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The Kalaiselvi Project **- Revitalizing the outdoor environment of a** **children's home in India**

Prosjekt Kalaiselvi
- Revitalisering av uteområdet til et barnehjem
i India

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Master in Landscape architecture

THE KALAISELVI PROJECT

Revitalizing the outdoor environment of a children's home in India.





P R E F A C E

This thesis is made as a completion of my master education in landscape architecture at the Norwegian University of Life Sciences. The thesis constitutes 30 ECTS.

The topic of the thesis is chosen on the background of my interest for human development and participation in landscape planning. I wanted to use the master thesis to make a small difference in someone's everyday life, and at the same time get a deeper understanding on how to use participation when planning spaces for people. I wanted to work with a real project, and I therefore initiated the Kalaiselvi Project, with the vision of making a new outdoor environment for a children's home in India.

Several people have contributed to make the project possible. I would like to thank my head supervisor Shelley Egoz and co-supervisor Ingrid Merete Ødegård for their valuable input and support throughout the entire master period. I would also like to thank the management and the children at Angel House Children's Home, for allowing me to carry out the project, and for all the help and contributions they have provided in the process. A special thanks goes to the local landscaper, Harihara Sudan, who engaged so much time, effort and compassion in the process. The project would not have been possible without him. I would like to thank my family and friends for being helpful and supportive during the planning process, and for participating in the actual building process. Finally, I would like to thank all the subscribers for their generosity and positive feedback.

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Hanna Tryggestad

T H E K A L A I S E L V I P R O J E C T

Kalaiselvi Karunalaya Social Welfare Society (KKSS) was founded in 1983 by Mr. Purushottam, a business man, who wanted to give children from marginalized communities a better life opportunity and an education. Today, the organization has grown into a big social service organization working for rescue and rehabilitation of orphaned children, abandoned elderly, women in distress, people addicted to drugs and alcohol and victims of natural disasters in rural and urban Tamil Nadu (KKSS, 2016).

KKSS has established rescue homes all over Tamil Nadu. In Chennai, the capital of Tamil Nadu, they have a children's home called Angel House Children's Home. The children's home is recognized by the government of Tamil Nadu, and gets 60 % of its support from the state. The remaining 40 % are covered by donations. In 2002, KKSS won the national award for child welfare by the government of India (KKSS, 2016).

In the same department of the children's home, they have a home for women in distress and abandoned elderly. The elderly in the home will move to a new location by the summer of 2016, where the facilities are more suitable for elderly. At the moment, there are both women, elderly and children living at Angel House Children's home. 25 children and 25 elderly are living at the children's home at the time of spring, 2016. When the elderly move to the new location, there will be room for 25 more children.

KKSS' vision is; *"To provide social development to the children by quality education and make a significant change in the community and society"* (KKSS, 2016).

With this project, I intend to provide a suitable outdoor environment for the children and residents at Angel House Children's Home.



ABSTRACT

I initiated the Kalaiselvi Project in spring 2012, with a vision to plan and execute a project to revitalize the outdoor environment of a children's home in India. The outdoor area of Angel House Children's Home in Chennai was previously in a very poor condition, and it was not safe for the children to play there. Through four years of work, with fundraising, visits to India with registrations and participation work, it has been an educational and exciting process, up until the outdoor environment was finished built in March 2016.

The thesis deals with the question of the challenges and opportunities that I, as a landscape architect, had when I was planning the outdoor area of the children's home. The thesis also examines the question of how the residents of the children's home could be included in the planning process. Participatory planning is a valuable tool that is becoming more and more used in landscape planning. Landscape democracy is promoted through participation, through giving the people you plan for a voice, and enabling them to affect their own surrounding landscape.

In the first part of the thesis, a literature study is presented, where I wanted to gain knowledge on how to use participation in the planning process. The literature part reflects on what participation is, and why we should use participation in landscape planning. The benefits and challenges of participation are presented, along with a selection of reference projects that have been an inspiration to the Kalaiselvi Project. Throughout the process, I tried to connect the literature study to the project. I realized that much of the literature might be better suited for planning in bigger communities, but I could still draw parallels to the Kalaiselvi project and make use of the knowledge.

In the second part of the thesis, a full report of the Kalaiselvi Project's process is presented, divided into five stages: 1. Listen, 2. Plan, 3. Design, 4. Build and 5. Maintain. In the first step, participation is taken from theory to practice, where the children and staff at the children's home contribute to the planning. In the planning and designing part of the process, the material from the participation part is considered for the plan proposals, to ensure a plan solution that satisfies the desires and needs of the children and staff at the children's home.

During the process I ran into a number of challenges and opportunities, and I could immerse in exciting materials and a wide range of plants. In the actual building process, there were challenges of cultural differences regarding perception of time, division of labor and gender roles, delay of materials and concerns regarding maintenance. Despite the challenges, the building process went relatively smoothly, and the project was realized within the time limit. The children and staff at the children's home participated actively throughout the whole project implementation, and has done an outstanding job with the maintenance of their new outdoor area after completion.

SAMMENDRAG

Jeg startet opp Kalaiselvi prosjektet våren 2012, med en visjon om å planlegge og utføre et prosjekt om å revitalisere uteområdet til et barnehjem i India. Angel House Children's Home i Chennai hadde tidligere et uteområde som var lite givende og utrygt for barna å oppholde seg i, og dette ønsket jeg å gjøre noe med. Gjennom et flerårig arbeid med innsamlingsaksjon, befaringer til India med registreringer og medvirkningsarbeid, har det vært en lærerik og spennende prosess, frem til uteområdet stod ferdig bygget i mars 2016.

Oppgaven tar for seg spørsmålet om hvilke utfordringer og muligheter jeg som landskapsarkitekt hadde, når jeg skulle planlegge uteområdet til barnehjemmet. Oppgaven tar også for seg spørsmålet om hvordan beboerne på barnehjemmet kunne inkluderes i planleggingsprosessen, for å sikre at de følte eierskap til prosjektet og ønsket å vedlikeholde det nye uteområdet sitt. Medvirkning i planleggingsprosesser er et nyttig verktøy som blir mer og mer tatt i bruk i landskapsplanlegging. Ved medvirkning blir landskapsdemokratiet fremmet, gjennom at de en planlegger for, får en stemme, og med dette en sterkere tilknytning til prosjektet.

I den første delen av oppgaven blir et litteraturstudie presentert, der jeg ønsket å tilegne meg kunnskap om hvordan en benytter medvirkning i planleggingsprosesser. Litteraturen svarer på hva medvirkning er, og hvorfor man burde bruke medvirkning i landskapsplanlegging. Både fordeler og utfordringer ved medvirkning blir presentert, sammen med et utvalg av referanseprosjekter som har vært til inspirasjon for Kalaiselvi prosjektet. Gjennom hele prosessen forsøkte jeg å koble litteraturstudiet opp mot prosjektet, og jeg innså at mye av litteraturen kanskje var bedre egnet for planlegging i større bosamfunn, men at jeg likevel kunne trekke paralleller til Kalaiselvi prosjektet.

I den andre delen av oppgaven blir en fullstendig rapport for selve prosjektet presentert, der prosessen er delt inn i fem steg: 1. Lytt, 2. Planlegg, 3. Utform, 4. Bygg og 5. Vedlikehold. I første steg blir medvirkning tatt fra teori til praksis, der barna og de ansatte blir engasjert til å bidra i planleggingsprosessen av det nye uteområdet sitt. I planleggingen og utformingen blir materialet fra medvirkningen vurdert og tatt i bruk i planforslagene, for å sikre et løsningsforslag som tilfredstilte ønskene og behovene til barna og de ansatte ved barnehjemmet.

Utfordringene og mulighetene var mange, og jeg kunne fordype meg i spennende materialer og et mangfoldig planteutvalg. Jeg støtte på utfordringer angående kulturforskjeller, oppfatning av tid, arbeidsfordeling og kjønnsroller, forsinkelse av materialer og bekymringer angående vedlikehold. Til tross for utfordringene gikk byggeprosessen relativt problemfritt, og prosjektet ble realisert innen tidsfristen med god margin. Barna og de ansatte ved barnehjemmet deltok aktivt gjennom hele prosjektrealiseringen, og har i ettertid av prosjektet gjort en fremragende jobb med vedlikeholdet av det nye uteområdet sitt.

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INTRODUCTION

In the following chapter, I present an introduction to the master thesis, including the background for the project, goals and research questions. The chapter provides a definition of the project, and explains the structure of the thesis along with definitions of concepts.



BACKGROUND

During 2011, I began my studies of development at Oslo and Akershus University College. The study included mandatory fieldwork in a NIC- or a developing country. One could choose from five countries in Asia, Africa and South America, and since I have always had an interest in Indian culture, India became a natural first choice. In February 2012, sixteen students traveled to the city of Pondicherry in Tamil Nadu state. My group, consisting of four students, had chosen the topic "domestic adoption in India," as we all wanted to work with children and development. With this in mind, we traveled around and visited several orphanages in Tamil Nadu, where we worked as volunteers and conducted fieldwork.

There were generally good conditions in the orphanages we visited, but there was especially one orphanage that stood out. The orphanage named Angel House Children's Home was located in the city of Chennai, and the premises were of good standard, with air conditioning and private classrooms. What separated this orphanage from the others was that their outdoor environment was in very poor condition. In an interview with the general manager, I was told that the children were allowed to play outdoors between 16pm to 18pm on weekdays, and spent a lot of time outdoors in the weekends. With a play area consisting of a rusty swing set and an old slide, there were not many opportunities for play for the 12 children who stayed at the children's home at that time.

In fall 2012, I started my studies of landscape architecture at the Norwegian University of Life Sciences. The experiences and lessons of the development studies were united with landscape architecture, and Angel House Children's Home was the inspiration for what would end up being my master thesis.



Two of my group members and I on our first visit to India and the children's home.

GOALS

The aim of this master thesis is to revitalize the outdoor environment of the Angel House Children's Home, with the help and engagement of the kids and the management. I had no ambitions of making a grand design project, but simply to, through participatory planning, find out what the children needed and wanted, and try to make it possible by simple design solutions. I also wanted to use the master thesis to get a deeper understanding of what participation is, and why landscape architects should use it as a method in the planning process. It was important for me to truly understand the concept, and by doing so, provide guidelines for the further process of the project. With hope that the project could make the days easier and more fun for the kids at Angel House Children's Home, this master thesis has been a motivational and educational way of approaching a topic.

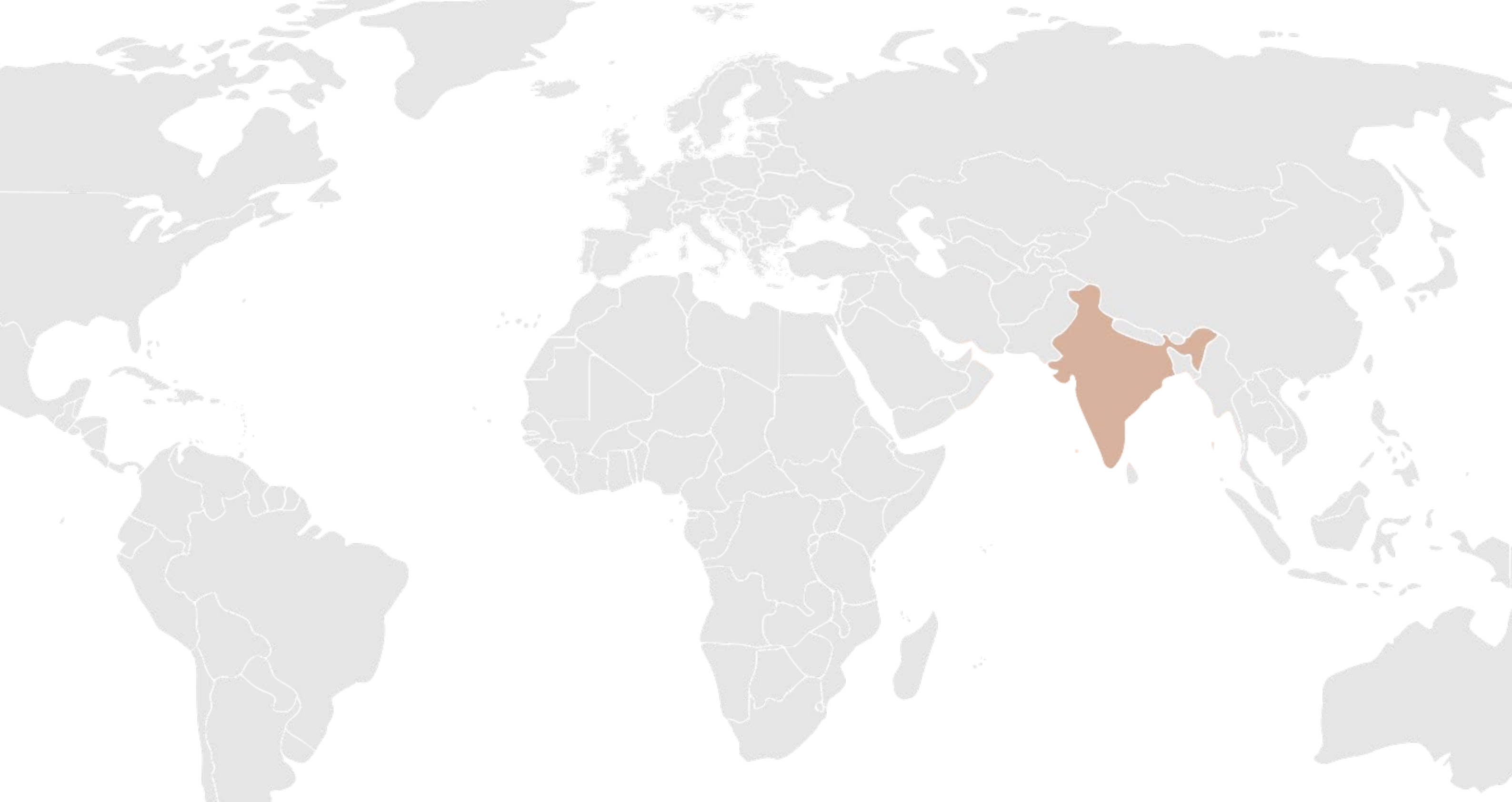
RESEARCH QUESTIONS

What are the challenges and opportunities for a Norwegian landscape architect when planning the outdoor environment for a children's home in India?

How can participation be used to achieve a result that satisfies the wishes and needs of the residents of the children's home?



One of the girls at the children's home showing me around in their outdoor environment.



DEFINITION OF PROJECT

GEOGRAPHIC

The thesis focuses on the outdoor environment of a children's home in the city of Chennai, located in Tamil Nadu, India. Chennai, earlier known as Madras, is the fourth largest city in India with approximately 4.500.000 inhabitants (Government of Tamil Nadu, 2015). Mogappair is a residential neighborhood located in north-western Chennai, and this is where the children's home is located. The building plot is about 1300 m², a relatively big site where about 700 m² are covered by buildings.

"Due to the high population in India we have a tendency to want to make maximum use out of our building plots, this meaning stuffing many buildings into a plot without having any specific plan." (Harihara Sudhan, 2015)

The total area of the outdoor environment of the children's home is about 600 m², including a front yard and narrow passages on the side of the buildings. They also have a big roof terrace which they never use. After interviews and workshops at the children's home I decided to focus on the front yard with the activity area, the small kitchen garden in the back, and to secure the roof terrace and make it accessible for the children.

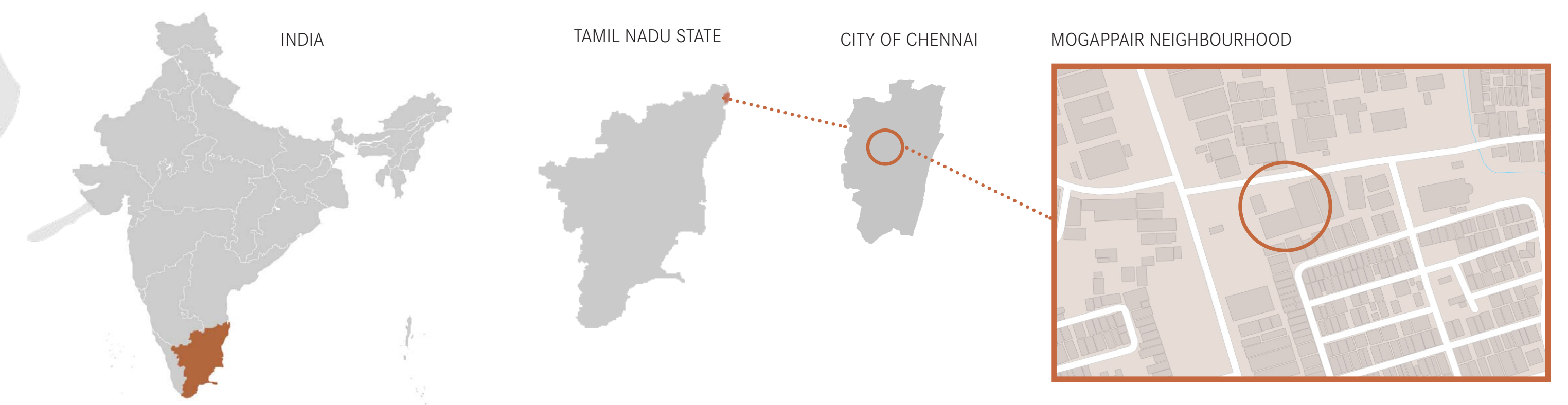
THEMATIC

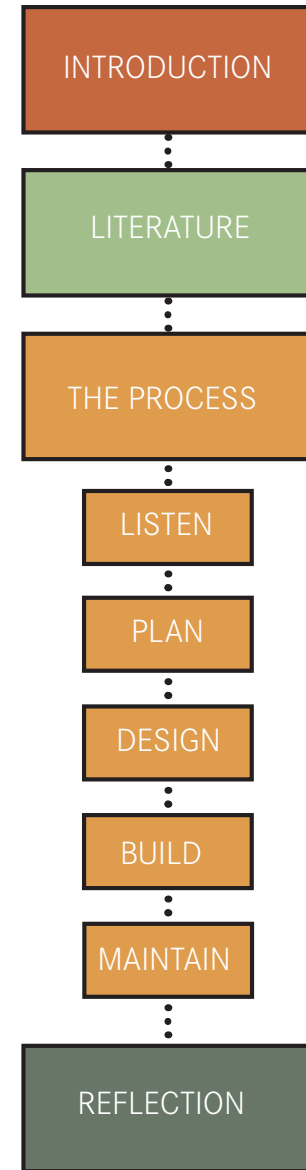
The main theme of the thesis is revitalization of the outdoor environment for the children's home and engaging the users in the planning process. It has been important for me to include the children in the planning and give them a voice. I wanted to look at development work in a landscape architecture perspective. I hope this thesis can be used as a small example of how landscape architecture can benefit people from deprived areas, where the smallest change can have big impact on peoples lives and well-being.

EXTENT

The first part of the thesis contains a literature review, where I go deeper into the definition of participation, its benefits, and how to use it in the planning process. I look at reference projects relevant to the thesis, and connect the literature to the Kalaiselvi project. This part focuses on the role of landscape architects in the planning process in general.

In the second part of the thesis, I present a complete report of the process from the day the idea came up to the last turn of the shovel. This part focuses on my own perspective on the planning process of a real project. The report is a summary of a four year project containing three visits to the children's home with on-site inspections, participation, fundraising, planning and execution of the project.





STRUCTURE AND METHODS

In the INTRODUCTION chapter I present the project and give an overview of the content of the thesis.

In the LITERATURE chapter, an assessment of why participation is important in planning processes, and how the method contributes to promote landscape democracy will be presented. I will not go in depth into landscape democracy, but simply point out how participation can promote a landscape democratic planning. The literature chapter seeks to highlight participation in developing countries, and references to similar projects are presented to illustrate the findings of the literature. The basis of this chapter is a collation of relevant literature of books, journals, reports, others master theses and web searches.

Further in the thesis, I present the complete process of the project from start to finish. I divide the chapter into five subchapters to give a clear presentation of the process. In the first subchapter, LISTEN, I describe the participatory process of the project. In the second subchapter, PLAN, I present the planning of the project, followed by subchapter three, DESIGN, where I put together findings and planning into a master plan. In subchapter four, BUILD, I explain the construction phase, and in the last subchapter, MAINTAIN, I propose a plan for maintenance and management.

In the last chapter of the thesis, REFLECTION, I reflect on the process. I discuss the challenges of the project, lessons of the outcome and how things possibly could have been done differently. References and list of figures conclude this document.

DEFINITION OF CONCEPTS

COMMUNITY DESIGN
 "Community designers plan *with* people, not *for* people" (Sanoff by Hester: 8, 1990). The community is included in the planning process of their environment to achieve a better result.

DEVELOPMENT
 In this thesis *development* reflects a positive change in the social and/or environmental aspects of the everyday of a community.

EMPOWERMENT
 "Within a group or community, empowerment can be taken to involve building trust, co-operation and communication between members...There must be opportunities for people to meet and exchange views and opinions, and ways of recording what is agreed and done; and there must be scope for having fun and celebrating achievement" (Powerful information, 2016).

LANDSCAPE DEMOCRACY
 "Landscape democracy is a form of planning and design in which all citizens are meant to participate equally, either directly or through elected representatives in the proposal, development and establishment of the rules by which their landscape and open spaces are shaped" (IFLA Europe, 2014).

PARTICIPATION IN LANDSCAPE PLANNING
 With a participatory process "...both users and experts are involved, to make decisions on everything from goal-setting to construction and management. This citizen participation leads to better informed and more socially suitable design" (Hester: 8, 1990).



LITERATURE

In this chapter I will discuss a selection of literature that is relevant to the thesis. To be able to work with participation, one has to understand the complexity of it. I have directed focus towards participation as a planning method in the process of a project, and try to explain what it is, why landscape architects and planners should use it in their planning, and how participation can be used in practice.



WHAT IS PARTICIPATION?

DEFINITION

Participation is a planning method that seeks to empower people to take part in their own community with the aim to bring about a more just society. By encouraging people to be more self-reliant, participation achieves to make people more aware of their opportunities (Park, 1993).

"Participatory research is a means of putting research capabilities in the hands of the deprived and disenfranchised people so that they can transform their lives for themselves" (Park: 1, 1993).

It is a misconception that landscape architects and planners are the holders of the correct design solutions, resulting in professionally designed public spaces instead of democratically developed landscapes (Waller, 2015). When working with people and communities there are no fixed procedures, as people are not static objects, and the needs of a community vary from one place to another. Participation is a way of including the users in the process to achieve a greater outcome that corresponds to the needs and wishes of the community. By including a community in the planning and the actual building process of the project, people develop a special relationship to it, and in this way the inhabitants get a sense of the value of the landscape (Schwab, 2015).

