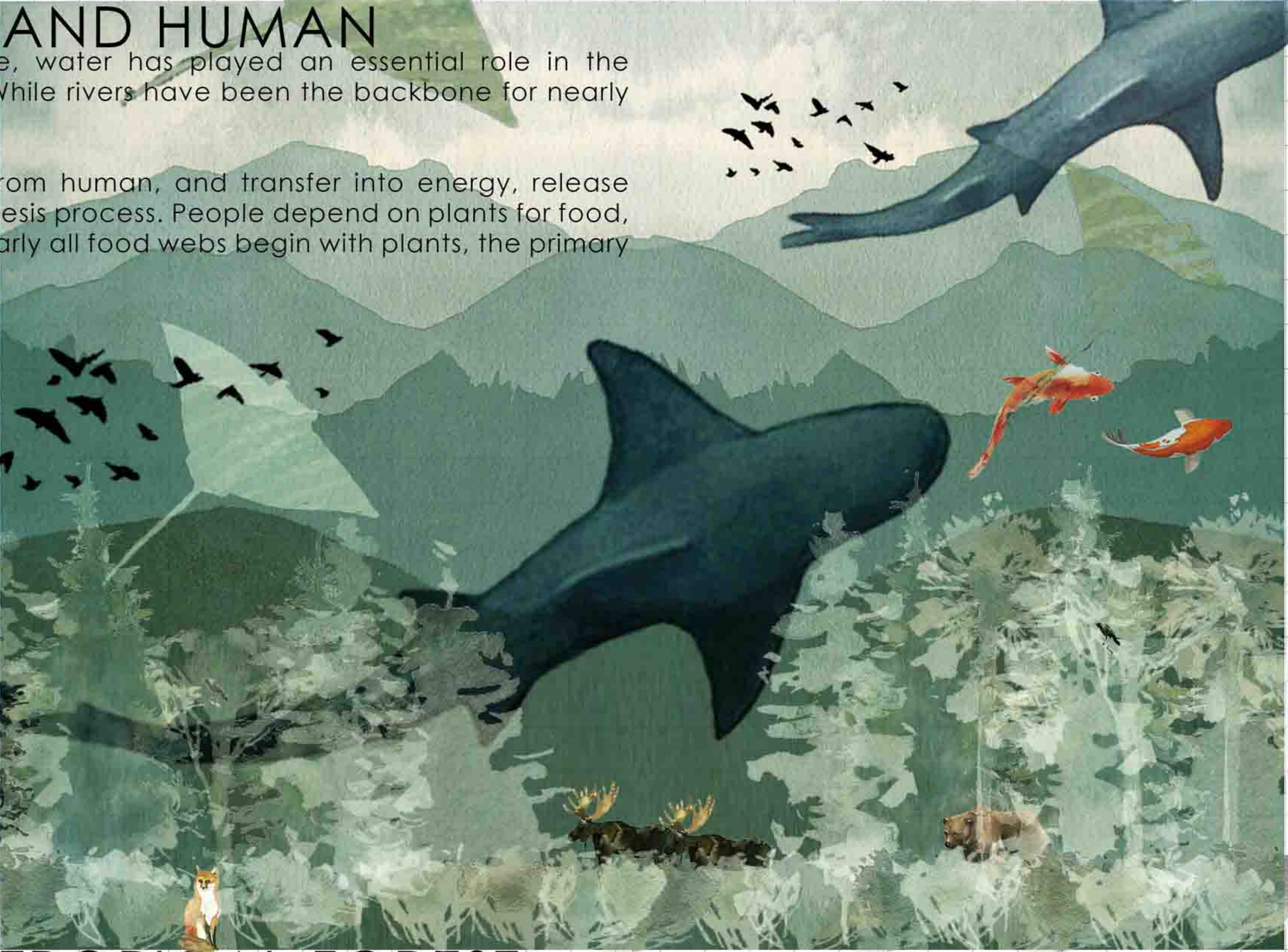


WATER, PLANT AND HUMAN

From the very early beginning of human life, water has played an essential role in the naissance and the development of societies. While rivers have been the backbone for nearly all human settlements for generations.

Plant is essential to absorb Carbon Dioxide from human, and transfer into energy, release oxygen to human for respiration, by Photosynthesis process. People depend on plants for food, clean air, water, fuel, clothing, and shelter. Nearly all food webs begin with plants, the primary producers.



LANGAT RIVER

The Sungai Langat basin is the second largest river basin among the seven basins in Selangor with a length of approximately 200 km and an area of 2350 km². The Sungai Langat Basin has undergone widespread development such as urban and industrial land development, agriculture, quarrying, and so on. The river provides important natural resources to support economic activities in the states.

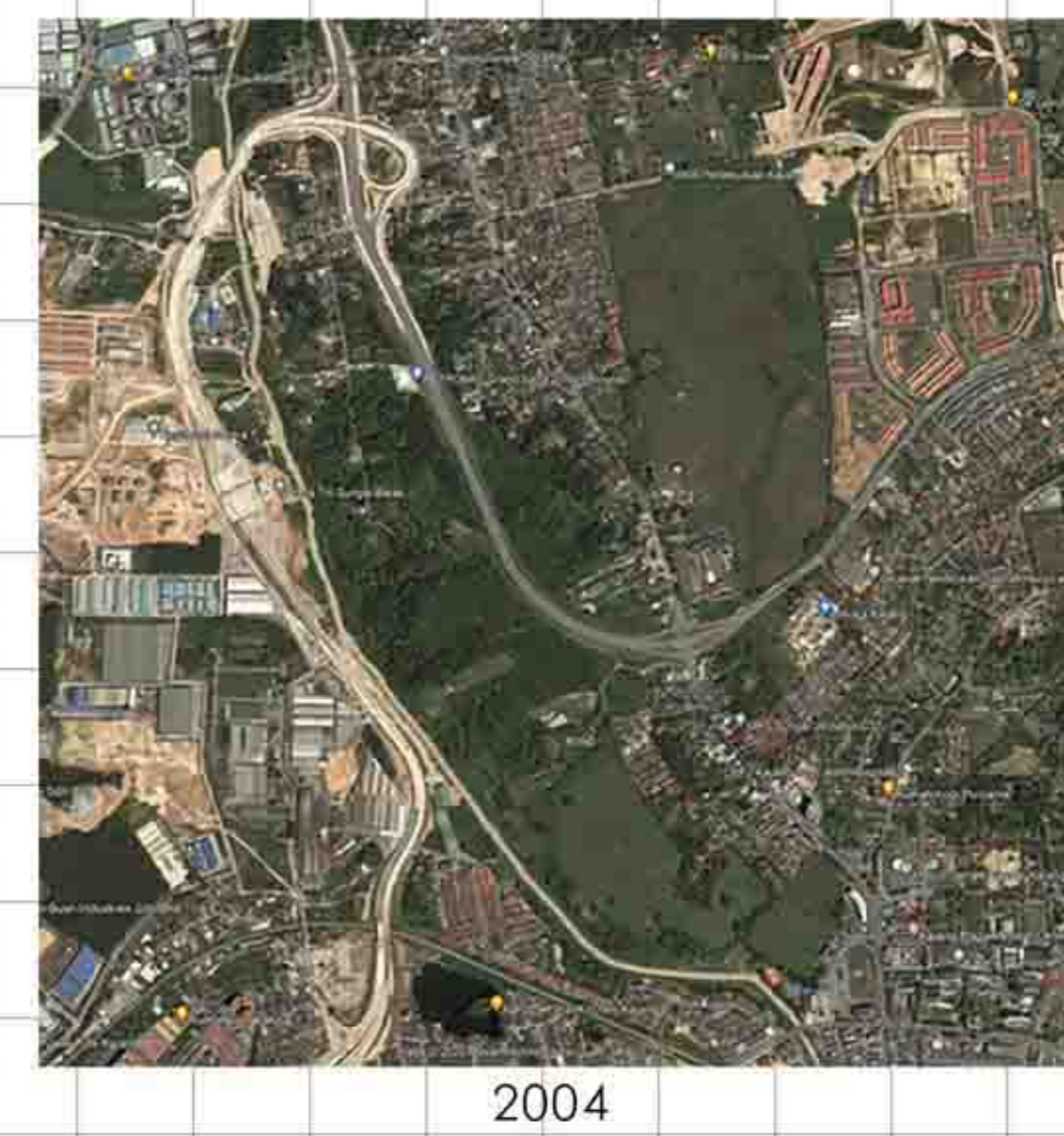
In 2004, the Sungai Langat Basin was designated as one of 91 hydrological ranges worldwide under the United Nations International Hydrological Programme. The program facilitates cross-border cooperation in the field, and put forward the integrated water resources management policy for the administrative management of the surrounding land of Sungai Langat to make these lands sustainable and reduce disasters.



TROPICAL FOREST

Malaysia's land surface was once almost entirely covered with forest. Today, forests still cover about 54% of the total land area. However, deforestation is a major concern as the country is still rapidly developing. From 2001 to 2019, there was a reduction of about (28%) 8.12 million hectares of tree cover in Malaysia. The remaining forests face threats from unsustainable logging, illegal removal of forest products and encroachment due to agricultural and urbanisation activities.

Tropical rainforests support the greatest diversity of living organisms on Earth with an estimated range from 3 to 50 million species of flora and fauna. The rainforests of Southeast Asia, including in Malaysia, are believed to be the oldest and among the most biologically diverse in the world. This diversity of rainforests is the result of a series of unique circumstances.



BLUE-GREEN SYSTEM

An interconnected network of natural and designed landscape components, including water bodies and green and open spaces.

These systems seek to protect the ecological, hydrological, and social values of the urban landscape and water cycle, and to provide resilient measures to address climate change and flood management, increase connectivity, and enhance access to nature.

