

An aerial, top-down view of a 3D architectural model of a city. The model is rendered in a light gray, monochromatic style. It features a central building complex with several interconnected volumes and a prominent, angular roof structure. The surrounding urban environment is composed of numerous rectangular blocks of varying sizes, arranged in a grid-like pattern. A network of roads and pathways is visible, along with clusters of stylized trees and green spaces. The overall scene is presented in a clean, minimalist aesthetic.

BOTHO G. JOSEPH  
ARCITECTURE 4th year

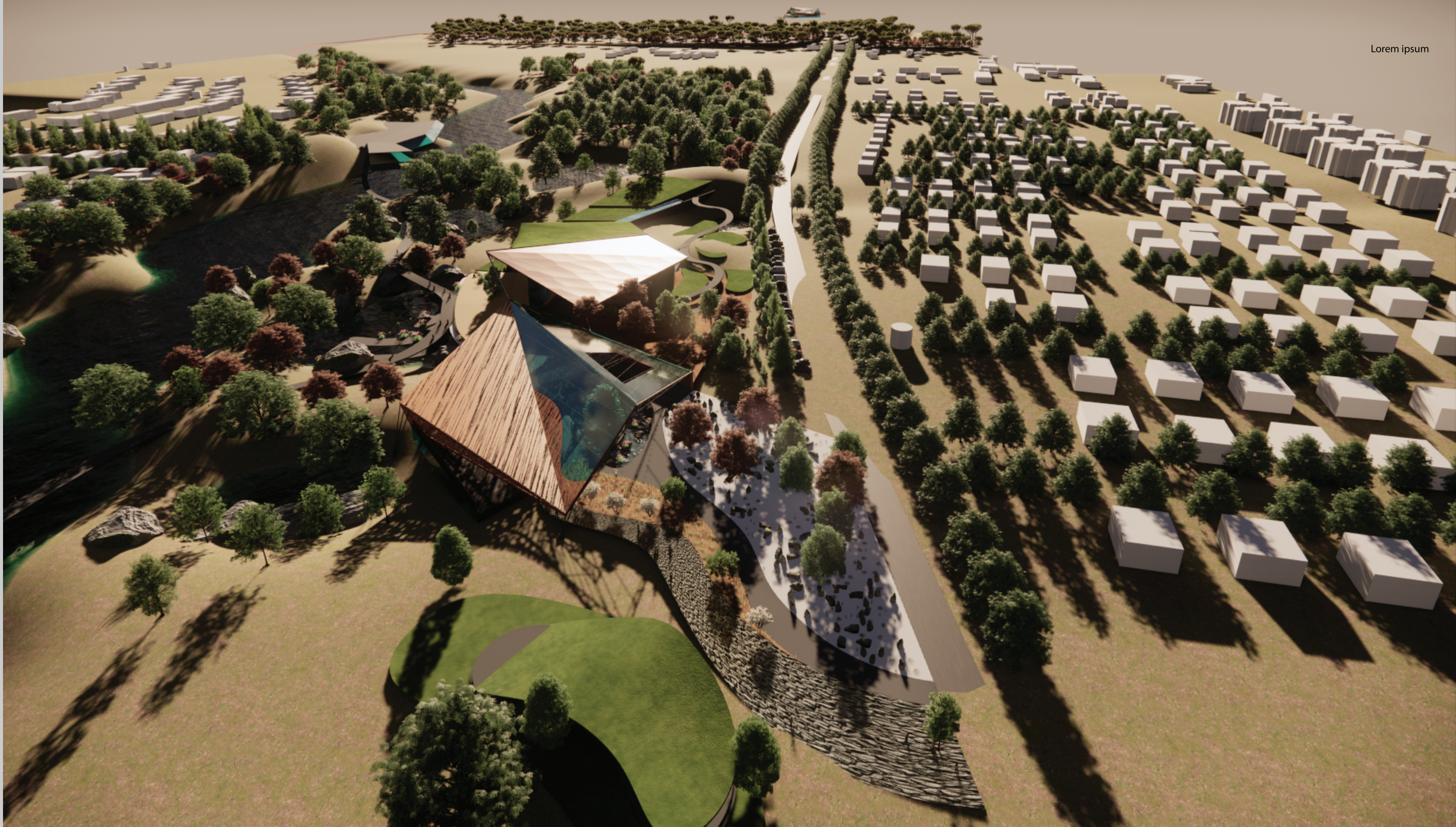
PORTFOLIO

2023



# GABORONE GAME RESERVE ECOLOGICAL RESERCH CENTER FOR GRADUATE STUDENTS

Lorem ipsum



## THE DESIGN

The design is a pristine piece of nature that houses an ecological reserch center for graduate students, it is aimed and restoring the ecology of the segoditshane river and soloving flooding caused by the urban fabric, promoting an ecological flow along the segodisthane river

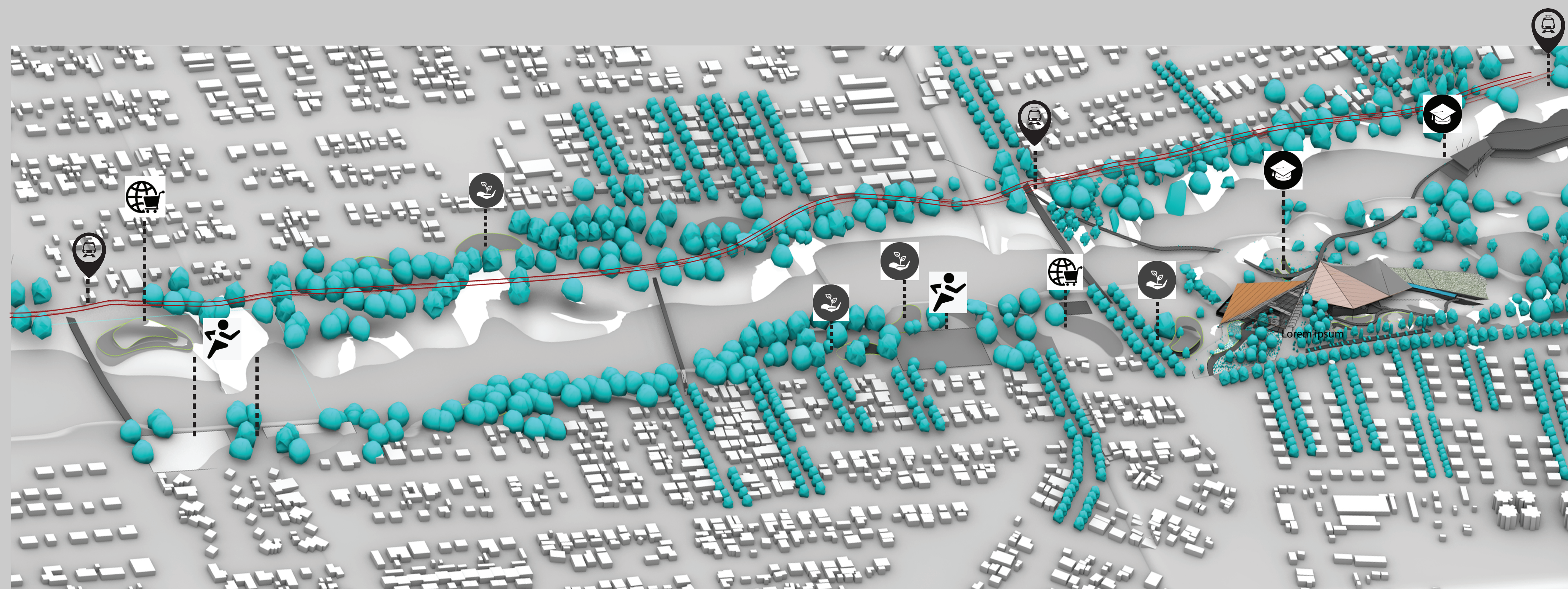
## THE CONCEPT

the cocept is a series green roof bulings protruding from the land becoming one with the environment, and restoring the ecology of the river by providing habitat and using ordering systems