The European Landscape Convention calls for participation in the planning and management of all landscapes (Council of Europe, 2000). All landscapes including the small-scale projects as well as the large impact landscape projects. In my opinion, small-scale landscape projects in low-income areas are important to involve to achieve true landscape democracy in all parts of the world. Whilst landscape projects at a larger scale have an impact on more people, participation within the small-scale projects seeks to highlight the voices of the deprived communities. The Kalaiselvi Project is an example of a small-scale project where small changes have big impact for the people involved in the process. By starting small you plant the seed of enlightenment around the concept of participation, which from there on can develop into general knowledge.

"It is often the small examples that make change possible and that have a great impact on new movements in society, architecture and politics" (Dreiseitl: 1, 2012).

GOAL OF PARTICIPATION

Participation does not discriminate, and its strength lies in being a movement that includes all groups of people, cultures, and cuts across the traditional professional boundaries (Sanoff, 2000). The goal of participatory work is that no people should suffer from deprivation of life's essentials (Park, 1993). Participation is driven by the motivation that all communities work better when the local residents take part in the planning and management of their own environment.

Empowerment

Landscape democracy

Participation

Ladder of participation

LADDER OF PARTICIPATION

Ladder of participation is a model developed by S. Arnstein in 1969 as a symbol of eight rungs of citizen participation. The model was developed to show that there are several different degrees of participation, and some of the steps show that the citizens really do not have any power at all.

"There is a critical difference between going through the empty ritual of participation and having the real power needed to affect the outcome of the process" (Lithgow, 2006).

In the first two steps, manipulation and therapy, Arnstein argues that there does not exist any form of actual participation. The aim of these two steps is educating the participants. The next three steps are a progression to a more tokenistic participation, allowing participants to listen, and to a certain extent, be heard. The participants have no actual power over what happens later in the process. Towards the top of the ladder the level of actual participation exceeds. With an increasing influence, the people get more power in important decisions, and partnership allows participants to advocate and engage more in the process. At the top of the ladder, citizens are given the full power of making decisions and having responsibility (Lithgow, 2006).

LADDER OF PARTICIPATION

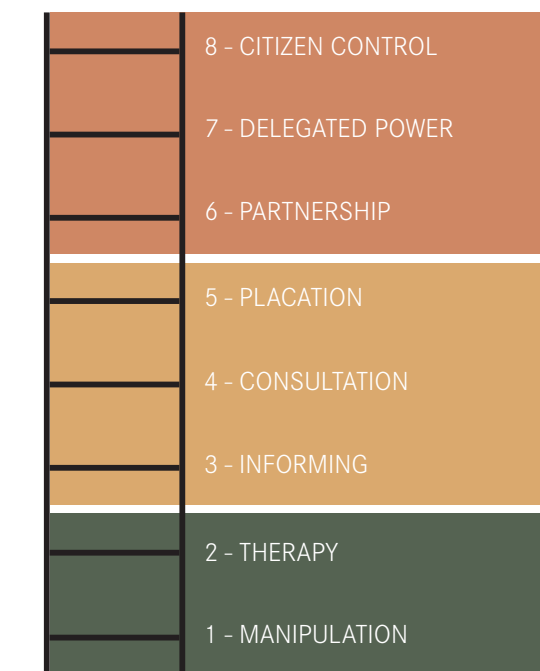


Fig 1: Ladder of participation. Adapted by H. Tryggestad (2016) from work by S. Arnstein (1969).

LADDER OF CHILDREN'S PARTICIPATION

Inspired by Arnstein's model, Roger Hart developed a ladder of children's participation in 1992. The model is designed to show planners who work with children how important the children's voices are in the planning process, and to show children's natural position in the process (Fletcher, 2008).

The model is highly relevant for all those who want to design and plan for children, providing a consciousness on the extent to which children are actually included (Fletcher, 2008). Participation of children is an important focus in this thesis, as children from Angel House Children's Home have participated throughout the process of revitalizing their outdoor environment. I will look deeper into the ladder of children's participation, to ensure a complete understanding of the levels of participation.

RUNG 1 - MANIPULATION

If the children do not understand their role or the issue of a project, but the adults pretend that the children's opinions are the inspiration, it is called manipulation. Adults often underestimate children's ability to understand, but in some cases careful explanations are essential to get a genuine response.

RUNG 2 - DECORATION

At this level, children are used as "mannequins" for the cause, for example by giving them hats or pins that are related to the project. The children do not necessarily understand the cause, and the adults pretends that the kids have contributed.

RUNG 3 - TOKENISM

Children are selected by adults to represent children's voice in general. The children can for example be invited to a conference panel, but their opinions are not taken into consideration later in the process. The children appear to have a voice, but in reality they have little or no saying at all.

RUNG 4 - ASSIGNED BUT INFORMED

At this point the children understand the intentions of the project, and they know who made the decisions and what their own involvement has been in the process. The children are assigned a role and informed about the process.

RUNG 5 - CONSULTED AND INFORMED

At this level, children are used as consultants in projects led by adults. The children understand the process and that their opinions are important to the project. The children's role is treated seriously, and the kids understand their position.

RUNG 6 - ADULT-INITIATED, SHARED DECISIONS WITH CHILDREN

The decision-making is shared between adults and the children. The project is initiated by adults, but the children have an equal role as the adults, at the level of genuine participation.

RUNG 7 - CHILD-INITIATED AND DIRECTED

This is a difficult level to reach, since adults tend to intervene in children's projects. These are projects that children start and conduct, but adults interfere and direct the final outcome.

RUNG 8 - CHILD-INITIATED, SHARED DECISIONS WITH ADULTS

Projects at this level of participation are rare, since most adults want to have an impact on the final outcome of projects. At this level, the children initiate the project and the decisions are being shared with adults. (ibid)

CONCLUSION

After studying the ladder of children's participation, I realized that the Kalaiselvi Project ended up at the middle levels of the ladder. Essentially it was me as a planner that came up with the idea of the project, but the children have been consultants in the process and they have been informed about the project - Rung 5. Through workshops and discussion groups with the children, they contributed with knowledge and shared their wishes, and together we made choices for problem solutions - Rung 6. Their role further in the process will be to take part in the construction and maintenance of their new outdoor environment.

LADDER OF CHILDREN'S PARTICIPATION

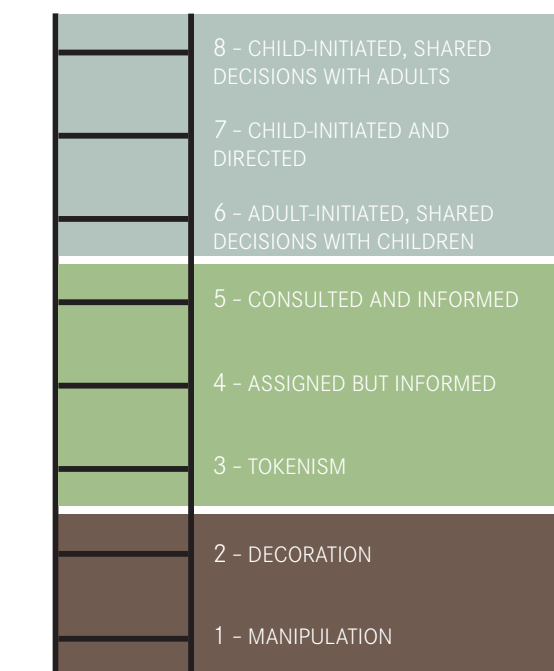


Fig 2: Ladder of children's participation. Adapted by H. Tryggestad (2016) from work by R. Hart (1992).

WHY USE PARTICIPATION?

SOCIAL BENEFITS

Empowerment of the community is an important outcome of participation. It is the planner's responsibility to let the participants understand that their opinions are valuable, and that all input and suggestions are welcome. In this way, participants are empowered, not only by feeling mentally capable to contribute with knowledge, but also by giving them the power of being able to influence a political process towards a better society (Hester, 1990). When planning with children, the circumstances are quite different from when planning with adults. Children have another way of seeing things, and can provide a lot of useful input when planning in a community.

Participation can be used as a method to solve social problems in a community. When you have identified a problem, the community can try to figure out how the landscape can help to solve this problem (Park, 1993). In order to solve the problem it is essential that the community actively contributes with its experiences. A project that shows the value of participation in landscape planning for social change is the Old Market Library in Bangkok, and this project will be presented later in this chapter.

ECONOMIC BENEFITS

Local government often claims that participation is both expensive and time consuming, and therefore not efficient in the planning process. It is true that participation can be time-consuming, but if it is done properly it can still be very effective. With careful planning of the participatory process and by engaging people who have experience in the discipline, you can save a lot of time. The structure for participatory planning processes today often starts with the local government having a proposal for a project, and then send invitations to a public meeting where the community can give its opinions. In this way, the government can claim that it has included the inhabitants in the planning, but since the community has not been involved from the start, it usually ends up with objections to the proposal (Parker, 2002).

The planner must then come up with a new proposal and present it again for new input. This is a very cumbersome way of doing participation in the planning process. Instead of performing participation after the proposal has been prepared, it is better that the planner already from the start becomes familiar with the community. By listening to opinions early in the process, it will result in a proposal that corresponds to the community's best interest. In this way, both the government and the planner save a lot of time and resources by not having to redo a proposal that is simply not good enough (ibid).

ENVIRONMENTAL BENEFITS

When a community gets ownership of their public spaces, it motivates a desire to maintain and take care of it. In this way, participatory planning results in a more sustainable outcome, because the project most likely does not have to be renewed every few years because of decay and vandalism. When the community really cares about its public space, there is natural maintenance of the place.

Randolph T. Hester is an initiative-taker for participation in all community planning. In the book *Design for Ecological Democracy* he suggests principles for urban design that allow a relationship between people and their natural surroundings by using participation. As designers we should be fighting for the communities to be involved in the planning of their local environment. In this way we ensure a natural development of good places for people.

"We should be fighting for something, or else we are just decorating" (Hester).

AESTHETIC BENEFITS

Aesthetics is the study of knowledge that comes to us through the senses, but can also be defined as human use and experiences of surroundings (SNL, 2016). Humans have different preferences for what they find pleasing, and therefore it should be up to people themselves to define what aesthetic values they want to surround themselves with. With participation, people can influence their own surrounding environments, and the idea that the surroundings are reflected by the needs and wishes of the people through a participatory line of action also gives the outcome an aesthetic value. The outcome does not necessarily have to be what you would call "beautiful", but the engagement and reflection behind it still gives an aesthetic value.

CONCLUSION
There are many benefits when using participation in landscape planning. All communities are different, and the participation process has to be customized for each and everyone of them, to ensure a suitable approach for the development of a community. Children can contribute with valuable information, and it is important to include them in the process. I tried to include the children as much as possible when planning the Kalaiselvi Project, and learned that their imagination is a great resource in the planning process.

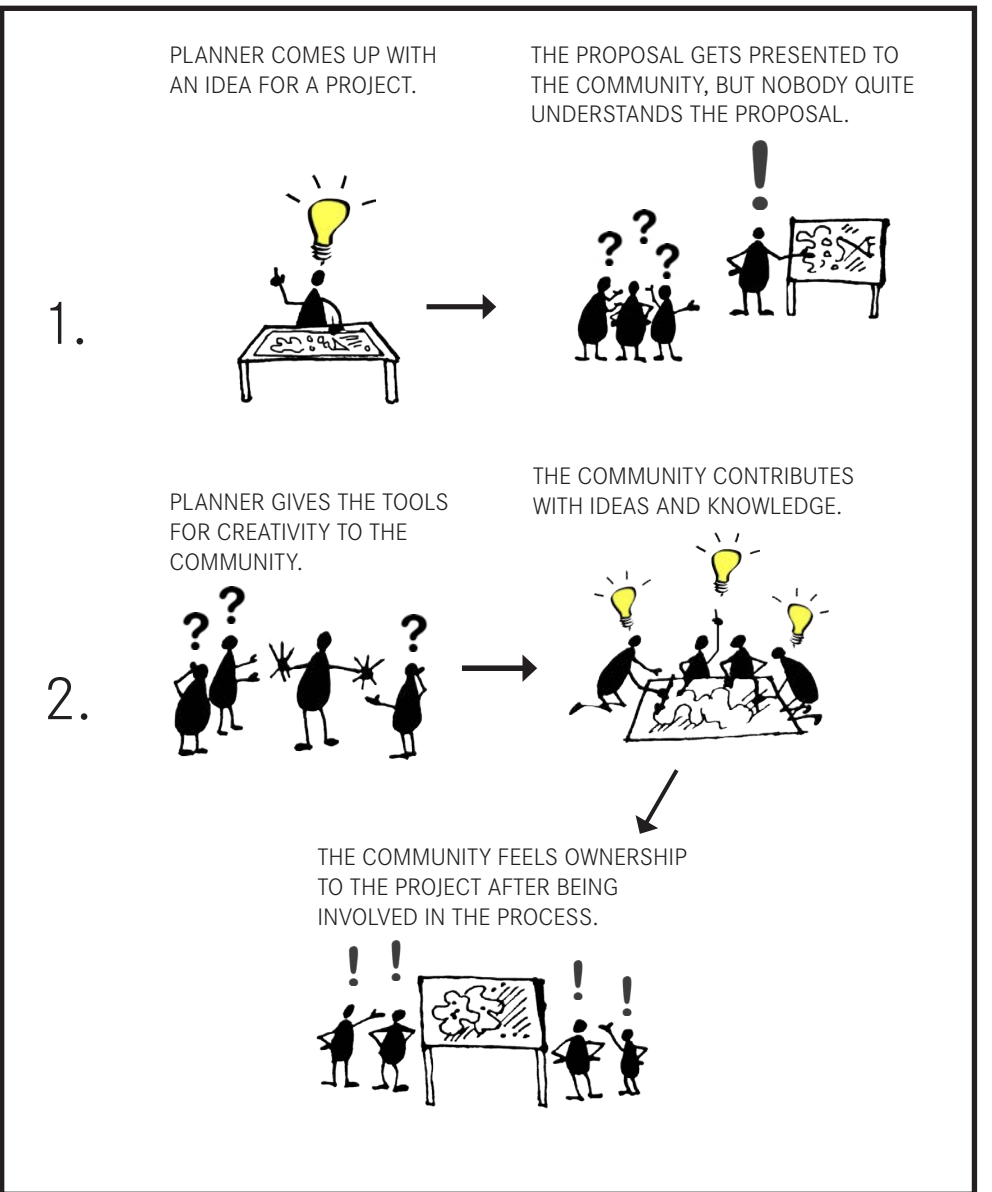


Fig 3: Explaining two different ways of planning.

PROMOTING LANDSCAPE DEMOCRACY

Democratic decision-making means that all people that are affected by a decision should be involved in the process of making that decision (Parker 2002). In this way, participation is a way of promoting landscape democracy, by including the community in the planning process.

"Landscape democracy is a form of planning and design in which all citizens are meant to participate equally, either directly or through elected representatives in the proposal, development and establishment of the rules by which their landscape and open spaces are shaped" (IFLA Europe, 2014).

There are several notions of what landscape democracy actually involves. In qualitative interviews Therese Anderson asked several project managers and landscape architects what they thought the term meant. For the project managers the meaning of landscape democracy was to include the community in the planning, so that they would get ownership of the landscape. They also believed that landscape democracy was about getting landscape projects done where such projects usually did not exist, for example in low-income areas. In interviews with landscape architects, it was revealed that many of them thought that landscape democracy called on landscape architects to provide a design that met universal standards and allowed recreation for all groups of people (Andersson, 2015).

In my opinion, landscape democracy is a combination of all of these views. It is about everyone having equal rights to take part in provisions of landscape, and projects should be done even where it is not necessarily beneficial to the government or project leaders to carry out such a project. At the same time, it is about having the knowledge of a design that satisfies a universal standard and possess a multitude of qualities. I do not think that landscape architects may take decisions on landscape that impact a community based only on their knowledge, but they ought to combine their personal expert knowledge and the contribution of the community. In this way, landscape democracy during the planning process is promoted in the best way.

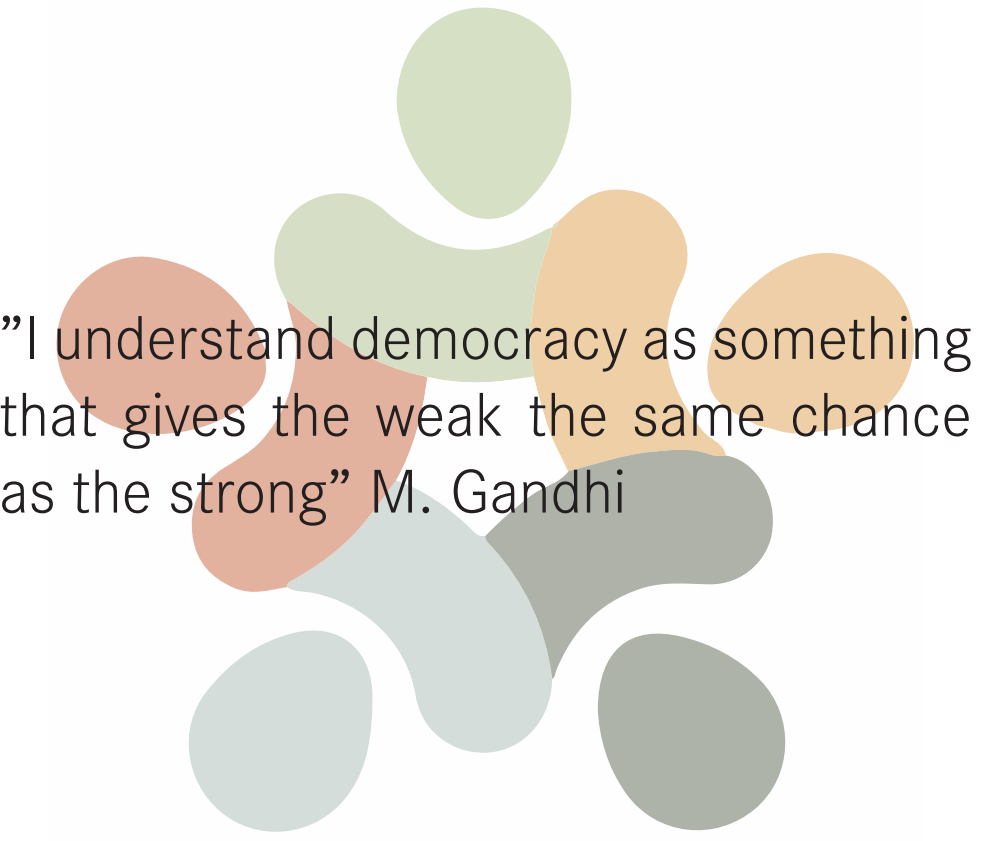
DEMOCRACY FOR ALL

Surroundings affect people both physically and psychologically, and any impact on this environment must be coordinated with those involved. Many organizations are helping to fight for these rights, and by using participation as a method these organizations seek to promote democracy.

The organization PRIA (Participatory Research in Asia) is a pioneer in participation for social change in India and Asia. Their work is focused on empowerment of the deprived through capacity building, knowledge building and policy advocacy (PRIA, 2015). This organization has done much important work for development and social change in India. As the largest democracy of the world, India has come a long way the last couple of years, but they still face many challenges. For example the fact that out of 8000+ urban habitations, there are less than 100 that have urban spatial plans. While every village has a childcare centre, nearly 50 per cent of the children are malnourished (ibid). Democracy works, but not for all. PRIA's goal is to empower citizens through information and mobilization so they become aware of their rights and responsibilities.

Their work is a great model to show how participation works in reality. Through their work they have, among others, managed to secure a safe and sustainable supply of drinking water in five hundred tribal areas of Odisha, Jharkhand and Chhattisgarh (ibid). With participation in the planning and execution of the Kalaiselvi Project, I want to secure a safe and fun outdoor area for the children at Angel House Children's Home. It will not affect a whole community, like PRIA's work does, but at least it will make the everyday for the children a bit more exciting.

PRIA is not mainly focused on landscape democracy, but on how participation can be used to promote democracy in general. I think that the organization makes an inspiring effort in trying to make the conditions better for deprived people in Asia. Their achievements prove the benefits of a participatory line of action, and shows that participation is a true driving force for democracy for all.



"I understand democracy as something that gives the weak the same chance as the strong" M. Gandhi

HOW TO USE PARTICIPATION IN THE PLANNING PROCESS

TWELVE STEPS OF PARTICIPATION

Randolph T. Hester has developed twelve steps for participation, a theory that was developed to describe the assumed procedure of the process, with simple guidelines for the planner to follow. The participation process must be adjusted for the community so that it feels natural for the participants. Sometimes you have to skip a step or two, and get back to them later in the process (Hester, 1985). This model has been very useful for me whilst working on the Kalaiselvi project, as it gives a clear checklist of important steps of a project's process. Hester's twelve steps for participation are categorized as follows:

01 LISTENING

The first and perhaps most important point of the twelve steps is that the planner has to listen. Generally speaking, designers are not especially good at listening, but to be able to come up with a reflective design solution, it is important to know what the community really struggles with. Hester says that he always schedules a meeting with opinion leaders of a community to hear their version before proceeding with the process. Listening has many advantages; it gives the planner a special attachment to the project and lets the planner see things from the users' side. "Listening...reveals value conflicts among residents, and indicates how committed the residents are to certain improvements" (Hester: 83, 1990).

02 GOAL SETTING

It is important to establish clear goals. In the same way as any person needs to have personal goals, it is important for a community to have clear, common goals (ibid: 65). The goals do not have to be advanced, but they are essential for a positive development to happen. Hester says that goals make the problems more clear and provide a better basis for planning, implementation and evaluation. Goals lead to positive action, and represent the community's needs. "Goal setting has a long-term educational value for the participants" (ibid: 65).

03 MAPPING & INVENTORY

In this step, the planner should identify and gather all information he or she needs about the community. It is important to have sufficient background knowledge about a community before starting the design phase. What is the historical background? What is the identity of the place and what are the existing qualities in the area? It is important to have a thorough survey of the area, but also an examination of the relations between the humans and the place, including the experiences and challenges they associate with their local environment (ibid).

04 INTRODUCING THE COMMUNITY TO ITSELF

When the planner has done all the necessary investigations of a community, the planner has to share the information he or she has gathered with the community. It is essential that the community gets an understanding of their own complexity, and the perspective of an objective outsider can be useful in this context. There are several ways to present the community to itself. You can arrange workshops where the results are presented afterwards, you can present findings through social media or create slideshows with the results and have a public meeting. Some people might actually be offended or surprised by the findings, but essentially all the information comes from the community itself and it most often provides an eye opener that leads to an open dialogue (Kot and Ruggeri, 2004).

05 GETTING A GESTALT

"Gestalt: a structure or configuration of physical, biological, or psychological phenomena so integrated as to constitute a functional unit with properties not derivable from its parts in summation" (Hester: 92, 1990). Hester says that the planner has a responsibility to organize all the information that has emerged from the users. One realizes that there are many different needs in a community, and it is up to the planner to come up with a gestalt that covers most of these needs. A gestalt should be simple and understandable, but also rich and sufficient. A gestalt is more than a concept diagram, and it seeks to be both affective and efficient at the same time. One can say that a gestalt is the "functional soul of the project" (ibid).

