

AMERICAN UNIVERSITY OF BEIRUT
UNDERGRADUATE CAPSTONE PROJECT
IN
LANDSCAPE ARCHITECTURE

SUBMITTAL FORM

THE RISING FALL
(BREAKING THE CYCLE OF MEMORY)

by

RODAN IMAD

LDEM 242 - Advanced Design – 6 Credits

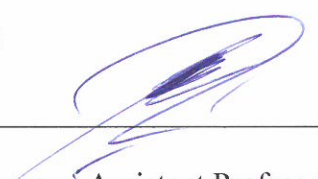
Spring 2015-2016

Capstone Project Coordinator: Yaser Abunnasr

Primary Advisor
Imad Gemayel

Secondary Advisors
Yaser Abunnasr, Mehran Madani

Approved by:



Dr. Yaser Abunnasr, Assistant Professor
Department of Landscape Design and Ecosystem Management

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Souk El Gharb Orphanage

Rodan Imad

Final Year Project 2015-2016

Landscape Architecture

Advisor: Imad Gemayel

The Rising Fall

Breaking the Cycle of Memory Through Landscape Education



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INTRODUCTION

Souk El Gharb Village

It is a village located in the southern hills of Lebanon, known as Mount Lebanon. It is 15km away from Beirut and with an altitude of 750m.

The village is known by many Lebanese as one of the most ancient inhabited places in the country and the one of a few that suffered the most from historic violent conflicts, especially from the Lebanese Civil War of 1975-1990. Over time, the inhabitants of this town have adapted several times to new conditions such as, new coming cultures and the physical character, which was continuously changing from several destructions.

The town originated near by an existing spring that cross the entire village; it immediately expanded becoming the commercial center of Mount Lebanon. The town acquired the name of "Market of the West" becoming the market village of the country between farmers and foreign traders.

Later, the village acquired another reputation, it became known to be the "educational center" of the Middle East, many scholars from around the world arrived to the village and taught in several schools. An example of such is Daniel Bliss, best known as the founder of the Syrian Protestant College, currently known as American University of Beirut. Most of the schools or educational centers, were completely destroyed during the civil war of 1975.

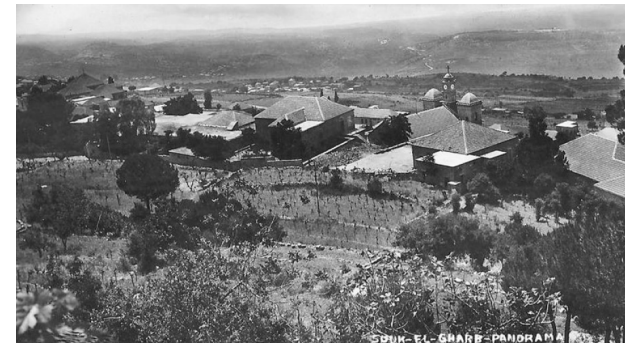


Fig.1 Overview of Village 1926



Fig.2 Old Market (Main Road)

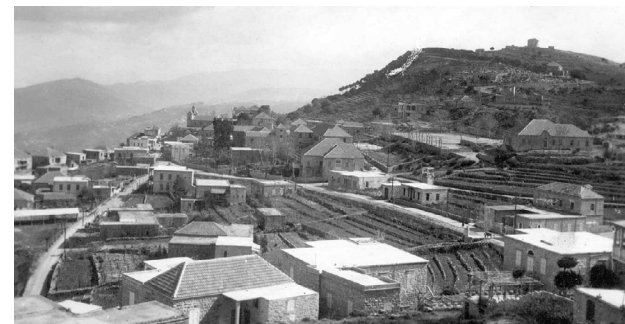


Fig.3 Overview of Village 1930

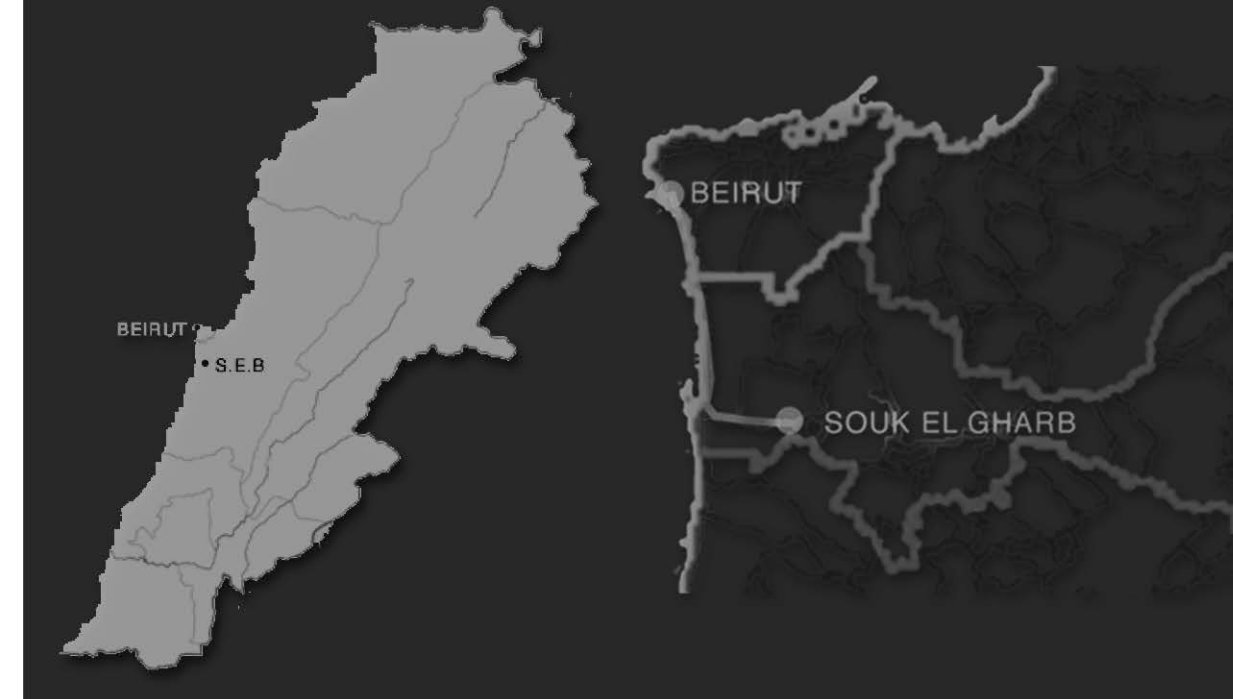


Fig.4 Map of Lebanon

Fig.5 Beirut/S.E.B



Fig.6t Neighbor Towns



Fig.7 Map of the Village



Lies Across Eastern Mediterranean

Some people trace from Sparta, others from locations in Lebanon: Baskinta and Zahle. And others from Assyria.



Church Bell

It was a gift from the Tsar Nicholas II. Destroyed during the Lebanese civil war.



Lebanese Conflict of 1860

Fueled by Ottoman Turkish machination and socioeconomic/religious differences, inter-religious massacres ensued in Lebanon and reaped thousands dead with many cities, towns and villages obliterated 1860 war

The Farmers' Market

A spring near the church and cluster of oak trees became the focal point. The small village grew, farmers and traders from Beirut became to gather.



Overview of the Village



Hotel Hajjar



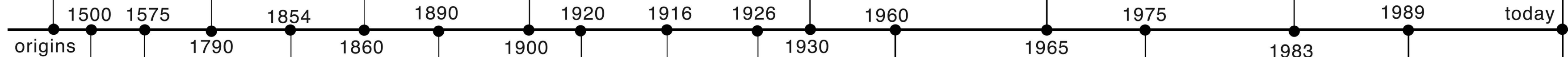
Palestinian Orphanage School

The school was built, for the locals, then during the Israel-Palestine crisis, many refugee children were brought to the school and it became an orphanage.



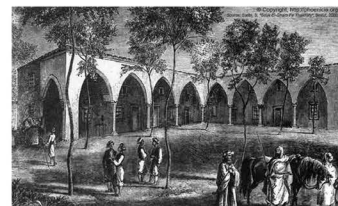
Battle of Souk El Gharb

Lebanese Army acted as blocking force in Souk El Gharb, from the militia pass to the presidential palace in Baabda. Hotel Hajjar was one of the first buildings to be damaged and later till today is used as a military vigilance base



St. George Abbey Church and Monastery

The church was founded, by an ennumerical patriarch appointed from Constantinople. Community started growing around the church



The Market (main road)

Armenian Settlements

Movement to Souk El Gharb due to the outbreak of World War I and the Armenian genocide.



The Market (church)



The Village (church)

Souk El Gharb High School

The school was renamed to Souk El Gharb Academic and Technical Institute. Destroyed during the civil war. The land is currently occupied by the University of Balamand.



Lebanese Civil War Began



Palestinian Orphanage Bombed

The school was one of the buildings mostly damaged and still standing. The location of the building was very strategic since it overlooks all of the lower villages and Beirut. Non of the children in the school died, when the war started the building was abandoned and became a battlefield.

Owner of the Land



The Haunted Fortress

It was nearby the high school, and from residents narratives it was constructed during the Byzantine empire for burials.

Souk El Gharb High School

It was one of the largest school of the middle east.

This helped promote the community from a village to a town and, consequently, it gained fame and reputation in the country and the Middle East, as a center for education.

Fig.8 Village Timeline

The Orphanage

The village of Souk El Gharb founded many schools over time, but most of them became destroyed during a sequence of civil wars in Lebanon, leaving behind the Palestinian Orphanage School alone which is still standing today.

The school suffered multiple rejections from the village upon its construction, even today. The orphanage was funded by Palestinian Arab Women's Union in Lebanon on the 15th of April in 1957 and remained unique in supervision until 1970 when it began with the Foundation of Social Affairs which cared families of martyrs and prisoners of the Palestinian National Liberation Movement (PLO).

The orphanage housed approximately eight hundred children ranged from four years old to eighteen.

The majority of the children were orphans whose parents were victims of the Revolution War in Palestine; some of them Lebanese Orphans too. The school had a well planned education and vast spaces for accomodation.

The school and the kindergarten split in two main branches: the branch of theoretical education which teaches the curriculum adopted by the Ministry of National Education and Fine Arts in Lebanon, in addition to private lessons on the history of the geography of Palestine, and the branch of vocational education, which included sections to teach various crafts.

The school provided all tools, equipment, devices and laboratories in order to attain the goals set for the school at various levels of science, culture, and sociology.

The school was named "the childhood happiness orphanage" after its foundation. The main goal was to improve the health of children who were coming from devastated situations. In 1967 the name changed to "the house of childhood happiness," removing the word "orphanage."

Others went back to Palestine and settled at a new School of Jerusalem, which opened in 1968. Some of them stayed in refugee camps in Lebanon. The orphanage was later taken over by the Phalange Party, and it became the battle field and strategic point of the Civil War in Mount Lebanon. During the war the site was bordered with landmines for no one to access it. Today, many of these landmines were found and removed, but some are still there. The school remains and is remembered as a symbol of war rather than a symbol of education in Souk El Gharb

Academics and vocations included:

- carpentry
- medicine
- outdoor games-singing-fieldtrips-theater plays
- painting
- science

The orphanage stopped working after the Israeli invasion of Lebanon in 1982 and many children went to Tunisia, Denmark and Syria. The Phalange political party took over the school, and it became the landmark of war in Souk El Gharb. Approximately 150 men were killed inside.



Fig. 9 Landmarks



Fig. 10 Contextual Map

PROBLEMATIC & PROJECT STATEMENT

Project Statement

This project examines how the landscape and its elements themselves can serve as a mean of education, reconciliation, and remembrance as well, for the many tragedies resulting from the Civil Wars in Souk El Gharb. It will reflect the identity of the town as it once was known as the educational center of the Middle East. This project will be focused on a ruined Palestinian Orphanage building and its surroundings located in the same town, which passed through different sequence of events. The future design will propose how the long-term and short term process of healing and regeneration of this place can be manifested through environmental criterias, and thus at the same time a memorial landscape for children from any part in Lebanon and for the community of Souk El Gharb.

Problematic

Today the “orphanage” remains the only educational shadow from what Souk El Gharb used to be known for. Ironically, due to the several rejections and political clashed that it produced in the past, it is the only one from the schools standing. Nowadays, this acropolis of Souk El Gharb is completely abandoned, is known as a landmark in the area and “the school of the palestinians.” The site is monitored by villagers around the area and the owner’s helper. Many people are prohibited to access the area, since it could cause some political tension in terms of ownership.

In November 11th 2015, the Palestinians gathered again to remember what is used be their home. This issue brought some tension between Palestinian representatives and the landowner.

The site could serve as a potential for the first “park” or “public space” in the area of Mount Lebanon.

ROOF

UPPER ZONE

CENTER ZONE

LOWER ZONE



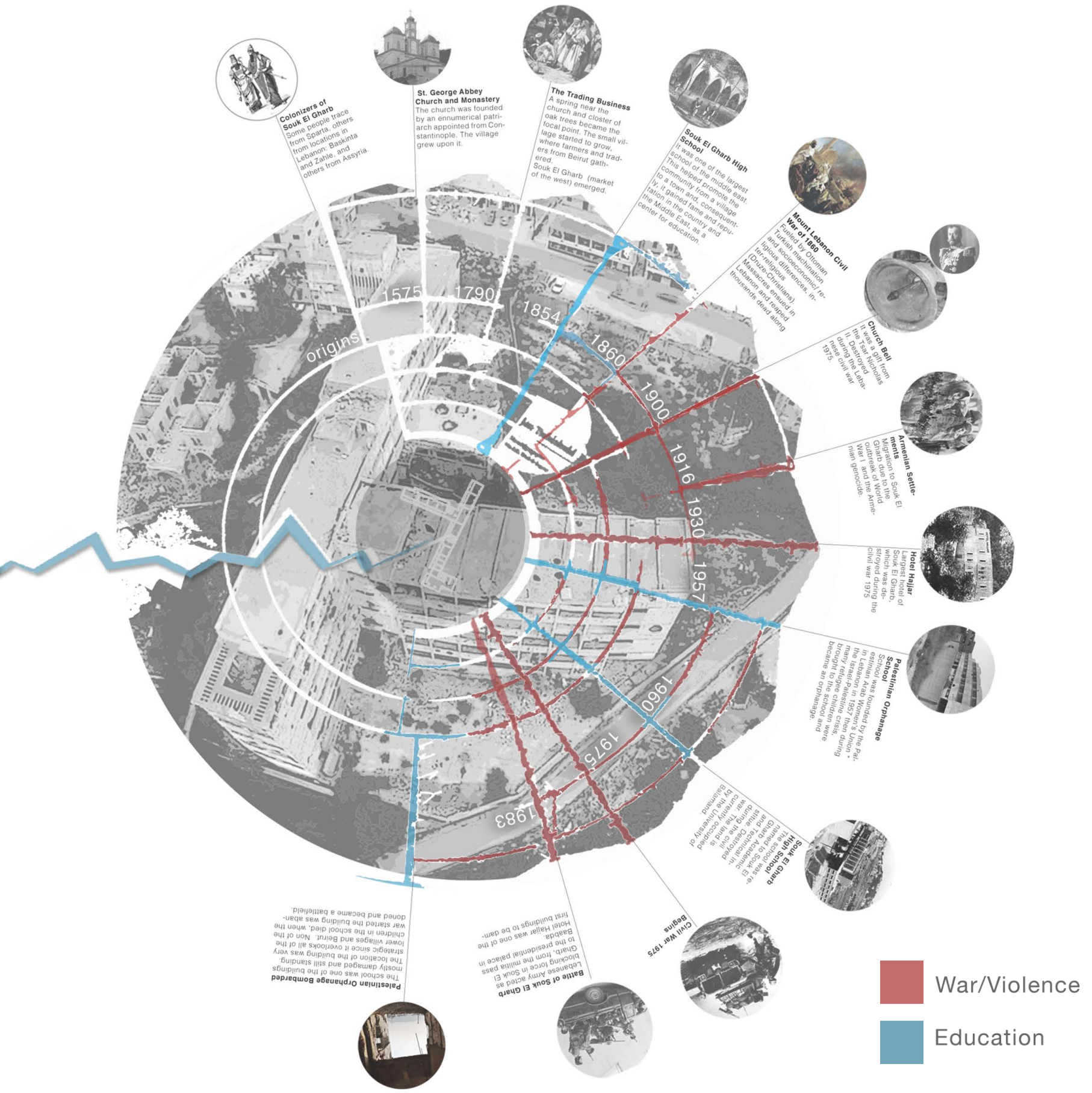


Fig. 11 Cycle of Memory

THEORITICAL UNDERSTANDING

Deconstructionism Theory

“Deconstructivism tends to produce a sense of dislocation both within the forms of projects and between the forms and their contexts. By breaking continuity, disturbing relationships between interior and exterior, fracturing connections between exterior and context, Deconstructivism undermines conventional notions of harmony, unity, and apparent stability. However, Deconstructivism is hardly a new movement, nor is it a coherent stylistic development agreed upon by some independent architects: rather it perhaps exposes the unfamiliar and the disturbing by means of deformity, distortion, fragmentation, and the awkward superimposition of jarring, disparate grids. If Deconstructivism took Russian Constructivism as its starting-point, Deconstructivism was linked to the theories of Jacques Derrida (1930–2004), and presupposed that, if architecture were a language, it was therefore capable of communicating meaning, and of receiving treatment by methods of linguistic philosophy: that raises certain difficulties, as it is arguable if late C20 and early C21 architecture possesses any claims to a vocabulary, let alone a language.”

