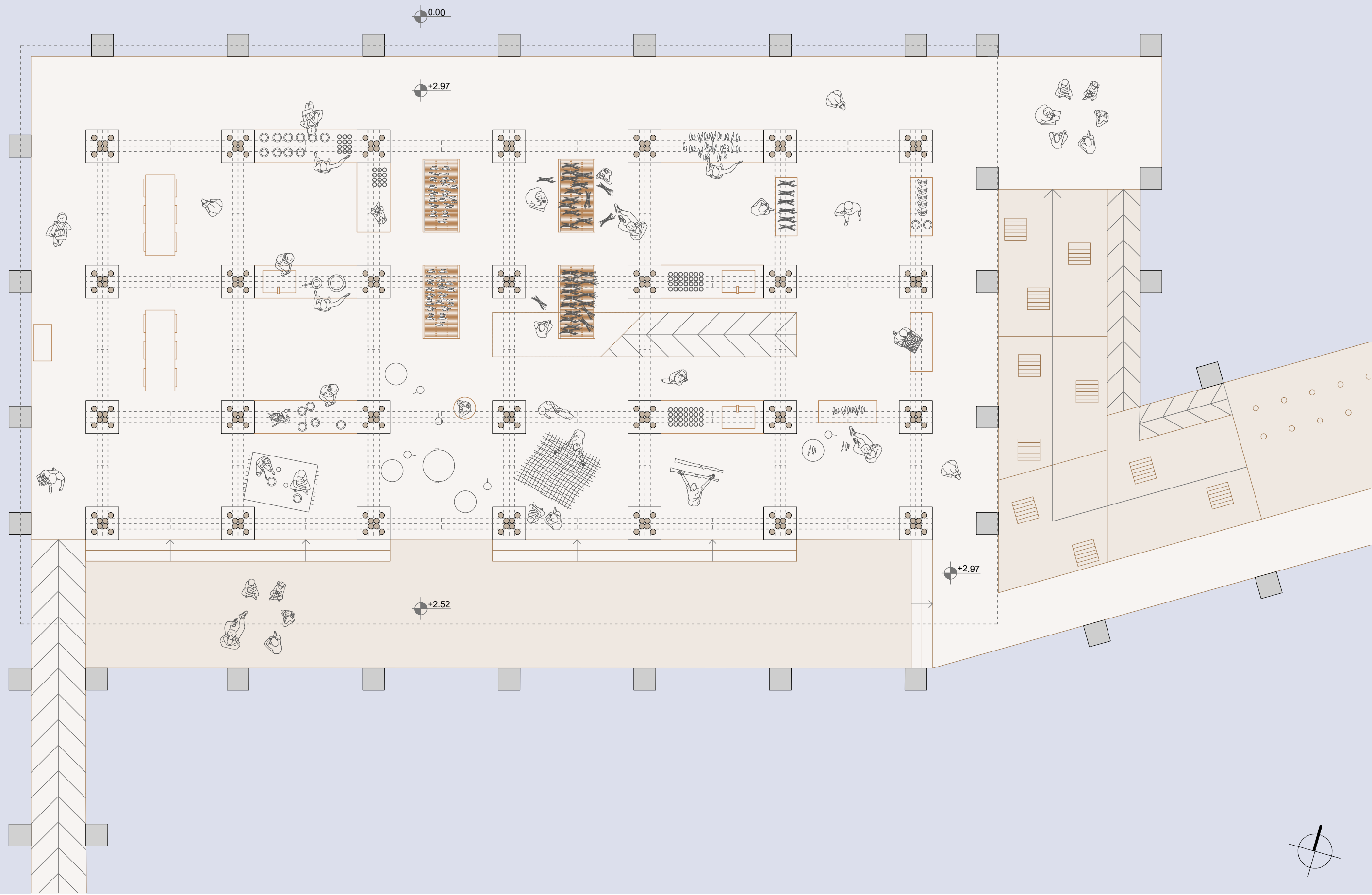


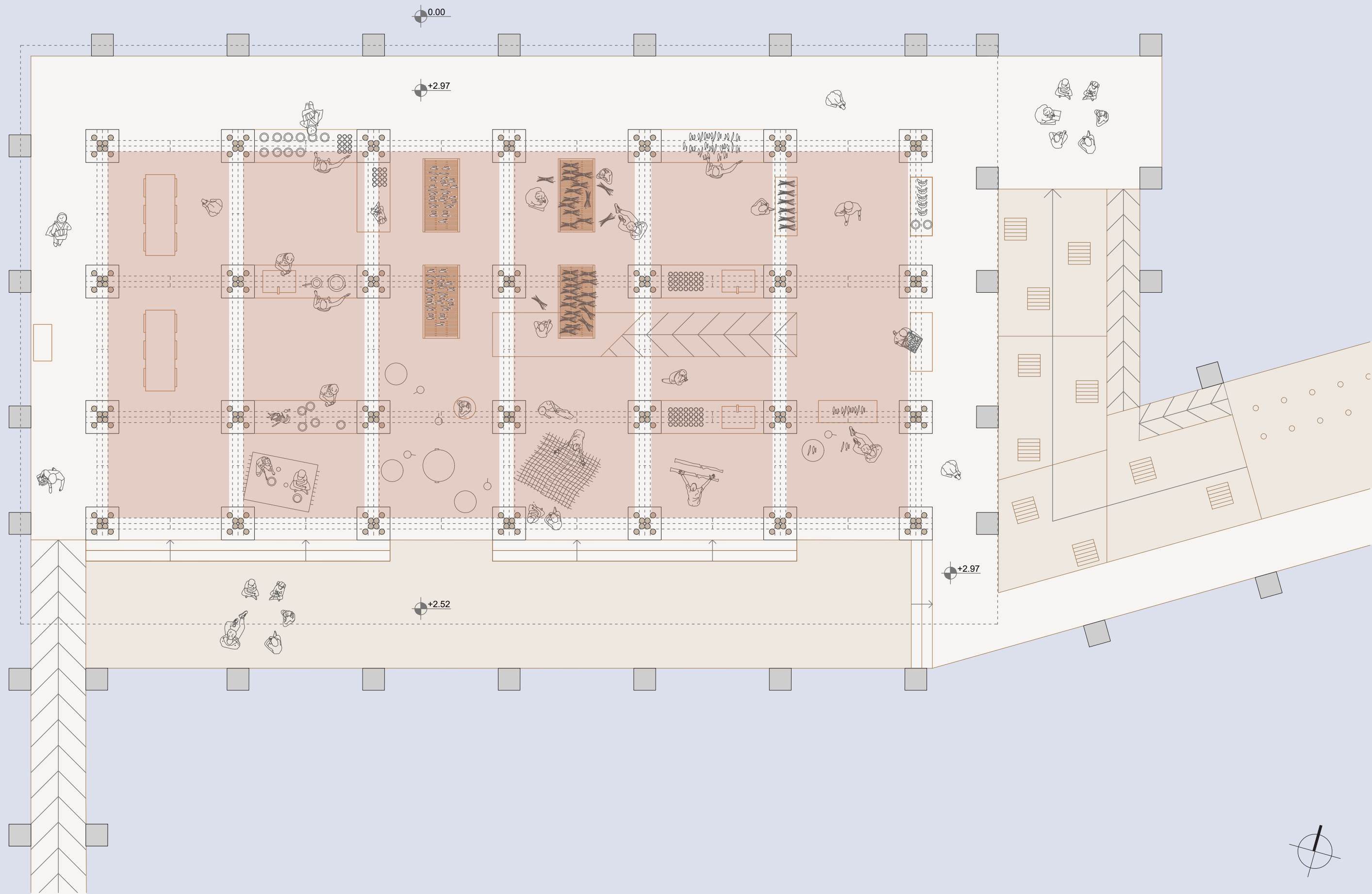
Vertical planes and distribution of programme

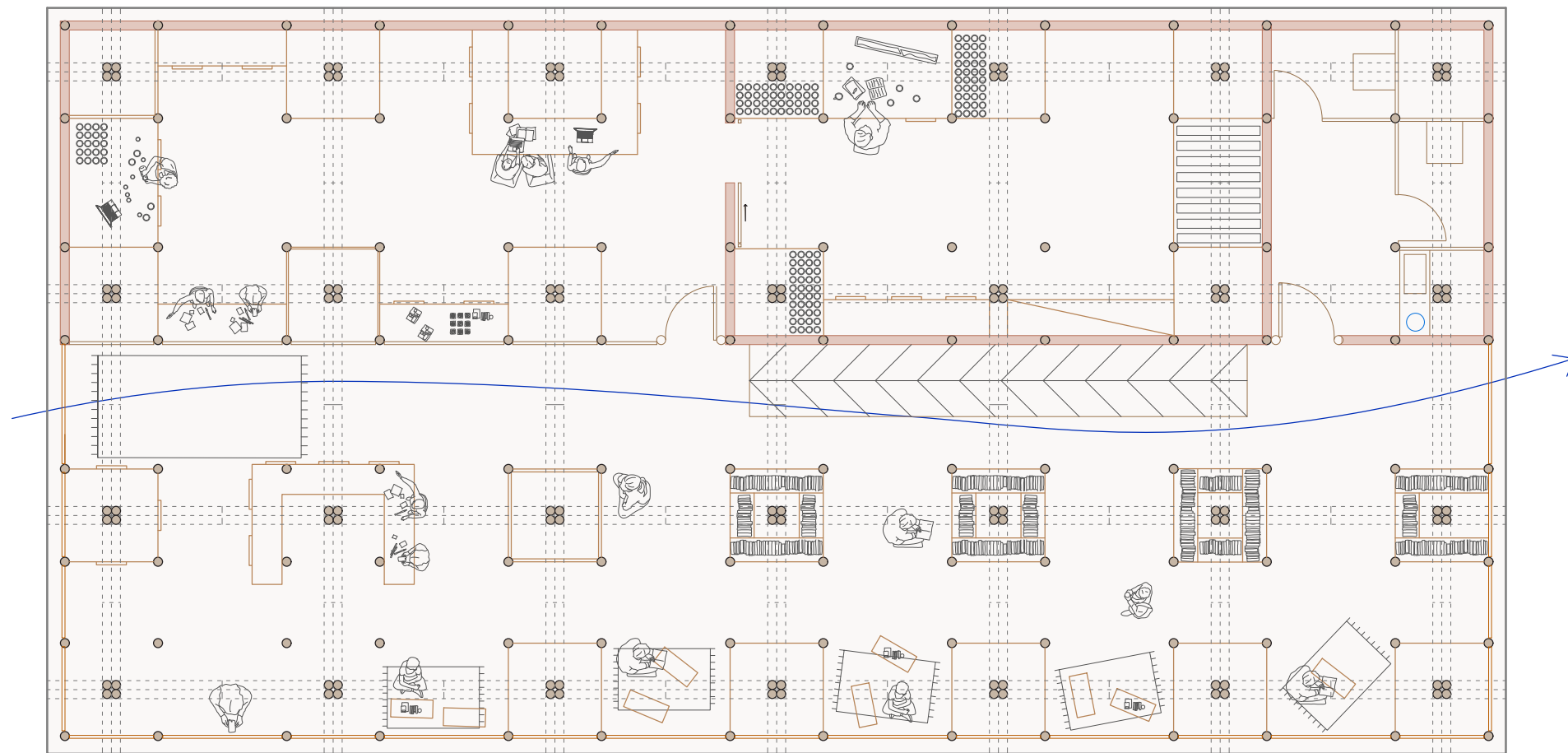
design question

How does one introduce a non-invasive structure that does not disrupt the village's connection with the sea?