06 DRAWING ANTICIPATED ACTIVITY SETTINGS

The community must envisage a realistic future vision for their neighborhood. What type of business do they want in the area? Which activities should be offered and how should this be organized? The spirit of voluntary communal work can come to life in a community if the planner provides simple guidelines on how the organization of these activities can be solved (ibid).

07 LETTING ARCHETYPES AND IDIOSYNCRASIES INSPIRE FORM

With all the knowledge from the community, the designer will be able to see tendencies to characteristics and identity of the community. These characteristics should be lifted and accentuated and can inspire form, concept and further development of the project. Many communities have what Hester calls "sacred places"; places that are special and mean a lot to people. These places often contain childhood memories, and are extremely important to preserve. Sacred places often have qualities like nature, water and hiding places, and can be great inspiration for an overall concept (Hester, 2006).

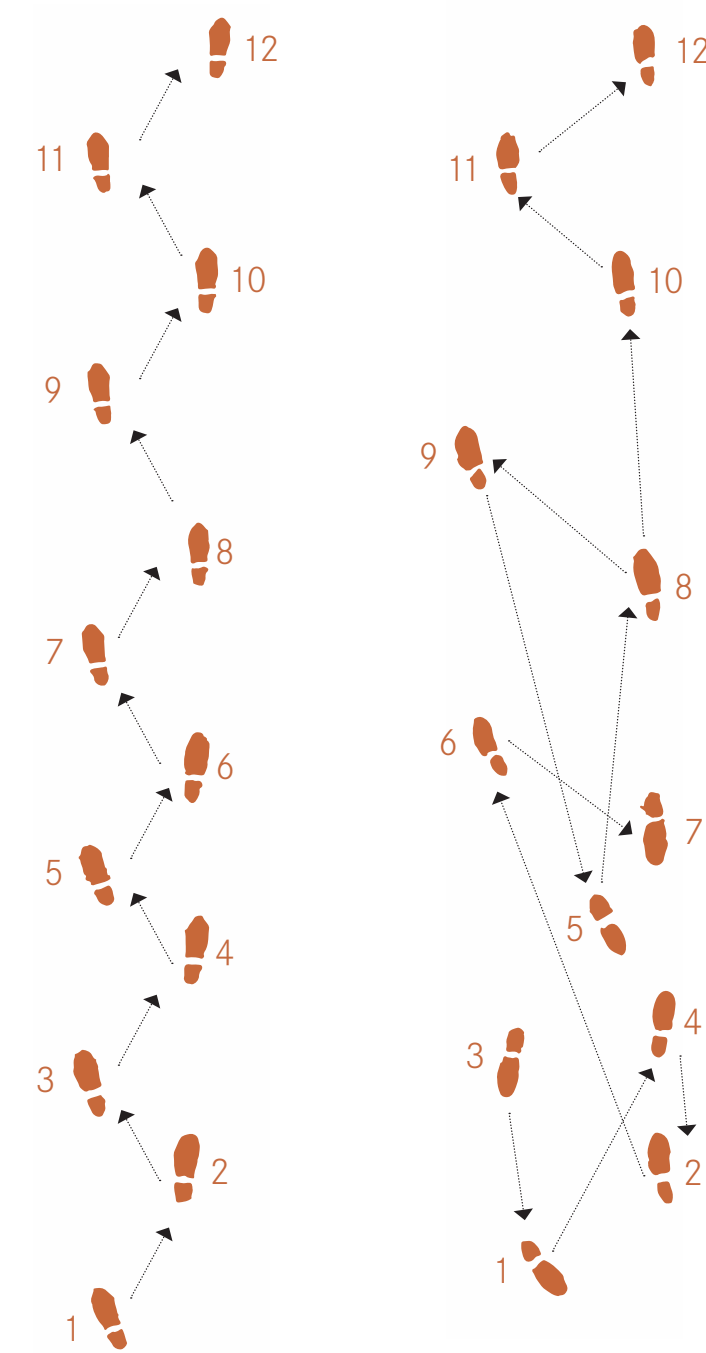


Fig 4: The figure shows the *assumed* and the *realistic* "path" of the twelve steps of participation. Adapted by H. Tryggestad (2016) from work by R. T. Hester (1982).

08 DEVELOPING A CONCEPTUAL YARDSTICK

What proportions fit into this community? The planner has to gain an understanding of the proper size of new buildings, street cross-section and size of public spaces. The conceptual yardstick must respond to the community's identity and goals (Kot and Ruggeri, 2004).

09 DEVELOPING A SPECTRUM OF PLANS

It is now time to develop a spectrum of plans for the project. The planner must use all the collected information and try to translate the wishes of the users into a design. The plans should reflect the goals and the gestalt of the community. After the plans are finalized, they should be presented to the community, and the community will then be able to choose the plan they find most suitable (Hester, 1985).

10 EVALUATING COSTS AND BENEFITS

Money is always an issue in development projects, and the community needs to have a realistic picture of what its possibilities are. It is not always the costly projects that have the best outcome, and the planner can propose many alternative solutions that do not necessarily have to be expensive (Hester, 1985).

11 TRANSFERRING RESPONSIBILITY

When all the plans and the budget for the project are ready, the process of distributing the work can begin. Ideally the community should be involved throughout the whole building process as well, providing a special connection and ownership to the project. In smaller projects this can be done, but in larger projects it might be more difficult. The planner has to make sure that the community is up to date on the project and let it contribute where it can (Hester, 1985).

12 EVALUATING AFTER CONSTRUCTION

After the project is finished, it is important to look back at the process and see what worked well and what did not work. The planner must evaluate the final project and see if it actually corresponds to the goals that the community set in the beginning of the process. With an involvement of the community throughout the process, the end result hopefully reflects the wishes of the community (Hester, 1985).

CHALLENGES OF PARTICIPATION

Despite all the advantages of participation, there are also a number of challenges connected to this planning method that the planner must be aware of. It is important to remember that people in a community are different. Public indifference can lead to controversy and discussions, but this often results in reflected contribution to the planning (Jones, 2011). There may be existing conflicts within the community, which have been ongoing for some time, which can be difficult for a designer to deal with. The community and the planners have to be solution oriented, and be open to new proposals.

Political administrative power structures can also be a challenge in the process, in which the process can be extended indefinitely because of the decisions having to go through several political authorities to be approved (ibid). Some government quarters may also express skepticism regarding participatory approaches, because of the assumption that this is a time consuming and expensive process. The landscape architect has to make an effort to spread understanding of the necessity of participation as a planning method.

The experts and the stakeholders might have different opinions in the planning process, and this can also be a challenge when dealing with participation in landscape planning (ibid). Whether it is a discussion about where to place a new playground or if a cafe fits well in one particular area, I think the community knows best whether members are going to use it or not. On the other hand, sometimes people do not know what they want before they get it. People might be skeptical to a concept, but when they experience it in real life, it might turn out a big success. I do not think that the expert knows best when planning with a community, but the ideas from an expert can provide inspiration and open-mindedness towards new proposals.

Another challenge of participatory planning is to actually ensure democratic involvement by the community (ibid). It is easy to state that participation is desired in the planning process, but the real challenge is to make sure that everyone is heard. Public meetings are known to be a simple way for politicians to include participation in the planning process, but the result of these public meetings often gives a poor outcome. Not everyone feels comfortable speaking in public, and therefore it is important to develop several methods to ensure that people get to share their opinions. Workshops, walking tours, interviews and so on, are all good methods where people tend to be more open.

Participation as a planning method might challenge the role of experts (ibid). For example, what use is there to get an education in landscape planning when the community ends up making the decisions, might be a question that pops up. I think designers can use their knowledge and understanding of landscape, to help and inspire communities to reach their potential. A designer can work as an organizer, a motivator and a consultant. With the input from a community, the designer may achieve a greater understanding of a community's needs and desires for the landscape.

There are also challenges of participation when planning with children. Children have a wide imagination and change their minds quickly. When children are considered "the stakeholders", it is important for the planner to consider the input open-minded but critical. It might be hard to include the children all the way in the planning process, but as for the execution of the project, the children can be a great asset with their engagement and energy.

CONCLUSION

Challenges often have a solution, and one can not give up just because the path is rough. Participatory planning might not be the easiest method, but in the end, the outcome will be better. Planners plan for people, and therefore the people must be a part of the planning. Despite the challenges that might turn up whilst using participation in the planning and executing the Kalaiselvi Project, it will all be worthwhile for the chance of the children feeling more attached to the project.



Fig 5: Diagram illustrating the challenges of participation. Adapted by H. Tryggestad from work by M. Jones (2011).

REFERENCE PROJECTS

A collation of projects that have been of inspiration to the Kalaiselvi Project.

PLAYGROUND IDEAS

"Playground Ideas" is an organization that offers guidance in form of manuals and advice to those who want to build a playground for their local community. People from all around the world have engaged themselves in these projects, and until now playgrounds have been built for over 350.000 children (Playground Ideas, 2016). The organization was established by the Australian Marcus Veerman whilst working for better living conditions for children living at the Thai-Burma border. It all started out with a request from a school that asked him to build a playground for them. With the help of volunteers and funding from the school, they managed to build it within a short time. The requests for more playgrounds started to pour in, but as it turned out, many of the communities were able to get the funding by themselves, and the only thing they needed was help to actually build the playground. Therefore, Playground Ideas established a webpage where people could get access to the information on how to build your own playground.

On their website you can easily make your own page to collect funds for your own project. You can download manuals and get inspiration from similar projects. Playground Ideas has contributed to playgrounds all over the world. The CEO of Playground Ideas started the organization with the motivation that it could help communities realize their ideas.

"Unlike many NGO's that see a need and try to fix it, we had been given the opportunity to follow the communities' lead and simply create the tools to make their ideas happen" (Marcus Veerman, 2016).

Working according to this purpose, Playground Ideas has empowered communities to take action. The manuals shows that playgrounds can be built by simple and cheap design solutions and still be safe and challenging for the children. It is not the amount of money you put into the project that makes a good playground, but the engagement of the community.

Working according to this purpose, Playground Ideas has empowered communities to take action. The manuals show that playgrounds can be built by simple and cheap design solutions and still be safe and challenging for the children. It is not the amount of money you put into the project that makes a good playground, but the engagement of the community. The designer operates as an organizer and provides input on design solutions based on the outcome from the participants.

Playground Ideas are very helpful and reply to all messages regarding projects. After being in contact with them and getting advice on how to solve the Kalaiselvi Project, I felt more motivated than ever before to carry out the project. The best advice they could give was to put your own ambitions to the side, and always keep the aims of the community in mind.



Fig 6: One of the projects conducted by Playground Ideas.



Fig 7: One of the projects conducted by Playground Ideas.

OLD MARKET LIBRARY, BANGKOK

TYIN Tegnestue, a Norwegian architecture studio, works with constructing projects for the poor in deprived parts of the world. They plan and design constructions with the help and participation of those they are planning for. By using local materials and whatever the community has to offer, they achieve a design that is indigenous and locally attached. The community is involved in the entire process, and in this way they get ownership to the project. In areas of deprivation this is an important factor, as vandalism and theft are common, and ownership helps to protect against such behaviors.

An example of one of TYIN Tegnestue's projects is the Old Market Library in Bangkok, Thailand. The architects work based on the idea that the people of the community should be encouraged to re-appropriate their own spaces (Floor nature, 2012). The old market library was located in an area influenced by crime and poor living conditions. By including the community in the project,

it caused the people to feel a liability to it, and therefore a passion to maintain it in a proper condition.

After a year of planning and participatory work in form of meetings and workshops, the architects finally came up with a design solution that translated the needs of the community into architecture (Live Green, 2012). Building the library only took about three weeks with the help of the community and was a big success after completion date.

This project shows that with the help of participation and the desire of vitalization, even the assumed hopeless design projects can be turned into a user friendly common space.



Fig 8: Result from the Old Market Library project.



Fig 9: The community working together on the Ole Market Library project.

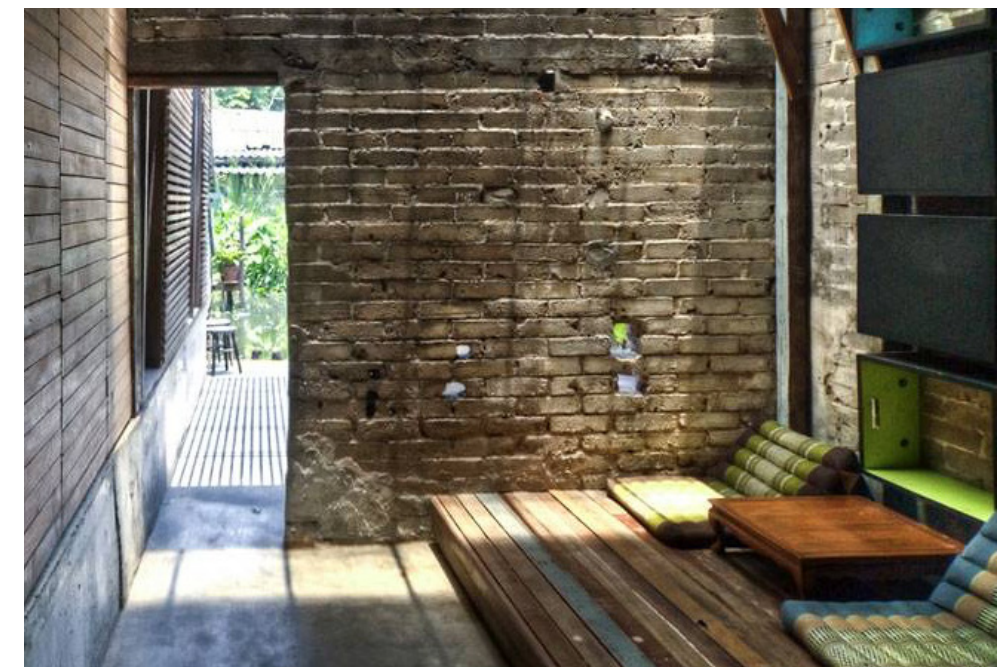


Fig 10: Result from the Old Market Library project.

WEST PHILADELPHIA LANDSCAPE PROJECT (WPLP)

Since 1987, Ann Whiston Spirn and the community of Mill Creek have worked together on the West Philadelphia Landscape Project. The project seeks to address the opportunities in the community of Mill Creek neighborhood, and for more than 25 years they have empowered the community to take part in restoring nature in their environment. Hundreds of students, teachers, residents and others have participated in the project throughout the years. They have worked on rebuilding the community and creating a healthy human settlement. The project has affected the community in many ways; development of community gardens, involving the children in urban planning and made people considerate towards their surrounding landscape (WPLP, 2016).

One of the most important missions of the West Philadelphia Landscape Project was to improve the water quality of the Mill Creek watershed. The water was highly polluted, but WPLP demonstrated how green infrastructure can affect

the environment, and helped the community to clean the water and prevent further flooding (ibid).

“Through our experience in Mill Creek, we seek to demonstrate how to create human settlements that are healthier, economical to build and maintain, more resilient, more beautiful, and more just.” (ibid)

Landscape architect Ann Spirn and her coworkers have gathered a whole community to take part in their own development, and their hard work is an inspiring and impressive achievement. It shows how much engagement can be found in a community, and the desire they hold to make their home a better place to live (ibid).



Fig 11: Community involved in the West Philadelphia Landscape Project.



Fig 12: Community involved in the West Philadelphia Landscape Project.



Fig 13: Community involved in the West Philadelphia Landscape Project.



Fig 14: Community involved in the West Philadelphia Landscape Project.

TIMMERDORP

Timmerdorp is an annual event in the city of Groningen, Netherlands. More than 650 children are involved in building their own little village of recycled materials. "Timmerdorp" stands for "Hamertown", and the entire camp is being built by children between 7-15 years. Parents have no entrance to the event, and the children are divided into groups that have two supervisors with them the whole time. Adults follow up the children carefully, but the children are challenged to try new things. The children get to build something with their own hands, and within just four days of hard work, this results in a small village of huts (Huffingtonpost, 2015).

The event is held to show children the joy of creating, and it is a popular event in the Netherlands. Many places in the Netherlands hold similar events, and it has become an happening of the year for many kids all around (Timmerdorp 2016). I think it is inspiring to see what children can create out of some

old pallets, and how little it takes for the children to engage themselves in the project. I think the event is an excellent way of encouraging children to creativity and innovation, and it also leads to children's motor development and assertiveness.

"I wish I could have gone to something like this as a kid" (Huffingtonpost, 2015).

The event has a learning-by-doing approach where the children are allowed to use the tools they want, except advanced saw-work. The supervisors ensures that the tools are being handled the right way, and if the children want to build higher they can get a license to do so as well. It is important that the event is safe and educational at the same time. Smaller accidents do happen, but that

is a part of the lesson (Timmerdorp 2016). Timmerdorp is not a permanent project, but it still shows how much engagement children have in building projects when included. Children's contributions are valuable assets in a planning process and should be considered in all projects that involves outdoor environments used by children.

CONCLUSION

The reference projects have been of inspiration to the Kalaiselvi Project, showing how communities and groups of people can come together and create something of meaning to the community. The reference projects are quite different from each other, but they are all based on the vision of involving a community for a positive development in their environment. This is what I am taking with me for the next phase of the process.



Fig 15: The kids at Timmerdorp in action.



Fig 16: The kids at Timmerdorp in action.



SUM UP

By explaining what participation is and showing some of the benefits of this working method, I wanted to emphasize why participation is a useful method in all design projects. Participation has both social, economic, environmental and aesthetic benefits, and it promotes landscape democracy in the planning process. With the help of Hester's twelve steps of participation, a simple guide for the process is proposed. The reference projects work as good role models and sources of information on how participation can be used in practice. I will now go from theory to practice, and try to show how the theory can be used in a real project.

THE PROCESS

The purpose of this chapter is to provide a reflective report of the process from the day the idea came up, until the project is built and ready to be maintained. The chapter is divided into five subchapters, in which each step of the process is detailed. The subchapters are organized by the model of the organization "Playground Ideas", where I follow the organization's manual through the process. I also try to follow Hester's twelve steps of participation (Hester, 1985), and at the same time seek to find my own way, and come up with solutions that I think are most appropriate for the project.



TIMELINE

During the first year, the process focused on practical planning of the project. Soon after the idea of the project came up, the student counselor and the manager of the children's home were contacted to ask whether this type of project was feasible. The response from both parties was positive, and within a month's time the project was up and running. I organized the fundraiser and did some online research to get an idea of how much money that would be needed in this type of project. I contacted the local newspaper to spread the

word about the project, and encouraged people to follow the project's website for updates. A high school teacher helped me to spread the word about the project to collect more funds to the construction phase.

Along with several people who supported the project, I went back to the children's home two times, and took registrations of the site, such as site measurements, registration of existing vegetation, movement patterns and

existing qualities. At the second visit, my boyfriend and I travelled around to meet with suppliers of different kinds of materials to do a material study, and to find a landscaper that could be involved in the project. I also conducted workshops with the children, and there has been constant dialogue with the management of the children's home throughout the process. They have been very helpful in the planning.

Many people from my hometown engaged in the project, and people donated clothes, toys and money to the project. These gifts were brought on the trips during the planning process. During January-February 2016, the final preparations before the construction phase were made. In March 2016, I travelled to Chennai with the company of two friends, and organized the project start up. With the help from a local landscaper and his company, the project was realized within a month. The kids were involved in the building process,

and during the last week, my family and friends came to help out with the final preparations. We had an opening party with cake, dance and music.

I received a multitude of pictures of the children taking care of their new garden after I came back to Norway. I was a bit worried about the maintenance before I returned home, but it turned out that the children had full control and there was nothing to be worried about. In May the thesis is delivered, and I will keep on following up the maintenance of the outdoor environment.



FIELDWORK
First time in India, fieldwork in Tamil Nadu organized by development studies.



THE IDEA
Was struck by the idea of the project.



SPREAD THE WORD
Project webpage, facebook-page and had an interview with the local newspapers.



RECRUITING
Encouraging people to join the project and visit the children's home. My high school teacher helped out with handing out flyers.



VISIT THE CHILDREN'S HOME
Together with fellow students, we visited the children's home and did all the necessary registrations and workshops with the kids.



DONATIONS
Haugen kindergarden donated four bags full of toys.



SECOND VISIT
Traveled to meet with landscapers, do plant and material research and have more interviews.



FINAL PREPARATIONS
Finalized all plans and made sure everything was ready for the construction phase.



OPENING PARTY
We had a grand opening party when the new outdoor environment was finalized. We celebrated with cake and dance.



DELIVER MASTER THESIS



AUG 2012

START OF STUDIES
Started studying landscape architecture at Norwegian University of Life Sciences.

JUN 2013

PERMISSION GRANTED
Got go-ahead signal from the student counsellor and the management of the children's home.

JUL 2013

FUNDRAISE
Organized the fundraiser, where friends, family and strangers contributed.

NOV 2013

APPLY FOR FUNDINGS
Sent application to several organizations and companies.

JUN 2014

WAFFLE SALES
Sold waffles to collect money for the fundraiser. Got help from friends and family to do the waffle sale.

DEC 2014

DONATIONS
Cubus Nordfjordeid donates three bags of children's clothes.

AUG 2015

DIALOGUE
Communicated on a regular basis with the management of the children's home and the chosen landscaper until the construction phase.

MAR 2016

CONSTRUCTING PHASE
Built the project during March with the help from Perikali landscapers, the children and the staff at the children's home.

APR 2016

MAINTENANCE / WORK EDIT
Organized the material from the construction phase. Made sure the maintenance was kept up by the children.

JUN 2016

FOLLOW UP
Continue to follow up the maintenance of the outdoor environment.

PROCESS DIAGRAM

1. LISTEN

The first step of the process is listening to the residents at the children's home and taking an inventory of the children's home's assets.

2. PLAN

The second step is collating all the information and registrations and organizing the material. This step of the process also includes site analysis, the planning of the fundraiser, recruiting, spreading the word, finding a local landscaper and doing a material study.

3. DESIGN

The third step of the process is the design phase with concept development, design principles, plans, sections and visualizations for the project based on the findings from step 1 and 2. I will also present a work schedule for the building phase and a budget for the project.

4. BUILD

The fourth step of the process is the actual building phase. I will discuss challenges and report on how the building went on.

5. MAINTAIN

During the fifth step of the process, I will propose a maintenance plan for the project, including a week schedule, waste management and a maintenance checklist.