## THE STRATEGY

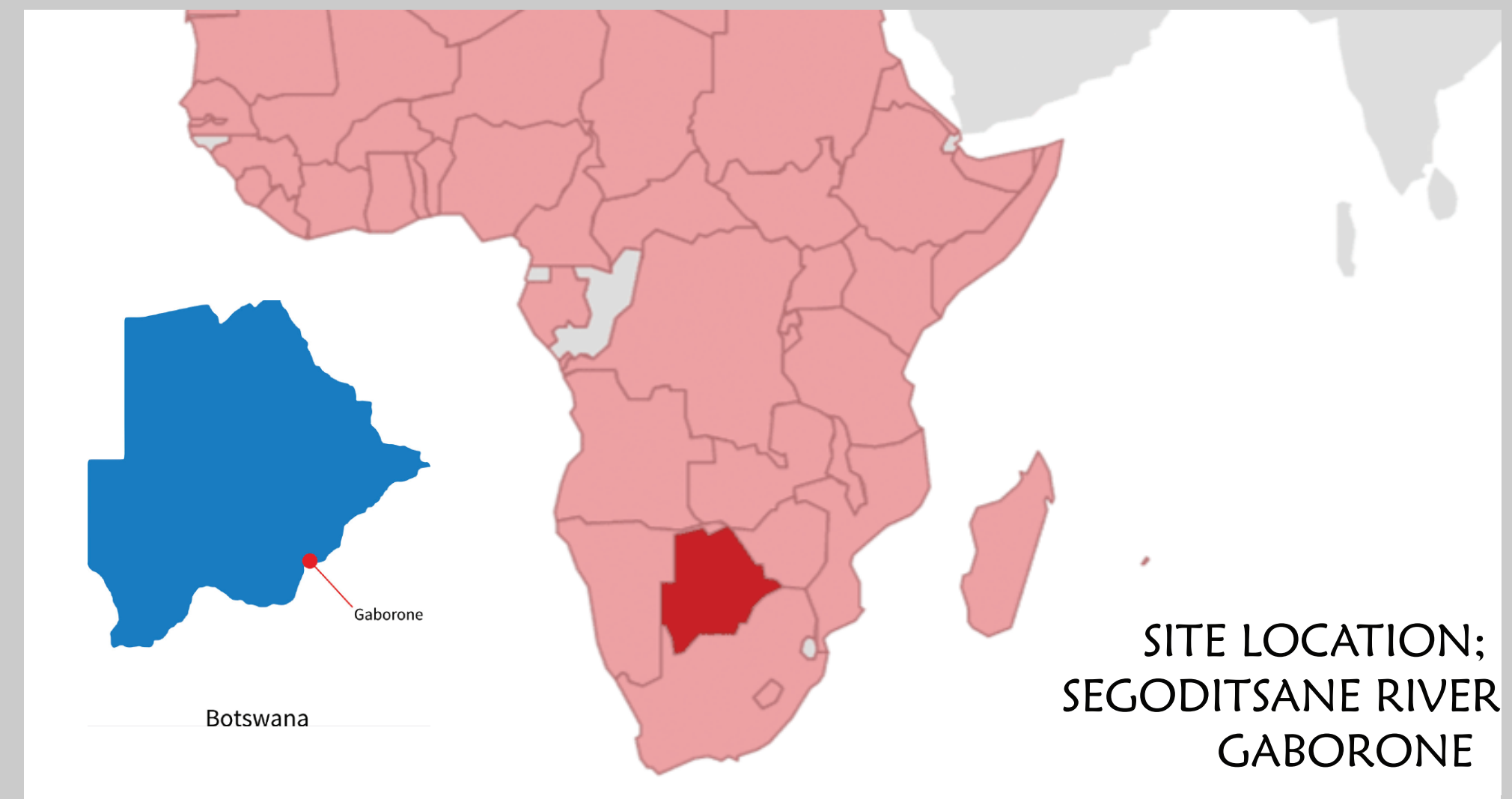
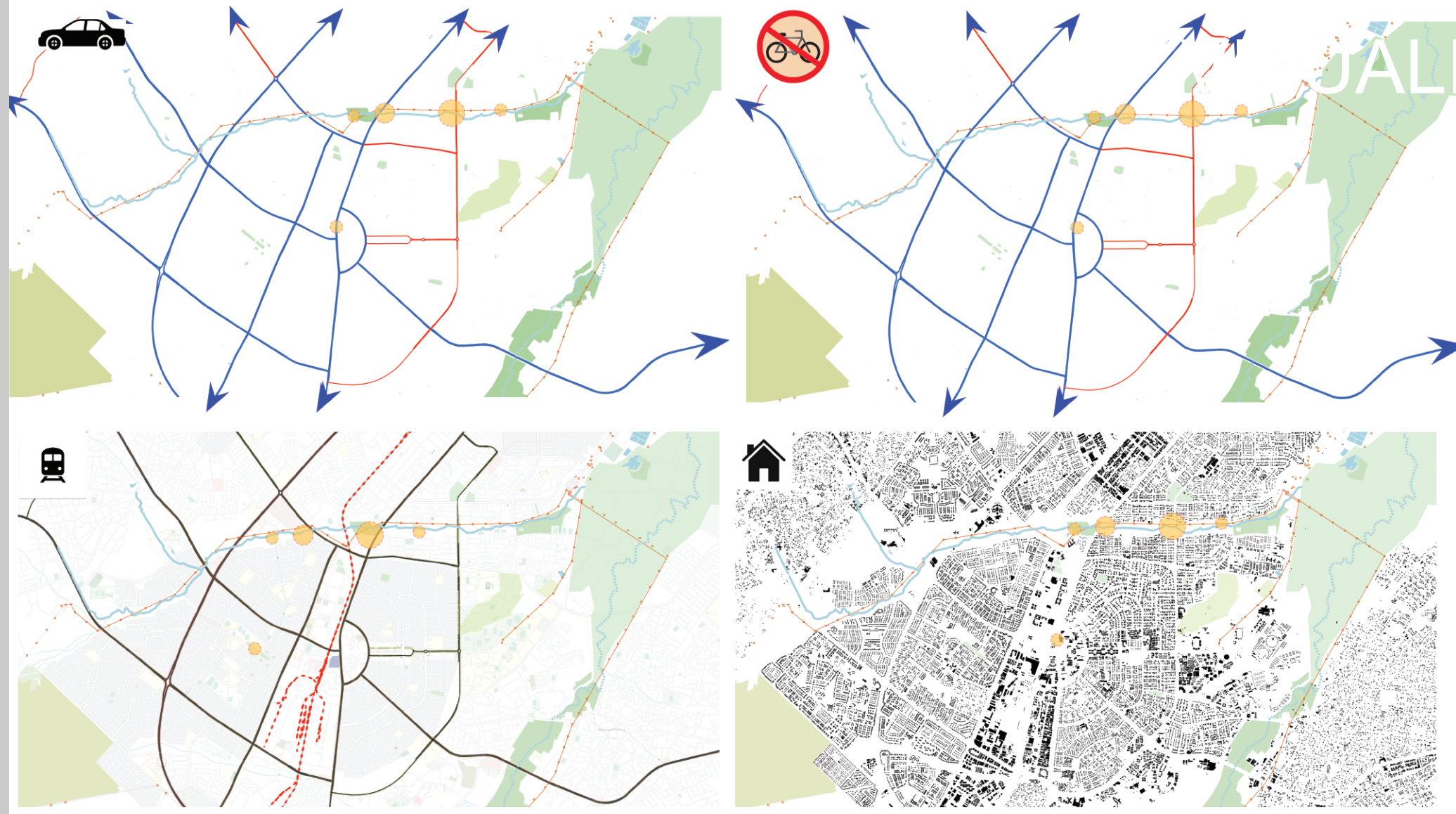
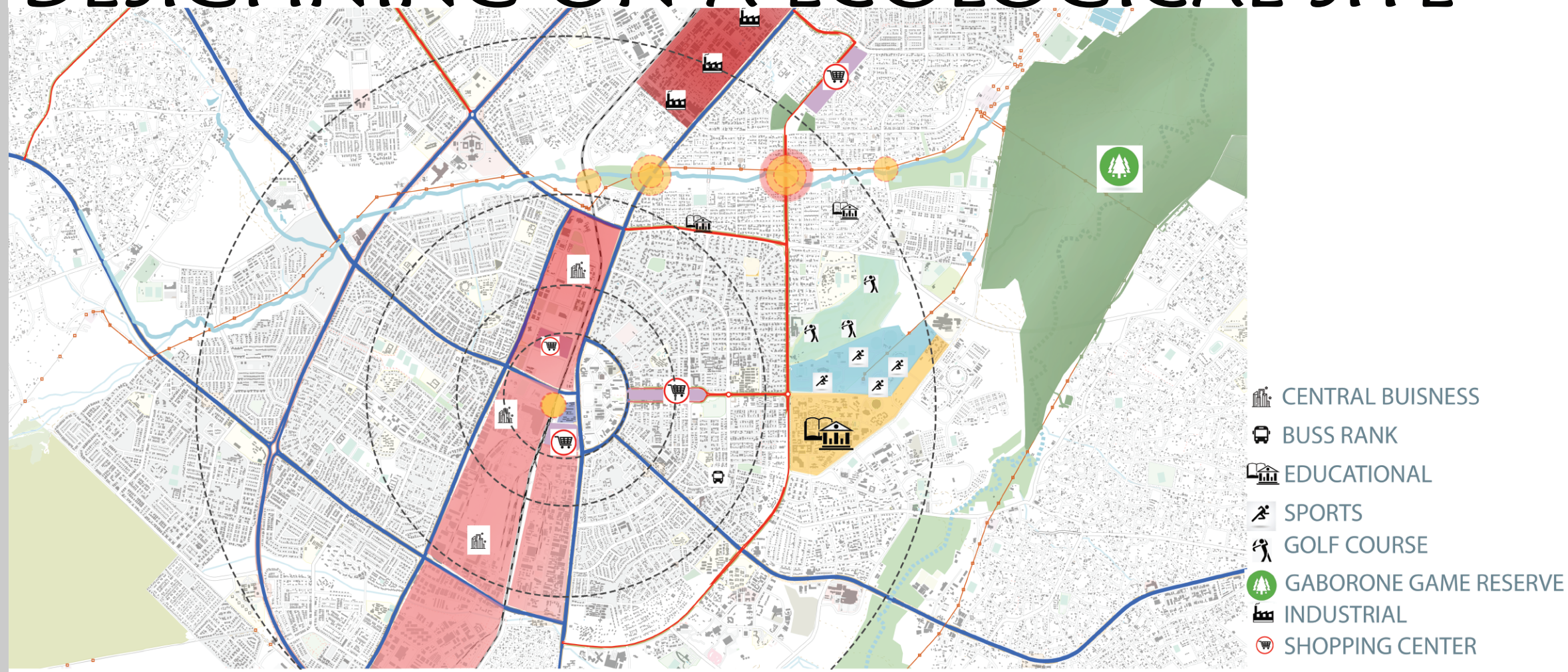
The strategy entails educating society on issues of ecolgy and urban farming at the research center by incorporating semina roams and greenhouses for public education, as well as incorporating a live machine that collects and cleans grey water from the city grid and supplies cleanwater to the urban farms along the Segoditshane river, thereby improving the lives of the community by planting trees on the egde of the Segoditshave to reduce wash off, thereby reducing the risk of flooding The concept proposes a tram for transportation to the ecological site and encouraging existing activities to enhance socialization and wellness.

HEALTH- LIVING MACHINE  
SOCIETY - PUBLIC EDUCATIONAL  
SPACES & WALKABIITY  
ECONOMY- URBAN AGRICUTURE  
ECONOMY- URBAN AGRICUTURE