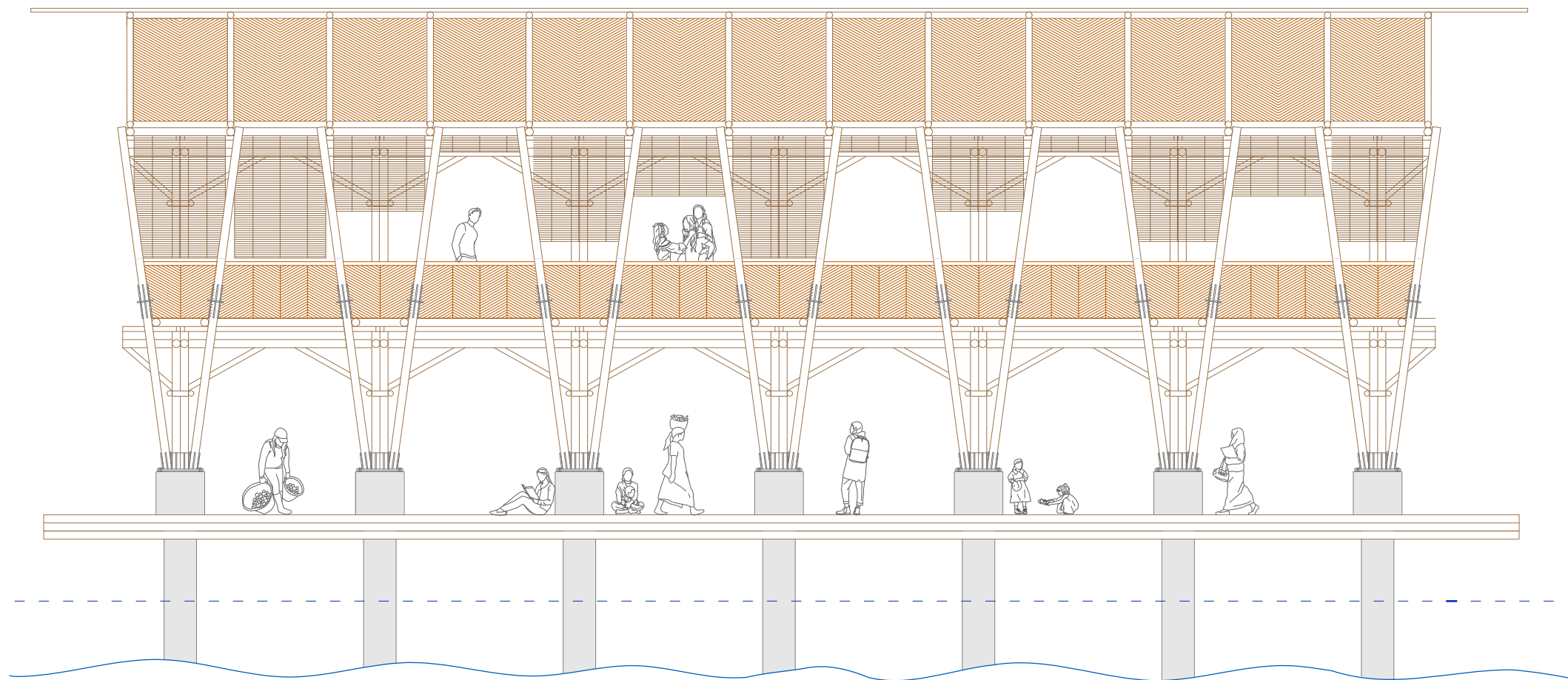




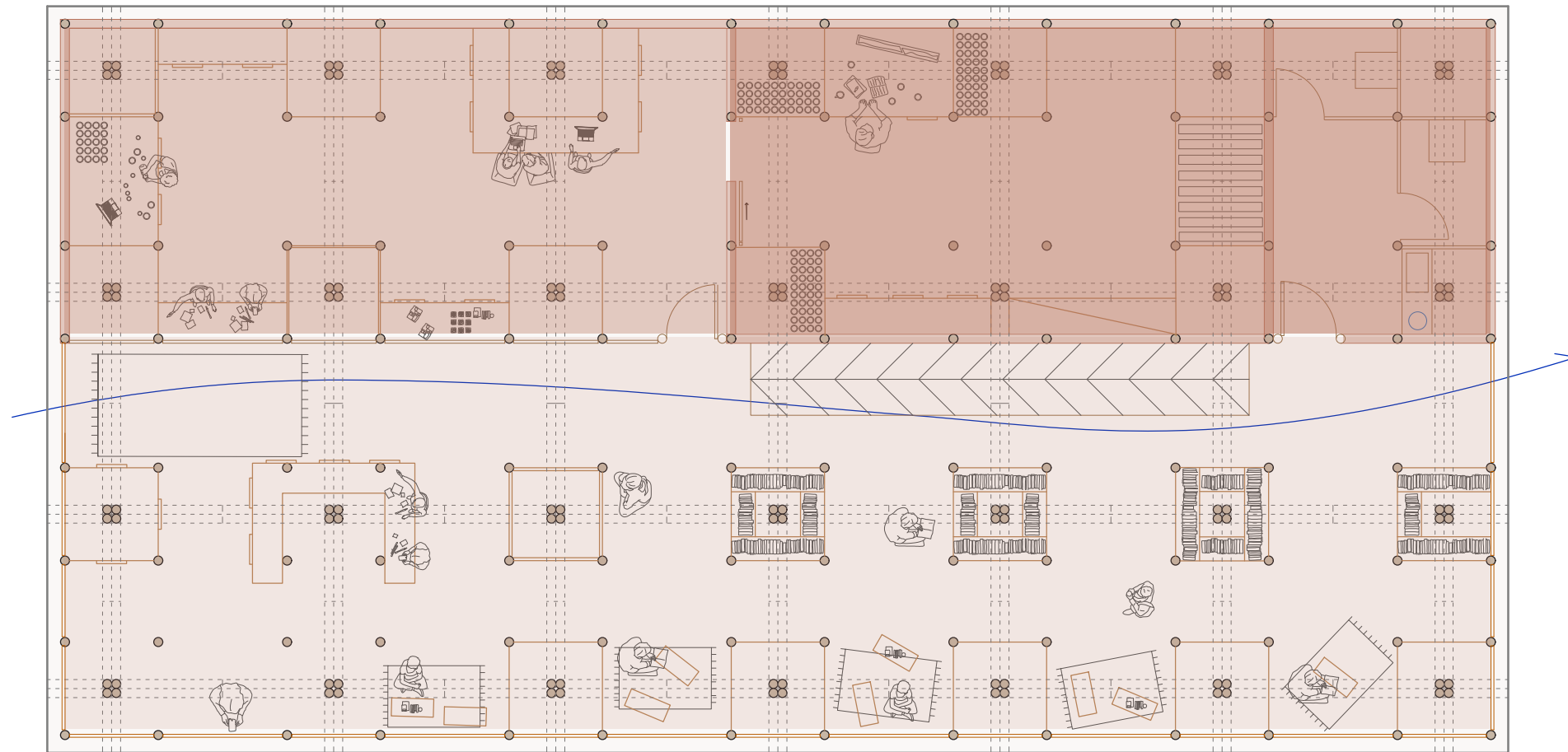




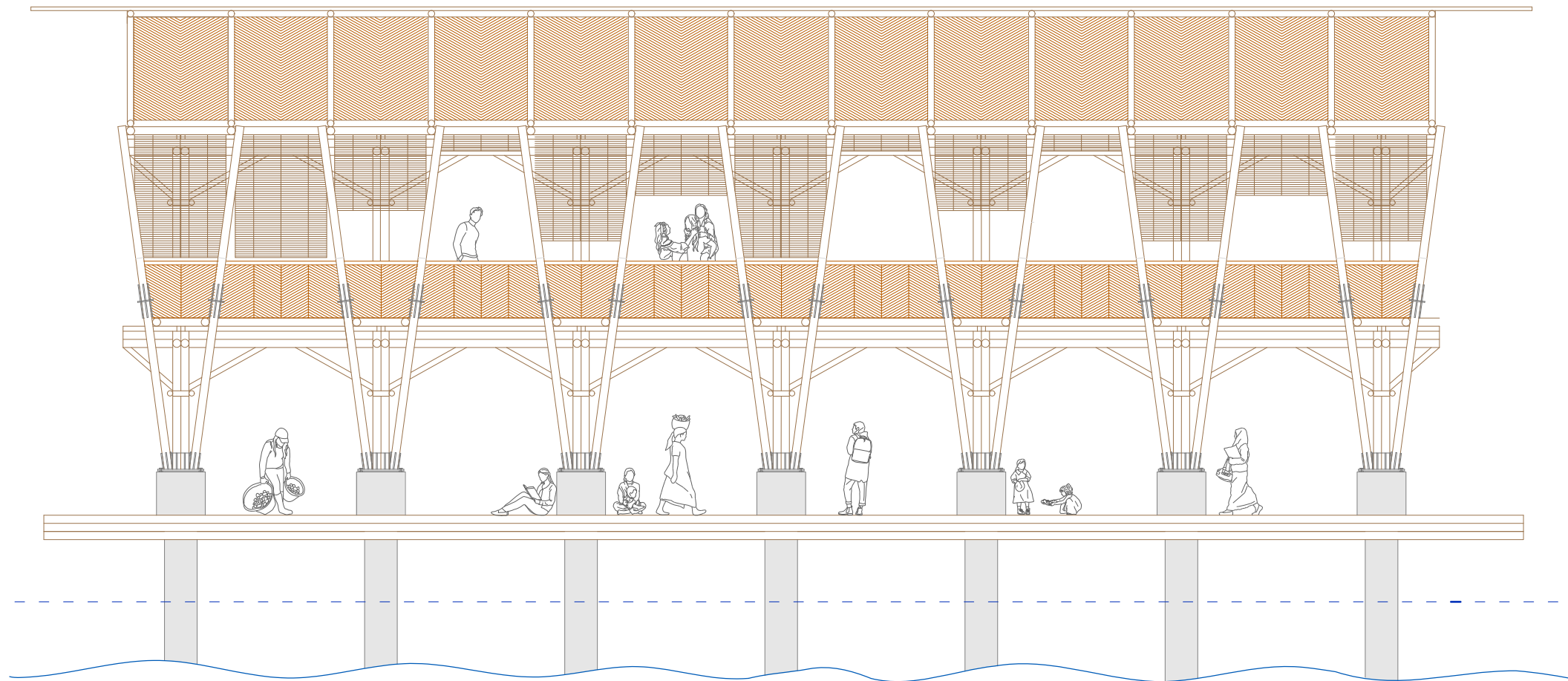
6.60m over the sea level
scale: 1/50



south elevation
scale: 1/50