“Nevertheless, some (e.g. Jencks) have claimed Deconstructivism as a new paradigm, but others have questioned the wisdom of pursuing this, mindful of the impact it is having on the built environment and on future generations of architects: those who are concerned about the legacy of Deconstructivism have perceived it as fundamentally destructive, because of its rejection of all that went before and its complete failure to provide any clear values as replacements. Indeed, Deconstructivism has been seen as intentional aggression on human senses, abusing perceptive mechanisms in order to generate anxiety and discomfort. If this is a new paradigm, it could be cause for even deeper concern.”

<http://www.encyclopedia.com/doc/1O1-Deconstructivism.html>

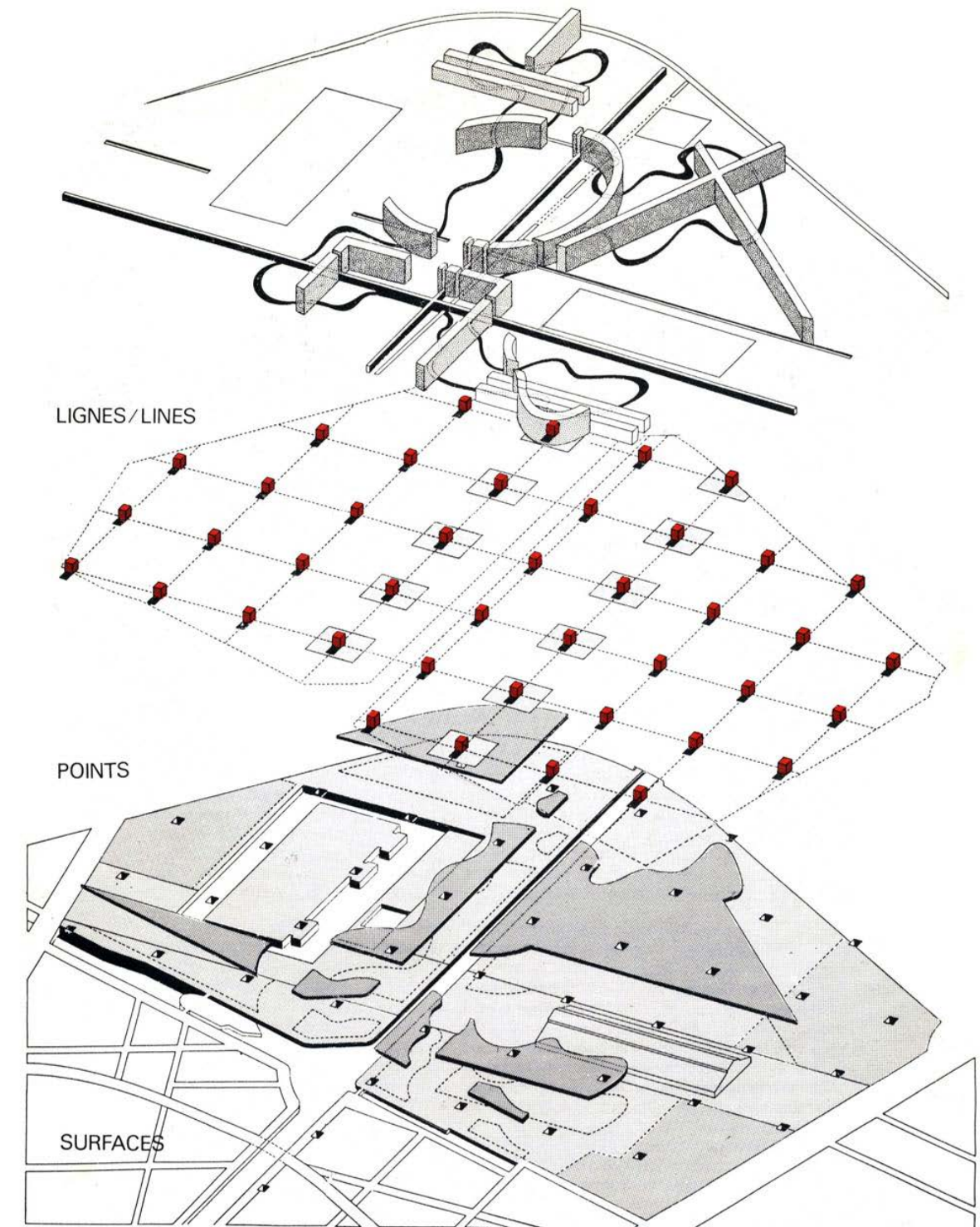


Fig. 12 Theoretical Model

Parc de la Villette- Rem Koolhaas

CASE STUDIES

rodan Imad |
 oct 22.2015 |

landscape architect: VMDO Architects

approach and theory:

acknowledging the relationship between human endeavors and global climate change, a problem with grave implications for this and future generations. Sustainable approach is the key element when designing, always taking into consideration, ecological studies, energy conservation, water management, and durability.

size/area: 12,235m²

project problematic/strategy:

the site was chosen in the middle of a forest and in an abandoned parking lot next to an old elementary school because of the many infra-structure, site development, and transportation efficiencies it offered. In addition, the campus site was embedded within a residential neighborhood, enabling the school system to implement a system of walking stops and bike trains for neighborhood children.

design approach/principles:

> analyzing the relationships between indoors and outdoors, school and community, ecology and culture.

> making each member of the community and school to be knowledgeable, responsible and creative when inhabiting the site.

> making the entire space physically educational, from buildings to the outer space.

design elements:

> ecological designs

> water harvesting & management

> sun direction

> air circulation

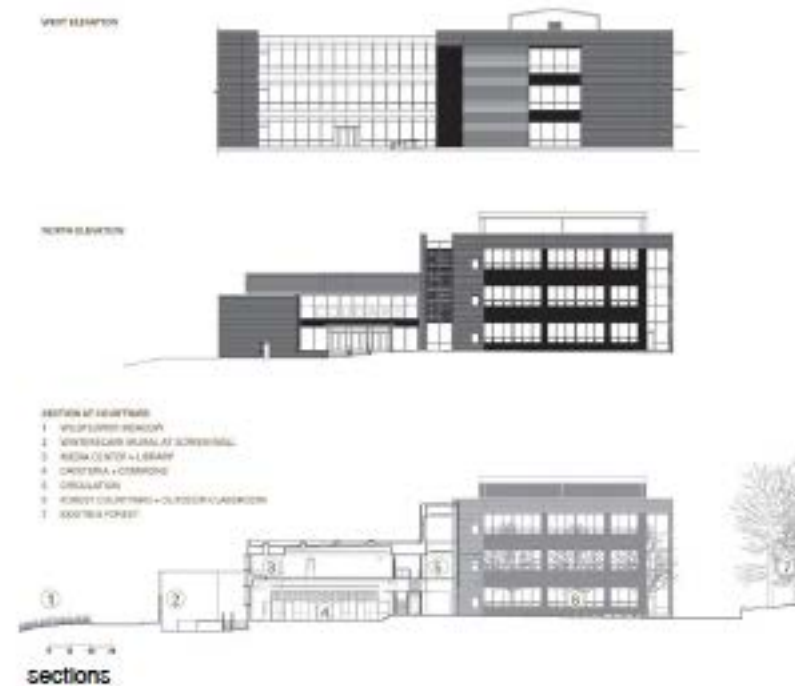
> tree relocations

users: community, teachers, children

client: manassas park district



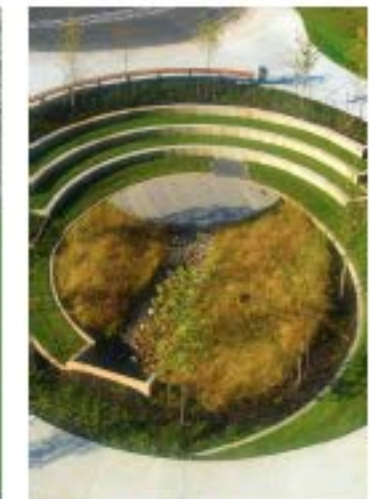
master plan



sections



water management

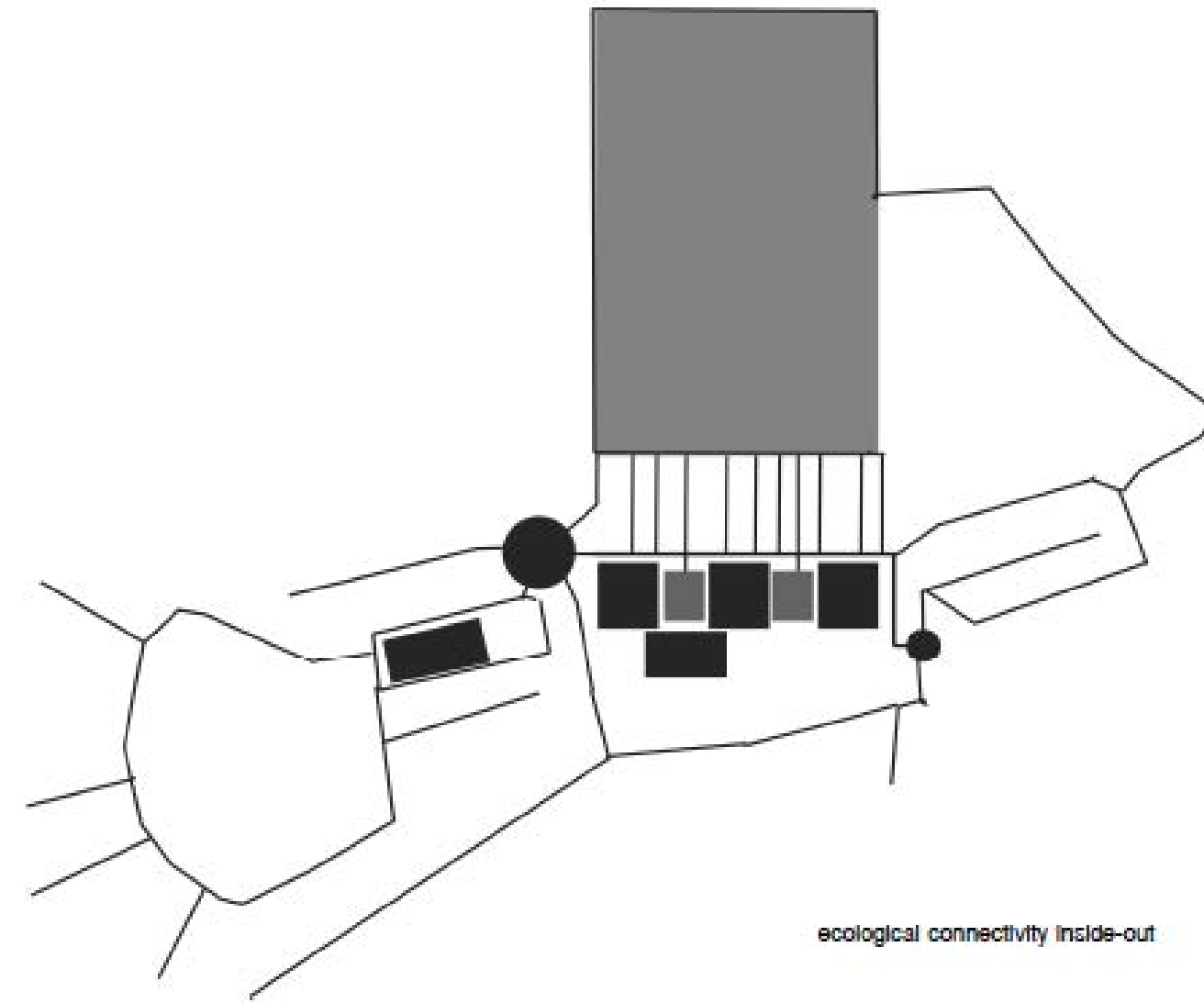
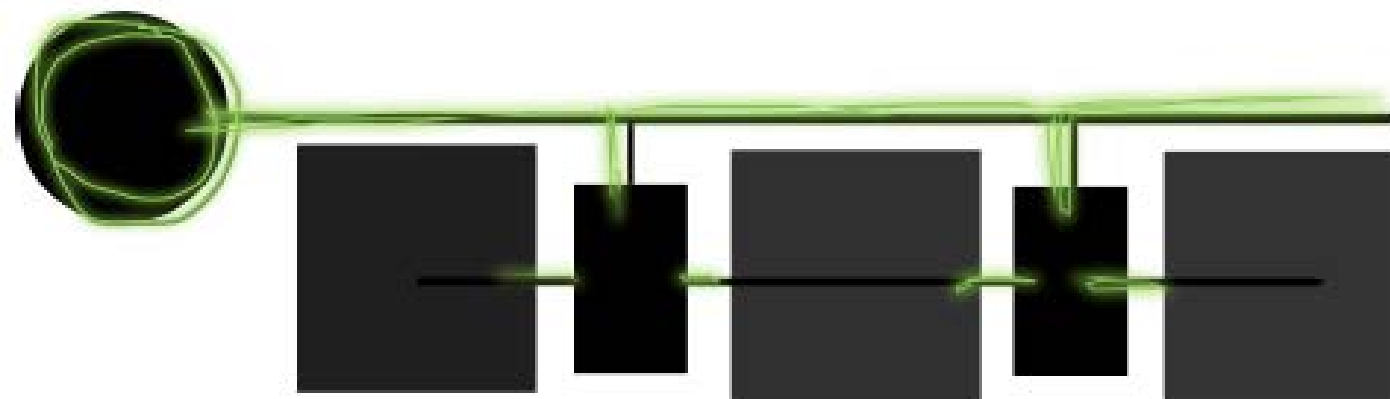


bioretention garden

Fig.13 Case Study 1



buildings according to seasons



ecological connectivity inside-out

children automatically follow traces and ecological chains from inside the building to the outside



Fig.14 Case Study 1.1

rodan imad |
oct 22.2015 |

landscape architect: PWP landscape architecture

approach and theory:
factors such as climates, topography, geographic locations, and history defines the character the projects.

size/area: 5,600m²

project problematic/strategy:
the site was chosen in an open space in Hyde Park, London. The main strategy and challenge for this project, was to physically reflect Princess Diana's character and qualities, through elements in nature, such as water, texture, movement, topography, and context.

design approach/principles:
it began with the designers' first model of the Memorial and their description of the complex textures, patterns and water features on its surface that would make the water tumble, cascade, curl and bubble as it ran its course. It also involved the development of the hydraulic design of the various water jets in collaboration with Arup engineers. The challenge was to make this vision into a technically deliverable programme of work.

design elements:

- > water flow
- > topography (creating water flow)
- > different textures unmoveable granite
- > pathways
- > symbolic trees

users: (mostly children)

client: (competition)

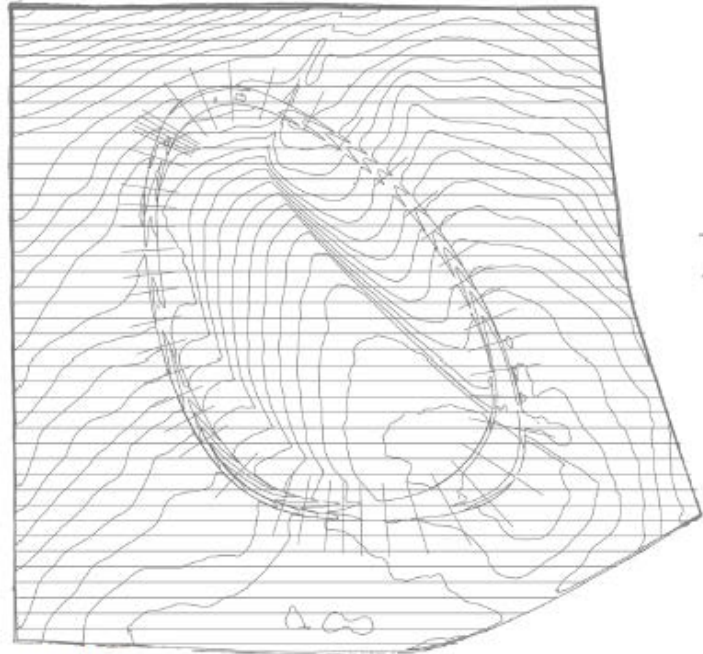


mass plan



textures

Fig.15 Case Study 2



contour lines

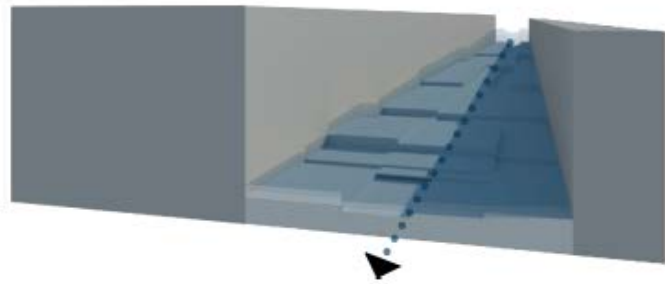
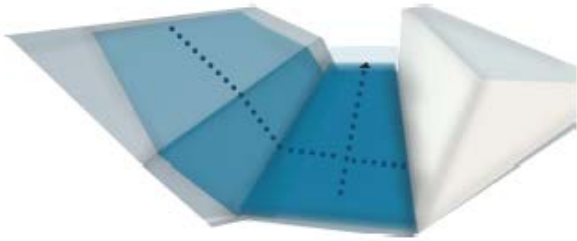
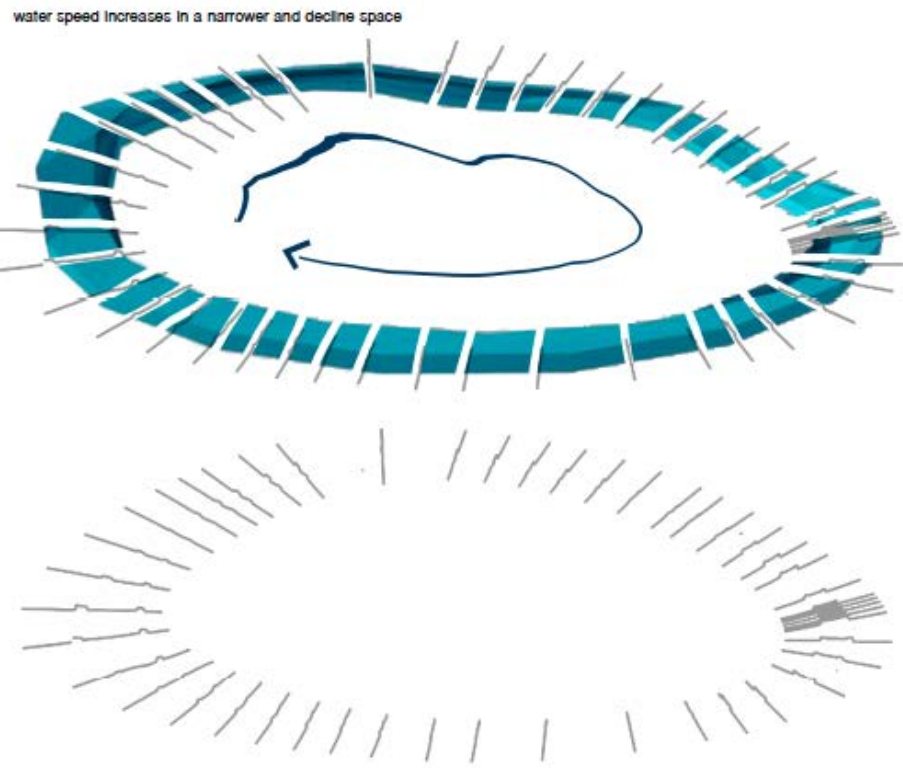