# DESIGNING ON A ECOLOGICAL SITE



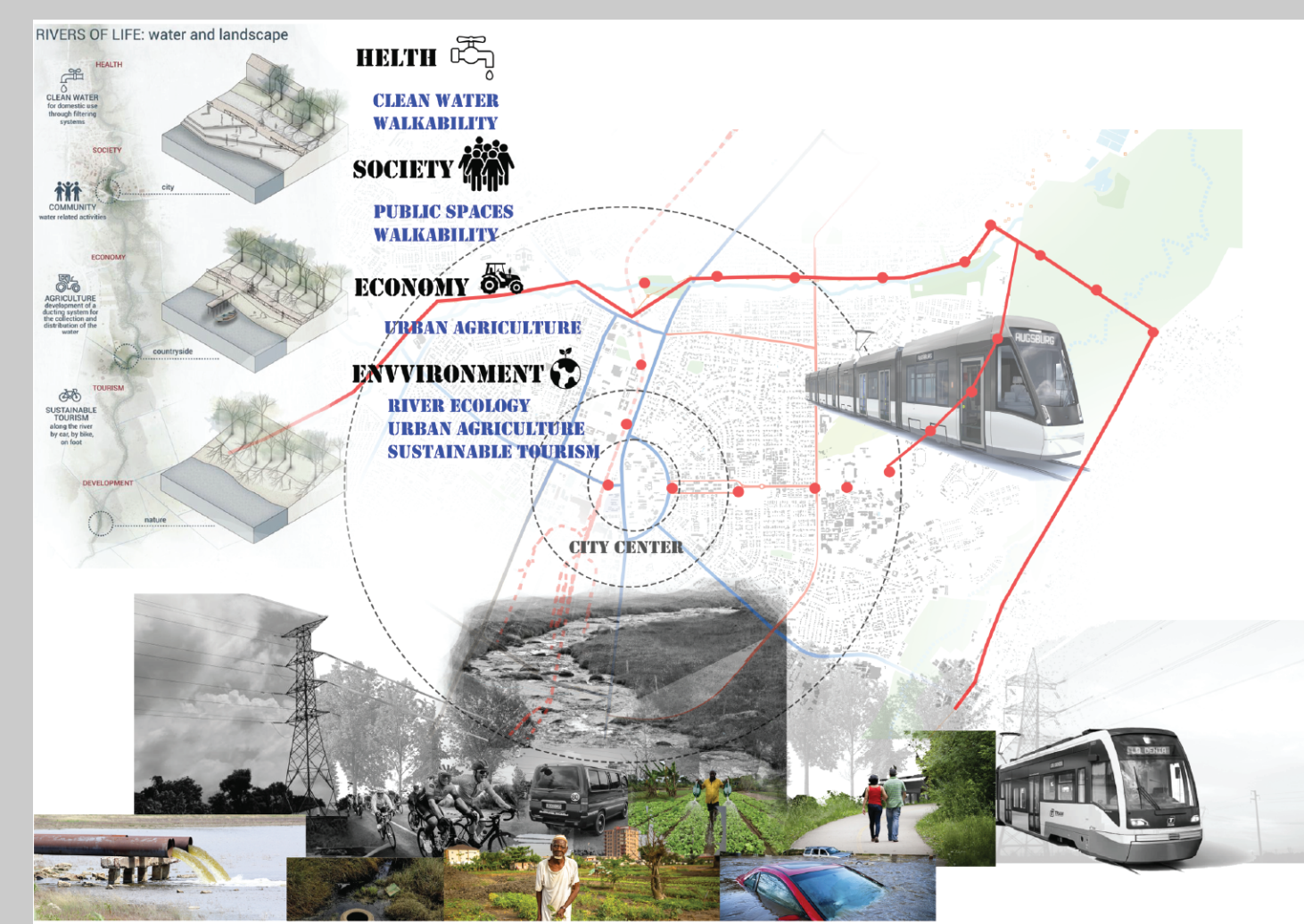
## URBAN STRATEGY



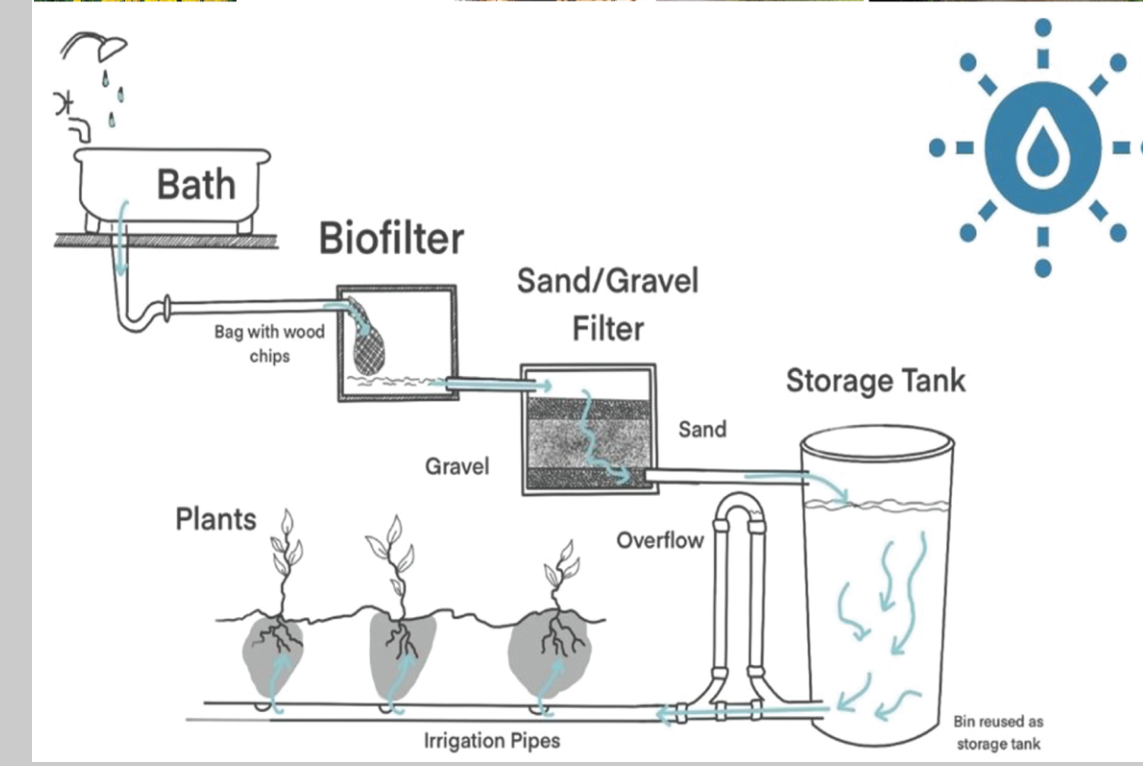
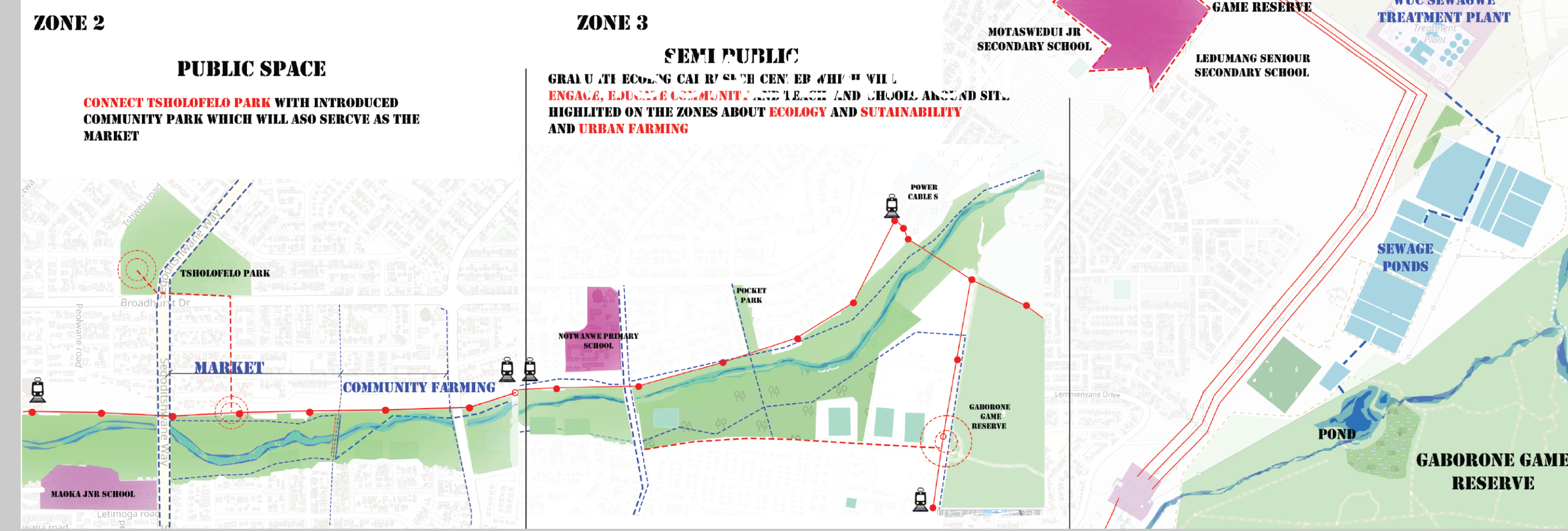
## DESIGN PRINCIPLES



- HEALTH- LIVING MACHINE
- SOCIAL - PUBLIC EDUCATIONAL SPACES & WALKABILITY
- ECONOMY- URBAN AGRICULTURE
- ENVIRONMENT- URBAN AGRICULTURE - RIVER ECOLOGY - SUSTAINABLE TOURISM



BRIEF OF SPACES		GRADUATE STUDENT HOUSING ON AN ECOLOGICAL			
CATEGORY	SPACE	CAPACITY	FLOOR AREA (m <sup>2</sup> )	TOTAL FLOOR AREA (m <sup>2</sup> )	
PUBLIC PARK/ COMMUNITY FARMING LAND	• PARK	200	300	450 + 750	<ul style="list-style-type: none"> <li>STUDENT WELLNESS CENTER</li> <li>Waiting room</li> <li>Reception</li> <li>GYM</li> <li>Medical store</li> <li>Storage</li> <li>Abilities for both (W/F)</li> <li>5 wide pitch</li> <li>Running tracks</li> </ul>
	• APARTHEATER	120	90	750	
	• FARMING LANDS	500	90	1200	
MARKET	• STORAGE	60	90	300	<ul style="list-style-type: none"> <li>LAUNDRY/NETE</li> <li>Washing/ drying</li> <li>Clothes sorting and drying</li> <li>Managers office</li> <li>RESTROOMS AND SHOWERS</li> </ul>
	• MARKET STALL SPACES	100	150		
	• GREENSPACES	100	150		
ECOLOGICAL RESEARCH CENTER	• PUBLIC SQUARE/ EXHIBITION	150	225	1297.5	<ul style="list-style-type: none"> <li>HOUSING GRADUATE RESEARCH STUDENTS (SINGLES &amp; FEMALE), FAMILY ENSUITE</li> <li>Work</li> <li>Sleep</li> <li>Play</li> </ul>
	• ADMINISTRATION	20	30		
	Reception x 4 administration staff	20	20		
RESIDENTIAL	• AUDITORIUM	150	16	24	<ul style="list-style-type: none"> <li>PRODUCTION AREA</li></ul>
	• LECTURE ROOM	15	22.5		
	• RESTAURANT	20	30		
ECOLOGICAL RESEARCH CENTER GREENHOUSE	• KITCHEN	100	105		<ul style="list-style-type: none"> <li>GREY WATER TREATMENT SYSTEM</li> </ul>
	• LOUNGE	20	30		
	• ABILITY BLOCKS	20	30		
STUDENT WELLNESS CENTER	• CLASSROOMS	100	150		<ul style="list-style-type: none"> <li>Waiting room</li> <li>Reception</li> <li>GYM</li> <li>Medical store</li> <li>Storage</li> <li>Abilities for both (W/F)</li> <li>5 wide pitch</li> <li>Running tracks</li> </ul>
	• RESEARCH LABS	200	300		
	• DIMENSIONAL WETLANDS				