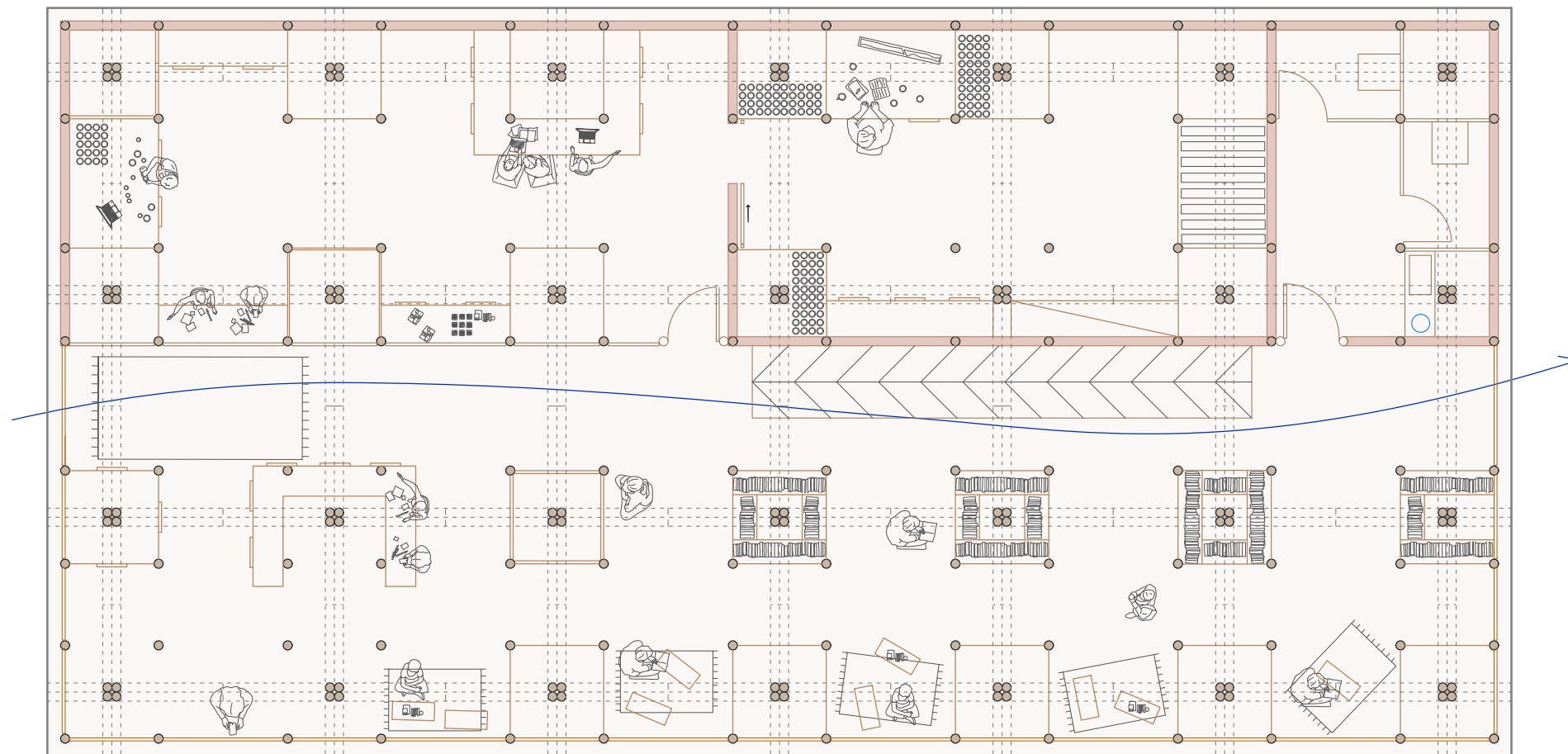
6.60m over the sea level
scale: 1/50



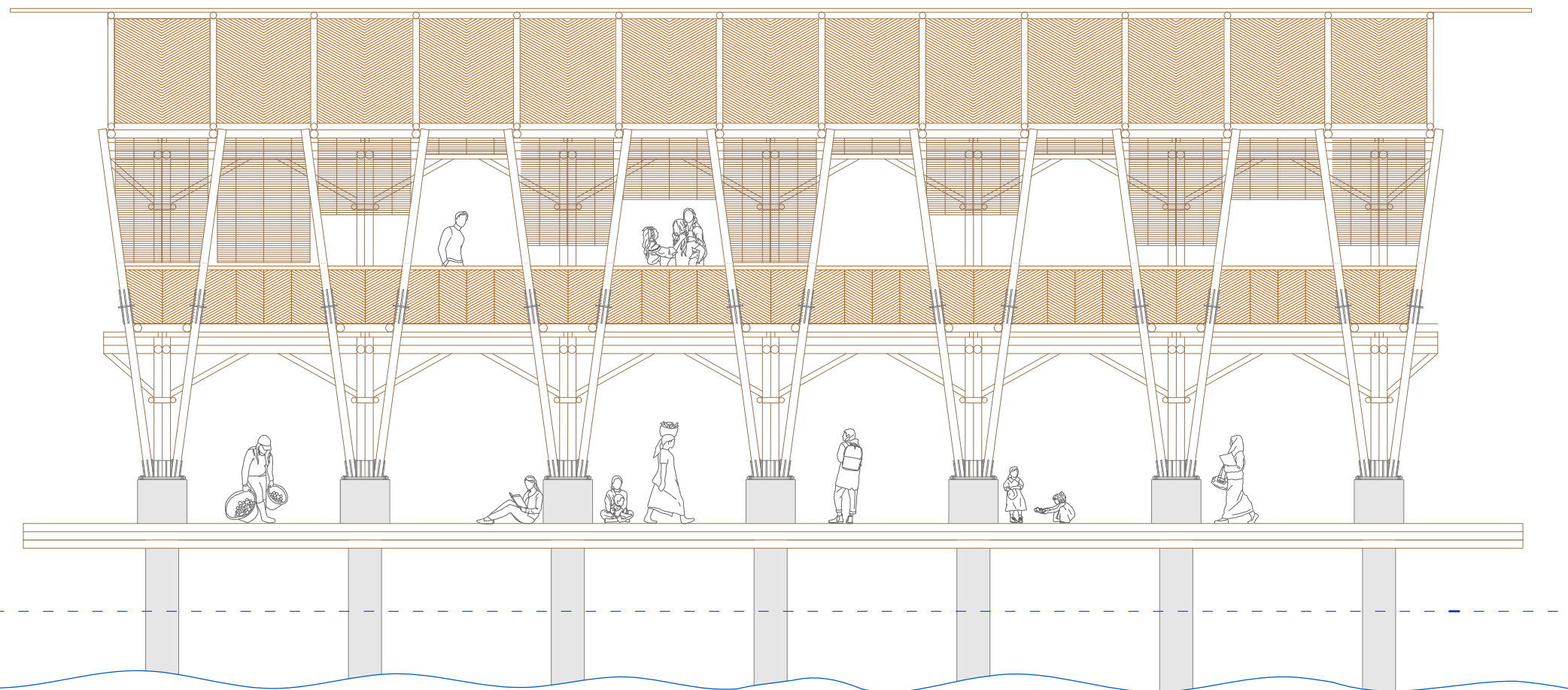
south elevation
scale: 1/50



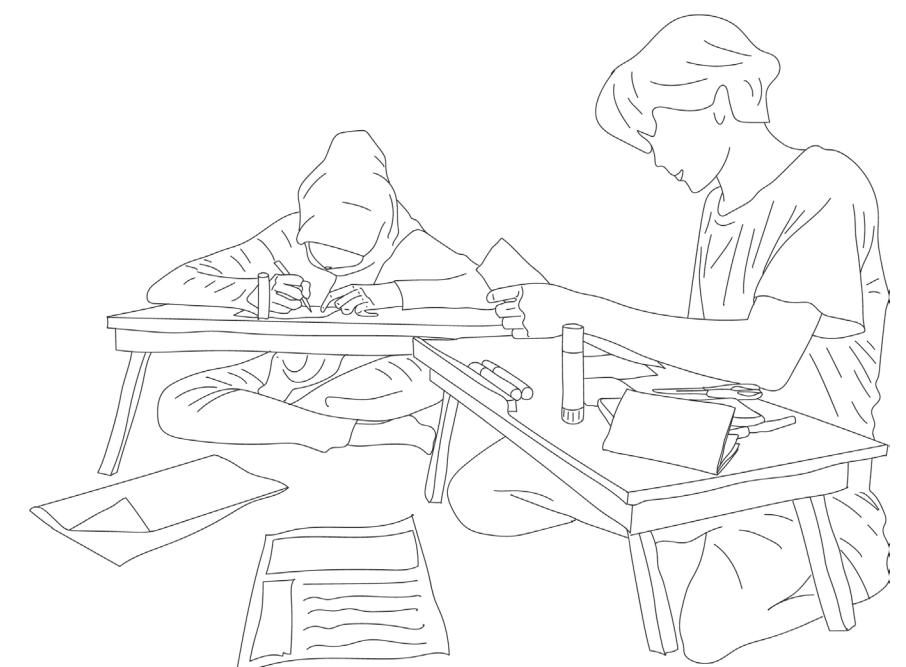




6.60m over the sea level
scale: 1/50

