

NATURE PARK ALONG THE LAKE PALAVA

THE URBAN STORY	Grain of Mumbai Grain of Palava Khoni lake -an urban node
MAPPING THE LAKE	Lake premise Soil & flora mapping Habitat mapping Catchment potential
IDENTITY OF PALAVA	Livable city determinants Livable city symbol
INTENT NATURE PARK	Program References Interpretation centre Solar façade
EARLIER ITERATIONS	Feedback Design evolution
LAYERS OF THE PARK	Existing & Proposed layers
KHONI NATURE PARK	Proposal
DESIGN COMPONENTS & VIEWS	Sculpture, Interpretation centre, Children play area, Decks & walkways, Maidans, Forest
MAKING OF DESIGN	Process sketches

THE URBAN STORY

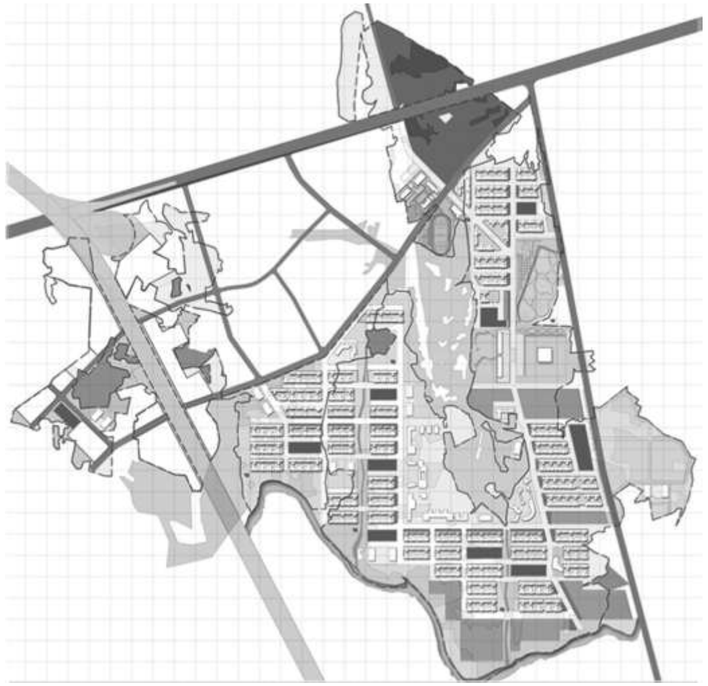




Total Area **603 sqkm**
Population **12478447 census 2011**

DENSITY **– 20694 persons/sq km**
206 persons/hectare

OPEN SPACE RATIO **– 1.1 sq m/person**



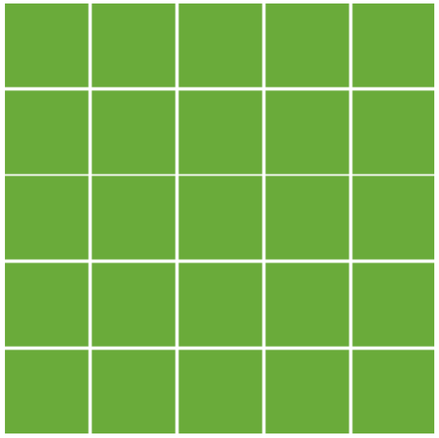


Total Area	**3.278 sqkm**
Population	**357210 projected**

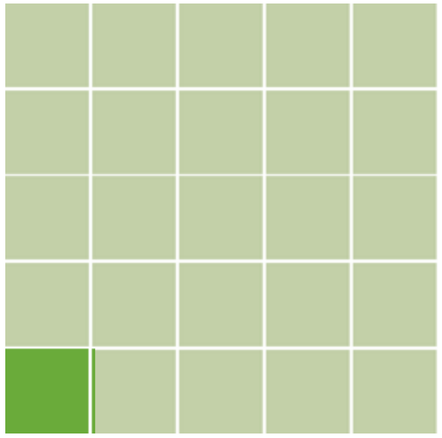
DENSITY – **110250 persons/sq km**
441 persons/acre

OPEN SPACE RATIO **– 2.5 sq m/person**

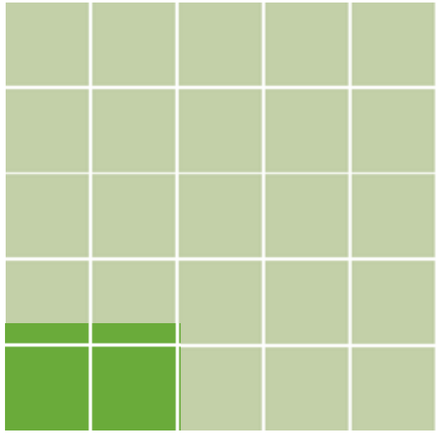
Open space ratio is calculated excluding the Gauchar land ,the Forest land & the roads.



New York
1,213 sqkm
26.4 sqmt/ person



MUMBAI
603 sqkm
1.1 sqmt/ person



PALAVA
3.27 sqkm
2.5 sqmt/ person

OPEN SPACE RATIO



Khoni lake has a potential to amalgamate the urban edge with the natural surrounding

Major roads (Axis)

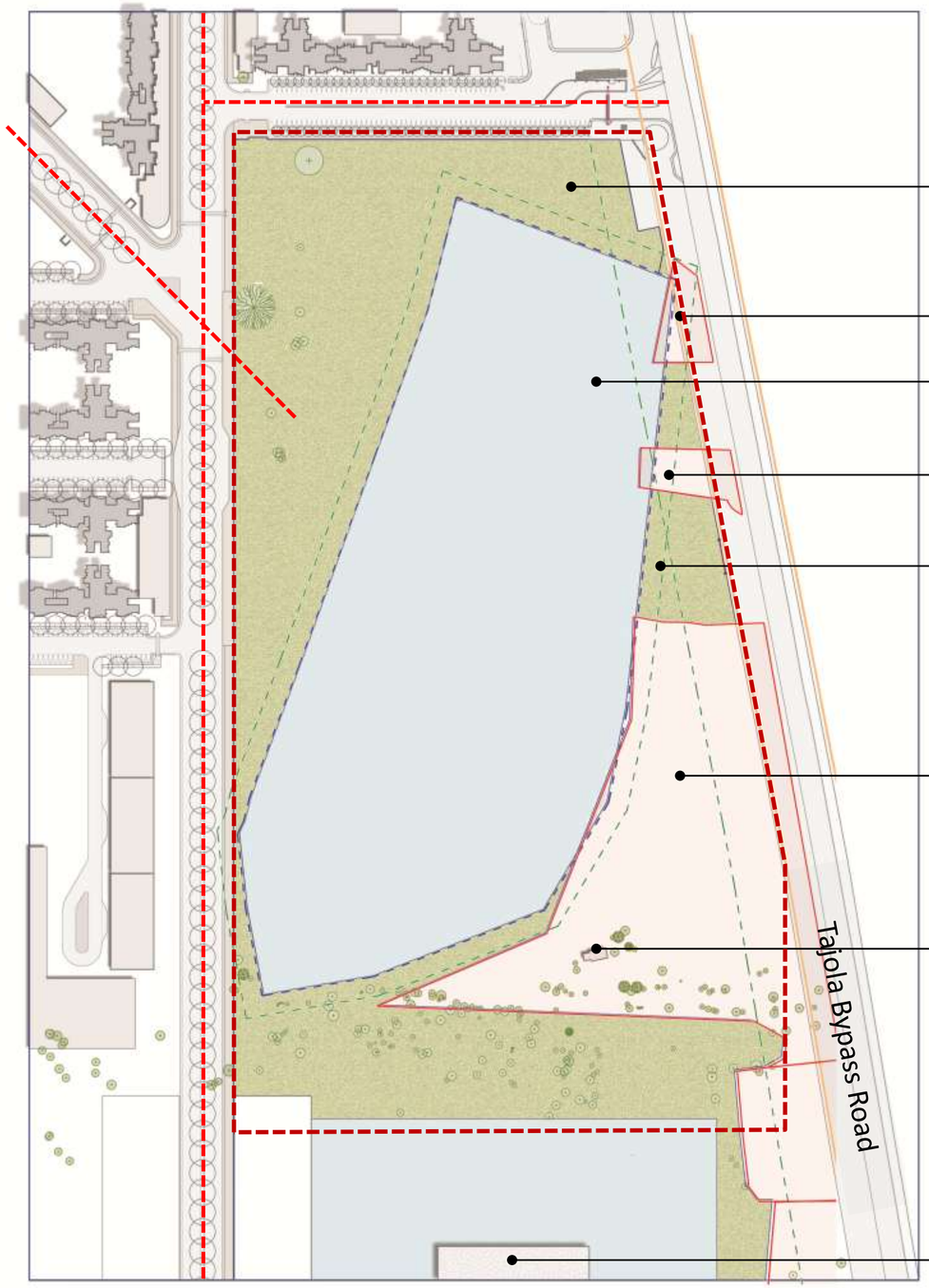
Potential Urban Nodes

Potential Open Spaces

URBAN NODE – KHONI LAKE

MAPPING THE LAKE

An attempt to understand the lake environs & explore its potentials



Source: Palava Design Review 15-03-16.ppt

Total Area with Khoni Lake = 83801 sq.m
Developable Area (Total Area without Khoni Lake) = 37956 sq. m

Considering plot as PG:
Total BUA = 10% of Plot Area
= 37956 sq. m

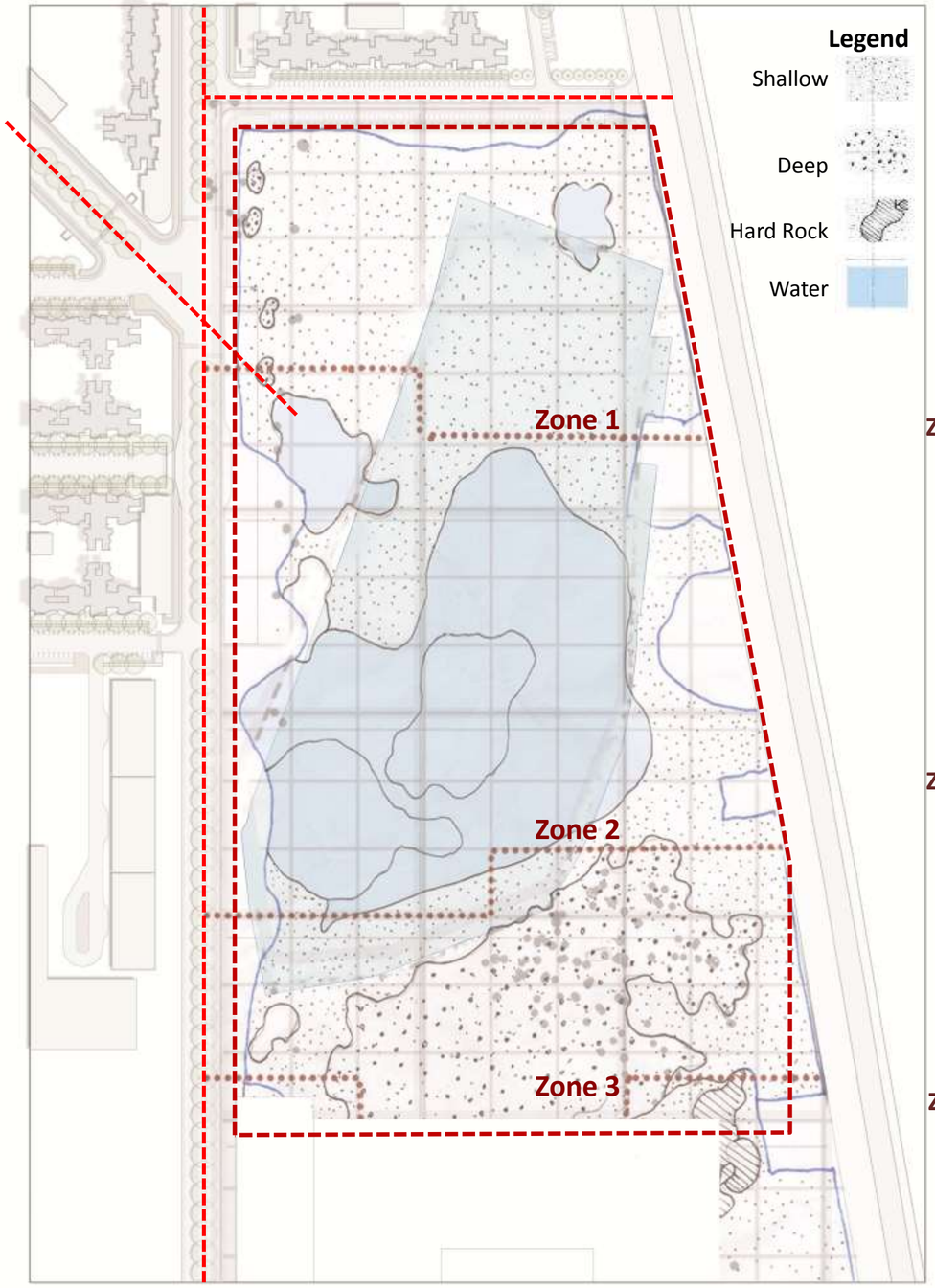
Permissible:
No. of floor = Ground Storey
Ground Coverage = 3795.6 sq. m

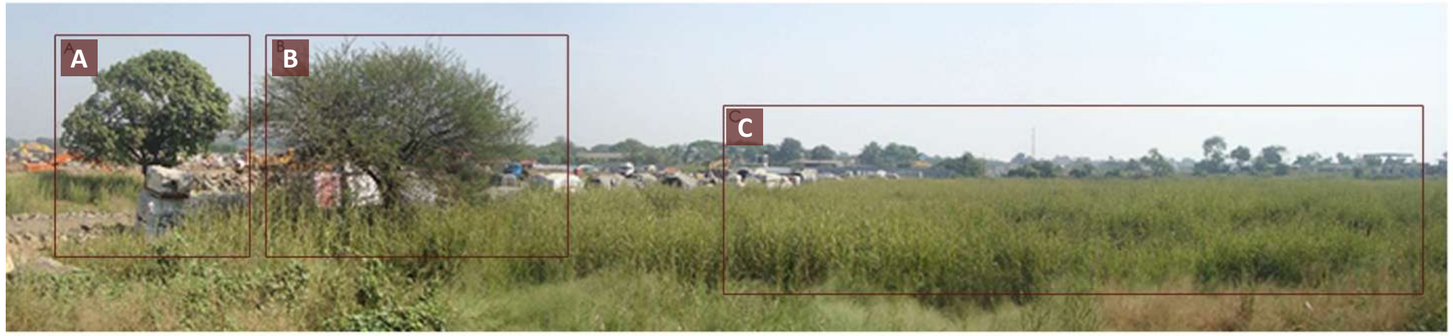


Palava City Key Plan (N.T.S)