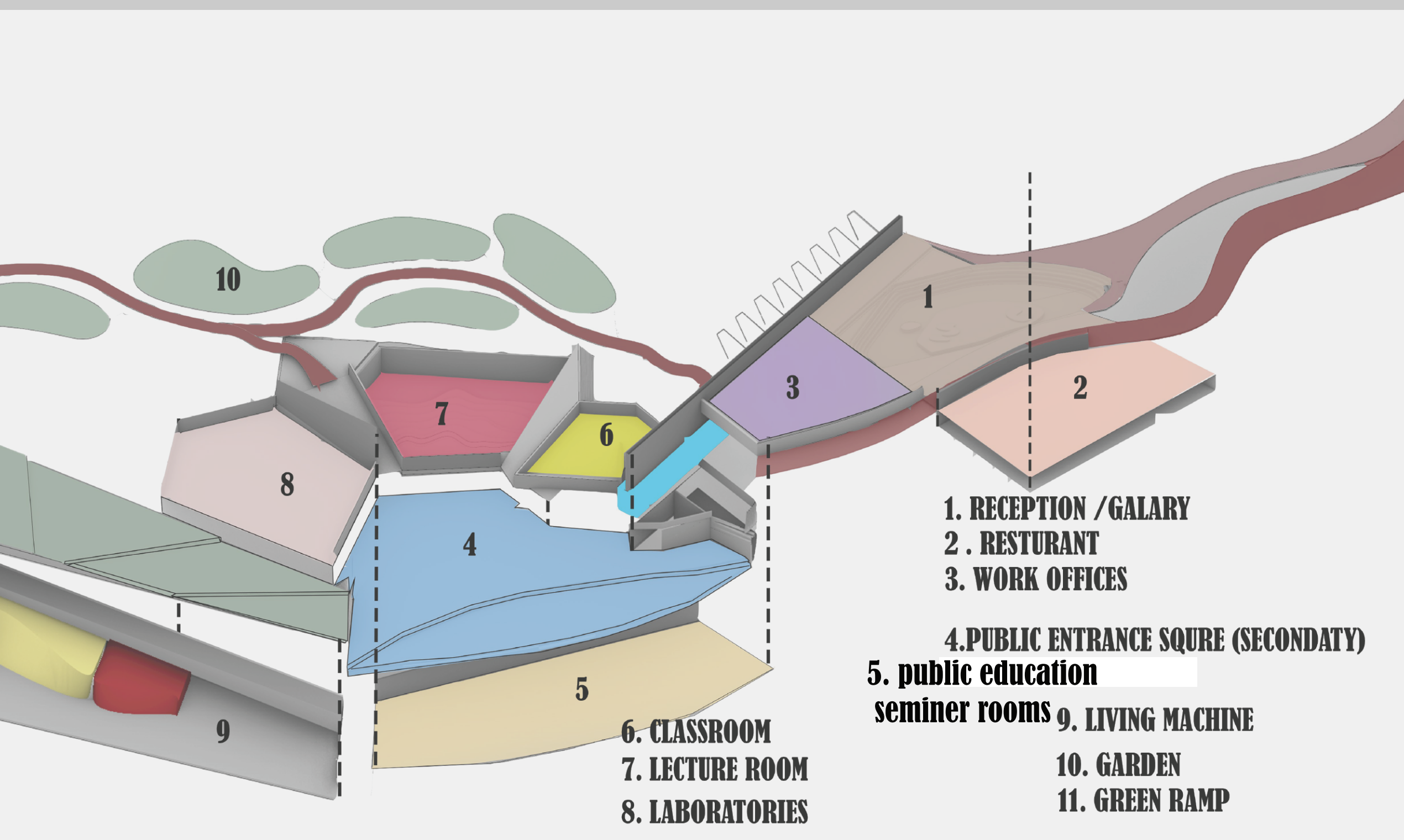
**ZONE 1**

**LIVING MACHINE 1**  
GREY WATER SYSTEM TREATMENT JUNCTION  
CONNECTING TO CITY GRID  
TO HELP REVITALISE THE RIVER  
AND PROMOTE CONTINUOUS FLOW