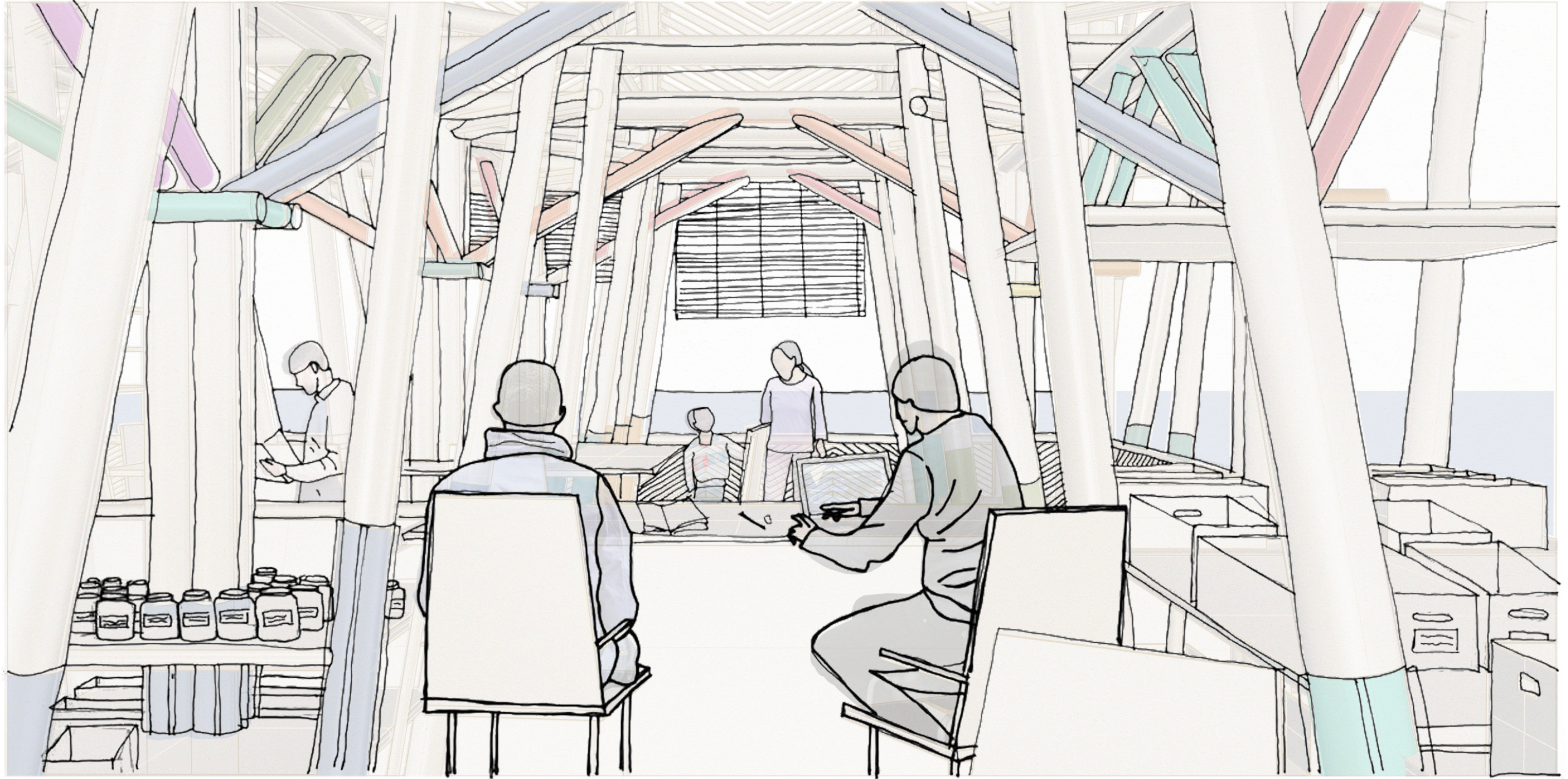


south elevation
scale: 1/50



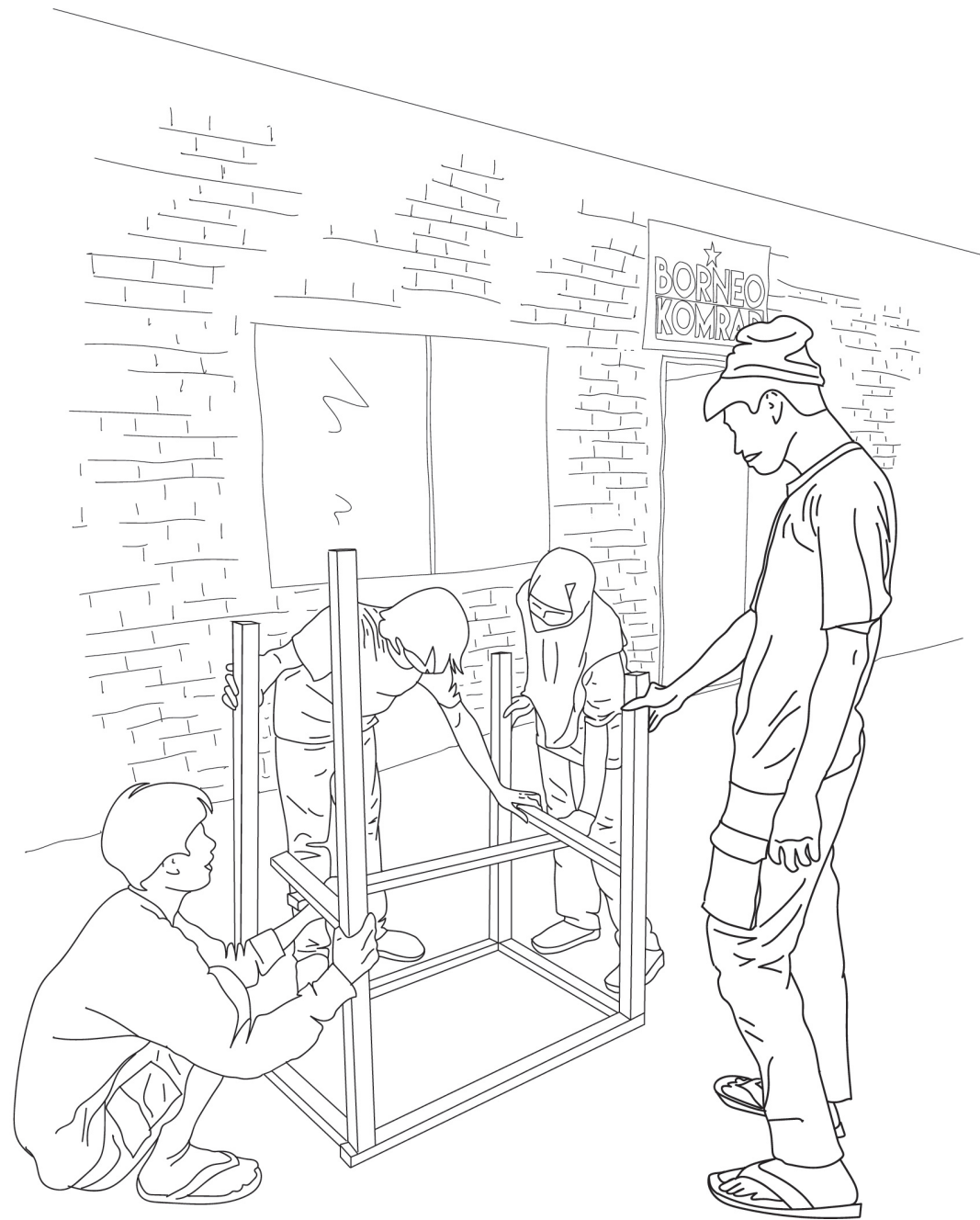
the floor as a working plane





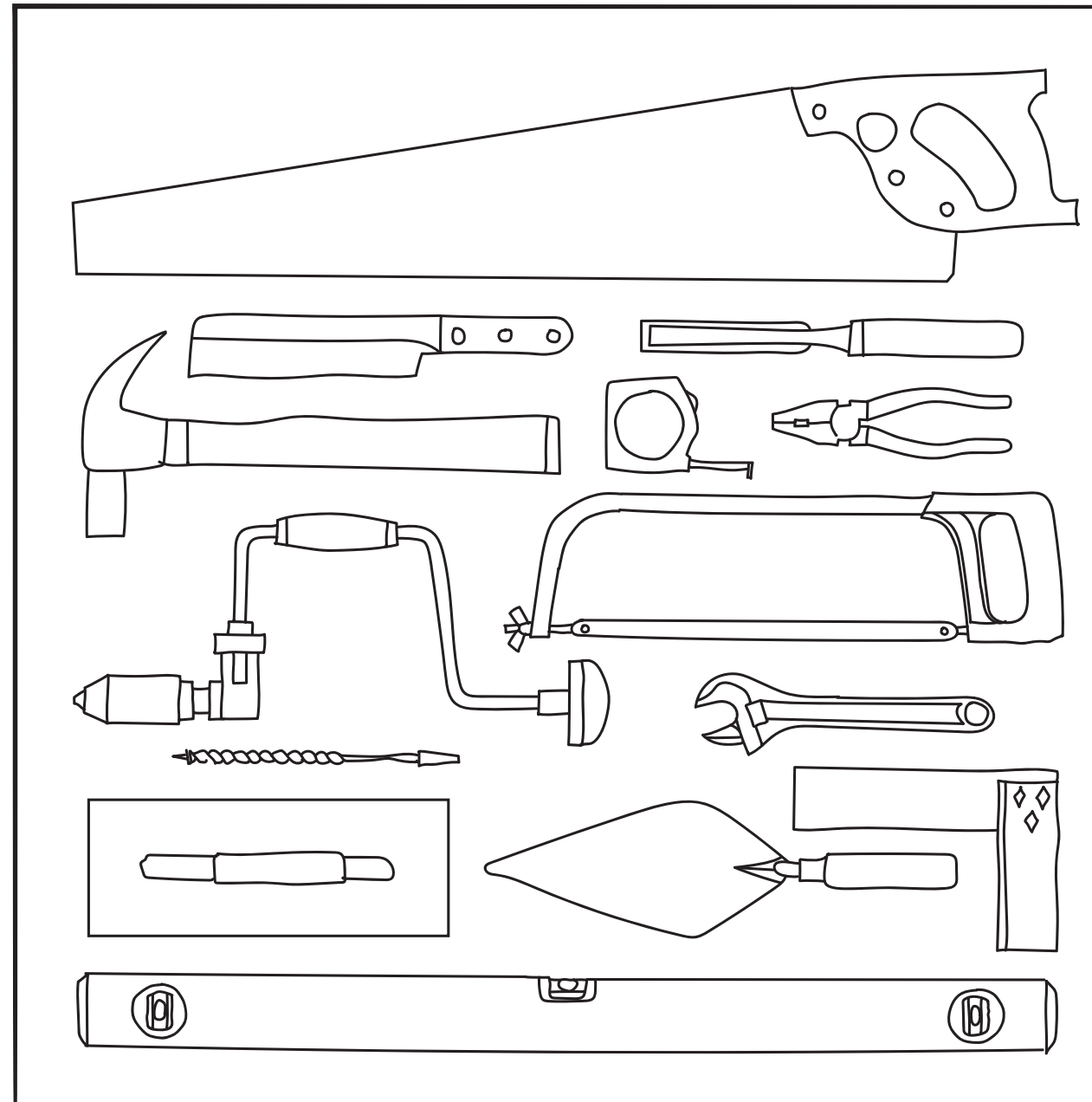






Is it feasible?

