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ZOKAK EL BLAT : PLAYFUL GROUNDS

by

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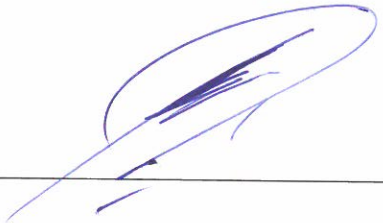
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Zoukak el Blat | Playful Grounds
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00 ABSTRACT

Zokak el Blat has Housed Schools for decades now. Most notably CIS, Hariri 2, Saint Joseph de l'apparition, Ecole Patriarchal, Lycée Abed el Kader, El Maanieh and more recently, a newly built Public School. The area is located in a strategic spot in Beirut: within walking distance to Downtown, Hamra and the Sanayeh Garden. Despite its surroundings and its educational potential, Zokak el Blat fails to satisfy the students there. The streets are deemed too crowded, narrow and not pedestrian friendly, and the schools themselves aren't providing a suitable educational space for the students. Playful Grounds examines the ways in which abandoned spaces- more specifically rooftops and abandoned open spaces can be utilised for the advantage of students, teachers and also the community at large. The analysis will look into the School District in Zokak el Blat, whereas the design focuses on more specific areas: the schools themselves.

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01 INTRODUCTION



Fig.1 Context

Beirut's urban area is home to over 50% of the Lebanese population and is a central hub for the country where trade, business and educational facilities and institutions have been and continue to be established. What can be noted in the city is that **cluster of similar institutions**, be it educational or leisurely. Hamra is an example of a cluster of shops and restaurants, as is Verdun, whereas Zokak el Blat's cluster is formed by the number of schools that occupy it- in addition to the cultural sites there. The district is currently divided into 2 main parts by a the Fouad-El Chehab Highway: The Serail area, located north of the Highway and currently managed by Solidere, and the area to the south of the highway, known as the Patriarchate in reference to the patriarchal school.

Area of Choice and Focus

The focus of this study will be on the district of Zokak el Blat. The area is known to be of cultural and historic significance. Its name stemming from the fact that it was one of the first areas in the city of Beirut to be paved ("Zokak" meaning alley and "Blat" meaning pavement). The Fouad Chehab Highway highlights the dichotomy between these two areas with the Serail being the more executive and commercial part of the district, and the patriarchal area being more residential and educational. The focus of this study will be on the educational zone in the Patriarchal part of the district.



Legend

- Contours at 1 m interval
- ABC Road Names

Fig. 2 Area of Focus / 1: 3000

02 PROBLEM & PROJECT STATEMENT

Zokak el Blat is home to more than **7 different schools**: CIS, Harii 2, Saint Josph de l'Apparition, Ecole Patriarchal, Lycée Abdel-Kader, El Maanieh and, more recently, a newly built public school. The schools cater for students of different financial backgrounds with tuition fees going from 260,000 LBP a year to over 7 million LBP a year.

What is interesting about the area is the potential of it being a campus-like space with already **existing cultural and educational institutions** that are either within the area itself: for example the Orient Institute (known as the German Centre), the Red Cross. It is also an area of rich and distinctive heritage: the old Bechara el Khoury residence or the Dr. Dahesh residence, which has been recently added to the World Monuments Fund watch list.

In addition to this, the Patriarchal part of the district also presents some remnant spaces that are sometimes used by local students and local residents as improvised playgrounds for children.

Despite the potential of the area, it remains, like much of Beirut, as a highly **congested** area- which is not suitable for positive and safe learning environment, in addition to that, the schools themselves are lacking in green areas that are beneficial for student wellbeing and academic achievement.

03 OBJECTIVES & METHODOLOGY



Fig. 3 Section/ School Alignment / 1: 2000

The **objectives** of the study are as follows:

- Identify the relationship between the schools and the surrounding area. This includes access points, streets, open areas and any other elements that seem significant.
- Understand the relationship that students have with the schools and the Zokak el Blat area.
- Define the distribution of the schools in relation to each other and other landmarks.
- Identify the areas of interest for intervention.

The general purpose is to combine the findings of the inventory and analysis to support the idea of creating “educational landscapes” within a “campus” around the schools and potentially within the schools themselves.

Methodology

The main focus of the study will revolve around the schools themselves. In order to meet the above stated objectives, socio-spatial analysis will be conducted on the area surrounding the “school zone”. In addition to that, research regarding the importance of outdoor “learning” and the importance of the exterior in regards to academic progression will furthermore support the argument of redefining the area as an educational space. The urban, spatial and educational dimensions will also be evaluated and studied based on their importance for the educational district.

THEORETICAL FRAMEWORK

04.1 Nature Deficit Disorder

Being exposed to nature has proven to have a number of **benefits** on both the **physical and mental health of individuals**. This generalisation rings truth to both youth and adults

However, nowadays, urbanisation has been taking up what is left of the greenery in a city. The latest generation is the one known to have a **lack of nature and the outdoors**- and with that the many benefits that they hold on their wellbeing. This is referred to as **Nature Deficit Disorder (NDD)**. NDD can trigger Attention Deficit Hyperactivity Disorder (ADHD), increase childhood obesity, lack of creativity and curiosity, ignorance of local flora and fauna, and a diminishing sense of community (Louv, 2005). Studies have also shown that children growing up in an urban setting are at risk of **not achieving their full academic potential** (Faber Taylor et al., 2001). In order to remediate from this, strategies of reintroducing the students to their surroundings and increasing their interactions with them, in addition to adding greenery spaces

Nature Exposure, Concentration and Attention Concentration

The outdoors have a distinct quality to them: they **refresh concentration** as well as provide elements to focus on (Faber Taylor et al., 2001). This is crucial as concentration helps an individual focus on a given task or phenomena- making it easier to understand. A study conducted researches where children were moved from highly dense to highly green areas within an urban setting, and it was discovered that their levels of **concentration increased when exposed to nature**

Attention

There are two different forms of attention: **voluntary and involuntary**- their effects are distinct well defined. Involuntary attention is put to use when observing and interacting with the surroundings. More natural settings offer a calm stimuli, whereas, a rigid concrete and urban setting can be **mentally exhausting**- thus hindering the cognitive abilities of students

THEORETICAL FRAMEWORK

04.2 EIC Based Learning

Schools are starting to **include nature and the outdoors** are part of their curriculum. This approach is known under the following appellation: **Environment as an Integrating Context for learning (EIC)**- where education is not only class based, but also environment based.

EIC is defined as being **interdisciplinary**, providing students with “hands-on” education”. The techniques they use are outdoor classrooms, labs, green play areas, environmental field trips in natural settings, and even planting activities. The knowledge acquired in EIC programs is directly put to use and engages both **practical and theoretical thinking** (Lieberman, Gerard A., 1998).

The benefits of EIC programs are not specific to any age group- this approach can be applied for kindergarten children as well as teenagers in their high school years (Lieberman, Gerard A., 1998).

EIC has encourages **social learning**. Students following an EIC base program have developed communication skills and learn to interact with one another as they are put in both an **educational and social environment** where team work and interaction is key (Lieberman, Gerard A., 1998). Students following these programs show to have less behavioural problems and interact with one another peacefully- thus contributing to a better learning environment (LAF News Blog, 2012).

05 CASE STUDIES

Nature and the outdoors must be integrated within educational programs in order to provide children with a healthy and effective learning environment. The outdoors, be it an urban or rural setting, can be viewed as a space where creativity, social interaction and learning can merge into one. Zokak el Blat, being a highly congested and crowded area does not offer the best learning environment for students- despite its cluster of schools. Educational landscapes can be integrated within the area itself in order to provide the students of Zokak el Blat with a .better learning environment

The following is a series of case studies that either tackle the use of educational landscapes, or are located within educational institutions. Their nature and scale vary: parks, playgrounds, even installations. These case studies illustrate how the use of educational landscapes and playful elements can be feasible and implemented.

05.1 Espacios de Paz, Caracas, Venezuela, Urban Revitalisation

Firm: Pico Estudio
Context: Urban - Conflict Areas (Caracas)

Participatory Design and construction that aims to engage the community with the urban landscape in high conflict. The idea is to take social dynamic in “zones of danger” and turning them into “zones of peace”. The design consists of “urban acupuncture” made of focal intervention is specific unused and abandoned plots. The design focused on the reclamation and implementation of 5 public spaces.



Fig. 4 Diagram / Distribution of Installations



Fig. 5 Before Intervention



Fig. 6 After Intervention / Side View



Fig. 7 After Intervention / Bird's Eye View

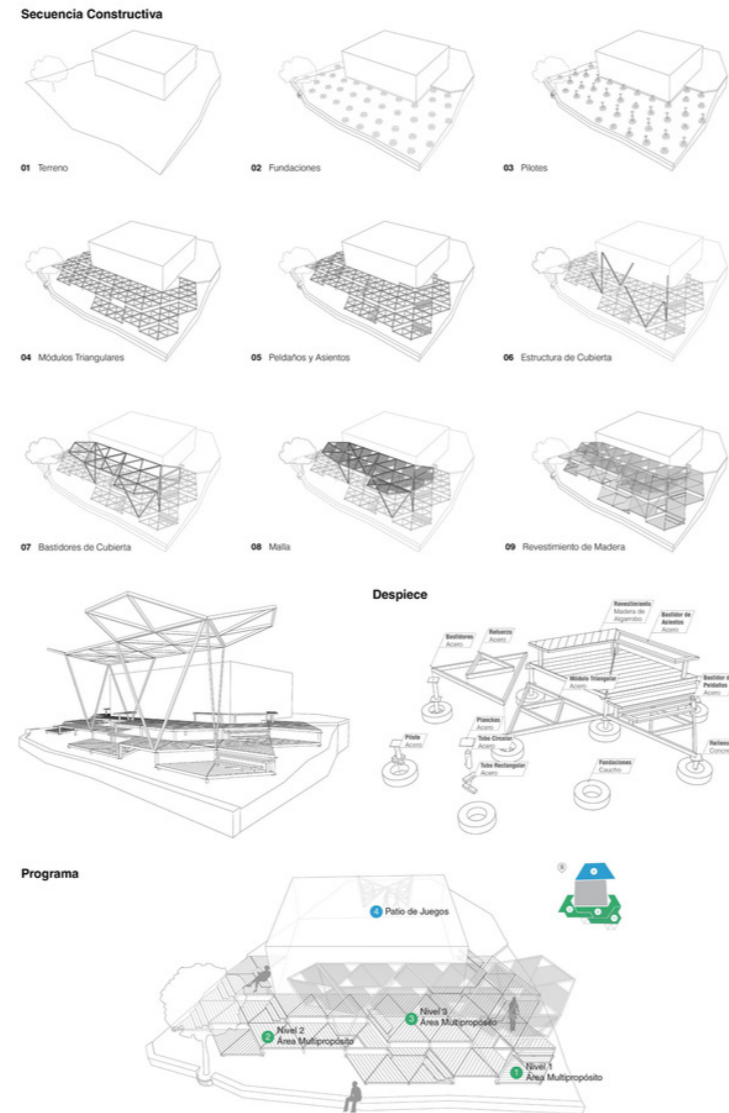


Fig. 8 Diagram / Construction Phases of Installation



Fig. 9 Diagram / Creating Vertical Spaces

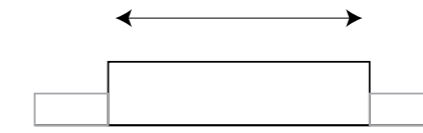


Fig. 10 Diagram / Utilising Horizontal Spaces

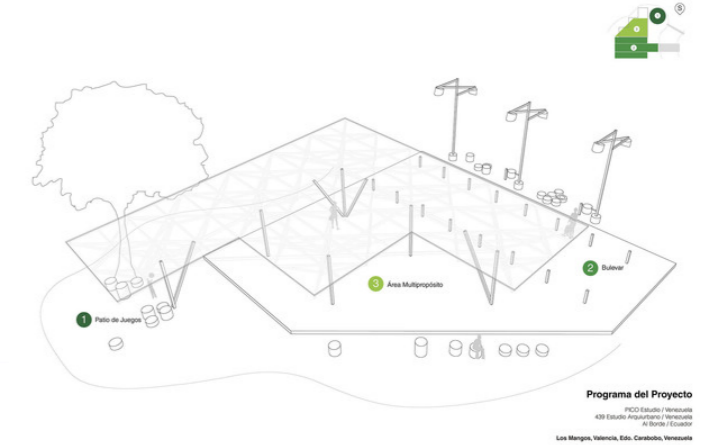


Fig. 11 Diagram / Play Area Intervention



Fig. 12 Play Area Intervention

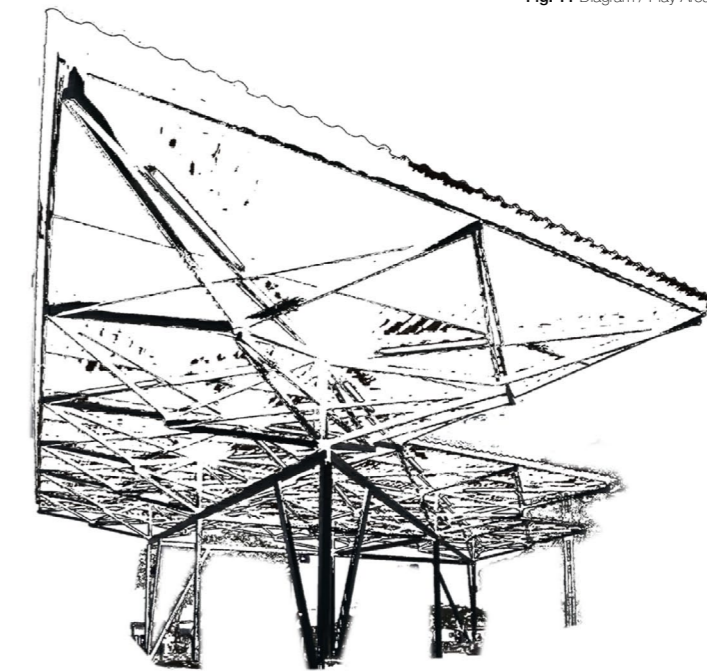


Fig. 13 Vertical Shading Structure



Fig. 14 Use of Coloured, Readily Available Material

Firm: Kinnear Landscape Architects
Scale: 450 sqm
Context: School Playground in Urban Setting.

KLA wanted to make a playground that improved the behavior of children in the classroom. The design aimed to having more flexible environments helps the children develop a sense of place for "imaginative play". The design has little added greenery and focuses most on hardscape: white stripes that highlight the topography, movable objects, rotating stages and a "forest" of poles. This out of the ordinary environment encourages the children to engage in creative play despite the rigid lines.