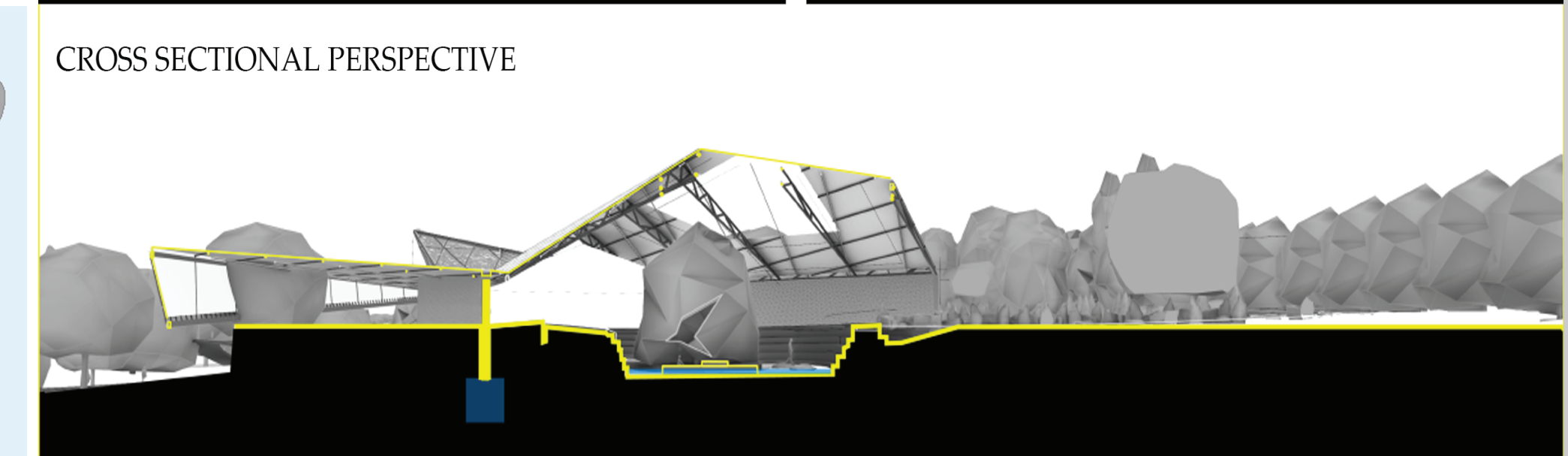
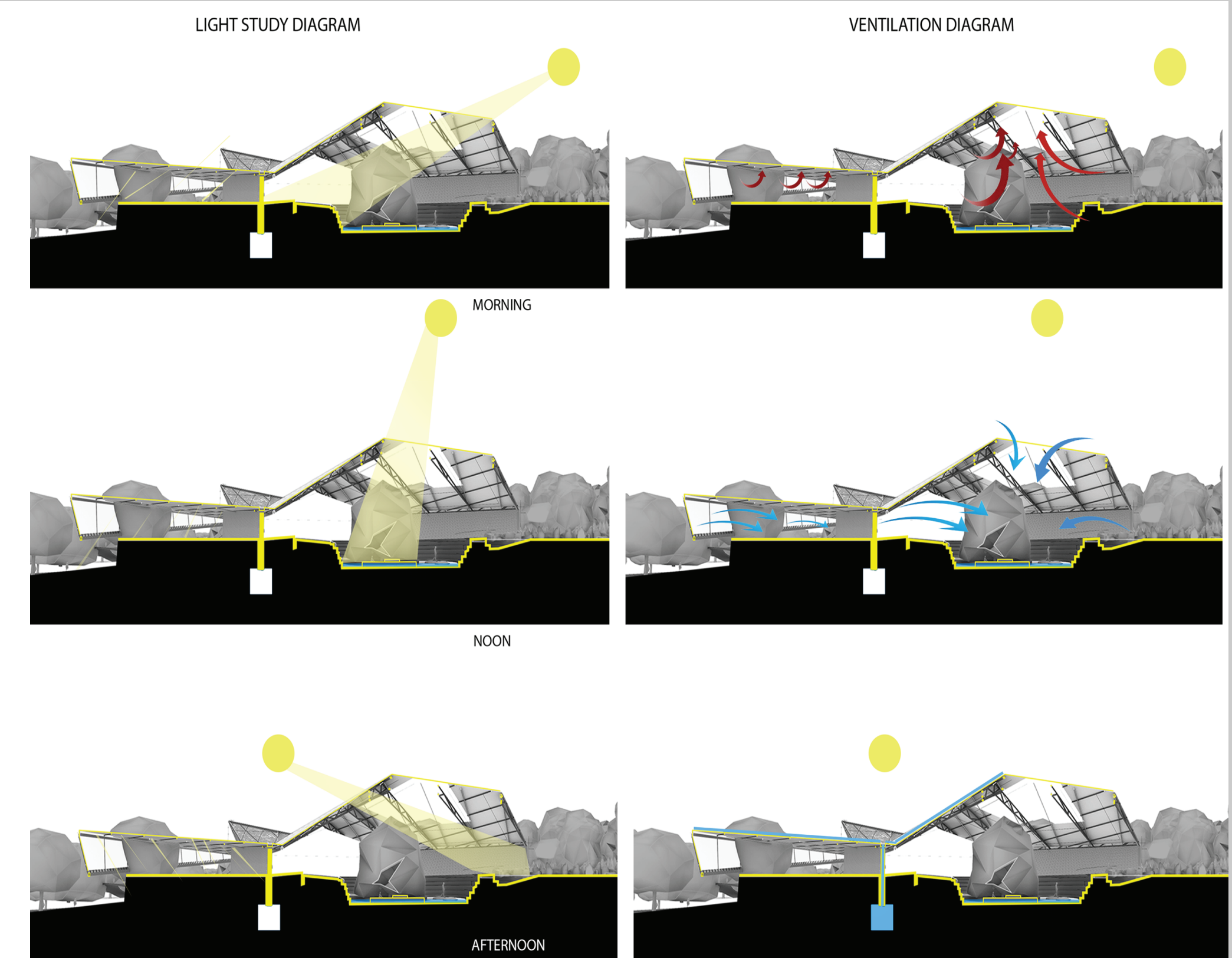
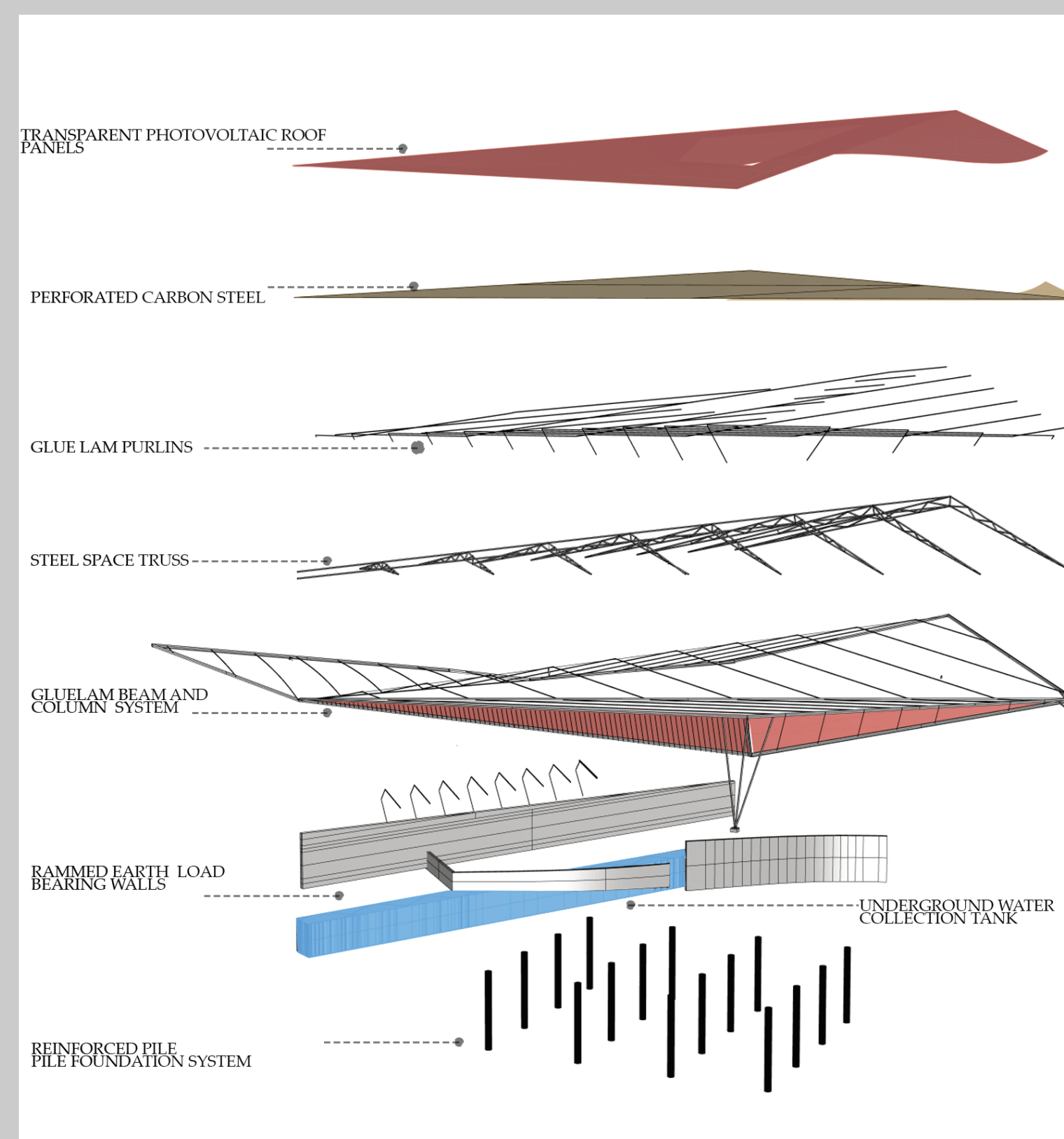
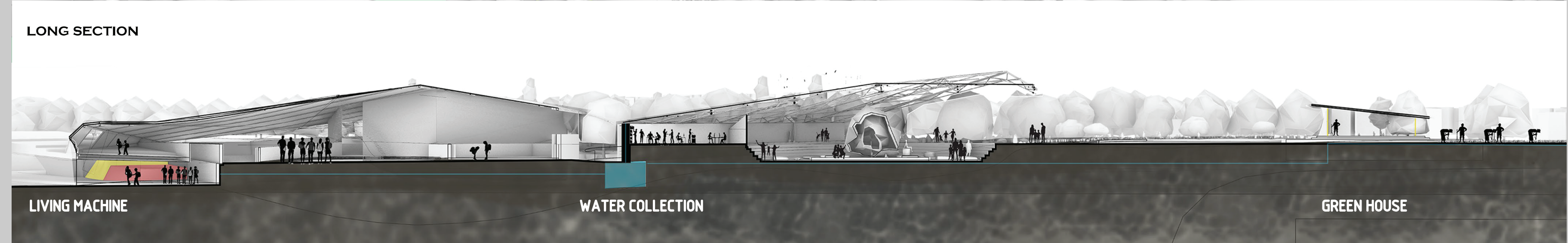
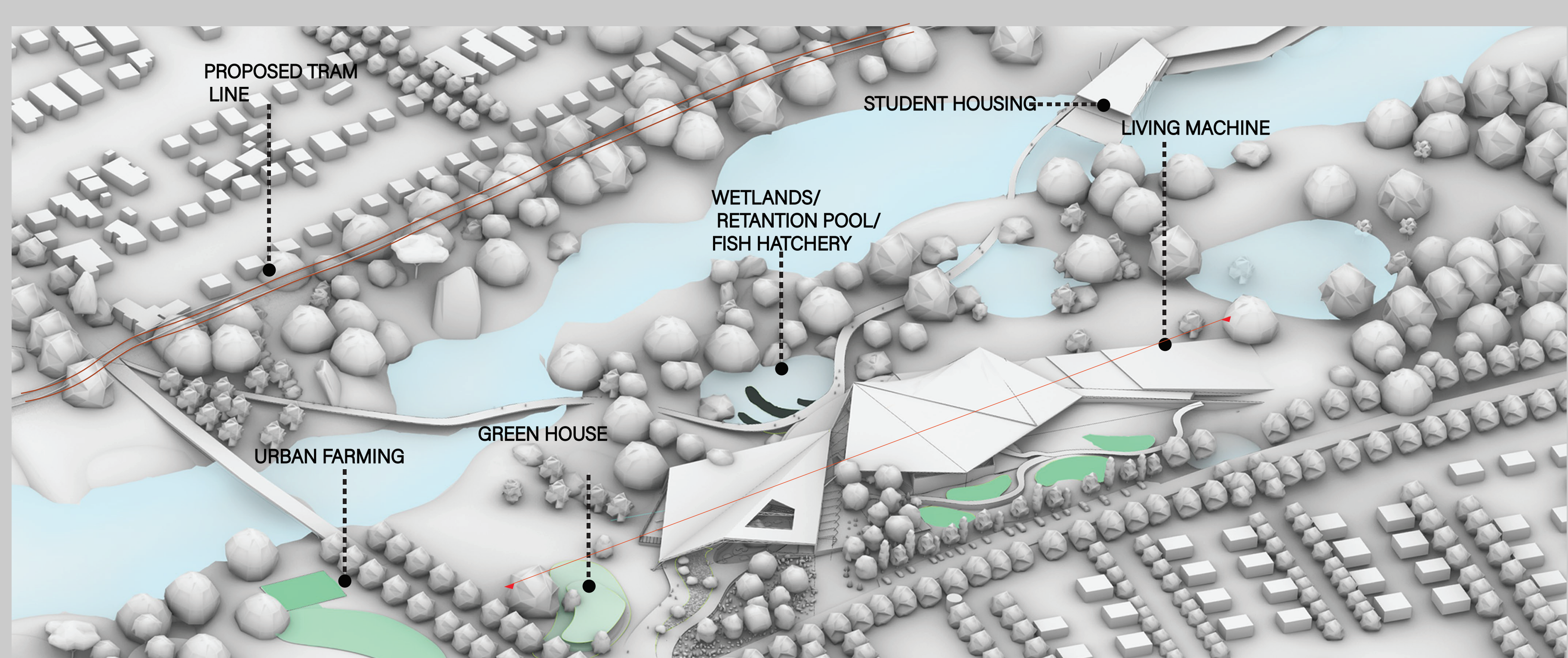




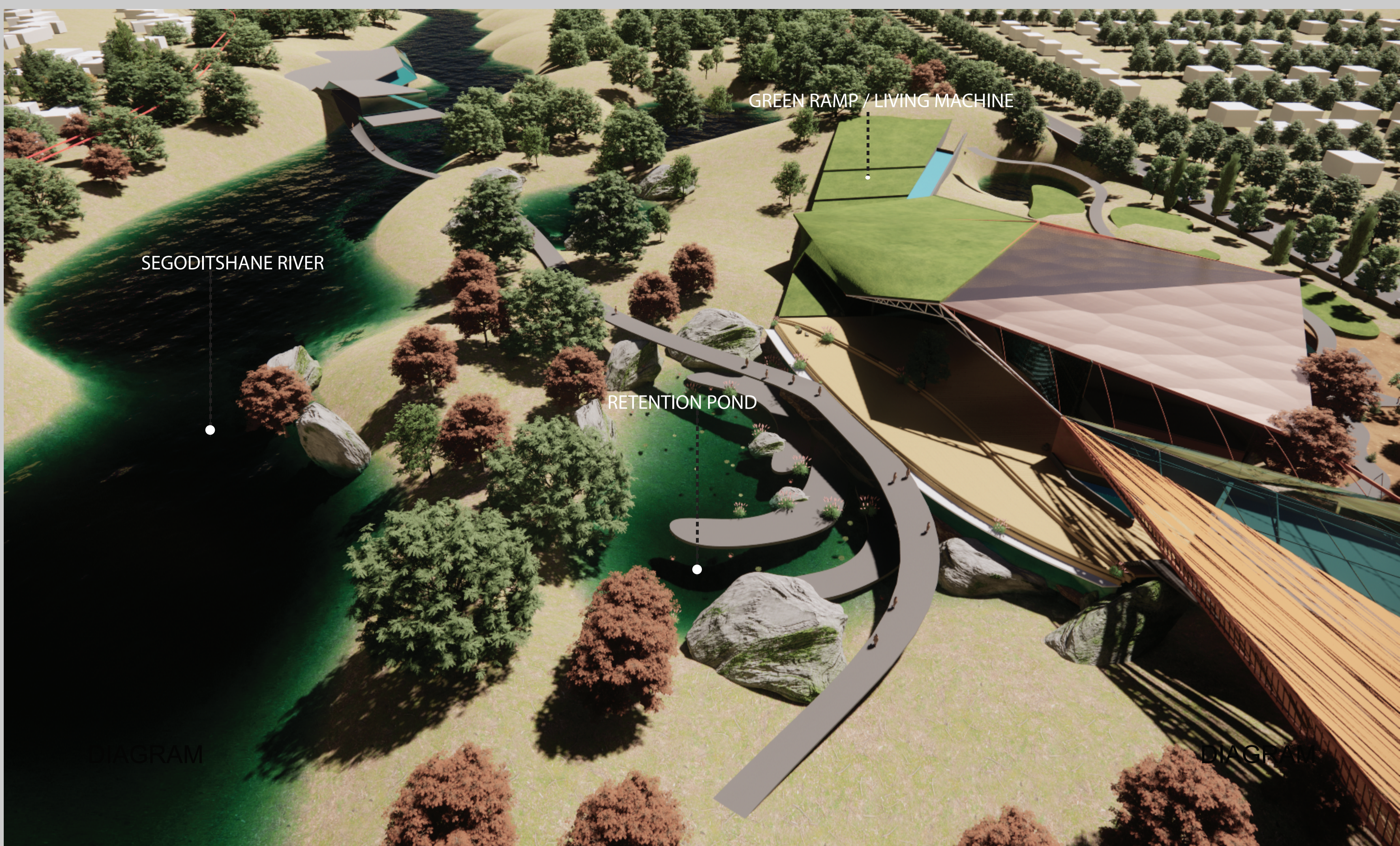
The design depicts a learn, work, practice, and sell environment for the community to be able to practice skills learned at the research center and productive sustainable farming practices for food and job security, which is why the design includes a second entry public square and public education seminar rooms.



