

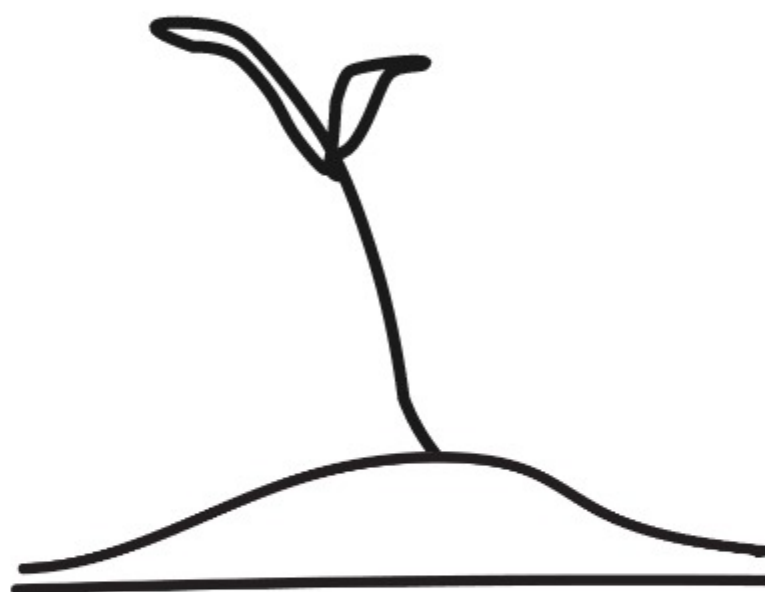
URBAN FURNITURE_GROUP 3

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ZOFIA SOŚNIERZ



BIODIVERSITY DUNE

LAST WEEK RECAP_BIODIVERSITY FOCUS

IDEA FOR
CREATING
A BEEHIVE!



BIODIVERSITY
AND RESTORING
ECOSYSTEMS AND
BRINGING
NATURE TO THE
CITY

RESEARCH

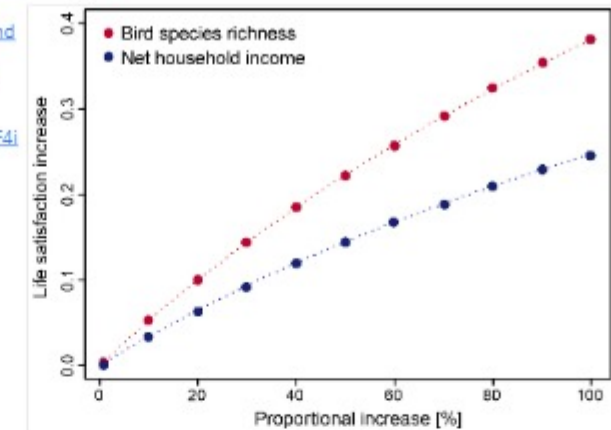
Urban biodiversity

- Urban animal need three conditions for survival:
 - food
 - shelter/nesting places
 - movement
- Mostly provided in urban green spaces and partially in the urban built environment
- For some species conditions are:
 - missing
 - limited available
 - too far apart



<https://www.weforum.org/agenda/2020/12/study-birds-biodiversity-happiness-levels?fbclid=IwAROLEWj6Z5A-2Ka1PT3dlFodsXqw8vvKBZgvCF4j2RC7T7YwQ88lb5QLq-A>

<https://repository.tudelft.nl/islandora/object/uuid:64ec413a-aa5e-4833-af0e-bb7adabfaa8b>



www.weforum.org

Being around birds linked to higher happiness levels

The study's authors calculated that being around 14 additional bird species provided as much satisfaction as earning an extra \$150 a month.