Fig.16 Case Study 2.1

rodan imad
oct 22.2015

landscape architect: PWP landscape architecture

approach and theory:

design process combines knowledge of history and tradition with fluency in contemporary landscape debate.

size/area: 33,492m²

project problematic/strategy:

the National September 11th Memorial commemorates the victims of the attacks at the Pentagon, at Shanksville, Pennsylvania, and at the World Trade Center site, both on September 11, 2001, and February 26, 1993. Two gigantic voids – in the footprints of the Twin Towers – and a surrounding forest of oak trees form the core of the rebuilt World Trade Center in New York City and provide a place for contemplation and remembrance within this revitalized urban center.

design approach/principles:

The PWP design process involves studying projects in a variety of scales and media. For the Memorial, large models were integral to establishing the scale, alignments, and relationships within the plaza. Significant elements/characteristics from the two towers were extracted for part of the design, such as the buildings.

design elements:

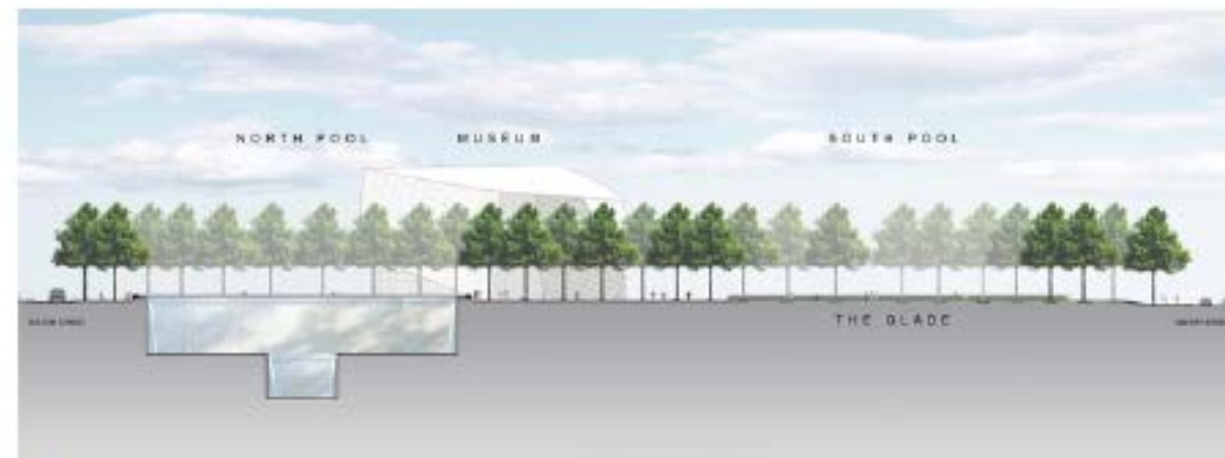
within the Memorial grove, the varying distances between trees, the placement of benches, and the rhythm of ground-cover beds will create spaces with distinct scale, character, and qualities of light.

users: anyone

client: (competition) National September 11 Memorial & Museum



aerial model



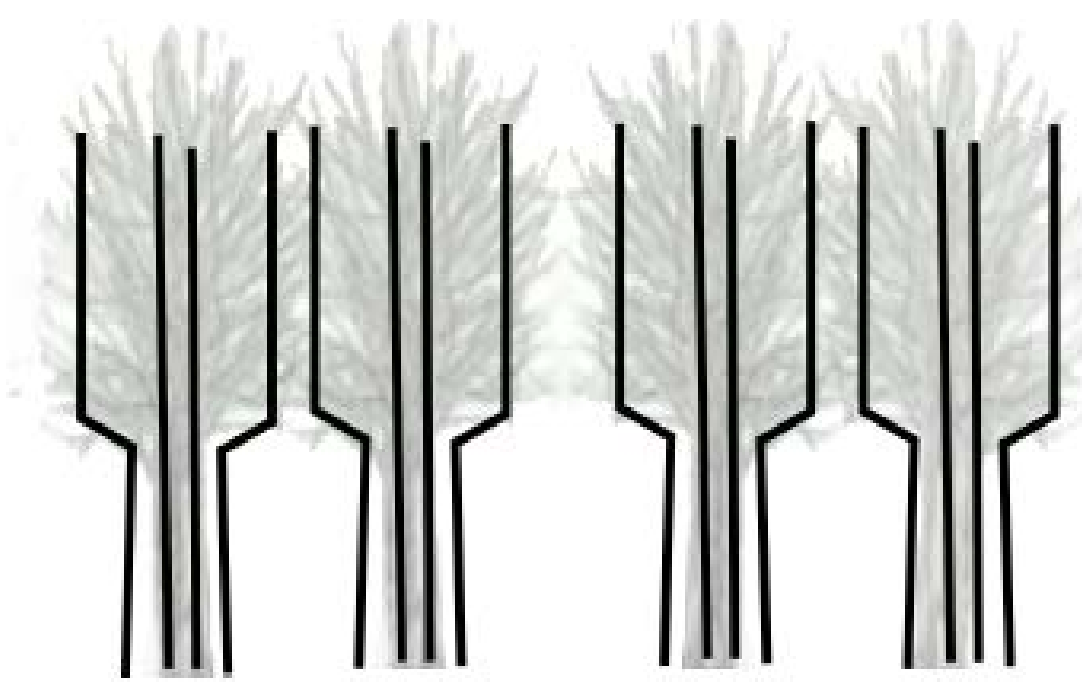
section



Fig. 17 Case Study 3



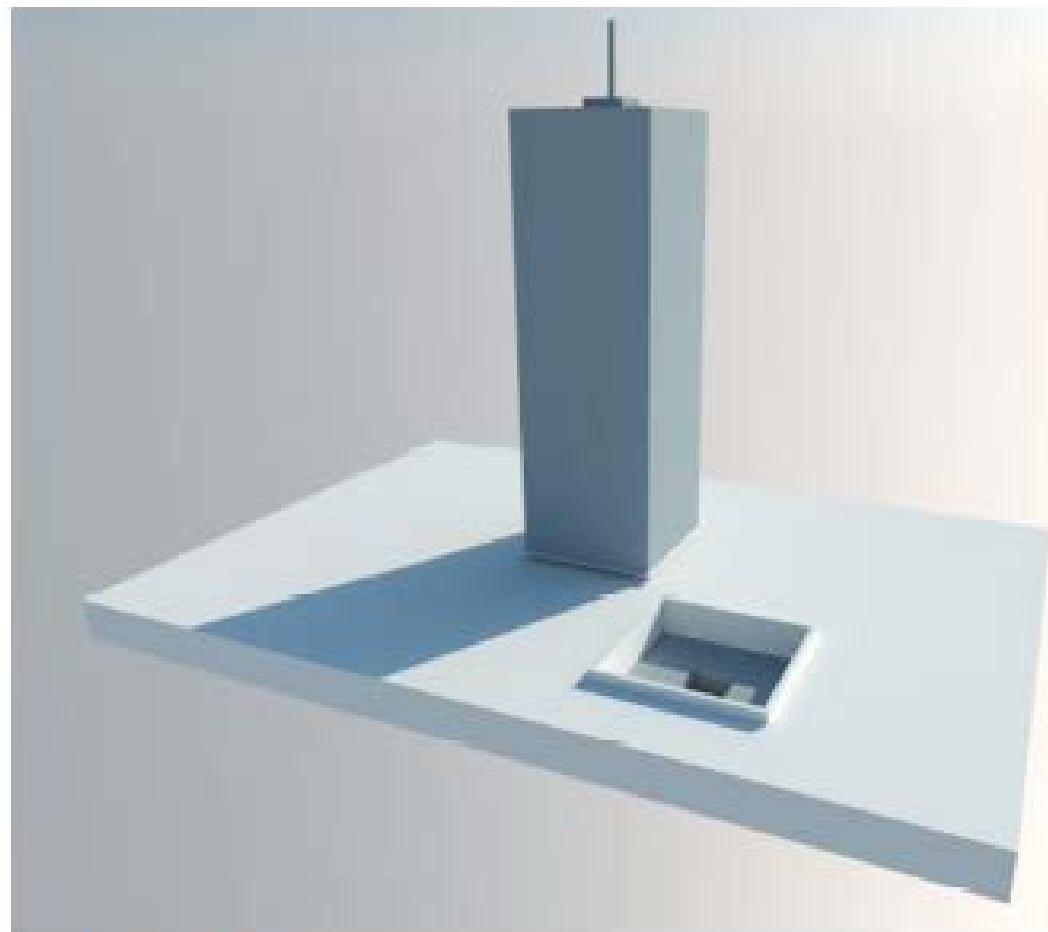
tower's facade



representing it through trees



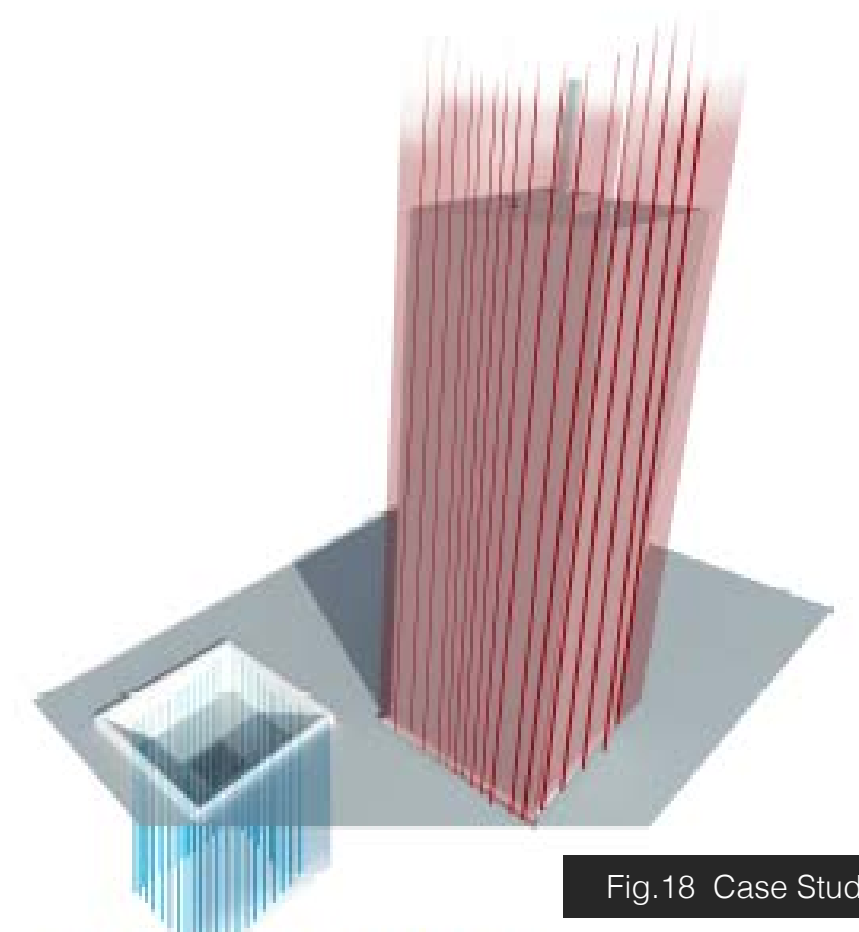
oak trees



tower / tower footprint

The voids render absence visible. In this way, the overwhelming losses of September 11th are given permanent presence. Within the protected space of the forest, visitors will arrive at the two great voids with their thundering waterfalls. After viewing the victims' names on the bronze parapets of the voids, visitors will move back to the city through the trees and take comfort from the soothing, life-affirming forest.

The recessed pools are set within the footprints of the Twin Towers. A cascade of water that describes the perimeter of each square feeds the pools with a continuous stream.



negativity/positivity in terms of dimensions

Fig.18 Case Study 3.1

rodan imad |
oct 22, 2015

landscape architect: MARI

approach and theory:
factors such as climates, topography, geographic locations, and history defines the character of the project.

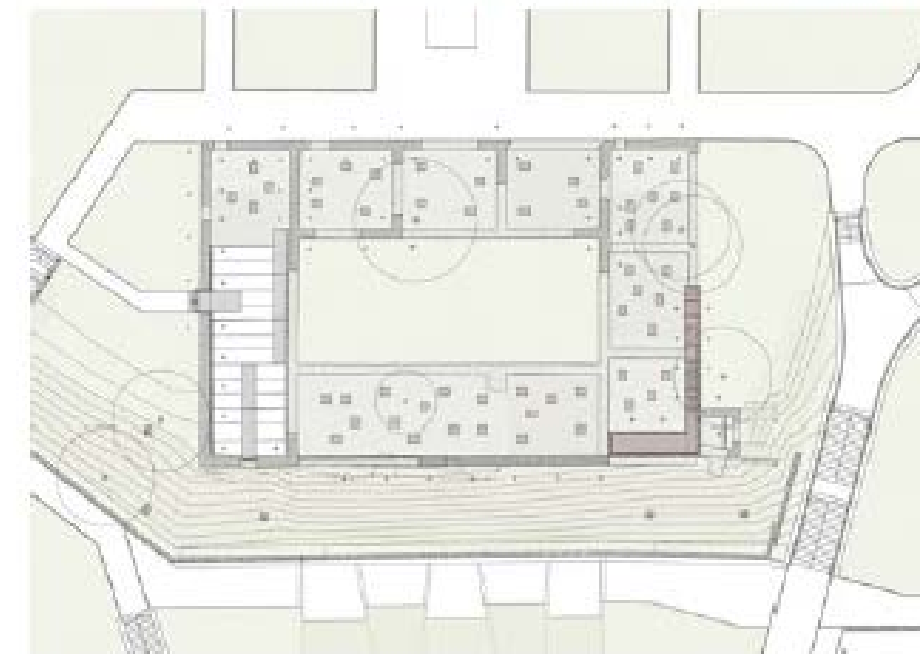
size/area: 1,040m²

project problematic/strategy:
The L-shaped structure is part of a renovation of the ancient site in the city of Pécs, Hungary, which was almost completely destroyed. The architects stabilised the site and added new elements, including the lookout point, a low-level stage for open-air theatre and Corten steel seating blocks.