THE TOOLBOX YOU WILL NEED..



Saw: to cut bamboo to size

Splitting knife: for cutting bamboo strips

Chisel: for detailed splitting, general carpentry

Hammer: for use with splitting knife and chisel + nailing

Tape measure: for general measurements

Hacksaw: for cutting steel dowels and bamboo purlins

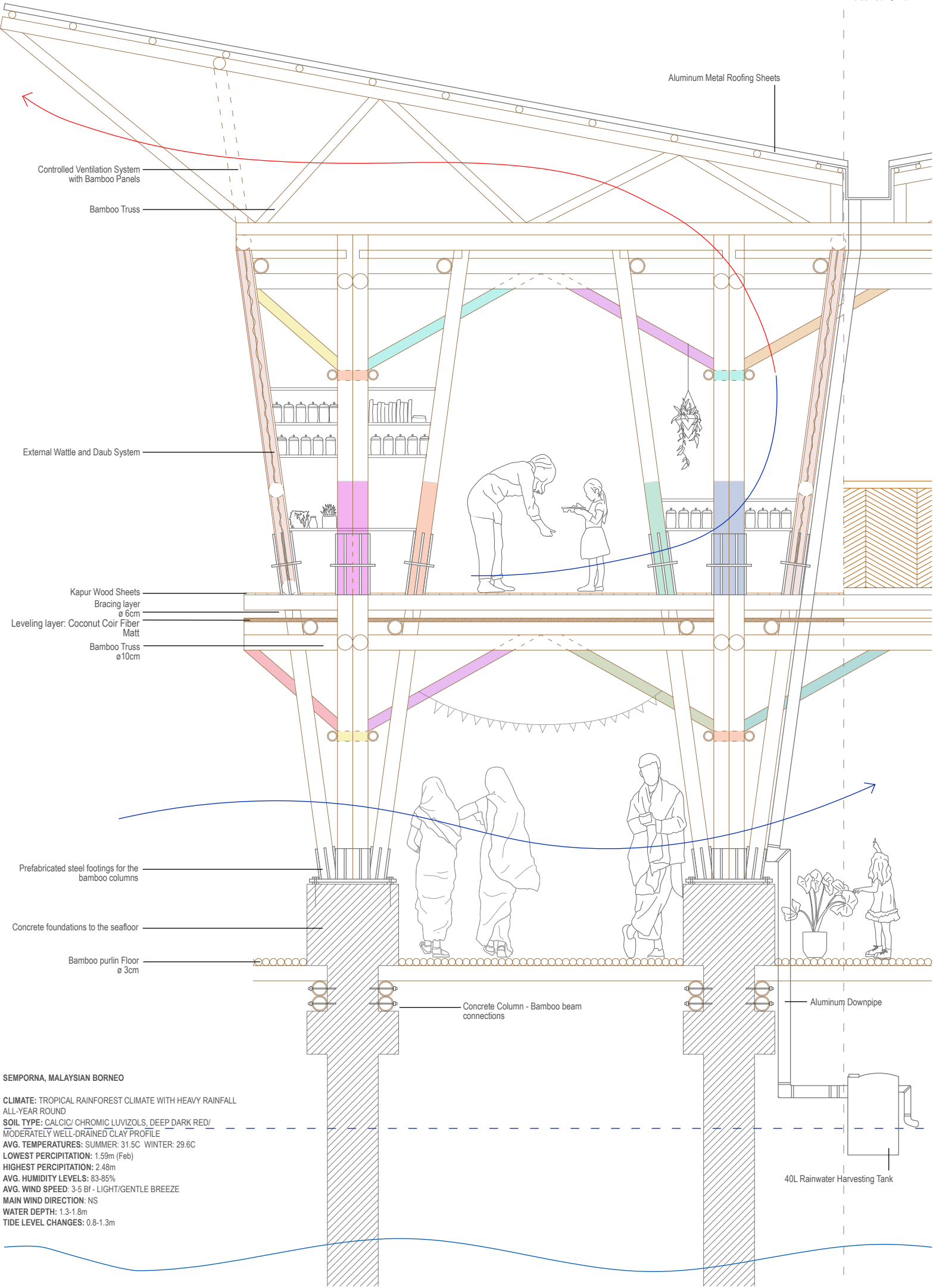
Drilling and drill bits: for drilling bamboo for bolts

Spanner: for tightening bolts

Plastering trowel: for floor and wall plastering

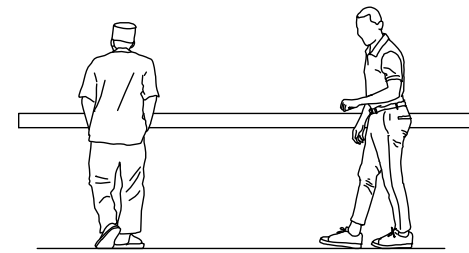
Square: for general use

Spirit level: for ensuring plumb and level

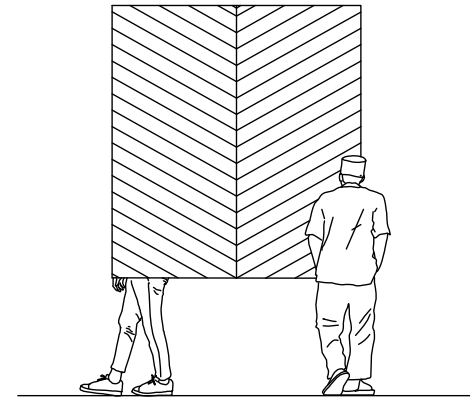


SEMPORNA, MALAYSIAN BORNEO

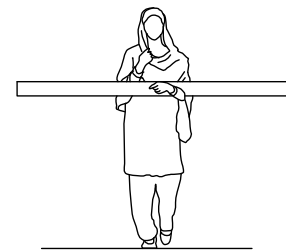
CLIMATE: TROPICAL RAINFOREST CLIMATE WITH HEAVY RAINFALL
ALL-YEAR ROUND
SOIL TYPE: CALCIC/ CHROMIC LUVIZOLS, DEEP DARK RED/
MODERATELY WELL-DRAINED CLAY PROFILE
AVG. TEMPERATURES: SUMMER: 31.5C WINTER: 29.6C
LOWEST PERCIPITATION: 1.59m (Feb)
HIGHEST PERCIPITATION: 2.48m
AVG. HUMIDITY LEVELS: 83-85%
AVG. WIND SPEED: 3-5 Bf - LIGHT/GENTLE BREEZE
MAIN WIND DIRECTION: NS
WATER DEPTH: 1.3-1.8m
TIDE LEVEL CHANGES: 0.8-1.3m



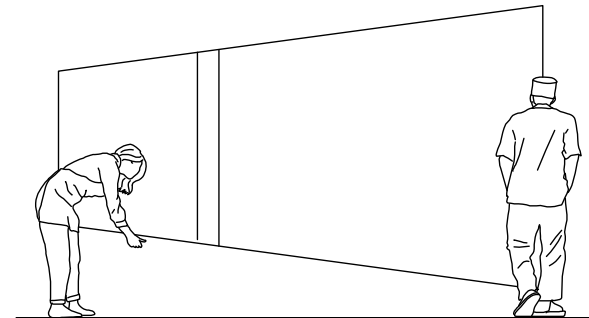
*x2 people to carry a
bamboo column*



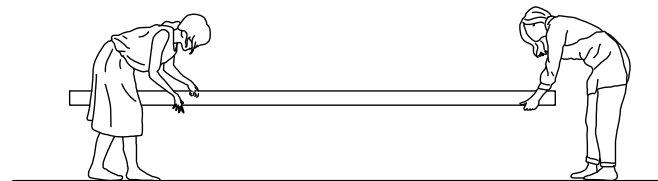
*x2 people to carry a
controlled ventilation
panel*