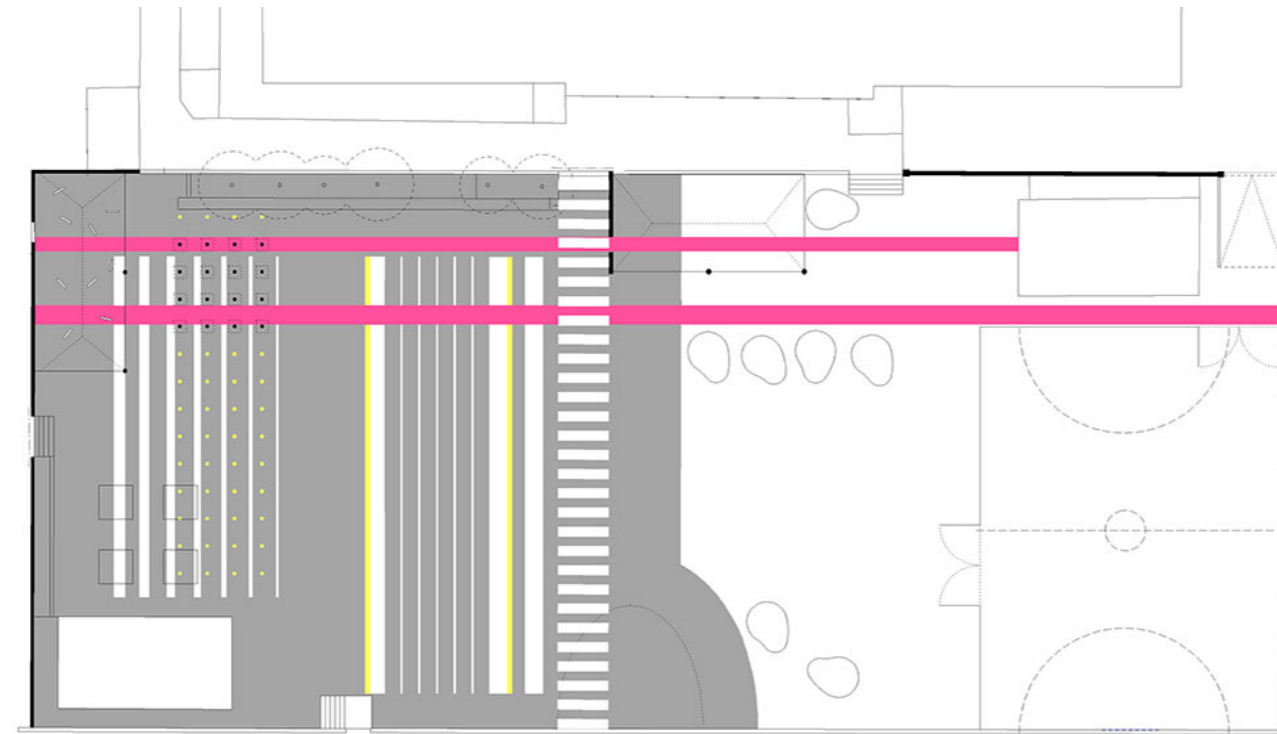


Fig. 15 Design Plan



Fig. 16 Playful Lines



Fig. 17 Lines as Racetrack



Fig. 18 Pole Area

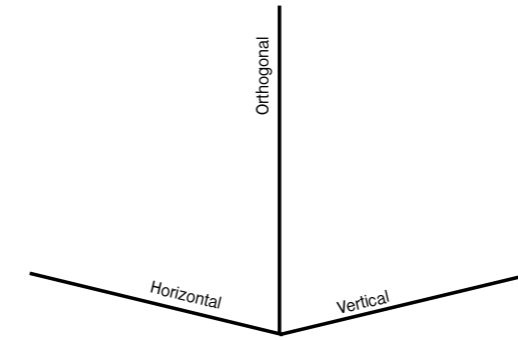


Fig. 19 Diagram / Design Feature / Perpendicular Lines

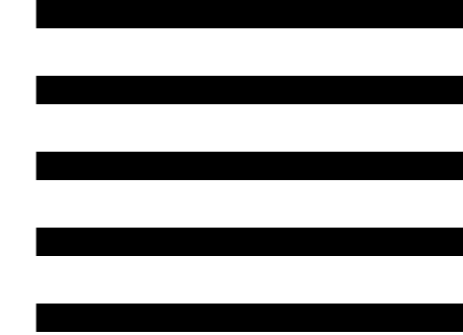


Fig. 20 Diagram / Lines in Plan



Fig. 21 Diagram / Distortion Of Lines in Perspective



Fig. 22 Floating Mats

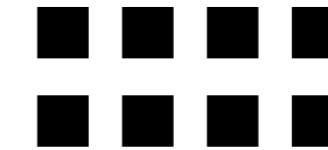


Fig. 23 Diagram / Creative Play- Moveable Matt Associations

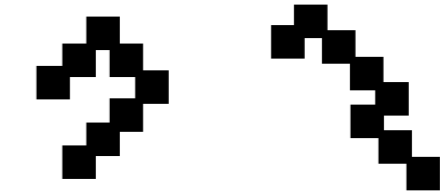


Fig. 24 Diagram / Front View Of Pole Area

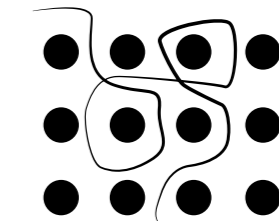


Fig. 25 Diagram / Top View of Pole Area / Routes

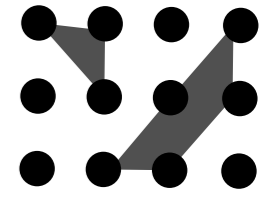


Fig. 26 Diagram / Top View of Pole Area / Fabric

05.3 Imagination Playground at Betsy Head Park and Burling Slip, NYC, USA, Interactive Landscape



Fig. 27 Unboxing Individual Pieces



Fig. 28 Assimilation of Pieces

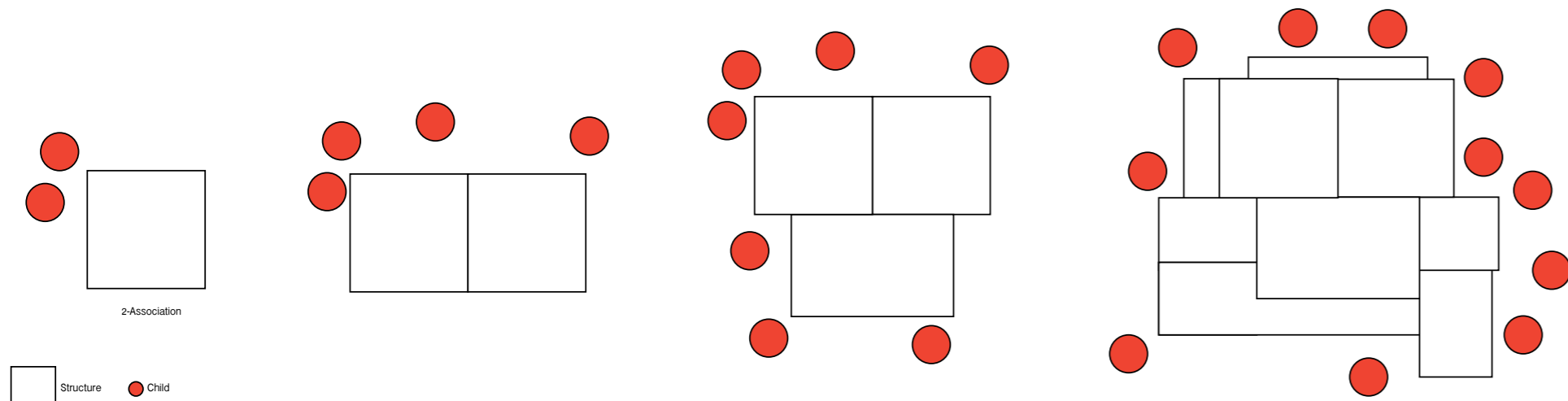


Fig. 29 Diagram / Creative Social Play

05.4 Garoon Gateway To Science Park, Chicago, USA, Educational Park

Firm: Weinbach and Partners, Ltd
Scale: 5000 sqm
Context: Near a Lake/Camping Site

The park serves as an educational tool for the children located near the Jewish Community Centre. The design tackles “informal” education within the landscape -it encourages experimental education by adding structures, exhibits. These installations are interactive and engage the children in the garden to learn about sciences in a more playful manner, without compromising leisure. The result of such an interaction is called “experiential learning”. Its target audience consists of: families and children ages 5 to 14.



Fig. 30 Park Overview



Fig. 31 Example of Interactive Structure- Weight



Fig. 32 Example of Interactive Structure- Planets

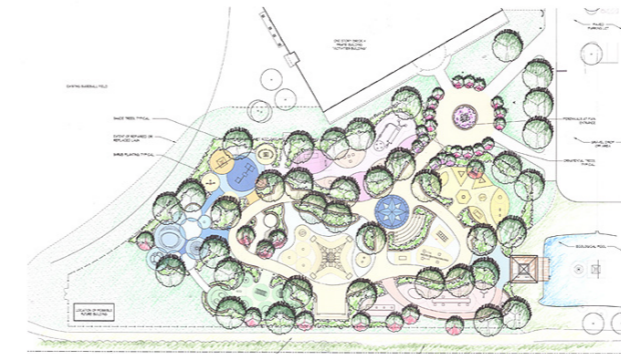


Fig. 33 Park Masterplan



Fig. 34 Park Circulation

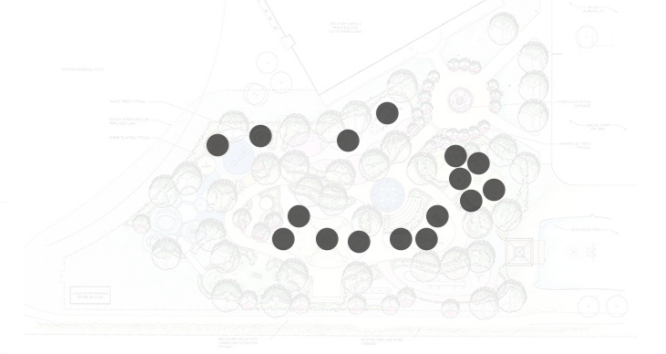


Fig. 35 Distribution of Interactive Elements

06 INVENTORY & ANALYSIS

Zokak el Blat, being a very complex and rich area had much to offer in terms of information. In order to try and narrow down the areas of study and focus, the most prominent data, significant to the problematic regarding education has been selected.

The data collection was in part direct information, making the inventory, and in others conclusions- which make the up the analysis. The data collected is based on both observation, research, analysis and interviews/surveys.



06.1 Land-use & Landmarks

The area is home to a number of different landmarks.

a. **Fig. 36** shows how the most prominent schools in the area are somewhat aligned and are fairly close to one another. Most buildings are residential and mixed-use. Schools are shown to be also within close proximity to one another. Religious institutions, for example: the Church and Zokak el Blat Mosque are also featured as landmarks within the area.

b. **Fig 37.** The entire site is located on a downwards slope, facing north.



Fig. 36 Land-use / 1: 6000

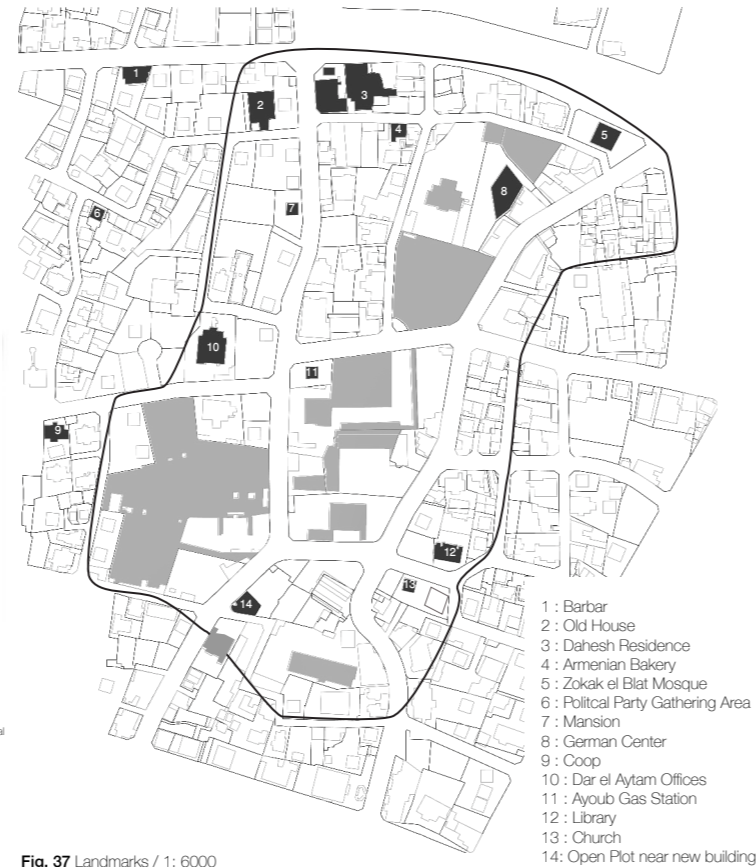


Fig. 37 Landmarks / 1: 6000

06.1 Land-use & Landmarks

a. **Fig. 38** Open spaces are mostly private and/or closed off. Some of them have been turned into parking lots that sometimes are used as improvised play areas.

b. **Fig. 39** A number of different institutions are also within proximity to the schools, interestingly enough, these institutions-including the schools, for example the Orient Institute, make up the landmarks of the area which give it its character. Other landmarks in the area also include old buildings classified as cultural heritage sites.