0 100m

KHONI- LAKE PREMISE





Zone 1

A. *Mangifera indica* B. Acacia species C. Tall grasses



Zone 2

A. Tall & dry grasses B. Aquatic Plants C. Floating Vegetation

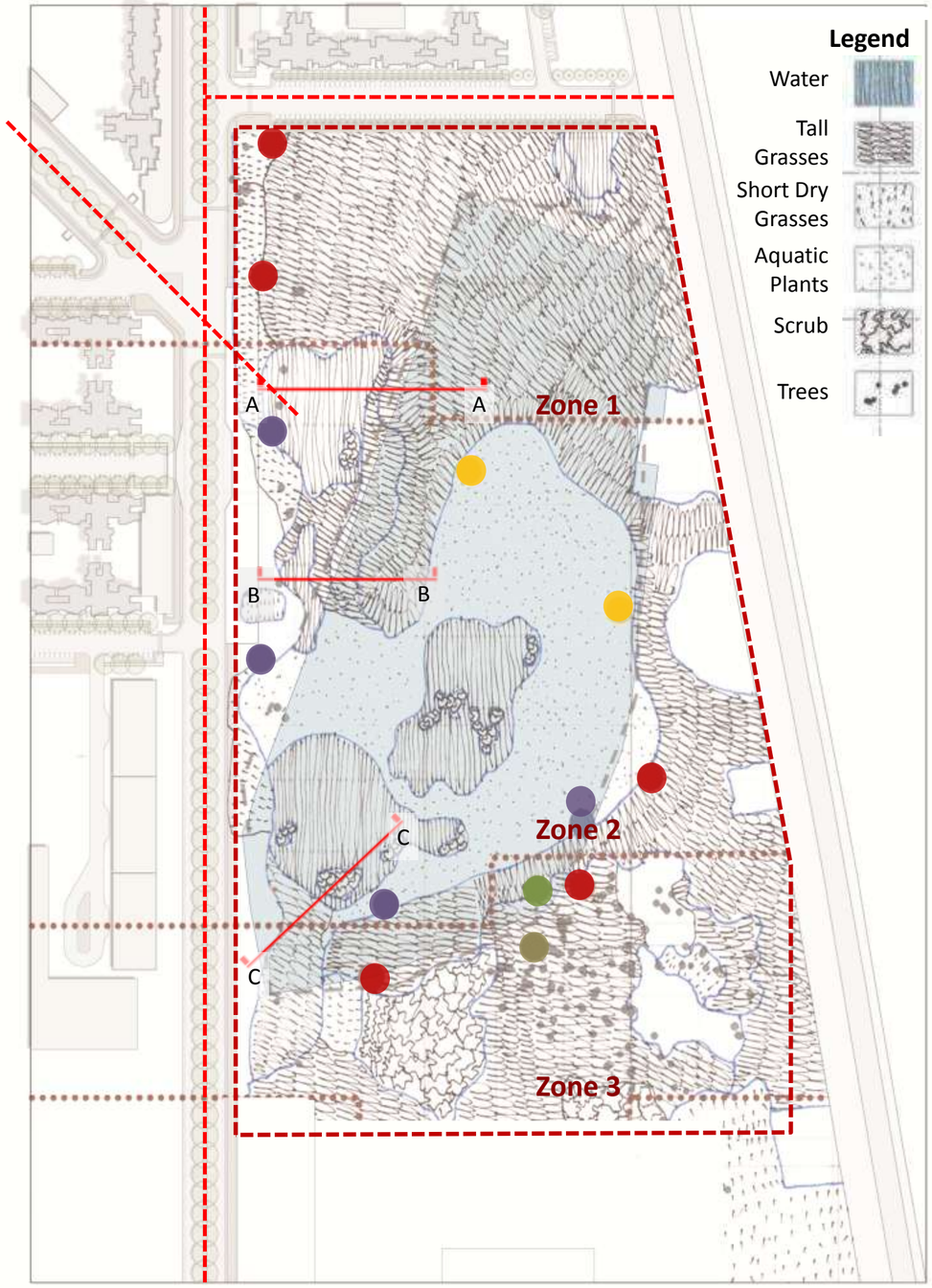


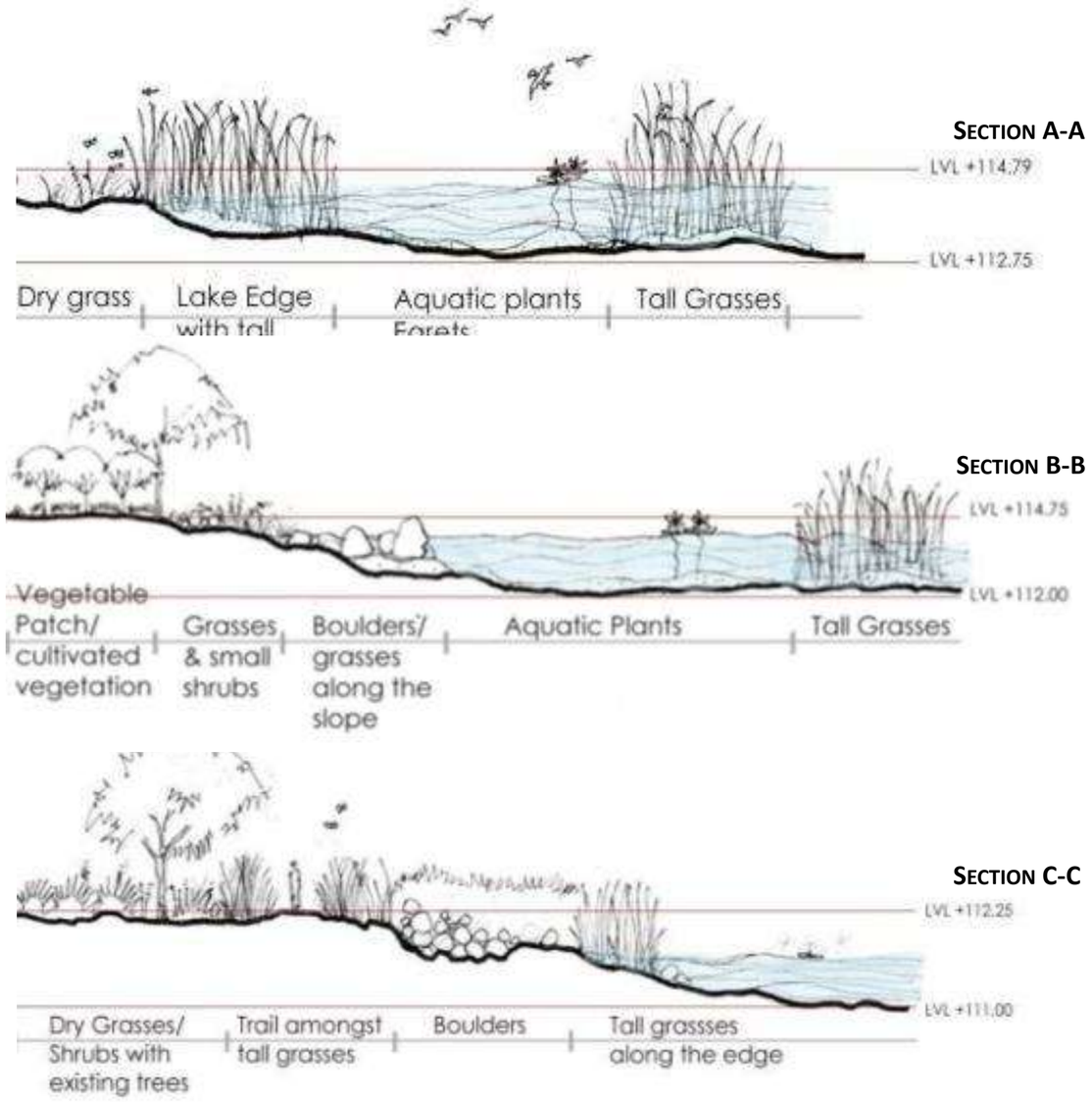
Zone 3

0 100m

KHONI- SOIL & VEGETATION

Source: Palava Design Review 15-03-16.ppt





0 100m

KHONI- VEGETATION

Source: Palava Design Review 15-03-16.ppt



Avifauna



Dragonfly
(Species of Anisoptera)



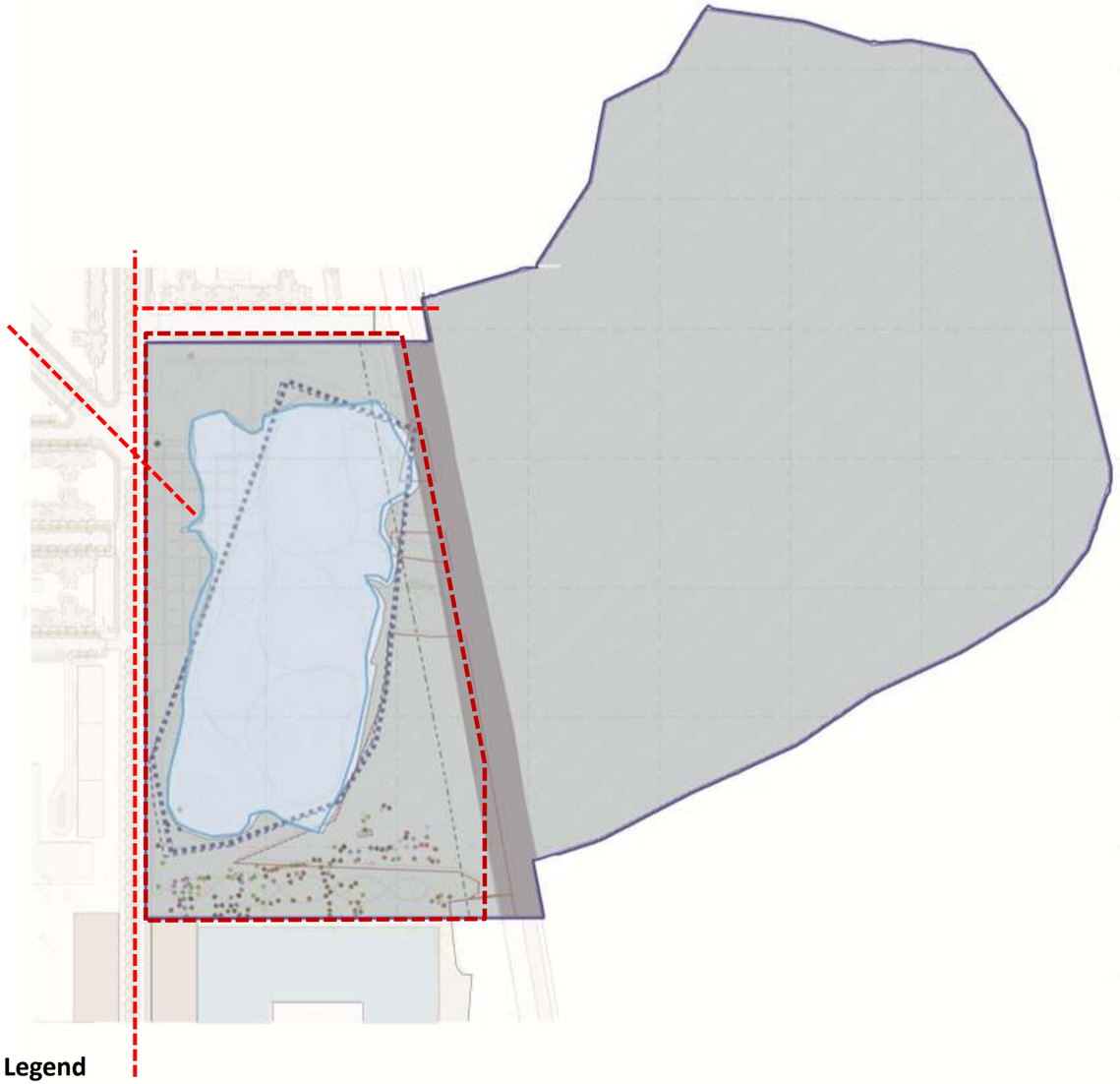
Butterflies
(Species of Rhopalocera)



Bees
(Species of Anthophila)



Grasshoppers
(Species of Caelifera)



Legend

- Khoni catchment Area
- Khoni Legal Boundary
- Khoni Surface Area
- Khoni Catchment Area
- Adjacent Roads

Area

Existing Lake Boundary = 46248 sq.m
Catchment Area (excluding Lake) **=** 297131 sq.m
Average Rainfall = 2.3m
Average Depth = 2m

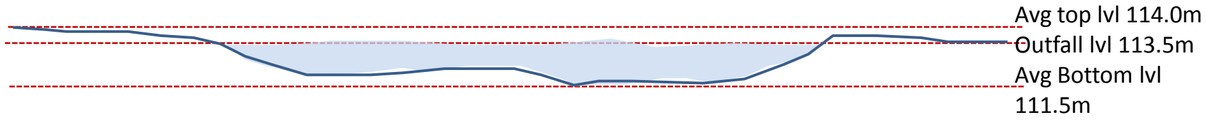
Zone	Area (sq.m)	Runoff Coefficient	Average Rainfall (m)	Surface Runoff (cum)
Landscape	297131	0.65	2.3	444210.84
Road	13492	0.8	2.3	24825.28
Lake	46248	1.0	2.3	106370.4

Total Water Accumulated = 575406.52 cum = 575.40 MLY = 1.57 MLD

Existing Holding Capacity = 46248 * 2 = 92496 cum = 92.4 MLY = 0.25 MLD
(16% of Total Water accumulated)

Runoff Water = 482910 cum. = 482.9 MLY = 1.3 MLD
(84% of Total Water accumulated)

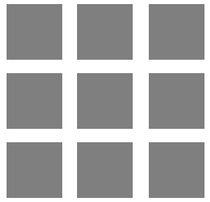
Wetland Park Total Area = Lake Area + Land Area = 83801.4 sq.m