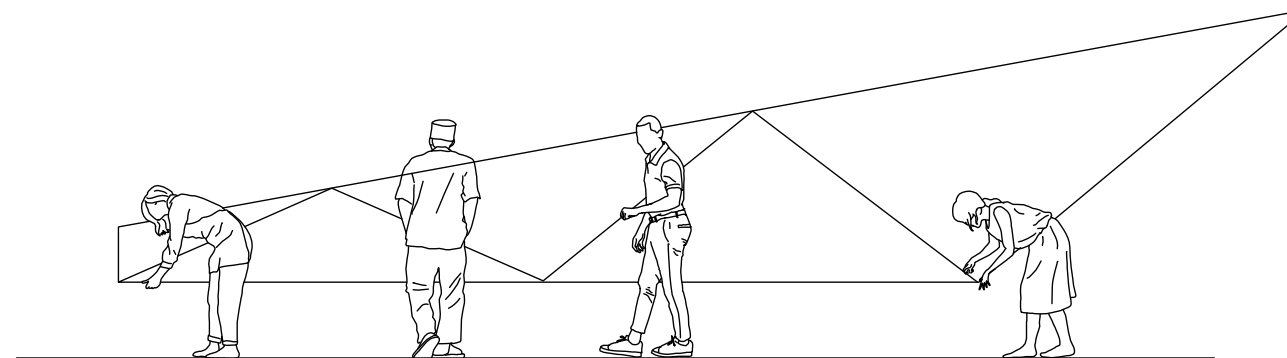
*x1 person to carry a
bracing element*



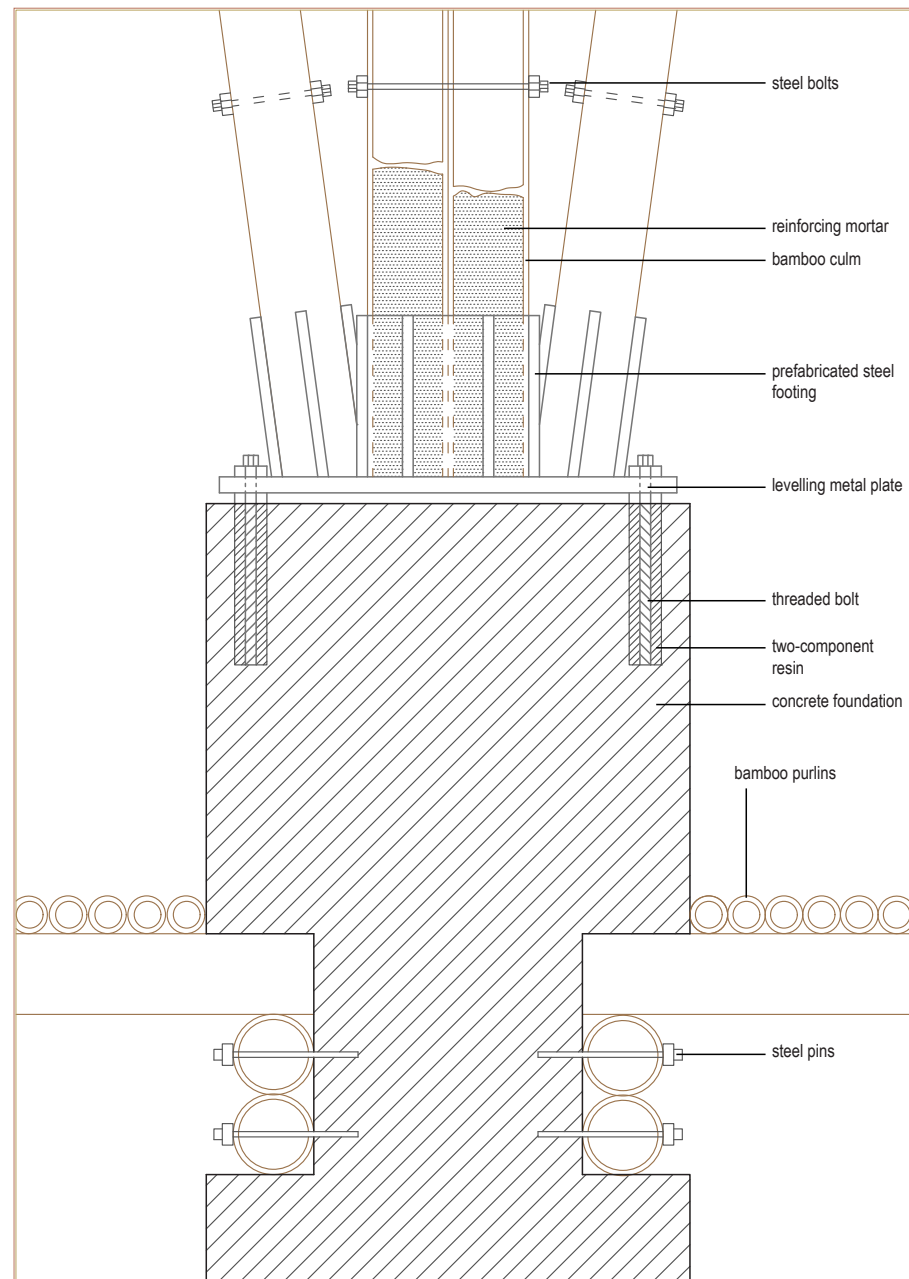
*x2 people to carry a
bamboo lath panel*



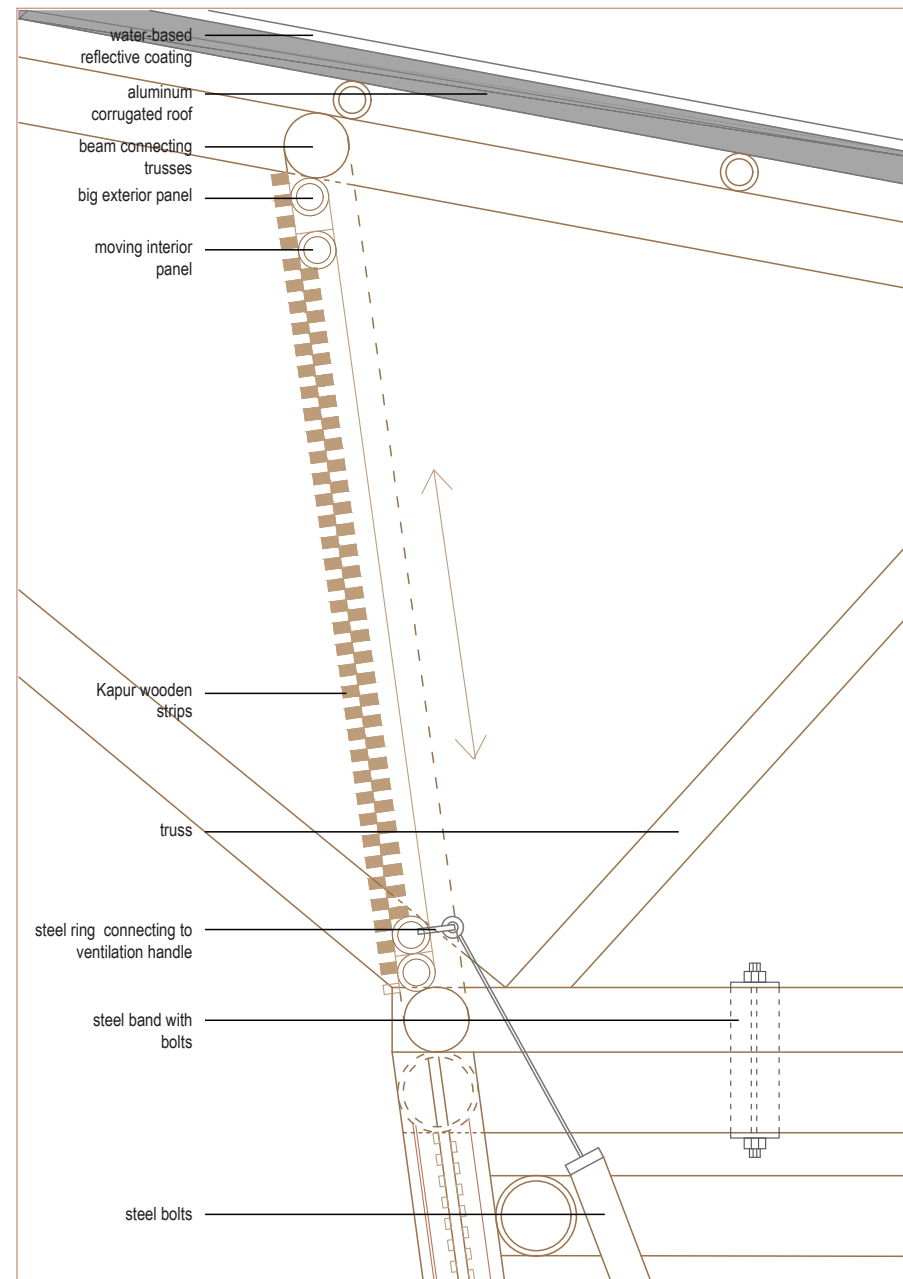
*x2 people to carry a
bamboo lath panel*



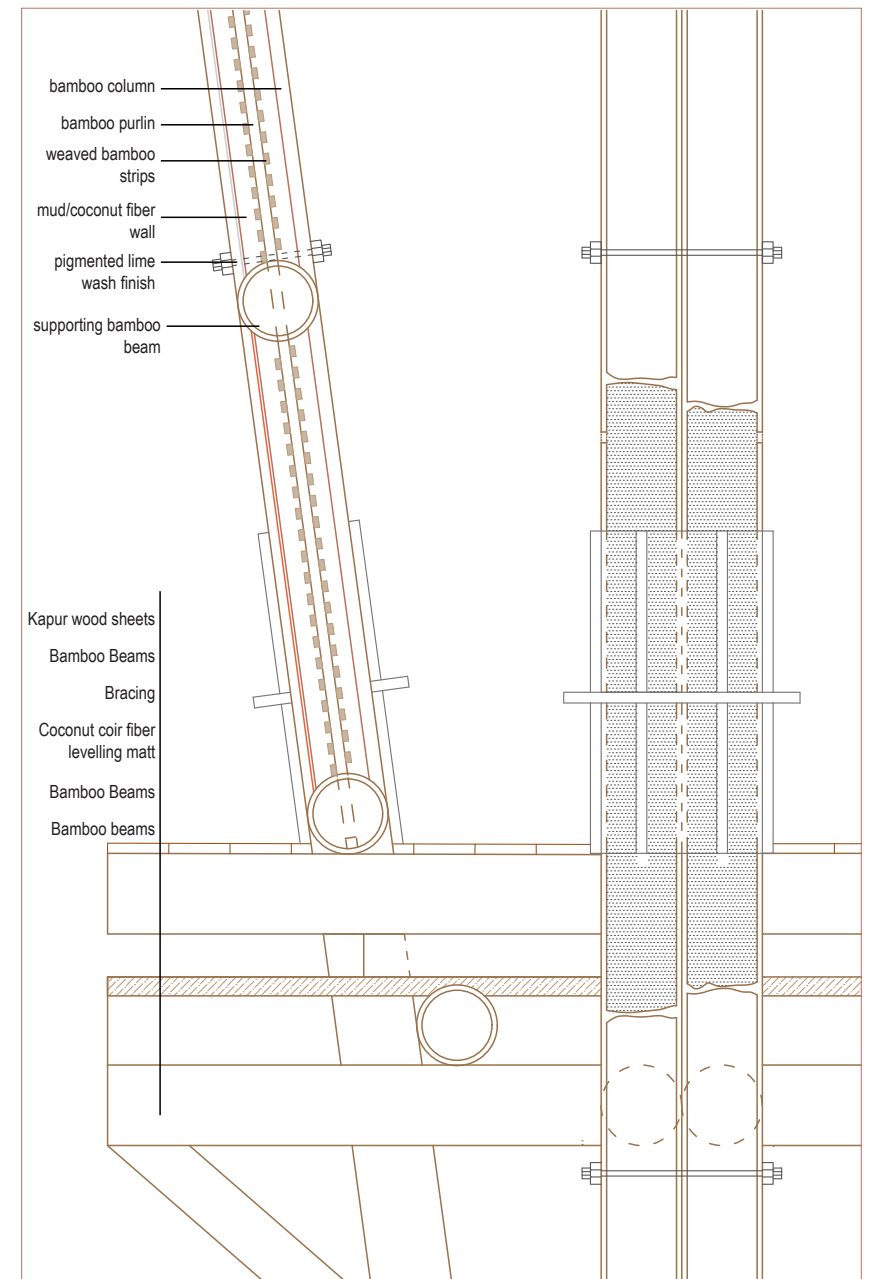
*x4 people to carry a
bamboo truss*



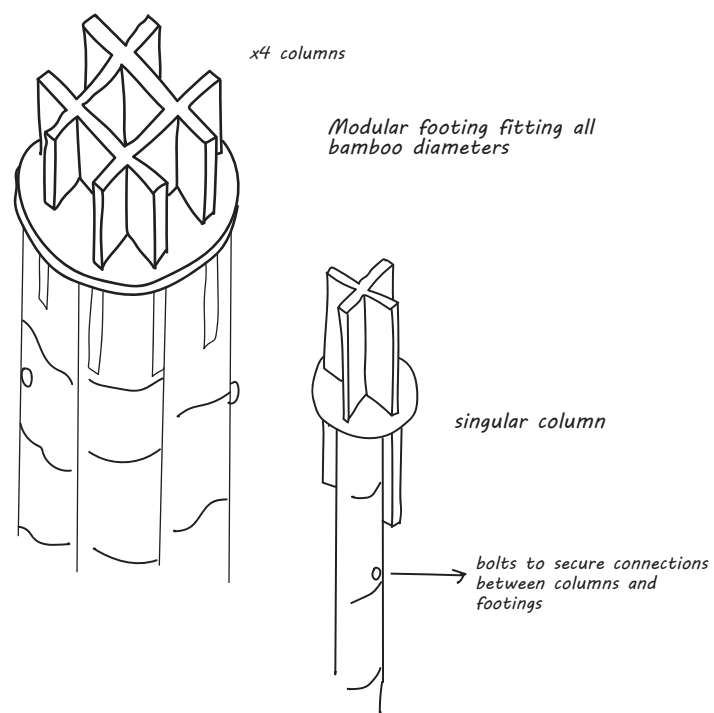
concrete foundation-bamboo columns detail