BLUE-GREEN INFRASTRUCTURE PLANNING

LANDSCAPE PLANNING

OPEN SPACE STRATEGY

URBAN FOREST STRATEGY

BIODIVERSITY STRATEGY

ENVIRONMENTAL STRATEGY

WATER PLANNING

FLOOD STUDY

WATER PURIFICATION

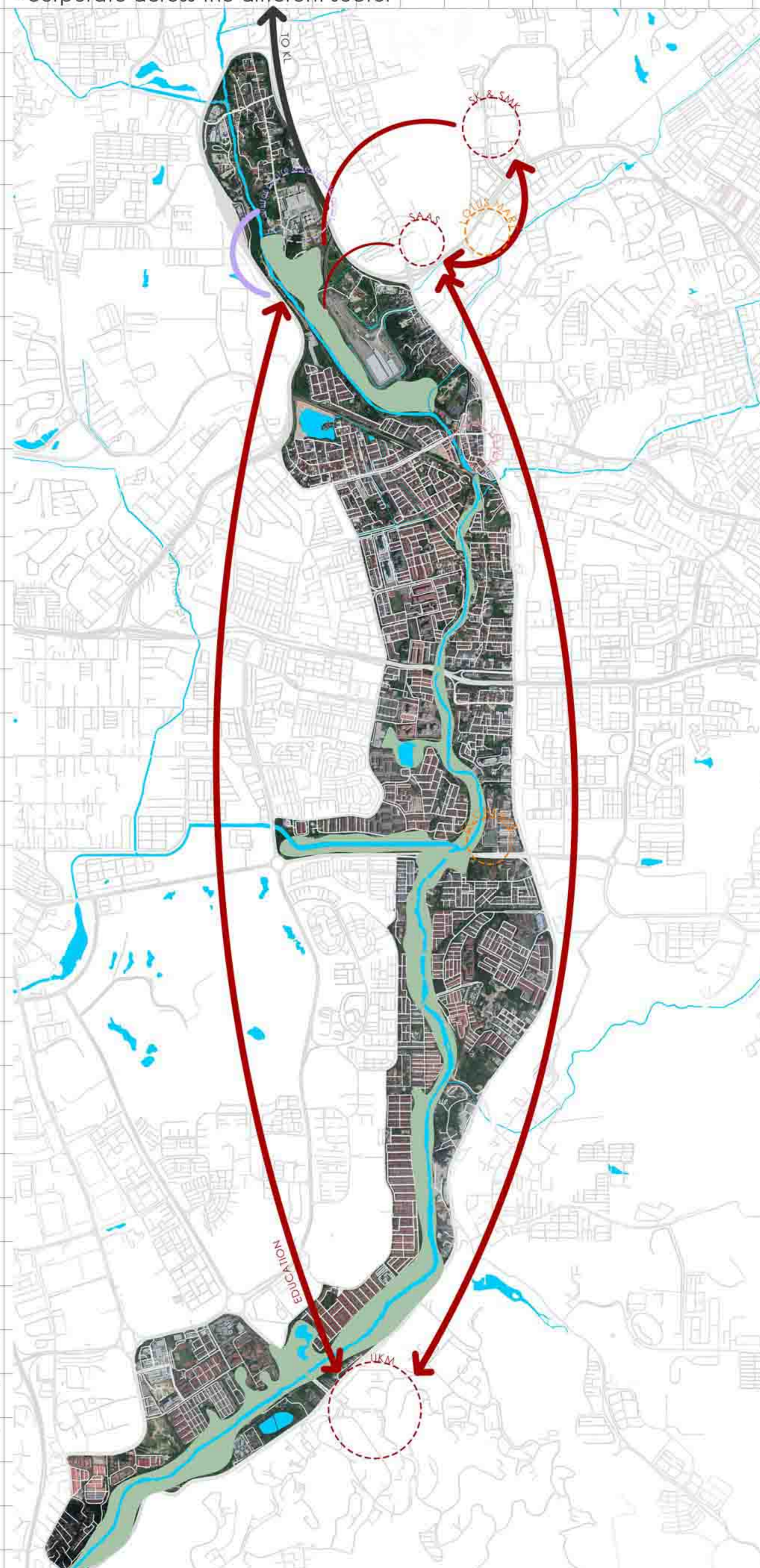
SUSTAINABLE WATER MANAGEMENT

INTEGRATED WATER MANAGEMENT

VISION & GOAL

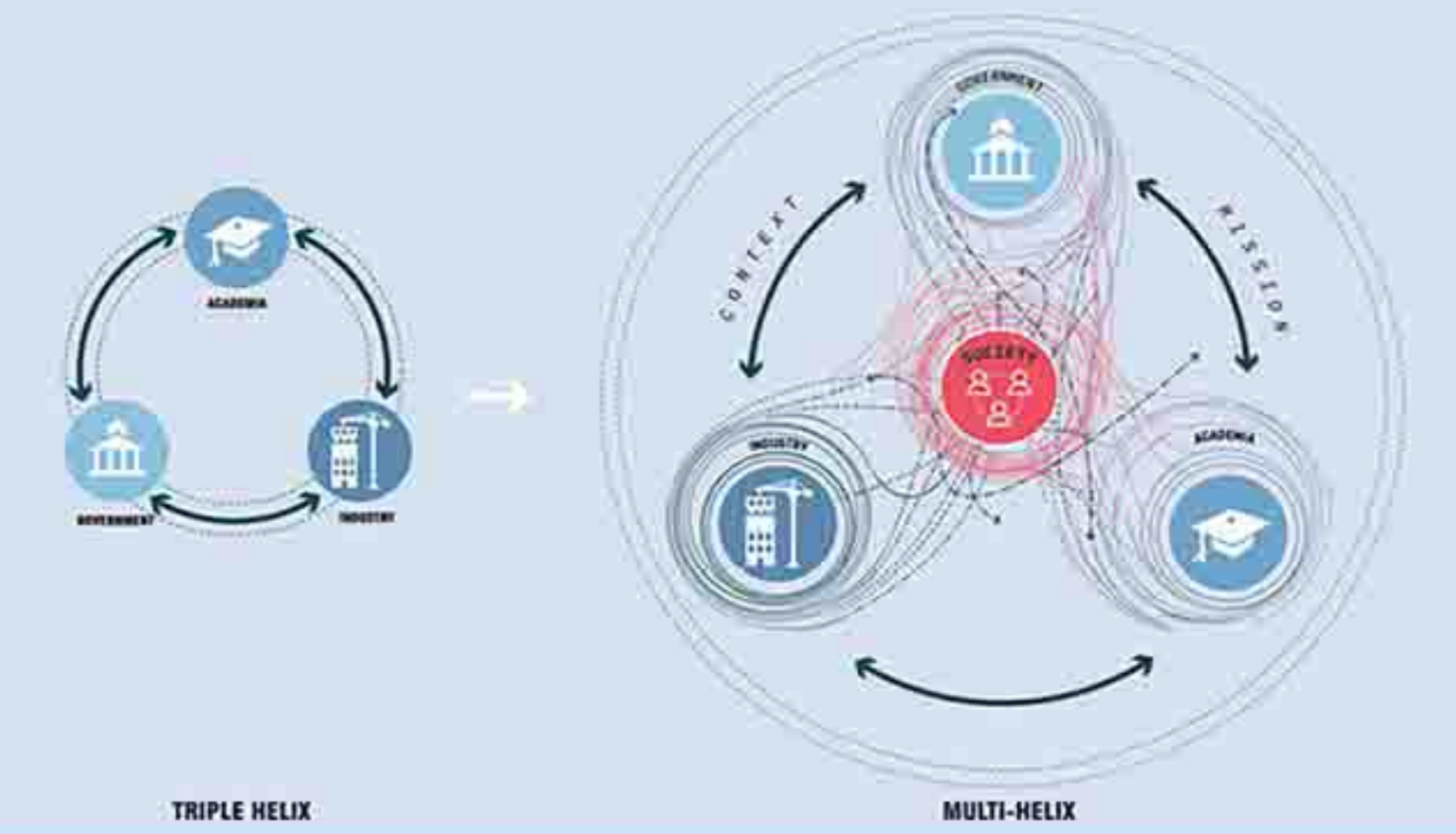
ALONG THE RIVER

- possibility of implementation along the riverside
- corporate across the different sector



SUSTAINABLE & RESILIENCE

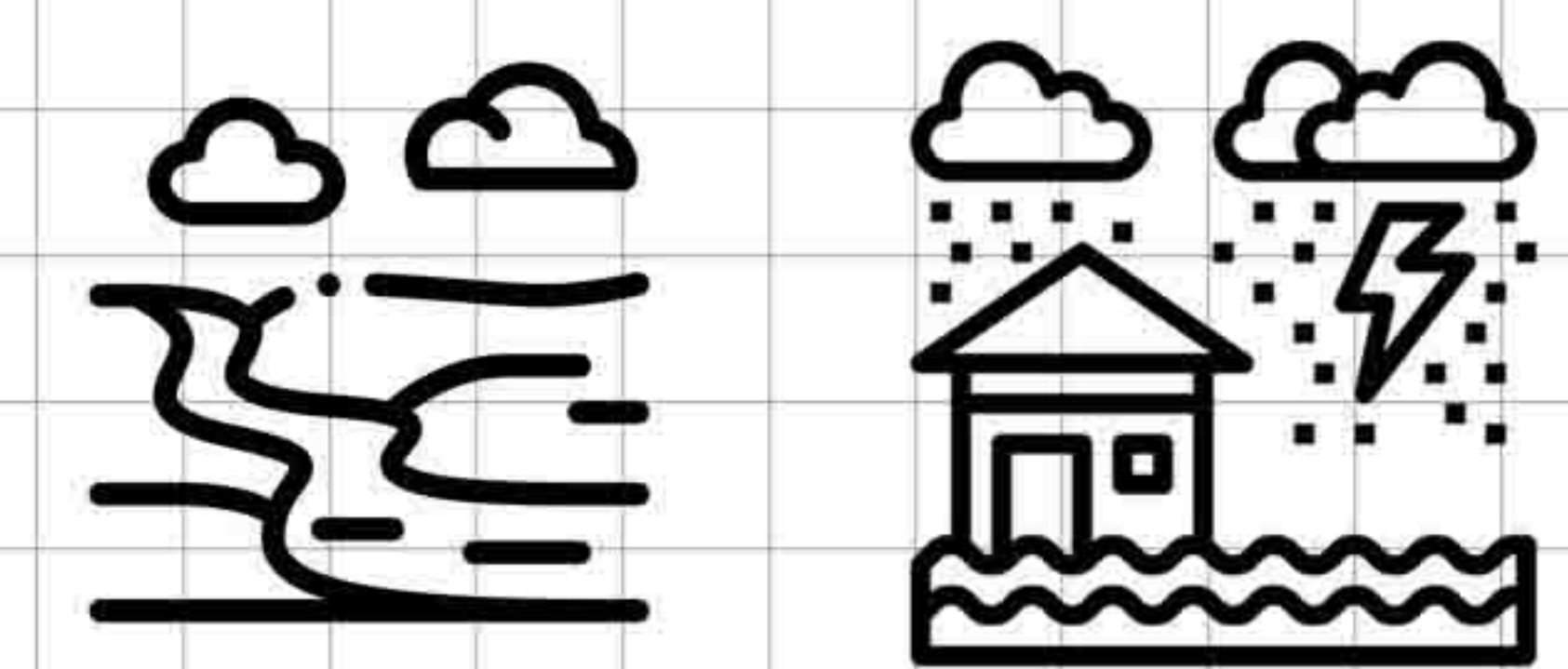
- SOCIAL**
- Enhance Sense of Community
 - Enhance connectivity, bring people together
 - Encourage community participation



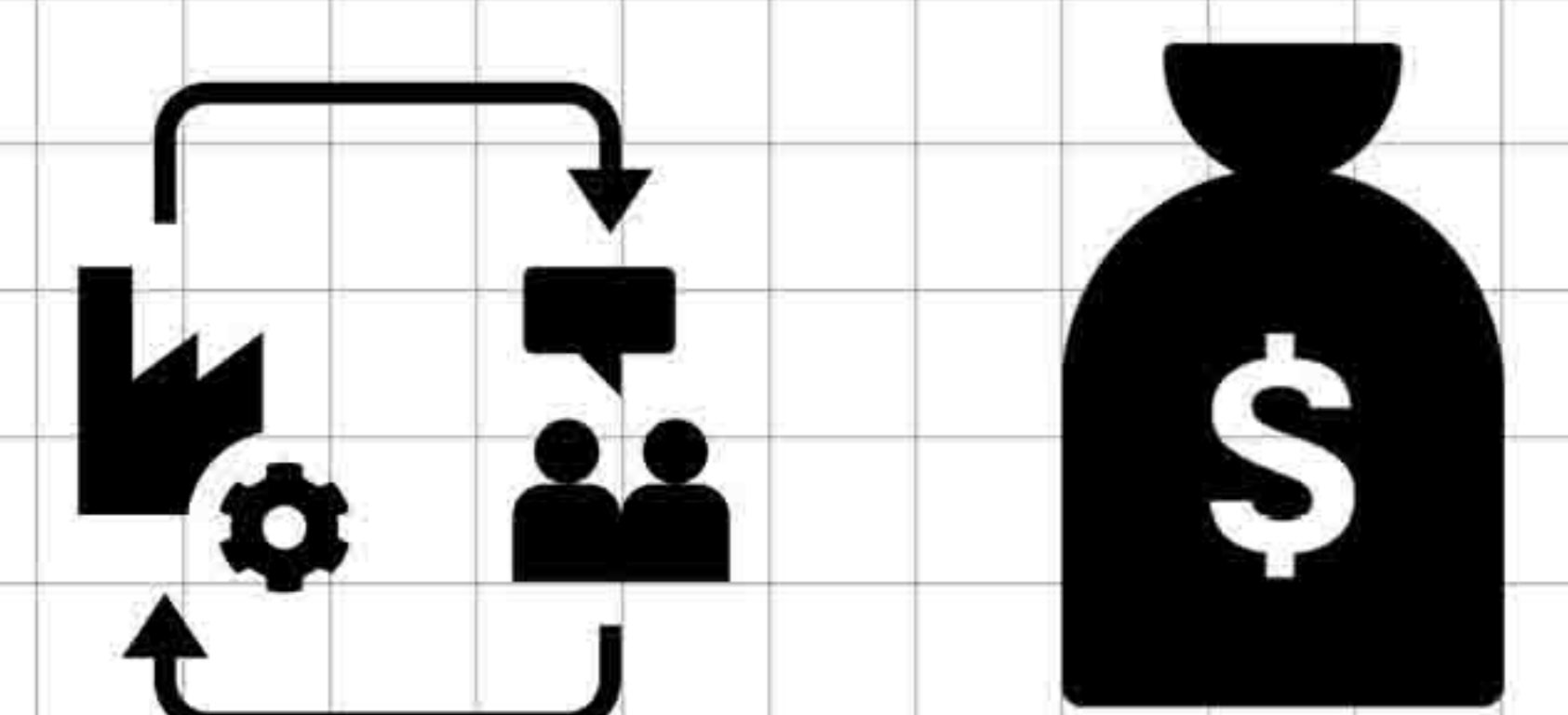
- CULTURAL**
- Introduce new culture: Living with Langat River
 - Promote vibrant lifestyle

*The manifestation and practice of traditional and new culture as a result of a constant creative process and free individual and collective expression that links the past and present in the artificial and natural physical space. It generates a dynamic that characterizes the solution of problems, ways of life, art, knowledge, tangible and intangible heritage and especially the identity that together form a legacy that is expected to reach the future**