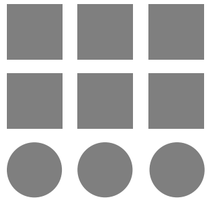
0 200m

KHONI- CATCHMENT POTENTIAL

WHAT WOULD BE THE **IDENTITY** OF **PALAVA?**



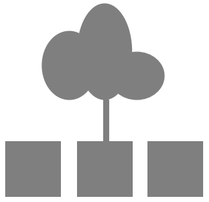
URBAN PATTERN



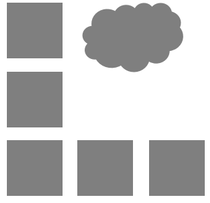
MOBILITY



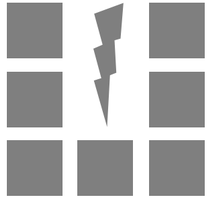
ENVELOPE CONTROLS



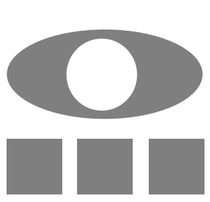
BIO DIVERSITY



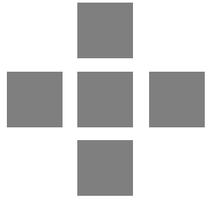
ENVIRONMENT



ENERGY



SMART SYSTEMS

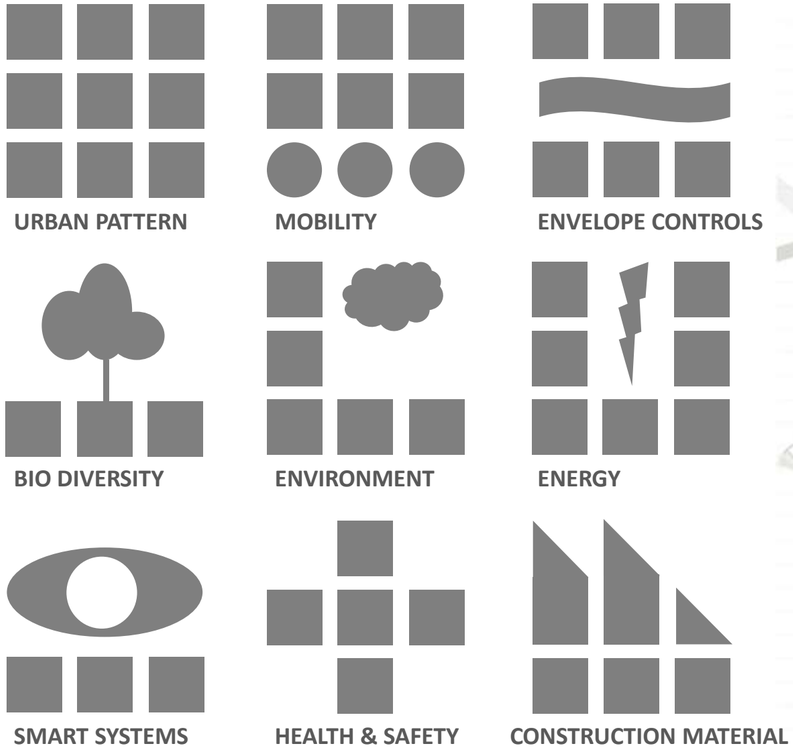


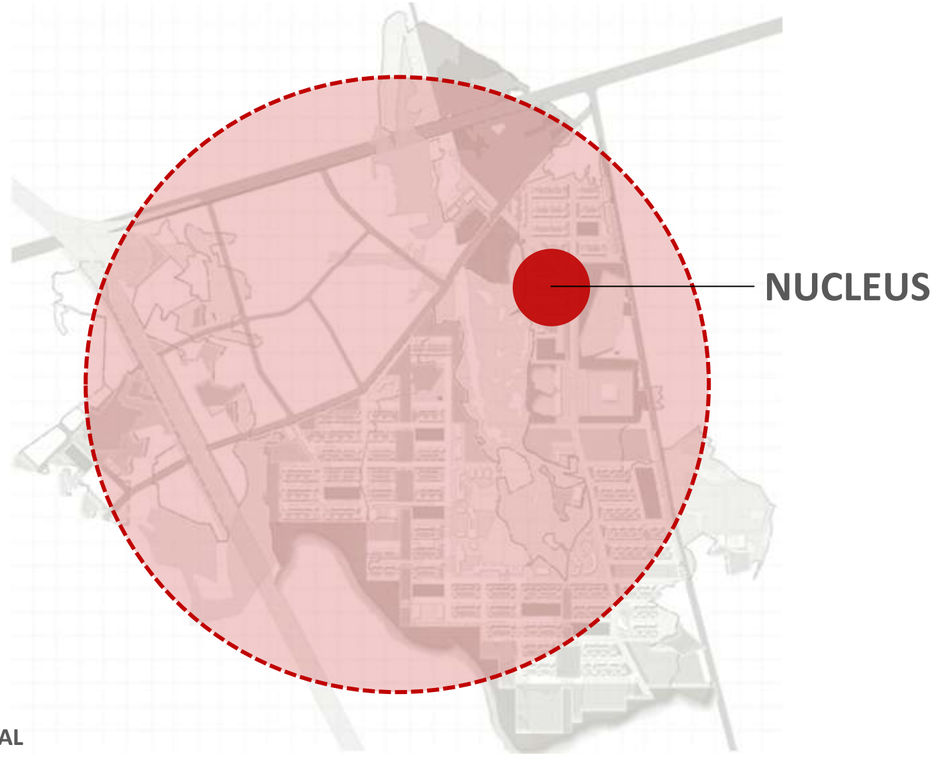
HEALTH & SAFETY



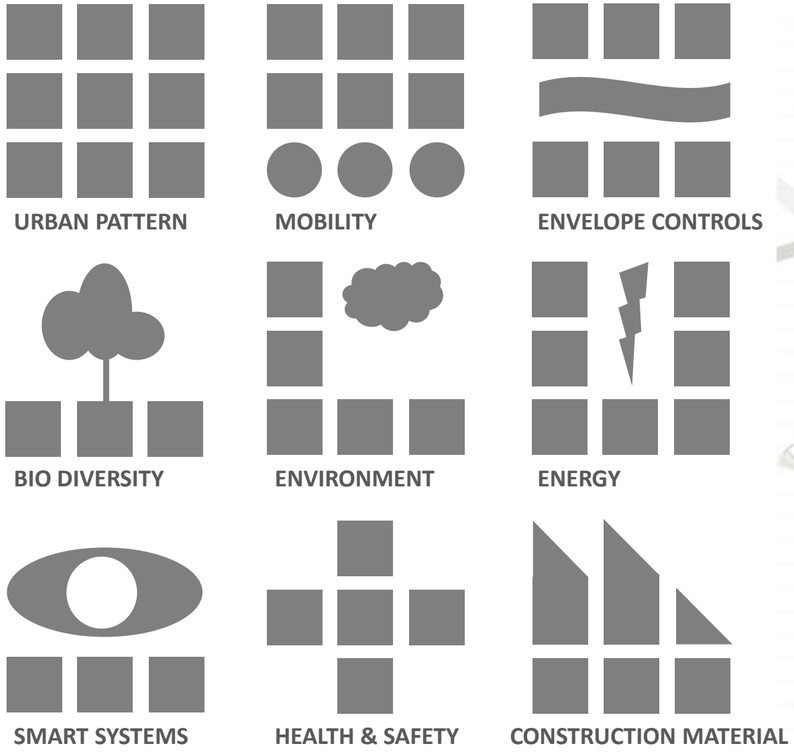
CONSTRUCTION MATERIAL

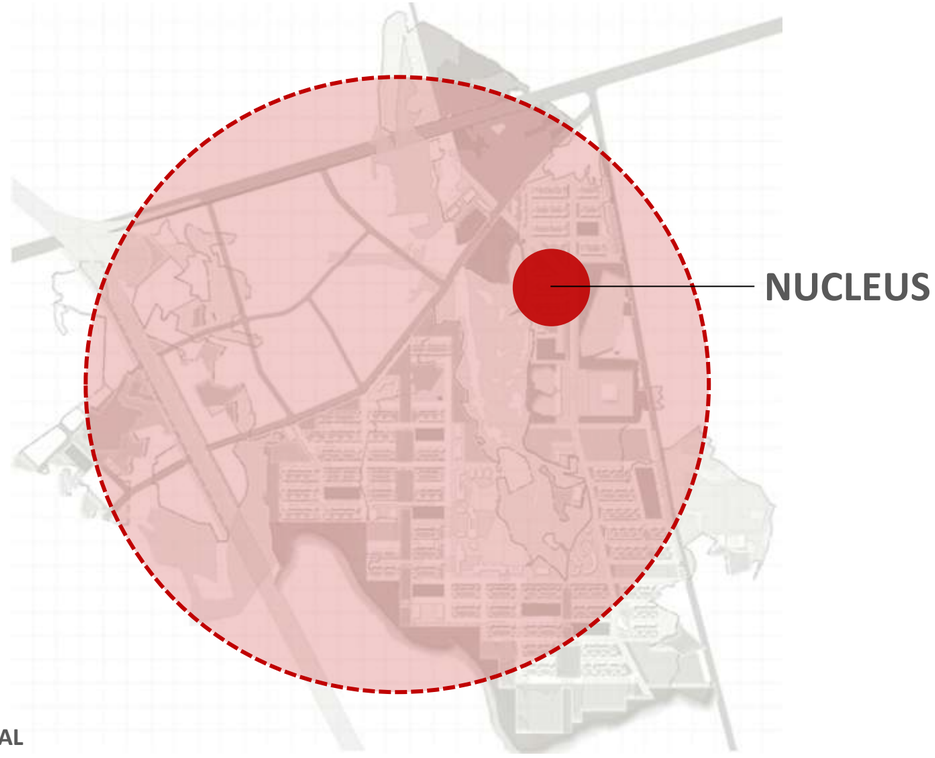
LIVABLE CITY-DETERMINANTS





SYMBOLISM- LIVABLE CITY





To have a **NATURE PARK** in the heart of **Palava city** which demonstrates the idea of **place making** by **sustainable** means & celebrates the idea of a **LIVABLE CITY.**

NATURE PARK ALONG THE LAKE

NATURE PARK Plot area (to be developed) : 38050 sqmt

Design Program

An urban sculpture at Entrance plaza symbolizing the life at PALAVA
Plaza with sit outs
Nature interpretation center
Children play area (made of reusable / recyclable material)
Congregation space
Landforms as play element
Lakefront edge with gardens nestled within wild grasses

INTERPRETATION CENTER Design Program Area (sqmt)

A display /exhibition area 500
Office space (reception desk + pantry + store) 60
Toilets (male + female) 30

The interpretation centre -an installation and not a building that captures the imagination of the citizens and expresses the values of art, culture & ecology .

REFERENCES

Exploring sustainable ways of building





WIND AND RAIN BRIDGE

Location: Peitian Village, Fujian Province, China
Project Year: 2016
Area: 20.0 sqmt

Alternative mode of community redevelopment
References of **local crafts and traditions**
Utilization of **sustainable** materials and methods



GREEN SCHOOL

Location: Bali, Indonesia
Project Year: 2007
Area: 7542.0 sqm

Bamboo, mud & grass as construction materials
Strives to be as **energy independent**
Buildings are cooled naturally







BAMBOO KONTUM INDOCHINE CAFE

Location: Kontum, Vientnam

Cafe which frames **panoramic views**
Structure is supported with **bamboo** via **15 inversely shaped cone**
The canopy is clad in **fiber reinforced panels**, Allows **natural light** to pour **into the enter**



wNw CAFE
Location: Binh Duong Province, Vietnam
Project Year: 2006

Treated bamboo using traditional methods
Constructed by **7,000 bamboo elements**
Uses **wire bracing** supports.
The V-shaped roof relates to surrounding trees



HALO: Swedish Students' Solar Decathlon Entry
Location: Chicago, U.S.

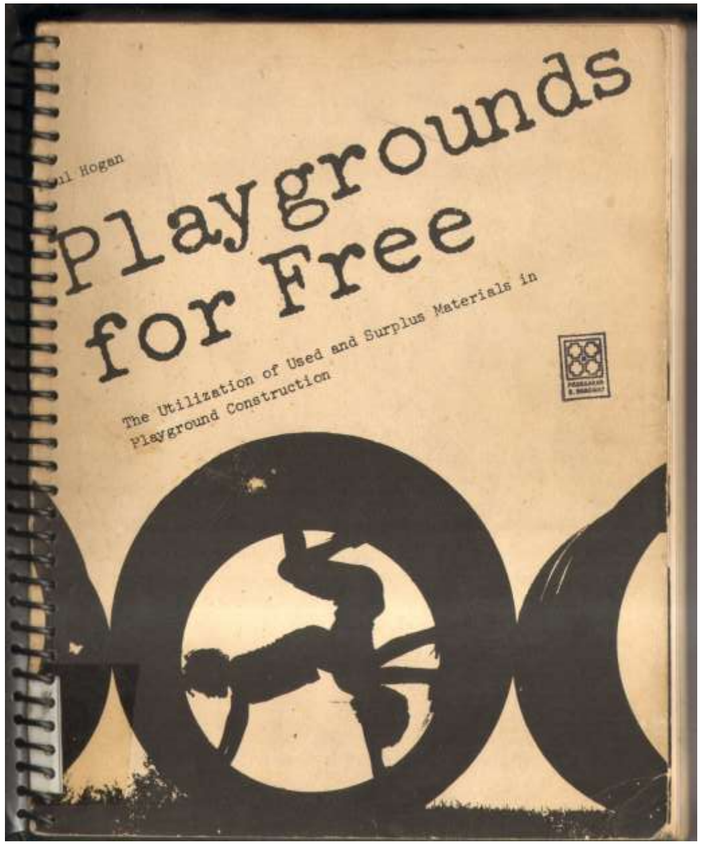
The solar panels act as the **roof**.
Solar cells integrated with the architectural design of a house



SOLAR ARK

Location: Japan

The ARK is a solar lab & museum of solar energy.
An arc shaped solar photo voltaic power generator
It has over 500 panels that produces approximately **530000 KW/ HR** on an annual basis.



in rhythm.

This bucking bronco, made from a 55-gallon oil drum suspended from four surplus utility poles, is in almost constant use at the Rawhide camp/home for disadvantaged boys in New London, Wi. Chains anchor it to the ground so that it won't buck too much when the motive power (supplied by the boy on the right) is applied. By working the tug-line, the boy can tilt the bronc or make it go forward or backward, up or down; and it can even be made to roll.

Rudolph Ilich plays on a "watchamacalit" made of old tires, an oil drum, cables, and steel piping. The sort-of-bronco is in a people's park in Chicago. A lot was cleaned and the park built by the Young Lords and the Concerned Puerto Rican Youth Organization.





Can you imagine the beautiful noise and rhythm from such an outdoor band which could withstand the elements and vandals and produce beautiful music?

Horses in a playground in Luanda, Angola, made from old oil drums and steel pipe legs. Note the welding, as well as woodwork, required for such a project.

Just outside of Johnstown, Pa., I saw this young lady waiting for the school bus. Her father made the shelter from an old 500-gallon fuel oil tank.





There are so many millions of broken swings in American playgrounds, one wonders why the maintenance problem isn't recognized before construction begins. We don't expect television sets, automobiles, or even houses to function properly without maintenance. Why, then, should we expect swings, and for that matter, other pieces of playground equipment, to function properly without care?

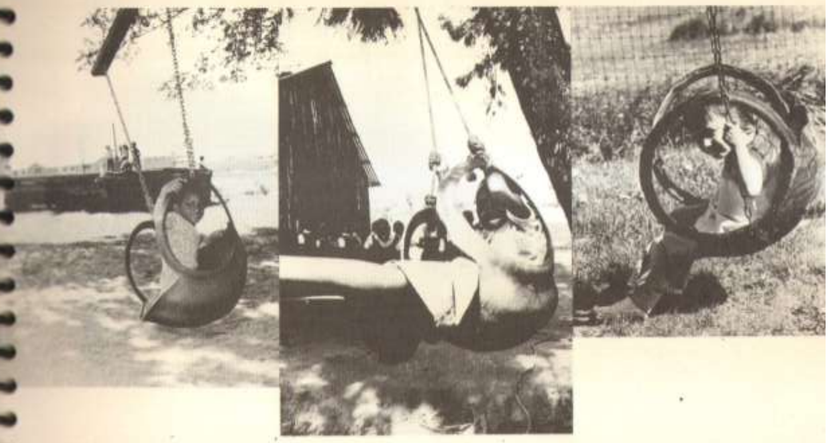


"I wish you'd buy us a swing like THEIRS!"

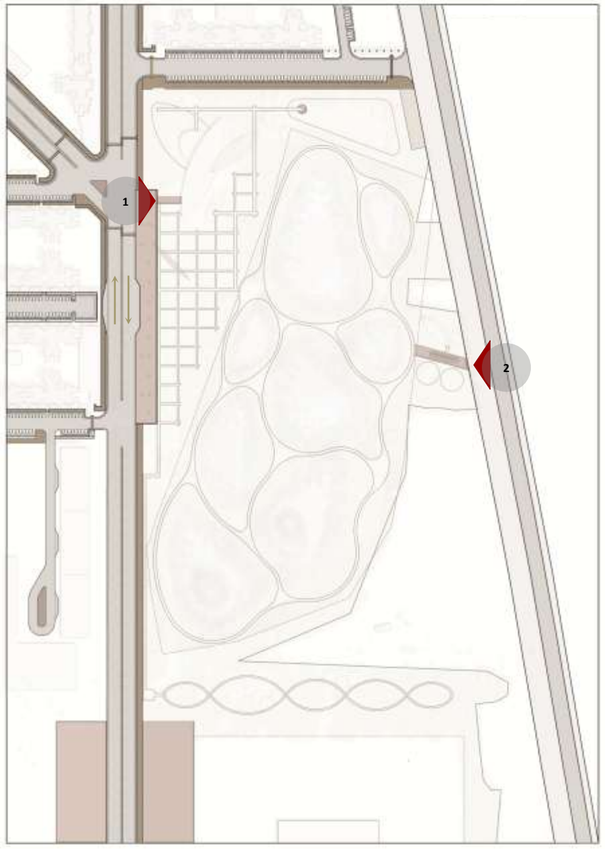
If all the world's books on playgrounds and recreation had to be summed up in one picture and one sentence, this would be the picture and the sentence.

for an hour, or put up for ever, if taken care of properly. Many recreation departments and schools have solved the problem of maintaining swings by eliminating them. This denies the children a very important play activity and illustrates a typical head in the sand approach to play.

These examples of a new tire-swing design came to me from Tennessee and Kenya within a few weeks of each other. This design is especially useful for small children who haven't mastered the fine art of tire swinging.

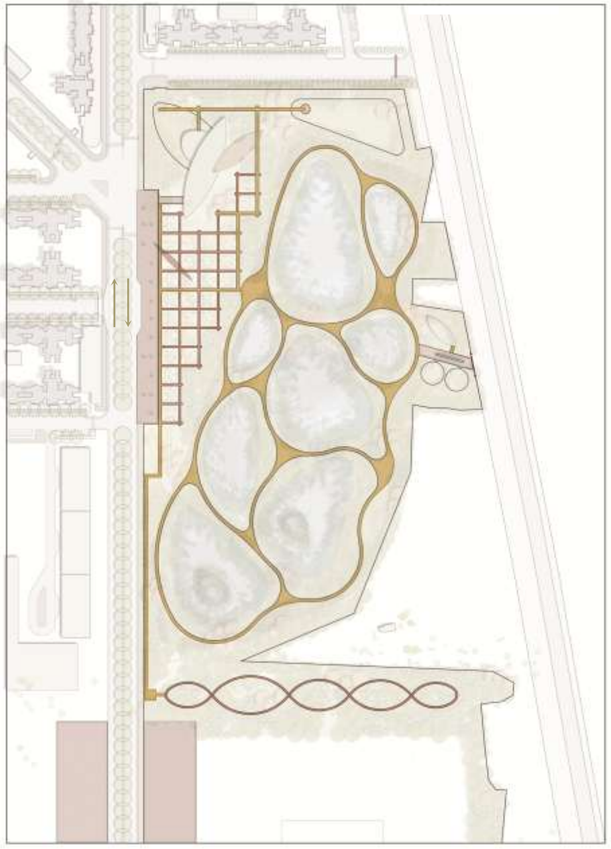


INITIAL ITERATIONS



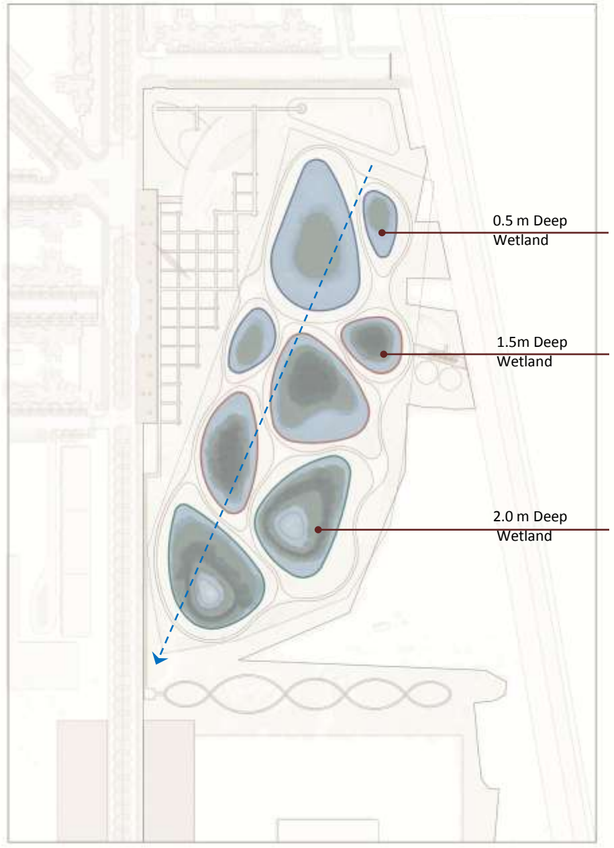
Stage 1

Approach roads



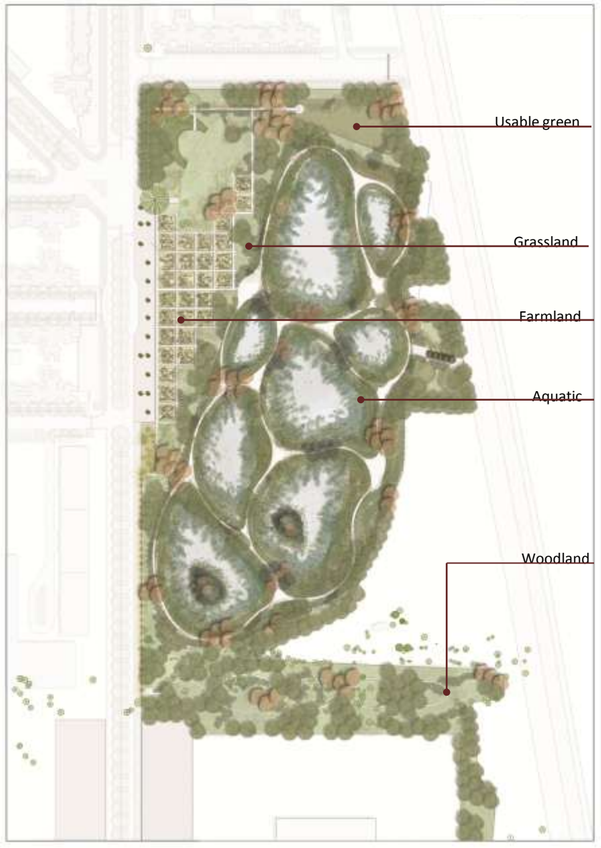
Stage 2

Circulation within the wetland park



Stage 3

Hydrology



Stage 4

Planting





Feedback May 2016 M/s LODHA

Development as of now should be restricted within area under possession excluding the legal boundary of the lake.