Pressures on biodiversity in the cities

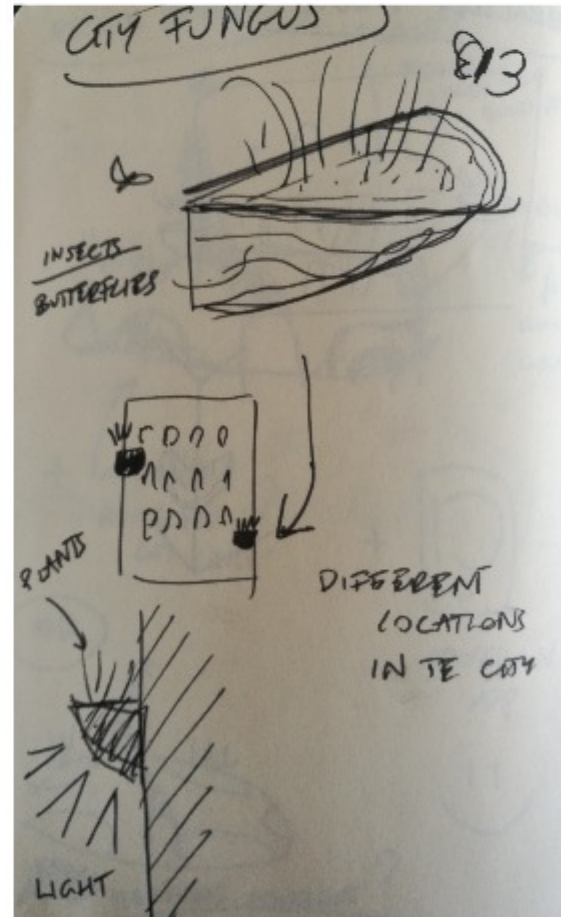
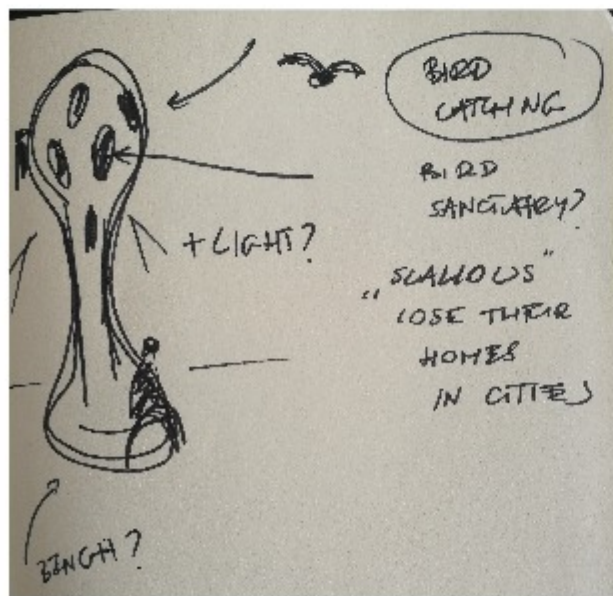
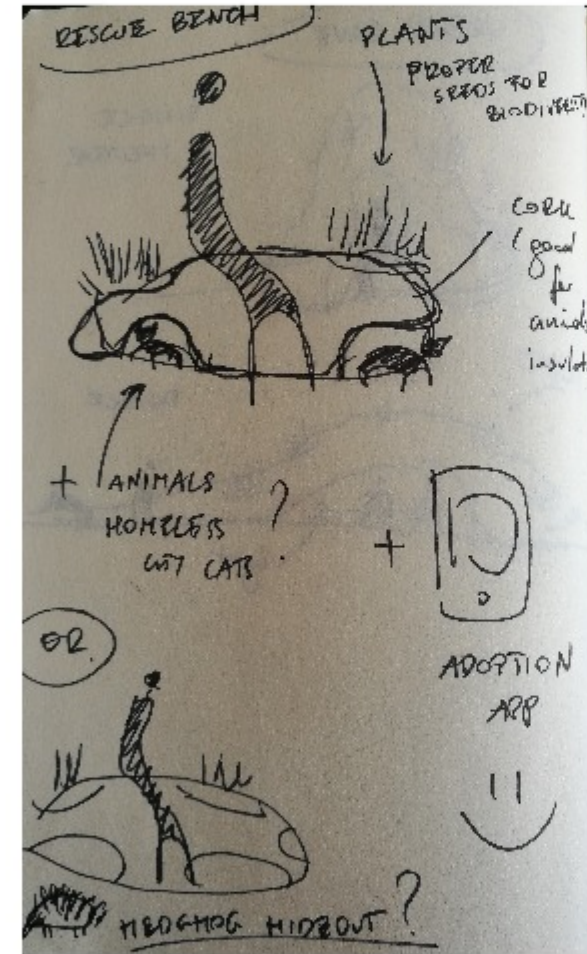
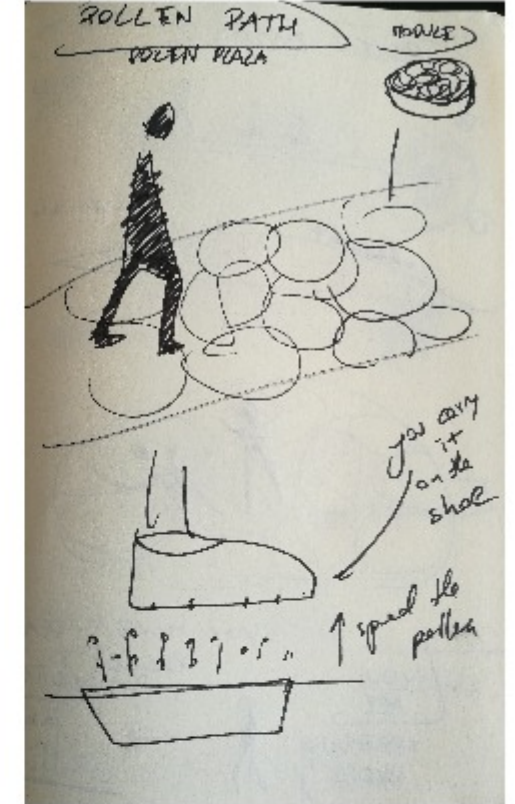
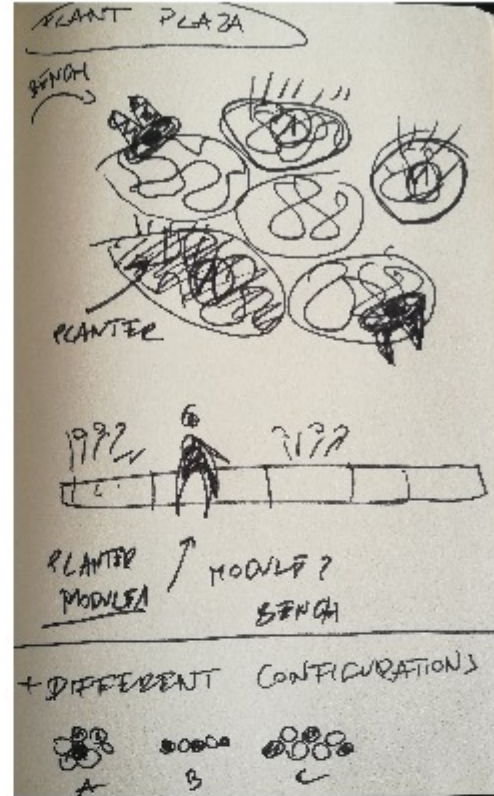


DENSIFICATION OF THE URBAN ECOSYSTEM

- Research has shown that densification:
 - often leads to loss of existing urban green
 - involves development of minimal amounts of green space that do not always contribute to biodiversity
- This will further increase pressure on biodiversity
- Increasing pressure on biodiversity can negatively affect quality of life for people in cities
- Ecosystem services: benefits experienced from nature