Fig. 38 Open Spaces / 1: 6000

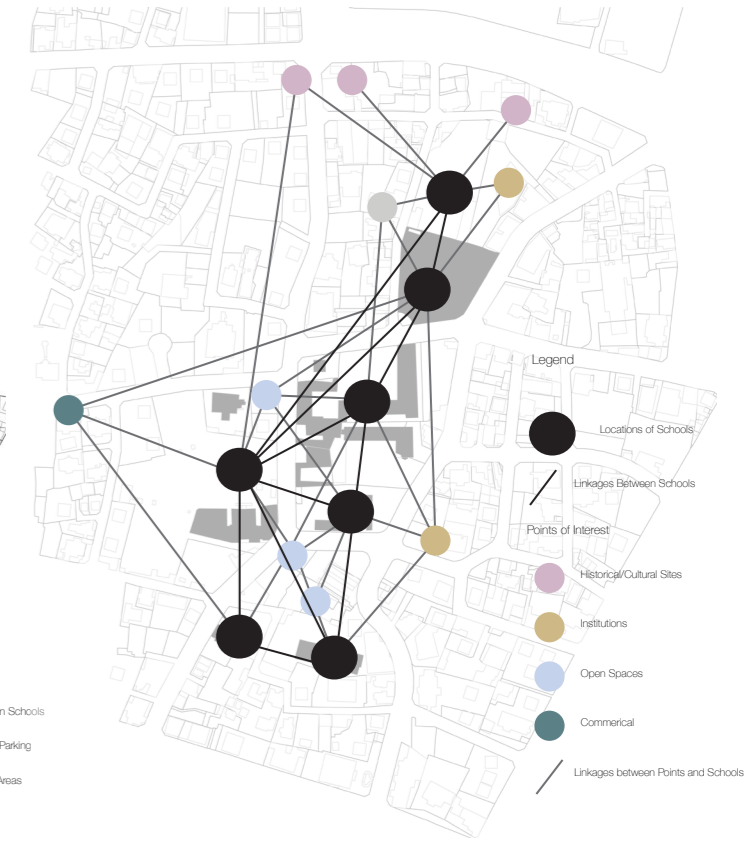


Fig. 39 Surrounding Elements Proximity / 1: 6000

06.2 Streets, Cars & Walkability

Streets network and sidewalks are major characteristics of any urban area. When properly designed, they can enhance safety, facilitate walkability and create a safer, friendlier environment. The following maps illustrate data that has been observed in the Zokak el Blat area regarding sidewalk and street network

a. **Fig. 40** Road network: The major schools-with the exception of CIS are all located along the main roads.

b. **Fig. 41** Disconnected Sidewalk: the sidewalk is disconnected along the secondary roads- thus reducing the general safety of the area.



Fig. 40 Road Network / 1: 6000



Fig. 41 Disconnected Sidewalk Network / 1: 6000

06.2 Streets, Cars & Walkability

a. **Fig. 45** Parking Areas: In addition to a having narrow sidewalks that sporadically disconnected, cars take up space when parked along them. The presence of parking lots does somewhat alleviate the number of cars parked on the sidewalk- it is still fairly high however. Note: Cars are also parked at the entrance of some schools.

b. **Fig. 46** Obstacles are also present in the form pillars, big walls (over 3 meters high) and other factors as well.



Fig. 42 Sketch / Wall near Apparition School

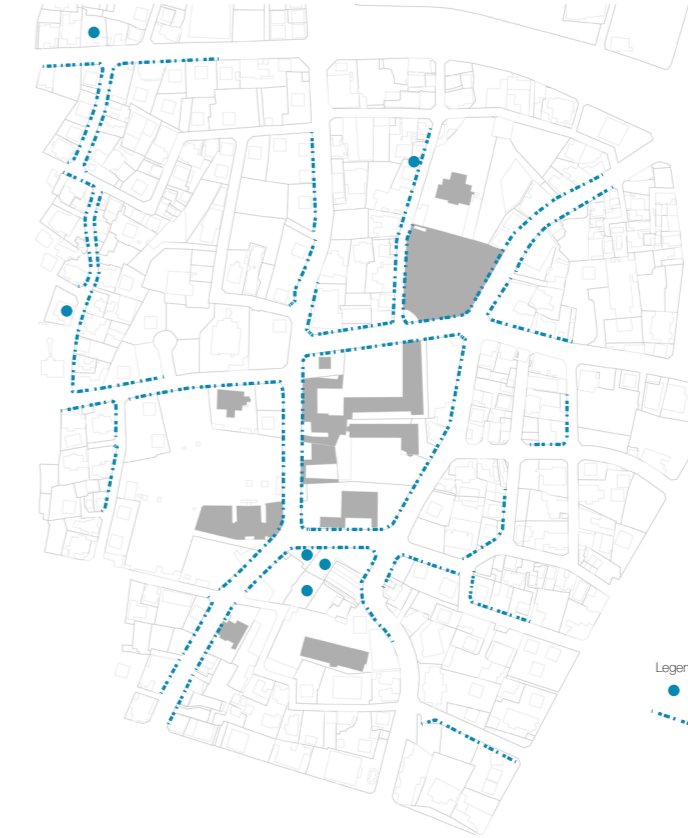


Fig. 43 Parking Areas / 1: 6000

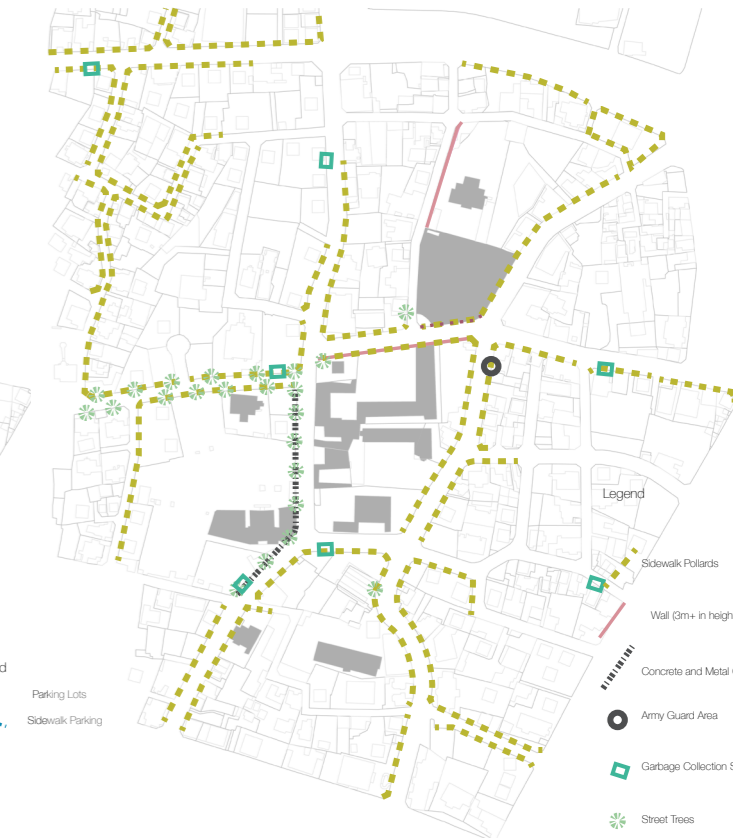


Fig. 44 Sidewalk Obstacles / 1: 6000

06.2 Streets, Cars & Walkability

Walkability is a major issue in the area. with the sidewalk obstacles and its sporadic disconnected network.

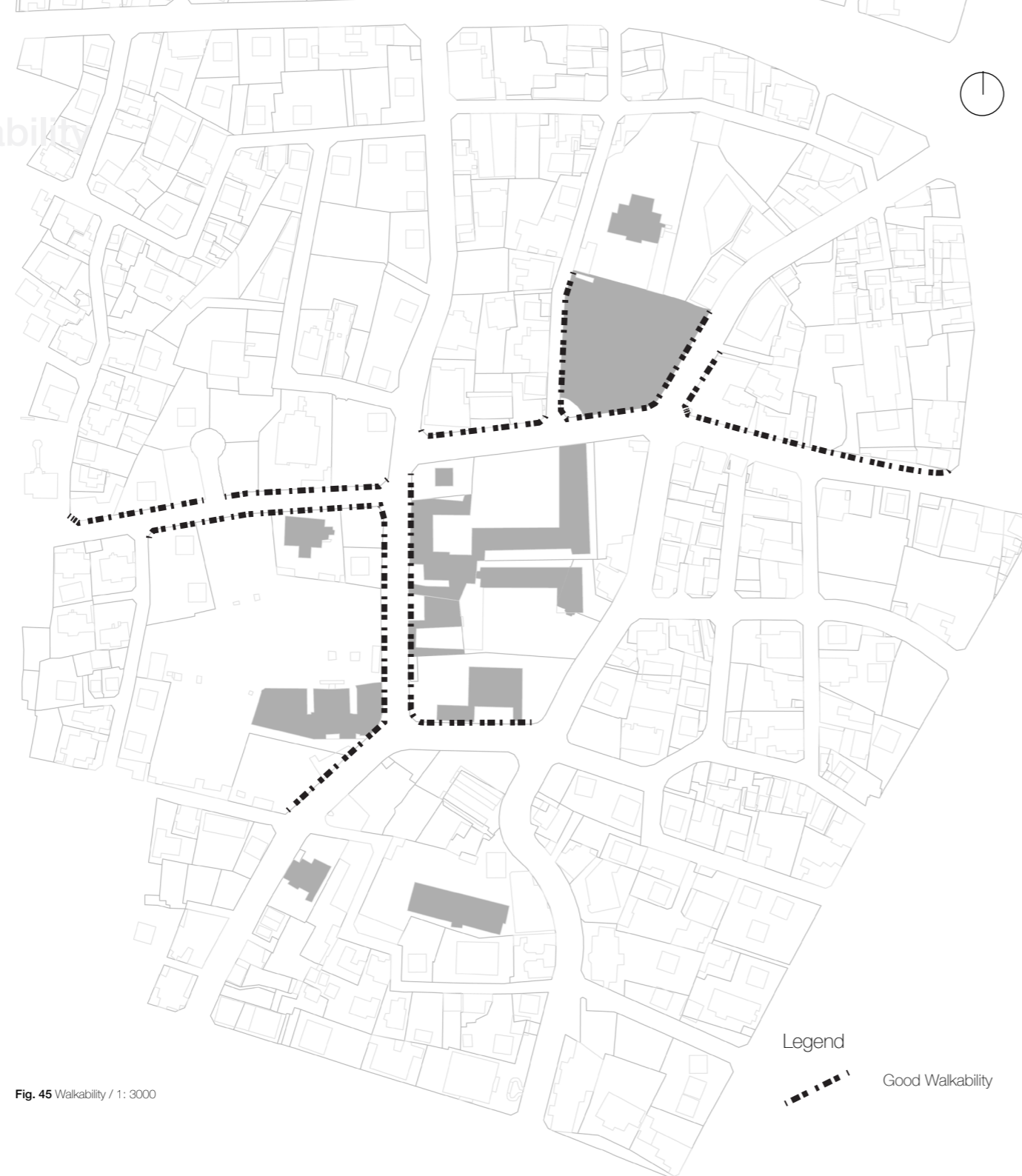


Fig. 45 Walkability / 1: 3000

06.3 The Schools



Fig. 46 Section / Lycee Abdel Kader / 1: 1500

Overview

Zokak el Blat's many institutions make it an area where residents have a number of different services within walking distance. Notably, the schools in that area take up a significant portion of the space- each of them presenting a distinct character and a target student body.

a. Location of Schools and School info: as previously mentioned, the schools are all within close proximity to one another. Despite that, they remain very different in terms of campus components and student body- due to the different in tuition fees. This is illustrated in the table below.

b. The schools differ based on whether or not they provide a green campus for the students. Noticeably, only two schools (CIS and Lycée Abdel Kader) offer a green campus. Saint Joseph de l'Apparition provides a small open area with a few planted trees, but it does not compare with the other two green campuses.

c. Students were asked a set of questions that helped better evaluate the area and how effective it is. The results are shown in the pie charts below. A number of 45 students going to school in Zokak el Blat were interrogated-these students. Almost of off the students wanted their school to supply them with a more suitable outdoors area.

06.3 The Schools

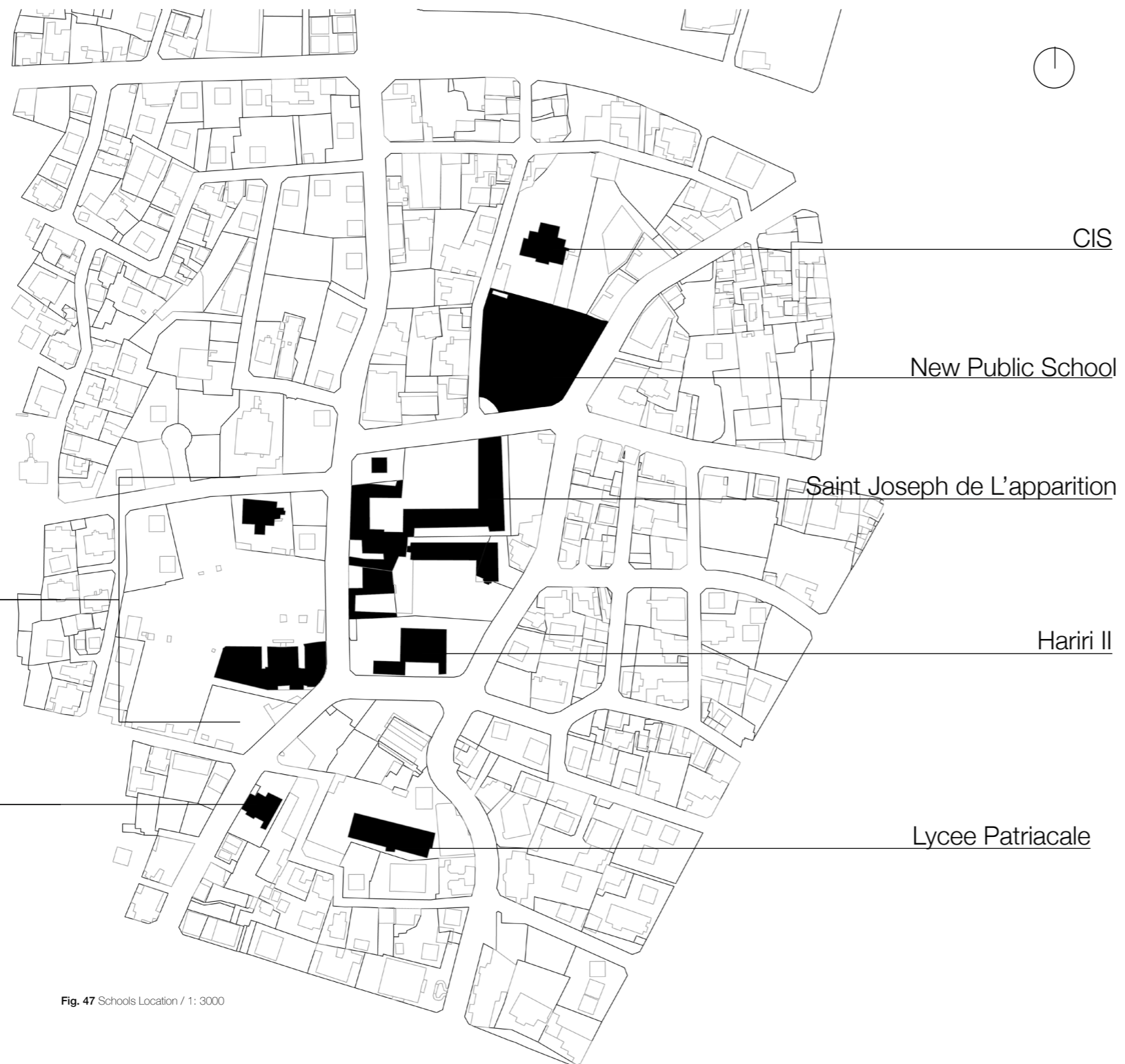


Fig. 47 Schools Location / 1: 3000

06.3 The Schools



Fig. 48 School Pictures

Name	Grades	Tuition Fee (LBP)	# of Students	Green Spaces	Area of Facility (m2)	Desnity (person/m2)	History of Facility	Start of the Day	End of the Day
CIS	K-12	7,774,000	690	Yes	4300	0.16	Armenian School	8 AM	3-4 PM
Public School	K-12	NA	NA	No	4280	NA	NA	NA	NA
Apparition	K-12	2,776,365	690	Yes	5490	0.12	Palace	8 AM	3-4 PM
Hariri 2	K-12	6,790,000	1300	No	3320	0.39	NA	8 AM	3-4 PM
Patriarcale	K-12	3,254,000	450	Yes	8200	0.05	NA	8 AM	3-4 PM
Maanieh	K-12	NA	NA	No	1850	NA	NA	8 AM	3-4 PM
Lycée Abed El Kader	K-12	7,260,000	1200	Yes	14300	0.09	Palace	8 AM	3-4 PM