GABORONE GAME RESERVE ECOLOGICAL RESEARCH CENTER







SEGODITSHANE RIVER

GREEN RAMP / LIVING MACHINE

RETENTION POND

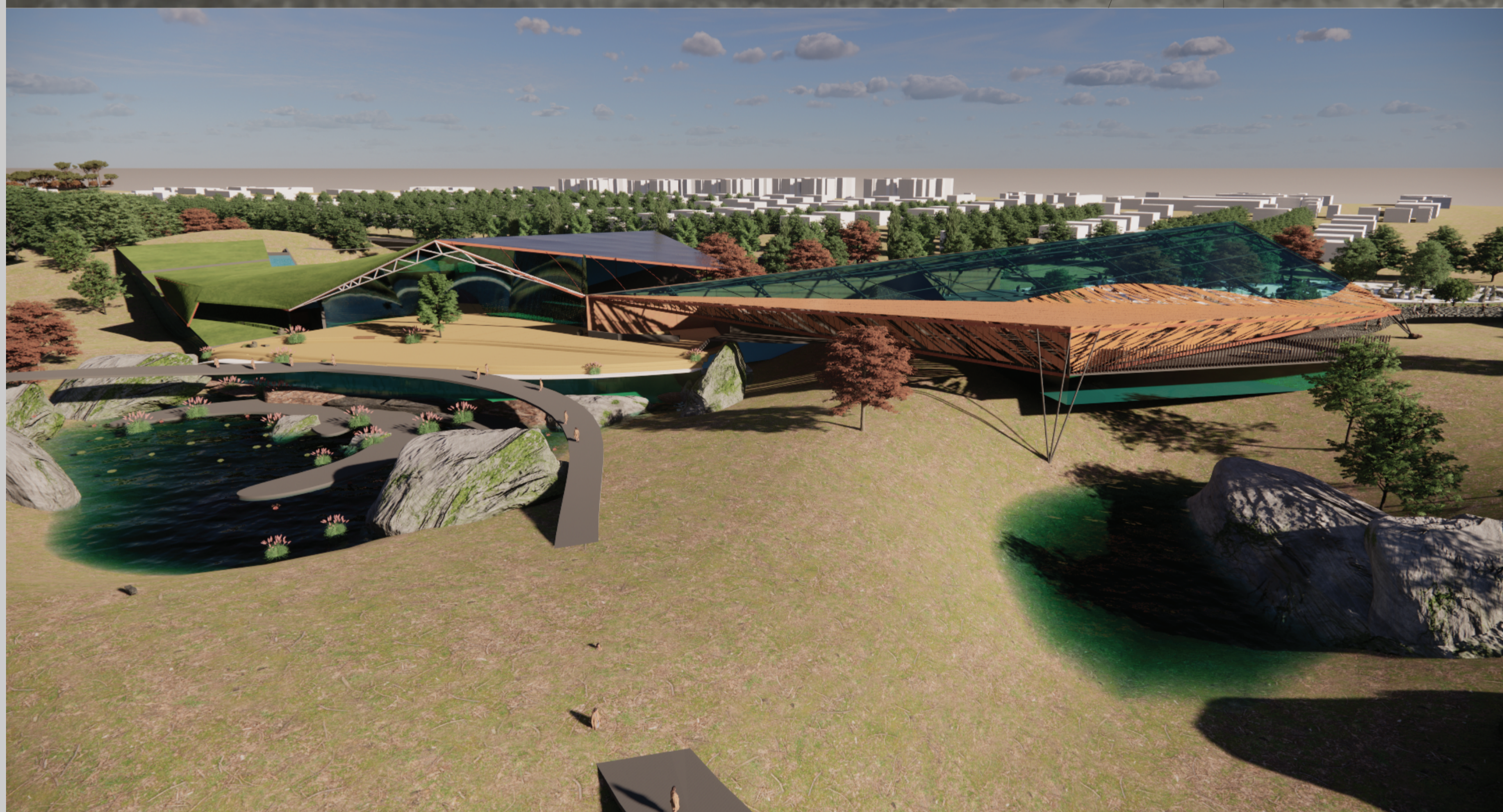


LIVING MACHINE

WATER COLLECTION

GREEN HOUSE

URBAN FARMS



## USE OF RETENTION POOL FISH HATCHERY

THE RETENTION BASES ARE USED AS FLOODING SYSTEMS IN THE SAME WAY THAT TREE PLANTING ALONG THE EDGE OF THE SEGODITSHANE RIVER IS USED TO CONTROL FLOODING INTO THE BUILDING WHENEVER THE RIVER IS OVERFLOWING. & THE FISH HATCHERY IS USED TO CHECK THE ACIDITY OF THE WATER AFTER CLEANING TO SEE IF IT CAN BE USED; IF THE FISH DIE, THE WATER IS REPROCESSED.

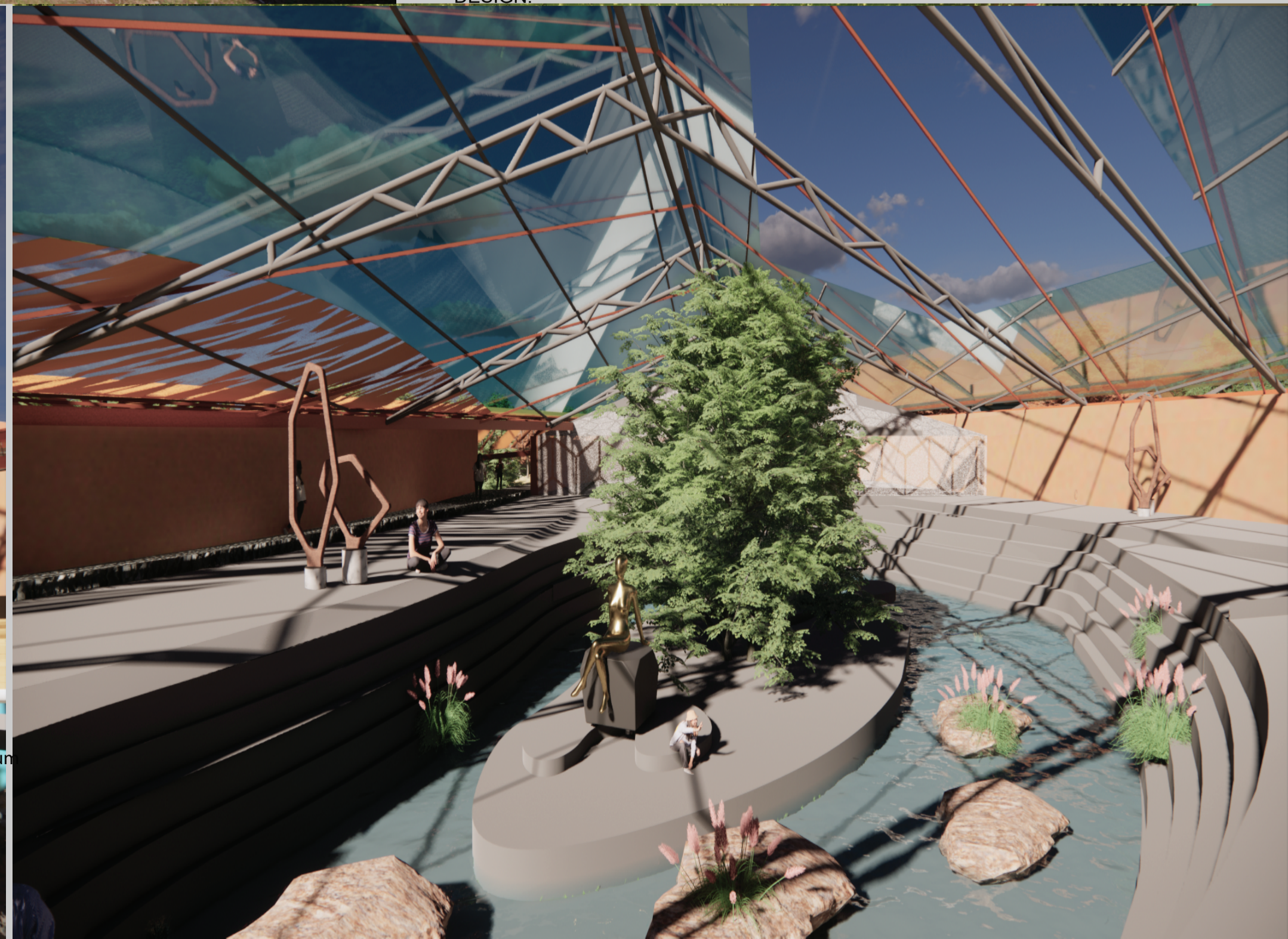
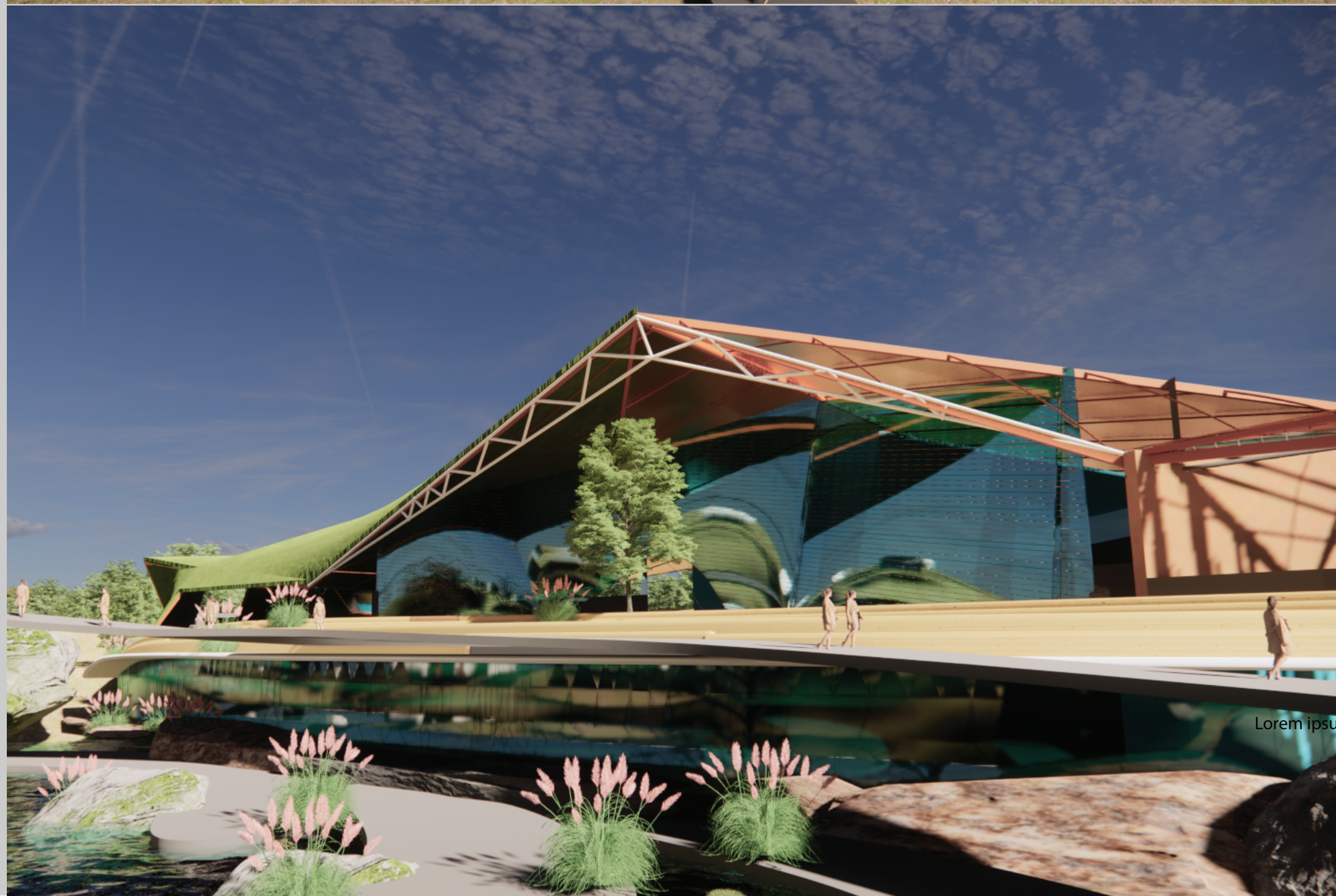
## URBAN FARMING