Entrance plaza, as a visual marker at the termination of our axis

Nature interpretation center with
- A ticketing office, library,
- AV room, exhibition space
- A small café, toilets

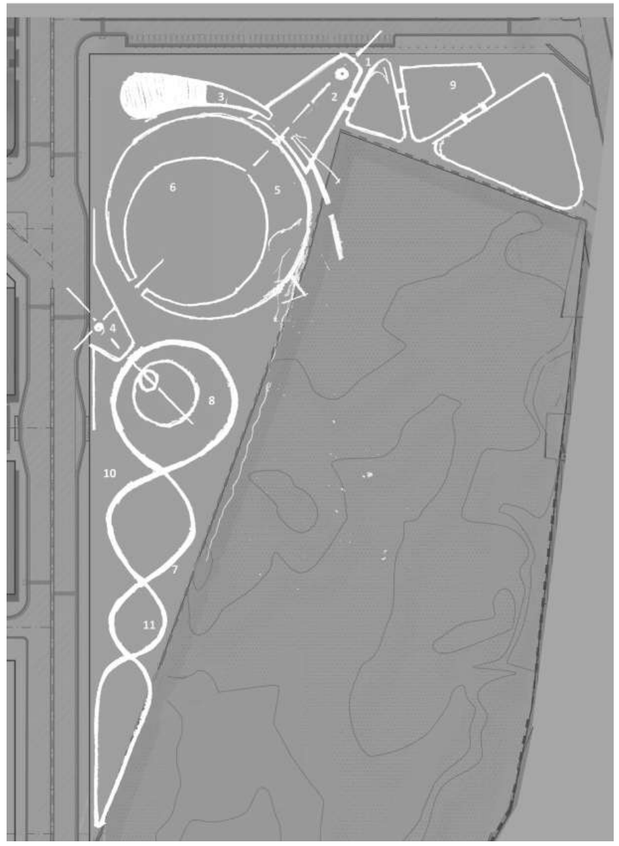
A children's park with mounds, swings, tunnels, jungle gyms etc. Children's museum outdoor play area e.g climbing walls, sandpits, double bars. mounds, small skating area for the kids.

A walking track around the lake with seats, barbeque pits etc.

Large festival space/Gathering space with no built form
- Large tree line on the edge.
- Landscaped mounds towards the edges.
- Outdoor exercise areas.
- Could be used for casual cricket/ football/badminton etc.
- Picnic spots / weekend outdoor activities.

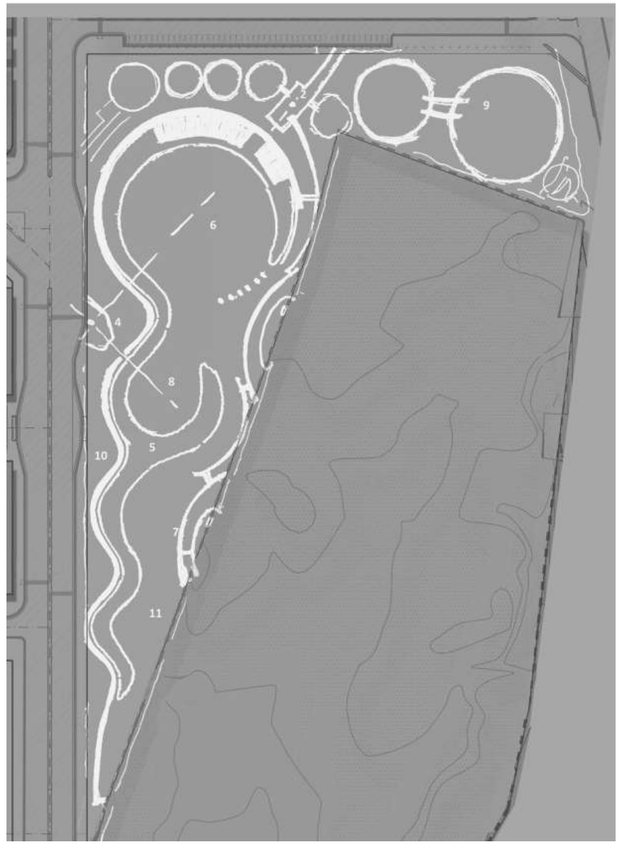
DEVELOPMENT STAGE





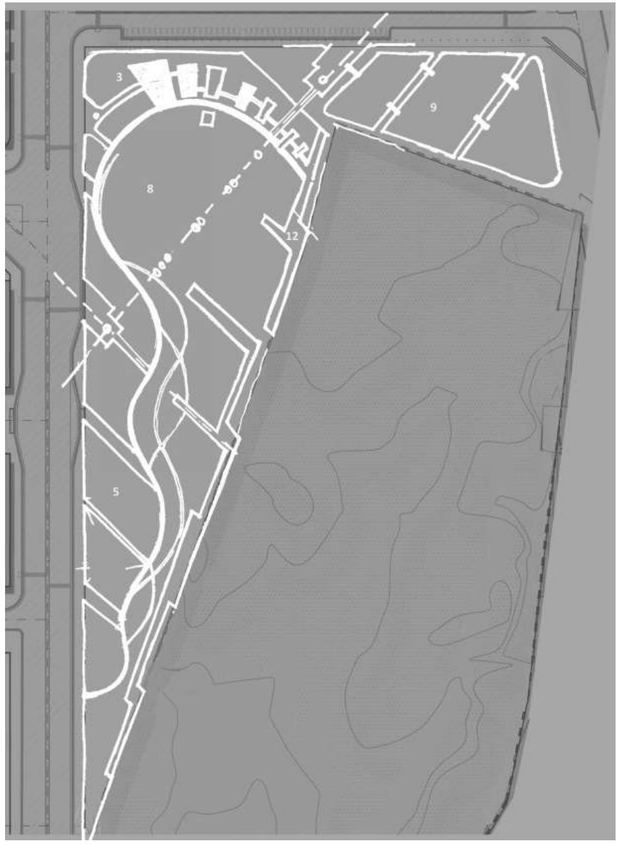
Option 1

Series of activity areas arranged axialy



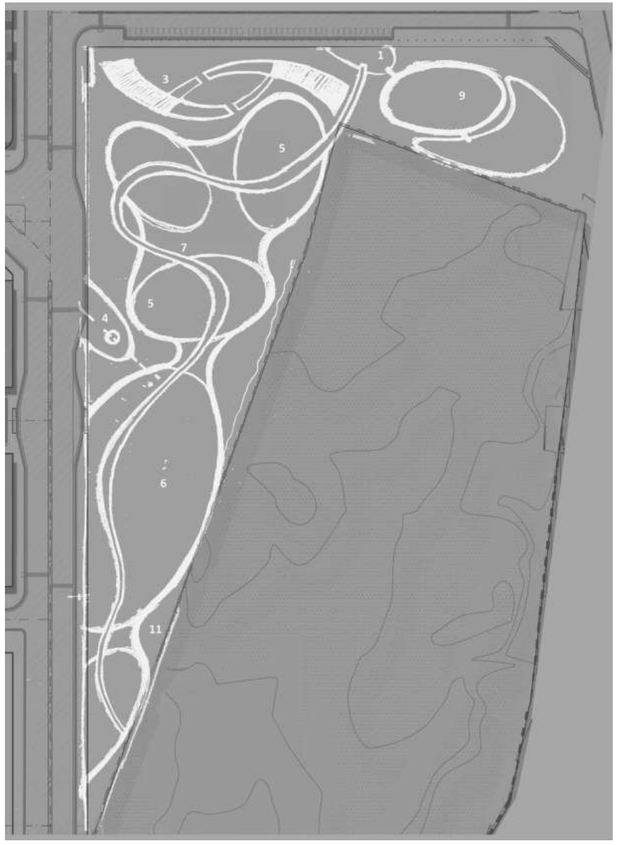
Option 2

Large open space -distinct nature of walkways



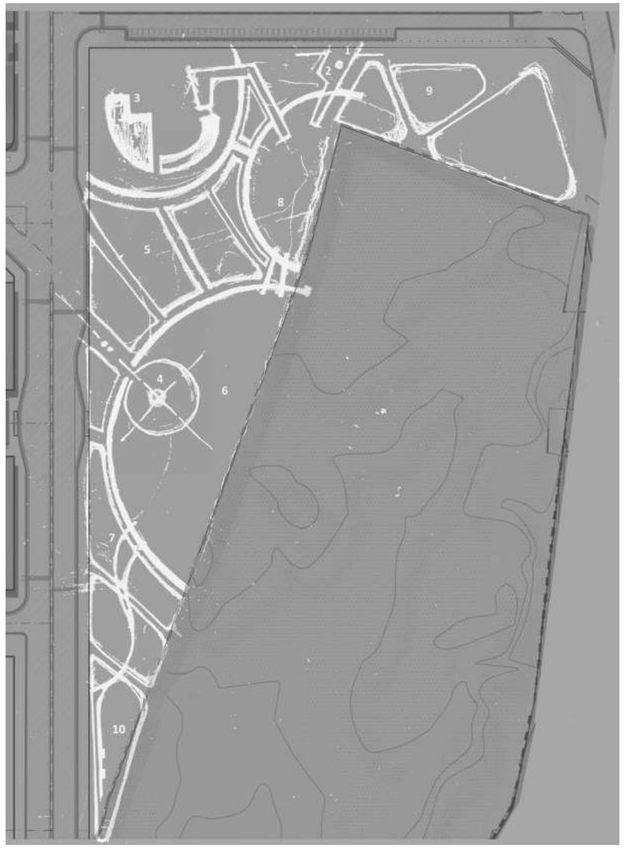
Option 3

Linear pattern - meandering walkways.



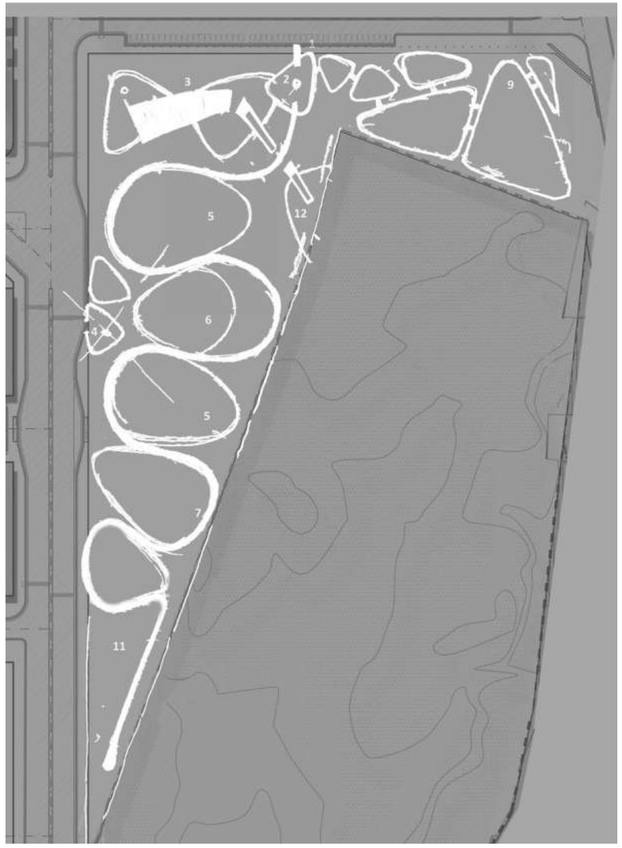
Option 4

Organic arrangement -meandering walkways



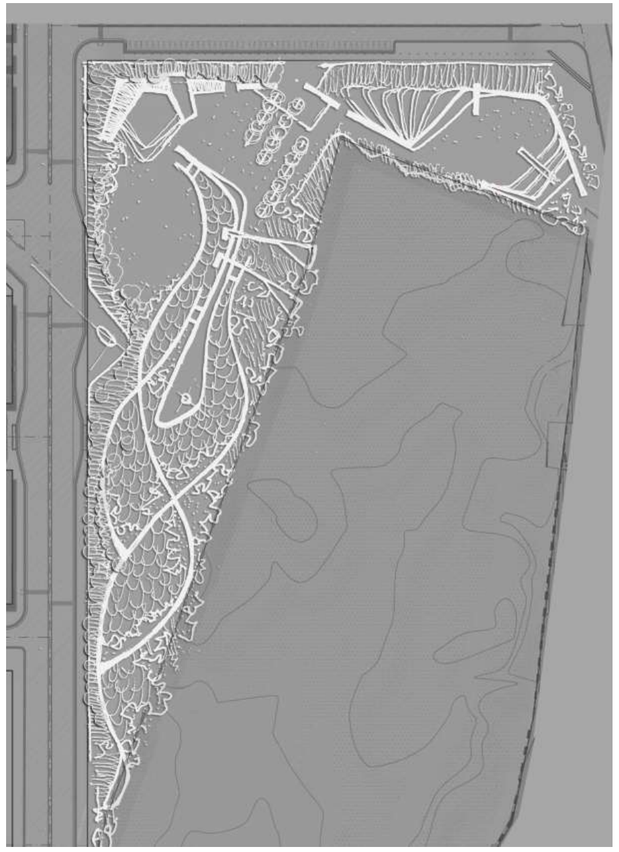
Option 2

Axial geometry



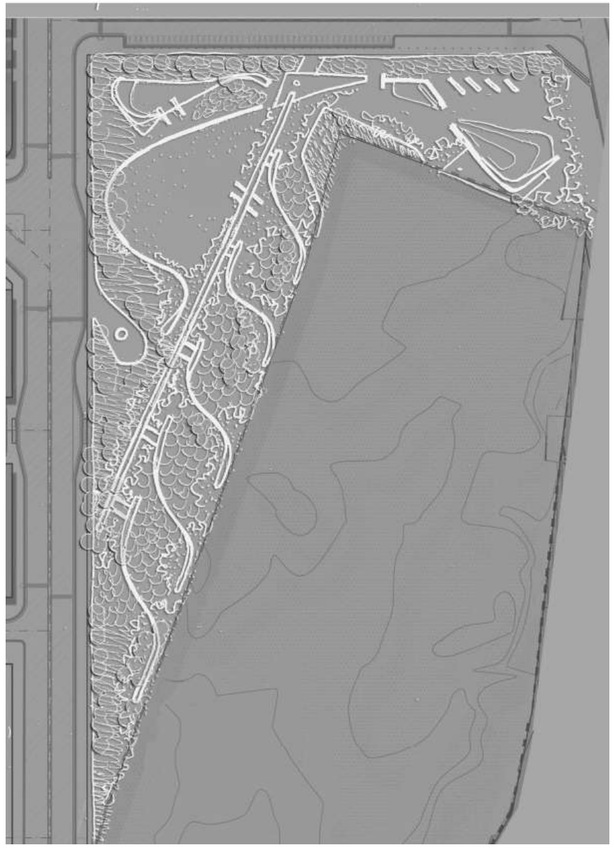
Option 3

Meandering Walkways -**wetland vegetation**.