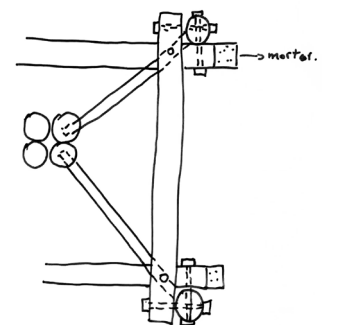
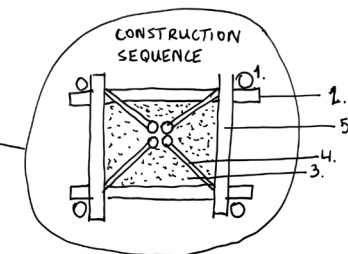
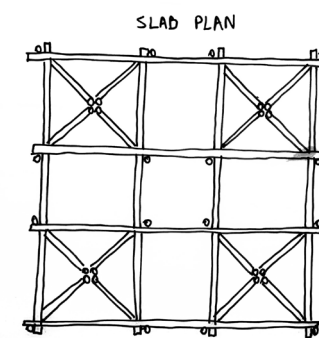
roof/controlled ventilation system detail

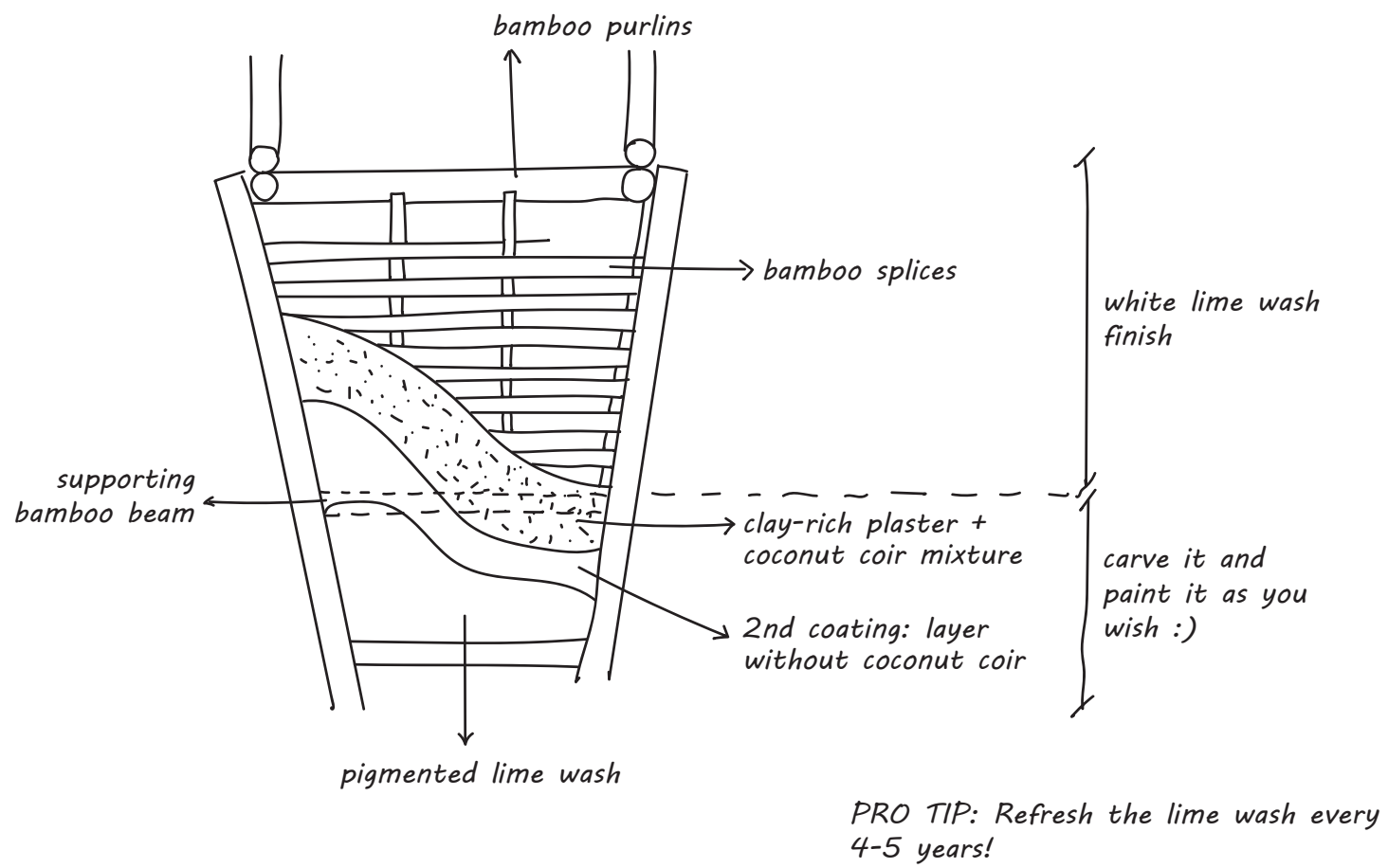


wattle + daub system detail

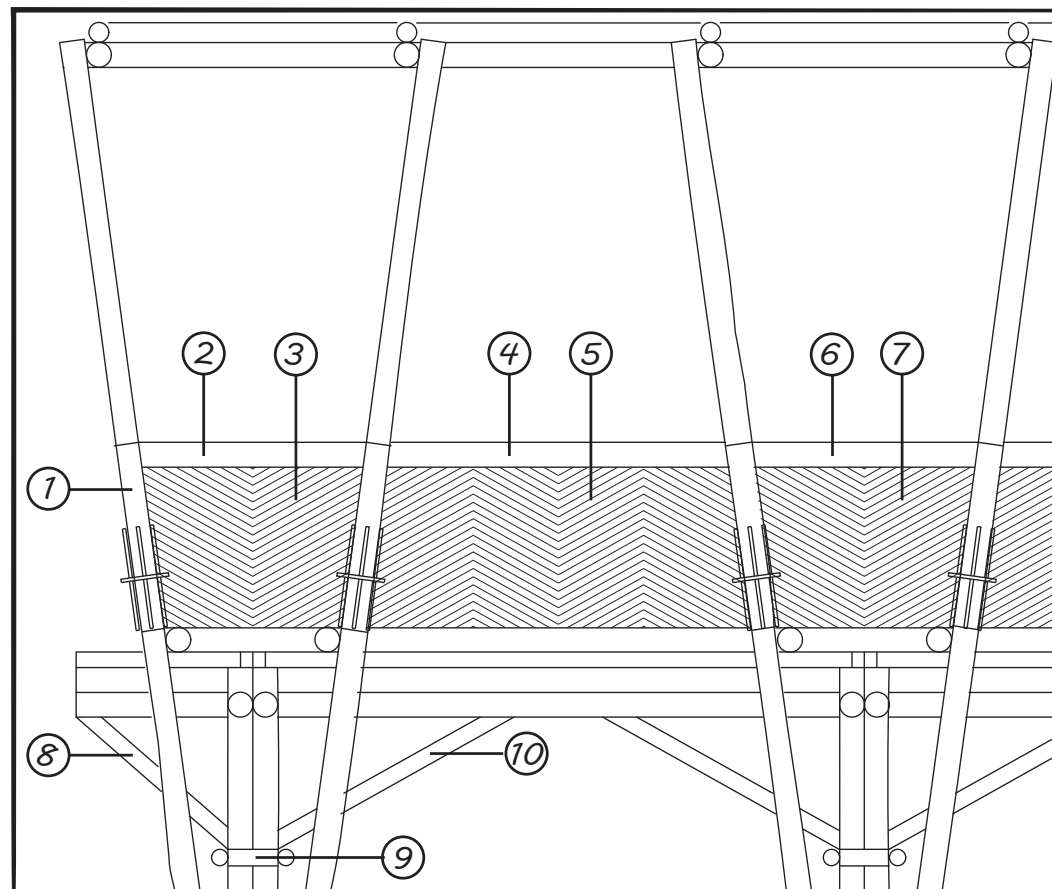


The overhangs of the rood mitigate the weathering of bamboo poles from rain and sun. However, exterior bamboo elements that are exposed to sun and rain should be maintained every 2 years. But fear not! This can be done by infusing them in a borax solution for 5-6 days and letting them dry completely before reassembling them.