BRAINSTORMING



DUNE_BRIEF

1. **ROBOTIC PRODUCTION** (materials - wood based biopolymers)
2. **ROBOTIC OPERATIONS** (interactive side)

"it integrates sensor-actuators into the urban furniture enabling direct and indirect communication with users via sounds, lights, etc. and web based apps, respectively"



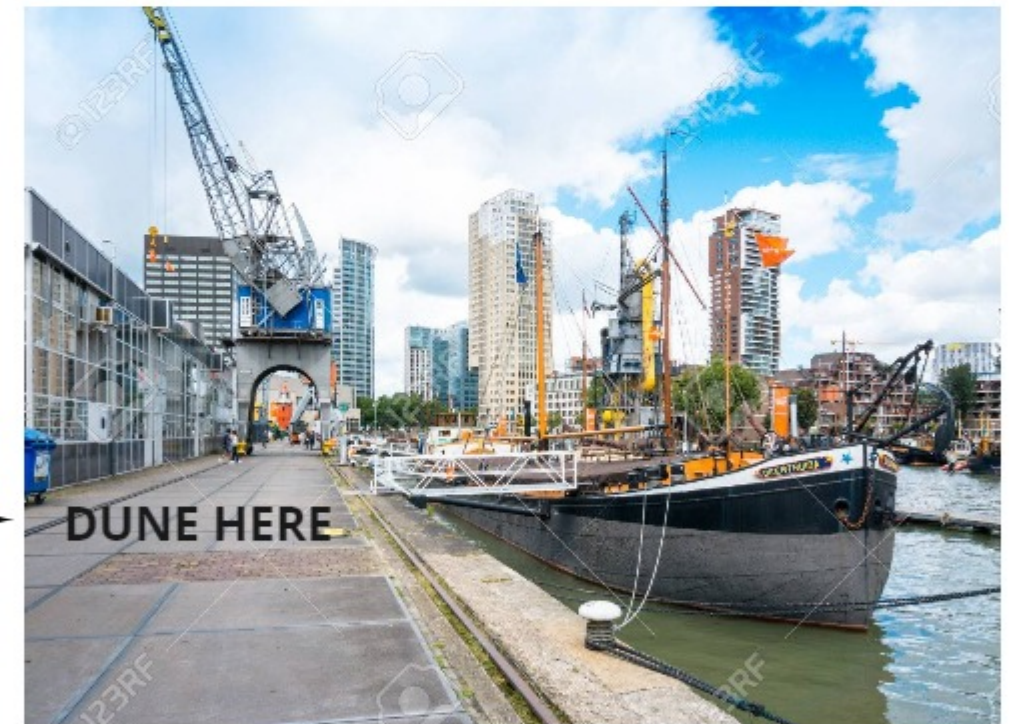
BIODIVERSITY DUNE_CONCEPT



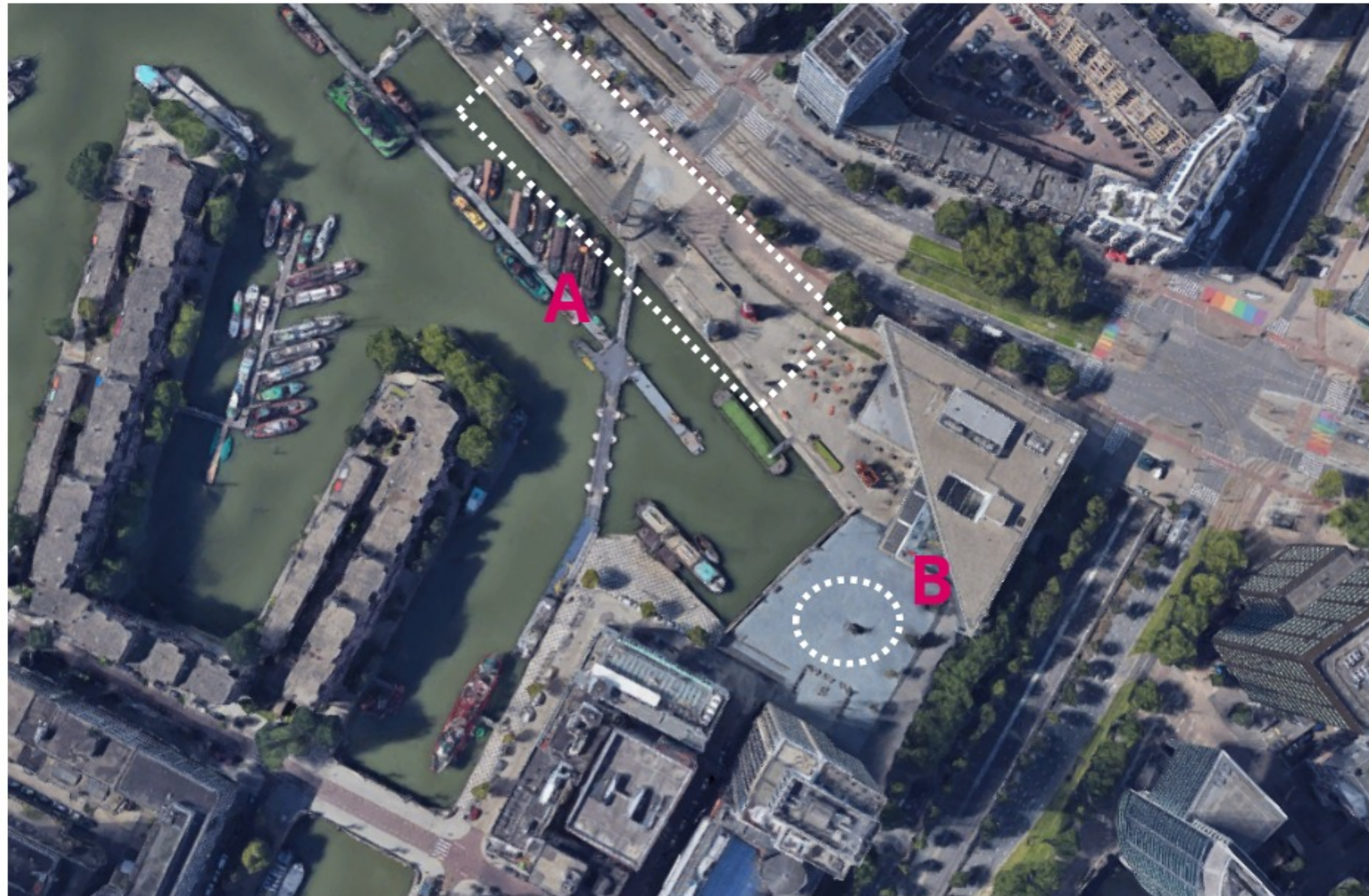
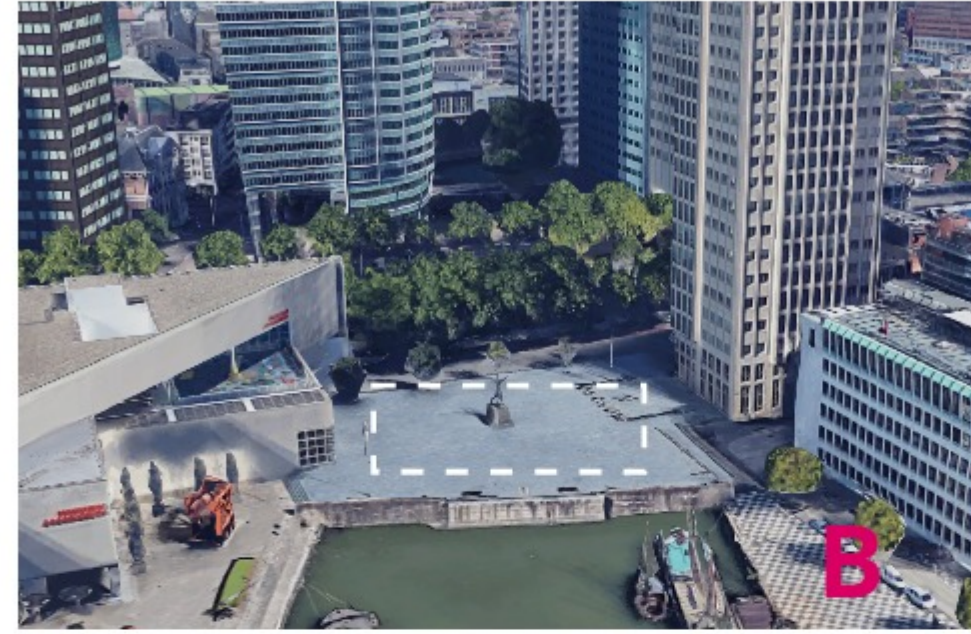
- quite LARGE urban furniture
-provides shelter from the rain/cold
-added biodiversity value