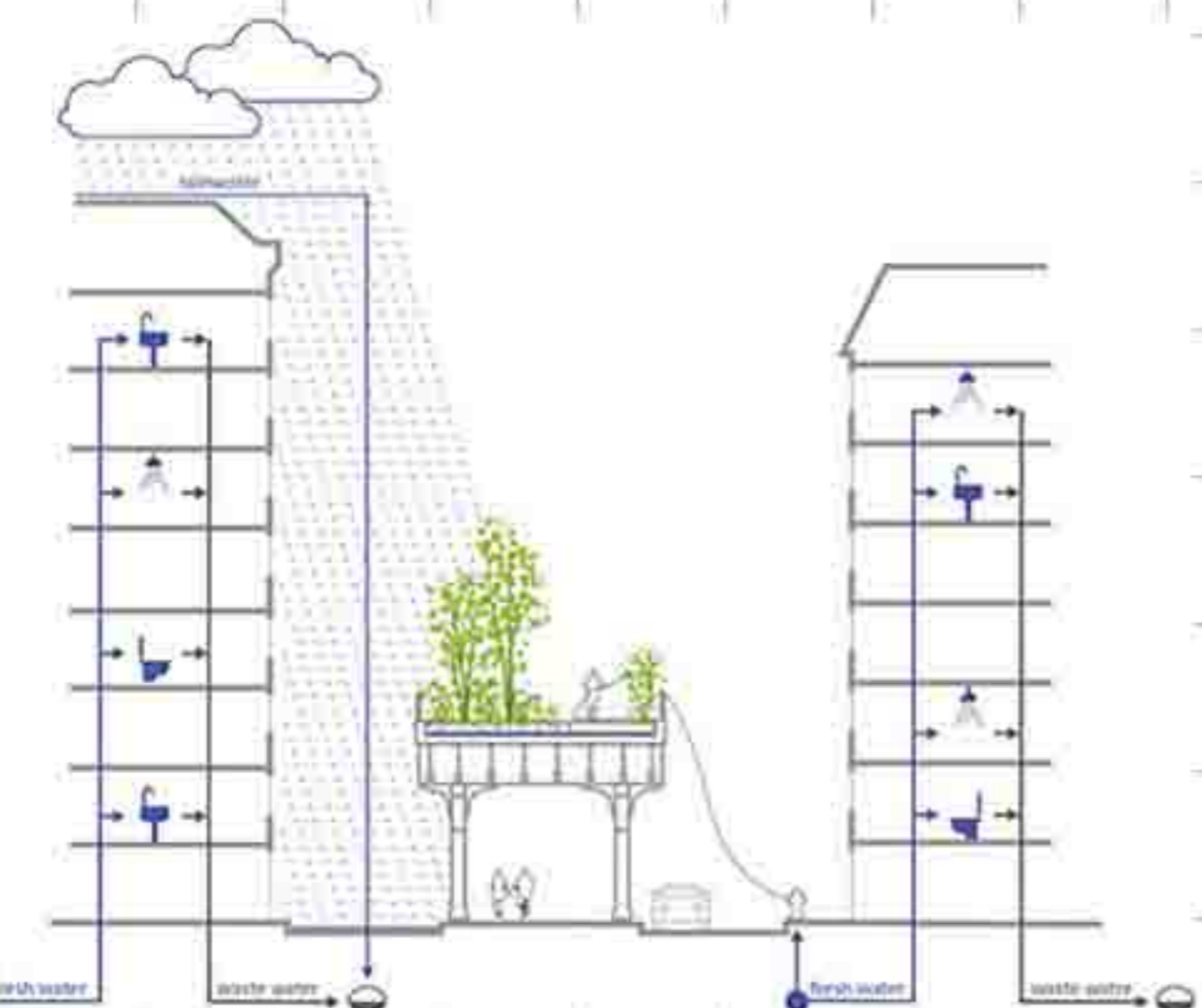
- ECOLOGICAL**
- Improve river condition
 - Conserve water-edge habitat
 - Prevent flood



- ECONOMIC**
- Community: Supply & Demand
 - Creating Job Opportunities
 - Increase Income

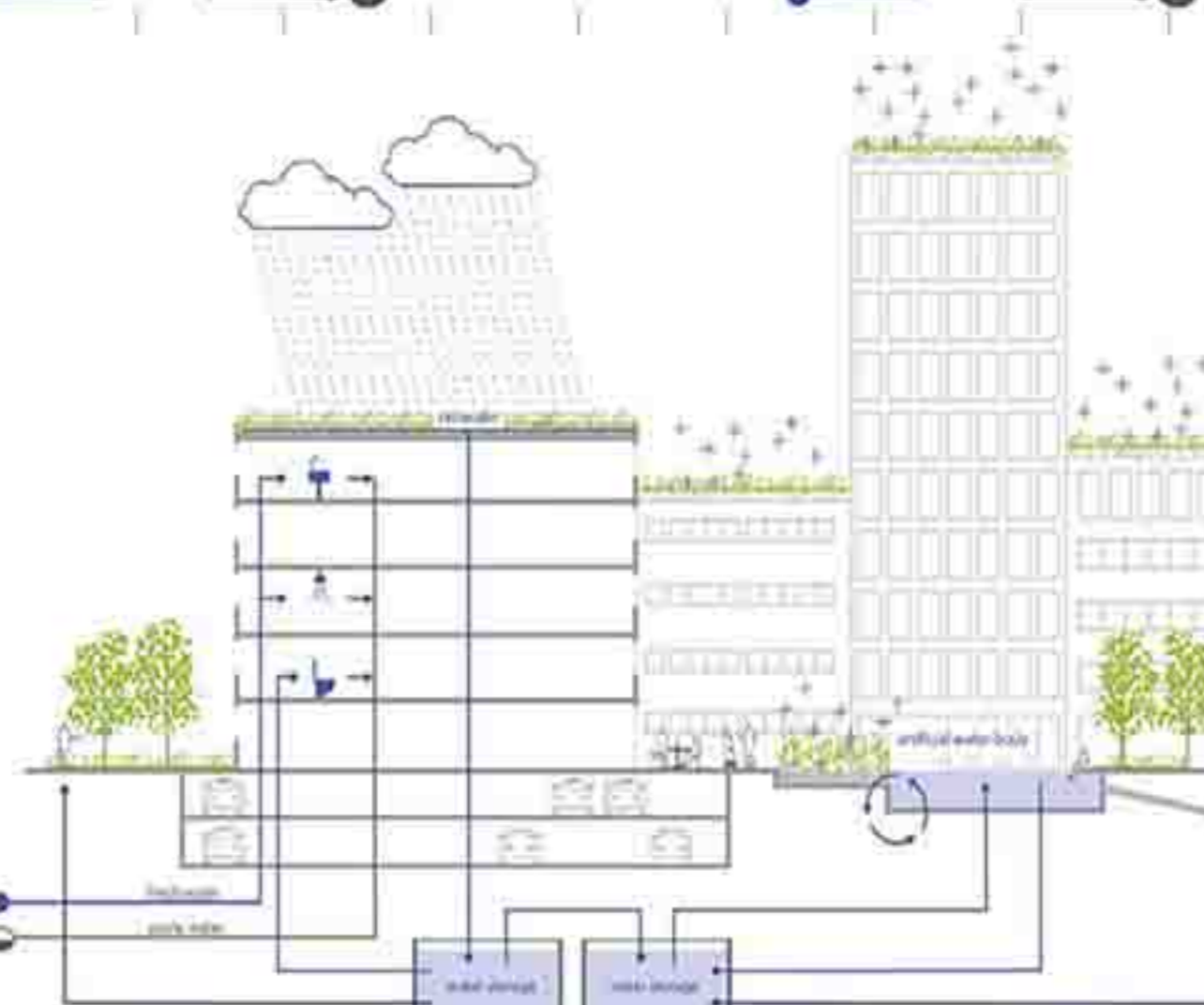


CASE STUDIES



High Lane, Newyork, USA

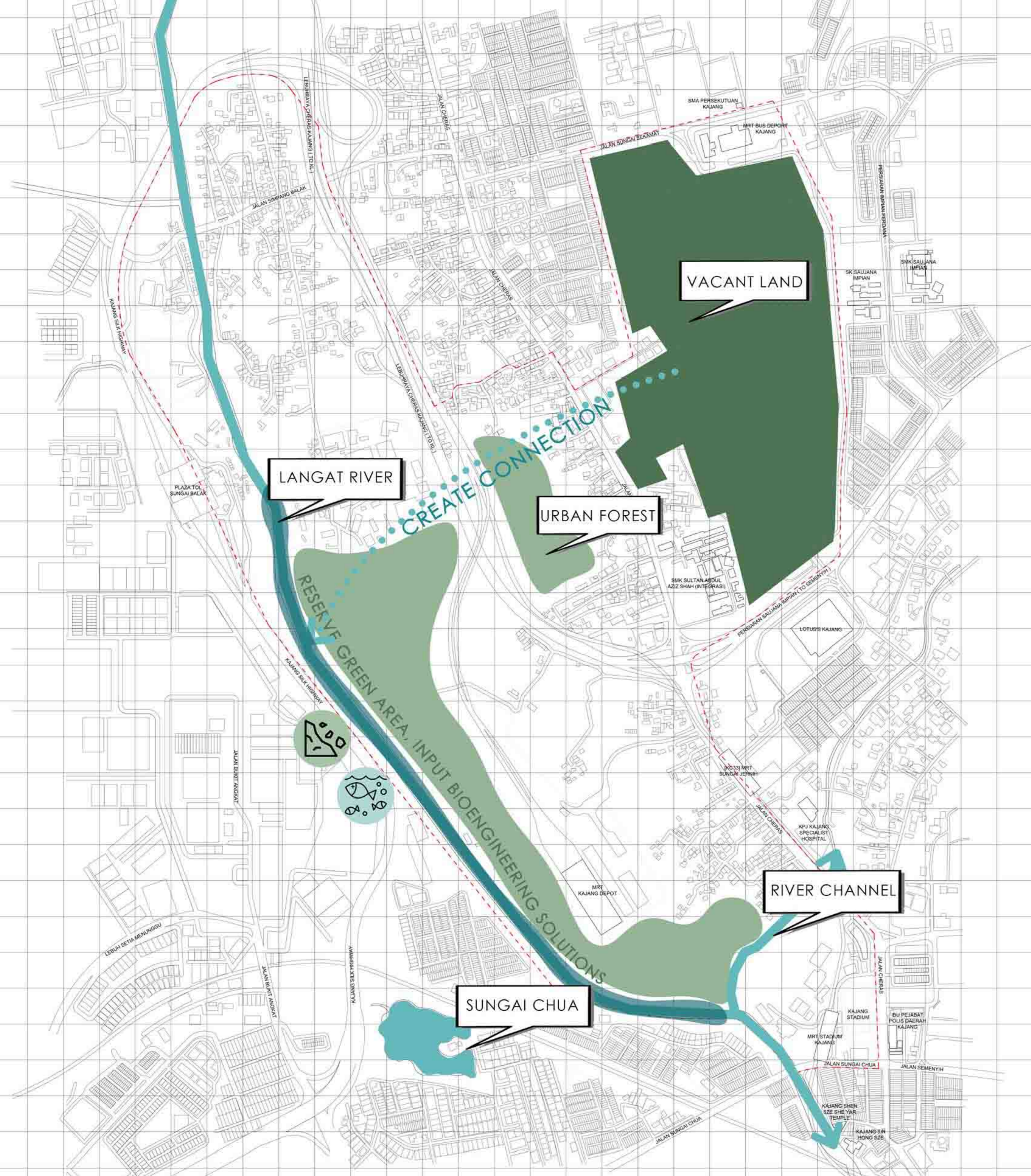
- existing grey Infrastructure (railway line) turn into a green linear park.
- low water demand plant
- permeable paving system