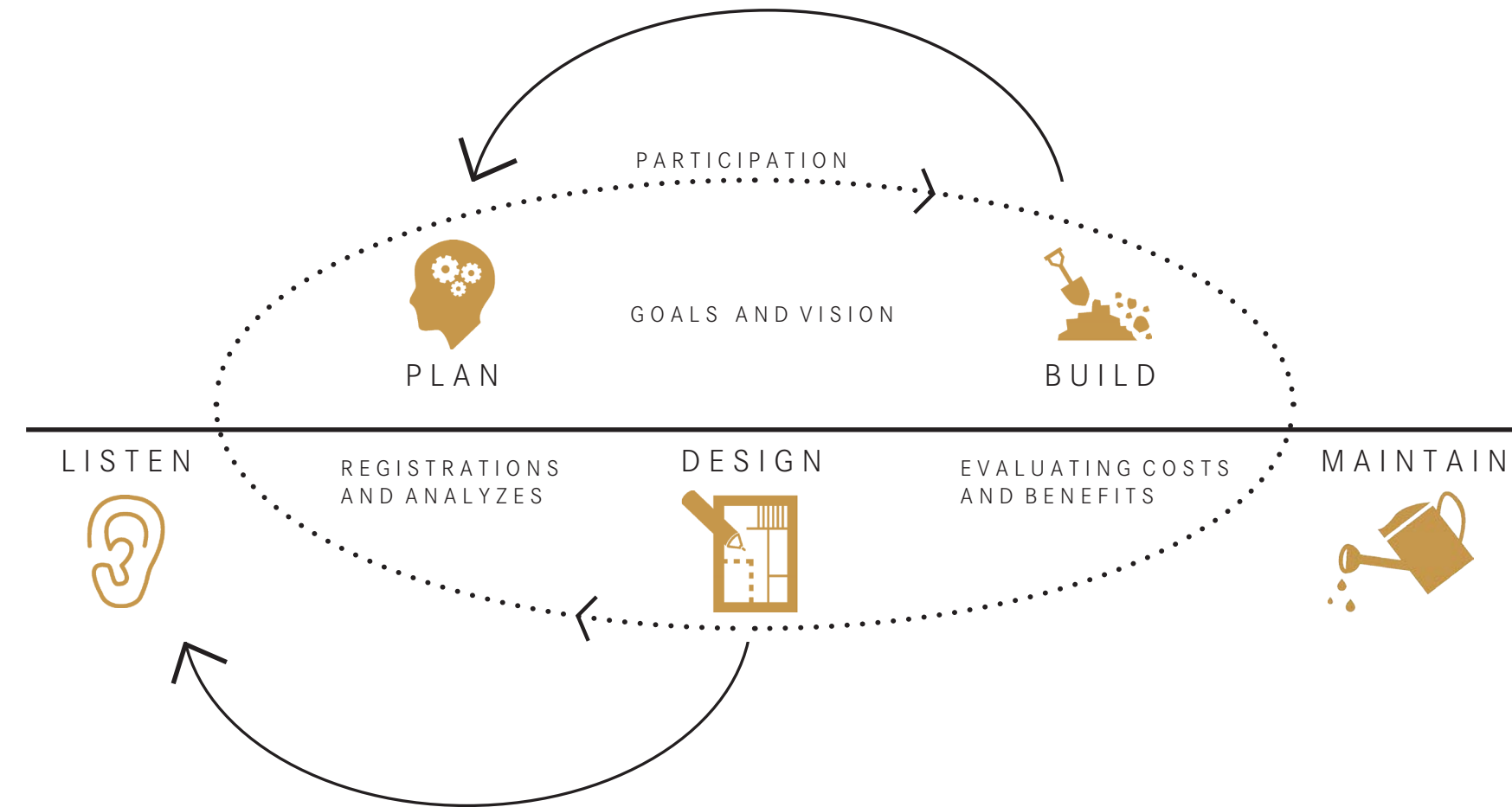


Fig 17: Process diagram

CONNECTION TO LITERATURE

To connect the Kalaiselvi Project to the literature, I organized the project process in this table to compare it with Hester's twelve steps of participation and the ladder of children's participation. As mentioned in the literature chapter, the Kalaiselvi Project ended up on the middle levels of the ladder, as it

was me that initiated and organized the project. The project follows Hester's steps in some way, but in a different order, as Hester mentioned that was a usual phenomenon in real projects.

HESTER'S TWELVE STEPS OF PARTICIPATION	THE LADDER OF CHILDREN'S PARTICIPATION	THE KALAISELVI PROJECT
1. Listening	1. Manipulation	1. Mapping and inventory: Did the site registrations and analyzed the site
2. Goal setting	2. Decoration	2. Listening: Arranged workshops and interviews
3. Mapping and inventory	3. Tekonism	3. Evaluating costs and benefits: Got a realistic idea of costs and project limits
4. Introducing the community to itself	4. Assigned but informed	4. Goal setting: Developed clear goals for the new outdoor environment in cooperation with the children and staff
5. Getting a gestalt	5. Consulted but informed	5. Introducing the "community" to itself: Presented my registrations and encouraged inputs
6. Drawing anticipated activity settings	6. Adult-initiated, shared decisions	6. Developing a conceptual yardstick: Made a model to test out different proposals
7. Letting archetypes and idiosyncrasies inspire form	7. Child-initiated and directed	7. Drawing anticipated activity settings: Evaluated the results from the workshop and drew anticipated activity settings
8. Developing a conceptual yardstick	8. Child-initiated and shared decisions with adults	8. Developing a spectrum of plans: Sent all the different plan proposals to the children's home for comments
9. Developing a spectrum of plans		9. Evaluating costs and benefits: Did another evaluation of costs and benefits after choosing plan solution
10. Evaluating costs and benefits		10. Transferring responsibility: Organize the construction phase together with the landscaper and workers
11. Transferring responsibility		11. Construction phase: Build the project with the help from the children, the staff and the landscaper and his workers
12. Evaluating after construction		12. Evaluating after construction: Evaluate the project after realization and take care of maintenance



01 LISTEN

INTRODUCTION

In this subchapter, I will present how the process began, starting with one of the most important steps that is described in Hester's twelve steps of participation; Listen. To truly understand the site and the potential of the place, I had to travel back to India, and make registrations, hold workshops and interviews. My role as a landscape architect was to listen to what the children and staff had to contribute in terms of knowledge of the site itself and their own visions for the site, in order to provide a design solution that reflected their needs.



THE FIRST VISIT

In March 2014, I traveled back to the children's home for the first visit after the project start up. I was very excited to meet the children and staff again, and to initiate the registrations of the site. Camera, measuring equipment and sketchbooks were packed and everything was ready to go.

I was warmly welcomed at the children's home by a gang of excited children. The first day was spent playing with the children and hearing about all they had to tell.

From day two, I started the registrations of the site. I undertook a thorough survey of the entire area, which proved to be very challenging as little of the site was perpendicular. This took a lot of time, but proper measuring equipment made the job easier. The site showed signs of an unfinished building project, and a lot of rubbish was lying around. I photographed every nook and cranny

and identified which species of vegetation that existed at the site. Registrations later in my stay were to observe where the children played when they were outdoors, movement patterns, and which places they liked and disliked.

Later, I had a small workshop with the children. The staff helped to organize the children and translated from English to Tamil. We had activities like draw your favorite space, a walking tour and discussion groups where the children discussed what they liked to do outdoors.

During the stay, four of my fellow students from my landscape architecture class came to visit the children's home. They engaged themselves in the project and wanted to see the project area as well as meeting all the kids. This was a day full of play and fun, where the children showed us what they liked to play with. It is very motivating that fellow students are involved enough to travel

to the other side of the world to support the project.

With new experiences and knowledge, we traveled back to Norway, and I was able to continue the planning process. The management of the children's home kept continuous contact and we kept each other up to date on further development of the project.



Playing cricket using a piece of a chipboard as racket.



Fellow student teaching clap play.



Water system seems to be in good shape.



Dried out nursery bed.



Garbage lying around.



The garbage heap.



Unfinished construction projects.



Playing "Boogie boogie" with the children.

FAVORITE SPACES

The first activity the children participated in was "draw your favorite space". The activity encourages the children to think about their favorite spaces and why it is their favorite space. The drawings can be used as input to the final design.

In «A Womb with a View» Randolph T. Hester talks about how favorite spaces affect humans. Hester says that designers unintentionally tend to try to recreate their favorite spaces in their design. The emotionally charged spaces help designers develop a form of aesthetic value. Some valued factors of favorite spaces seem to repeat themselves with several people.

- Enclosed spaces
- Places with vegetation
- Bright sunlight
- Water
- Spaces from which one can be seen and not be seen (Hester, 1979)

Even though not everyone of the children understood the activity, most of them tried to solve the task in their own way. A member of the staff helped out by explaining the activity in Tamil, and the children eagerly drew what came to their mind.

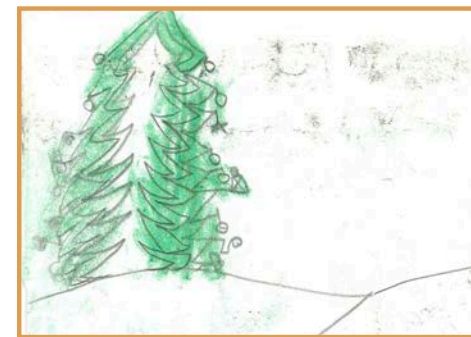
After the activity I asked them to tell about their drawings, and it fascinated me that many of the points that Hester lists are covered by these children. A girl told that her favorite space was in a tent where she could play and hide from the grown ups, and almost everyone mentioned flowers and green as important. This is an interesting observation I will take further to investigation in the planning part of the report.

Some of the drawings are presented in this report.



GIRL, AGE 5

"My favorite space is where the flowers grow."



BOY, AGE 5

"I like Christmas trees."



GIRL, AGE 4

"My favorite space is here at home."



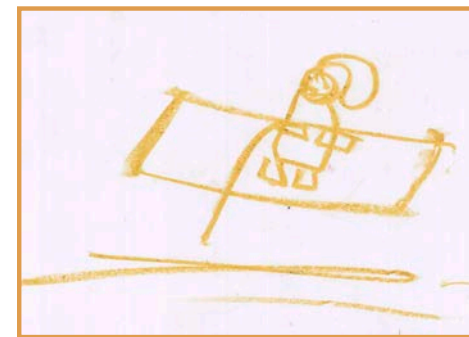
BOY, AGE 2

"Colours."



BOY AGE 9

"There is so much space for the car, but I like it better in the park where you have big green spaces."



BOY AGE 3

"I like boats, and I would love to go fishing some time."



GIRL, AGE 6

"My favorite space is in a tent where I can hide from grown ups."



GIRL, AGE 10

"Palm trees are beautiful, but they are very hard to climb. I tried once, but that did not work out well."

INTERVIEWS

In an interview with the general manager of the children's home, she told me that they were open to all suggestions for their outdoor environment. She pointed out that supply of water for the plants should not be a problem, and that they wanted to assist with any information that I needed. The general manager wanted a focus on an outdoor environment that facilitated the children's needs, and at the same time made the outdoor environment seem more attractive for visitors. They did not want to have any grass area, since this would be difficult to maintain because of the dry climate conditions. They did, however, want many plants in the flowerbeds, and they also wanted the children to be involved in growing vegetables. They had been discussing making a kitchen garden in the past, but they did not have the time or knowledge to operationalize that wish.

The general manager also stipulated that there was a need for at least two car park spaces. I was hoping that we could avoid placing car parks in the front yard, but after conversation with the general manager I realized that this was not possible, and that I had to take this into account in the design phase.

The general manager also pointed out that the children attend a local school close to the children's home every week day from 9.00 am to 16.00 pm, and will not be available for any activities during that time. On Saturdays, they have school until 13.30 pm, and on Sundays, they have the day off. That means that we will have to be very effective during the time they are available for engagement with the outdoor space.

GARDEN
SHADE WATER SEATINGS
PARKING GREENERY KITCHEN GARDEN
DEVELOPMENT PLANTS PLAY
VEGETABLES SAFETY FUN
VARIETY

WALKING TOUR

On the walking tour the kids were responsible to show me around the children's home and tell me what they liked and disliked. They were very enthusiastic when they told about their everyday routines, where they ate and where they liked to hide. I was dragged through the narrow passages, into the laundry area in the back, up to the roof terrace and into the bedrooms. The children had a lot to tell about their home, and most of it was positive. It was obvious that they were very happy with their place, but they also came up with suggestions for improvement. For example, they pointed out that there was a lot of trash in the front yard. This was something they were not particularly pleased with, since the trash hid animals and insects in the garbage heap. They thought it was a pity that the plant beds were completely dried up, and wished to have more greenery in the outdoor area.

Through observing the children play and listening to what they told, it was clear that it was important to have a big open space in the front yard where they could play cricket and other games, and have the opportunity to arrange such activities. This also was pointed out in the interview with the general manager, in connection with being able to park cars in the front yard. The kids did not like the fact that the cars were parked in their play area, but they understood that people liked to park in the shade.



THE SECOND VISIT

In August 2015, I returned to Chennai for a final visit before the construction phase of the project. The main purpose was to provide the latest registrations, do a material study, meet with landscapers and see what changes had occurred since the last time I was there. Angel House Children's Home is an active children's home with many volunteers who come and work for them. During the past year a volunteer had started an initiative to transform the children's home's garbage heap into a café. This was a successful project which the children's home now manage themselves and get the excess earnings.

Since the last time I visited, there had become more focus on having a child-friendly environment in the outdoor area, and a lot of garbage was removed from the front yard. This was a positive development and it was nice to see that the kids could run around without risking stepping on sharp objects. The children were as energetic as always, and took me on a new walking tour around

the children's home and told me about all the changes. They had a special commitment to the new vegetation that had been planted, and the children proudly showed different plants and told me how they looked after them.

Later on the trip, I studied possible materials that could be used in the project. I traveled around to different dealers and looked at materials such as granite, concrete, wood, masonry, metal and more. At the end of the week, I had arranged meetings with several potential landscapers who could assist in the construction phase. I ended up making a deal with a local landscaper who lived close to the children's home. With this set, I felt confident to travel back to Norway and start the last preparations before the actual construction phase could begin.



Cars occupy the play area.



A flag pole had been installed.



Outdoor kitchen area.



Some of the garbage had been removed.



The children showing me the roof terrace.



The new café.



The roof terrace with dangerous rods sticking up.



Trying to park the cars in the shade in the children's activity area.



Some of the garbage had been removed from the narrow passages.

WALKING TOUR

Since there had been some changes since the last time I visited, I wanted to take the kids on a new walking tour. This was received with great enthusiasm, and the kids almost pulled me around and told me about their home. Some new plants had been planted in the flower beds, and the kids picked out species they thought were exciting and showed me what plants they liked the best. It was clear that the shape and color was interesting.

The slide and the swing sets were just as popular as the last time, but had started to become quite worn out. Many of the elderly living at the Angel House preferred to sit in the shade under the trees and hung the swings up, so that the children could not reach them. The children were not very happy about this, but they did understand that it was most pleasant to sit in the shade. At the same time, the chains for the swing set were very rusty, and therefore it may have been dangerous for the children to use the swing set.

The kids were very happy with the new café, and thought it was nice that something happened in their front yard. They especially liked the new flagpole they had received, and told about their routines with hanging up the flag and decorating around the pole. Obviously, these are elements that will have to be preserved in the design process.



INTERVIEWS

Since the last time I visited, the general manager had eagerly collected advertisements and commercials about gardening and planting from all newspapers she came about. She had collected everything in a binder and gave me tips on plant nurseries I could visit. I had looked up most of the plant nurseries in the city online, and aimed to visit as many as possible during my stay.

The general manager proudly told me about the new café they had opened. During one of the last few days of my visit, I met with the founder of the organization that runs the children's home, and he expressed his interest in the project. He pointed out the importance of volunteer work in this children's home, and looked forward to seeing the results. He showed what he thought were positive aspects in the existing facility, and hoped that new solutions would optimize the outdoor environment.

The general manager also told me that they wanted the roof terrace to be more accessible and attractive for the children. She also suggested that it can be rented out for events and other activities to raise funds for the children's home. The roof terrace therefore had to be open, and have room for furniture and provide spaces with shade. It had to be properly secured and at the same time look inviting.



My boyfriend, the general manager of the children's home and I at the second visit.

SUM UP

After two eventful visits and gaining much new knowledge about the children's home, I finally felt ready to get started on the plan and design phase. The children had contributed with important information and inspirational ideas. This is certainly one of the greatest benefits of working so closely with the people who are going to use the place, and the special connection you get to the place and the project is extremely valuable. Registrations, workshop, interviews and observations will now be presented in the following subchapter.





02 PLAN

INTRODUCTION

In this subchapter I will present the planning part of the project process. With all the data collected in the registration part of the process, I could start to process the information. Before creating a vision and goals for the project, it is essential to do analysis of the site to really understand the place. Based on the site analysis and a SWOT analysis, goals and vision for the outdoor environment are presented. The goals are set in cooperation with Angel House Children's Home, and together we came up with an overall vision for the project. I will present how the project was made possible, through fundraising, spreading of the word, recruiting of people and help from a local landscaper.



CURRENT STATE OF AFFAIRS

The current situation at the children's home is relatively good, but there is a need for upgrading and improvement of certain elements. The new café (1), Sathyam Café, has given new life and activity to the children's home, and many neighbors enjoy visiting the café and socializing there. The newly installed flagpole (2) is a great success, where the children get to help to decorate around the pole and hoist up the flag.

The front yard is unpleasant, and the play area is degraded after frequent use (3 and 4). The playground equipment is worn and the swing set is not much in use anymore. The entrance of the gate and the main entrance to the children's home is in good condition (5 and 6). At the front door there is a ramp, which is not up to standards of universal design, but still makes it easier for wheelchair users to get into the building.

In the narrow hallways on the sides of buildings, there are the established plant beds, but most of the planting is dead (7). This is the situation of all plant beds in the outdoor environment of the children's home. There is also a lot of garbage lying around in the passages, that makes it difficult to pass through.

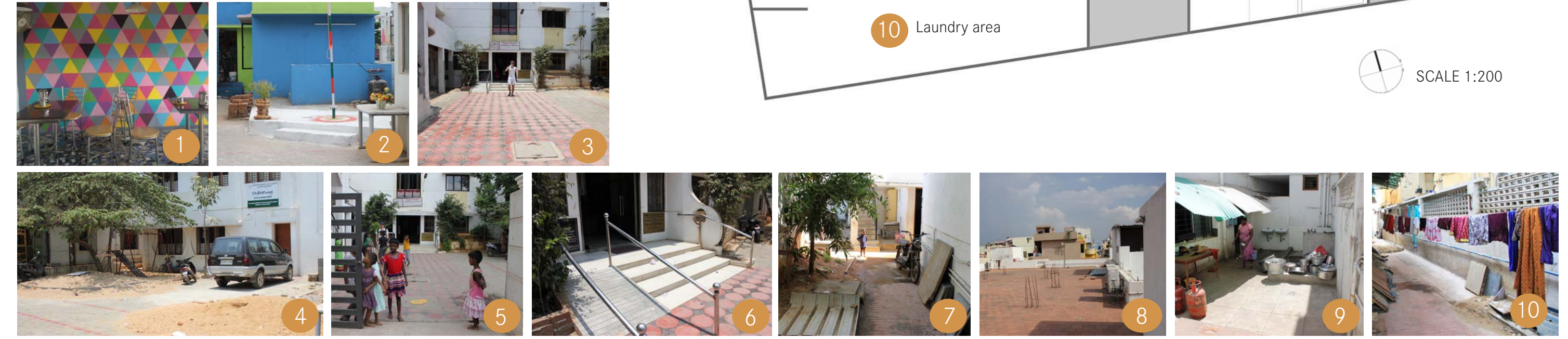
On the roof terrace (8), there is a lot of space but it is not safe to be up there. The roof terrace is encircled by a 50 cm high masonry wall, which is easy to climb over and holds the risks of children falling down two floors. In addition, steel pipes stick up from the roof, from the pillars of the building. If the kids were to run around at the roof terrace and slip, this could end up in major injuries.

Behind the main building there is a small area that is used as an outdoor kitchen (9). It is a small room, but there is room to wash dishes, and have some kitchen plants as well. The laundry area is also located behind the main building (10). The general manager expressed that this area should not be interfered with.



LOCATION

The children's home is located in a dense area with much traffic. Mogappair neighborhood lies outside the most urban parts of Chennai, but still the density is striking. The children are not allowed to go outside the gate without the supervision of adults. In other words, the outdoor environment at the children's home is what they have available for play, recreation and activities, when they are not at school. The children's home is located far from green areas and parks, and it is about one hour drive from the beach. The outdoor environment of the children's home is not suitable for children, and the general manager could tell that visitors do not understand that it was a home for children when they access the front yard.





SITE ANALYSIS

BUILDINGS AND FUNCTIONS

There are a multitude of functions in the buildings on the site. The blue marked building is the main building where the children live, sleep and have lessons. In the yellow building, there is currently an elderly center which is run by the organization KKSS. This is going to be moved to a new location during the summer of 2016, and the children's home will make room for 25 more children. In this building, there is also a kitchen and a small dining room.

The dark green marked buildings is the Sathyam Café with a kitchen. In the bright green marked building, offices and other administration functions are located. The little orange building is the lodge of the gatekeeper who makes sure that the children do not go out in the street, and opens the gate for visitors and staff.



EXISTING QUALITIES AND DEFECTS

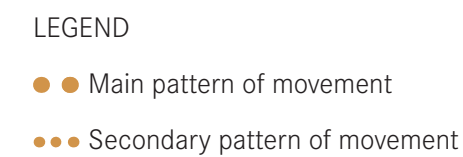
The outdoor area has existing qualities that are important to preserve or enhance. The new flagpole is an item that definitely should be preserved because the children feel attached to it and love to hoist the flag (1). The large common area in the front yard (2) is essential to keep open for play, visitors must have free access and the employees must be able to drive in and park their car.

Existing established plant beds (3-8) are today parched, and should be planted with new plants that children and staff can enjoy. The play area (9) is a great quality, but shows signs of wear and tear and should be upgraded. The roof terrace (10) is currently not suited for children, but has great potential if simple measures are done.



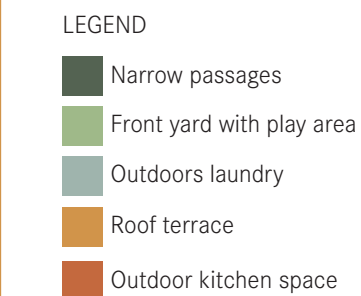
PATTERN OF MOVEMENT

There is no specific pattern of movement in the front yard, but after some observation, I was able to point out some movement lines. The main movement is in and out of the site for visitors and employees. The children run freely around on the site, and a lot of movement circles around the play area. The staff walk in and out of the café, and sometimes to the laundry area in the back.



OUTDOOR ROOMS AND FUNCTIONS

The main room of the outside environment is the front yard, where most of the activity takes place. The children also like to play in the narrow passages on the side of the buildings. The laundry area behind the building is for work purposes, where the staff clean and dry clothes. There is a desire for improvement of the roof terrace, to make this more accessible for the children and guests.



EXISTING VEGETATION

The existing vegetation consists of mostly trees. In the front yard, there are three big cherry trees in the play area, and two smaller African tulip trees just outside the play area. In the passages along the buildings, there are two small trees as shown in the plan, one mango tree at the west side and an unknown species at the north side. The green marked plant beds are dried out. Some green plants have survived, but in general, the planting is very thin. It is important to preserve the existing trees, but the existing plants in the plant beds should be replaced with more hardy plants.