**BRINGING BACK THE NATURAL
INTO THE INDUSTRIAL** →



DUNE_LOCATION

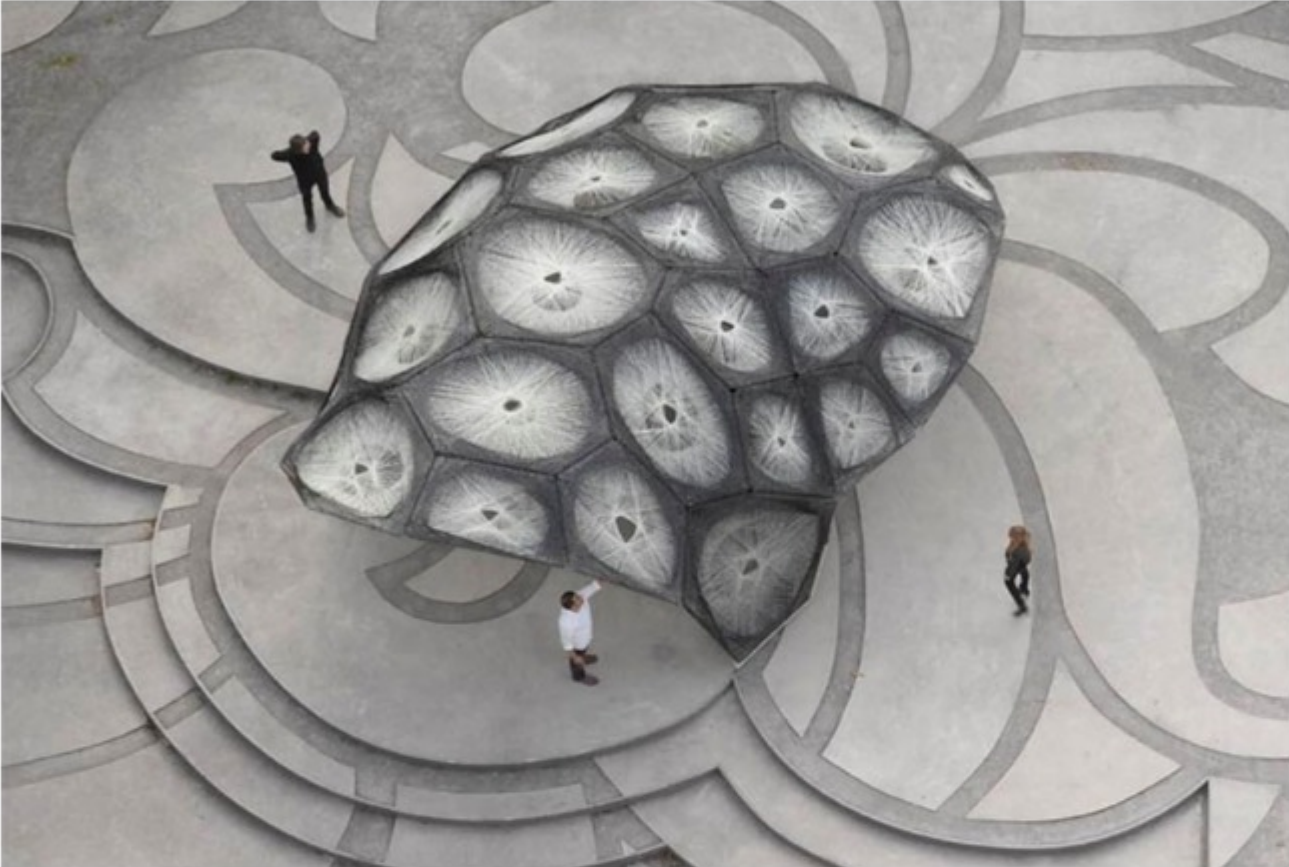


DUNE_REFERENCES

BUGA Wood Pavilion 2019

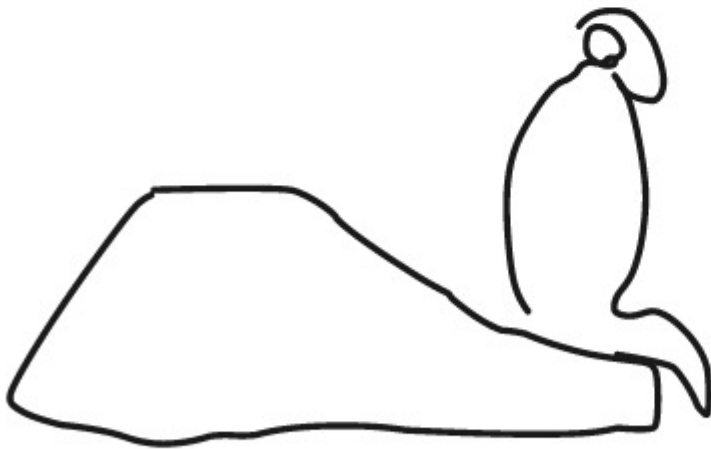


BICD/ITKE Research Pavilion 2013-14



DUNE_MODULES

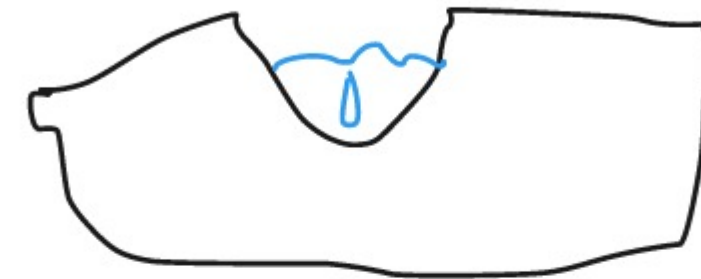
- different modules
- combined can bring needed qualities to the surroundings (recreation spaces, biodiversity, water retention, sun collectors, sound etc.)
- 3D printed base/grid that can adjust to what is needed