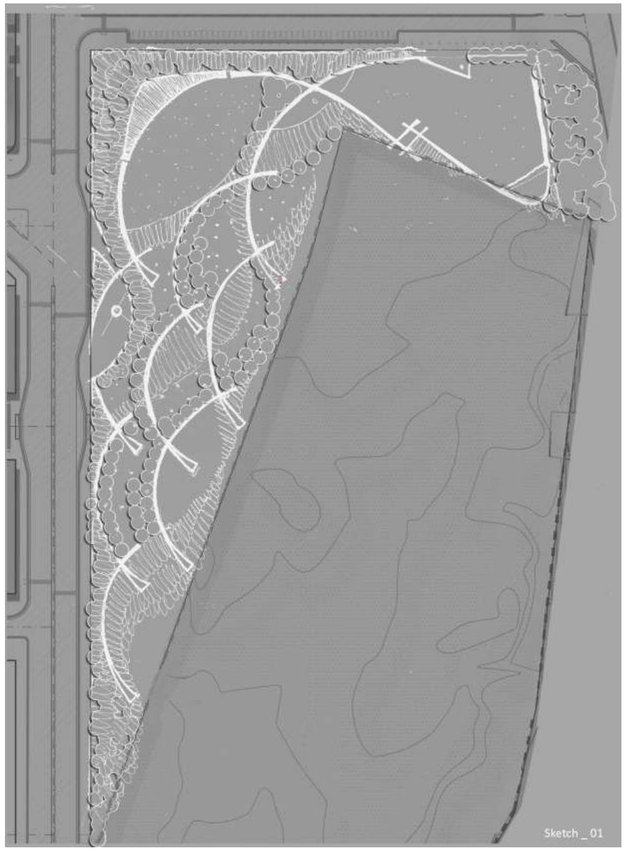
Option 4

Multiple walkways with **distinct character**



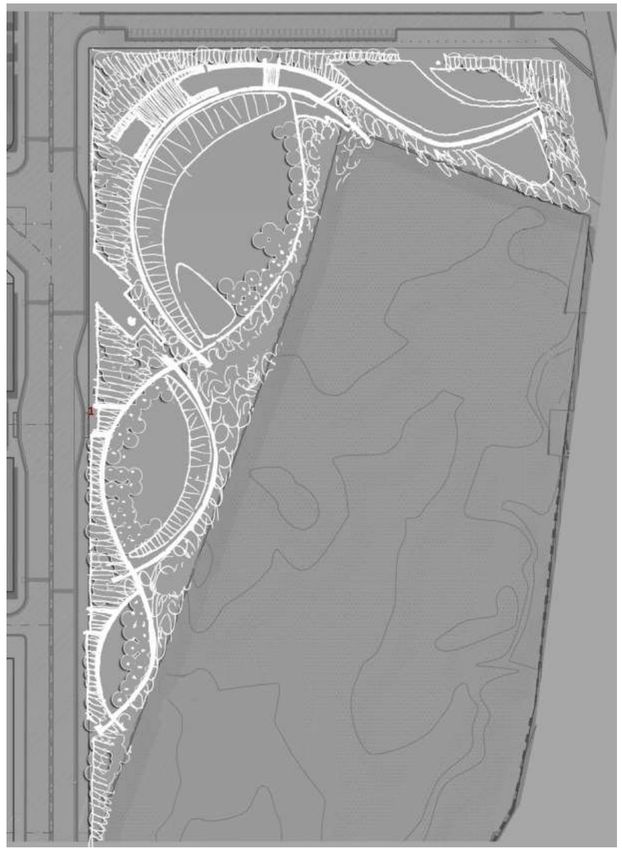
Option 5

Series of Deck over vast expanse of **grasslands** reaching out for the lake.



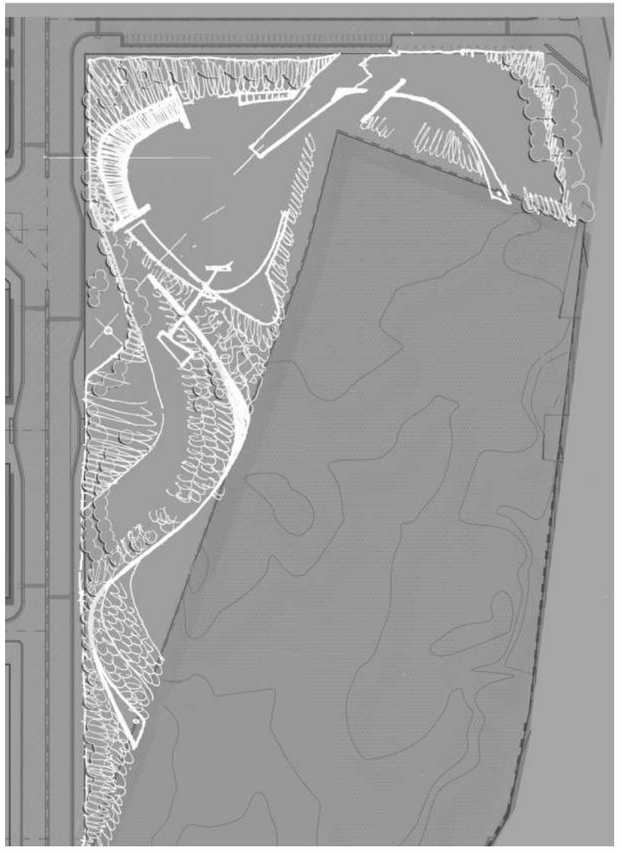
Option 9

Rhythmic pattern of arcs -**Series of galleries to happen**



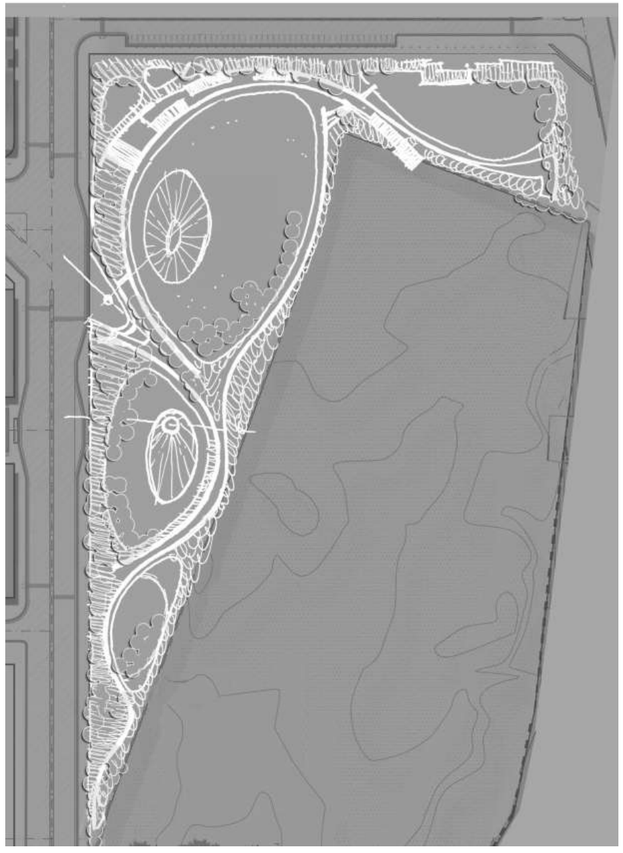
Option 10

Cascading landform geometry – incidental spaces



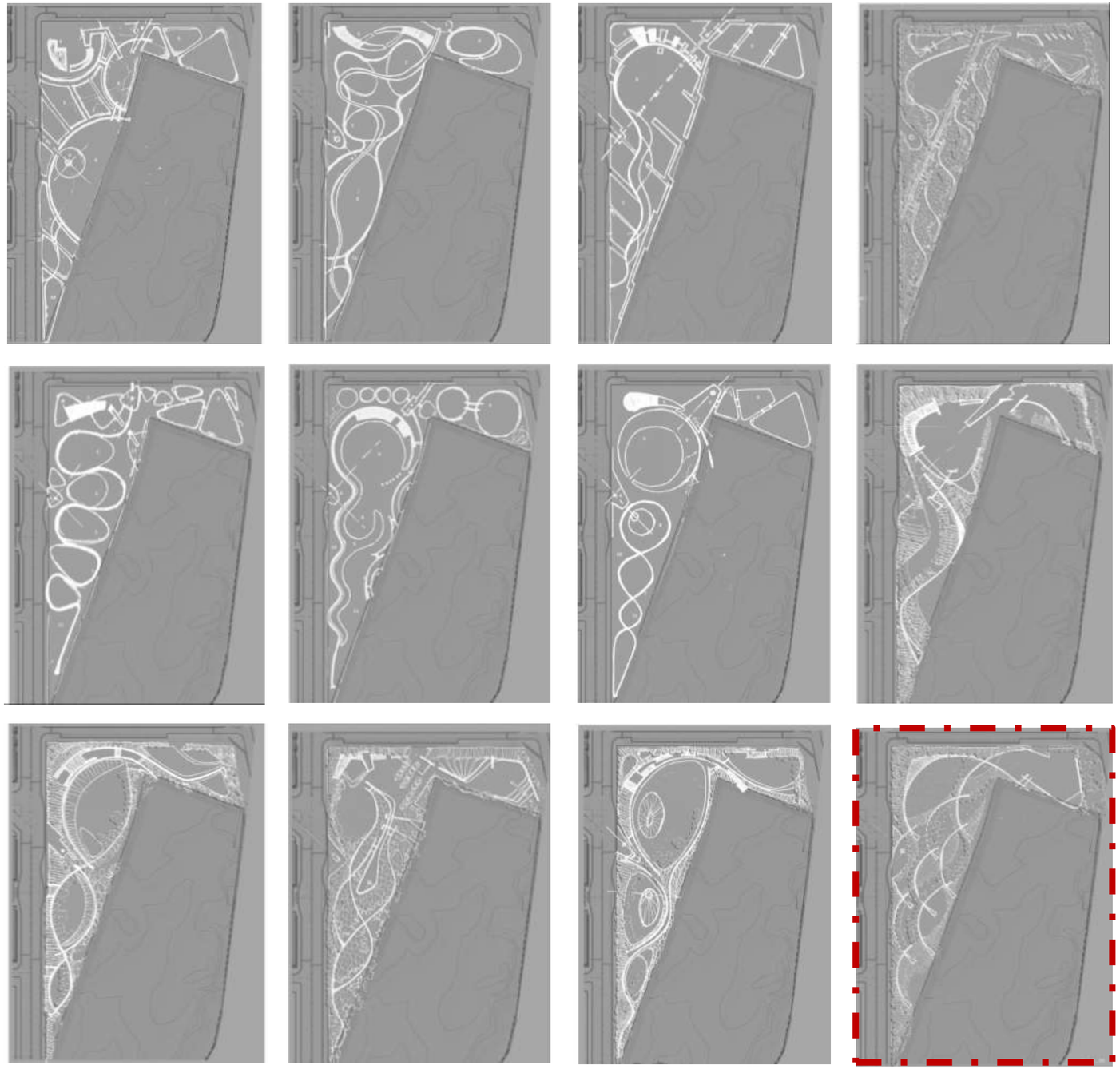
Option 11

Clear patches nestled amongst the **dense woodland**.

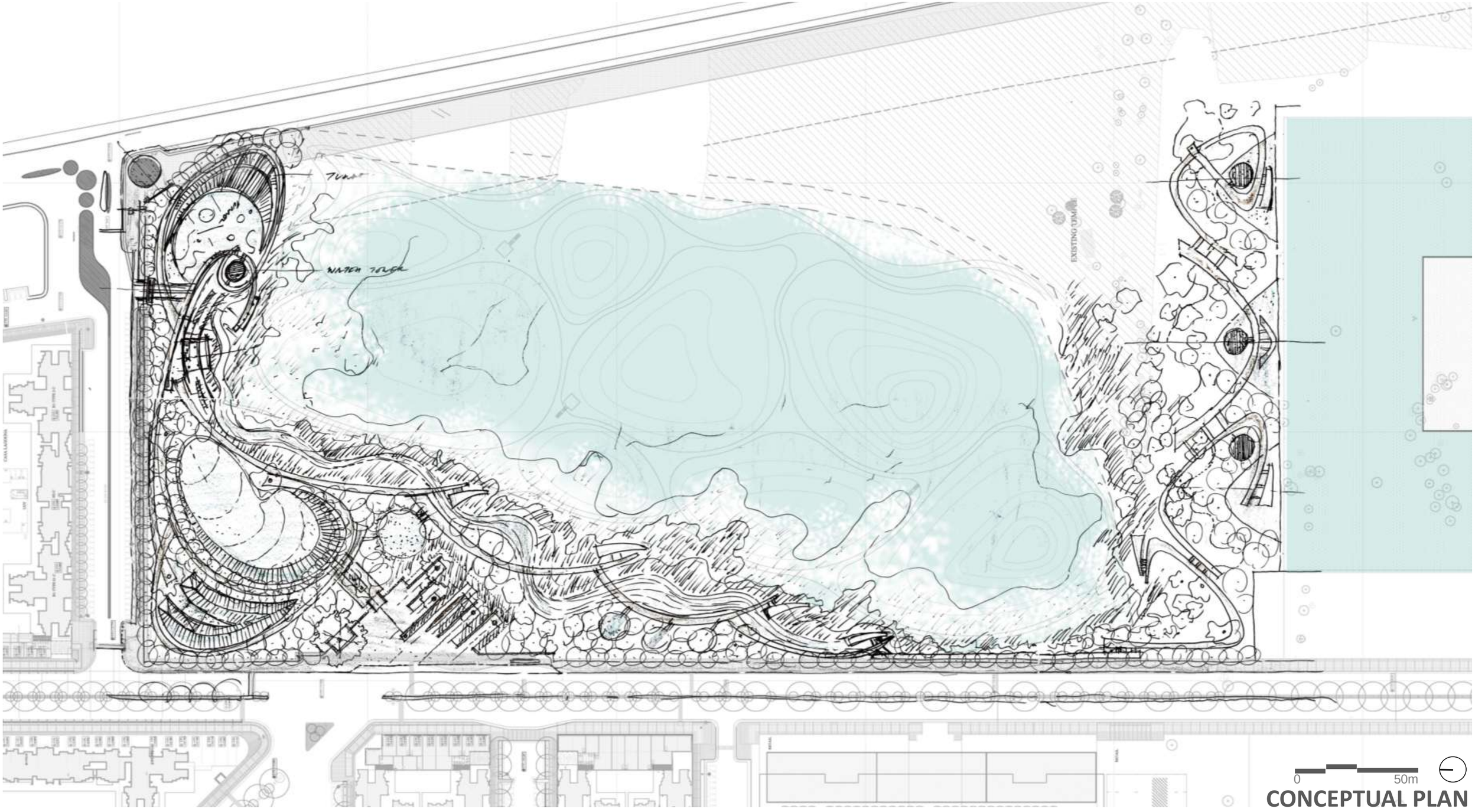


Option 12

Landforms amidst the ground, creating **strong focal points**.