SCALE 1:200

LEGEND

- Plant bed with little or no vegetation
- Small tree
- Shrub
- Large tree



I collected leaves and dried them, and tried to identify which species the existing trees were.



SAFETY

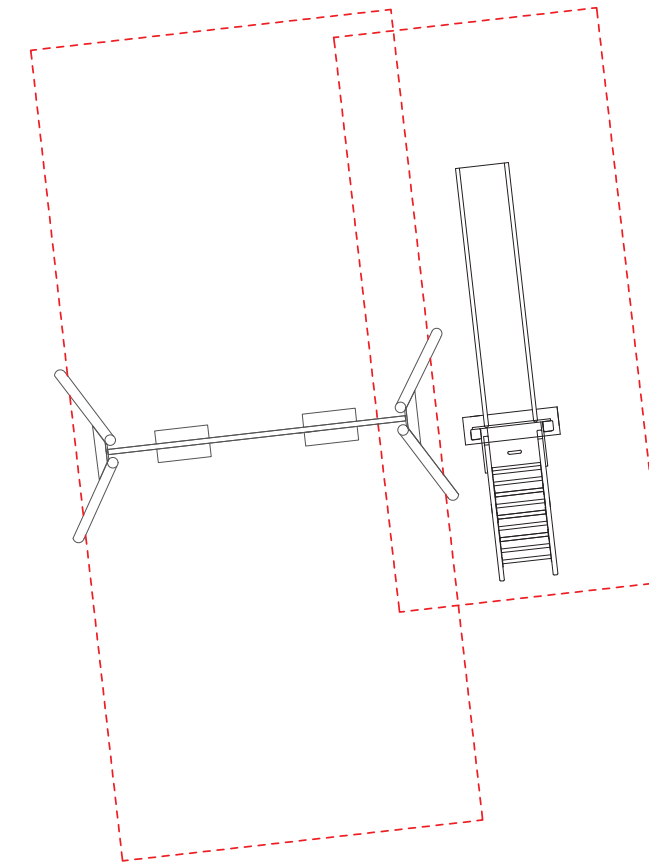
Regulations of the condition required for outdoor environments for children vary from country to country. Rules for security zones, materials and general standards are not the same in India as in Norway. To be sure that all security requires are covered, I looked deeper into the regulations of playgrounds and school yards in India.

The Indian Department of School Education and Literacy has created guidelines for safety and security of children in Indian schools. Even though the Angel House Children's Home is not a school, I decided to use this as a basis for assessing the outdoor environment. The guidelines states that "Children require a healthy and supportive environment to grow and develop. All children have a right to live in dignity, and have access to education in an environment that is safe, protective and conducive to growth and development. The school environment is associated with overall growth and development, cognitive behavior, safety and security of a child." (DSEL: 1, 2014)

The guidelines point out that if the school is located near a busy road, the area should be surrounded by a high wall or fence, preferably with vegetation that shields and protects from the dust from the road (DSEL: 4, 2014). This is the case for the children's home, as it is located in the middle of a busy neighborhood with a big road right next to it. The children's home has a high wall with guarded entrance but no shielding of vegetation.

Electrical wires and other similar dangerous items must be covered in the outdoor area. Children tend to want to pull the wires, which has led to many accidents in primary schools in India. The regulations also state that playgrounds "should be leveled to avoid falling down of children", and that "construction that may pose potential danger to children due to exposed construction materials/building under construction should be made out of bounds for children" (DSEL: 5, 2014).

Several of these points are not fulfilled for the outdoor environment of the children's home, and it is thus clear that an upgrade is needed to improve safety. The current situation is that building materials are available for the children, masonry wall around the roof terrace is not secured against falls, steel poles stick up from the roof construction, cars may park in the play area, big rocks lie around under the playground equipment and the safety zones for the playground equipment overlap.



Safety zone overlap.



Garbage and building material lying around.



1. Steel poles sticking up from the roof. 2. Low masonry wall, easy to climb over.



1. Cars are parked in the play area. 2. Rocks under the play equipment. 3. Safety zone overlap.

CLIMATE

Chennai has a tropical wet and dry climate, and the hottest part of the year is late May to early June. Because of the city's proximity to the equator there are no extreme variations in temperature. The average annual rainfall is around 140 cm. The months between December-February have a comfortable average temperature, but on average the temperature is always high in Chennai, from 21-38 degrees depending on season. The rainy season is in July-November, with an average precipitation of 500 mm rain in August. The dry periods are in January-May, and the warmest month is May (WWCI, 2016).

In other words, it is very hot and dry during the period of constructing the project. Due to little rainfall, it is not easy to maintain vegetation in Chennai. Luckily, the children's home have good access to water, and the kids are eager to keep the vegetation alive when established. It is important to provide good information on how to maintain the plants, and this will be further discussed in the maintenance chapter.

POLLUTION

Chennai struggles with extreme air pollution, and it is now at a critical level. The air pollution levels are actually higher than in Delhi, and it is one of the most polluted cities in the country (The Hindu, 2015). Air pollution can be very dangerous, and can cause disease and death. The government of Chennai is now working on improving the air quality, and has started a extensive shift of public transport systems (Centre for Science, 2015).

Vegetation may help fight air pollution by uptake of pollutants via the leaf stomata. It can decrease carbon dioxide and increase oxygen levels in the atmosphere (Mercola, 2016). A study conducted by Thomas Pugh and colleagues shows that green plants reduce pollution on city streets up to eight times more than previously believed (ACS, 2012).

Angel House Children's Home has expressed a desire for more vegetation in their outdoor environment. By planting more trees and other greeneries, the air quality can be improved and the trees also help regulate the indoor temperature by providing shade.

SUN AND SHADE

The outdoor environment of the children's home is north facing, which provides favorable shade conditions. The buildings cast shadows in the outdoor area almost throughout the whole day. Around 12.00 am, the sun is at its highest and provides little shadow to the outside area, but in general, there are good shade conditions.

I find it interesting to make a sun and shade analysis on opposing criteria of what I am used to. In Norway, one usually does a sun and shade analysis to see where the best sun spots are, as most people want to stay in the sun. In India, it is the opposite, because of the bright sun and the high temperatures. The sun and shade analysis is done to see where the best shade conditions are.



01/03 at 09.00 am.

The sun rises around 06.30 am, and at 09.00 am, the buildings cast long shadows in the front yard, providing a comfortable temperature.



01/03 at 12.00 pm.

The buildings provide shade in the play area during the whole day, which makes it the best location for the children in the outdoor environment.



01/03 at 03.00 pm.

The sun sets around 05.30 pm and it turns dark. At 03.00 pm the buildings again cast long shadows.

SWOT

After conducting site analyzes, I wanted to gather it all in a clear SWOT analysis. This is a strategic planning tool to assess the Strengths, Weaknesses, Opportunities and Threats in a project.

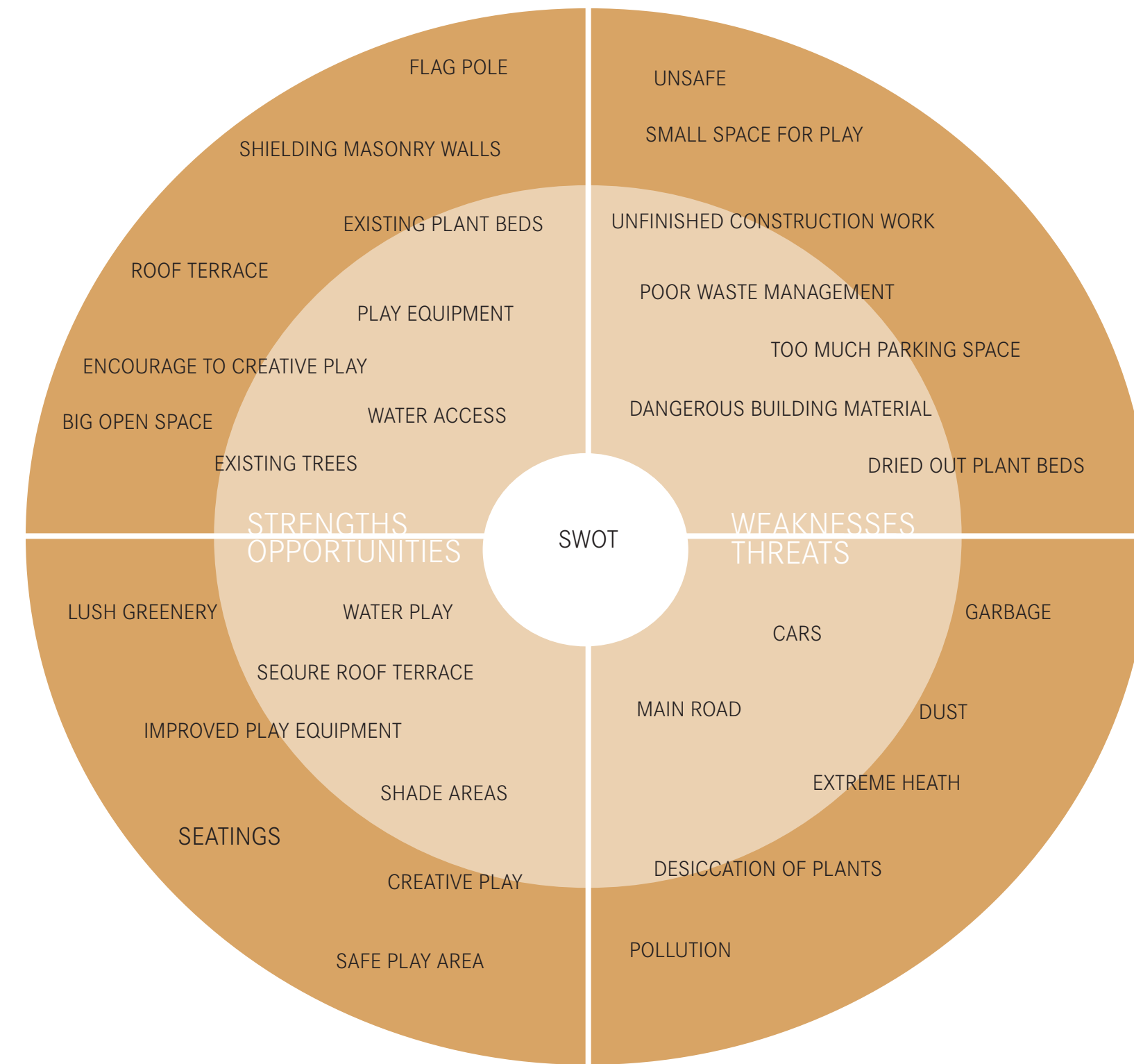
The strengths of the outdoor space are that it has a masonry wall around the area ensuring safety for the children from the traffic outside. The outdoor area has some existing vegetation that is important to keep, especially the trees. Elements like the flagpole and the play equipment are also important to preserve and enhance.

Weaknesses in the outdoor space are that there is much that can be potentially dangerous for children. With poor garbage management, unfinished construction projects and overlapping safety zones, I do not think that the outdoor environment meets a sufficient safety standard for children.

There are many opportunities for the outdoor environment as well. Existing plant beds can be replanted with low maintenance plants, seating in the shade can be arranged, the roof terrace can be secured and safe play can be facilitated.

Threats for the project are that the climate is harsh, so hardy plants which require low maintenance must be chosen. It is hot to stay outside, and it has to be possible to play and relax in the shade. The main road next to the children's home is also a threat, as it emits much dust and other air pollutants.

I look at the weaknesses and threats as a challenge to overcome. There is not much I am able to do about the air pollution, but by planting trees in the front of the children's home, we can at least protect the front yard from the dust.



VISION AND GOALS

Develop a safe and exciting outdoor environment that encourage versatile play, creativity and exploration of the natural environment, in collaboration with the residents and employees of the children's home.



SAFETY

GOAL
Facilitate a safe outdoor environment for the children where they can challenge themselves for motor development.

MEASURE
Better the outdoor equipment and shield the play area from cars.
Fence around the roof terrace to prevent danger from potential falls.



CREATIVITY

GOAL
Maintain the elements of the outdoor environment that encourage creative thinking and problem-solving.

MEASURE
Listen and observe what elements the children feel attached to in their outdoor environment and make sure not to interfere with these.
Facilitate new play elements for the children to engage with.



NATURE EXPLORATION

GOAL
Arrange for a natural environment that encourages the exploration of and interest in nature.

MEASURE
Facilitate more green areas with a diversity of plants and colors.
Facilitate a cultivation area to enhance the understanding of the process for plant growing and food production.



Walking tour at site with the children.

HOW TO MAKE IT POSSIBLE?

FUNDRAISE

Quite early in the process, I started a fundraiser in order to be able to realize the project. It is important to not let the fundraiser be an obstacle in the process, but rather try to make the best out of the resources you get. With commitment from friends and family, the realization of the project turned out to be possible to accomplish. All expenses for travels and stay I covered myself. I wanted all the raised funds to go directly to the project, so that the donors could really see the results of what they had contributed with.

It has been a challenge to reach out to strangers about the project, since I did not want to seem intrusive. I have kept a facebook group updated on the project, where over 400 members have engaged themselves, and many have given positive feedback. As the money did go to a good cause, it was slightly easier to ask for money, but nevertheless I did not want to be pushy. I could probably have been better at promoting the project, but I am generally very satisfied with the result and overwhelmed by peoples' good spirit and generosity.

There are many useful websites that allow you to launch fundraising campaigns online. In this way, it was easy to send out a link that people could use to donate to the project. Yet it turned out that the most effective way to raise money was to talk to people personally, and thus engage them in the project.

I have applied for funding for the project from several funds, endowments and corporations, but this turned out to be a challenge. Most of them did not respond to the request, and those who did reply said that they could not support individual projects, only organizations. Yet there was one company that showed their interest and contributed a substantial sum for the project.

Not everyone has the opportunity to contribute with money, and this is something I fully understand. Nevertheless, these people have helped with other things, like motivational words, inspiration and ideas. All these contributions I see as very useful.

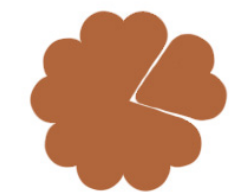


Fig 18: Fundraise, waffle sale and help from family and friends.

SPREAD THE WORD

For people to be able to engage, it is important to raise awareness of the project and to hold those involved updated. I started out by making an open Facebook group where I invited friends and strangers to join. Through this page, people got the latest updates on the process. I also created a website for the project, so that people could learn more about the children’s home and the progress of the project. With help from my former German teacher, the website was translated into both English and German in an attempt to reach out to more people. The same teacher helped with handing out flyers at her school, to create publicity around the project.

The local newspaper in my home town was contacted, and they were happy to write about the project. This meant that everyone in my home town got to hear about the project, and many responded positively and wanted to support the project.

Spreading the word was not just about getting money for the project, but also to recruit people to join the travel to India and realize the project. In such projects, you need all the help you can get, and I was very happy when several people volunteered. My whole family, boyfriend and several friends wanted to join and contribute in the construction phase.



Fig 19: The project’s facebook group.



Fig 20: Telling about the Kalaiselvi Project in "My UMB story".



Fig 21: Article in my hometown’s local newspaper.

LOCAL LANDSCAPER

With funds and volunteers ready, the next step was to find a landscaper who could help with the execution of the project. Since the plant selection is completely different than in Norway, I needed professional help from a local landscaper to make sure that the project would be successful. By hiring a local landscaper, all the orders could go through him, instead of me having to contact each supplier. This is an easier and cheaper way to execute a project. I could easily have been fooled by scammers, and it was therefore important for me to get in touch with a professional landscaper who I could trust.

During the second visit to Chennai, I traveled around to meet with landscapers, to find someone that wanted to be a part of the project. After a little back and forth I ended up at the office "Perikali." This is a company run by landscaper Harihara Sudhan, short name Hari. We were met with great enthusiasm, and Hari was very interested in contributing with his knowledge. He owns a plant nursery near the children’s home, with a large variety of trees and other

plants. We looked at a number of projects he had done, and were inspired by his commitment in creating green environments for people.

He thought it was great that people from another country were involved in this matter, and told me that children have a special role in Indian culture, and that he would love to help out without charging for the planning work. I only had to pay for materials, plants and hired labor. He had all the contacts and tools I needed in order to complete the project.

Hari’s contribution has been a tremendous asset in the process. We kept a constant dialogue via mail, from the time of the visit in August 2015 until the construction phase began in March 2016. Hari studied in California and spoke fluent English, and the communication was therefore very good. We sent plans and ideas to each other, and with good input and assistance from Hari, the project was made possible.



The plant nursery.



Visiting Hari’s office.

LOCAL MATERIALS

In order to plan a good outdoor area for the children's home, I had to get a better understanding of which materials were suitable to the climate. On the second visit to Chennai, I traveled around to look at different materials and to consider price and quality. Beforehand, I had looked up all the addresses of the suppliers, and with a tight schedule, I traveled around to visit them all. It was not exactly what I had expected. I had envisaged big factories with a wide variety of materials, but what met me were tiny shops stuffed with so many different things. The images below show two of the stores I visited, where they provided for example stone slabs, sand, wood and much more. This experience confirmed that it would be hopeless to deal with each and everyone of the suppliers, and I was once again relieved to have found a landscaper who knew where to get hold of the best materials. I still got to see the range of materials and were explained the pros and cons of the various materials. To maintain the values of sustainability in the project, I have chosen to use local materials and services, to ensure materials that are fitted to the climate and that are short transported. Some of the materials are presented here.



One of the hardware stores I visited.



One of the wood stores I visited.

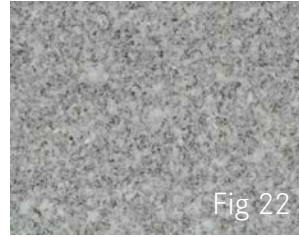


Fig 22

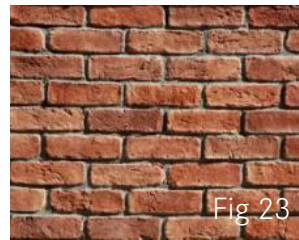


Fig 23

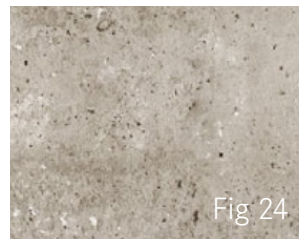


Fig 24

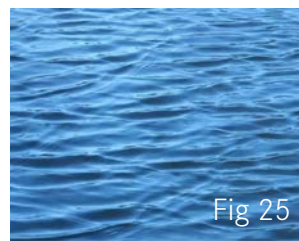


Fig 25



Fig 26

GRANITE

Indian granite is known worldwide, and I was excited to see the range of varieties in Chennai. I visited a supplier of granite on the other side of town, where I got to look at the texture and the price list. The prices were a bit higher than I had expected. Granite is a strong and robust material, and I wanted to include granite in the design to reflect the local ties.

BRICKS

Bricks are much used in building projects in India, and it was easy to find suppliers of bricks. This was a very affordable material, and there were very many masons who could do the job for a reasonable price.

CONCRETE

Concrete is also a widely used material in India. Concrete is made by mixing cement and water with sand, and is a versatile building material. Concrete could be purchased at most hardware stores, and it was also very affordable.

WATER

Chennai has a dry and hot climate outside the rainy season, and it was thus important to investigate the availability of water. This was taken up with the general manager and the founder of the organization KKSS, and they could assure me that they had unlimited access to water, so this was not something to worry about. The water would not be clean enough to drink, but worked well for watering the plants and possibly for play.

SAND

Sand was also very easy to obtain. They delivered sand for playgrounds for a fairly small sum. I asked if the sand they delivered for playgrounds was any different from the sand they delivered for for example building constructions, but they did not have an opinion about this. They said that all sand would be suitable for playgrounds, so I noted to double check the fraction of the sand when we were going to order sand for the new playground at the children's home, just to be sure.



Fig 27



Fig 28

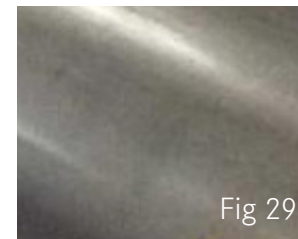


Fig 29

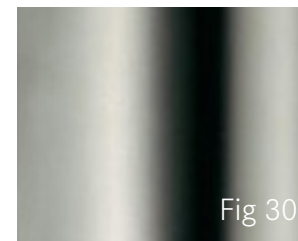


Fig 30

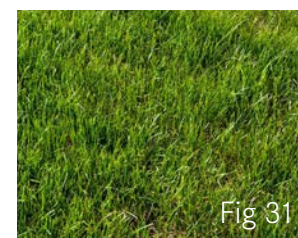


Fig 31

PINE WOOD

Wood material proved to be quite hard to find. The best suppliers could offer both new and used materials. The used materials were full of holes and were in poor condition, but the new materials were of good quality. The wood was very dry, but appeared to be well treated. They could tell me that with proper treatment - termite agent, waterproofing and painting, the wood could last for a very long time, even in their climate.

BAMBOO

Bamboo is a fast growing plant, and it provides very hard and durable materials. Bamboo must also be treated with termite agent and waterproofing to ensure that it does not rot. In Chennai, there was good availability of bamboo, and it was relatively inexpensive.

CARBON STEEL

Carbon steel is the common term for steel which is mainly achieved by alloying with carbon. It comes with a dull surface. It has a good formability, and it is a resistant material. Carbon steel could be obtained for a very affordable price in Chennai.

STAINLESS STEEL

Stainless steel is more shiny than carbon steel and comes in many different qualities. It was actually not that easy to find suppliers of stainless steel, and the one supplier I visited demanded a quite high price for the materials.

VEGETATION

Vegetation proved to be one of the cheapest and easiest materials to obtain in Chennai. There was a wide spectrum of plant nurseries, and we visited three of them. The plants seemed to be of good quality and were well taken care of in the nurseries. I also visited Hari's plant nursery, where there was a wide variety of species.



SUM UP

Having done site registrations and analysis, I feel that I have gained better knowledge of the site, and understand the premises that underlies the project. For a project to be successful, it is essential to do careful planning. With a clear vision and goals, I can move on to the design phase with an assurance that the crucial conditions are taken into consideration.



03 DESIGN

INTRODUCTION

In this chapter, I will present the plan solution for the outdoor environment of Angel House Children's Home. The proposal is based on the knowledge and registrations which I acquired in phase 1 and phase 2, and is developed in collaboration with the landscaper. I will first present an overall concept for the design and related design principles. Furthermore, I will present the illustration plan, planting plan and material plan, accompanied by sections and visualizations. All plans are coordinated and approved by the general manager of the children's home, and monitored closely by the landscaper.