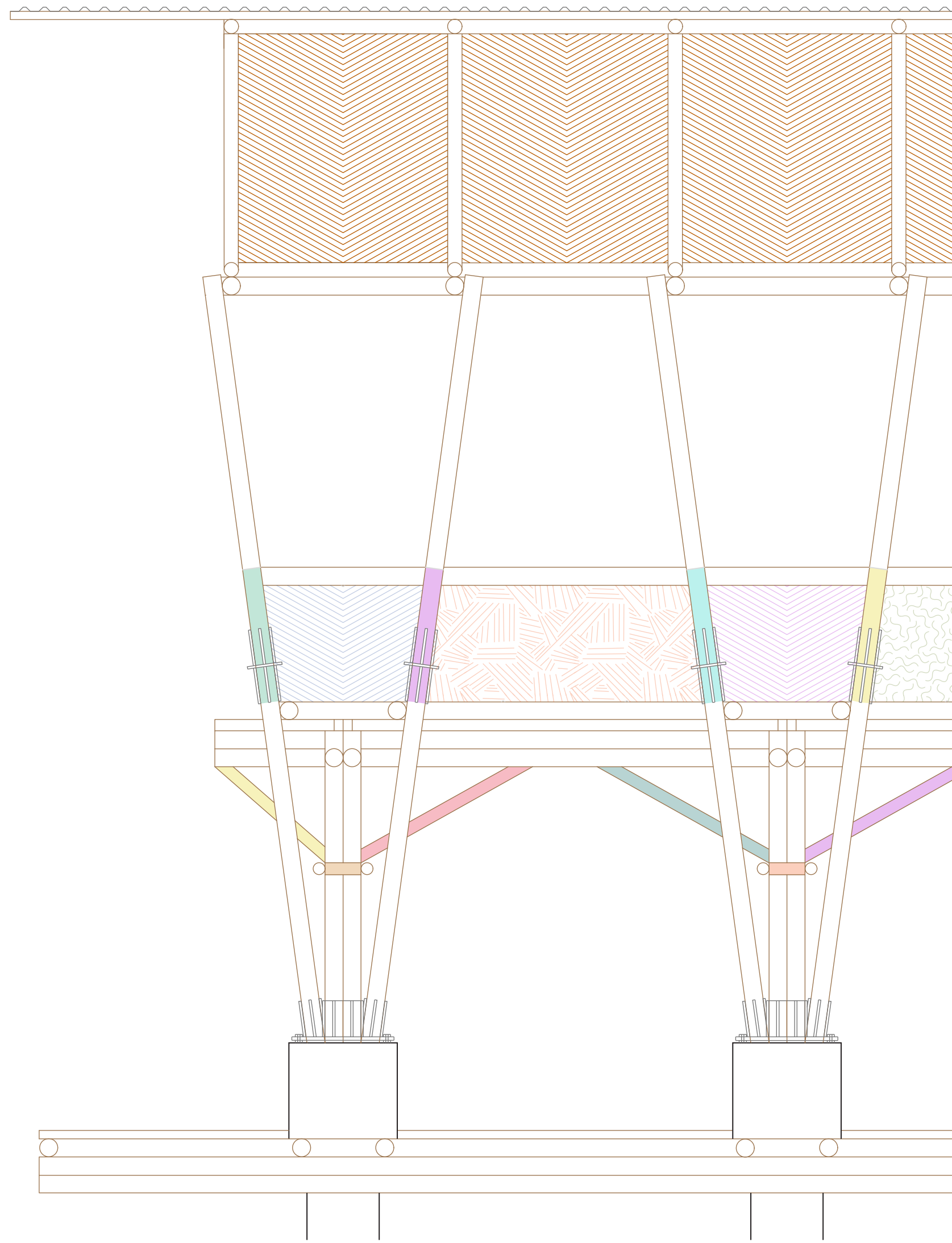




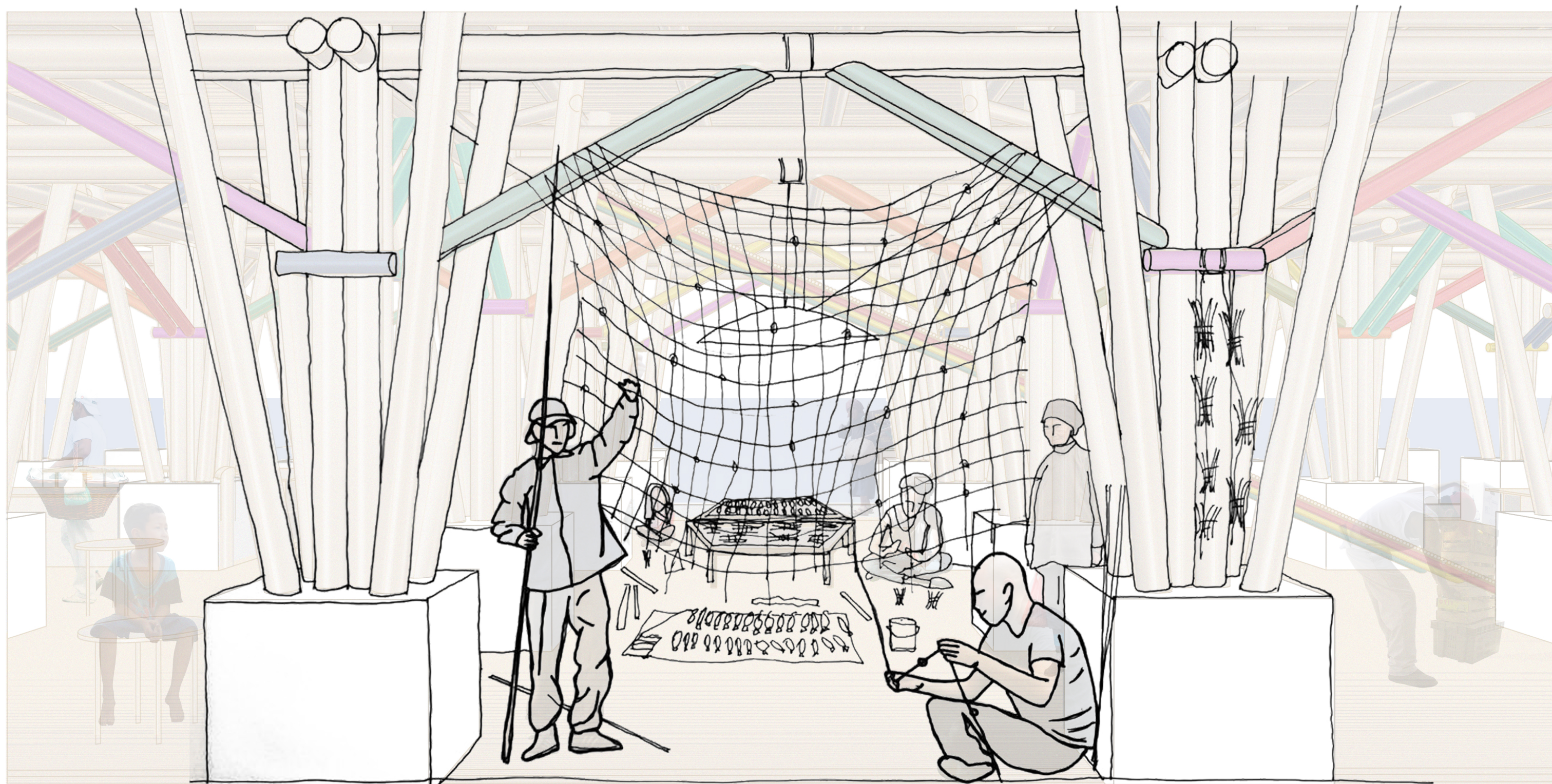
COLOUR THE NUMBERS!



↪ ↻ The thick plaster layers protect bamboo lath panels from humidity, fire and pests. However, if you need to replace them, give the old panels a second chance! By washing away the plaster, you can reuse the panels as a permeable surface to dry seaweed or fish.







design question

How could the user's experience be appropriated by incorporating familiar elements in a rather unfamiliar setting?

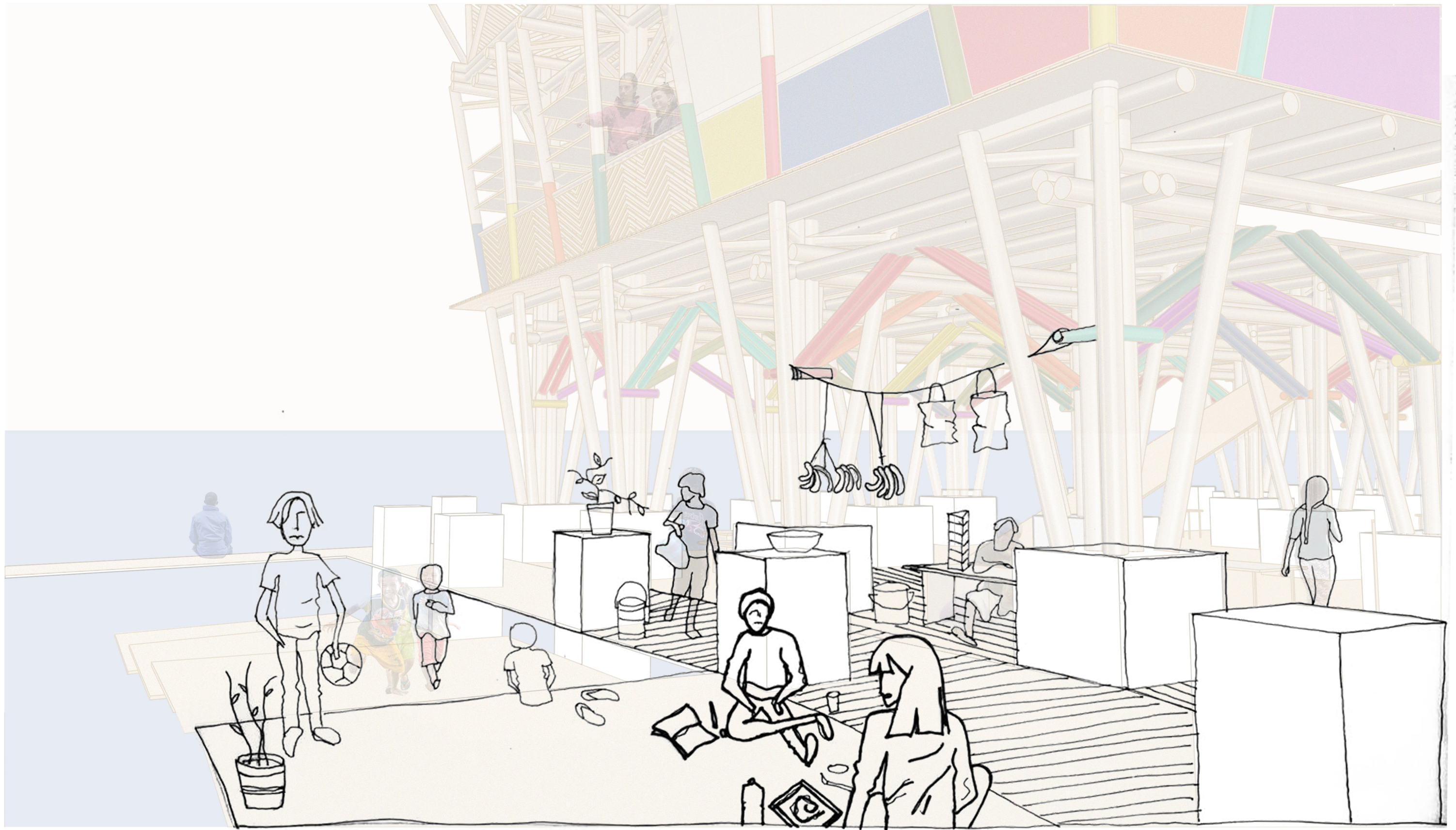














THANK YOU