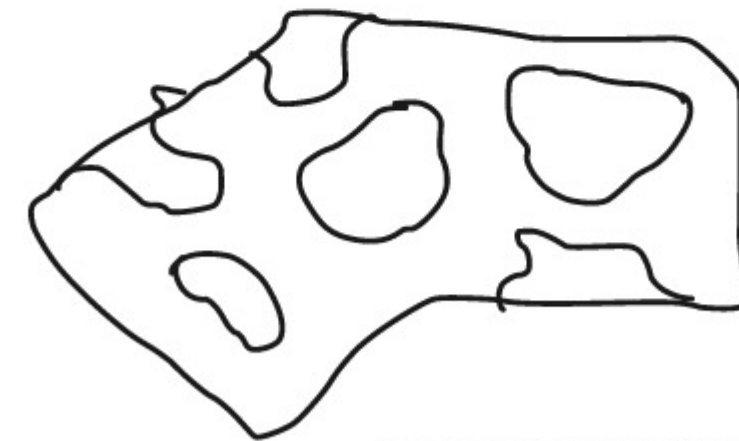
BENCH FOR PEOPLE



PLANTER

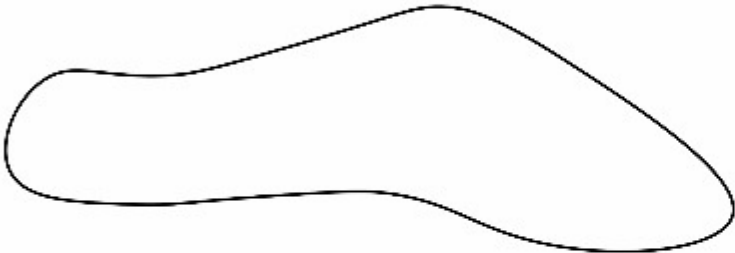


WATER RETENTION

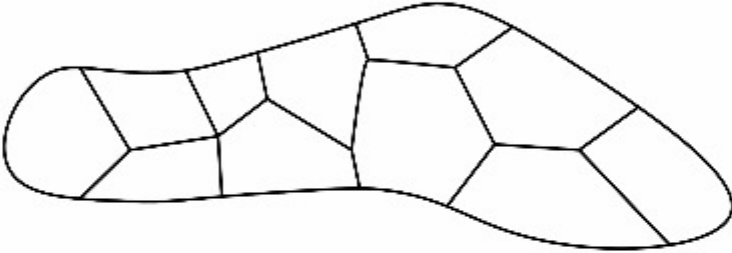


POROUS SHELTER FOR ANIMALS

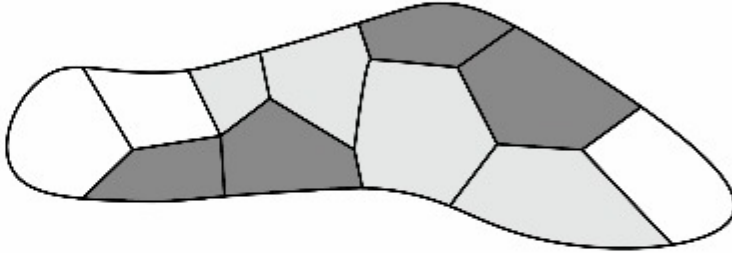
DUNE_FORM CREATION



BASE FORM PARAMETERS

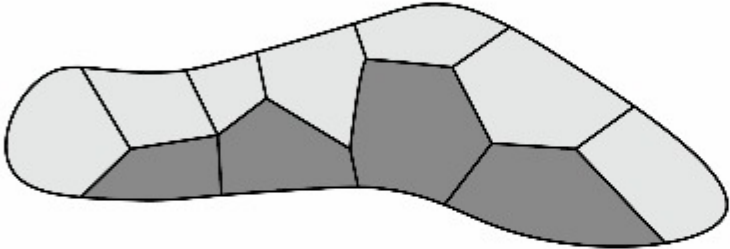


MODULE DIVISION

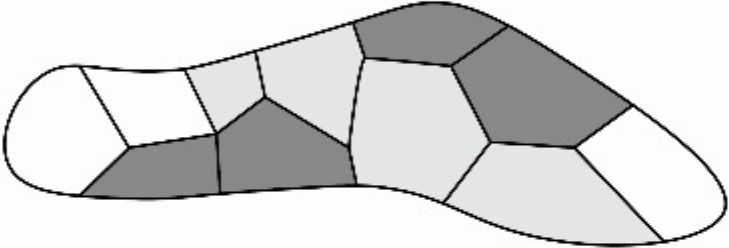


FUNCTION APPLIED

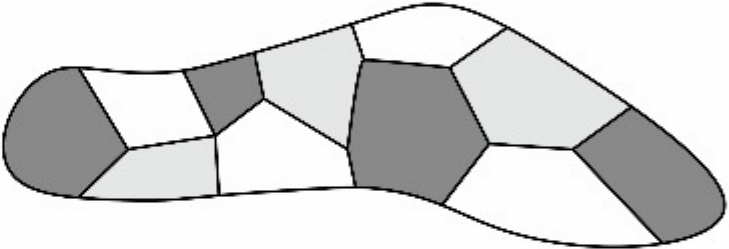
DUNE_SCENARIOS



SCENARIO 1



SCENARIO 2



SCENARIO 3

DUNE_REFERENCES

Urban green habitat



Poroso, Emerging Objects



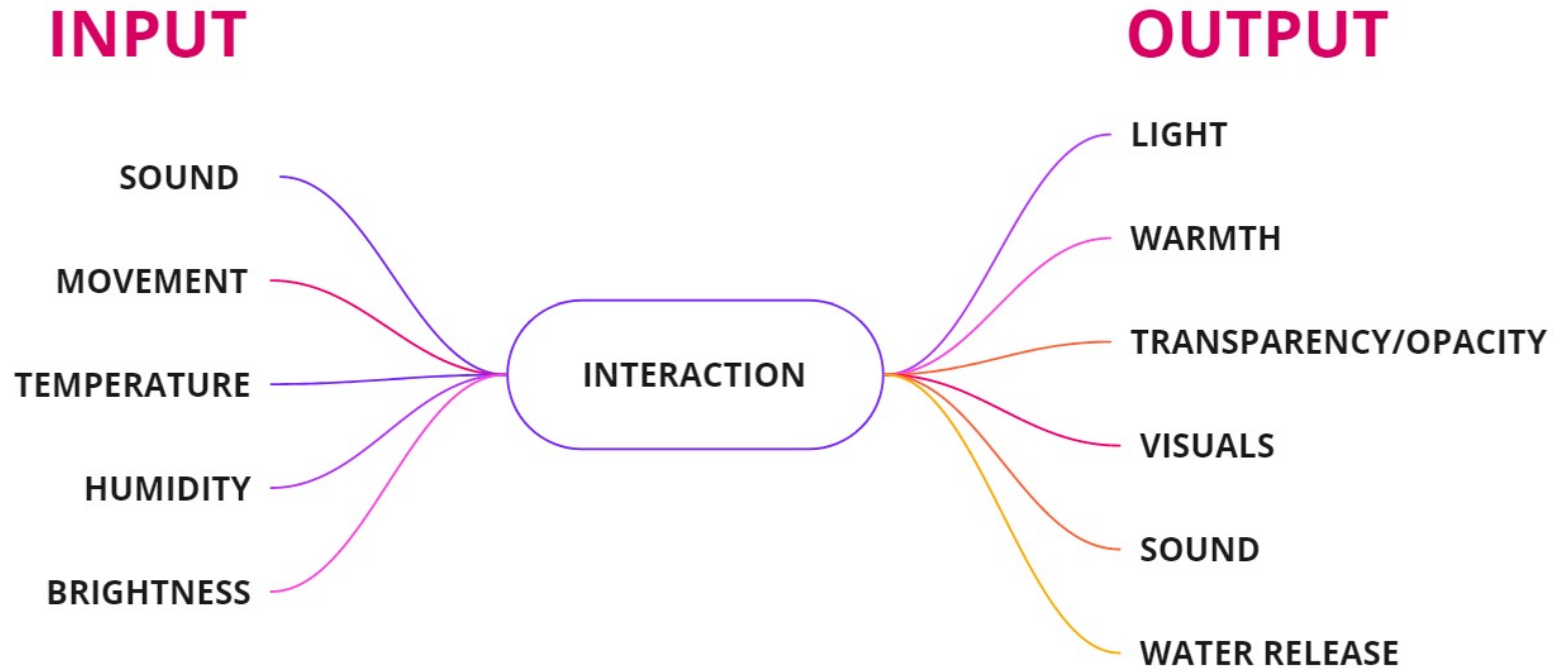
Living seawall, Reef design lab



Print your city, The new raw