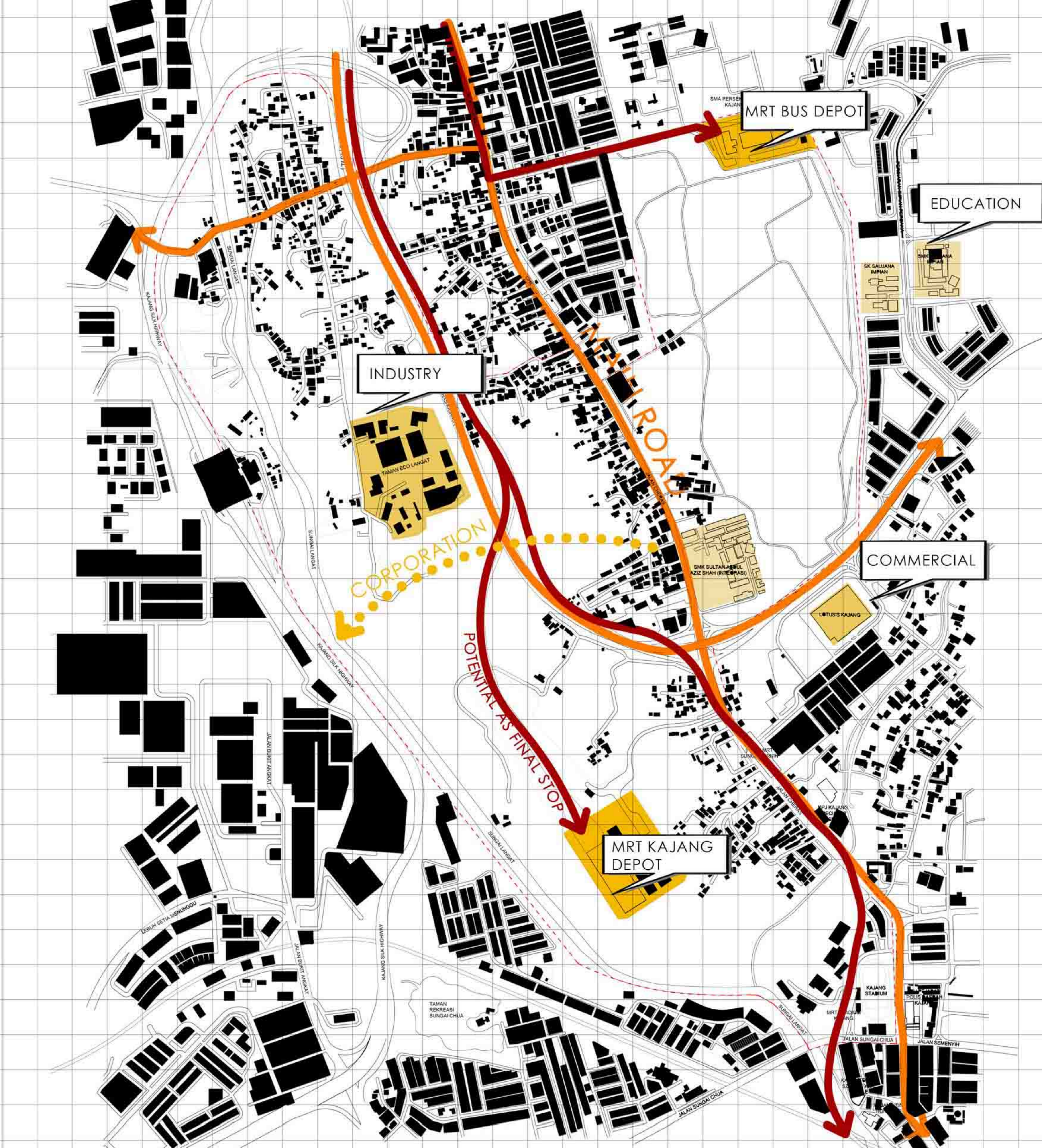
Potsdamer Platz, Berlin

- zero rainwater runoff with all green roof on top
- green roof connect with water cistern underground
- include water as design element

SITE ANALYSIS BLUE-GREEN INFRASTRUCTURE



GREY INFRASTRUCTURE

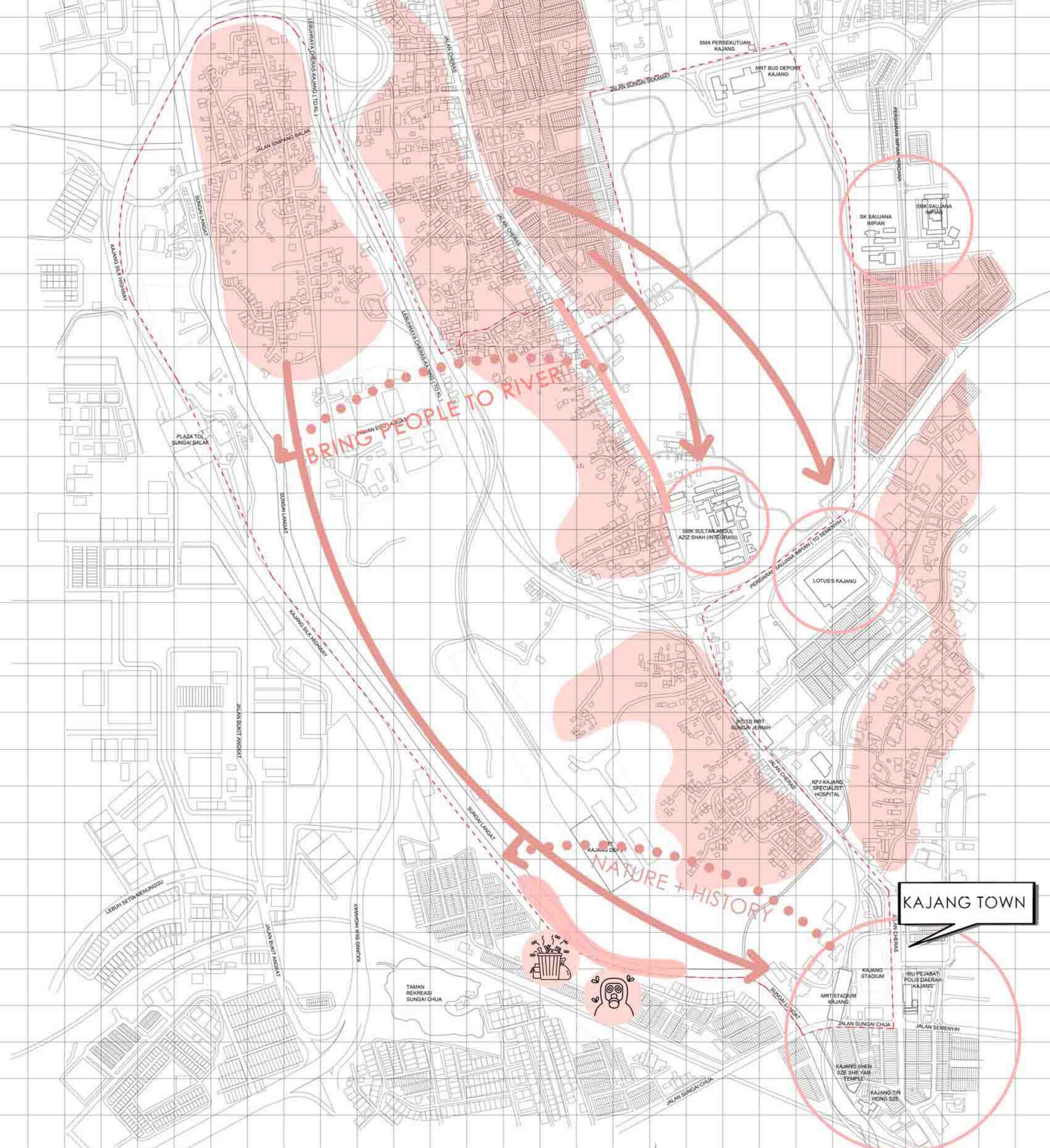


WILDLIFE HABITAT



SITE CONTEXT

SOCIAL CULTURE



SITE ISSUE

ENVIRONMENTAL DEGRADATION

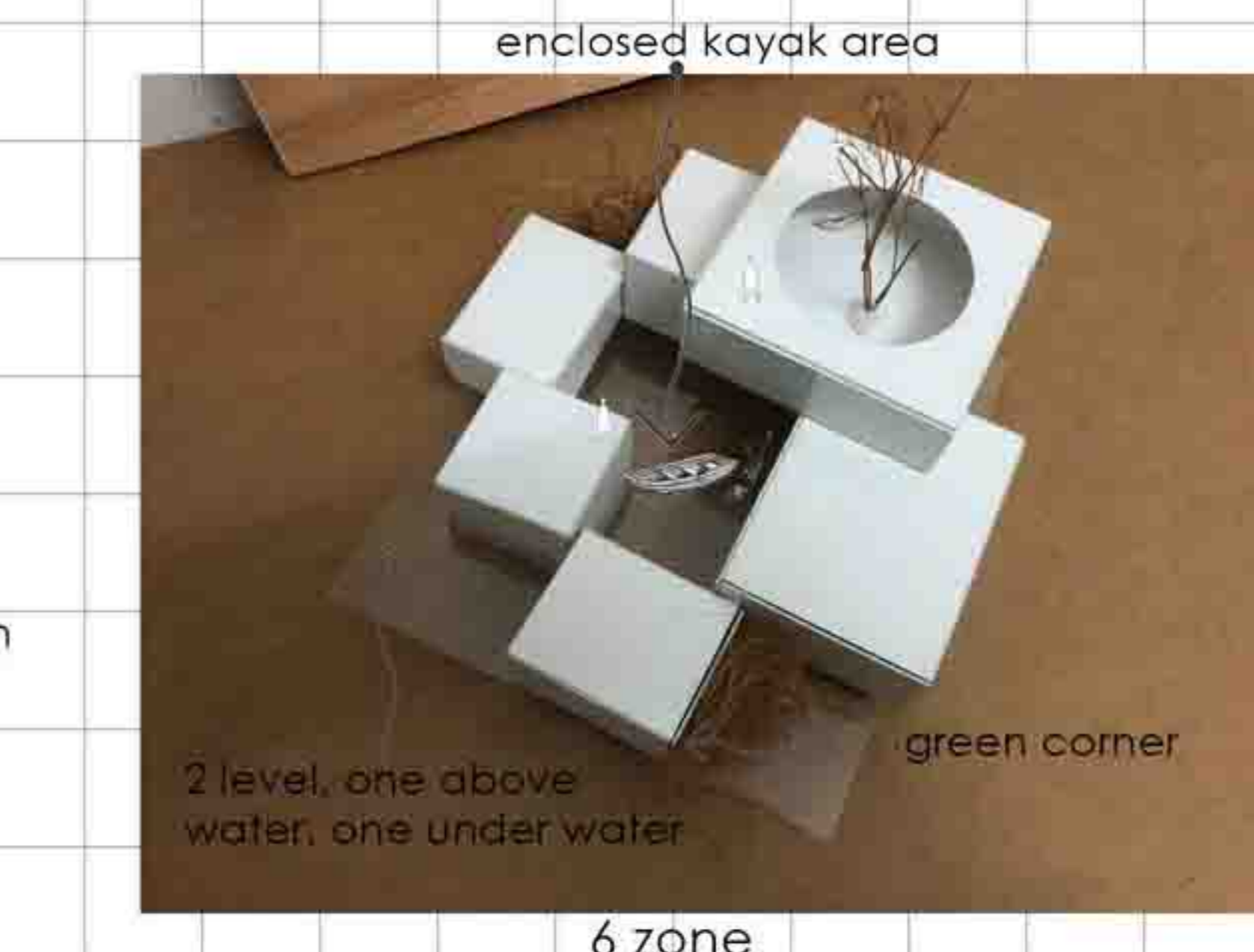
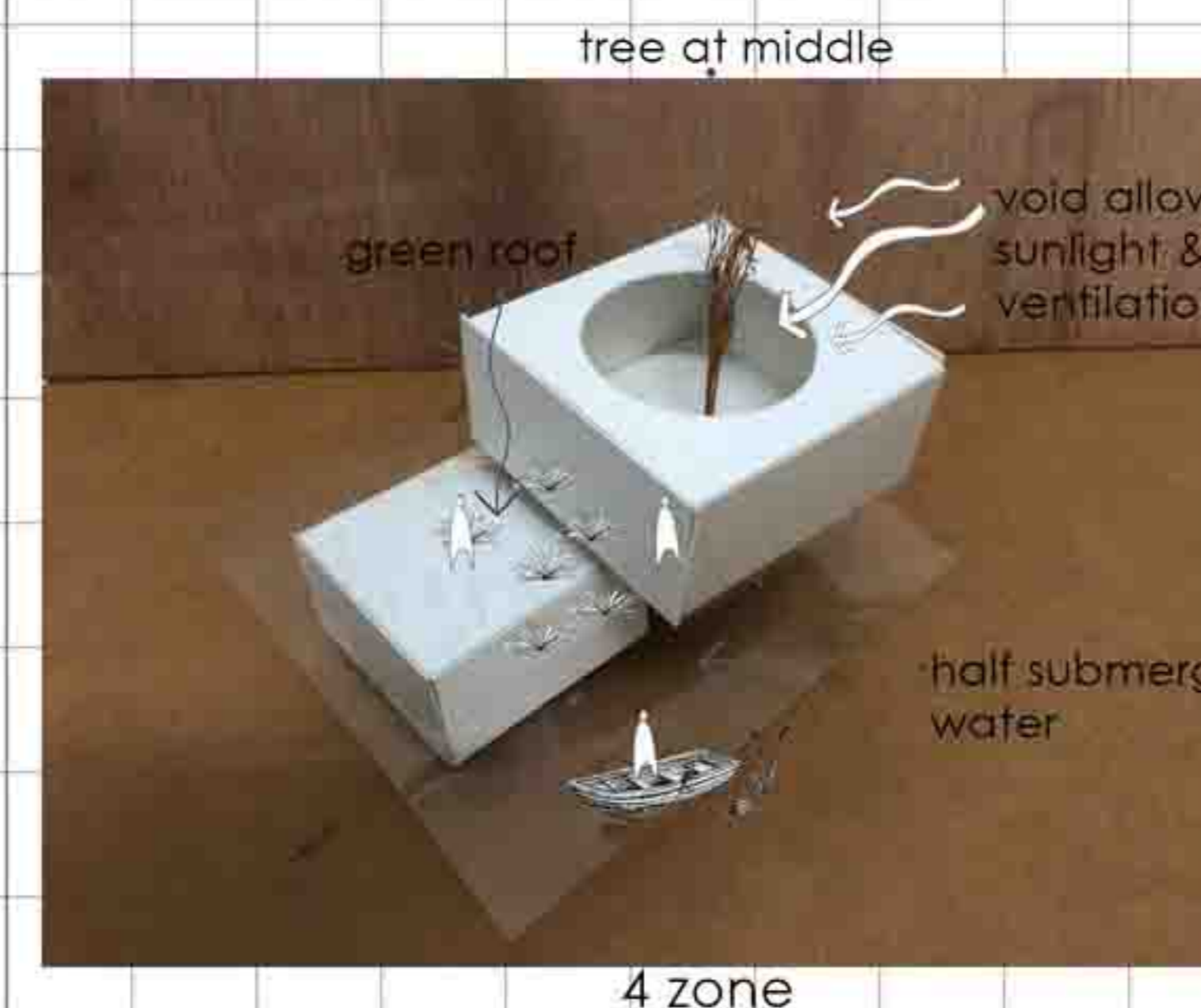