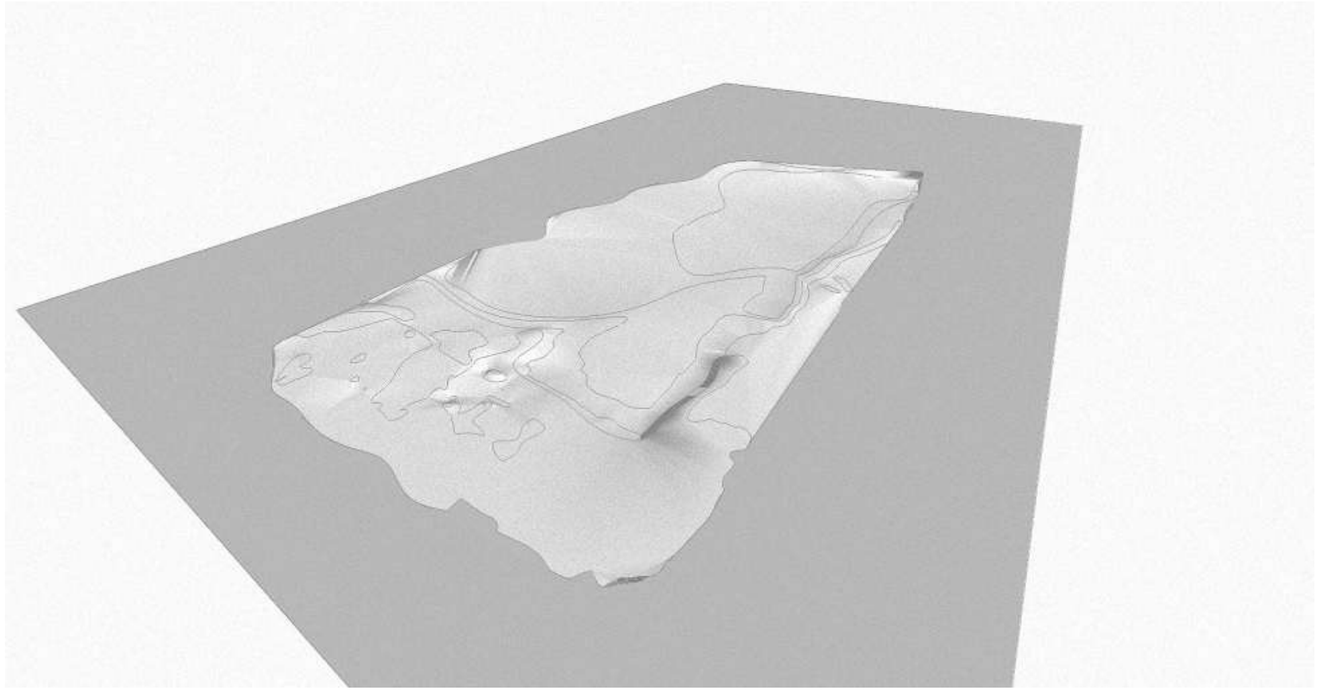


IDEA DEVELOPED

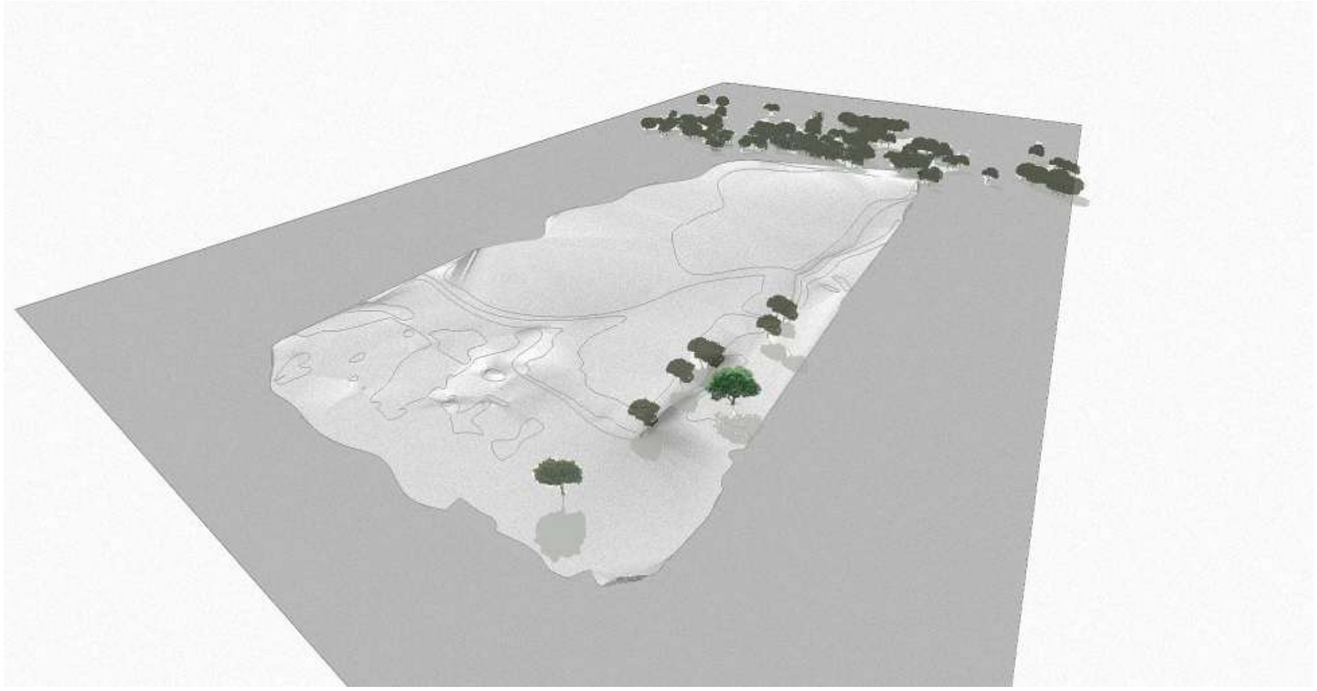


CONCEPTUAL PLAN

LAYERS OF THE PARK



Existing topography



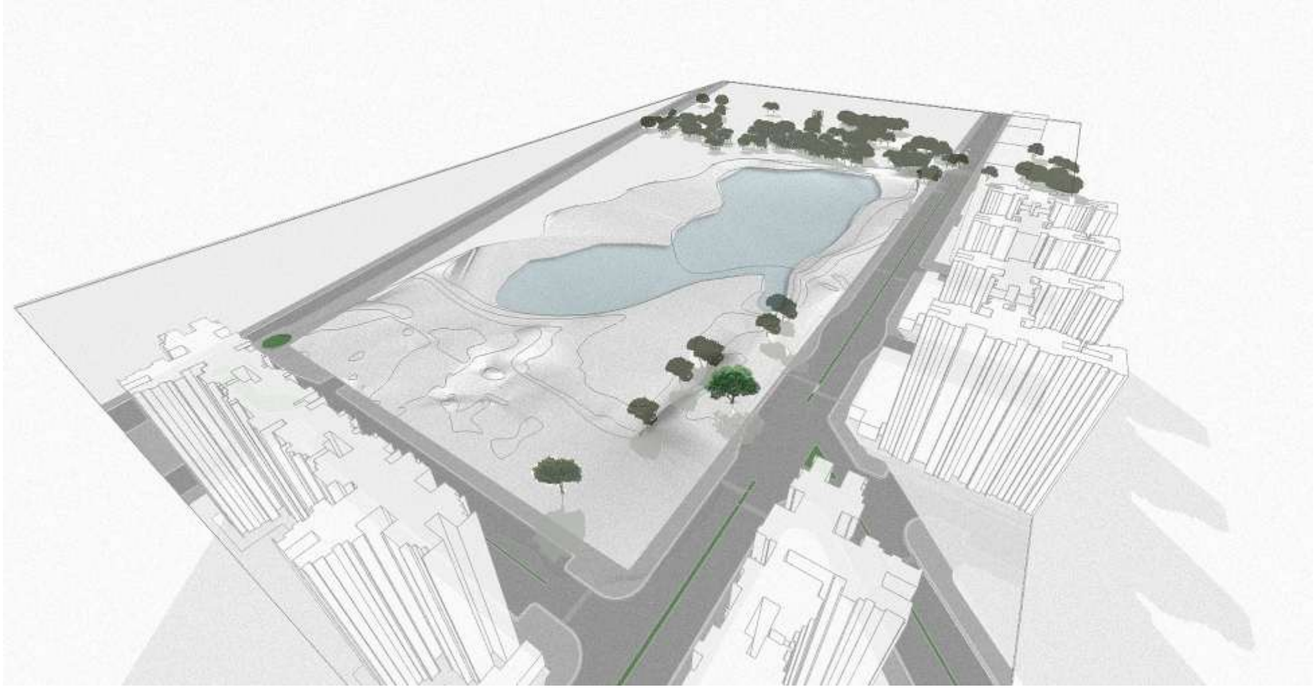
Existing trees around the lake



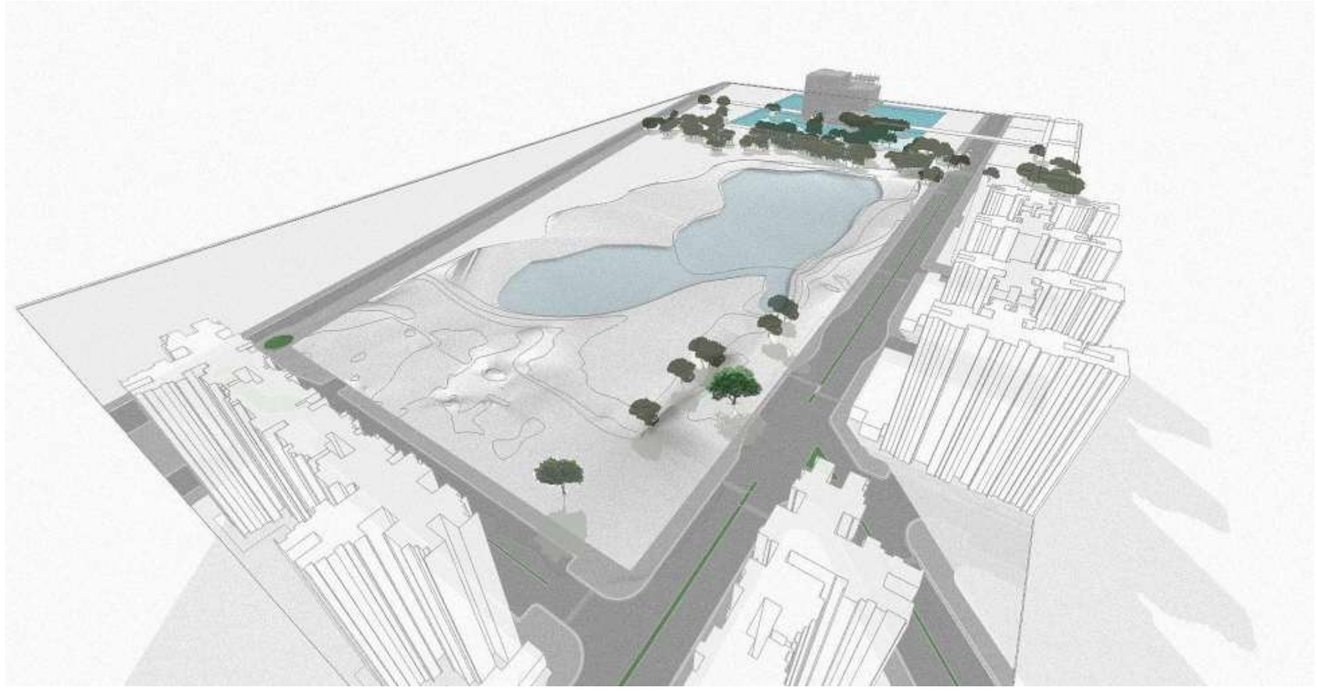
Existing Large ‘*Peepal’* Tree

Existing *‘Mango’* Tree

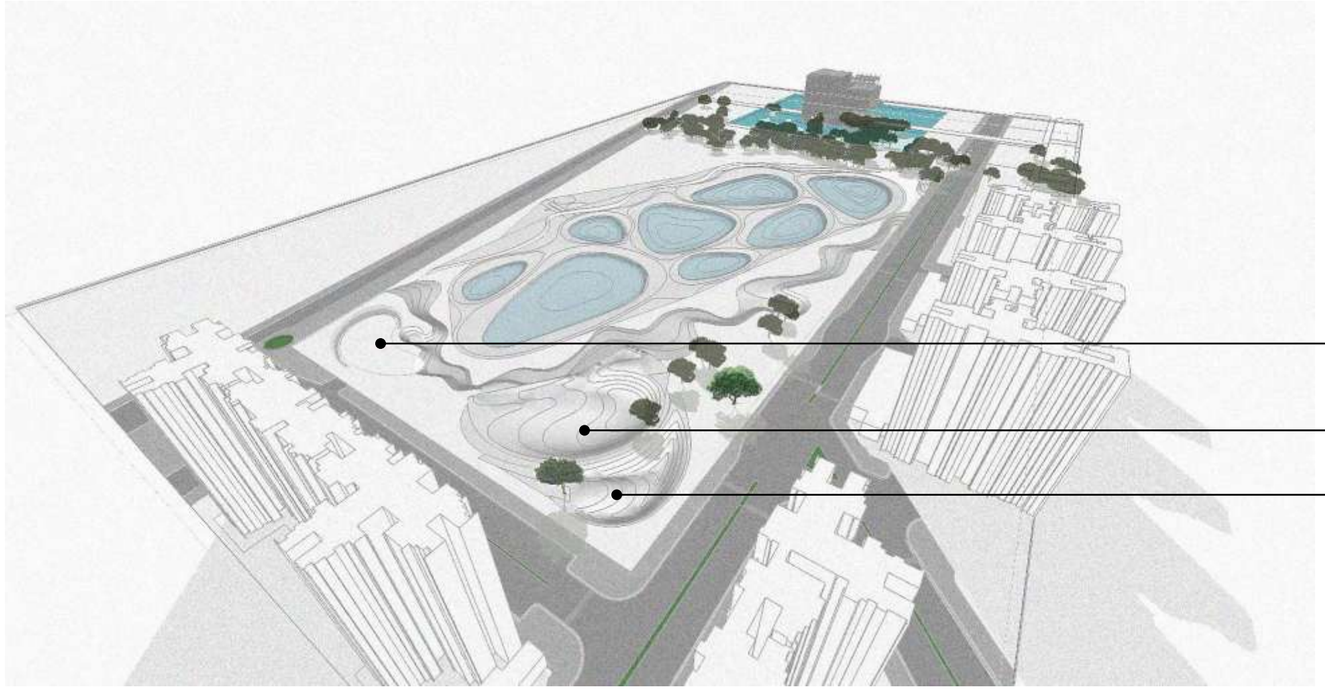
Roads and infrastructure network



Built around the lake



Performing Culture and Art Center

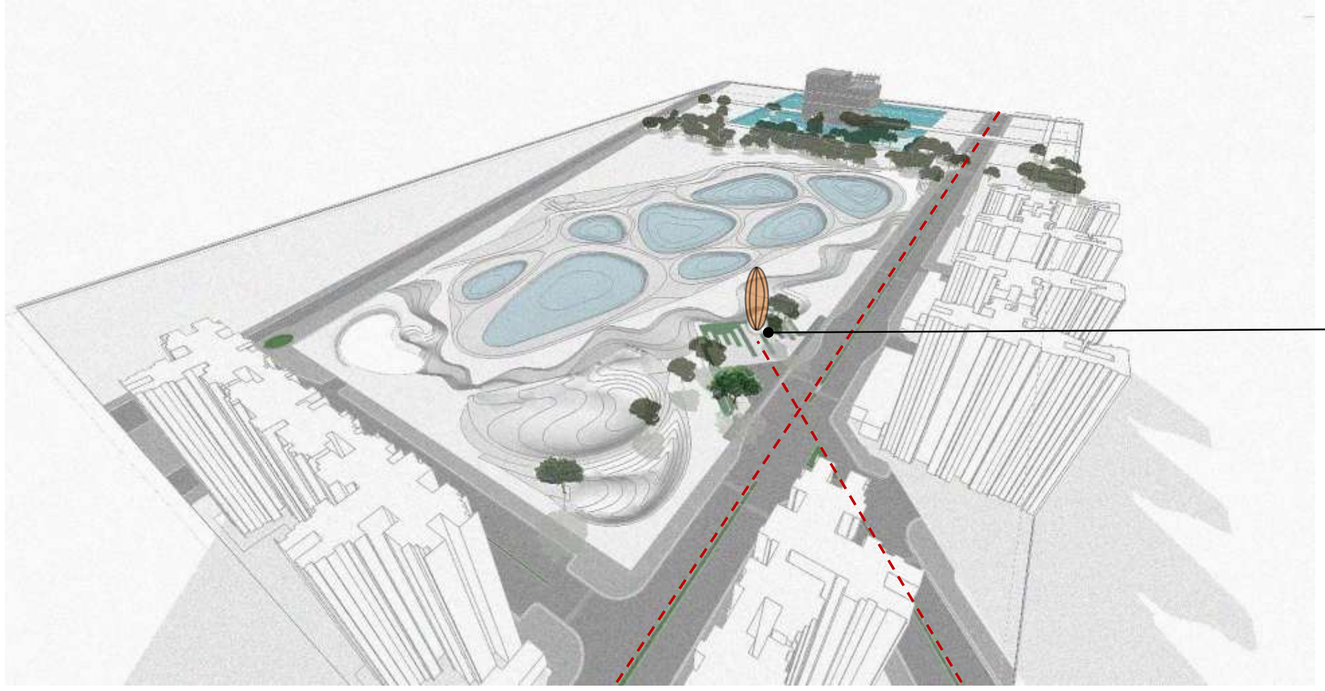


Kids’ play ground

Grand maidan

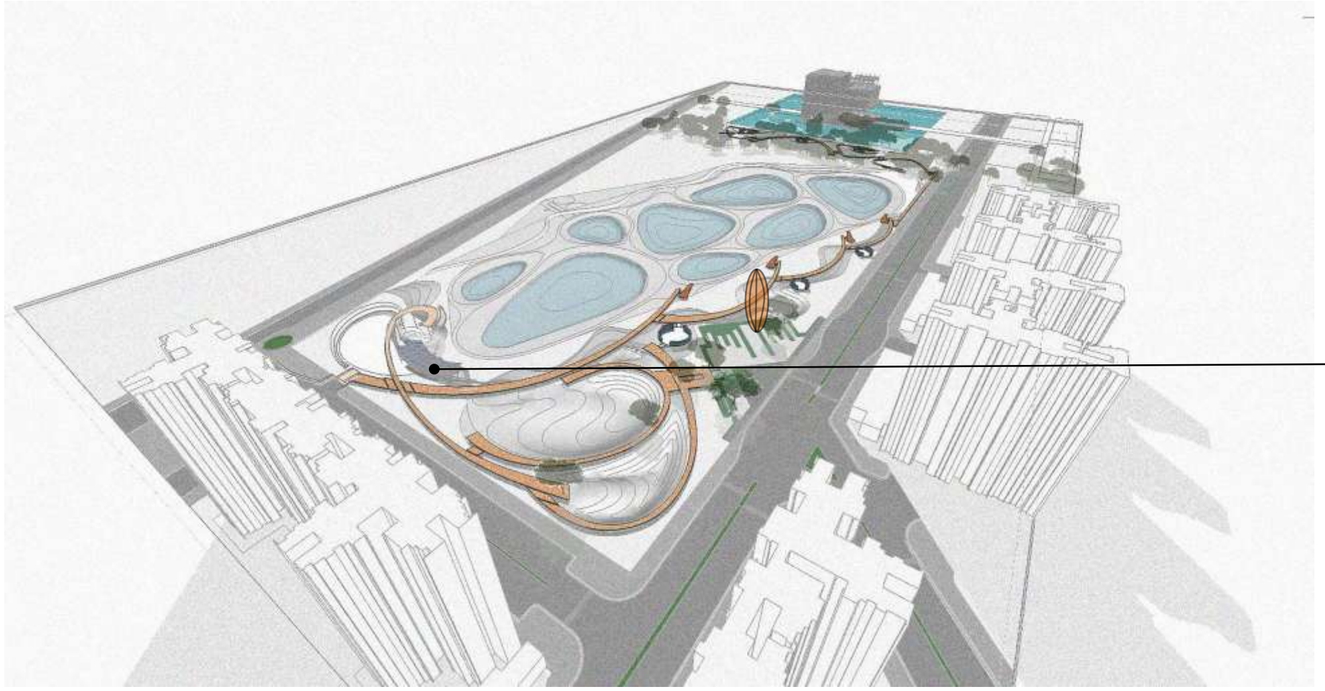
Viewing Mound around the mango tree

Modifying the ground with respect to existing trees



Diagonal axis culminating into an urban plaza marked by a large sculpture symbolic of the life at PALAVA

plaza - the primary entry to the park



Walkways & decks that form galleries along the lake edge allowing varied experiences of nature