I had no access to digitalized plans of the current situation, so all plans are based on my own measurements. Since I did not have access to an altimeter, the plans are not shown with contour lines, only height set where necessary. Plans and sections are developed in a suitable scale. Illustration plan, plant plan and technical plan will be presented in 1:200 and details and sections will be presented in 1:100 and 1:50. The plan solution aims to create a lively and attractive outdoor environment for the children and staff at the children's home.



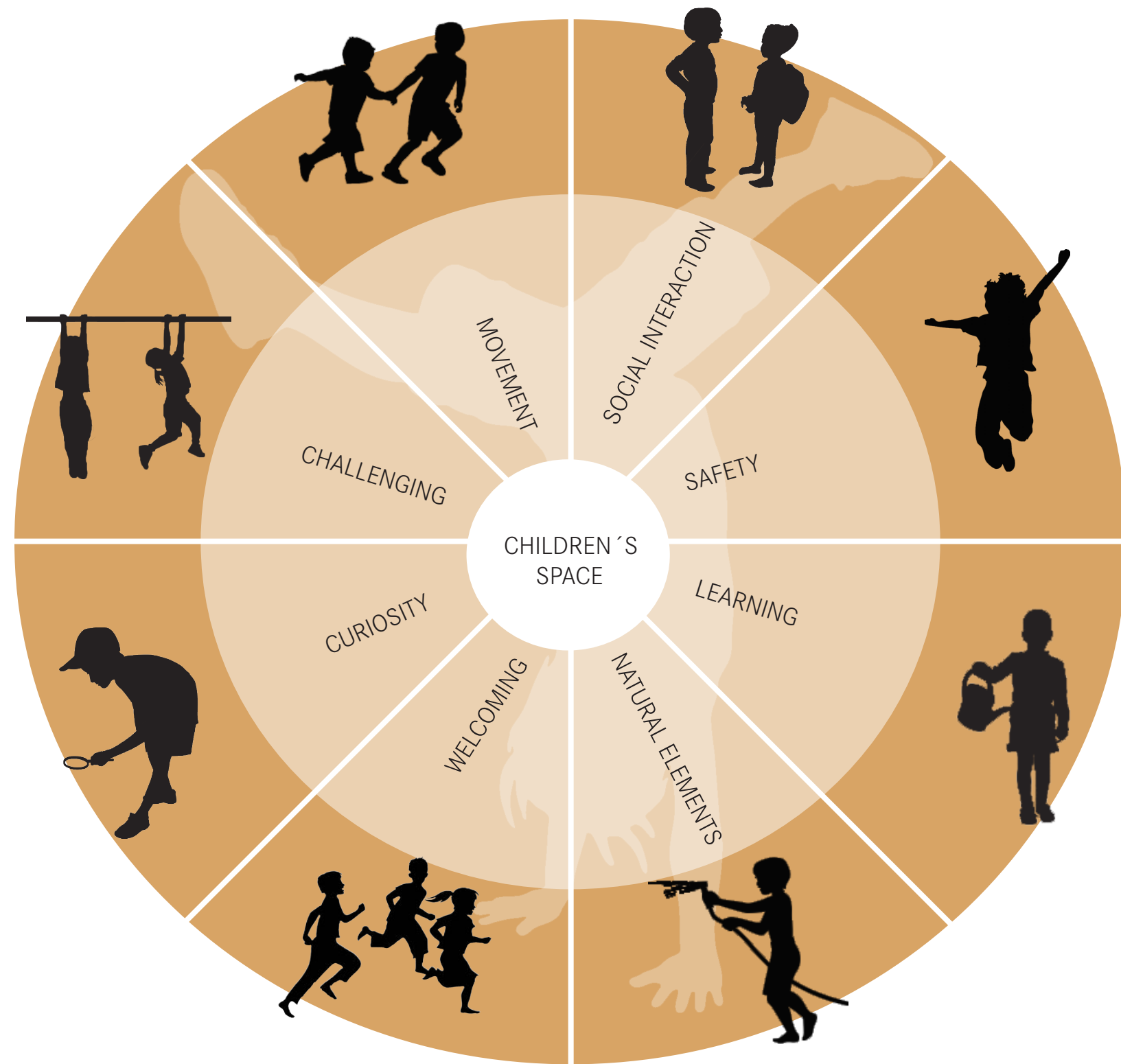


Fig 32: Illustrating what elements that make good outdoor spaces for children.

WHAT MAKES GOOD OUTDOOR SPACES FOR CHILDREN?

When planning an outdoor space for children, there are many things to take into consideration. The contribution of the children can be very helpful in the planning, as it eventually is they who are using the space. Good play spaces for children offer a multitude of activities and challenges. The space should encourage movement and motor development, and invite for social interaction and play. It can also provide an educative contribution, like for example how to take care of the plants or that it hurts to fall down.

Good outdoor spaces for children let them experience and play with natural elements, such as water, sand and earth. It allows them to stimulate the five senses. Examples of this can be the taste of berries, smelling flowers, looking at the beautiful butterflies, listening to the sound of flowing water and feeling the texture of the sand under their feet.

A good play space is well located and provides a welcoming atmosphere. The children should feel safe whilst playing there. It should be facilitated with seatings, so that parents could sit down if they would like to watch the children play (Play England, 2008).

DESIGNING FOR PLAY

Play is important for children's physical and mental health. Children learn from each other and the environment around them, and by playing, the child develops social and cognitive abilities. Outdoor play is especially important for children. When playing outdoors, children can learn about how to overcome physical barriers, solve motor challenges and experience the natural elements. Outdoor play leads to a sense of well-being and the children can play more freely.

It is important not to be over cautious when it comes to safety. Children learn by falling, and should be able to unfold in their surroundings. Climbing, jumping and balancing are useful skills that involve motor development. The play space should of course be secured for unnecessary threats, but the kids should not be prevented from for example climbing trees. When designing for play, it is important to remember that children are not porcelain dolls. They are often eager to discover the world outside their house. Experiencing their local environment is a valuable lesson for the children (Play England, 2008).

MY ROLE AS THE DESIGNER

My role as a designer in the process of planning the outdoor area for the children at Angel House Children's Home, is to lead the process and to work closely with the management of the children's home, the kids and the landscaper to achieve the best result possible. Since I do not have experience in leading such projects, it is very reassuring to have a professional landscaper on the team. Planning with children offers much laughter and joy, but it is also my job as a designer to organize the process and make sure that the project reaches the finish line.

I have to make sure to plan for good and durable materials, and hardy plants that can withstand the harsh climate. The children will help to decide what plants they would like, such as flowers that attract butterflies or fruit trees. It is my task to ensure that the place retains its existing qualities, and that the new project does not interfere with its identity. I want to help the children and the management to see the possibilities in their outdoor area, and motivate them to engage in the development of it.

Practical issues such as budget and ordering materials are performed in collaboration with the landscaper. I must personally ensure that the materials and plants that arrive at the site are of good quality.



CONCEPT DEVELOPMENT



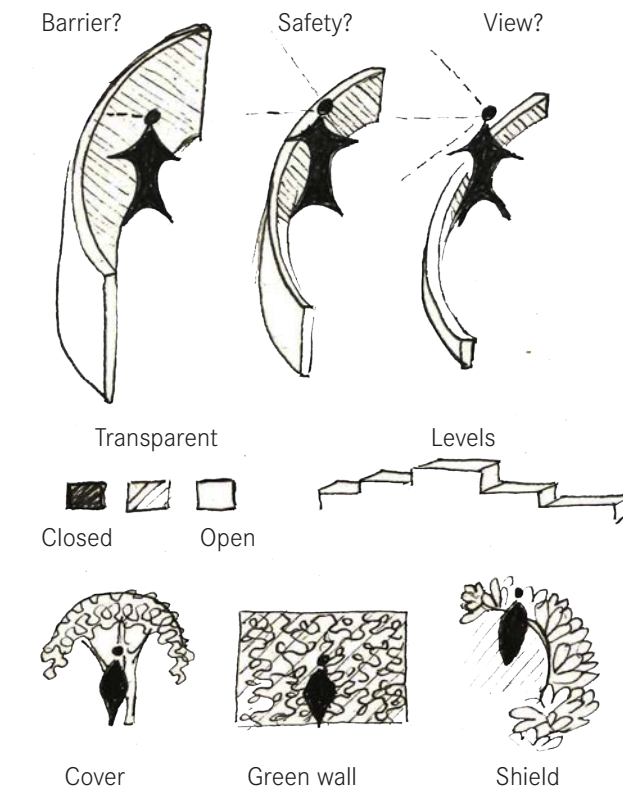
- "My favorite space is where the flowers grow." Girl age 5
- "Colours." Boy age 2
- "There is so much space for the car, but I like it better in the park where you have big green spaces." Boy age 9
- There is room for more plants here! Girl age 6



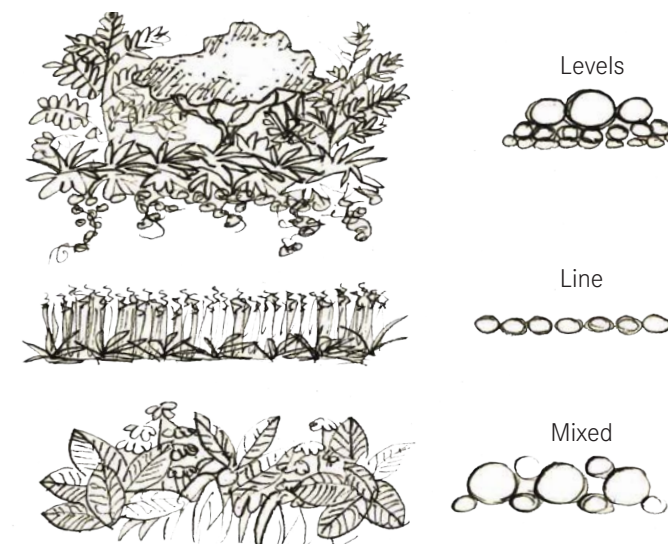
GARDEN
SHADE WATER SEATINGS Elements that can be implemented in the concept.
 PARKING GREENERY KITCHEN GARDEN Elements consistent with the concept
DEVELOPMENT PLANTS PLAY
 VEGETABLES SAFETY FUN
 VARIETY

CONCEPT DEVELOPMENT

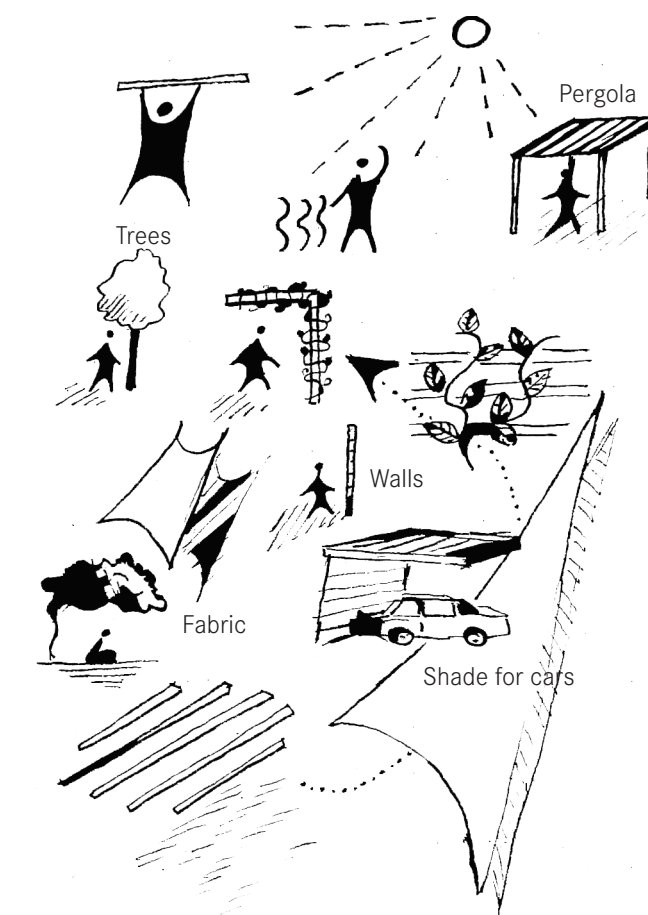
SHIELDING AND SPACE DIVISION



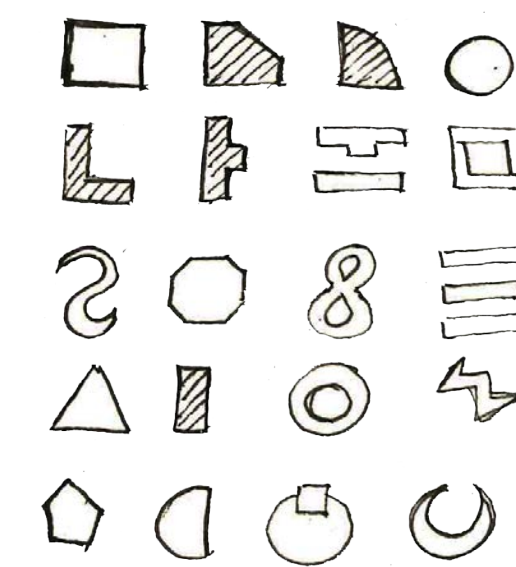
VEGETATION GROUPING



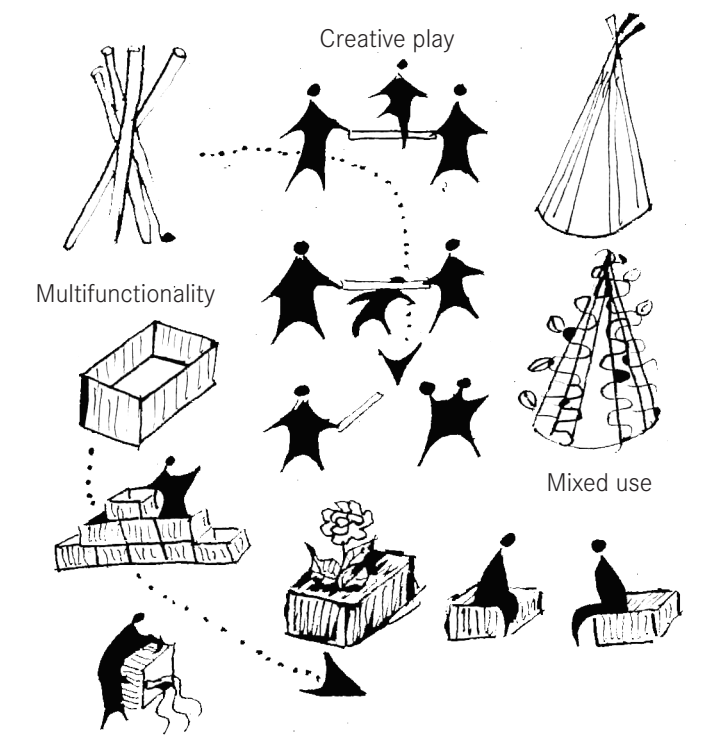
SUN AND SHADE



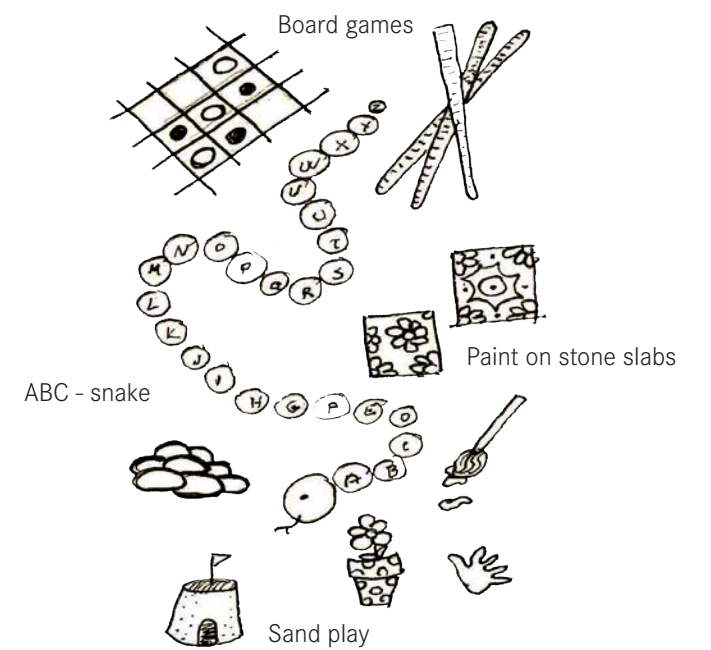
SHAPES AND FORMS



CREATIVITY AND ELEMENTS



ACTIVITIES AND GAMES





CONCEPT

"ALL OF THE FLOWERS OF TOMORROW ARE IN THE SEEDS OF TODAY"

By looking at the results from the participation process and the site registrations, there were several issues highlighted. A desire for a green and safe outdoor environment with the children's best interest in mind was expressed through the whole process, and I thought this desire suited the saying that was painted outside the children's home gate extremely well. "All of the flowers of tomorrow are in the seeds of today" is a metaphor for childhood, explaining that children are our future. In the same way that seeds need nursery to grow, so do the children. The saying also reflects a new beginning with the seed and new life. This is the concept for the outdoor environment of the children's home - A new beginning with a flourishing and child friendly environment.

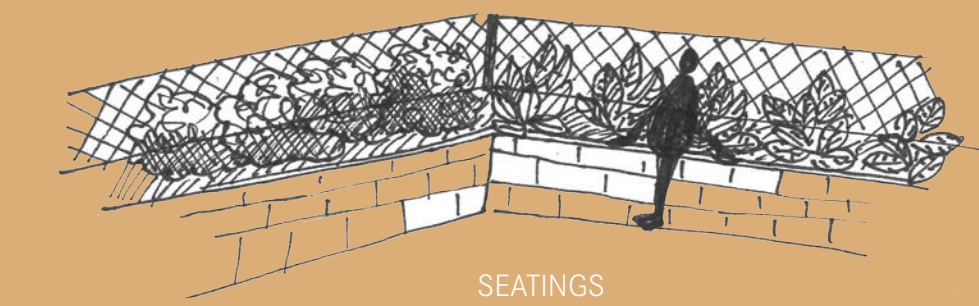
DESIGN PRINCIPLES

"A children's garden can be a small, green space or a green space with small scale features; it can be a garden with play features; it can be a place to teach youth about the natural world and/or the botanical sciences; or it can be a natural area given over to children for the cultivation of flowers, fruit and vegetables. Most often, gardens dedicated to children are multi-functional and each is certainly unique" (CPIDL on Shair: 2, 1999).

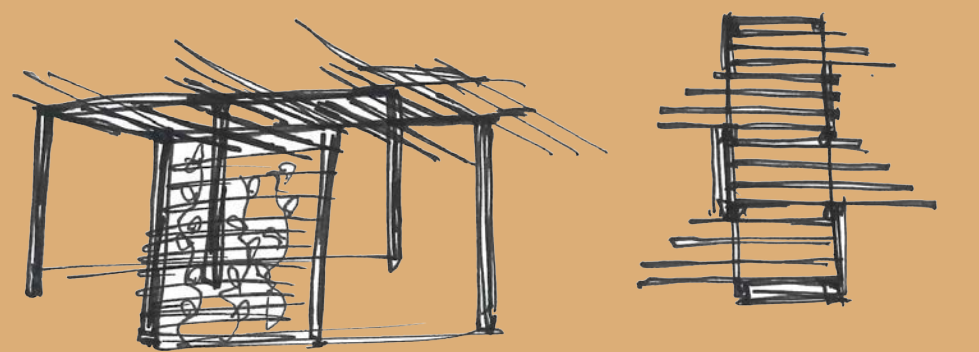
-  **MULTIFUNCTIONAL**
The outdoor environment should be multifunctional to cover several needs and encourage a variety of activities.
-  **GREEN SPACE**
The outdoor environment should offer a diversity of plants, both for recreational and educational purposes. A kitchen garden should be established to let the children take part in growing their own vegetables.
-  **SAFE**
The outdoor environment should be secured to prevent accidents and injuries.
-  **CREATIVE PLAY**
Access to few play equipments tends to encourage creative play, and this quality should be maintained. Other elements that encourage creativity, such as sand and water play, should also be implemented.
-  **SHADE**
The main elements and activities, such as the play equipment, should be organized in spaces with shade or shade should be provided.
-  **SPACE DEVISION**
Children enjoy small spaces and hiding places, and space division is important to give a sense of the outdoor room. The outdoor environment should be divided into different zones with own qualities and activities.