SOIL EROSION
WATER DEGRADATION
RUBBISH POLLUTION
ODOUR POLLUTION

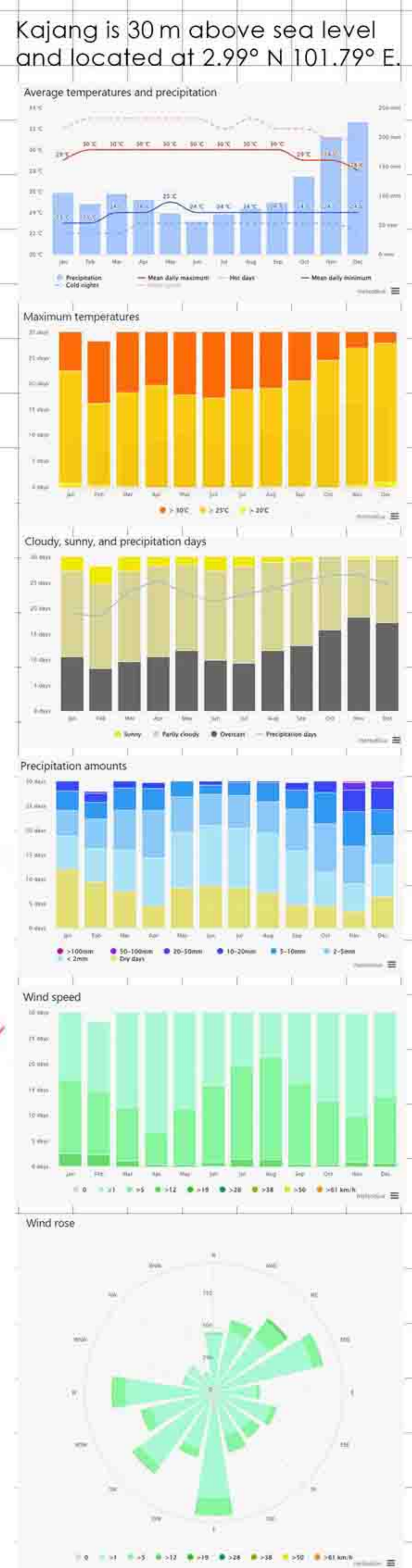
SWOT

- Strength**
 - people, nature, and wildlife co-exist
 - existing river with high ratio of green
- Weakness**
 - Local people less interaction with river and forestry
 - not proper river management
- Opportunity**
 - bring people close to river
 - rejuvenate river
- Threat**
 - act of threatening river and forest

DESIGN PROCESS



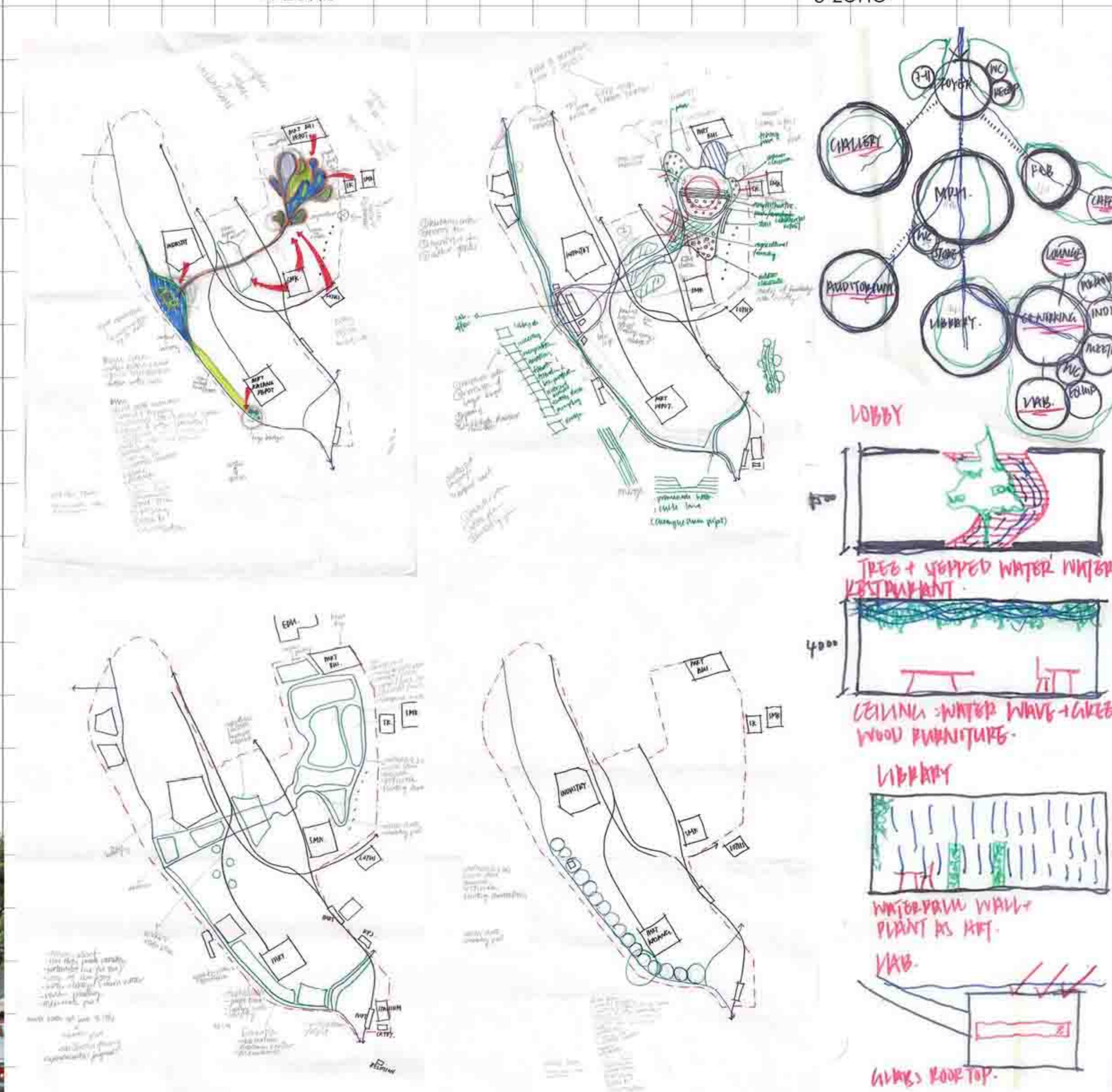
WEATHER DATA



HOW PEOPLE APPROACH RIVER

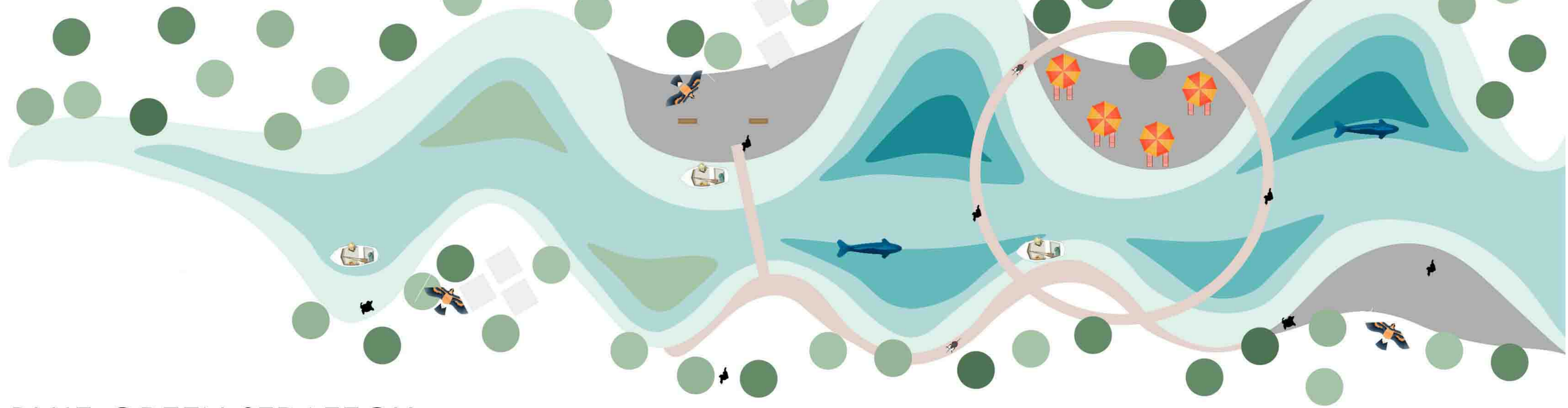


SATEY

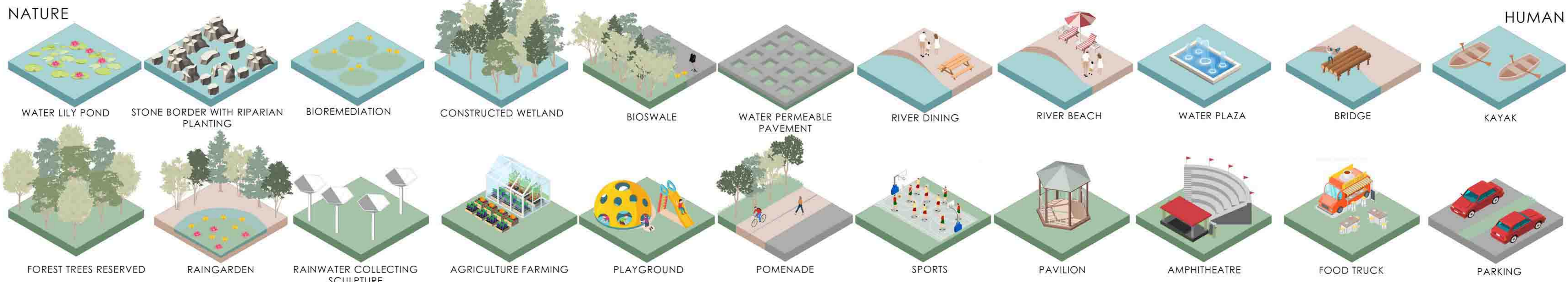


LIVE WITH LANGAT RIVER, CREATING BLUE-GREEN INFRASTRUCTURE

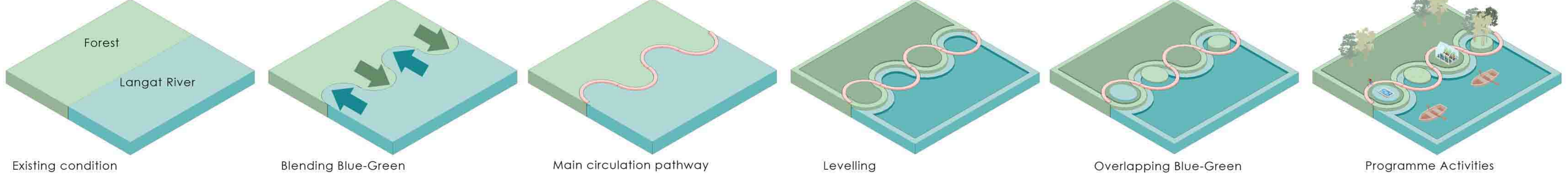
"living with blue and green by blending, merging and harmonizing both nature elements-water and plant, revitalise the river by engaging local community, bringing the wildlife in, and solving existing site issue by providing nature-led solutions."