URBAN FARMING IS PART OF GIVING BACK TO THE COMMUNITY IN ORDER TO PROVIDE THEM WITH SOMETHING TO SUSTAIN THEIR LIVES WITH. THE STRATEGY INVOLVES PROVIDING TRAINING TO THE COMMUNITY IN ORDER TO PROVIDE THEM WITH THE NECESSARY SKILLS TO CARRY OUT URBAN FARMS ALONG THE SEGODITSHANE STILL PART OF RESTORING THE RIVER ECOLOGY V

## LIVING MACHINE

THE LIVING MACHINE WILL BE USED TO CLEAN STORM WATER AND GREY WATER BEFORE IT GOES INTO THE FISH HATCHERY AND URBAN FARMS; IT IS A SUSTAINABLE PART OF THE DESIGN THAT TIES THE WHOLE STRATEGY TOGETHER.

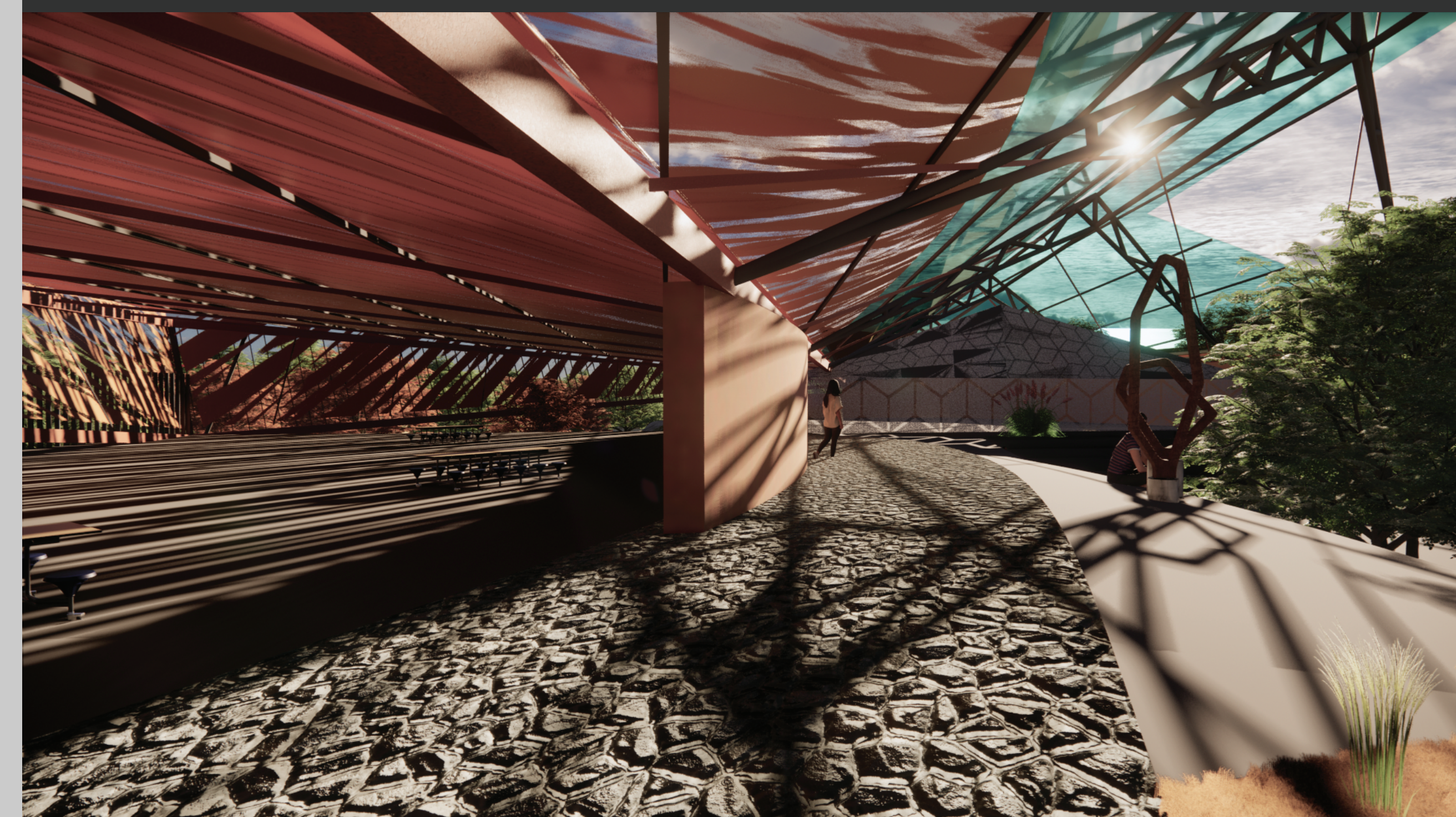
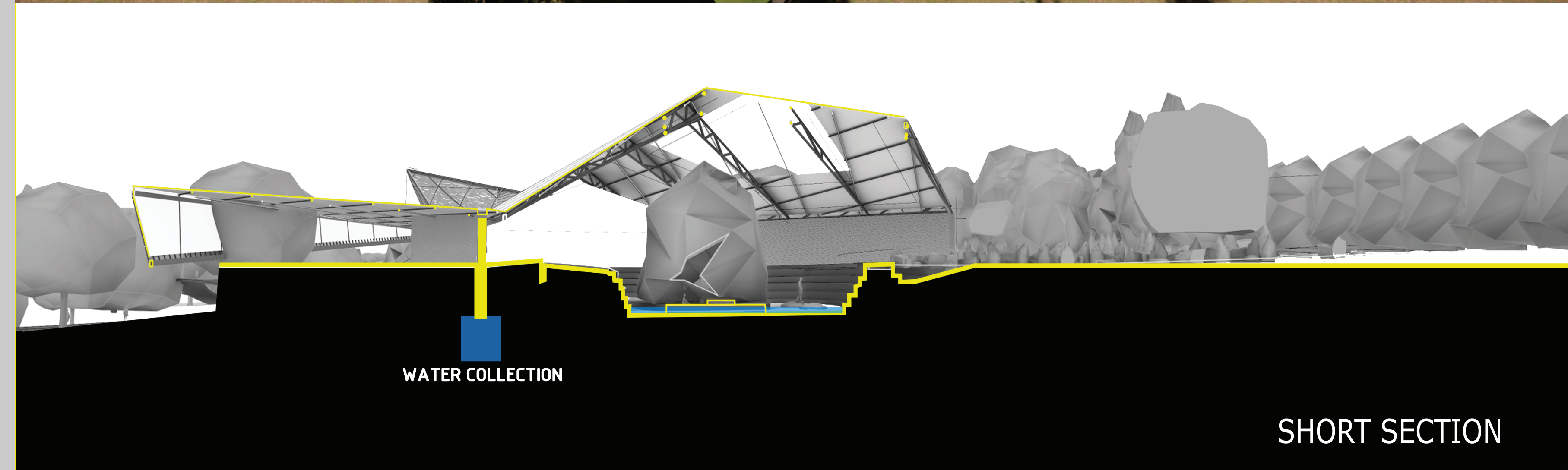
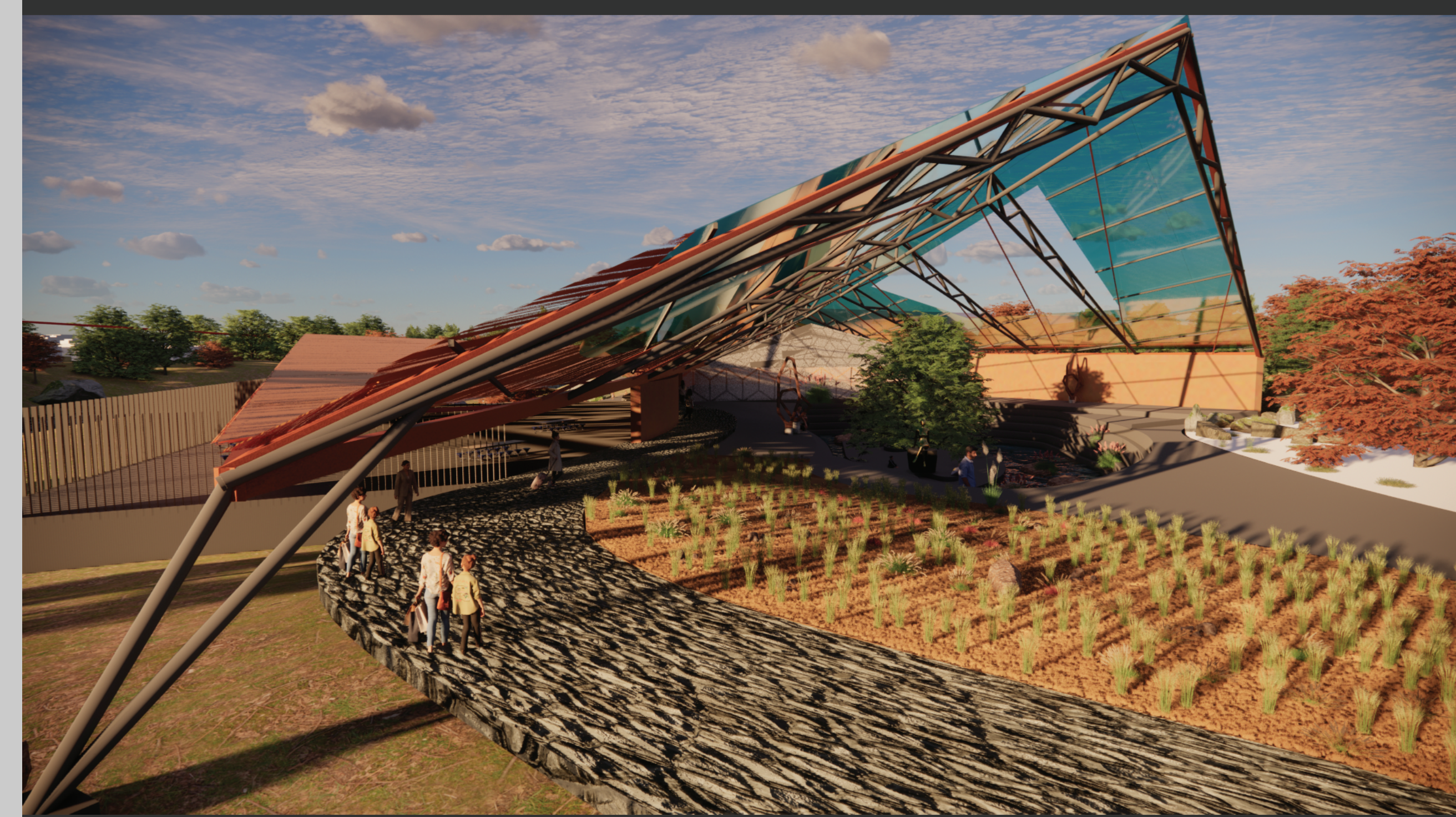