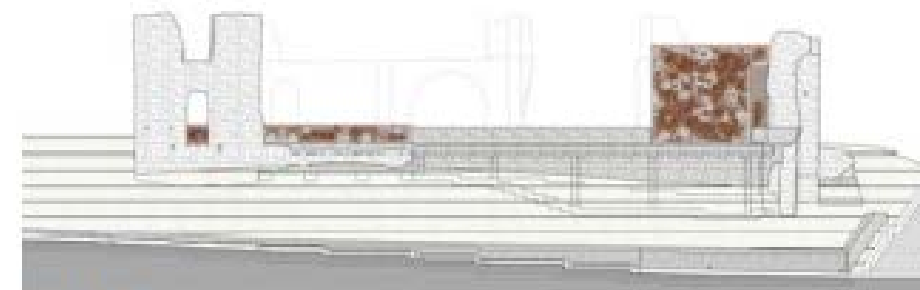
design approach/principles:
We chose Corten steel as the primary material of our intervention to make the new structures significantly distinguishable from the older parts," architect Márton Dévényi told Dezeen. "The old remaining structures had been so incomplete for centuries that we did not want to rebuild them, we preferred to show their absence

client: City of Pécs

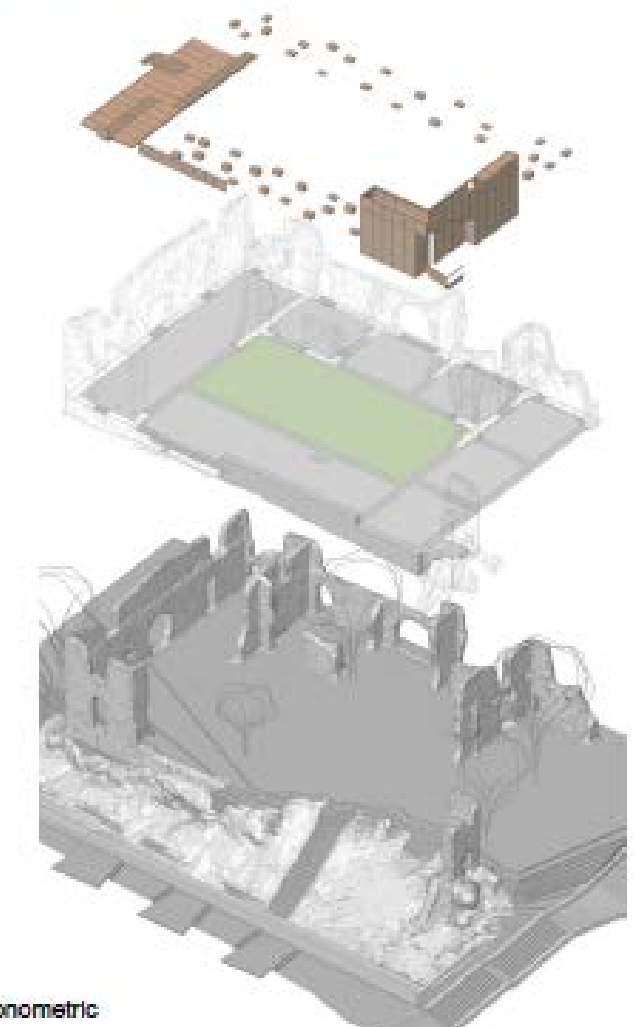
users:



plan



section



axonometric

Fig.19 Case Study 4

rodan imad |
 oct 22.2015

landscape architect: Shale Experience Park

approach and theory:

Integrating urban hydrology, environmental engineering, landscape architecture and art within an urban context, a goal to promote sustainable projects with a high aesthetic and social value with a particular focus on water.

size/area: 10,000m²

project problematic/strategy:

agricultural land is being restored and a new park is being created, adding sustainable value for people and nature. Instead of clearing away the remnants of the extraction of resources left there, the site is given back to residents and visitors as a nature theme park and event setting.

design approach/principles:

The water of the lake is treated in soil filters; rainwater is collected from the park to replenish the lake, as well as the operation of a water playground. Following the planning of the lake, key elements of the park were designed, like the Knock-Plaza as well as the Lake-Plaza as a central space, where the construction of a catering- and operations building was driven. The main idea for the implementation of the shale experience park is a combination of industrial character with a site-specific design.

users: mainly for children

client: Holcim (Süddeutschland) GmbH



SITE INVENTORY & ANALYSIS



The site has an area of 8,000 sq.m

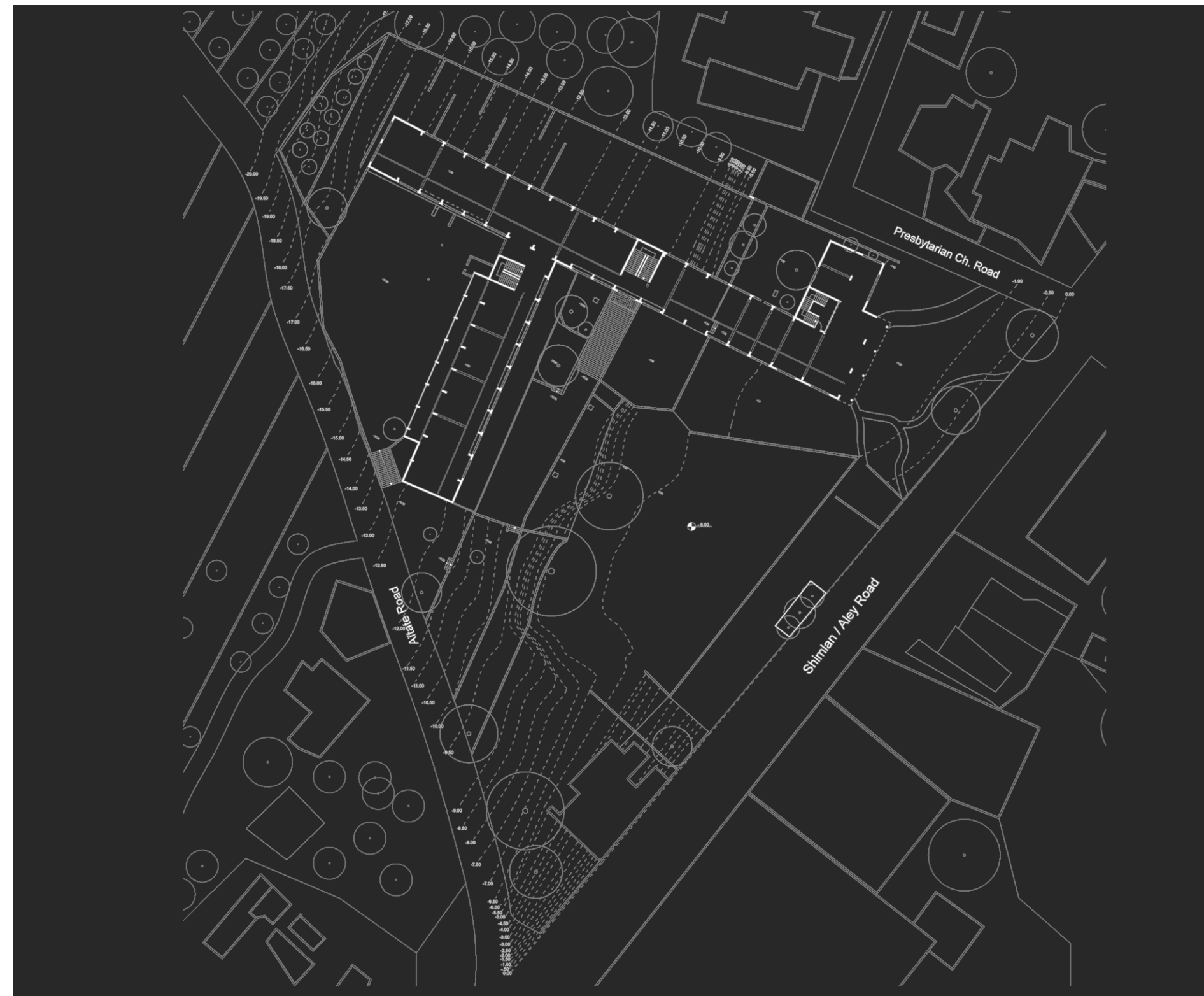


Fig. 22 Base Map of Site

Each level was named after an important region in Palestine; as a form of learning strategy for geography studies for children. Each one had different uses, some for dormitories, for laboratories, others for classrooms, and one for an amphitheater.

roof
Bethlehem

level 2
Nazareth

level 1
Jerusalem

ground level
Nabes

levels -1,-2,-3
Haifa
Akka
Jaffa

basement
Ramallah

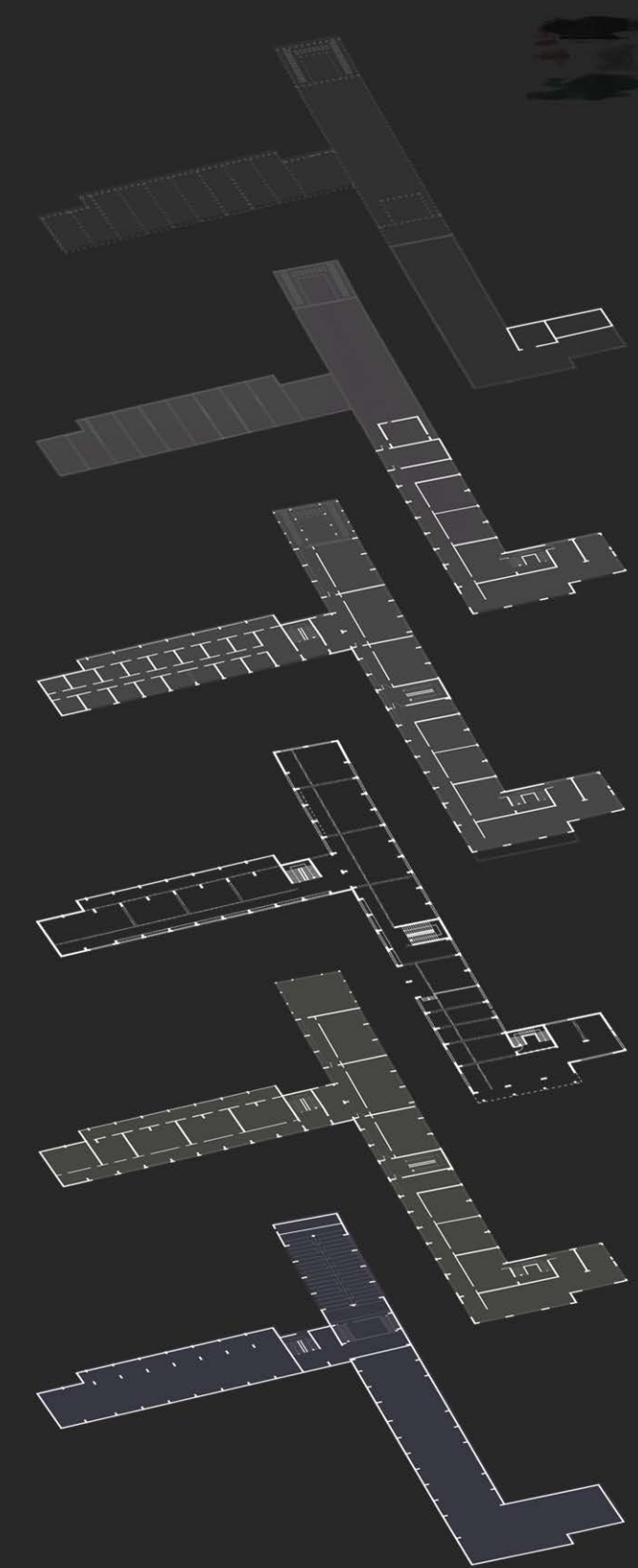


Fig. 23 Floor Levels

The topography of the site is very complex, the differences in levels are huge, and there are rarely smooth changes in slopes. Most of the open spaces are not flat, they are shaped through several inconsistent levels. In this case water is the major issue, the flow is always constant and damaging, it creates a lot of erosion, and it floods one building floor.

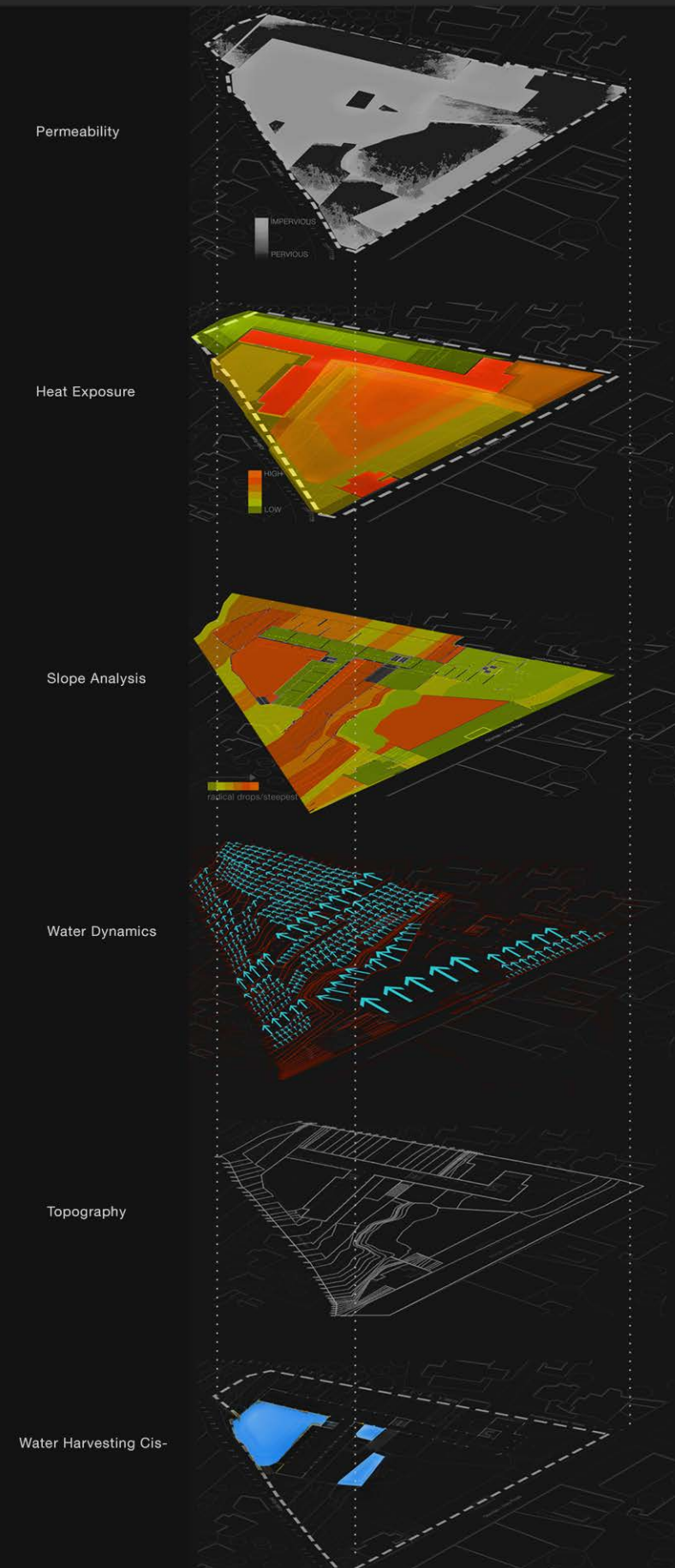
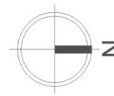
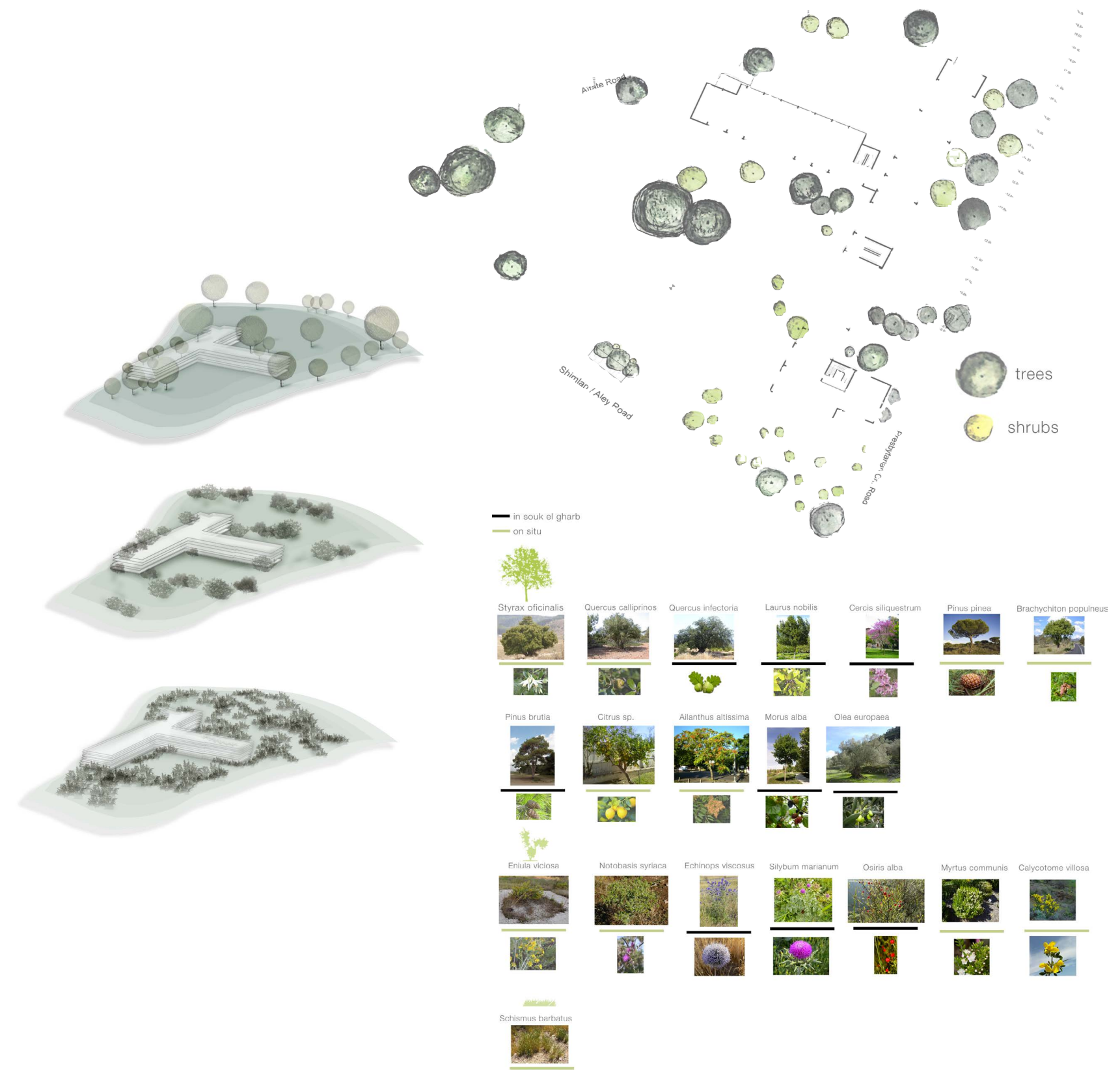