Fig. 49 Table / School Data Summary

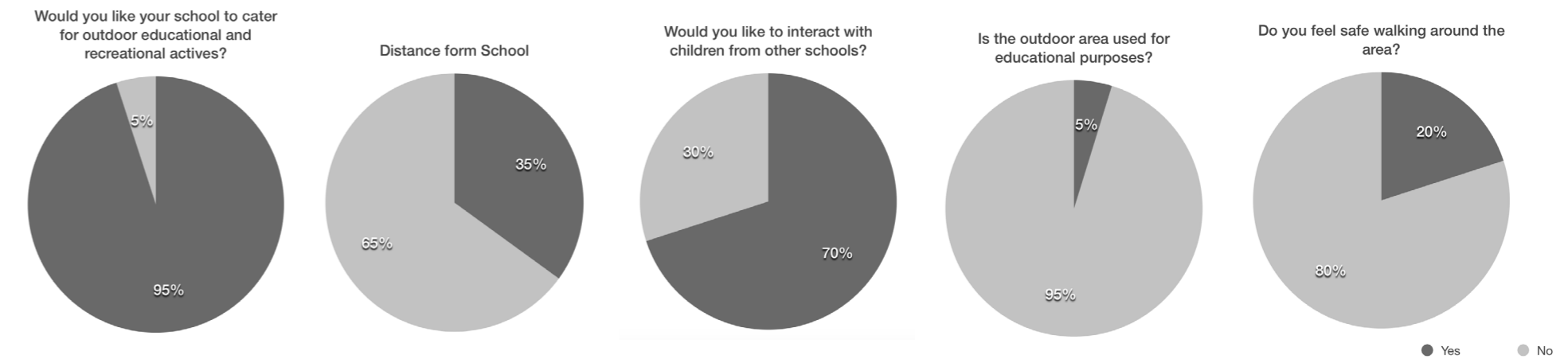


Fig. 50 Pie Charts / Survey Results

06.3 The Schools



Fig. 51 School Access Points / 1: 6000

Fig. 52 Schools in need of Open Spaces / 1: 6000
Results based on Open Spaces and School Data

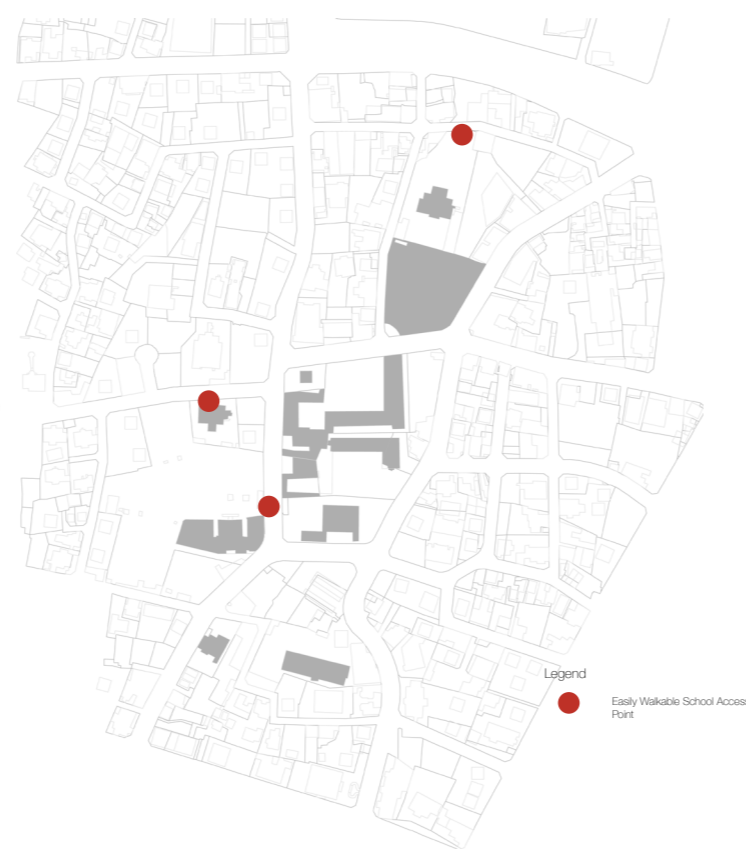


Fig. 53 Easily Accessible Schools / 1: 6000
Results based on access points, sidewalk network and topography

06.3 The Schools

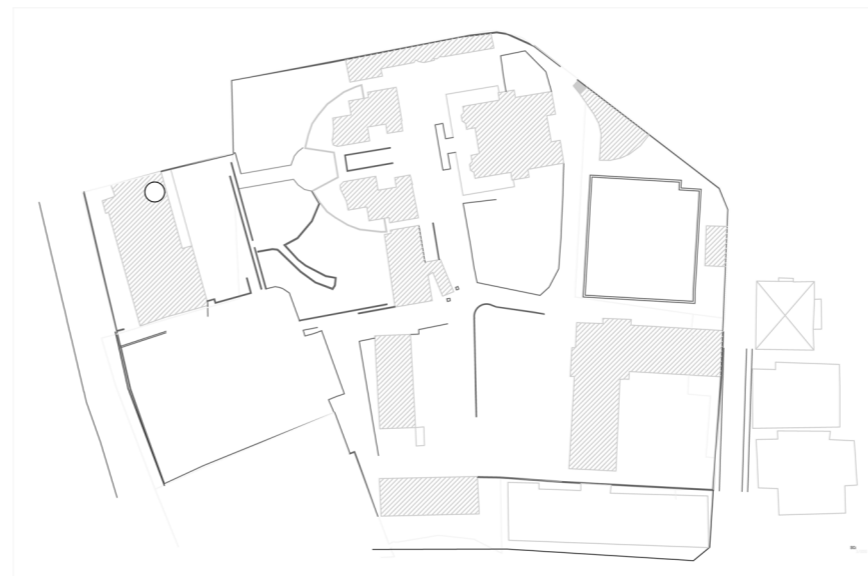


Fig. 54 Lycée Abdel Kader Masterplan / 1: 2000



Fig. 55 Hariri 2 Masterplan / 1: 1500
Results based on access points, sidewalk network and topography



Fig. 56 Entrance to Lycée Abdel Kader
Large Open Spaces- Colourful



Fig. 57 Entrance to Hariri School
Rigid

06.3 The Schools

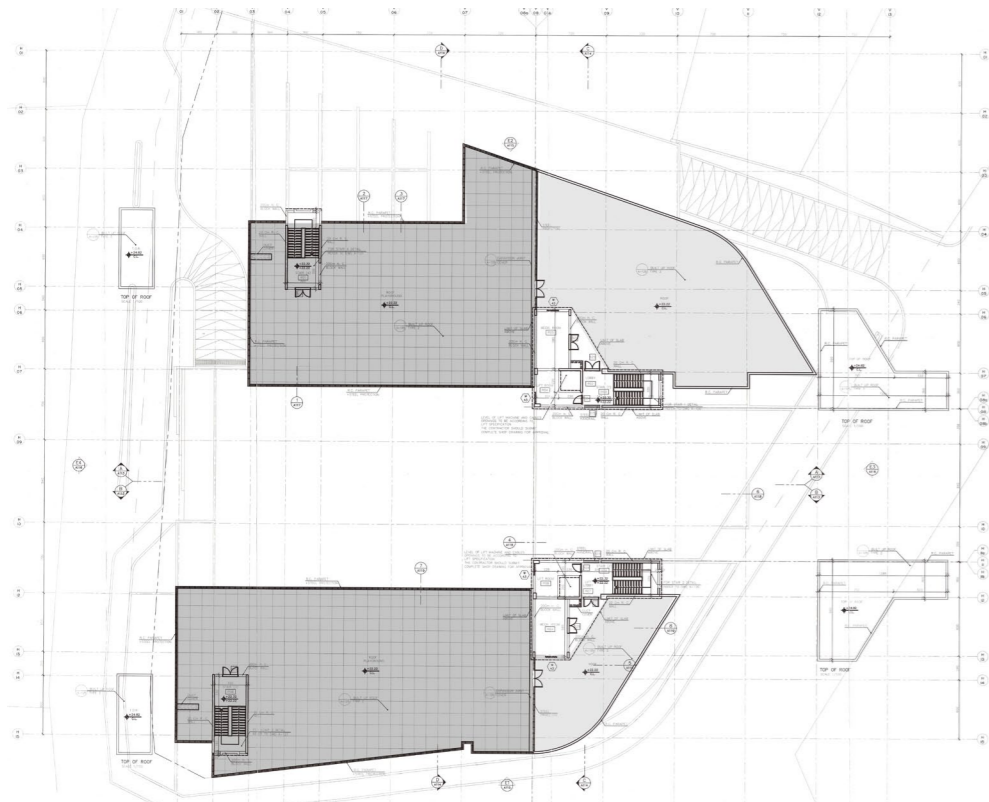


Fig. 58 New Public School Masterplan / 1: 1000



Fig. 59 Open Spaces in Public School
Rigid-Stoic-Uninviting



06.3 The Schools

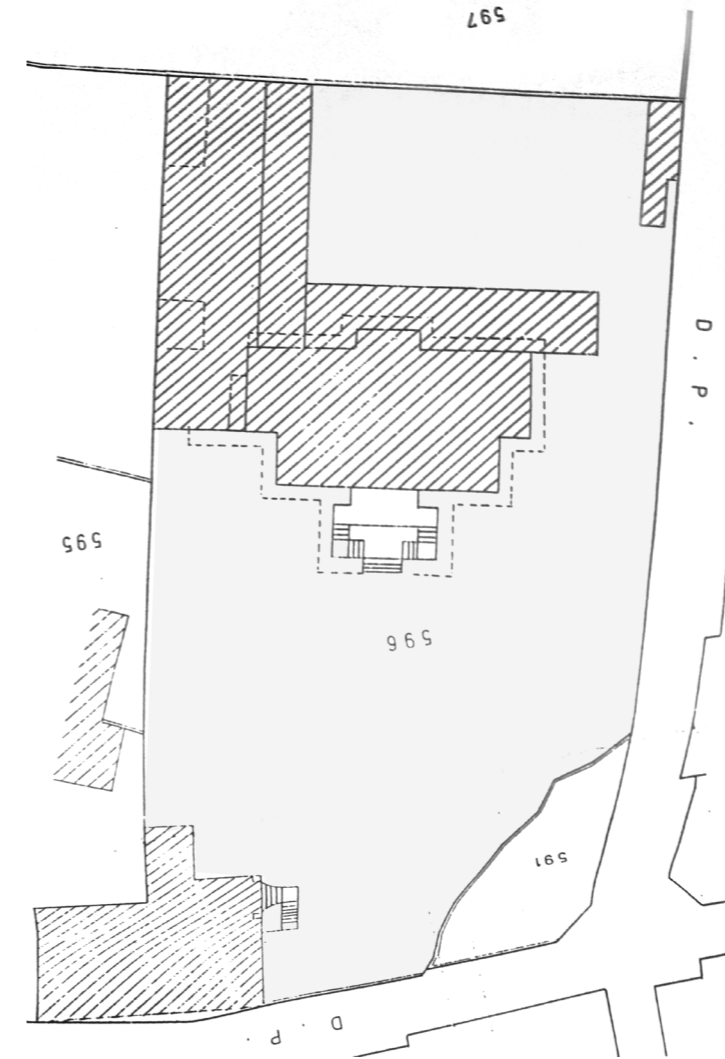


Fig. 60 CIS masterplan 1: 1000



Fig. 61 Open Spaces in CIS
Colourful-Inviting-Unused



General Conclusions on Schools:

- a. Schools are not easily accessible.
- b. The surveys show that the schools are not making the most of the area they are in: be it on a private level where each school is not optimising the space for outdoor learning, or the Zokak el Blat area itself- which made way to private parking lots instead of smaller, more niche spaces where children can express themselves and learn from their environment.
- c. There are a number of areas of interest that also add to the educational experience of the students.
- d. The spaces within the schools, be it rooftop or the campuses themselves are interesting places for intervention as they offer a vast open space that can be manipulated to incorporate elements to further enhance their education- potentially even implementing a space where an EIC educational program can take place.



After having carefully analysed and went though the different aspects and elements of the area, both on a social, urban and academic level, it is clear that the schools are in need of a better learning environment. Creating a more safe and academically friendlier environment within the congested area of Zokak el Blat is the driving idea of this project. The spaces designed will be mostly for educational and playful use. The main strategy is to utilise unused spaces, within and/or around the schools to provide the institutions with these spaces, as well as creating a general “campus-like” feel to the space.

On a more general scale, issues like walkability will be tackled, in order to ensure the safety of the students walking around the area, either for leisurely purposes or for their walk back home. At a smaller scale, creating educational landscapes- much like the ones discussed in the case study- to enhance the quality of educational environment is the strategy to follow through.