ROBOTIC OPERATIONS_INTERACTION



LONG DISTANCE INTERACTION DUNE_INTERACTION

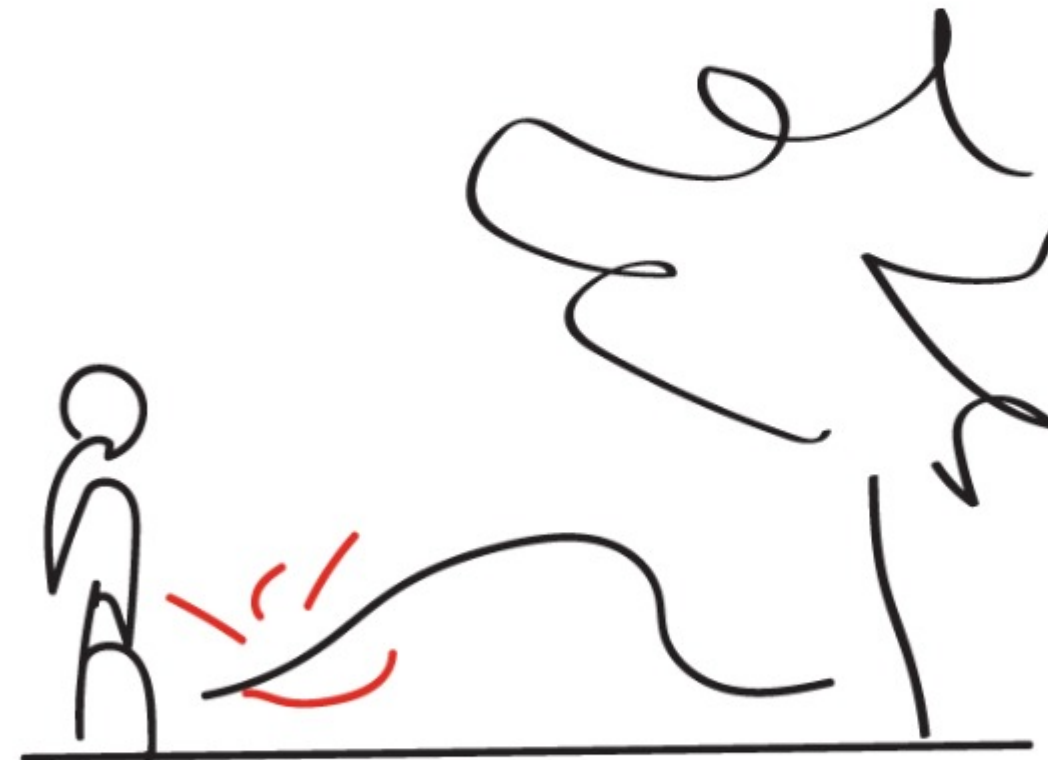
In this weird, pandemic times everyone is longing for a human interaction. However, it is not always possible due to health and safety reasons.

The Long Distance Interaction Dunes help people to interact together and feel each others presence and at the same time keeping **safe distance!**

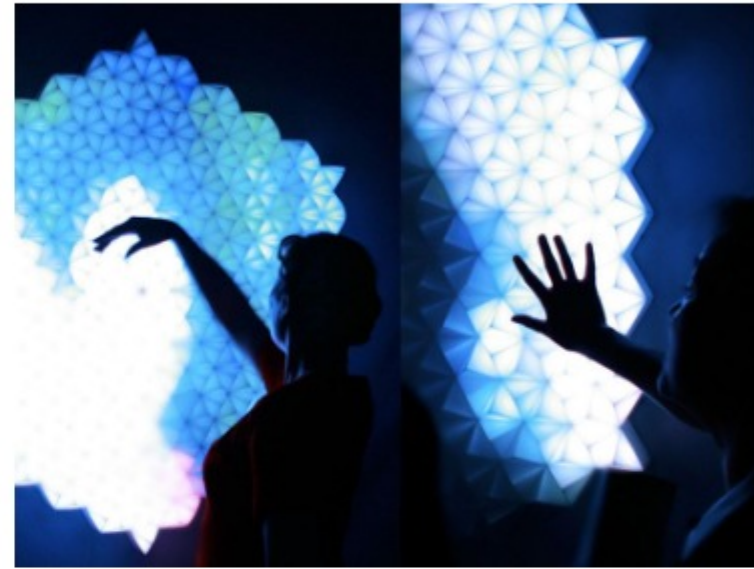
When a person in Location A sits on the Dune it sends the signal to a Dune in Location B. The latter one shows the presence of that person by lighting up, warming up, makes a sound or changes its visual appearance.