Fig. 24 Site Inventory I

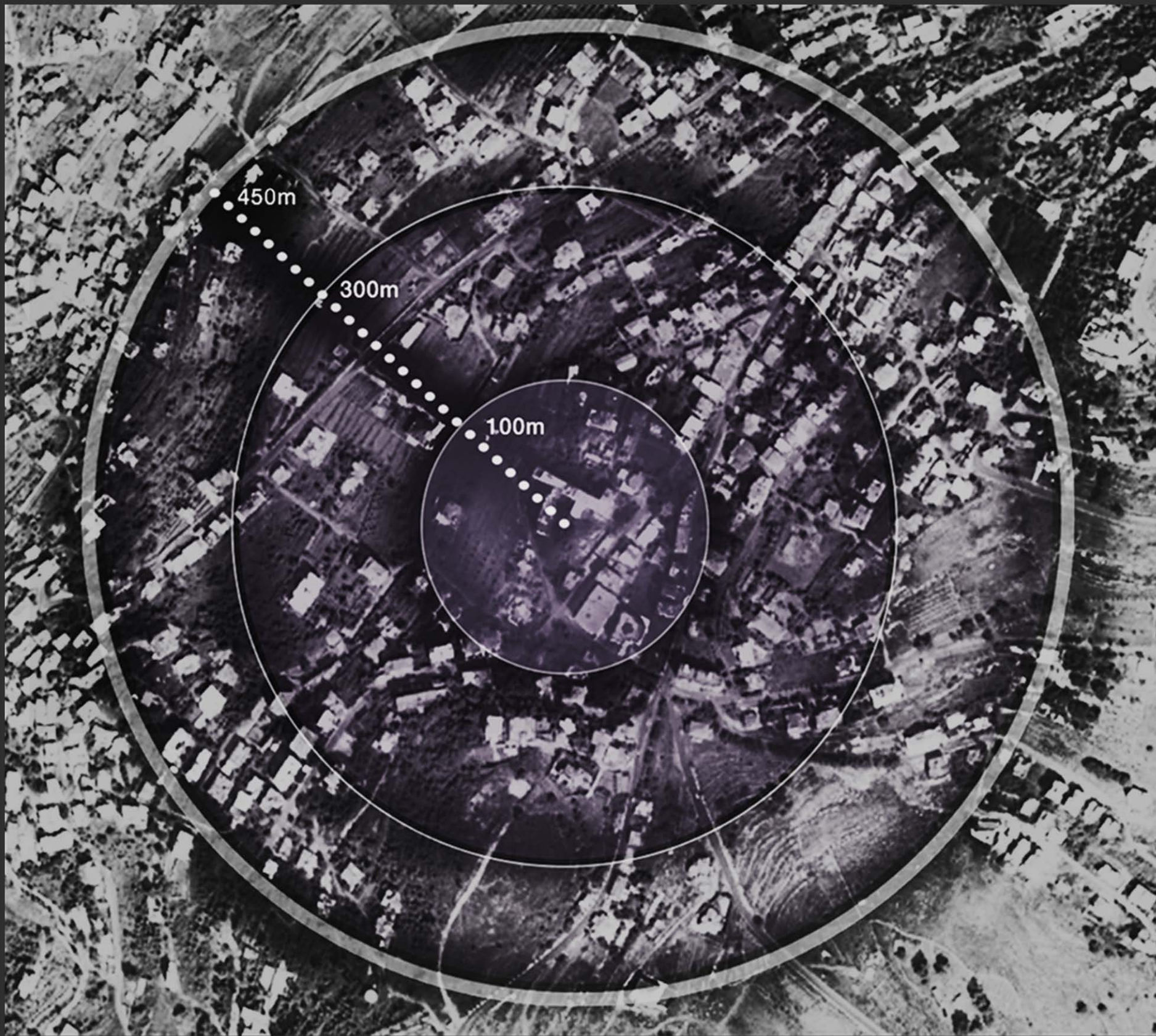


The vegetation in the site relates to the common species found on the village. Most of the species are native (mediterranean) and tolerate drought. During raining season, flowering plants reactivate, creating a lively setting. Most species found on site are invasive, constantly reproducing. Many wild grasses are found inside the building.

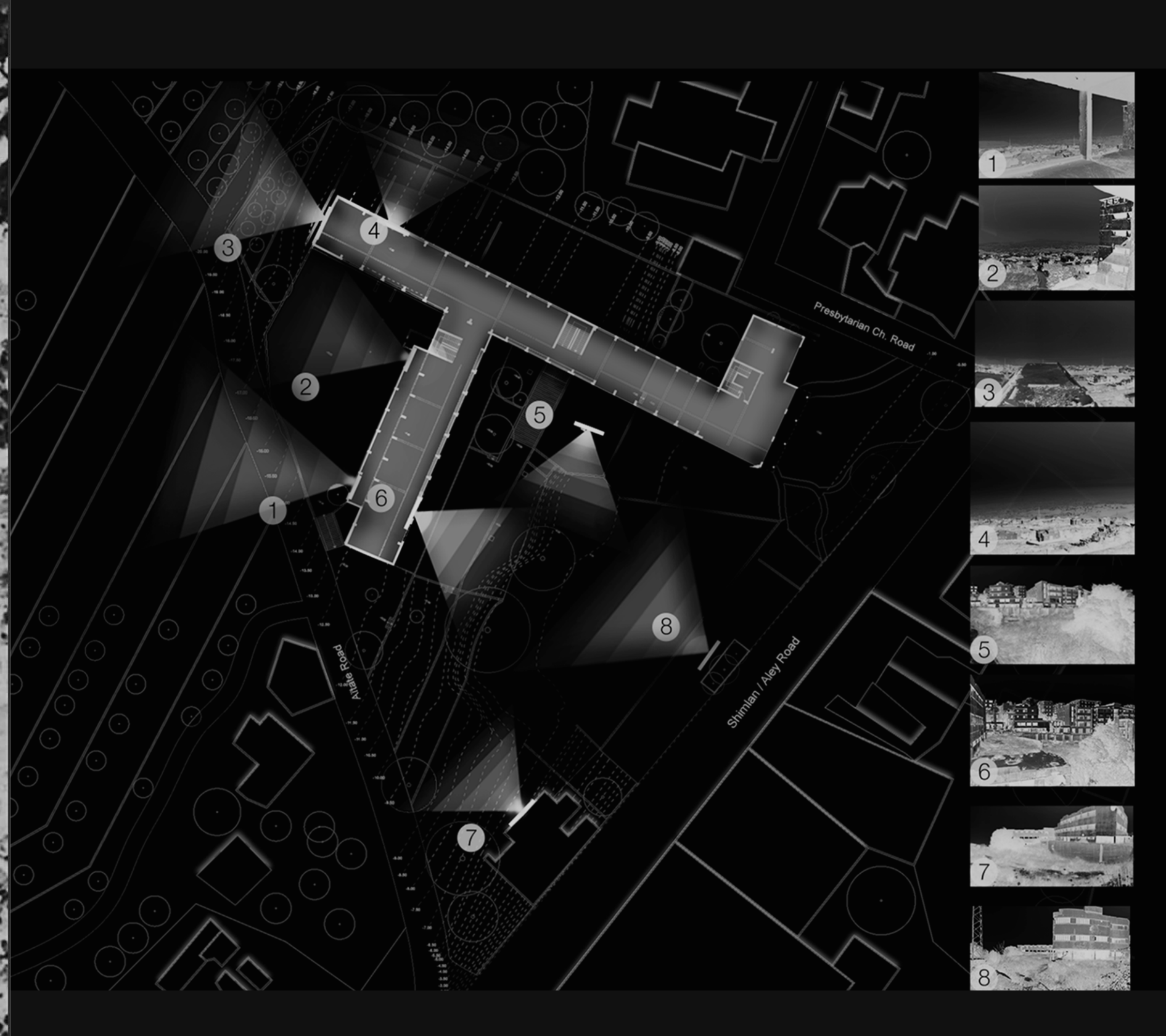


The following diagram illustrates the potential areas of intervention and ground material, either tiling or soil. This could help in the analysis of water on how each space can affect the water flow on site.

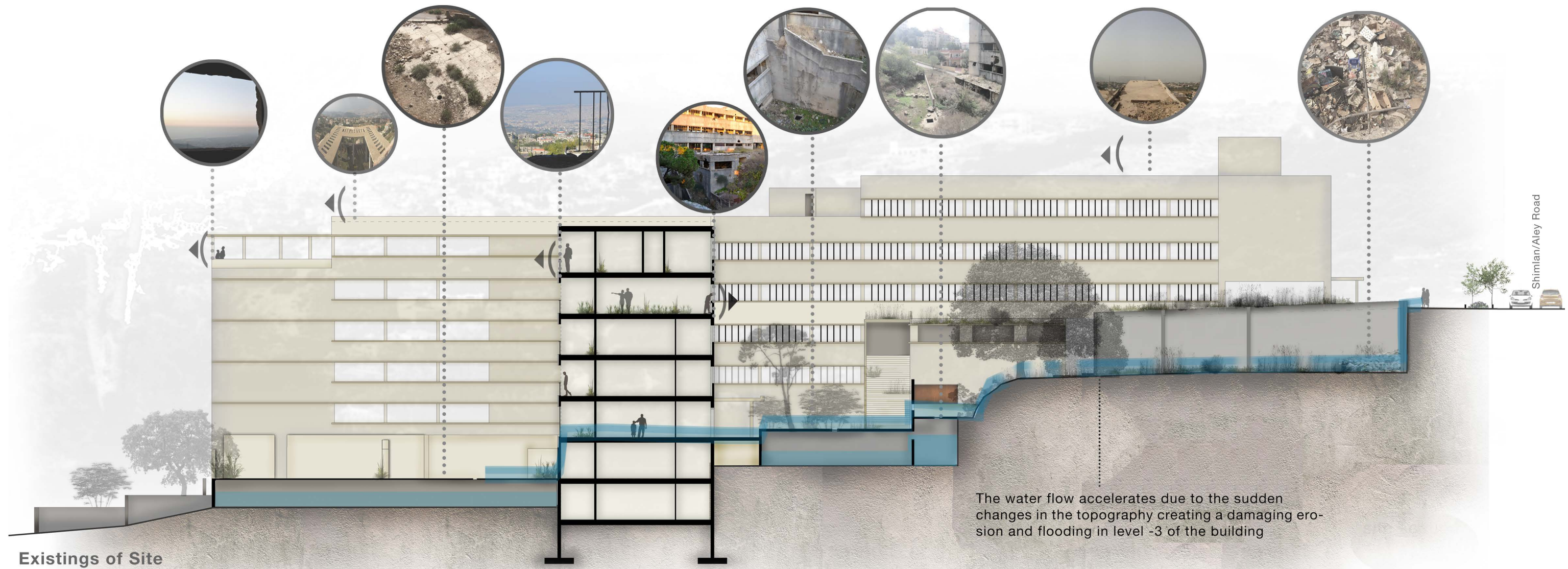




Proximity to the Site



View Sheds

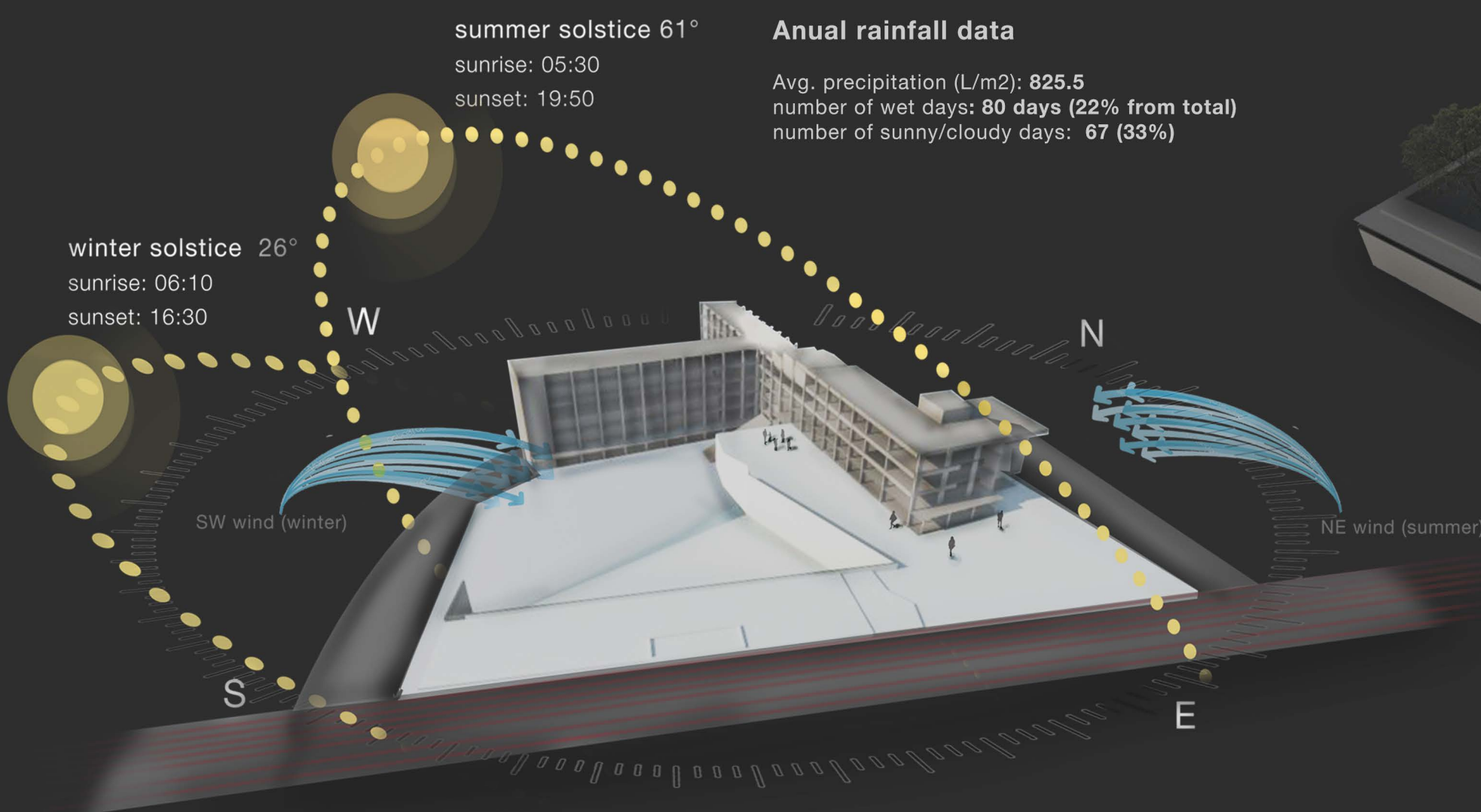


Existings of Site

The water flow accelerates due to the sudden changes in the topography creating a damaging erosion and flooding in level -3 of the building