08 Preliminary Concepts

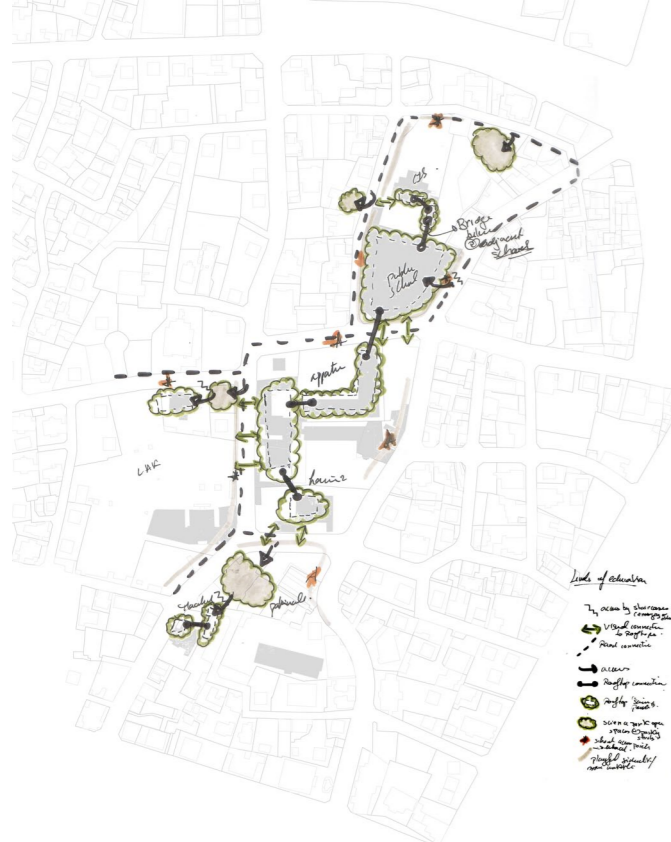


Fig. 62 Concept 1: Connections & Structured Education / 1: 6000

The first focuses mostly not the pedestrian network around the school, optimising it and utilising open spaces near the schools as education landscapes.

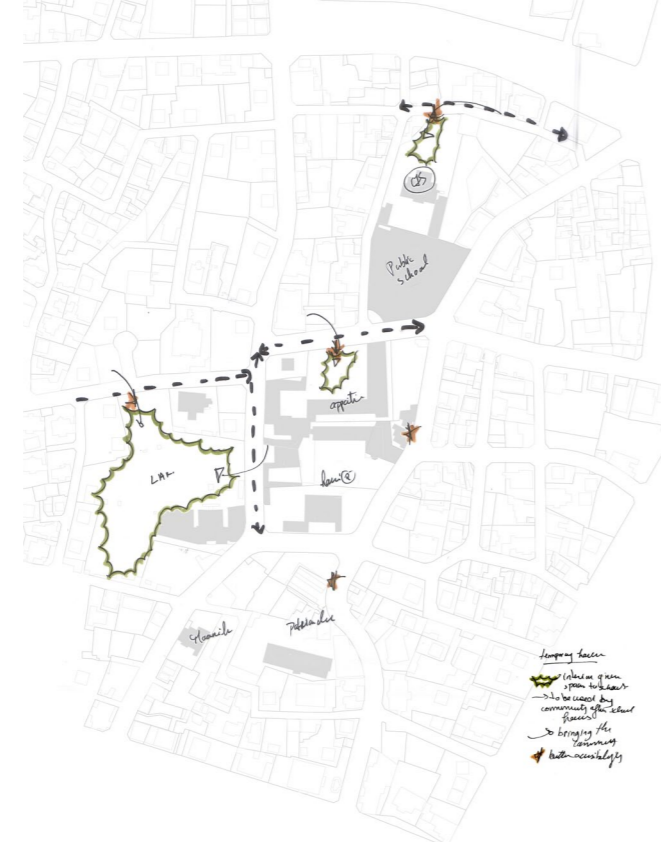


Fig. 63 Concept 2: Temporary Haven / 1:6000

The second concept tackles the inner spaces in the schools, working solely on the connection between sidewalk and school, and optimising the existing green spaces within them



Fig. 59 Concept 3: Elevated Education / 1: 6000

The third concept mostly focuses more on utilising the rooftops of buildings as educational spaces for the community of schools in the area.

09 FINAL CONCEPT

As a final concept *Playful Grounds*, the synthesis of the first and third ideas seemed best and most suitable as it provided space for learning and safe mobility for the students, and adding open spaces to lessen the congested effect of the thick urban fabric around the schools, thus creating an environment that is more stimulating. The idea is to also **connect the rooftop areas** together via bridges where possible to create a larger space for educational play for the students.

The **connectivity** between the different spaces would be mostly visual, and will give the space a uniting factor. In addition, on the rooftops, activities such a green roof gardening, and educational elements are added in order to merge play and learning.

The final product would consist of a series of **connected rooftop spaces** that are used for **educational purposes**, connected visually and physically to one another, in addition to smaller spaces-where possible, in order to also add the entire **“campus-like” feel** of the area. This would require a **general masterplan** of the area, and then **several focus area to develop** as samples.

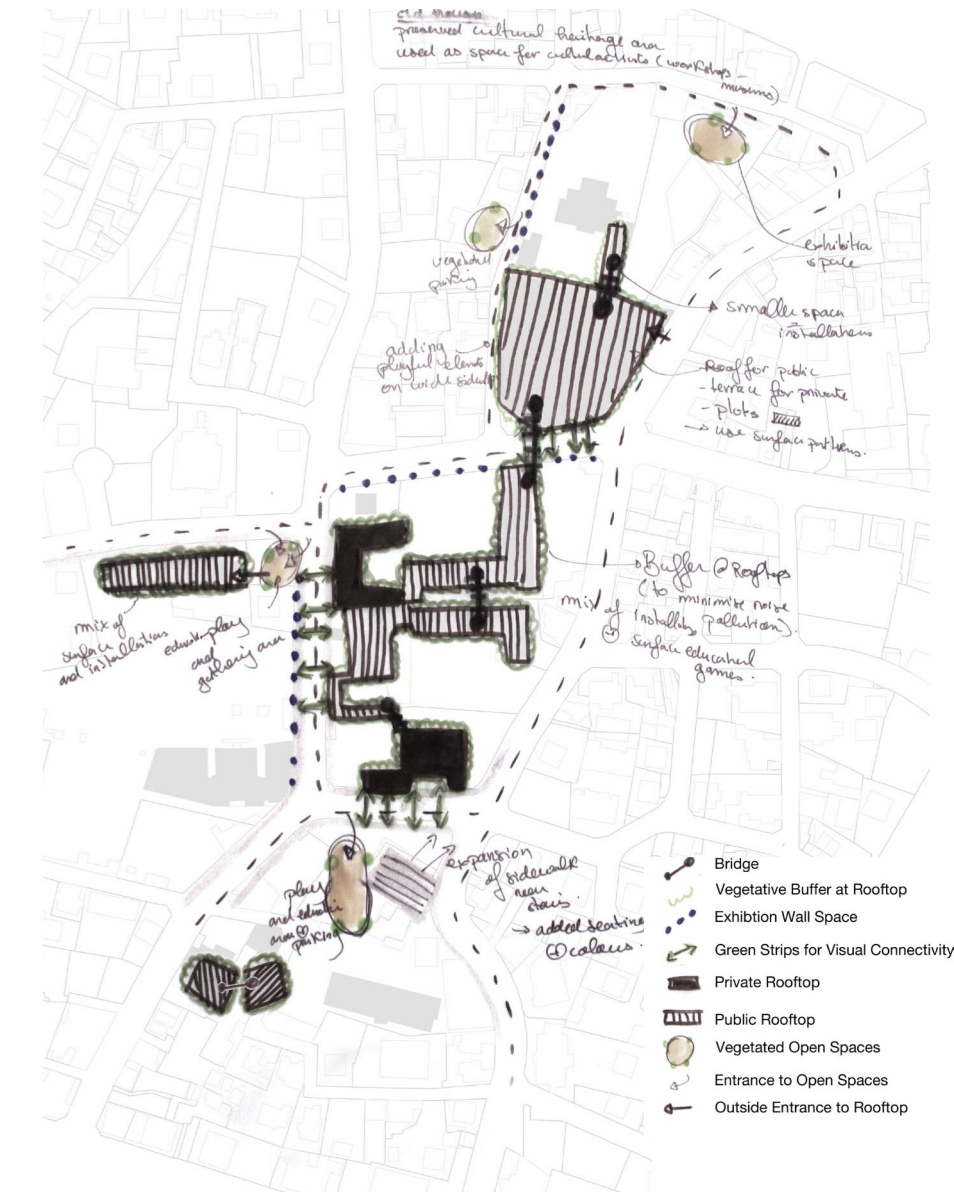


Fig. 65 Final Concept: Playful Grounds / 1: 6000

10 MASTERPLAN

DESIGN PHASE II

Making the area more **education-friendly** requires to think at both, a **masterplan** and a site design level.

The entire area follow an **educational theme**, aimed at making the spaces around and within the schools **safer and more enjoyable**. The area presents a **museum** and a **library** open to the public and within walking distance from the schools.

The streets near the school are **paved** in order to encourage pedestrian use. This also serves as a unifying factor the space.

Each open space (rooftop and ground-level spaces) is assigned a certain **theme** around which the design is built upon.





Fig. 67 Street Layout and Bridge Photomontage

11.1 The Street Network

The street network, as previously mentioned is **paved** and also accommodates **street trees** in order to make it all the more walkable. In addition, **alternate lighting** on opposite sidewalks allows for good visibility at night, all whilst keeping the energy consumption at a minimum. The sidewalks are all to be at least two meters wide in order to allow a flow of pedestrian access and use.

The walls along the schools are no longer rigid- they take on a playful aspect. The walls' use is no longer strictly to separate the schools from the existing sidewalk. It is used as an **exhibition space for student work**.

This allows the students to leave their mark and the area, making them appropriate the space and make it their own.

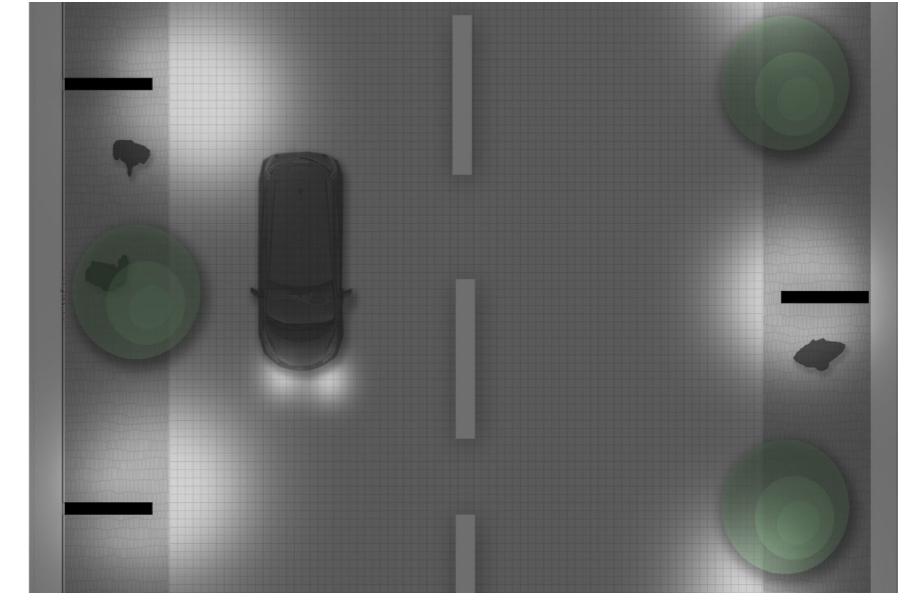


Fig. 68 Street Layout (Night) / 1: 125

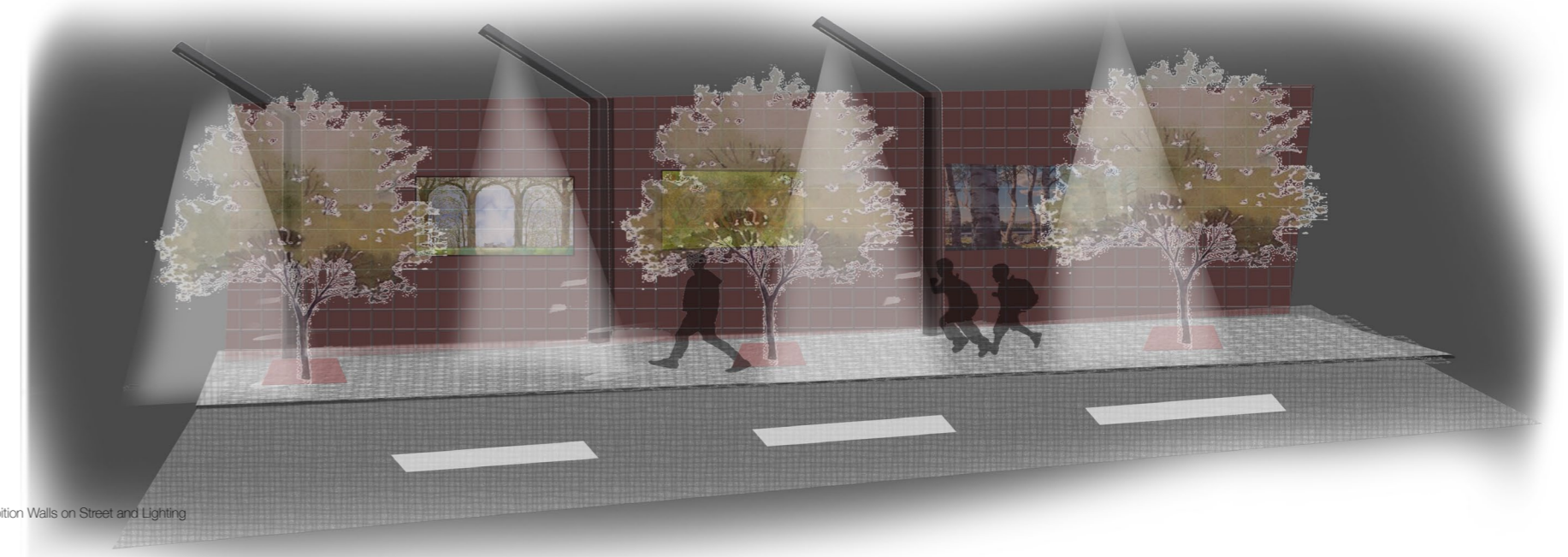


Fig. 69 Exhibition Walls on Street and Lighting

11.2 The Open Spaces : Playground Area

The first open space is one that is used as an **impromptu** playground by the kids and students in the area. The idea is not to change this, but rather to build up on it, by adding **proper seating** areas in the shape of stairs to accommodate the maximum amount of people in such a limited space, as well as adding **vegetation** around these seating areas to provide **shade** for the users. This also allows for a small audience to sit and watch the games. Lines of football and basketball courts are appropriately scaled on the floor to provide the users with a sense of direction when engaging in these physical activities.