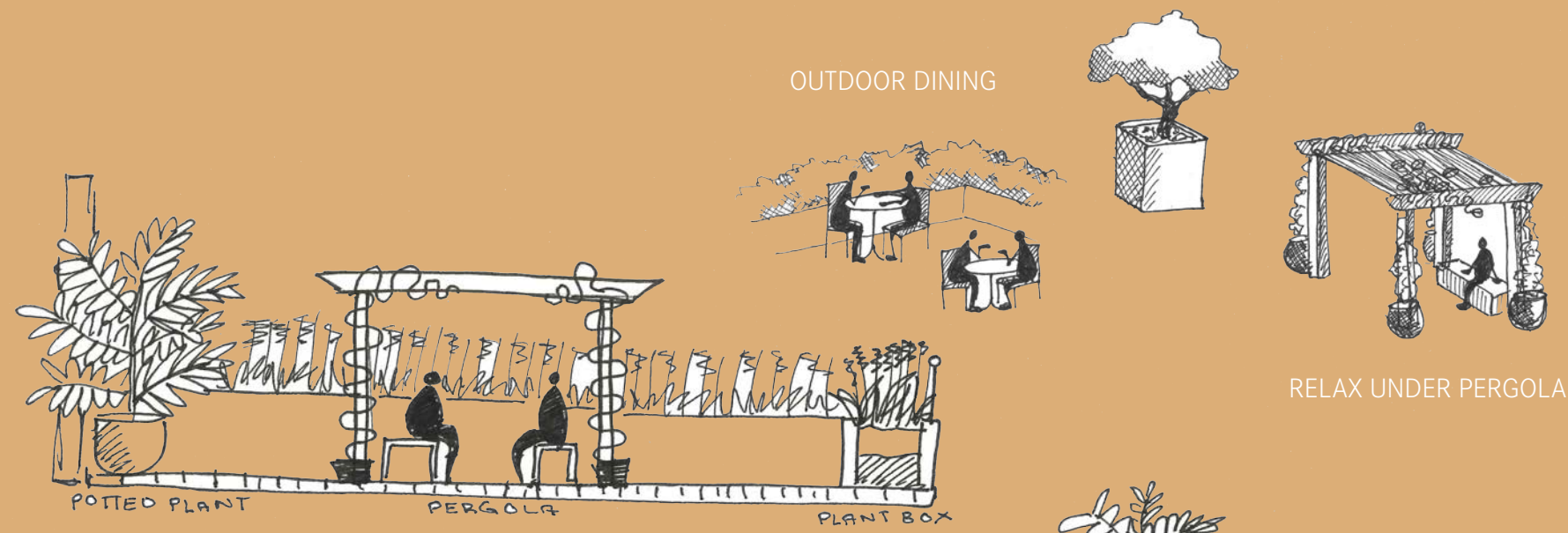
DEVELOPMENT OF IDEAS



SEATINGS



PERGOLA



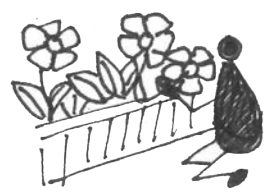
OUTDOOR DINING

RELAX UNDER PERGOLA

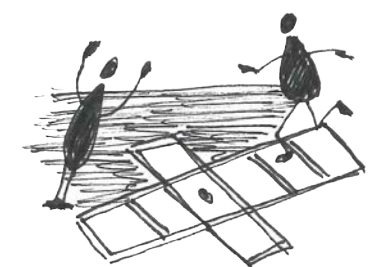


SECTION ROOF TERRACE

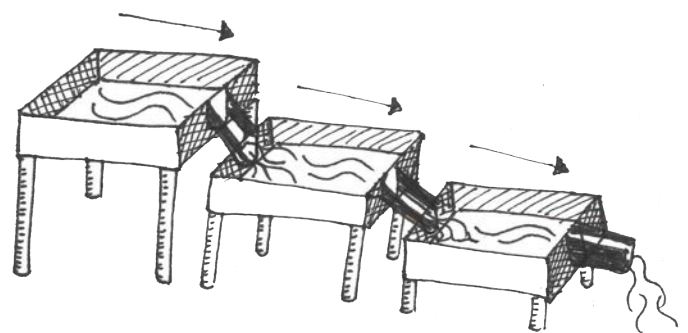
GARDENING



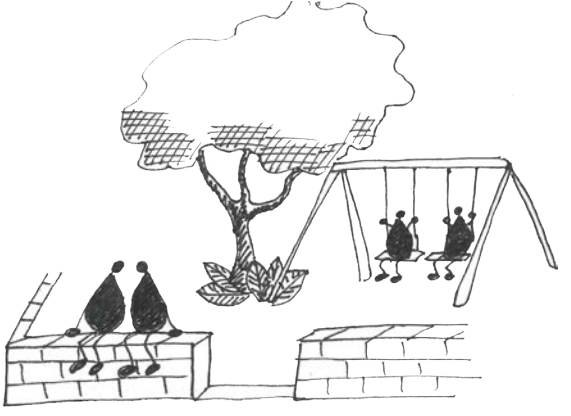
PAVING GAMES



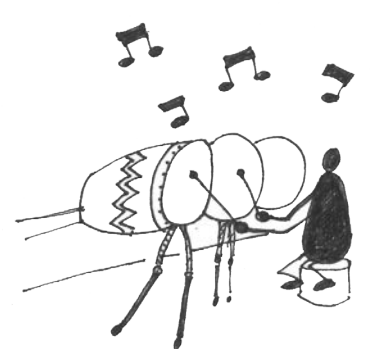
WATER PLAY



PLAY SPACE

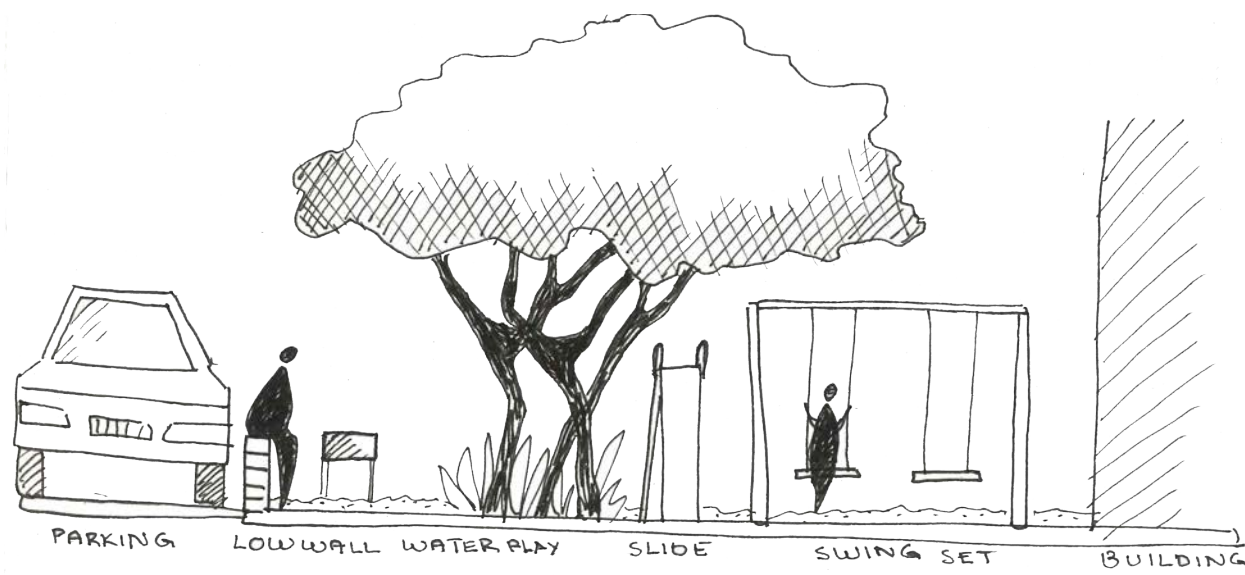


MUSIC

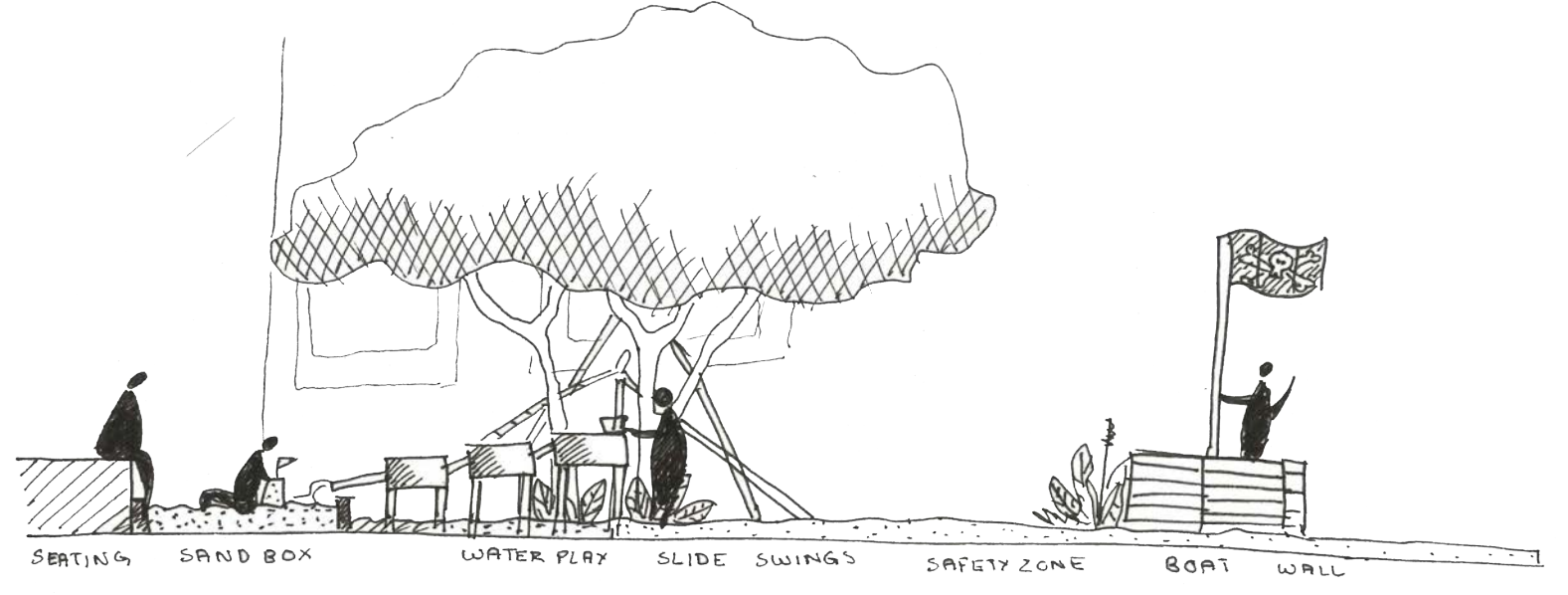


PLAY SPACE

SECTION PLAY SPACE



SECTION PLAY SPACE



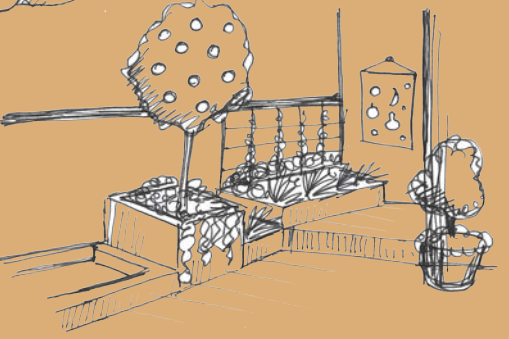
FRUIT TREE



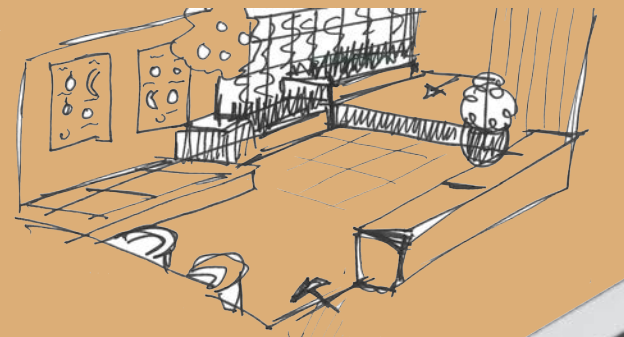
POTTED VEGETABLES



KITCHEN GARDEN



KITCHEN GARDEN



VEGETABLES AND HERBS



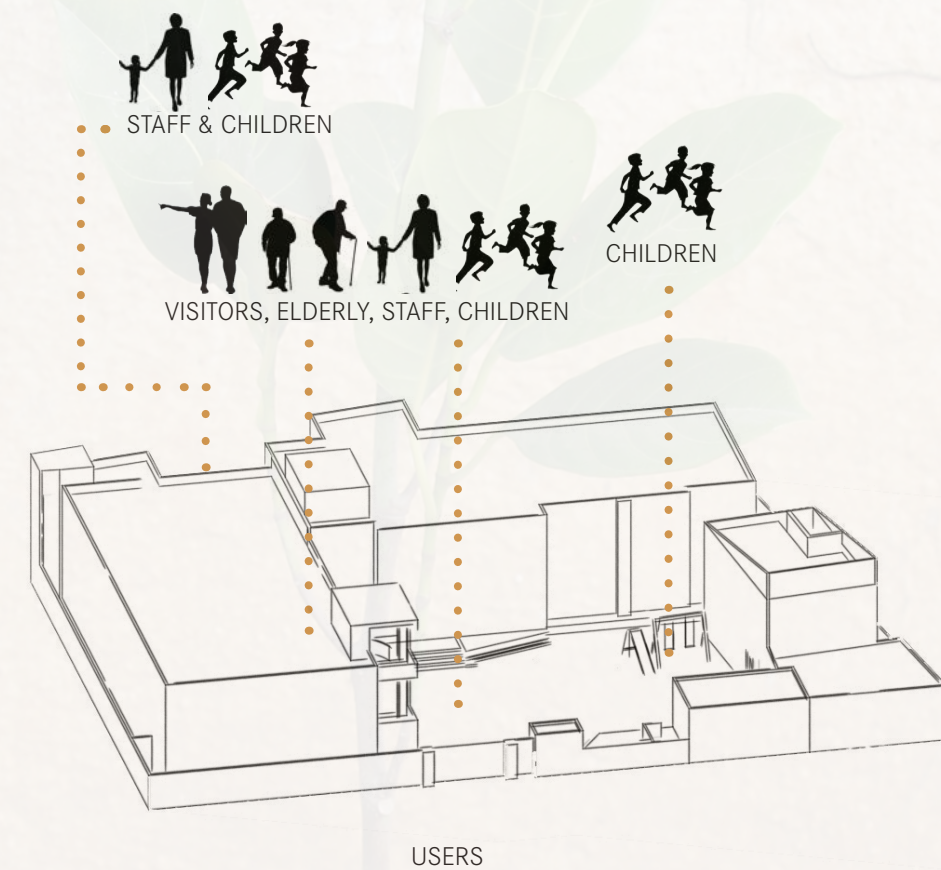
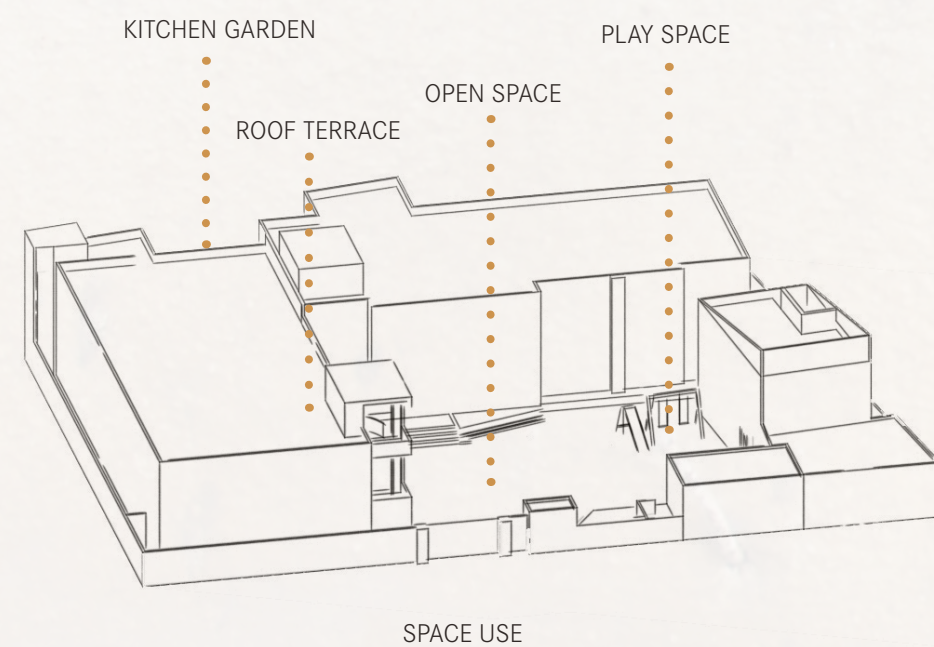
INFORMATION



SECTION

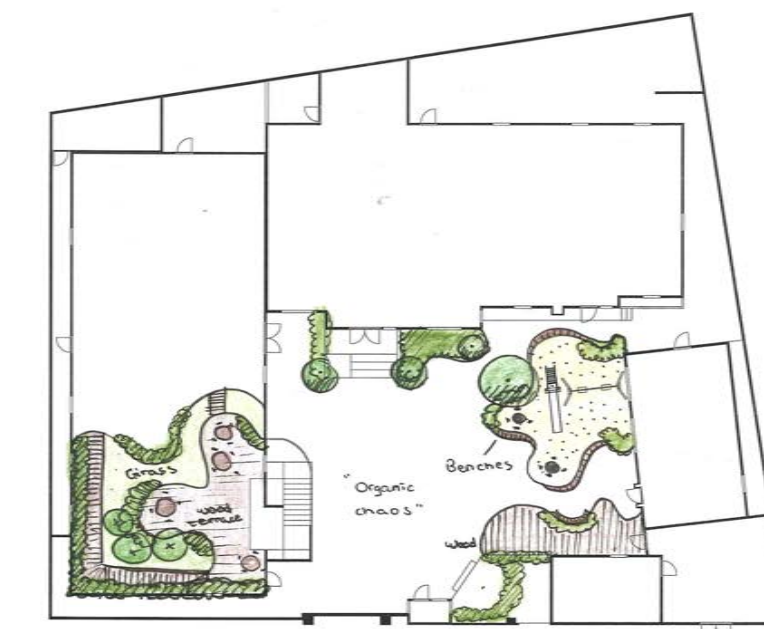


PROGRAMMING



PLAN PROCESS

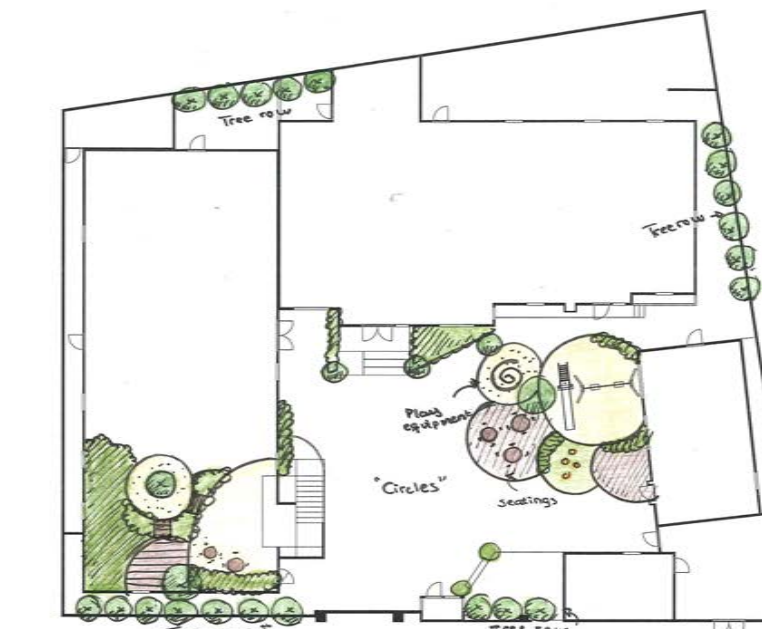
A selection of plan proposals with different form concepts from the concept development process.



"ORGANIC CHAOS"



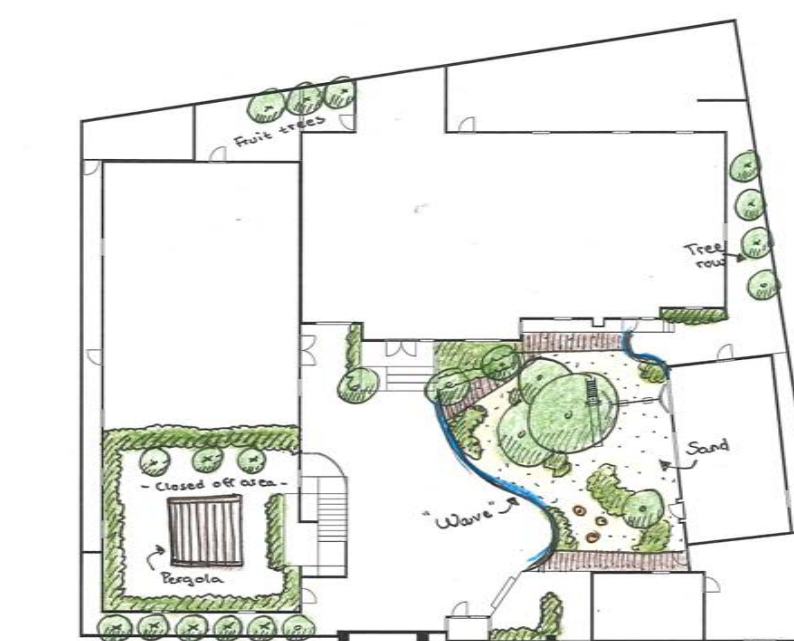
"THE AMOEBA"



"CIRCLES"



"STRIPES"

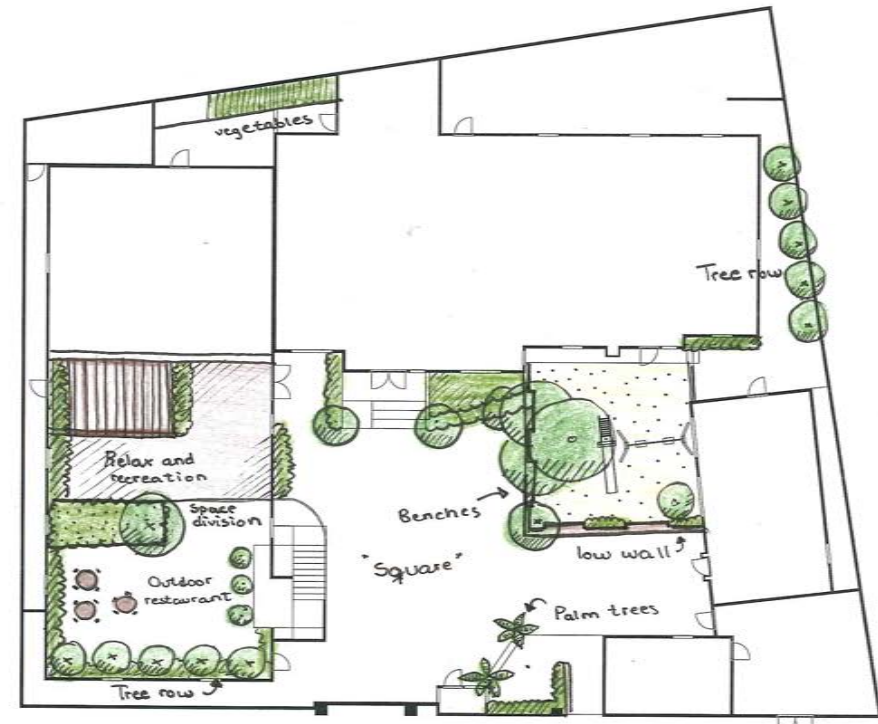


"THE WAVE"



"THE SPIRAL"

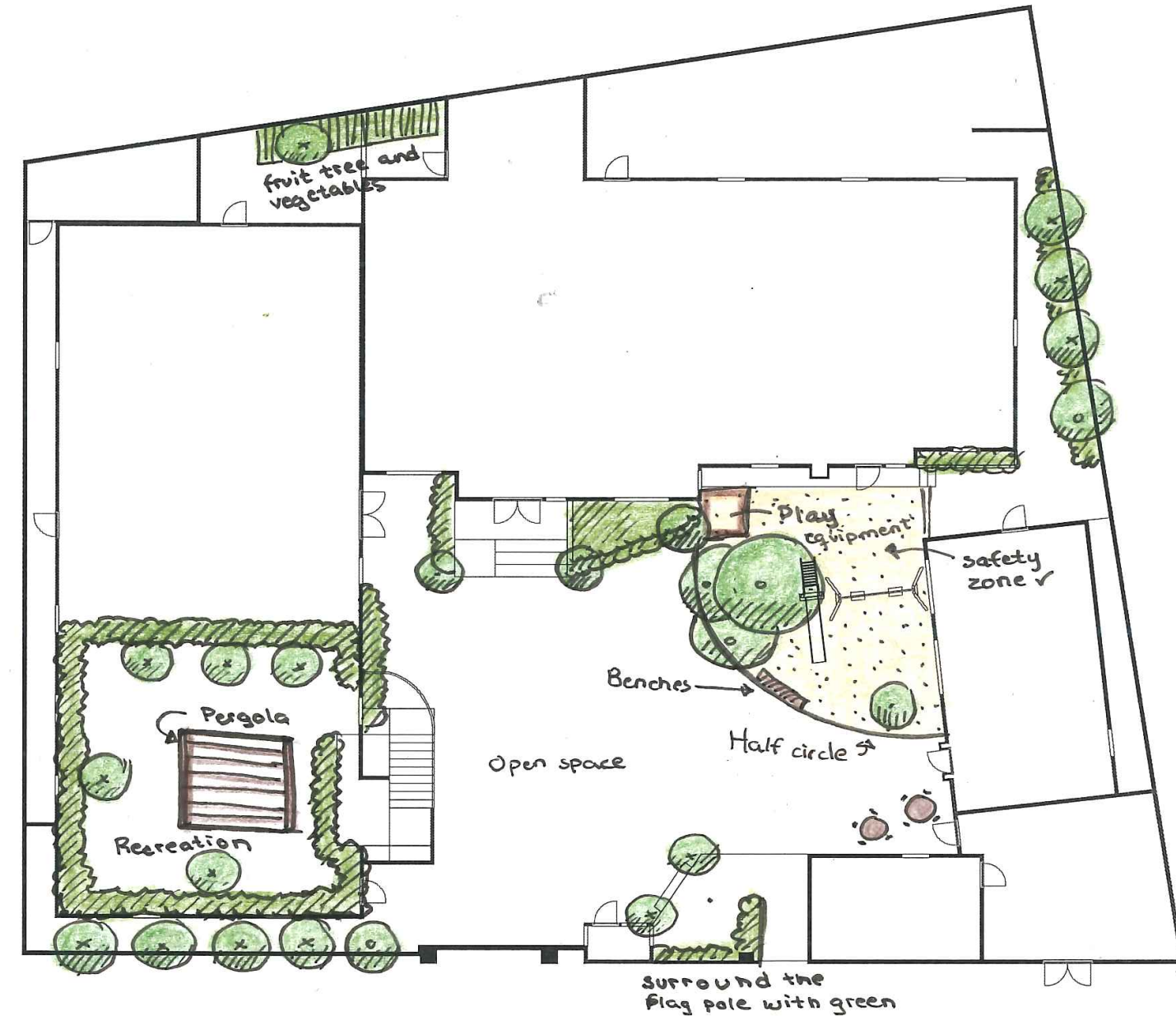
PLAN PROCESS



"SQUARES"



"THE BOOMERANG"



"HALF CIRCLE & SQUARE"

The scope of the project had to be scaled down a bit because of costs, available space and the amount of time estimated for the building process. The "half circle & square" proposal was one of the preferred proposals, and we decided to go with this plan for further development.