The interpretation building imagined as an installation with recycled materials and roof made of solar panels that shall generate enough power to take care of the general demand



The existing woodland on the southern edge gets extended and wraps the park from all sides, offering varying opportunities to walk, sit, contemplate away from the built and along the water



LEGEND

1 ENTRANCE PLAZA 2 SCULPTURE 3 GRAND MAIDAN 4 NATURE INTERPRETATION CENTRE 5 WALKWAYS & DECK 6GRASSLANDS 7 VANTAGE POINTS 8 TERRACES 9 THE MANGO TREE MOUND 10 WETLAND 11 CHILDREN'S WORLD
12 PICNIC SPOTS 13 HEDGE GARDEN HIDE OUTS 14 FOREST PARK 15 SECONDARY ENTRY 16 PERFORMING ARTS CENTRE BY RPDW

0 50m

LANDSCAPE PLAN

VIGNETTES OF THE PARK





APPROACHING FROM THE DIAGONAL AXIS



THE PLAZA & SCULPTURE



PALAVA SCULPTURE –SYMBOLIC OF THE GOOD LIFE


THE LAKE PLAZA



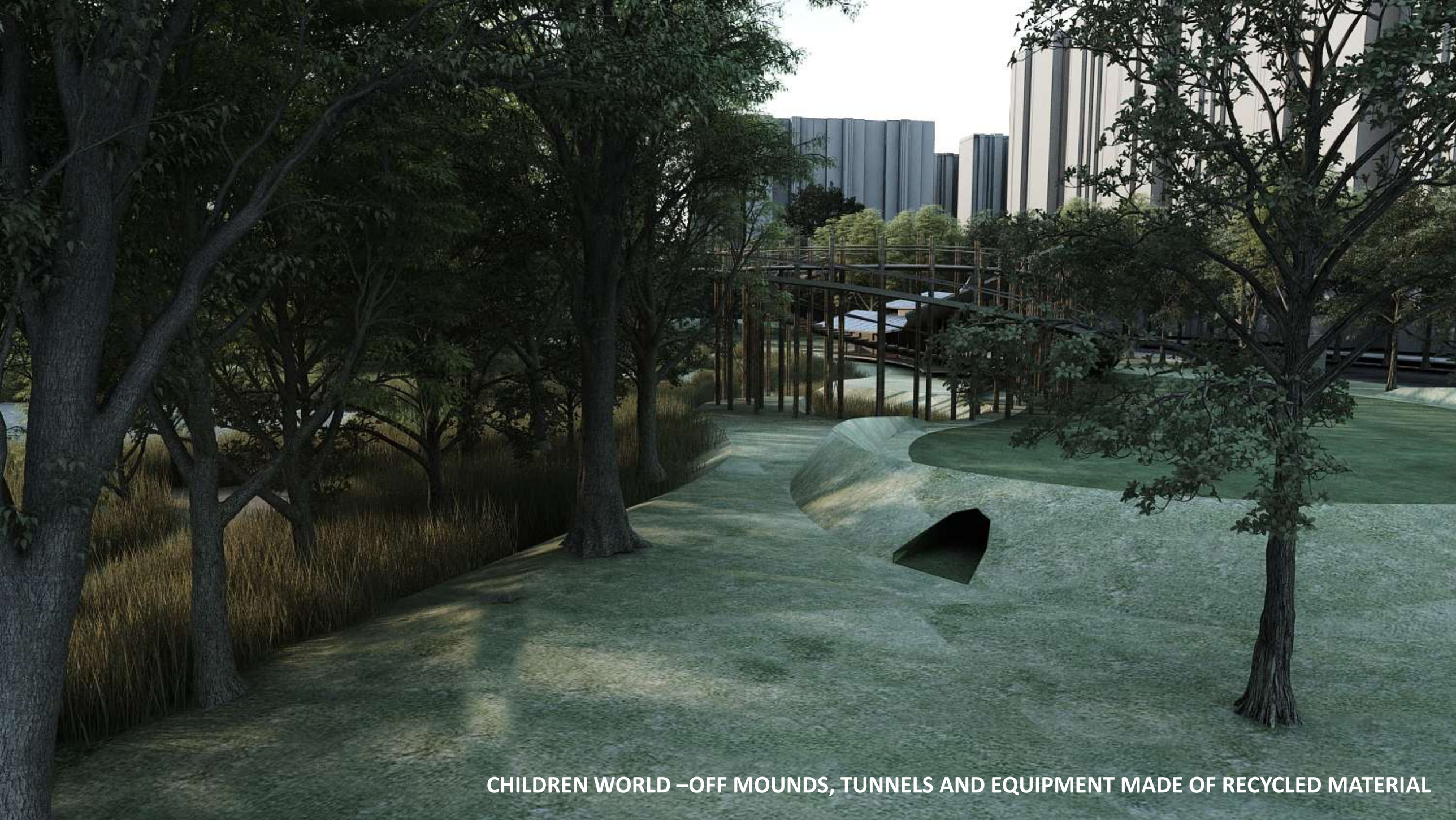
THE MAIDAN IN THE BACKGROUND



ELEVATED VIEWING DECK



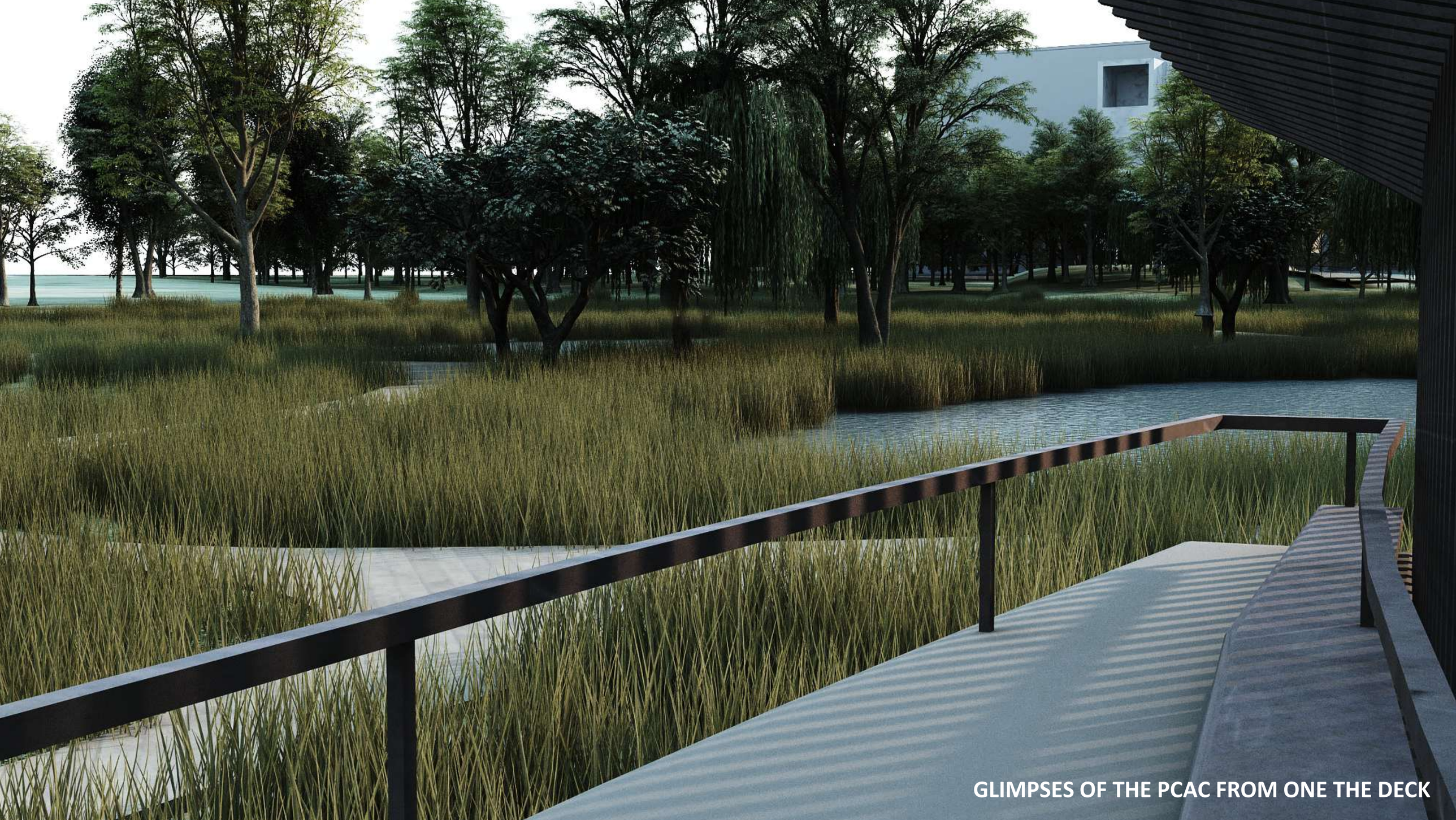
PCAC IN THE BACKDROP



CHILDREN WORLD –OFF MOUNDS, TUNNELS AND EQUIPMENT MADE OF RECYCLED MATERIAL



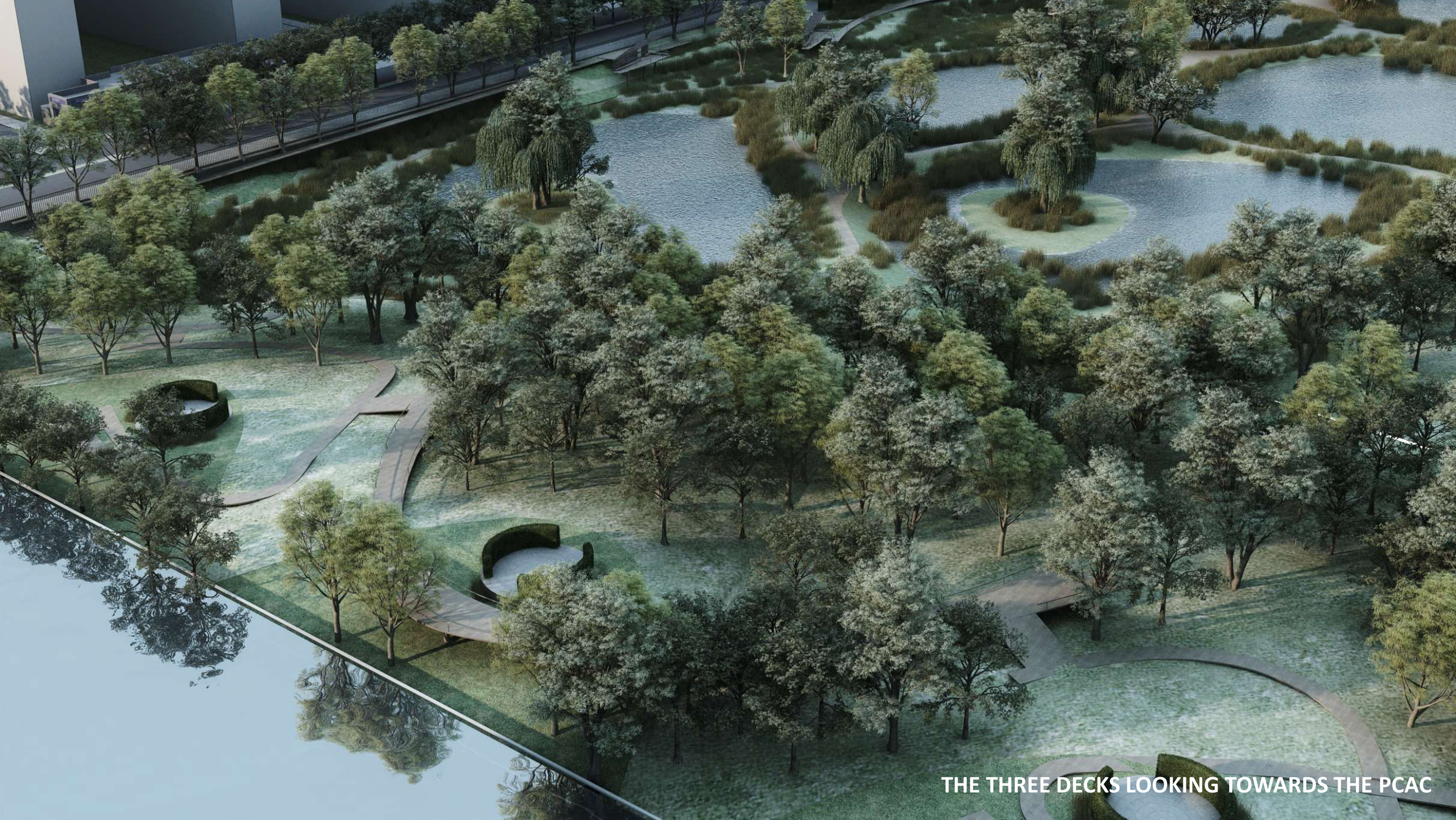
THE WALKWAY ENDS AT THE EXISTING MANGO TREE AND THE MOUND CASCADES TOWARDS IT



GLIMPSES OF THE PCAC FROM ONE THE DECK



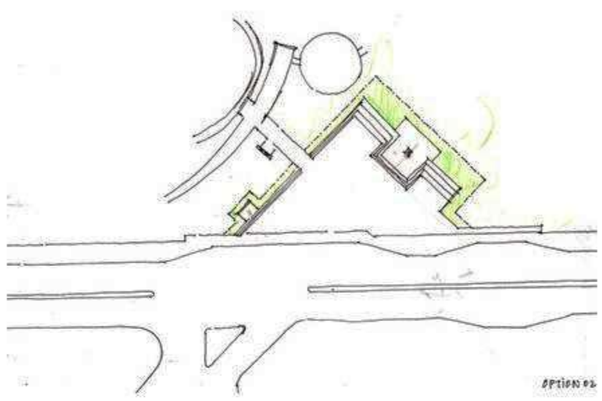
PARK FROM THE WETLAND

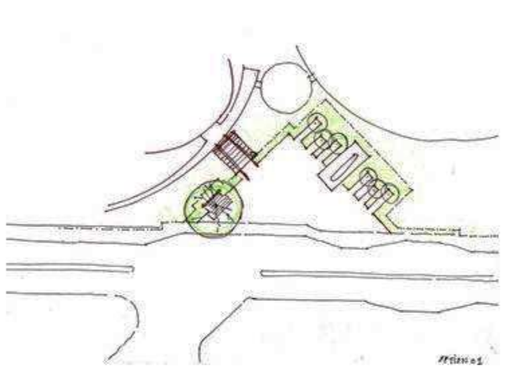


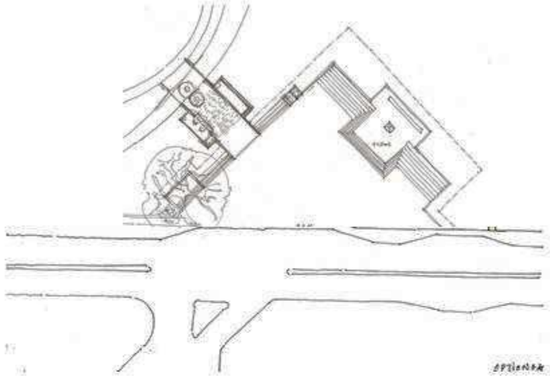
THE THREE DECKS LOOKING TOWARDS THE PCAC