Fig. 70 Open Space Rendered Plan / 1 : 200

11.2 The Open Spaces : Playground Area

The **lighting** is focused around the **edges** and the **entrance** of the space. The planting scheme is kept simple in order to maintain the familiarity of the area with *Sophora secundiflora*, used in its tree form, and *Pennisetum setaceum* and *Pennisetum setaceum rubrum* as groundcovers. The edges of the site that are not attached to a wall will be fenced in order to maintain the **connection** with the street.

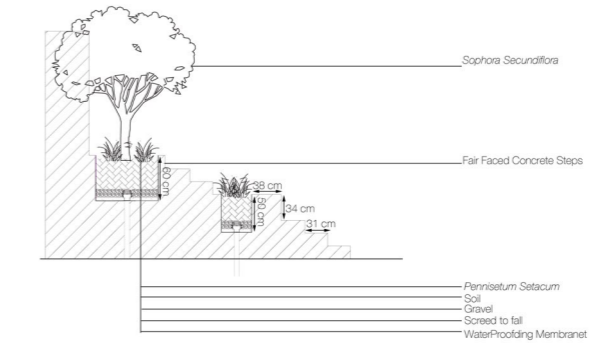


Fig. 71 Detailed Section Stair Case / 1 : 100



Fig. 72 Lighting Plan of Open Space / 1 : 400

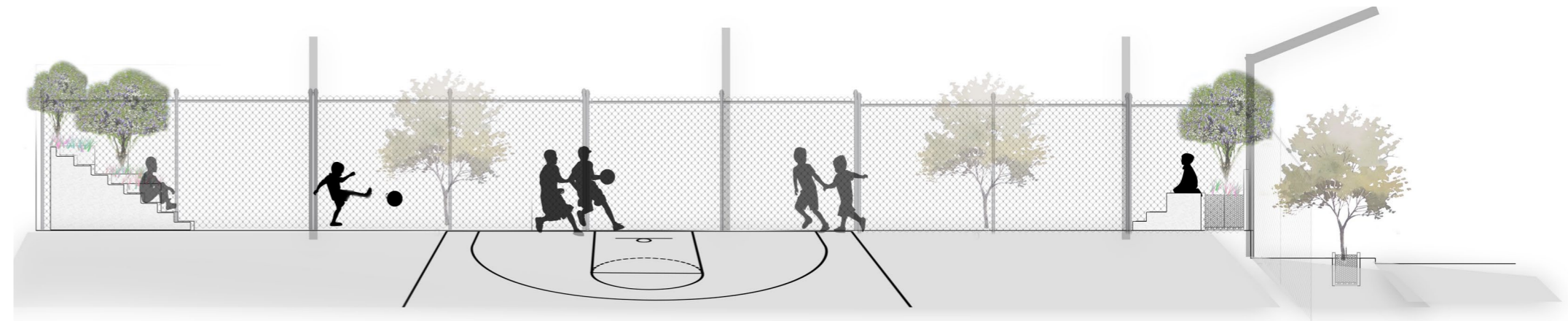


Fig. 73 Overall Open Space Section / 1 : 100

11.3 The Open Spaces : Outdoor Exhibition Area

The second open space is used as an **outdoor exhibition** area which hosts temporary exhibition by local artists, this includes paintings. Installations and other forms of art.

The sidewalk is extended one meter into the space itself in order to invite people to utilise this area. The existing **pebbles** are kept- this gives the space a more “raw” feel. At the center, an elliptical fair faced concrete floor is added- this can be used as a play area when no exhibitions are being held, or as the support for any structures that can't be maintained on the gravel floor.

At the edges are **seating areas**, surrounded with ground covers, making the space not only for contemplation, but also for relaxation.

No fences or specified entrances are added in order to highlight the **visual and pedestrian connection** with the surroundings.

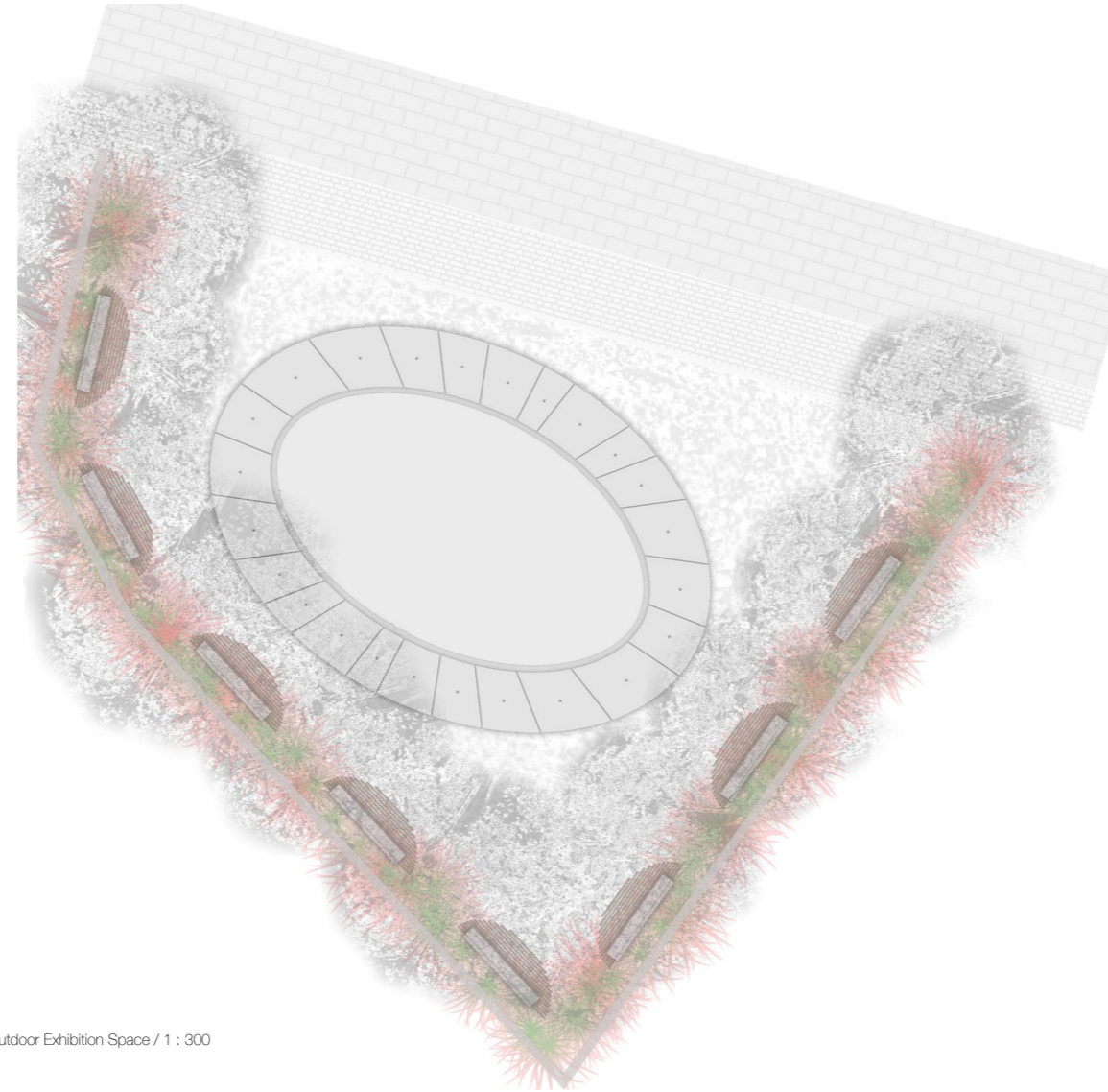


Fig. 74 Outdoor Exhibition Space / 1 : 300

11.3 The Open Spaces : Outdoor Exhibition Area

In order to emphasize the relation with the other open space, *Pennisetum setaceum* and *Pennisetum setaceum rubrum* are also found as groundcovers. The **Cypress trees** are kept.

The pebbles are already existing and merge well with the cypress trees and the proposed vegetation, creating a unified space of **serenity**.

The lighting is emphasised at the edges, against the **walls** and near the **benches**, also it emerges from the fair-faced concrete floor in the center to highlight whatever elements exhibited there.

The space is thus an area for art appreciation and for seating. It is open all day for the public to use.

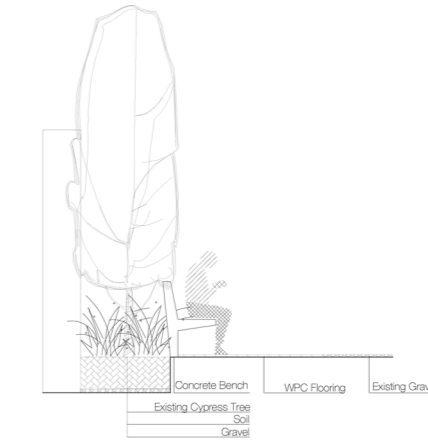


Fig. 75 Detailed Section and Material Used / 1 : 50

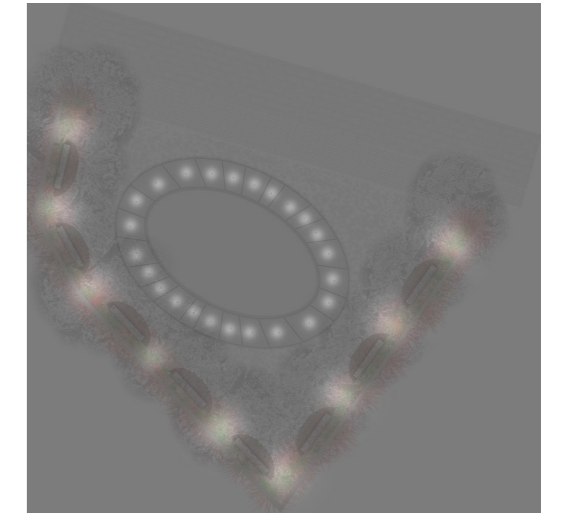


Fig. 76 Outdoor Exhibition Space Lighting Plan / 1 : 600



12 THE SCHOOLS

The school rooftops are used as public **open spaces**. This helps **maximise** the number of open spaces in the area, and also allows easy access to the students during the schools days.

The rooftops are not open to the public on weekdays. However, on weekends, they can be used by both the students and the people living in the area. The rooftops are **assigned themes**: arts and crafts, science, planting areas etc. This ensures that each rooftop provides

specific activities- making it part of the larger network of schools and open spaces.

The school rooftops provide education activities in **playful and engaging** matters that allow the users to **interact, play and learn** all at once. This is achieved through playful **patterns** on the floor or even **interactive installations** that also fall under the theme of educational play.

12.1 The Schools: The Public School

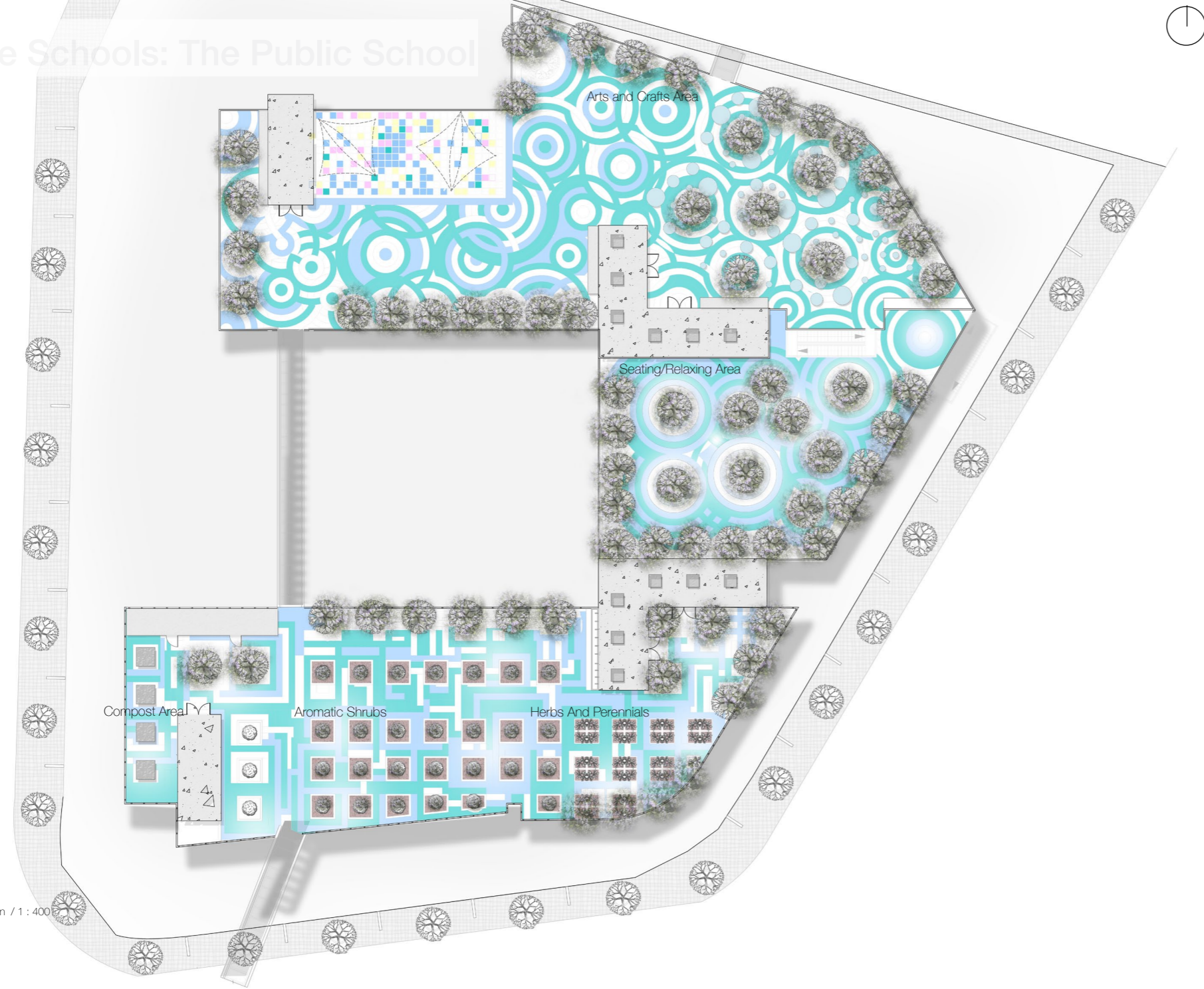


Fig. 77 Public School Rendered Plan / 1 : 400

12.1 The Schools: The Public School

The first rooftop to be used is that of the newly built public school. This school was specifically chosen as it had little to no playful elements for the students to engage with. The **patterns** on the floor add colour to a previously dull and uninteresting space. Each part of the rooftops and the terrace provides **different activities**: arts and crafts, resting and planting.

Finally, this school provides **access from the streets** to the rooftops via a **staircase** that connects to the terrace, and then another staircase would take the user from the terrace to the rooftops which are connected to others via a set of bridges, assuring pedestrian connectivity between the different zones.