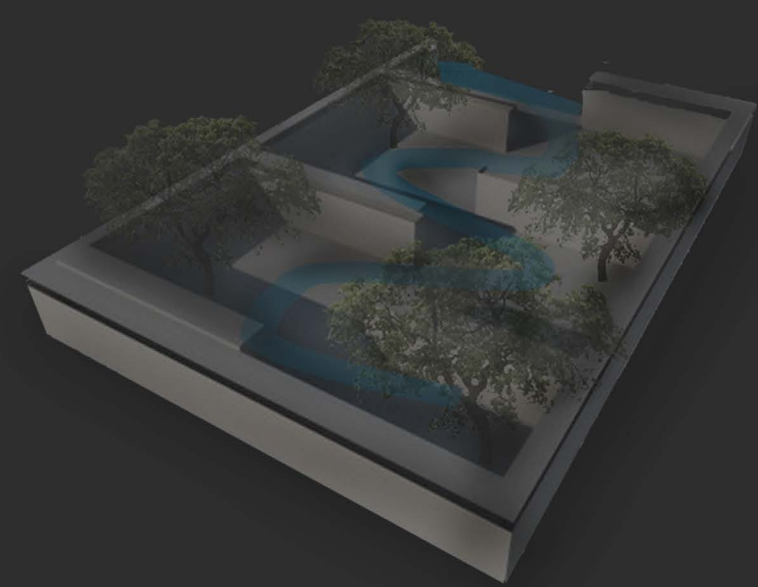
Shimlan/Aley Road

Fig. 27 Site Section



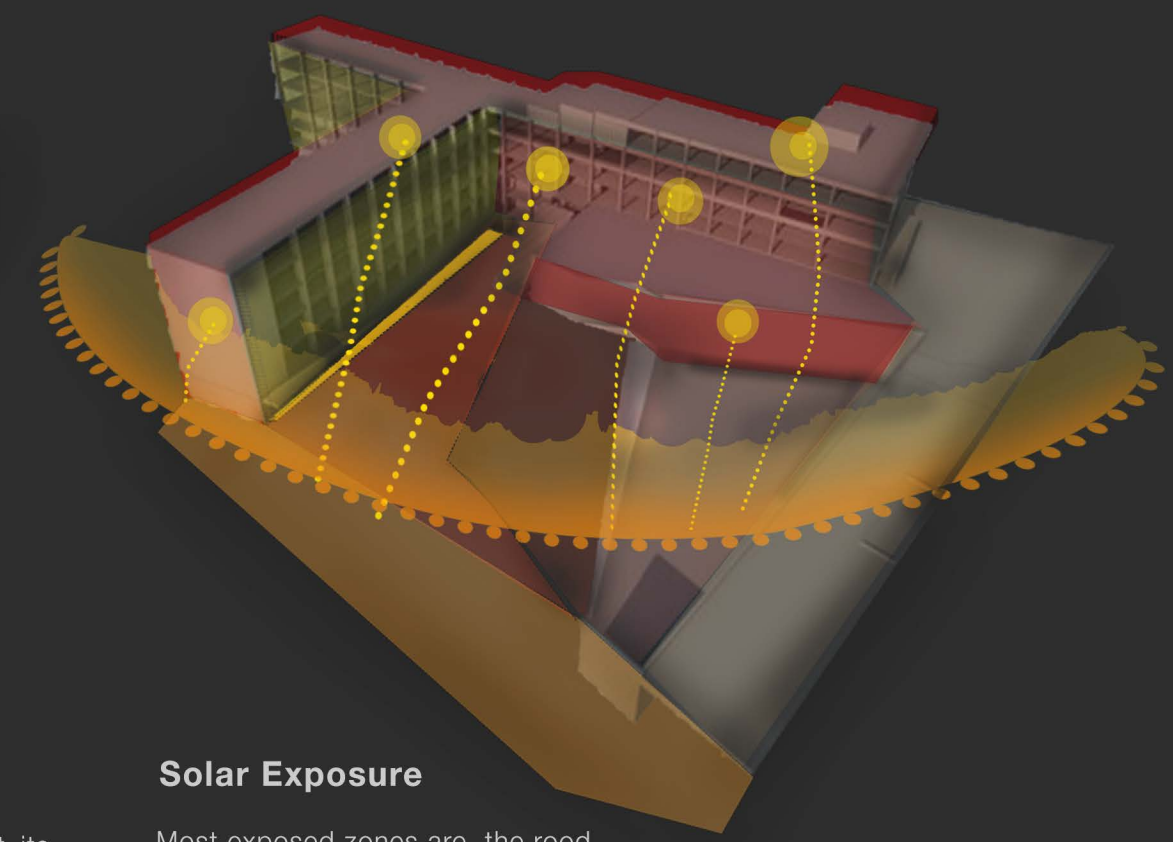
Anual rainfall data

Avg. precipitation (L/m2): **825.5**
 number of wet days: **80 days (22% from total)**
 number of sunny/cloudy days: **67 (33%)**



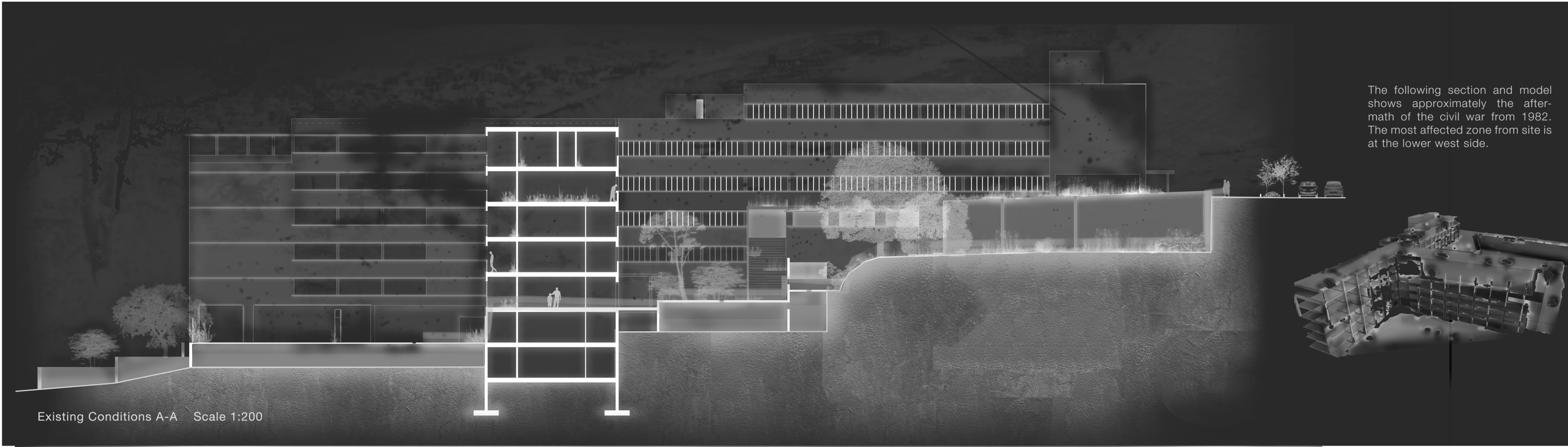
Water Walls

On the north side of the building at its edge there is a system to reduce the water flow. There are walls placed perpendicular from each other, making the water to deviate thus, its speed slows down automatically, creating a meandering shape. This could assist on the design when dealing with damaging erosion



Solar Exposure

Most exposed zones are, the rood the south facades, the west (lowest zone) and the east.

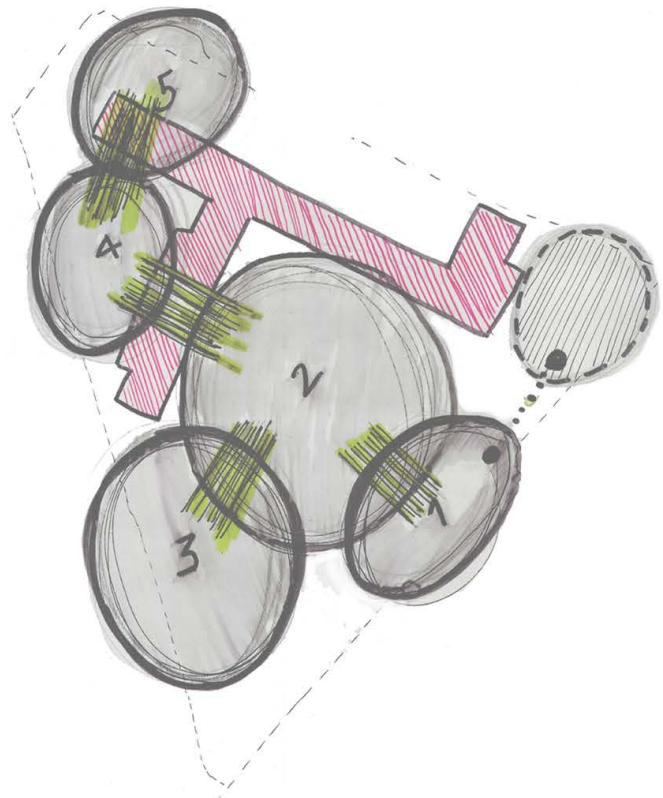


The following section and model shows approximately the aftermath of the civil war from 1982. The most affected zone from site is at the lower west side.

Existing Conditions A-A Scale 1:200



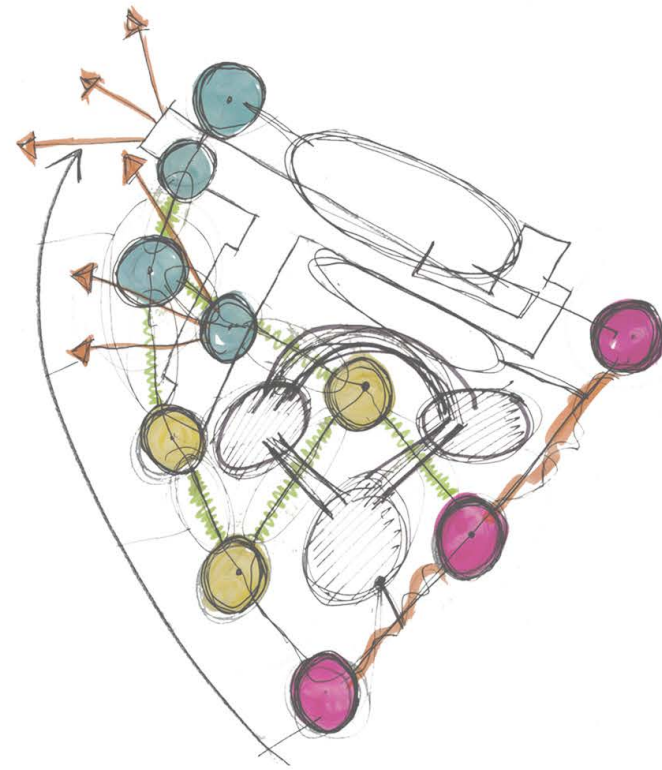
CONCEPT EXPERIMENT /PROGRAM



The Five Senses:

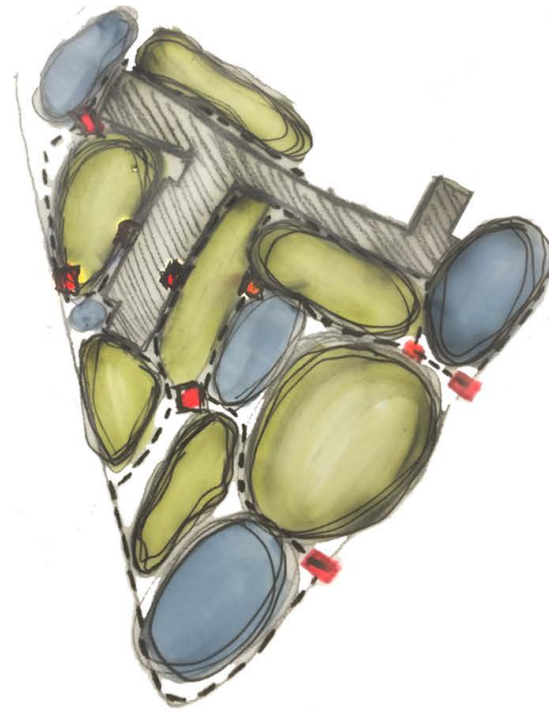
Touch-Sight-Hearing-Taste-Smell

Each zone will be reactivated by different activities with characteristics related to the five senses in which the individual could interact actively with the site.



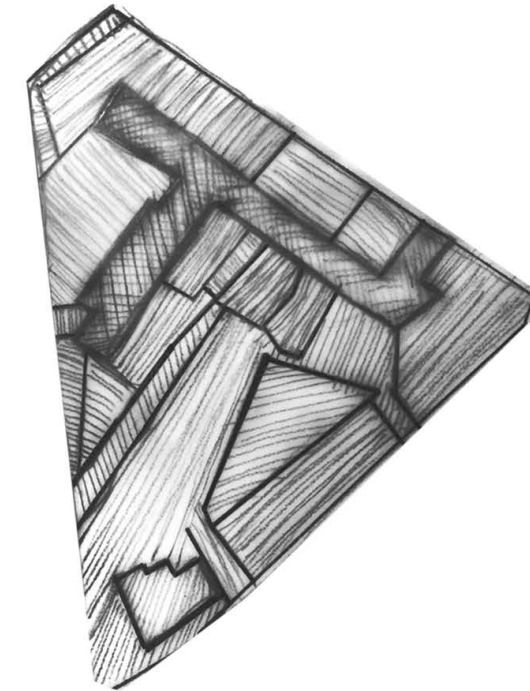
The Spine

A linear pattern will interlock with different nodes; each node characterizes a zone where specific activities will occur, one for "site entry," one for "recreational activities," and one for "memory." The linear pattern will be intersecting from the beginning to the end of the site.



The Knot

Different zones or clusters are randomly distributed for higher diversity, and each was classified by the topographic relevance. Specific access nodes were created to transit from a major zone to another one.



The Rigid

The site currently demonstrates a sense of rigidity, creating different octagonal-like shapes. The lack of elasticity is clearly shown.



The Magnet

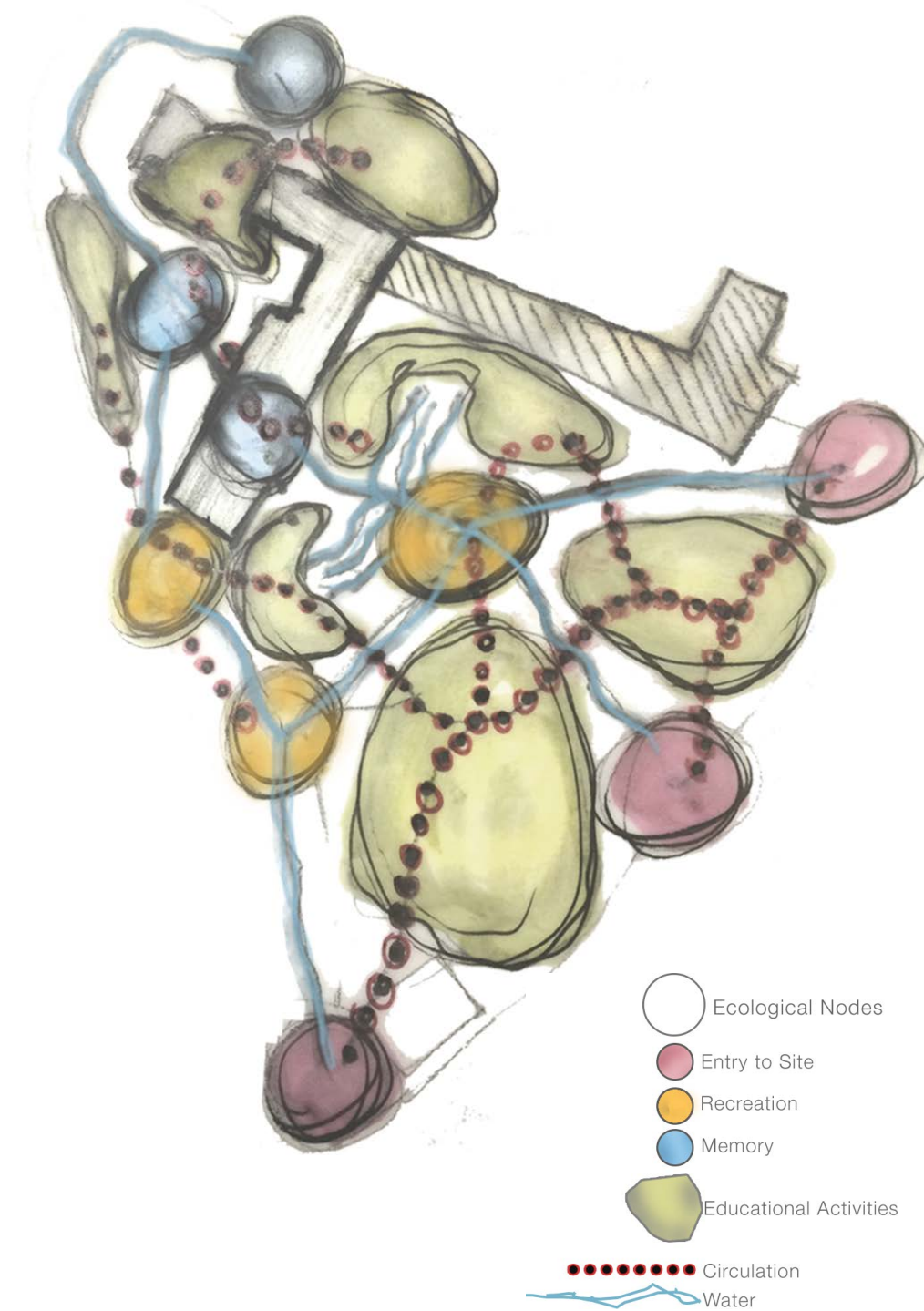
Potential integrations between the current built form and the natural landscape. This space acts the same way as a maze; there is an inconsistent pattern in the circulation. Connections between the soft and the hard could help heal the disturbed site.

Fig. 35 Preliminary Concept

The concept design consists of elements extracted from the environment and used it as a the backbone of the site, in this case, the water. The continuous flow of water throughout the site serves as an ecological corridor, where fauna species will get attracted to and at the same time it will create a new relationship between children and the environment.

The site will serve mainly for the children, community, and as a university dorms for students in the University of Balamand at Souk El Gharb. Children will experience an essential and unique type of education, where they will be involved directly with nature. They will learn throughout active and physical activities the characteristics of several environmental elements, such as, water, wind, the sun, plants and their growth, different types of animal species, and also the history of the site (palestinian children and the civil war).

The proposed design will modify certain existing areas on the site such as fragmented agricultural fields, density of invasive vegetation, water circulation, erosion and the building itself as a structure. The focus will be mainly on a single element that will act as a spine of the site and chain as well connecting it all together, such as water. The site will be divided according to certain criterias: First ecology which will mainly consist of the direct interaction of children and community with the environment, and thus environmental knowledge and awareness will be acquired. Second the building as a memorial agent, in which will teach its history.