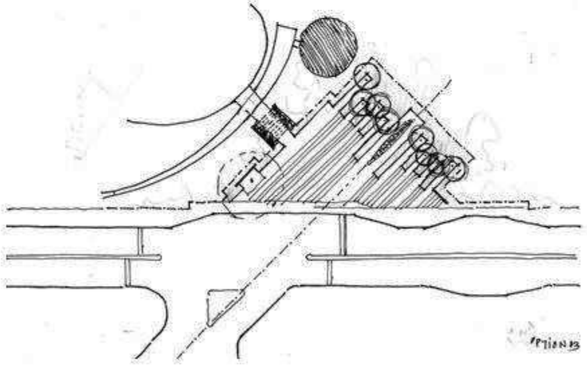
MAKING OF THE DESIGN

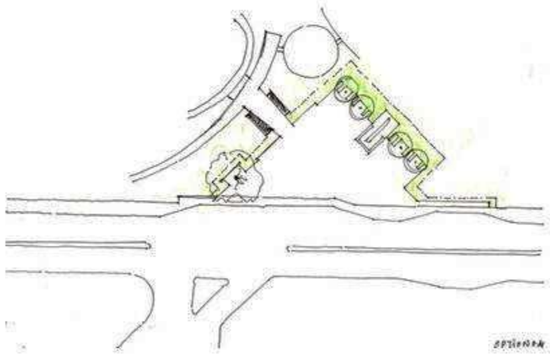
Archive of the Process

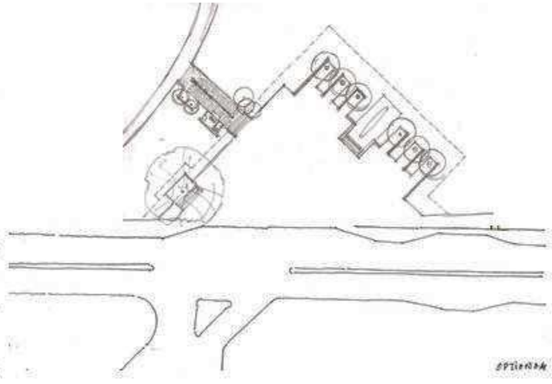


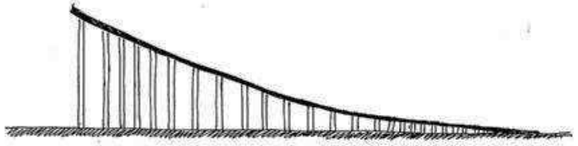






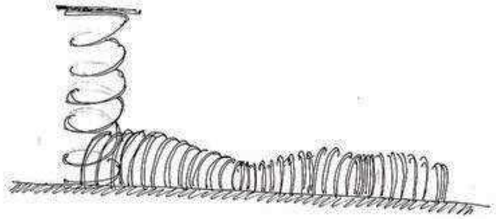




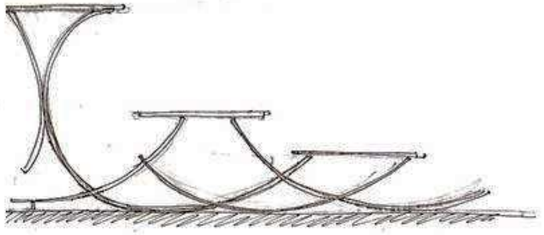


ELEVATION
SCALE - 1:25D

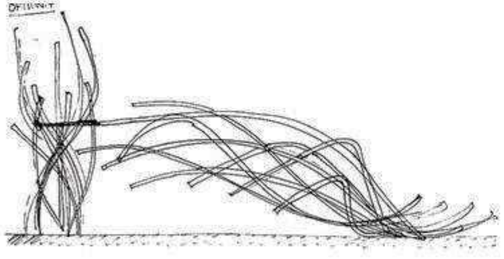
4-JULY-2016



ELEVATION
SCALE- 1:25D

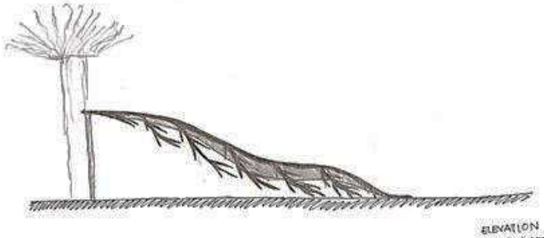


ELEVATION
SCALE- 1:25D



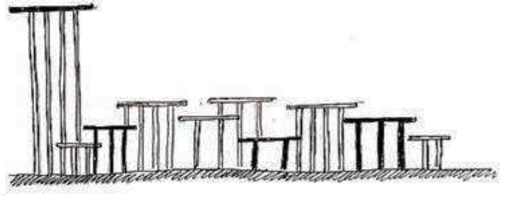
ELEVATION
SCALE - 1:25D

3-JULY-2016



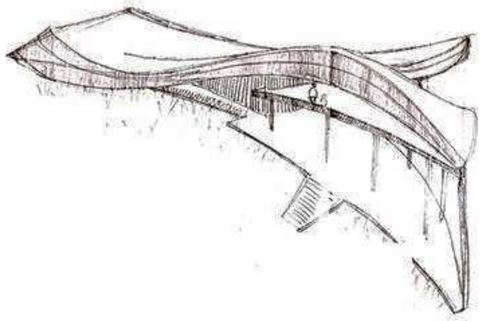
ELEVATION
SCALE- 1:25D

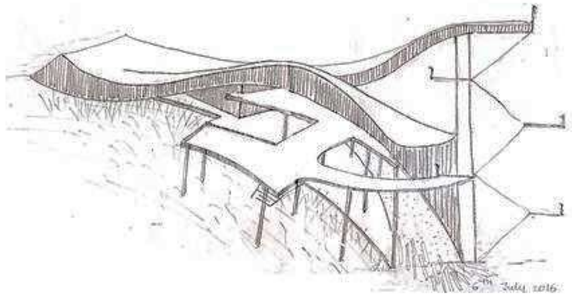
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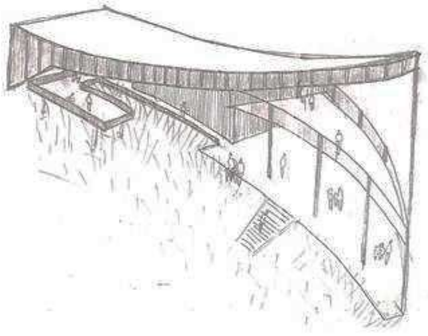


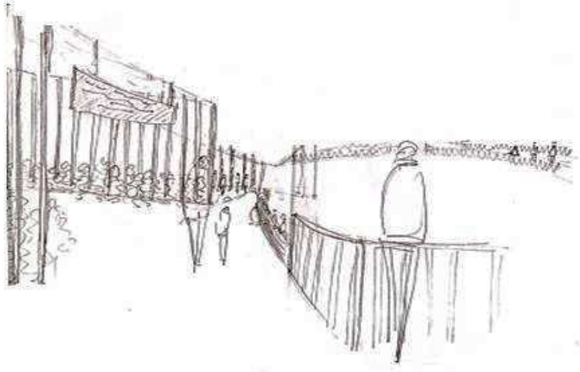
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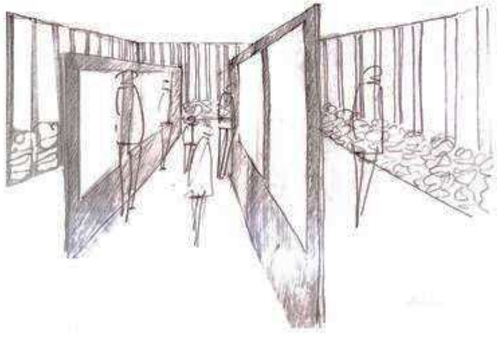
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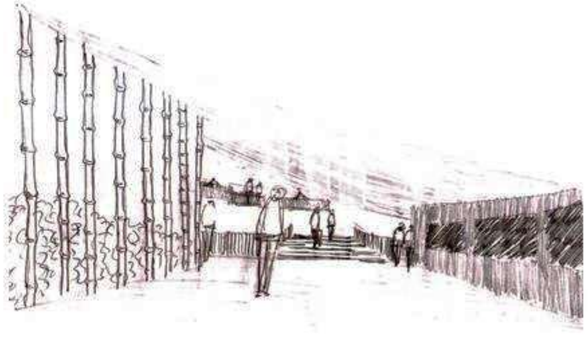


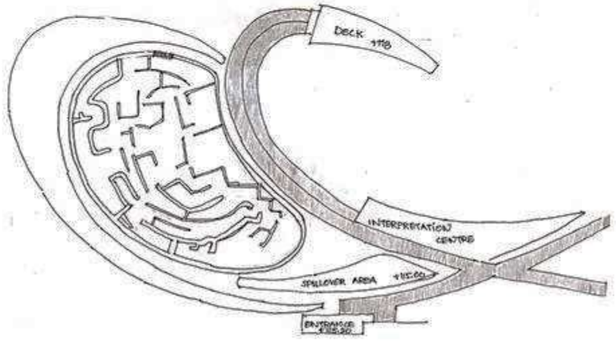


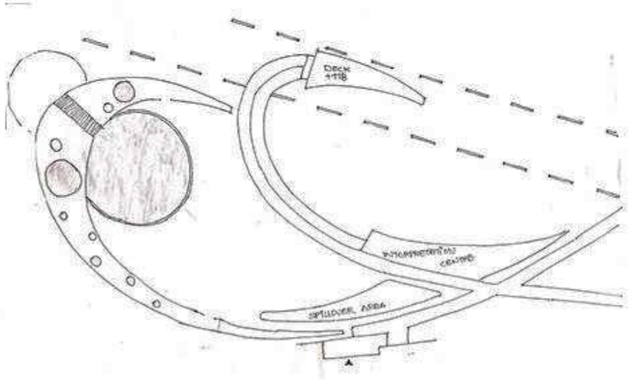


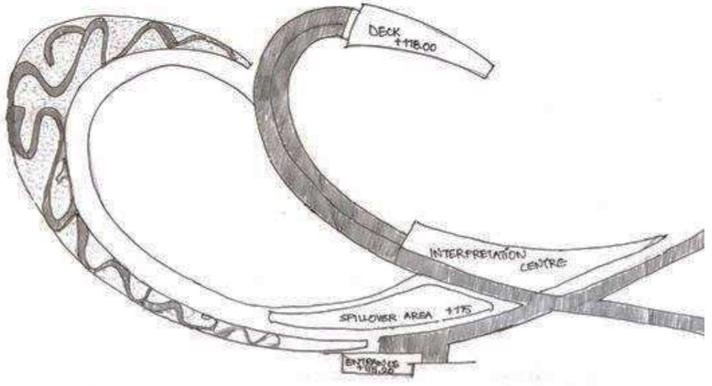


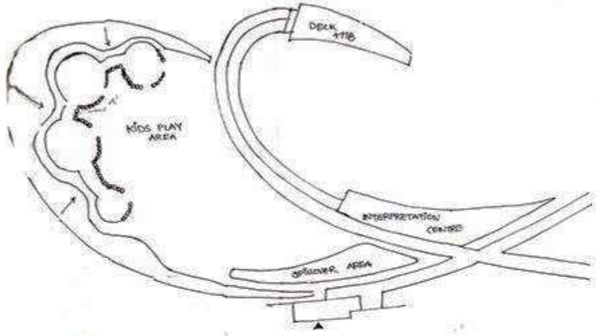


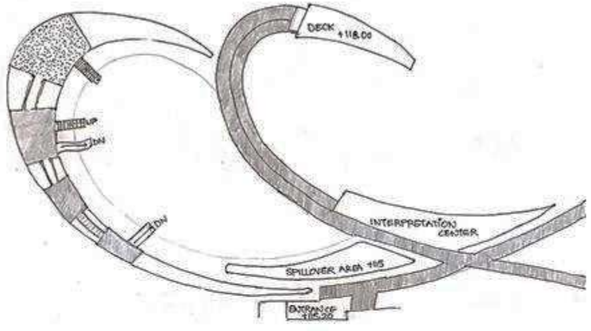


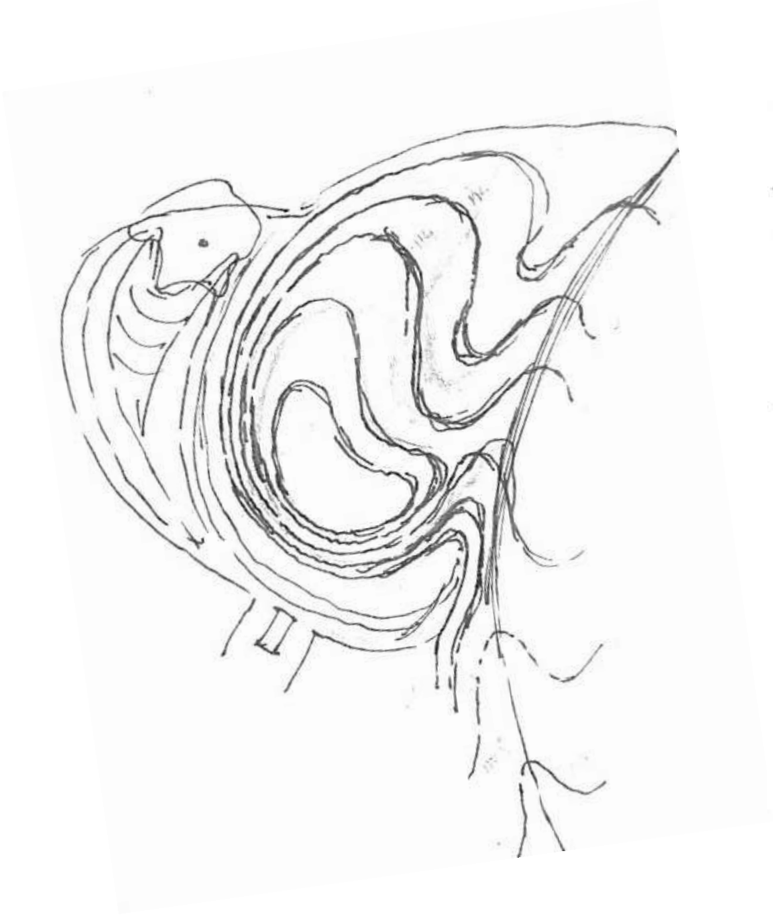

DECK +118
INTERPRETATION CENTRE
SPILLOVER AREA +115.00

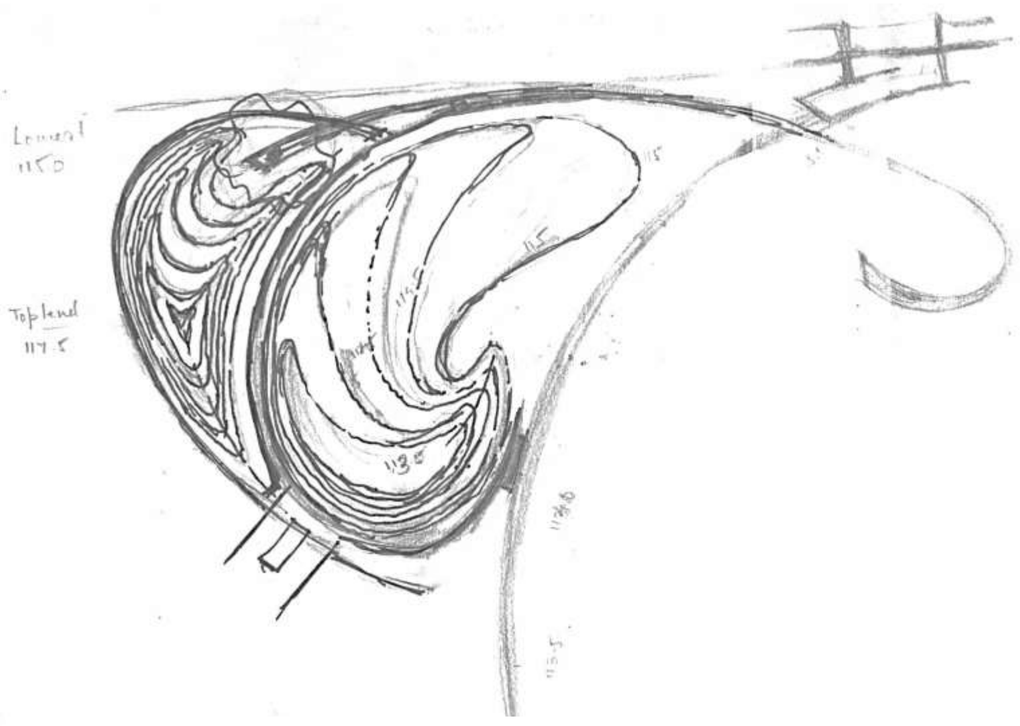

DECK +118
INTERPRETATION CENTRE
SPILLOVER AREA


DECK +118.00
INTERPRETATION CENTRE
SPILLOVER AREA +115


DECK +118
KIDS PLAY AREA
INTERPRETATION CENTRE
SPILLOVER AREA


DECK +118.00
INTERPRETATION CENTRE
SPILLOVER AREA +115




Lowest
115
Top land
117.5
115
113
113.5



JULY 2016