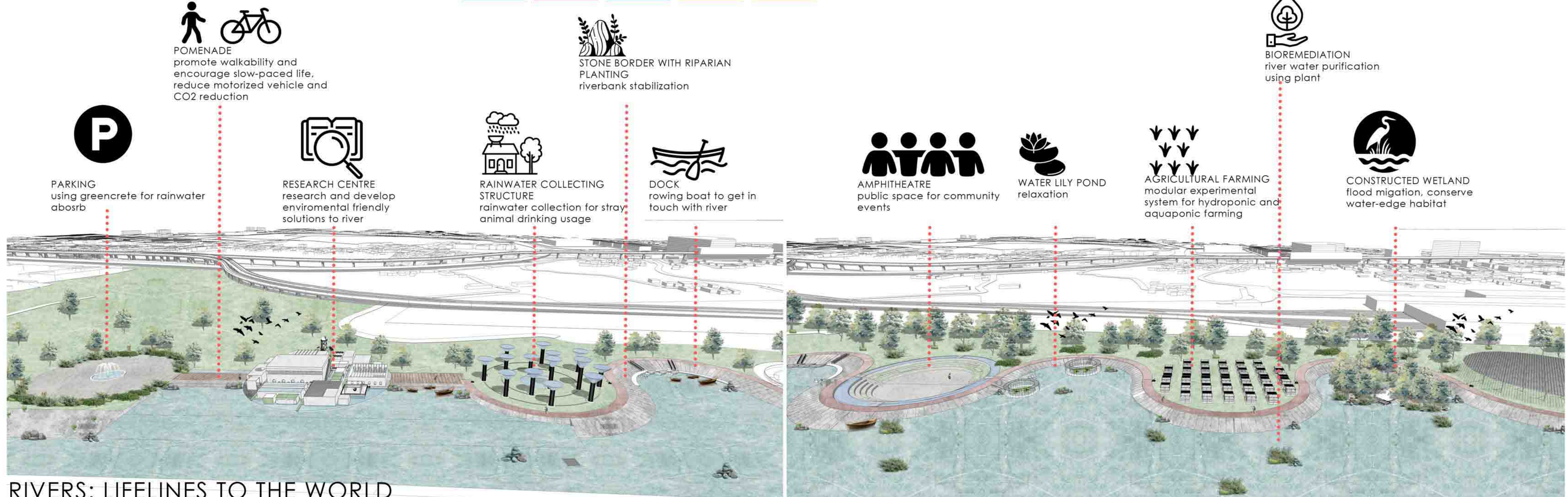
BLUE-GREEN STRATEGY



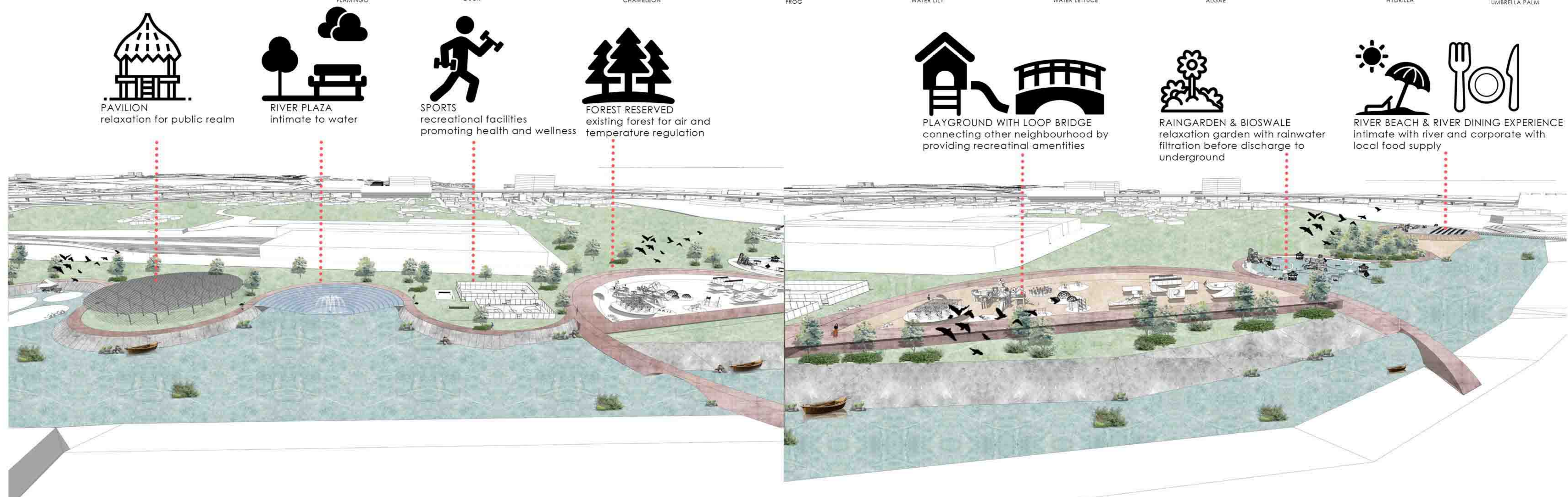
MASTERPLAN STRATEGY

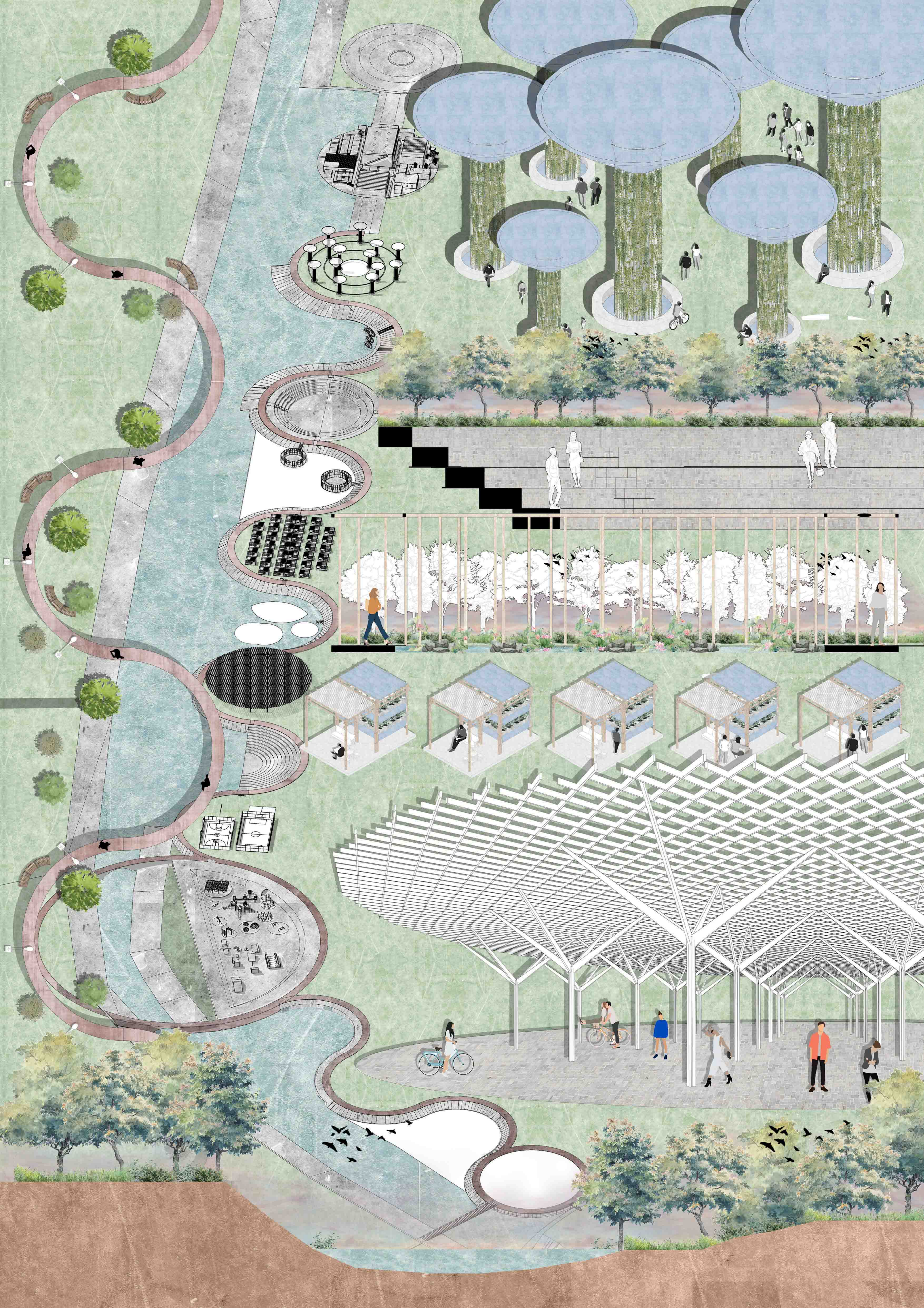


SUSTAINABLE STRATEGIES



RIVERS: LIFELINES TO THE WORLD







- 1. MAIN ROAD
- 2. CIRCULAR PARKING
- 3. SERVICE ROAD
- 4. RESEARCH AND EDUCATION CENTRE
- 5. POMENADE
- 6. RAINWATER HARVESTING STRUCTURE
- 7. DOCK
- 8. AMPHITHEATRE
- 9. WATER LILY POND
- 10. AGRICULTURE FARMING
- 11. CONSTRUCTED WETLAND
- 12. PAVILION
- 13. RIVER PLAZA
- 14. BIOREMEDIATION
- 15. STONE BORDER WITH RIPARIAN PLANTING
- 16. SPORTS
- 17. PLAYGROUND WITH SKATE PARK
- 18. RAINGARDEN
- 19. BIOSWALE
- 20. RIVER BEACH
- 21. RIVER DINING
- 22. FOOD TRUCK AREA
- 23. EXISTING FOREST RESERVED
- 24. LOOP BRIDGE

LANGAT RIVER RESEARCH & EDUCATION CENTER

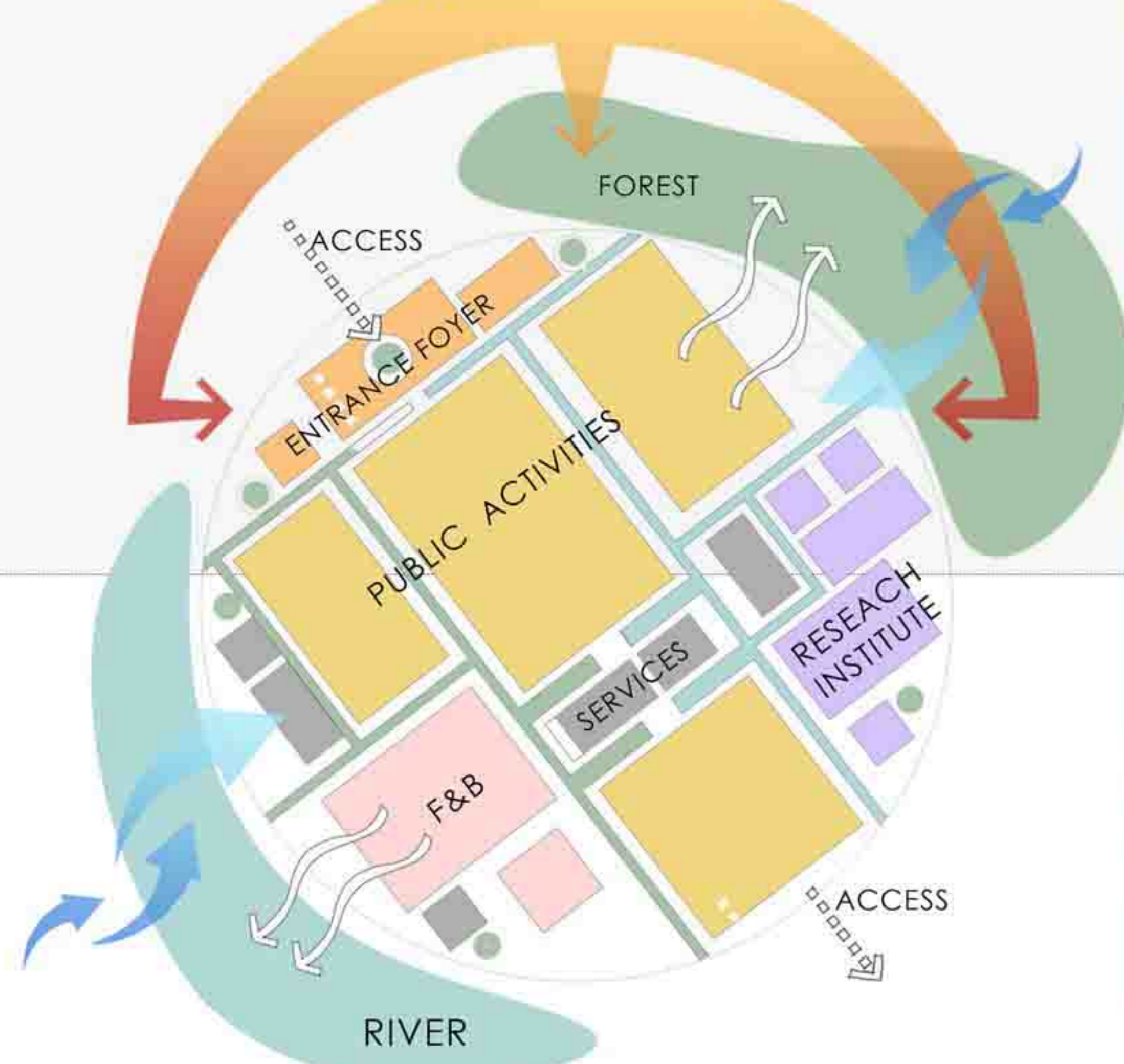
Langat river research & education center aim to cooperate with local industry and partnership with local educational institution, educate the people about the history and importance of Langat river, providing environment-friendly solutions directly on to the river, thus improving Langat river situation and revitalizing the riverside by bring back social, environmental and economic benefits to the local.