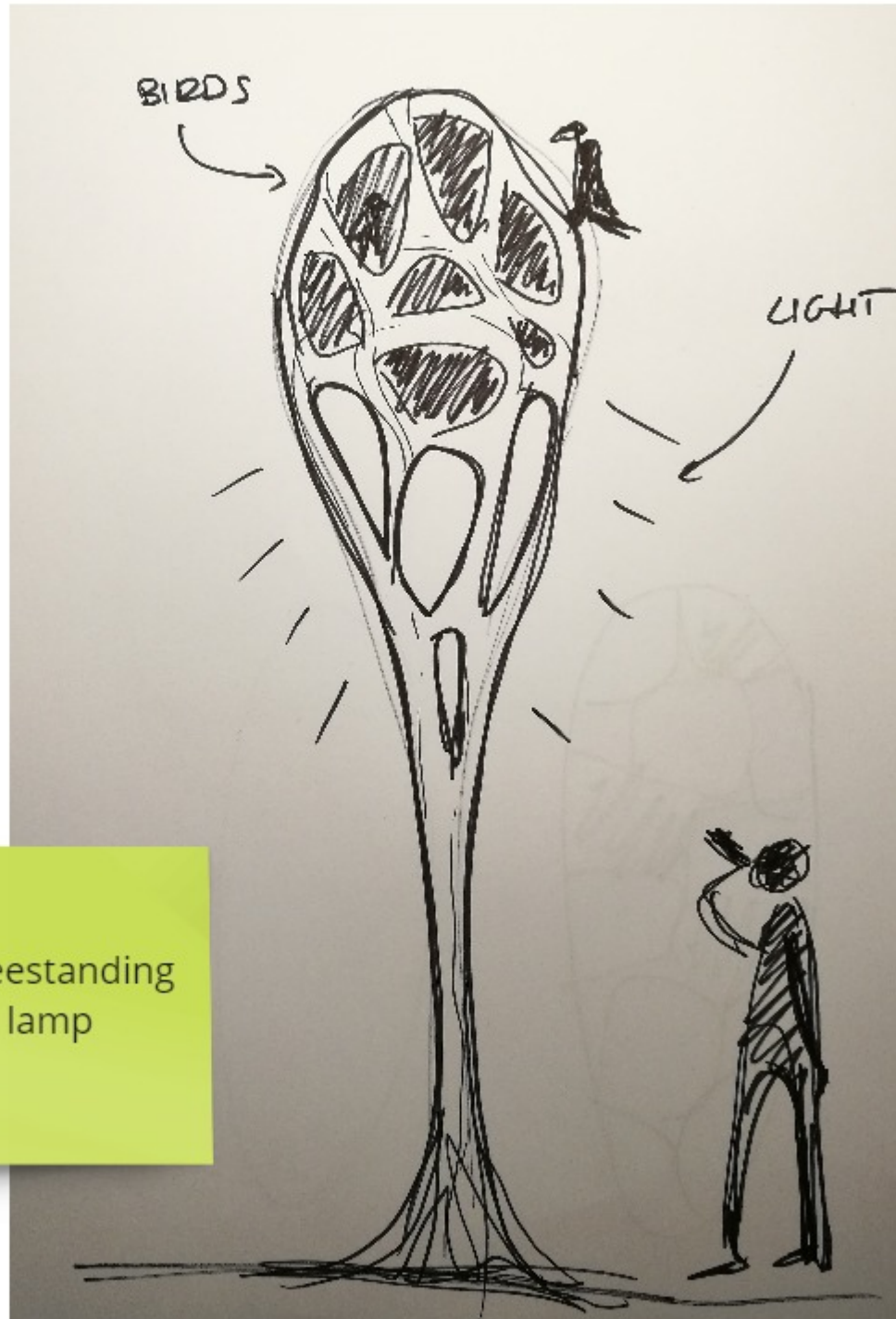
LOCATION A



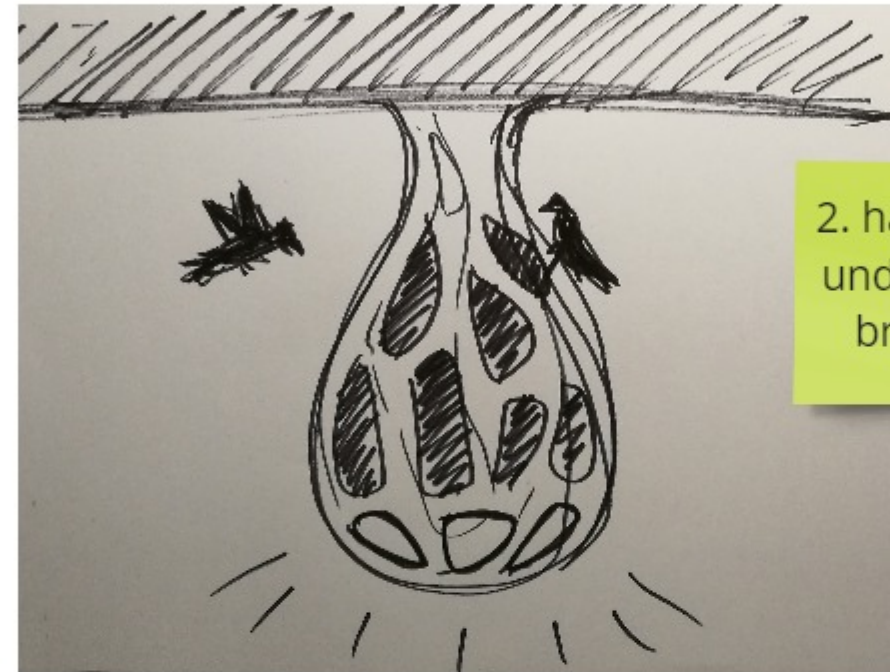
LOCATION B



BIRD LAMP_ALTERNATIVE CONCEPT



1. freestanding lamp



2. hanging under the bridge