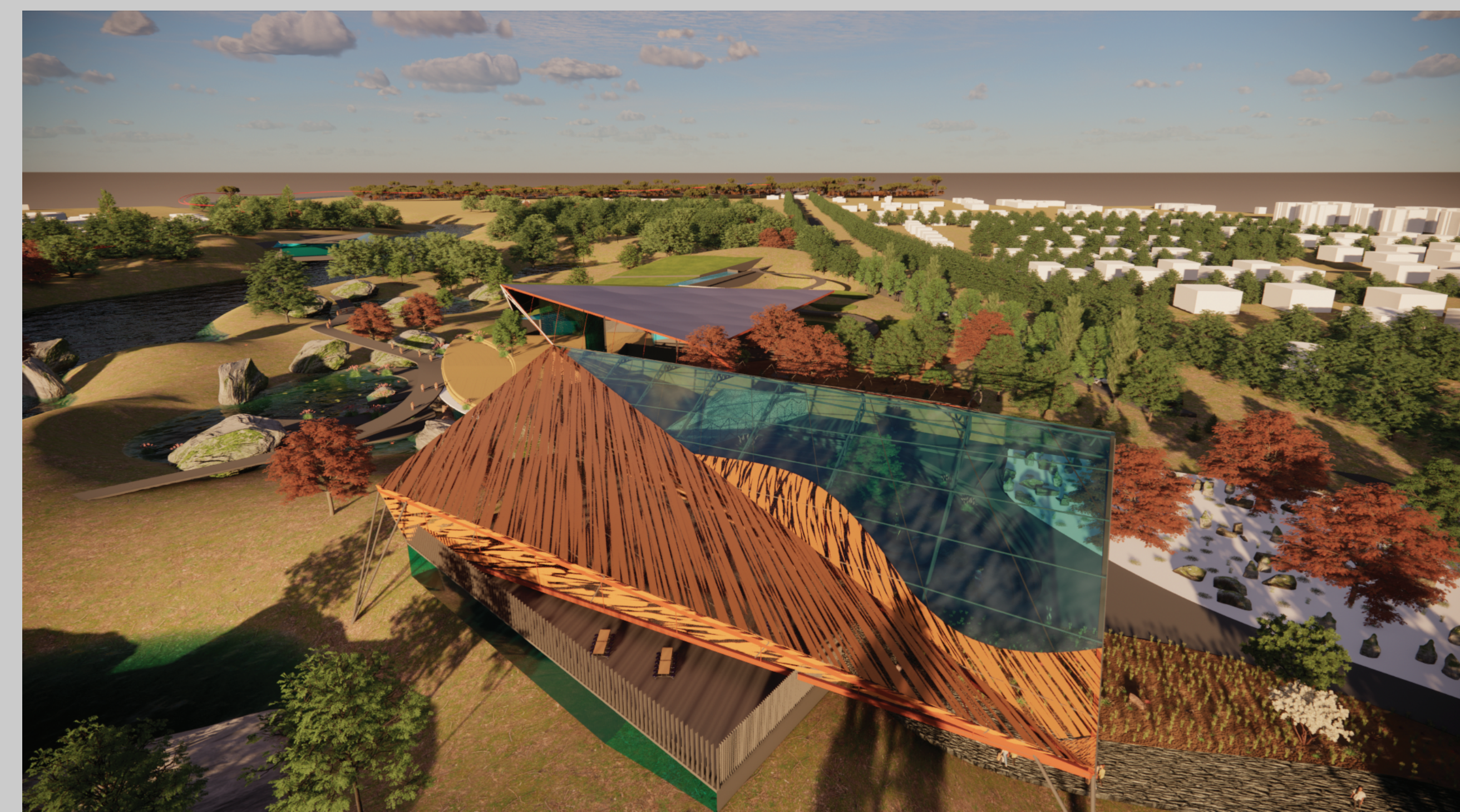
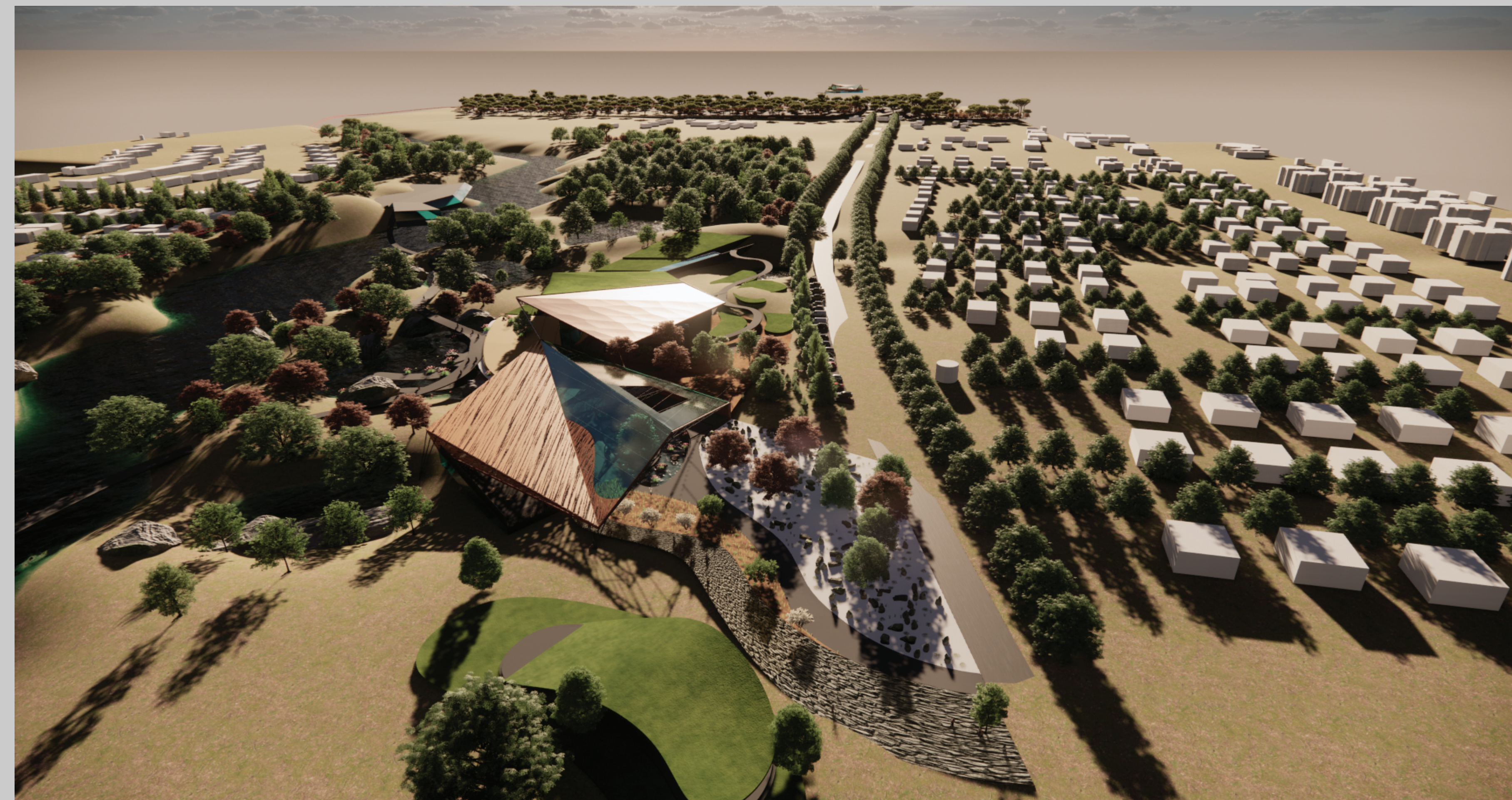
THE CLEANED WATER WILL GO TO THE RETENTIONS BASES IN ORDER TO ATTRACT GAME FROM THE GAME RESERVE, TO BEAUTIFY THE BORTANICAL PARK ON THE DESIGN.





# GABORONE GAME RESERVE ECOLOGICAL RESEARCH CENTER

The strategy entails educating society on issues of ecology and urban farming at the research center by incorporating semina rooms and greenhouses for public education, as well as incorporating a live machine that collects and cleans grey water from the city grid and supplies cleanwater to the urban farms along the Segoditshane river.





**THANK YOU !!**

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