THEORETICAL RESEARCH



Fig. 40 Elements/ Materials/Lighting

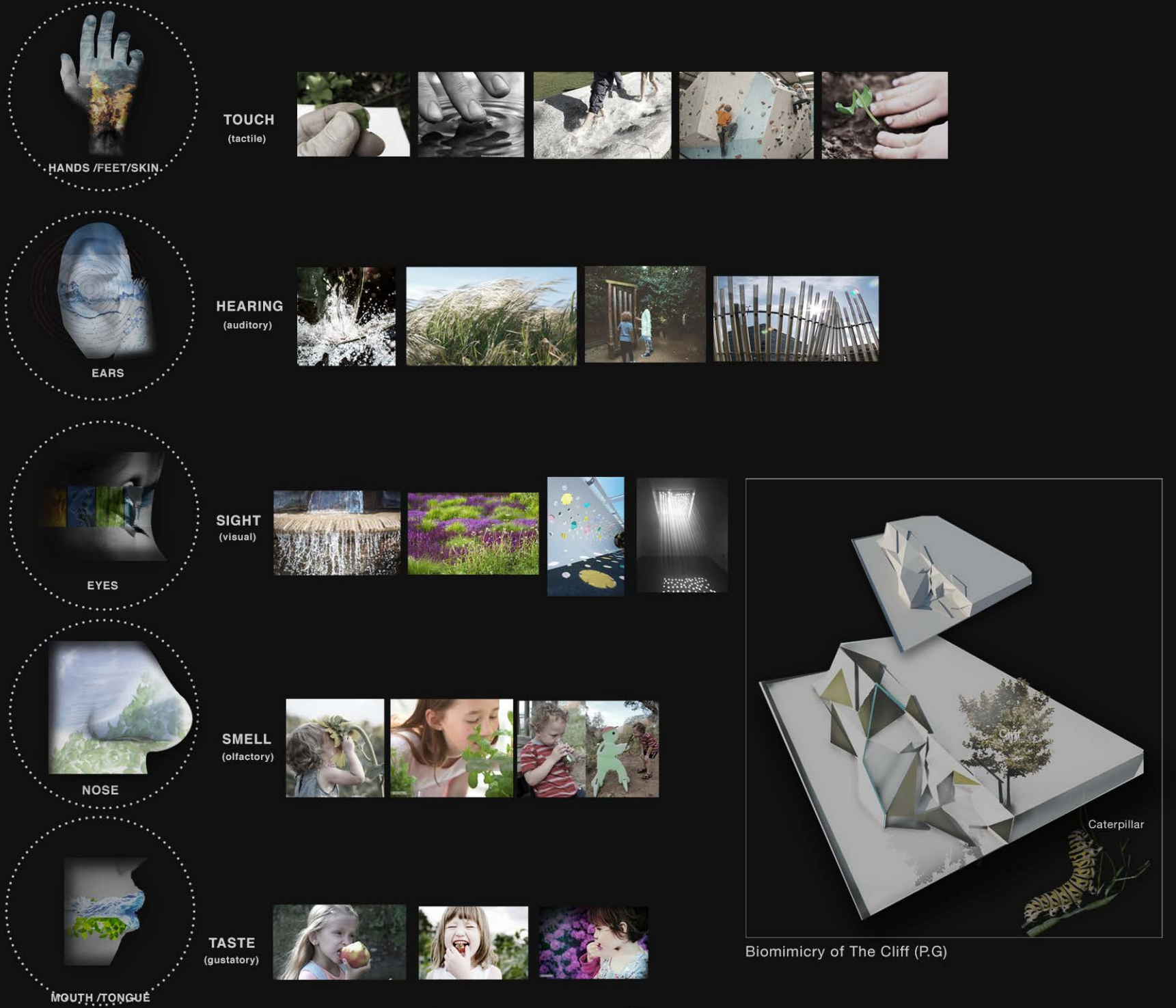


Fig. 41 The Five Senses

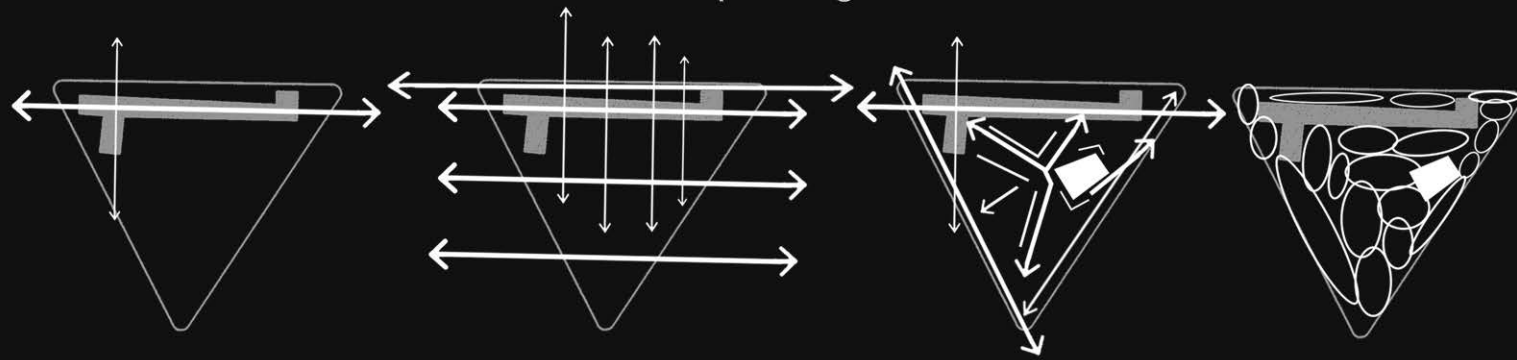


- Walks and crawls up stairs
- Builds pulling activities
- Aware when running
- Develop gross motor coordination, fine motor skills, and language skills
- Turns while running sharp corners
- Develop ability to hub and climb
- Physically active
- Concentration ability
- Pushes and pull
- Develop self confidence, imagination, intellectual exploration
- Emotional shifts
- Highly active body and mind
- Develop friendships, and better at group games.

Age Group

CONCEPT DESIGN

Concept Diagrams



CURRENT MOVEMENT

The movement on site is limited within the building only. Access to the outer areas is not possible.

CONNECTIVITY INSIDE OUT

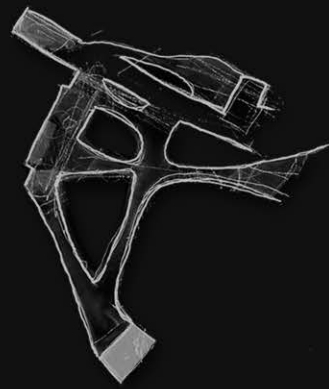
More connection between the building and the landscape.

FLEXIBLE MOVEMENT

A central point is created, thus developing several outdoor spaces accessible. Activities can be translated into spaces

PROGRAMMATIC SPACES

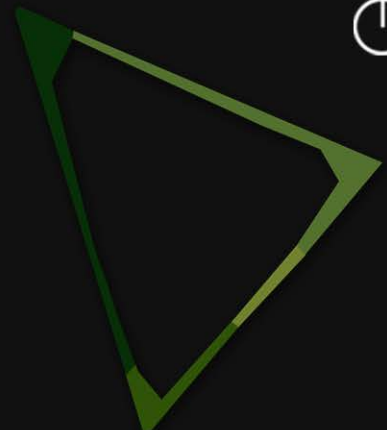
Landscape typology is distributed for different uses. The landscape acquires character.