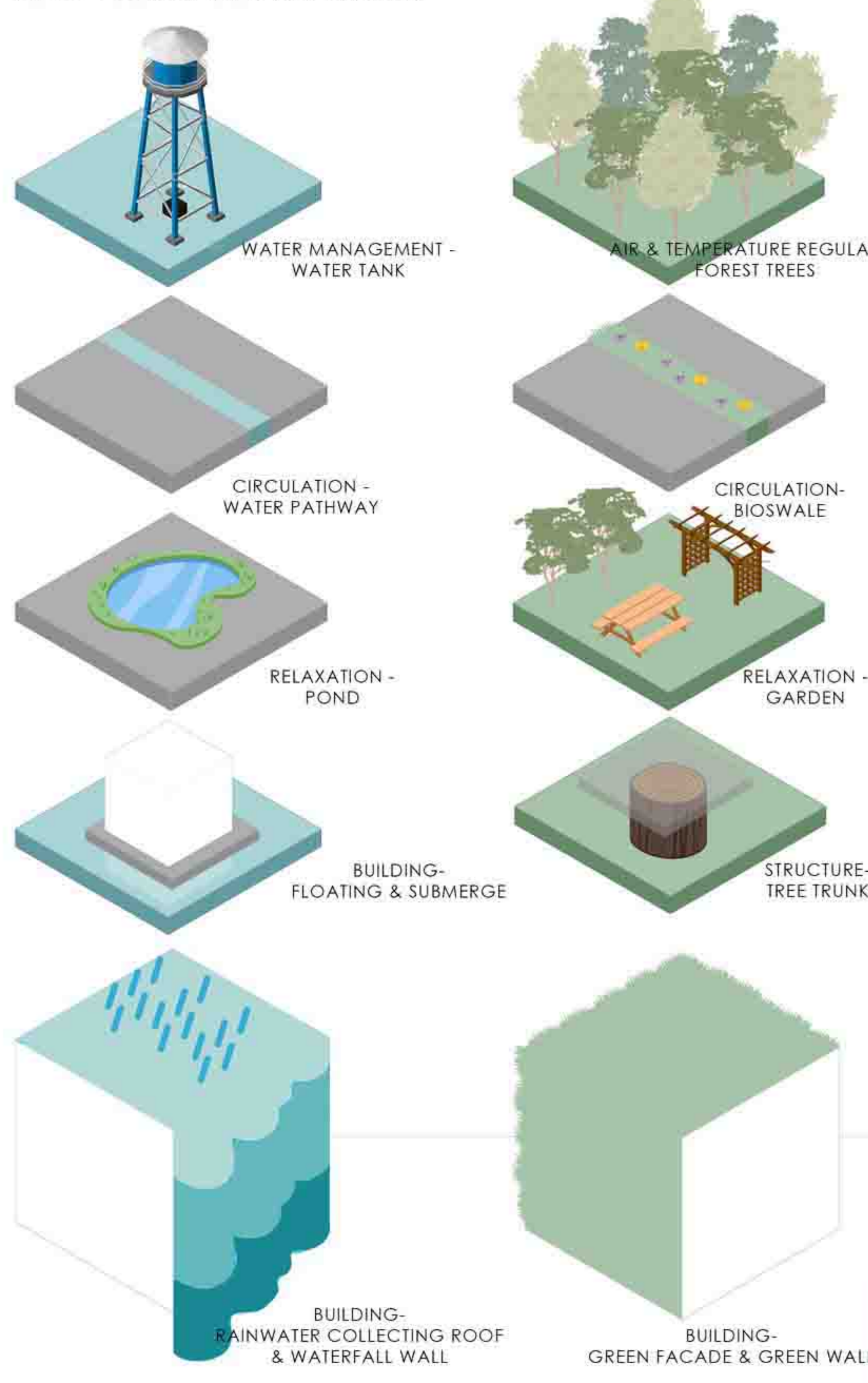
CASE STUDY
21st Century Museum of Contemporary Art, Kanazawa
architect Kazuyo Sejima and Ryue Nishizawa



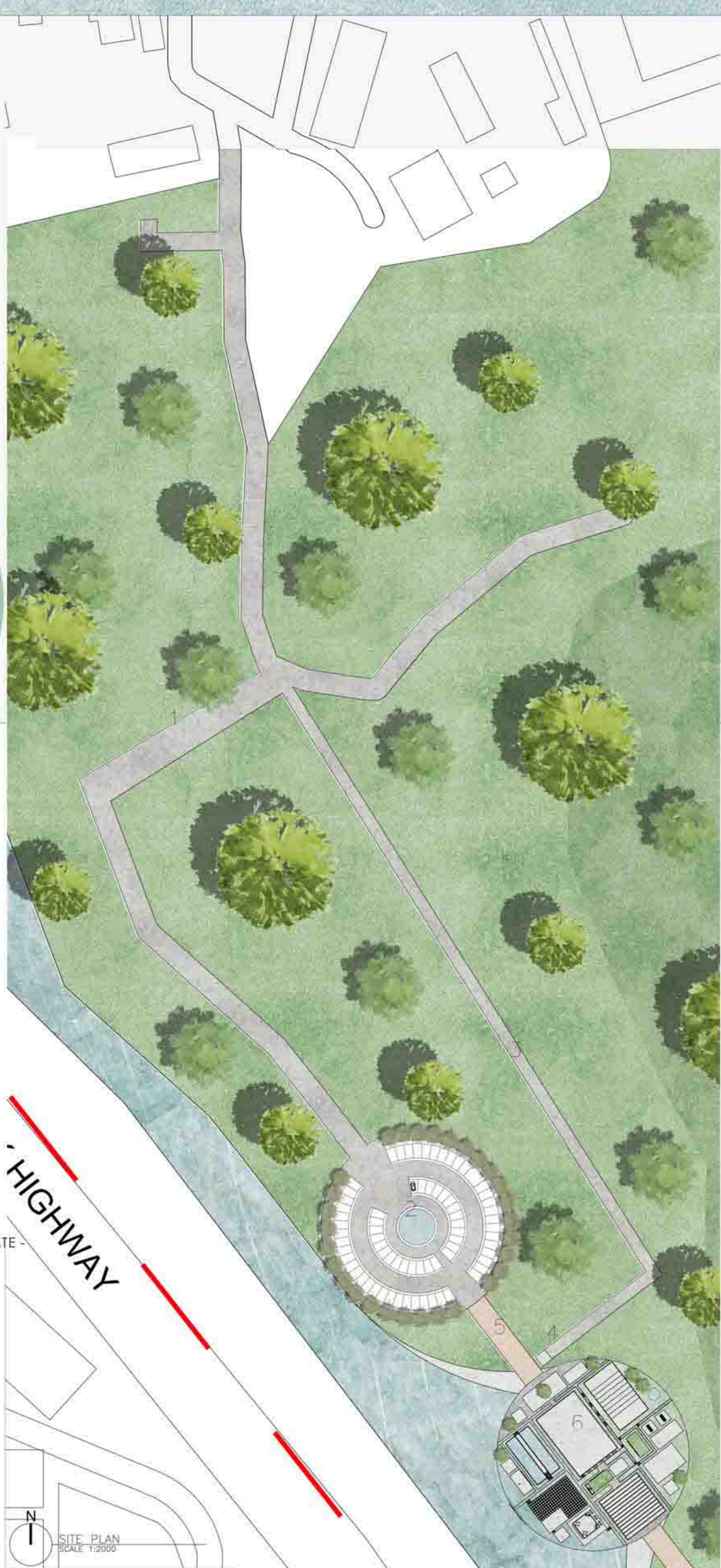
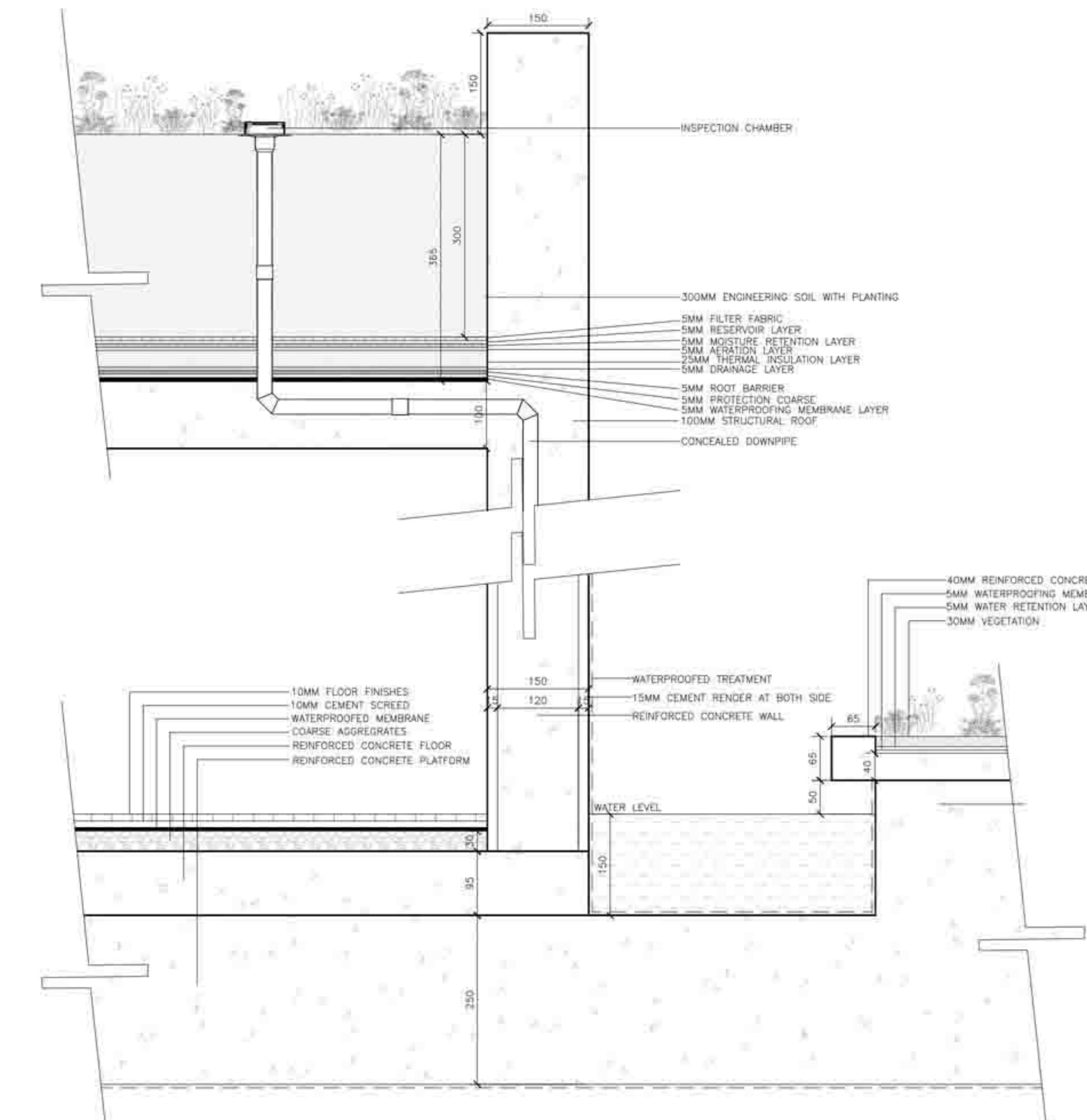
DESIGN INTENTION