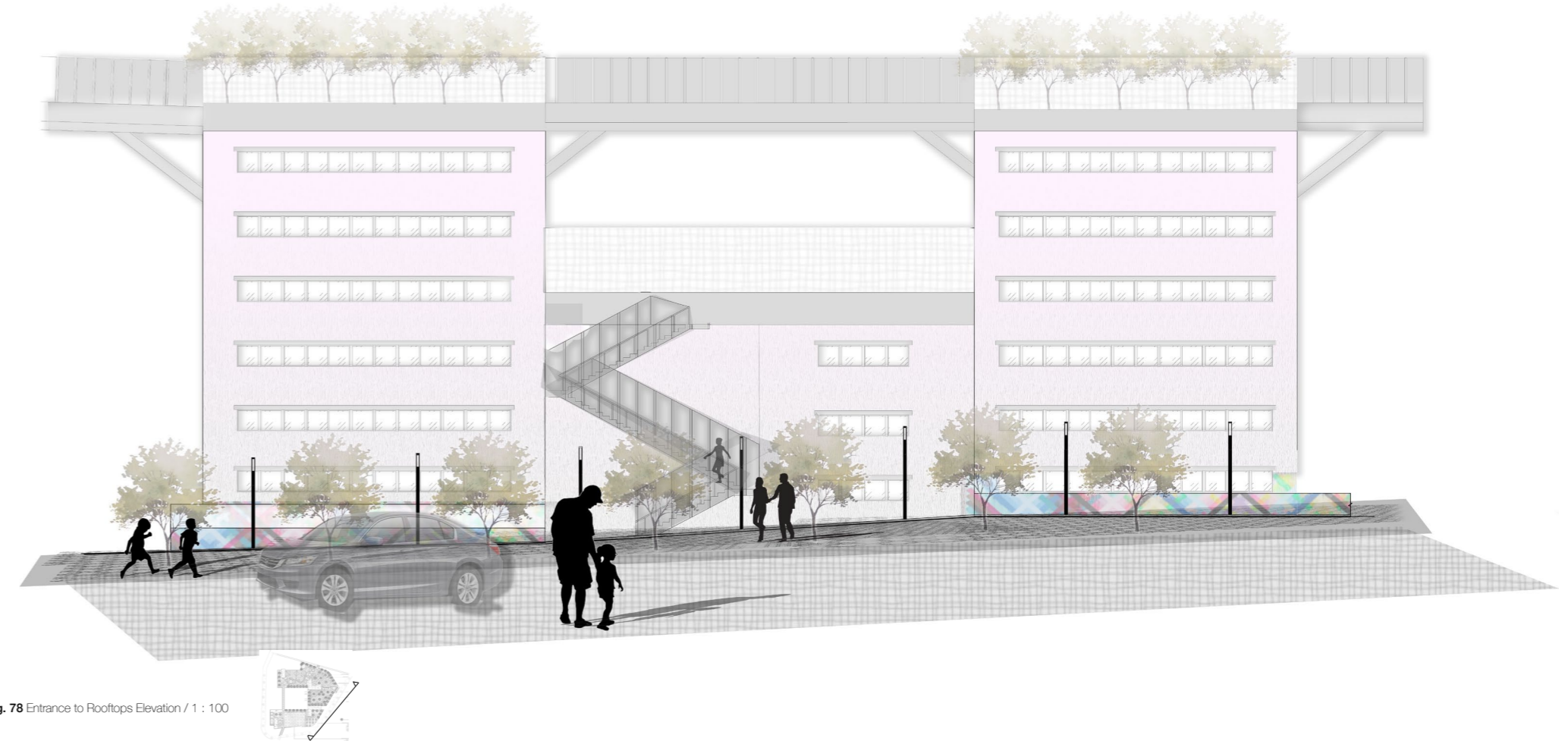


Fig. 78 Entrance to Rooftops Elevation / 1 : 100

12.1 The Schools: The Public School

The material used is limited to **coloured rubber** flooring for maximum safety. The floorings will be installed following the patterns shown in the plan.

The terrace presents domes in which *Sophora secundiflora* are planted to provide shade for the users. This tree is used all over the arts and crafts area as well as it doesn't need much maintenance and falls under the specifics required for rooftop planting.

The **plotting area** is divided into three separate spaces: a compost area, an ornamental and aromatic cluster of shrubs and finally perennials and herbs that are planted interchangeably throughout the seasons.

The arts and crafts area presents height **adjustable tables**, connected to **rails** into to maximise space flexibility.