Elastic and Unified Landscape



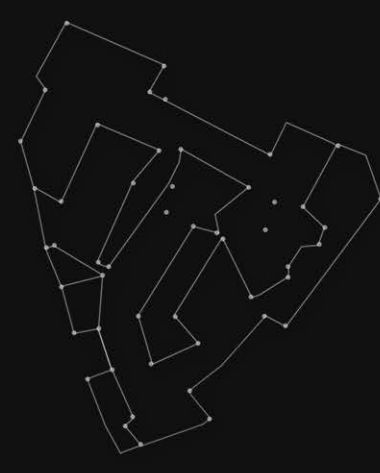
Hand Sketch of Spaces



Green Belt



Movement on Site



Conceptual Nodes



Programmatic Spaces

PASSIVE

ACTIVE

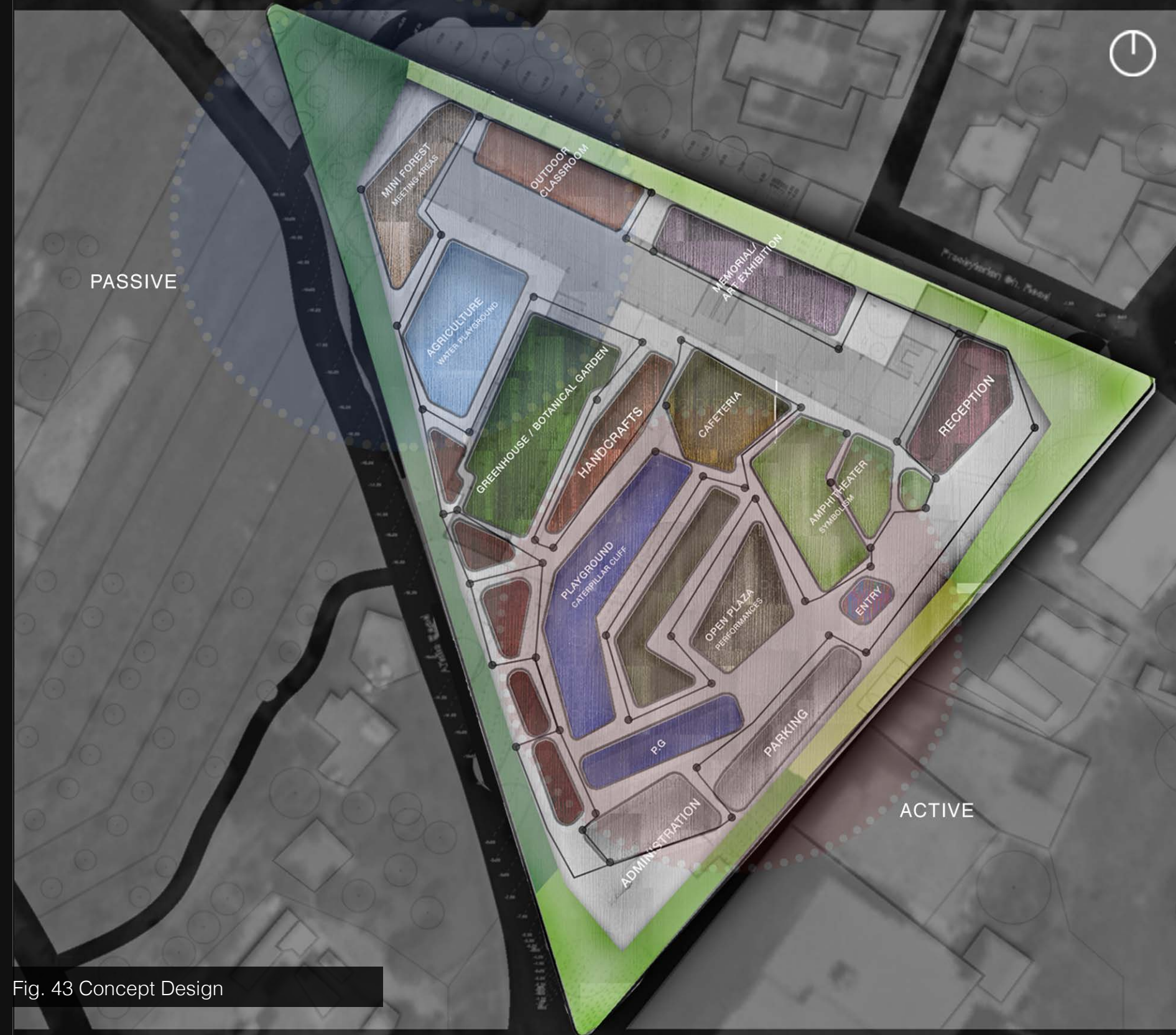


Fig. 43 Concept Design

DESIGN DEVELOPMENTS

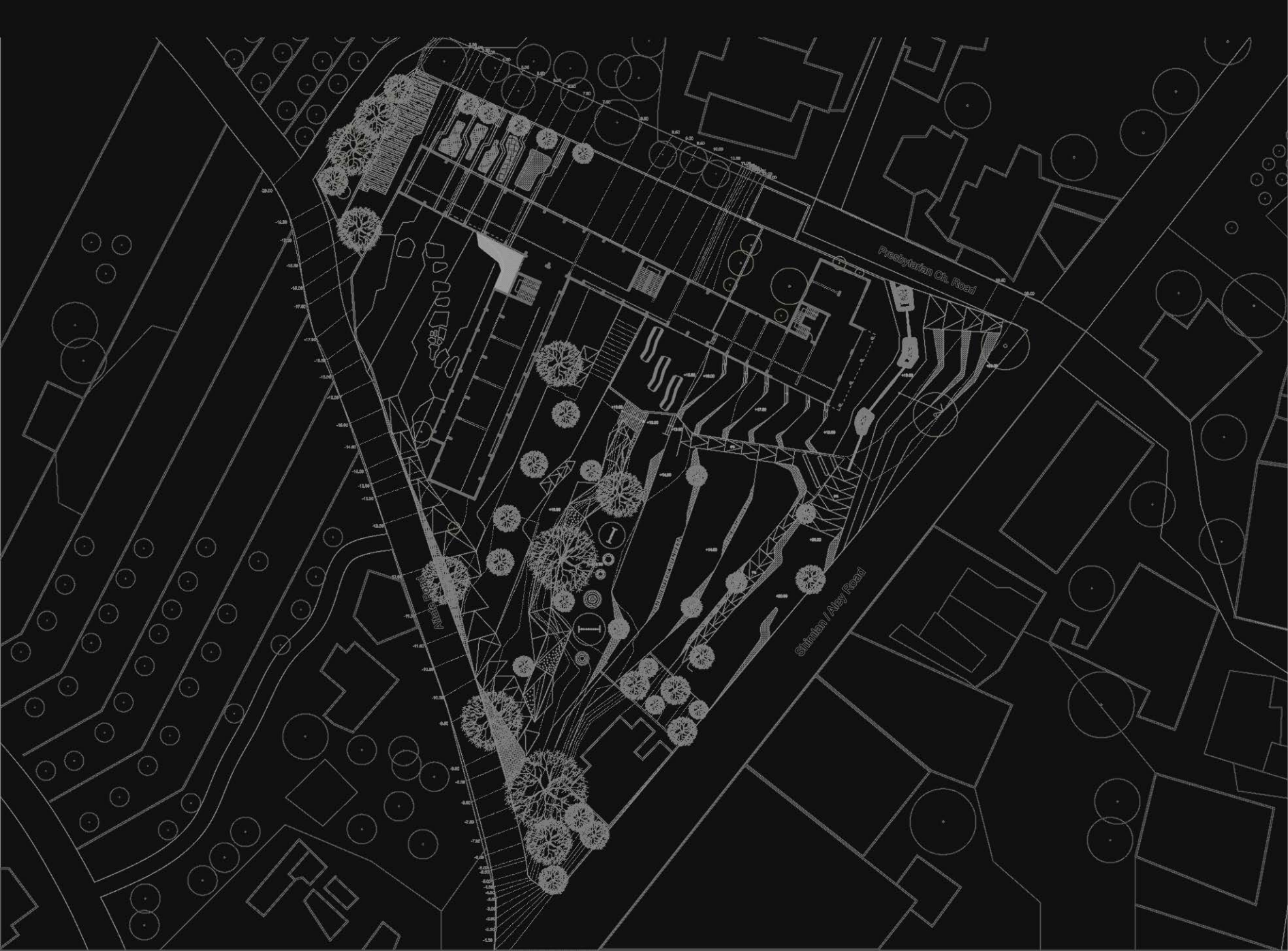


Fig. 45 Design I

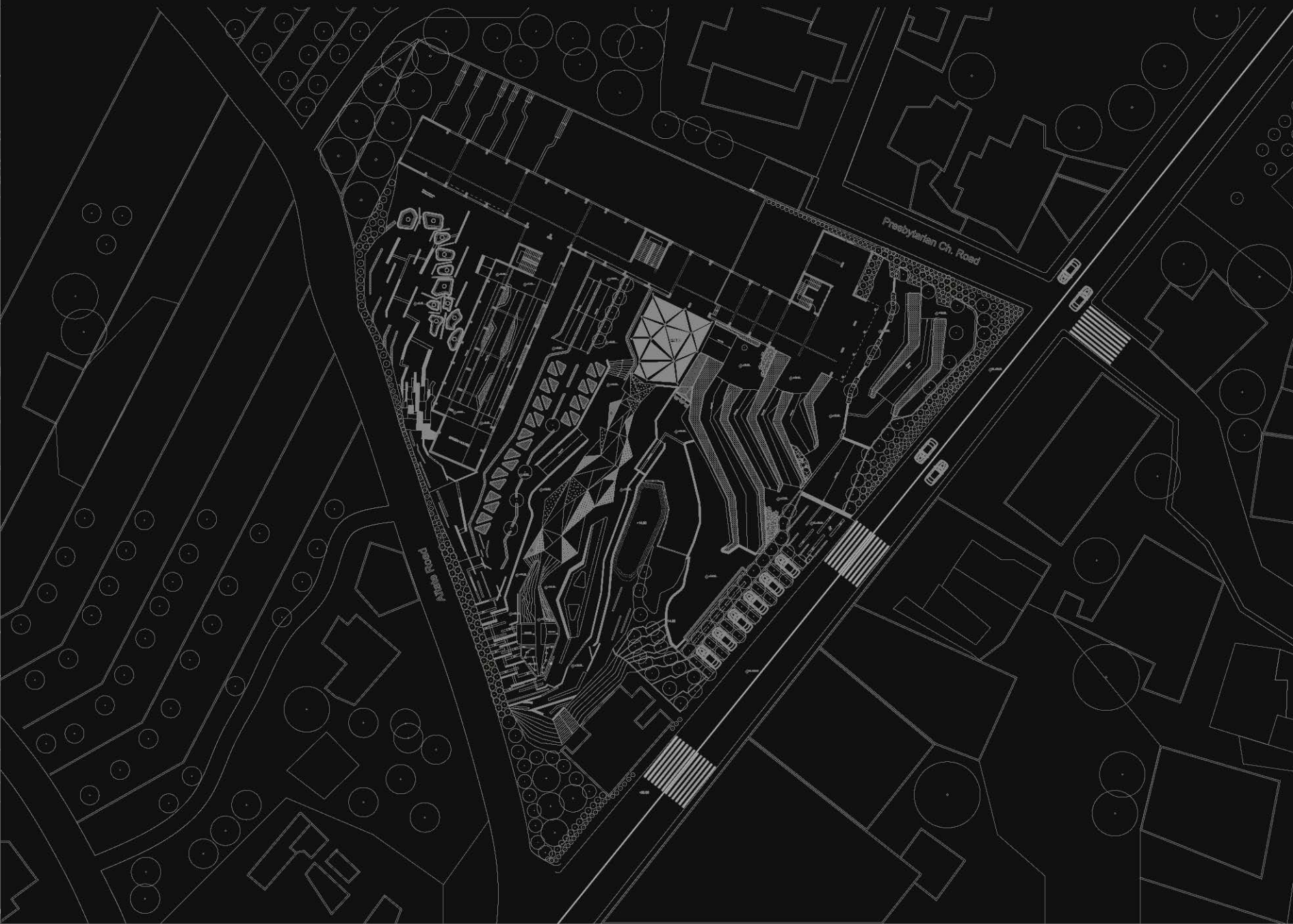


Fig. 46 Design II

MASTER PLAN

PROGRAMS	ACTIVITIES	ELEMENTS	USERS
Medicine	Herbs/ Medicinal Garden Healing Gardens	Native Plants Edible Plants Sitting Areas	All Ages Locals/Visitors
Carpentry	(Workshop) Manufacturing Wooden Objects	-Bird /Bat Houses -Outdoors Tables/Chairs -Exhibition	Children
Sciences	-Growing Native Plants and Fauna/Flora -Identification -Monitoring Water Quality -Birds Watching -Seasonal Changes	Water Path Wetlands Plots/Planting Beds	Children
Music	-Learning & Performing -Constructing Instruments (Workshop)	Amphitheater Sitting Areas	Children
Theater	-Learning & Performing -Amphitheater	Amphitheater Sitting Areas	Children Villagers (Church)
Art	-Painting and Sculpturing -Exhibition Area	Sitting Areas	Children
History	-Learning About War -Specific Damaged Zones -History of Site	Used Recycled Material from destroyed walls, windows, bullet shells, and rusted steel rods.	Children/ Villagers
Reading & Writing	Learning & Practice -Tree House -Healing Gardens	-Tree House -Sitting Areas	Children/ Villagers
Trails & Links	Connecting all zones together (a homogenous trail) outer with building	Ramps Passages Tunnels	All Ages Local/ Visitors
Physical Activity	Climbing, Running, Swings.	Mounds Passageways	Children

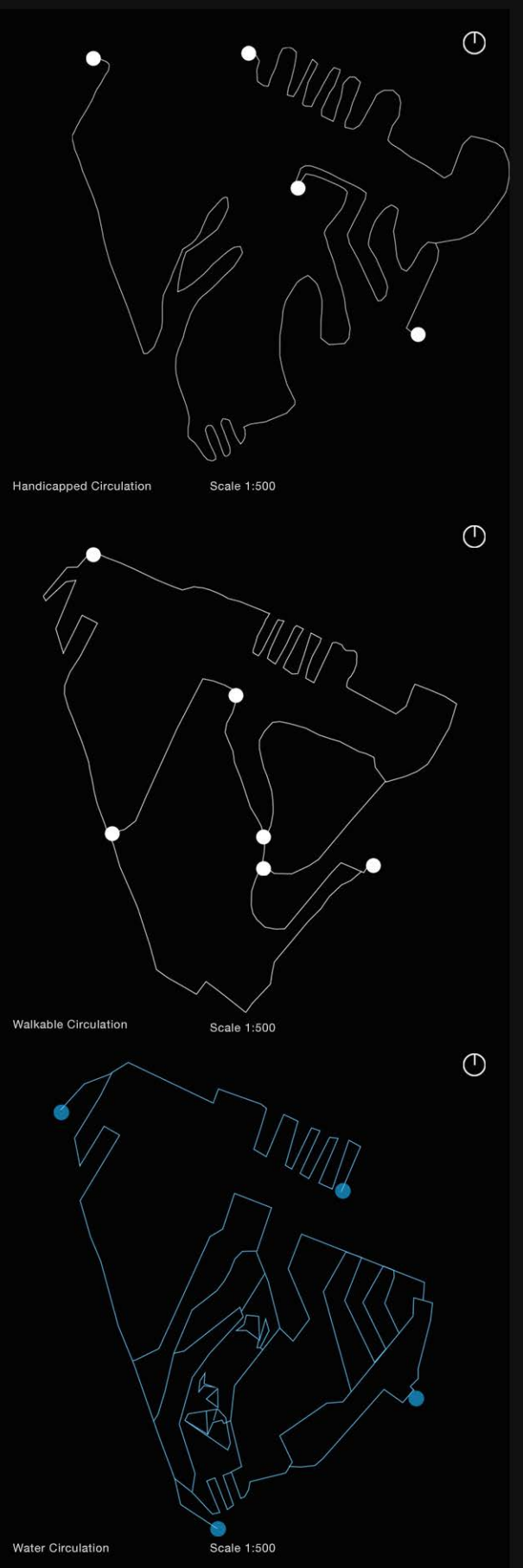


Fig. 47 Program/Activities

Fig. 48 Master Plan/DIII

PLAY PLANT

The proposed plants were chosen meticulously for children to interact with and learn from. Plants can be used to create dynamic and playful experience among children. Each plant provides a character of enhancing children's sensory motors.

- Smell** aromatic
- Touch** unique textures
- Edible** interesting flavors
- Colourful** longlast colors
- Movable** plants that moves with wind

TREES

- Pinus pinea**-Umbrella Pine
-The needle leaves and the seed.
- Delonix regia**-Royal Poinclana
-The leaves and flower during sumer and fall.
- Cercis siliquastrum**-Juda's tree
-The leaves and flower during sumer and fall. The flower is edible
- Laurus nobilis**-Juda's tree
-Aromatic leaves when crushed
- Citrus sp.** -Lemon/Orange
-Aromatic and edible.
- Olea europae** - Olive tree
-the fruit is edible, and extraction of oil.
- Cedrus libani** - Cedar of Lebanon
-aromatic, and rigid leaves.
- Prunus dulcis**- Bitter Almond
-Colorful fruits.
- Zizyphus spina christi**- Christ's Thorn
-Spikes
- Punica granatum** Pomegranate
-Edible
- Morus alba** White Mulberry
-Edible, silk worm

HERBS & GROUNDCOVERS

- Lavandula angustifolia**-English Lavender
-Purple flower, very aromatic leaves.
- Pennisetum setaceum**-Fountain grass
-Depending on the color, it is a very flexible plant.
- Rosmarinus officinalis**-Rosemary
-Strong aroma specially when rubbed.
- Silybum marianum**-Milk thistle
-Spike.
- Pelargonium graveolens**-Geranium
-Strong Aroma, specially when rubbed.

Fig. 49 Planting Palette



Fig. 50 Planting Plan

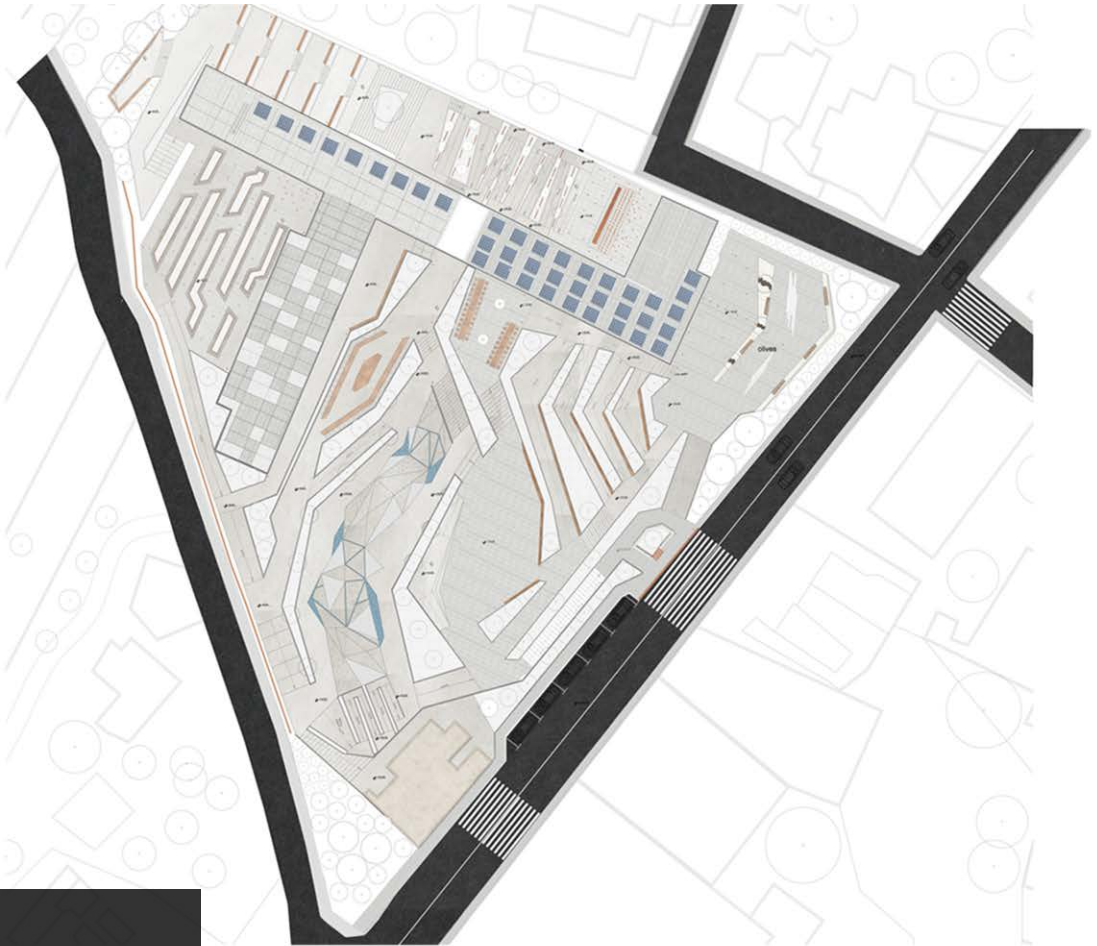












Fig. 51 Hardscape Plan

-  WHITE CONCRETE
As benches
-  ASPHALT
Roadway
-  LIMESTONE
Sidewalks/ Small
-  LIMESTONE PLAIN
Ramps, walkways, narrow spaces
-  CORTEN STEEL
BOARDS(PANELS), WALL
-  LIMESTONE
Open spaces, roof
-  TEAK WOOD
Benches, tables
-  GRAVEL
Agriculture area surface
-  RUSTED METAL RODS
Acquired from site, destroyed walls, proposed as a fence
-  SOLAR PANELS
Placed on the roof

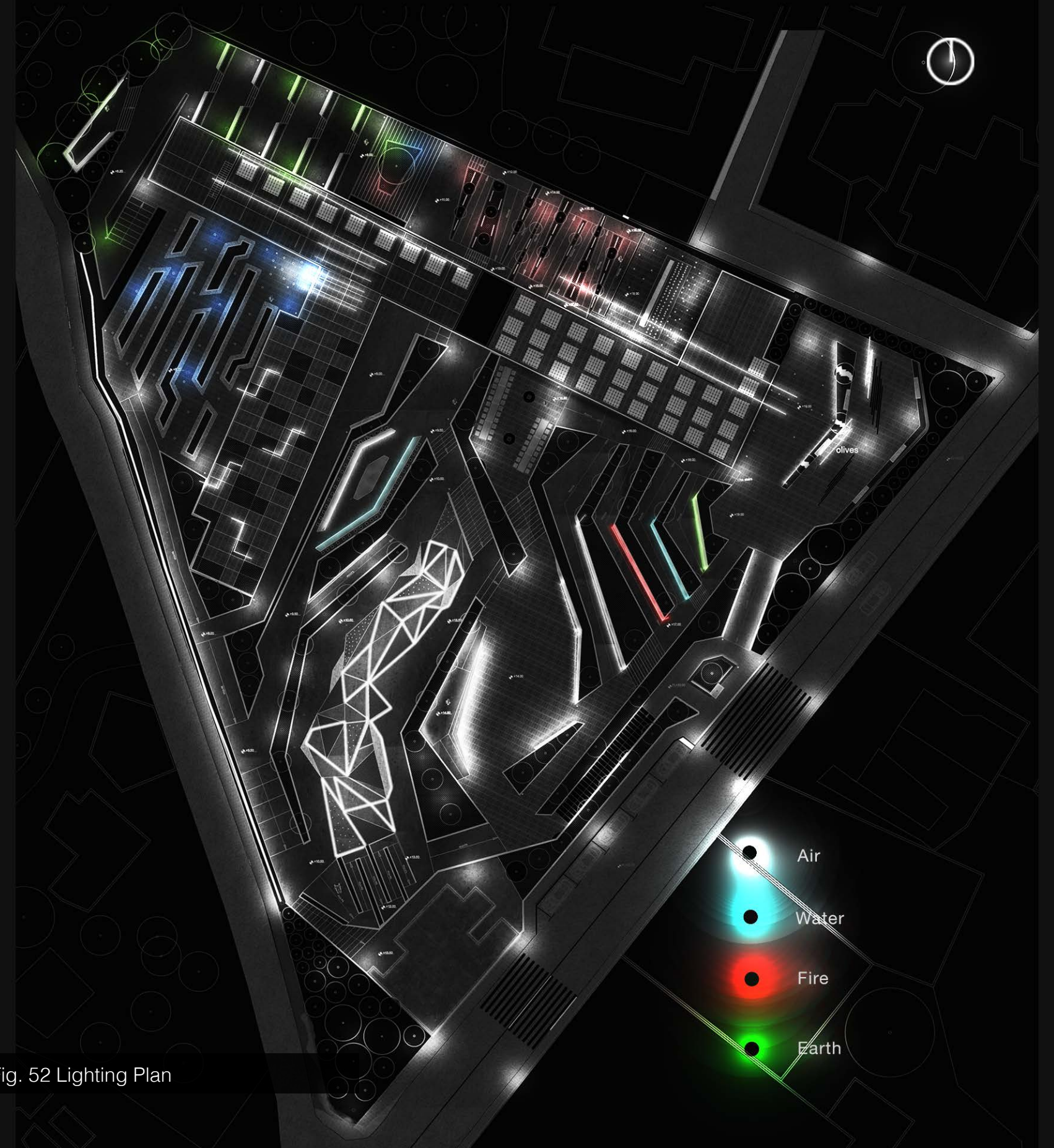
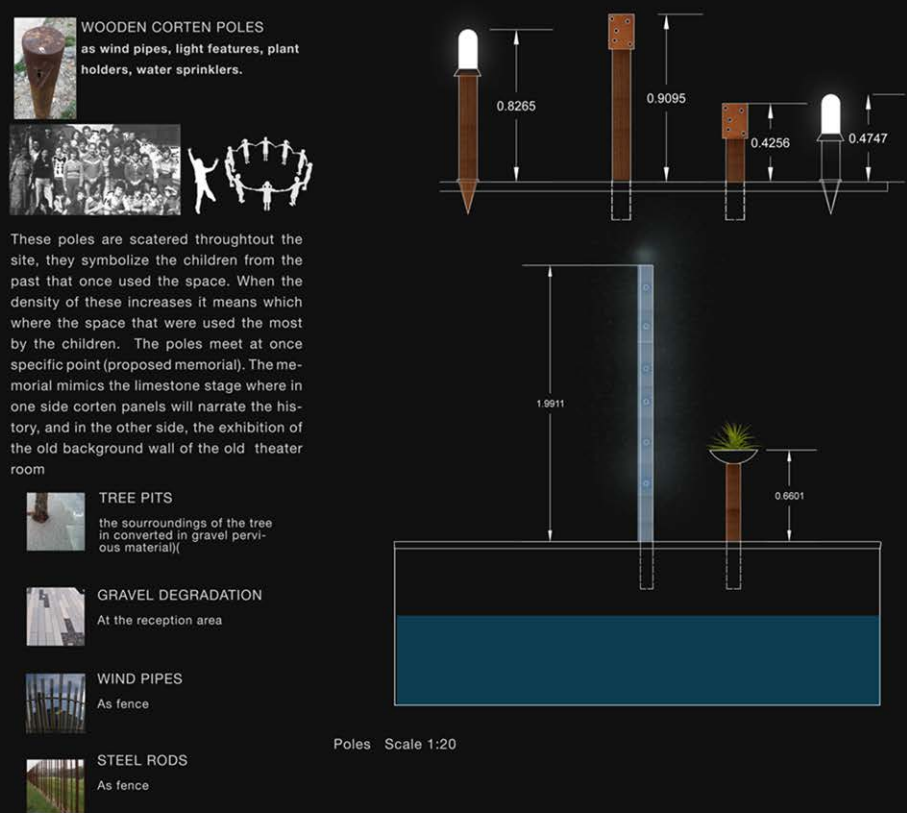






Fig. 52 Lighting Plan

-  Air
-  Water
-  Fire
-  Earth