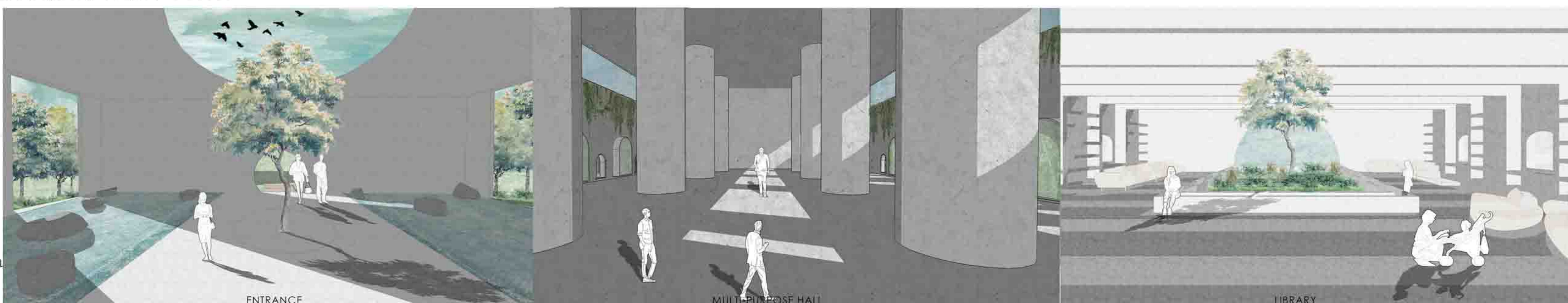
BLUE-GREEN STRATEGY



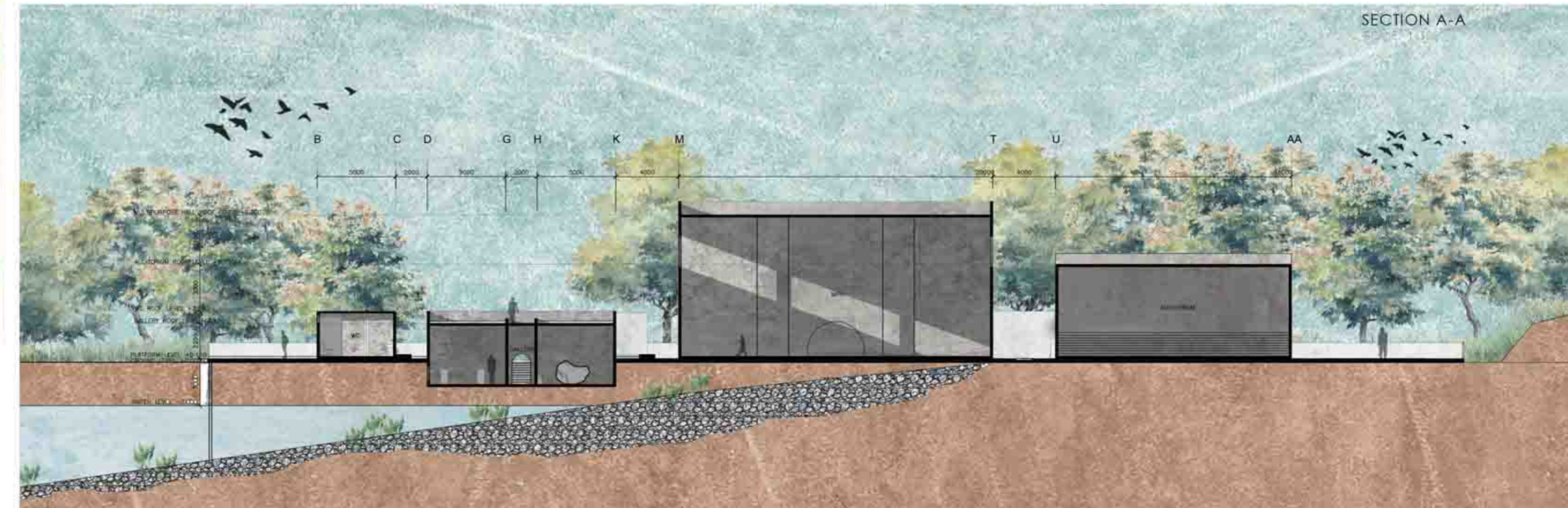
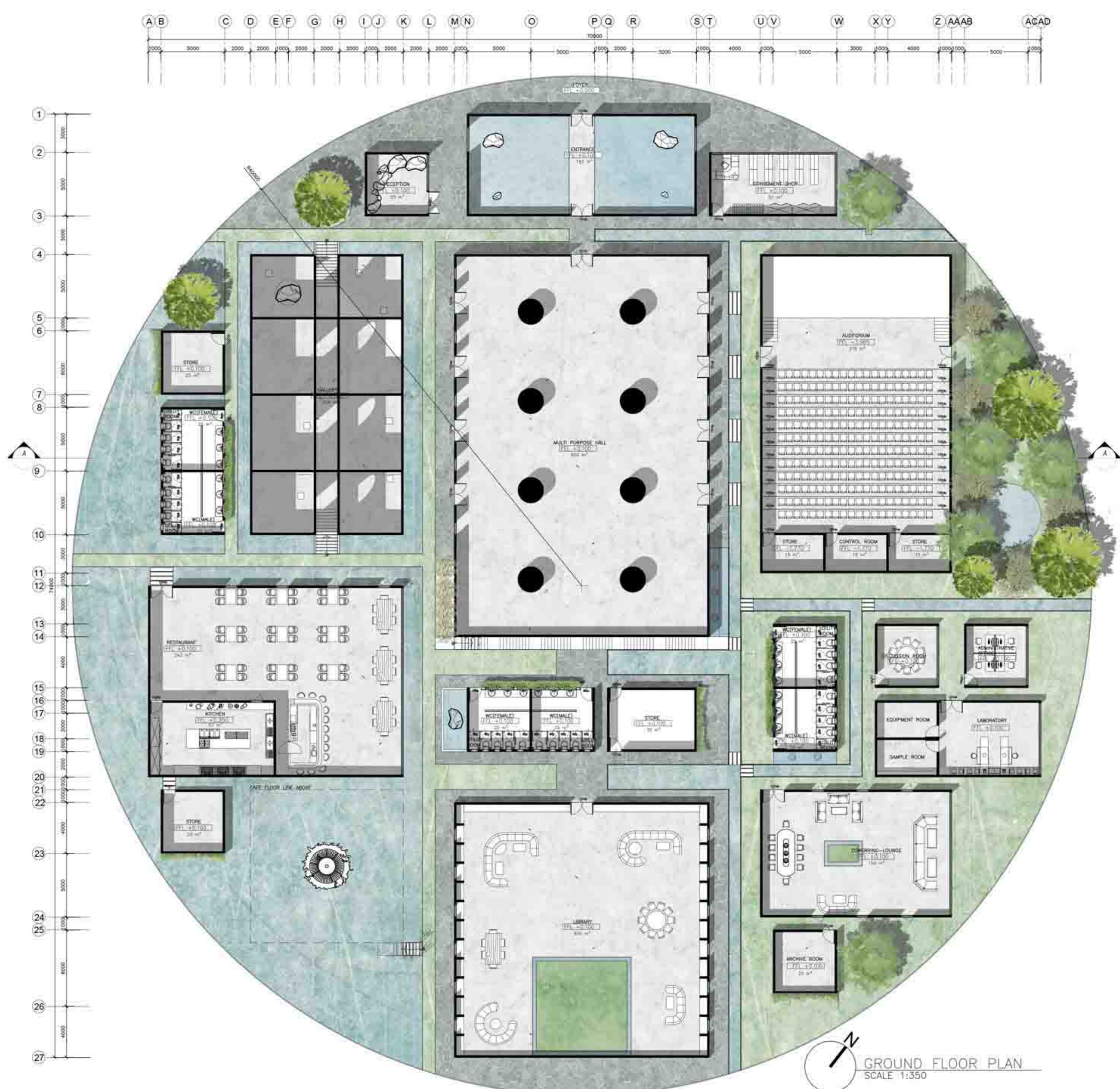
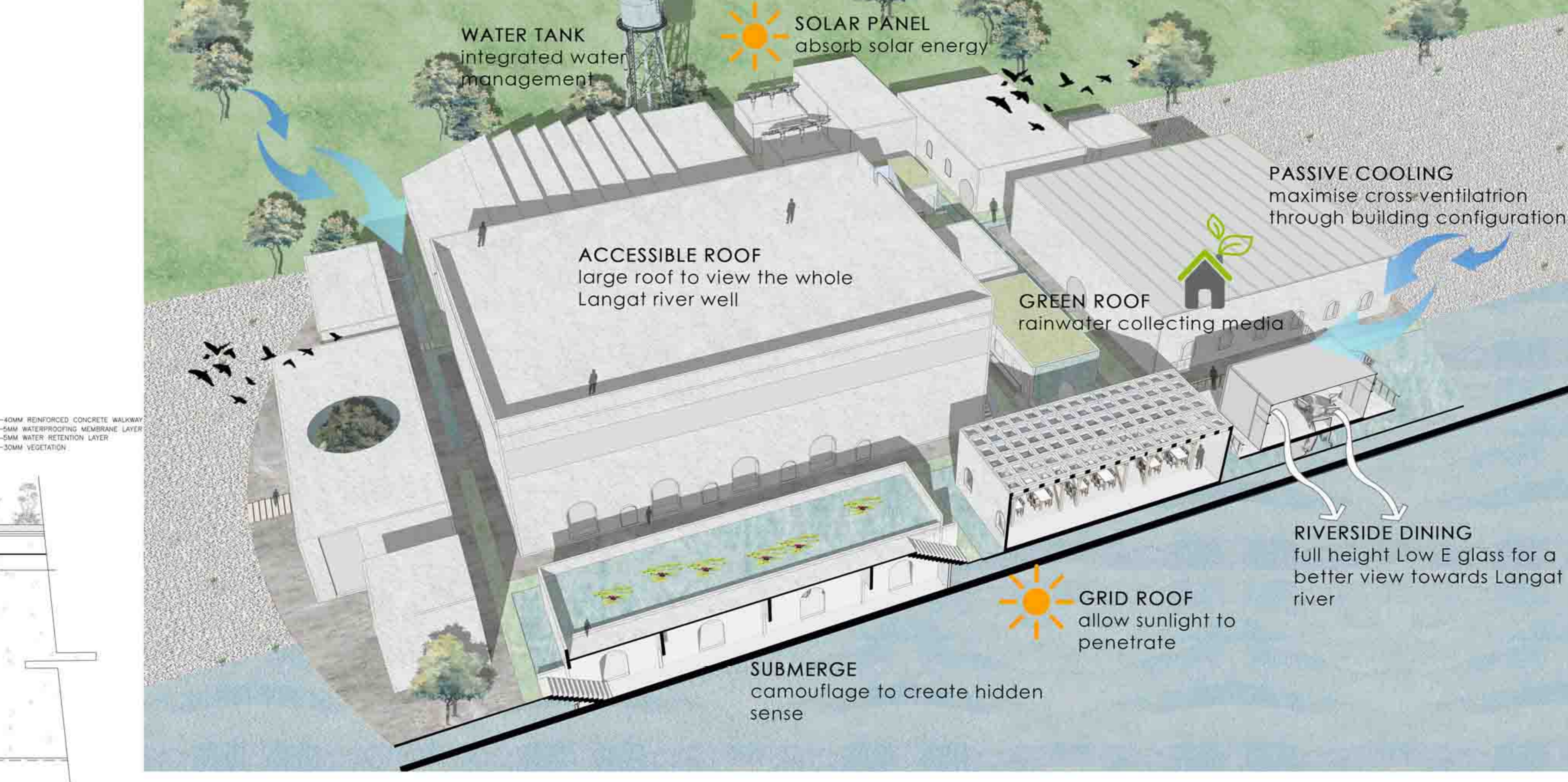
CONSTRUCTION DETAIL
GREEN ROOF - FLOOR DETAIL
SCALE 1:10



1. MAIN ROAD
2. PARKING
3. SERVICE ROAD
4. SERVICE PROVISION
5. BRIDGE
6. RESEARCH AND EDUCATION CENTRE



SECTIONAL PERSPECTIVE



SUSTAINABLE DEVELOPMENT GOALS

- 4 QUALITY EDUCATION
- 6 CLEAN WATER AND SANITATION
- 7 AFFORDABLE AND CLEAN ENERGY
- 11 SUSTAINABLE CITIES AND COMMUNITIES

INTEGRATED WATER MANAGEMENT
Integrating greywater management with on-site sewerage plant

FLOOD STUDY

TAHAP NILAI AMBANG ARAS AIR
(WATER LEVEL THRESHOLD)

LEVELING

- 22M BUILDING LEVEL
- 24-26M FLOOD LEVEL
- 22M NORMAL WATER LEVEL
- 0M

<https://publicinfobanjir.water.gov.my/aras-air/data-paras-air/?state=SE&lang=en>

<http://infobanjirips.selangor.gov.my/water-level-data.html?districtid=3&lang=en>