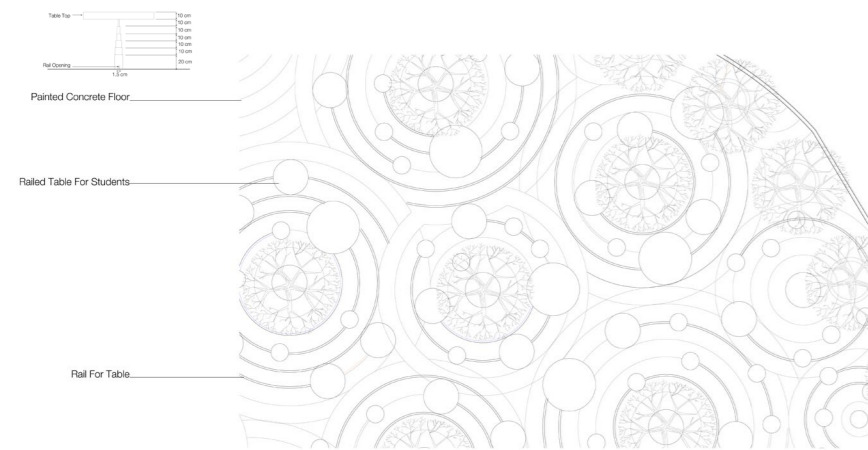


Fig. 79 Close Up Pattern and Rail Table Detail / 1 : 200

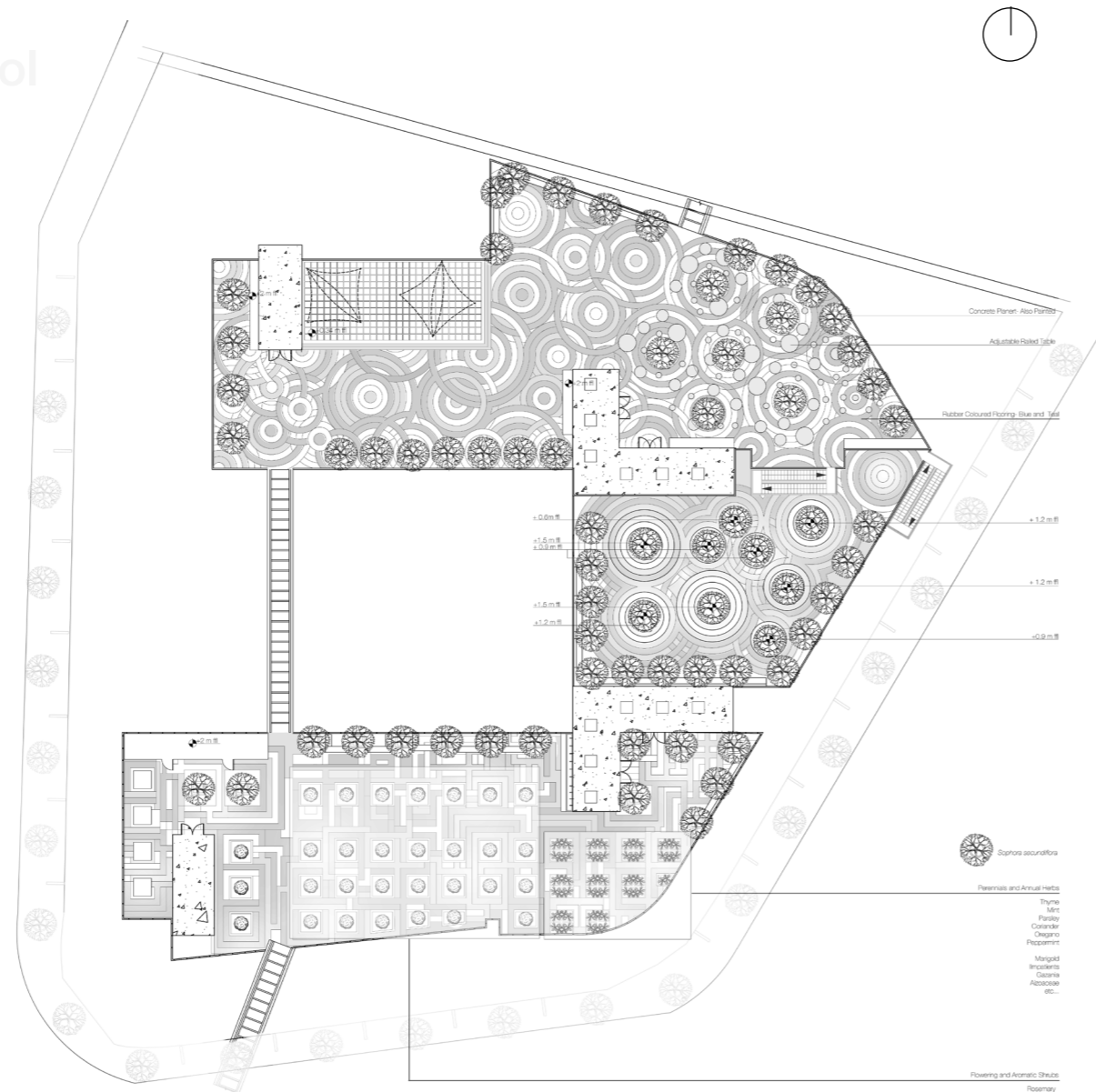


Fig. 80 Public School - Pattern Softscape and Hardscape Plan / 1 : 600

12.1 The Schools: The Public School

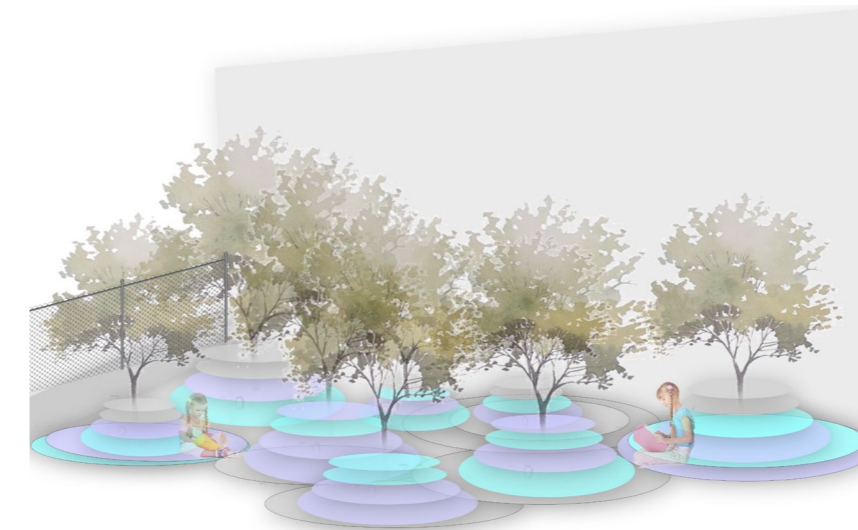


Fig. 81 Photomontage of Resting Area on Terrace



Fig. 82 Theatre and Game Space on Rooftop

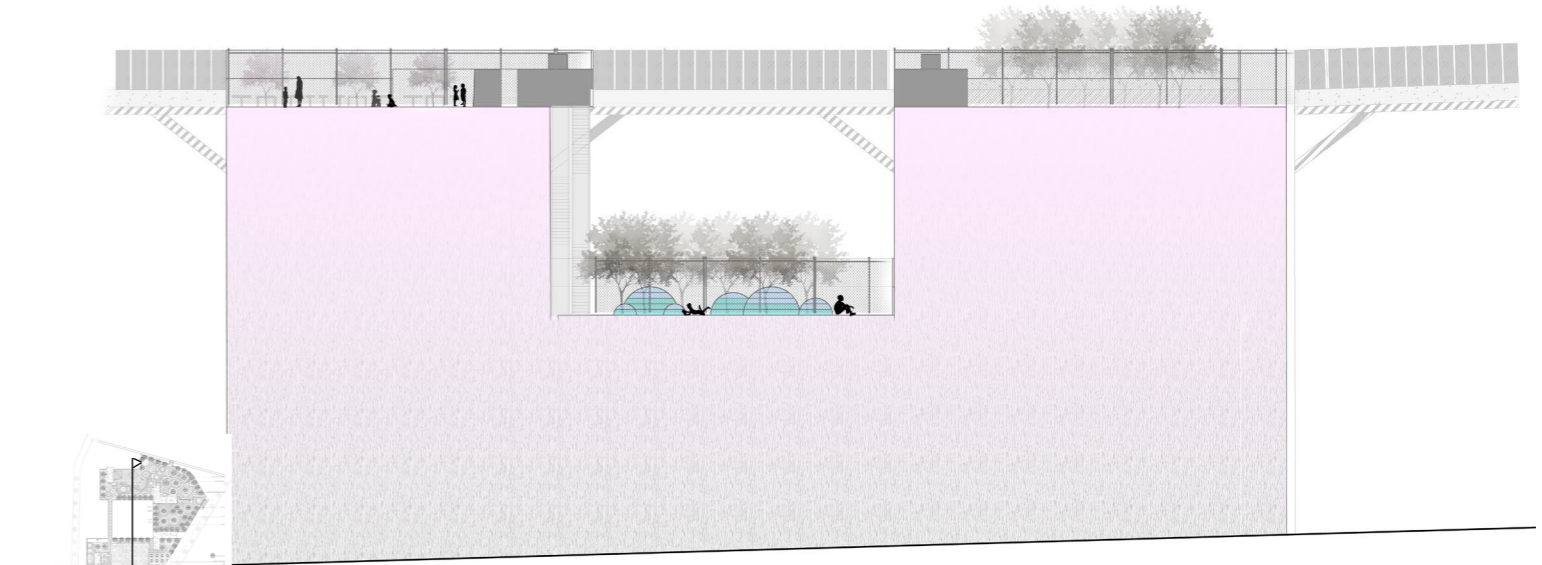


Fig. 83 Section of Public School / 1 : 400

12.2 The Schools: Hariri II

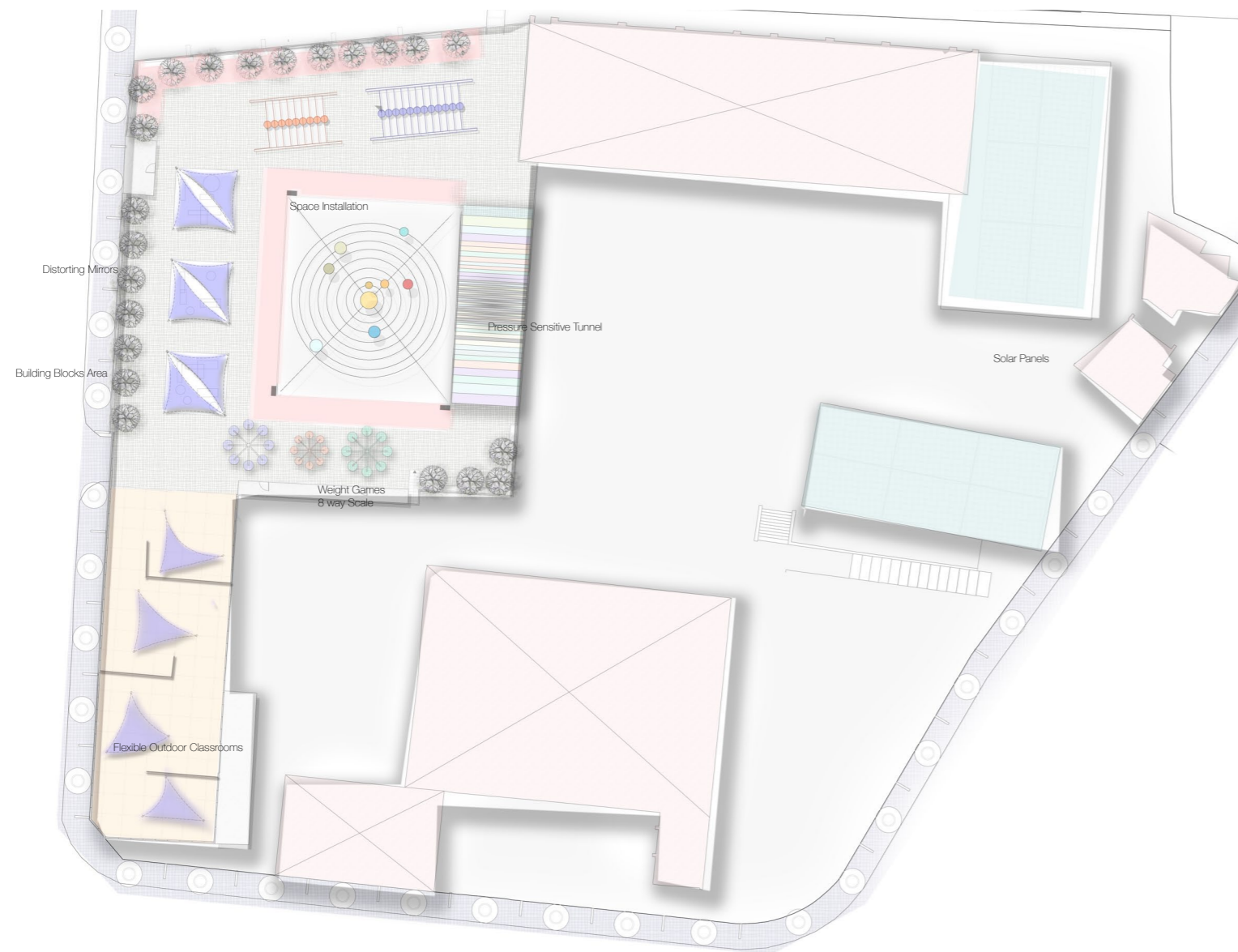


Fig. 84 Hariri II Rendered Plan / 1 : 600



12.2 The Schools: Hariri II

The Hariri II rooftop follows a **science theme**. This theme is expressed by a number of different interactive installations. The first installation is a set life-sized **newton's cradle**, followed by a tunnel of **pressure sensitive tiles** connected to **pipes** that release air depending on the pressure applied. These pipes have papers and confetti that make the movement of air within them visible. A space allocated for **building structures** using the imagination playground

pieces discussed in the case study. In the backdrop are **distorting mirrors**. Finally, at the end of the rooftop are eight-way **life sized scales** and a **open classroom** area that provides a flexible space, via a set of panels that are connected to the fence. These panels can be distributed as one sees fit onto the allocated space, thus providing a multitude of different classroom areas every time of interchangeable sizes. **Shading Structures** are also a key factor of the space.

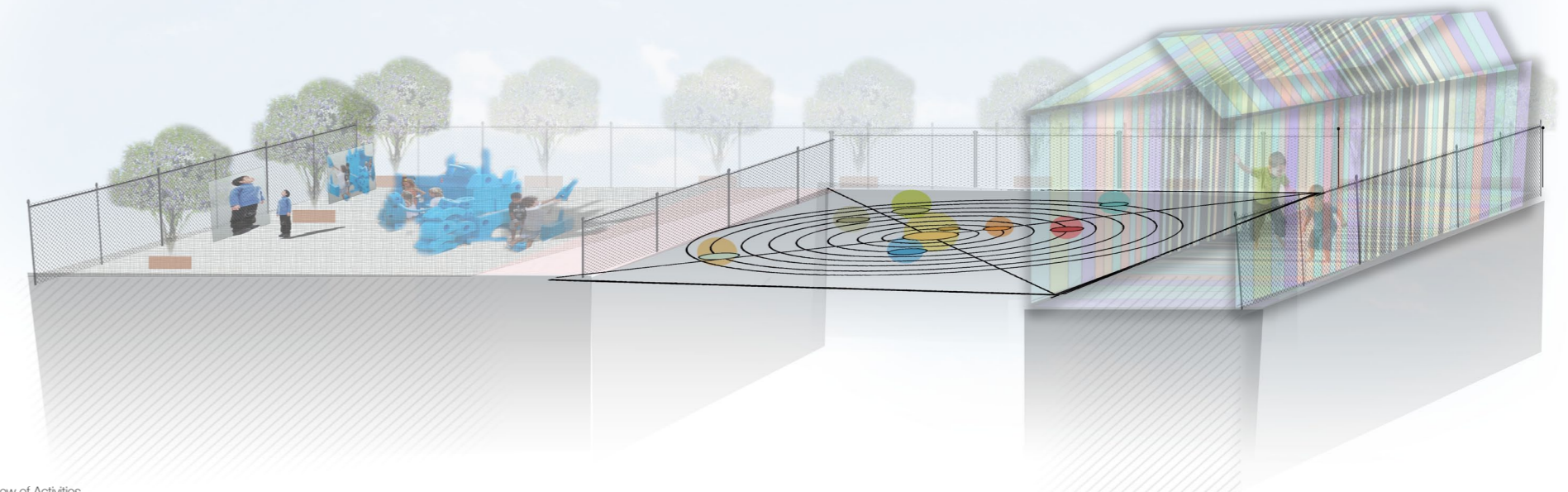


Fig. 85 Overview of Activities

12.2 The Schools: Hariri II

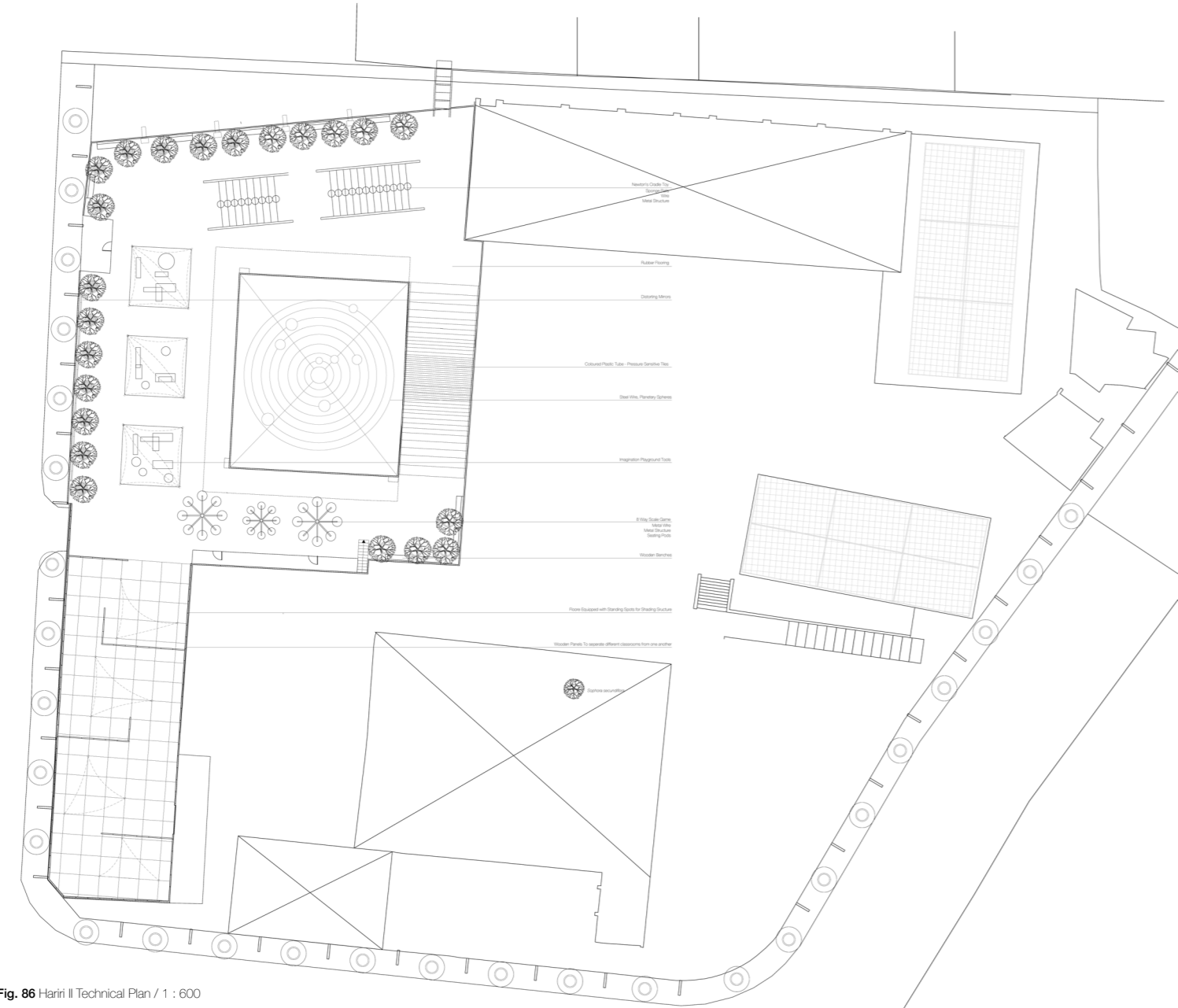


Fig. 86 Hariri II Technical Plan / 1 : 600



12.2 The Schools: Hariri II

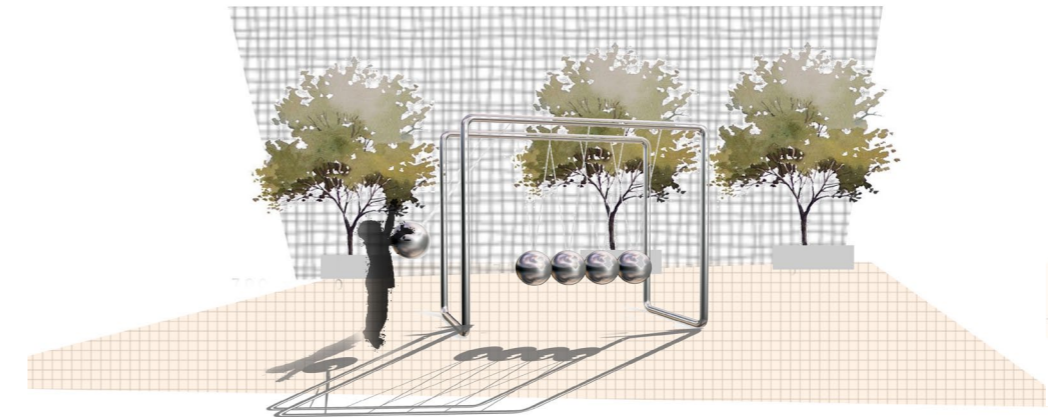


Fig. 87 Newton's Cradle Game

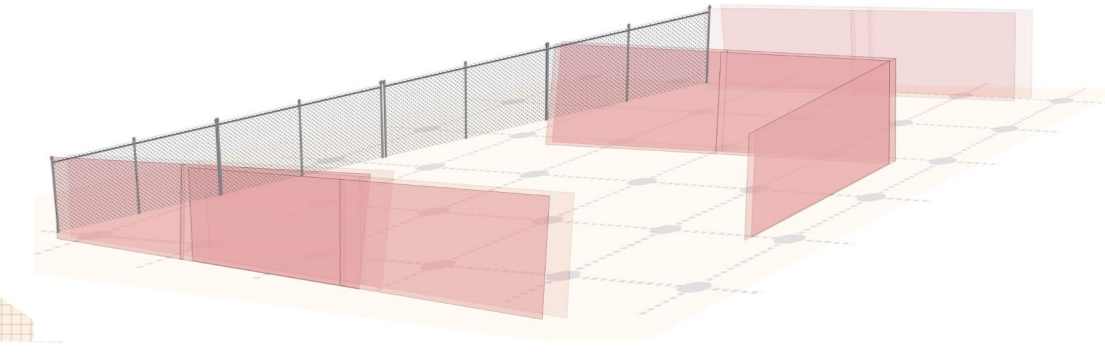


Fig. 88 Flexible Outdoor Classroom



Fig. 89 Eight-Way Scale Game



Fig. 90 Preliminary Photomontages of Pipe Tunnel

13 REFERENCES

Chawla, L. "Benefits of Nature Contact for Children." *Journal of Planning Literature* (2015). Web. 21 Sept. 2015.

Chedid, R., Krijnen, M., Marot, B., Moussaw, H., & Adjizian, J. (2012). *Urban Observation Zokak el Blat Bierut - Lebanon* (Unpublished master's thesis). Academie Libanaise des Beaux-Arts

Faber Taylor, A., A. Wiley, F. E. Kuo, and W. C. Sullivan. 1998. "Growing up in the Inner City: Green Spaces as Places to Grow

Faber Taylor, A., and F. E. Kuo. 2009. "Children with Attention Deficits Concentrate Better after Walk in the Park." *Journal of Attention Disorders* 12 (5): 402-9.

Faber Taylor, Frances E. Kuo, and William C. Sullivan. "Views Of Nature And Self-Discipline: Evidence From Inner City Children." *Journal of Environmental Psychology* (2001): 49-63. Web. 21 Sept. 2015.

Gebhardt, H. (2005). *History, space and social conflict in Beirut: The quarter of Zokak el-Blat*. Beirut: Orient-Institut.