TESTING IN MODEL

A selection of model tests from the concept development process



PERGOLA ON ROOF TERRACE



SPIRAL SHAPED PLAY AREA



SHIELD THE PLAY AREA



FLOURISHING FRONT YARD



INCLUDING THE COMPLETE ROOF TERRACE

GREEN FRONT YARD WITH PERGOLA



PERGOLA ON ROOF TERRACE

"EXPLODING" WITH GREEN IN THE FRONT YARD

TREE ROW IN THE FRONT

ILLUSTRATION PLAN

After a long planning process with participation and consultation with the general manager and the landscaper, we eventually came up with a plan proposal that met the needs and wishes of the children and staff. In line with the concept, the main idea was that the new outdoor environment would flourish with plants, and provide a green and appealing expression. We chose to keep the existing plant beds at ground level, and give them new life. We wanted to preserve all existing vegetation on site, that meaning a few trees that had survived so far. On the north and west sides of the building, two rows of trees will be planted, to act as shielding from dust and noise from surrounding roads.

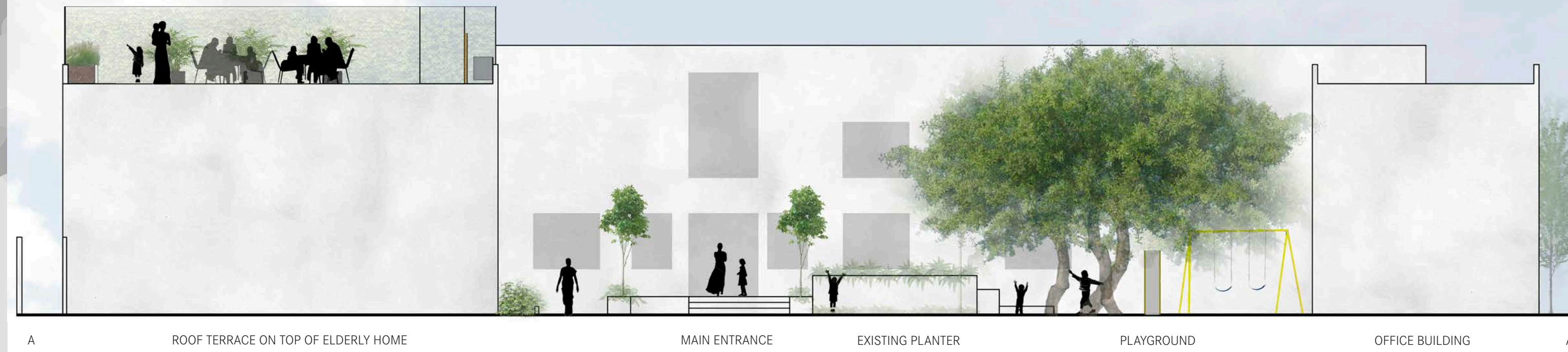
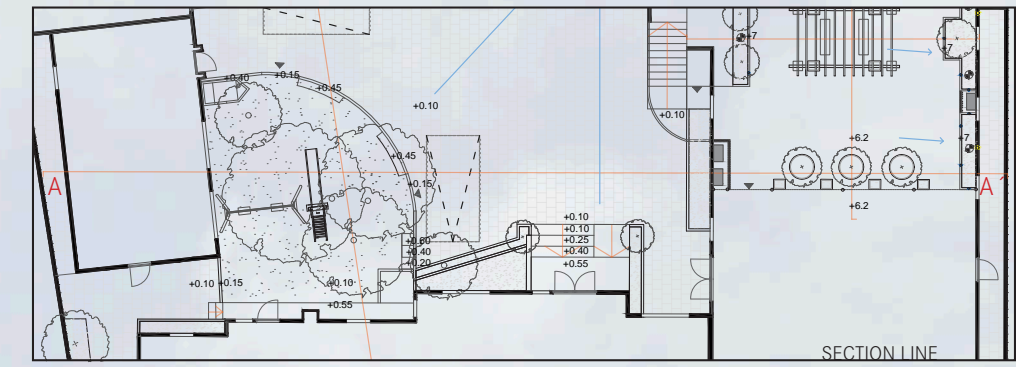
The children's needs was top priority in the new outdoor area, with an enlarged play area with new play elements. We chose to keep the existing play equipment and to make them in better condition. Two new play elements are introduced, a play boat and a sandbox with a water element. For educative play an ABC-snake will be painted outside the play area. It is planned for a low wall to surround the play area to shield from car parking, and prevent the sand to end up in the drive way. The shape of the wall surrounding the play area is organic, and is facilitated with seatings and multiple entrances.

The front yard is kept open to ensure that cars can park, and that activities and games can be arranged in the open space. By the flagpole, the area is made more attractive with framing of vegetation and new trees. The roof terrace is planned for a place where you can sit down and relax in a quiet atmosphere under a pergola that provides shade. The terrace will be secured for fall and the steel rods will be removed. On the south side of the building, a small kitchen garden will be arranged. A fruit tree will be planted, and the kitchen garden will have pots for vegetables and herbs.



SCALE 1:200

SECTION A-A' 1:100



TECHNICAL PLAN

WATER DRAINAGE

The front yard is facilitated with adequate slope towards existing manholes and the water flows towards these manholes, and towards the entrance gate. The site is generally flat, but flooding in the rainy seasons has not been a major problem at the children's home. There was a big flood in November-December 2015, and then the water height was up to 20 cm inside the front yard. This was mostly because of poor urban planning and stormwater management in Chennai, and elsewhere in the city, the conditions were much worse.

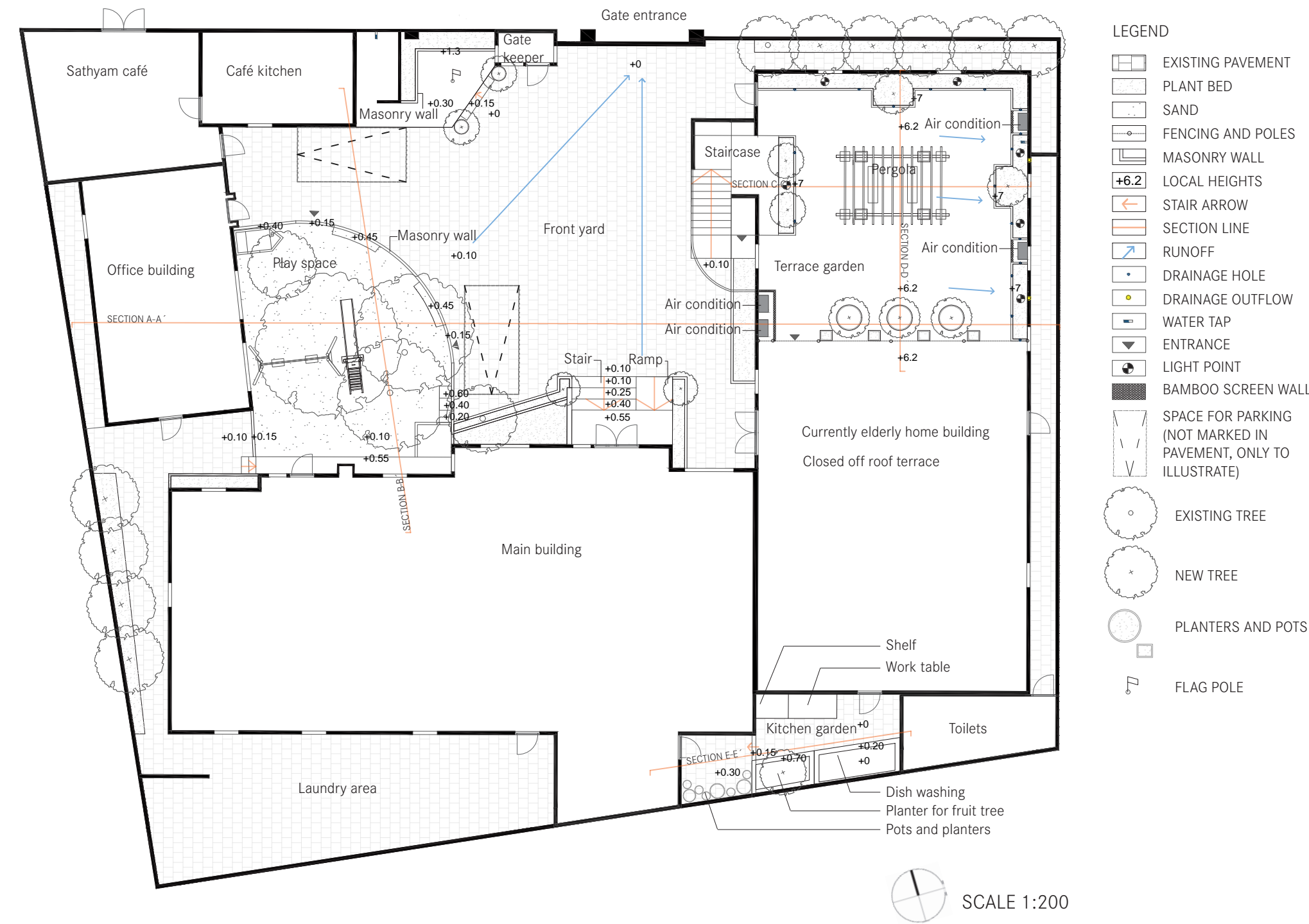
On the roof terrace, there is also adequate slope towards five drains installed on the east side of the building. All the water that ends up on the roof terrace flows eastward, and I was told that there had been no problems with runoff on the terrace earlier. It was important not to create any problems for runoff with the new planter boxes, and they were designed with many drainage holes in each of the planter boxes, as well as a logical location, not interfering with the existing drains. All planter boxes should be equipped with a root secure layer and water protection.

THE MATERIALS

The materials for the outdoor area are selected according to advice of the landscaper, a material study, availability and price. They are robust and durable materials that do not require much maintenance. The only material that requires some maintenance is the wood, but with the consent of the management of the children's home, we decided to have some elements of wood anyway. As long as I could remind them whenever they had to maintain the wood, it should not be any problem.

SAFETY

Through conversations with both the landscaper and the general manager of the children's home, it turned out that security was not really a big priority when planning outdoor areas in India, but both of them agreed to have this as one of the priorities when planning the new outdoor area. The steel rods on the roof terrace are to be removed, the roof terrace must be secured with fencing, and safety zones for play equipment should be provided where possible. I knew that I could not be too over cautious about safety, but some simple precautions could still be taken.



MATERIAL DESCRIPTION



Fig 33

BRICKS WITH WHITE SURFACE

All new planter boxes will be built up by bricks, cast with a rough surface and get white-washed. The inside of the planter boxes will be installed with drainage cells, get root secured and water protected to prevent the wall from being damaged by the plants and the soil. Surrounding the play area, a low wall will be built to shield the area and keep the sand inside the walls. The wall will vary in height, include seatings and can also function as a balance edge for the children. The wall will have multiple openings, and should not be a barrier. The new sandbox in the play area will also be built from bricks, and the edge can be used as seatings for the children while they play. The new water element will also be built from bricks, with stone slabs as bottom surface in the water basins. All walls are to be cast with a rough surface and get white-washed.

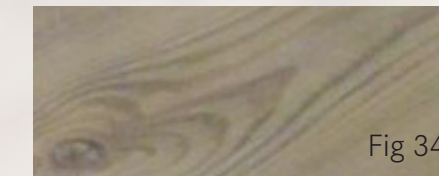


Fig 34

PINE WOOD

For the play boat, we chose to use pine wood, despite the fact that this is not a favorable material in the hot climate. Wood rots quickly in the heat, and there is a risk of fungal and termite attacks. As long as the wood gets a waterproof coat, a termite agent and gets painted, there is no problem. Twice a year, the boat will have to get a new coat of termite agent, and refresh the paint if necessary. When the wood is properly maintained, it is a great material to use, even in warmer climates.

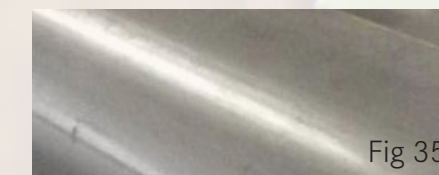


Fig 35

CARBON STEEL

Carbon steel is also a considered material for the pergola. This is a robust and durable material that is easy to obtain in Chennai. In addition, the price is fairly low, and after installation it requires less maintenance than wood.



Fig 36

SAND

For the play area, new sand suitable for playgrounds should be added. It should be clean sand of good quality, providing a soft surface where children can run around barefoot.



Fig 37

RED SOIL

All existing plant beds and new planters will get new, fertile soil. The red soil is known to be suitable for planting in India, so this should be in all planters mixed with brown manure soil.

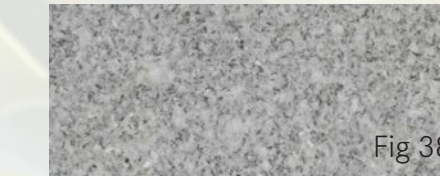


Fig 38

GRANITE

Since granite turned out to be a little expensive, I had to minimize the use of it. I still wanted there to be some elements of granite to express the local affiliation granite has in Chennai. We decided to go for two granite benches on the roof terrace, hand made by one of Hari's contacts.



Fig 39

WATER

The water element will not provide a continuous flow of water, but it will encourage the children to play with water and activate the water element.

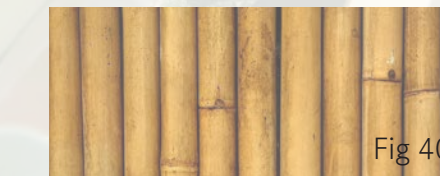


Fig 40

BAMBOO

For the screen walls on the roof terrace, we have chosen to go for bamboo. This is a strong and durable material that gives a nice expression. It would not look attractive if the air conditioning dischargers showed, so we figured this was an easy and nice solution to hide them. Because of the dry air coming from the dischargers, the bamboo will work good as a cover, but we must make sure not to place any plants in front of them, as these will dry up pretty fast.

PLANTING PLAN

A large variety of plants is planned, to preserve biodiversity and provide a flourishing expression. Several species are selected on the basis of a desire that the plants should have both an aesthetic and a practical function. Therefore, the planting plan is facilitated with plants that require little maintenance, and many of the plants are useful plants. Both at the roof terrace and in the kitchen garden, fruit trees, are planned, as well as herbs and vegetables in the kitchen garden. The children will cultivate their own herbs and vegetables.

The plants chosen are mostly drought-resistant and robust plants that can tolerate a difficult climate. On the roof terrace, only drought-resistant plants, which can withstand the strong radiation from the sun, are chosen. On the ground level, plants that tolerate both shade and sun, as this varies throughout the day, are chosen.

A thorough investigation on the toxicity level of the plants took place. It was important that none of the plants would be able to inflict serious harm to the children if they eat any of them by accident. Many tropical plants are known to be somewhat toxic, some more than others. Those plants that are marked with an orange dot in the plant list are slightly toxic, in the sense that they can cause mild discomfort by excessive intake. We did not think of this as big problem, since children still had to learn that one should not eat plants they do not know. The plant list does not include plants that can be dangerous for the children.

The plants with flowers are selected on the basis of a desire for a colorful garden that attracts butterflies, including species such as Passiflora and Jasmine. Two rows of trees, that can withstand the disturbances from the surrounding roads, will also be planted to the site.

In India, many plants have religious value, and several species are considered sacred and worshiped. Some of the existing species at the children's home were seen as sacred, such as the ficus trees by the main entrance, and it was therefore particularly important to retain all existing vegetation on site. Many of the residents had a special connection to these plants. It is also decided to plant more of the sacred plants, to provide for an additional affinity between the people and the plants. One example of sacred plants that will be planted is Jasmine (Gift of God), that is associated with Lord Shiva and Lord Vishnu.



PLANT LIST

Illustration	Nr	Botanical name	English name	Description	Maintenance	Qty
	1	Adenium obesum	Desert rose	Height: 100-300 cm Evergreen, succulent shrub. Pink flowers.	Drought-tolerant. Full sun.	4
	2	Annona reticulata	Custard apple	Height: 200-450 cm Spreading crown, heart-shaped fruits.	Well-drained soil. Partial to full sun.	1
	3	Artocarpus heterophyllus	Jackfruit	Height: 15 m Leathery, evergreen leaves. Big, green fruits.	Drought-tolerant. Partial to full sun.	1
	4	Averrhoa carambola	Starfruit	Height: 10 m Evergreen tree, soft leaves. Star-shaped fruits.	Drought-tolerant. Partial to full sun.	2
	5	Citrus limetiooides	Sweet Lime	Height: 200 cm The fruits may be solitary or in bunches.	Moderate watering. Full sun.	1
	6	Cordyline 'Purple Sensation'	Cordyline 'Purple Sensation'	Height: 90-150 cm Upright palm-tree with burgundy-red leaves.	Well-drained soil. Moderate watering. Partial to full sun. Extremely durable plant.	4
	7	Dypsis lutescens	Areca palm	Height: 100-200 cm Multiple stems emerge from the base.	Moderate watering. Partial to full sun. Easy to grow.	22
	8	Dracaena messangeana	Corn plant	Height: 50-100 cm Shiny, green leaves.	Moderate watering. Partial sun.	2
	9	Grevillea robusta	Silver Oak	Height: 100-300 cm Evergreen, succulent shrub. Pink flowers.	Drought-tolerant. Full sun.	5
	10	Jasminum officinale	Common Jasmine	Height: 40-50 cm Green leaves, white flowers.	Moderate watering. Partial to full sun.	10
	11	Lagerstroemia speciosa	Pride of India	Height: 400 cm Tree with green leaves and beautiful, pink flowers.	Moderate watering. Partial to full sun.	1
	12	Plumeria alba	Plumeria alba	Height: 200 cm Evergreen shrub with narrow leaves, white flowers.	Drought-tolerant. Full sun.	3
	13	Plumeria 'Dwarf'	Plumeria 'Dwarf'	Height: 60 cm Leaves are leathery and glossy green.	Moderate watering. Partial to full sun. Easy to grow, and long-lived plants.	2
	14	Plumeria pudica	Plumeria pudica	Height: 180 cm Leaves are long, leathery and glossy green.	Moderate watering. Partial to full sun. Easy to grow, and long-lived plants.	3
	15	Punica granatum 'Bhagwa'	Pomegranate 'Bhagwa'	Height: 300 cm Green leaves, red fruits.	Full sun, well drained soil.	2
	16	Pouteria sapota	Yellow Marney	Height: 200 cm Evergreen tree with brown fruits.	Moderate watering. Partial to full sun.	1
	17	Rhapis excelsa	Lady Palm	Height: 90-120 cm Large thick leaves with blunt tips and wide segments.	Partial sun. One of the easiest palms to grow.	2
	18	Schefflera arboricola	Regular schefflera	Height: 150 cm Green leaved umbrella tree. Evergreen shrub.	Drought-tolerant. Partial to full sun.	10
	19	Schefflera arboricola 'Variegata'	Variiegated schefflera	Height: 150 cm Green and yellow leaved umbrella tree. Evergreen.	Drought-tolerant. Partial to full sun.	20
	20	Wodyetia bifurcata	Foxtail palm	Height: 300 cm Palm with long plumose leaves with a grey trunk.	Drought-tolerant, low water use. Partial to full sun.	2
	21	Alocasia cucullata	Chinese taro	Height: 30-80 cm Large, spade shaped leaves on long fleshy petioles.	Moderate watering. Partial sun.	2
	22	Alpina zerumbet	Shell ginger	Height: 90 cm Colorful funnel-shaped flowers.	Moderate watering. Partial to full sun.	6
	23	Caladium bicolor	Elephant ear	Height: 60 cm Red and pink decoration on the leaves.	Moderate watering in their growing season. Partial to full shade.	10
	24	Canna indica regular	Indian shot regular	Height: 50-100 cm Perennial herb with large green leaves.	Robust plant, water when top 3 cm of soil is dry. Partial sun.	3
	25	Canna indica 'Black Canna'	Indian shot 'Black Canna'	Height: 50-100 cm Deep bronze leaves and bright red flowers.	Robust plant, water when top 3 cm of soil is dry. Partial sun.	3
	26	Codiaeum variegatum	Croton	Height: 90 cm Ovale leaves splashed with green, orange and red.	Moderate watering. Partial to full sun.	4
	27	Colocasia esculenta	Elephant ear	Height: 90 cm Green leaves.	Regular watering. Partial sun.	2
	28	Heliconia rostrata	False Bird of Paradise	Height: 90 cm Flowers with multi-color bracts and varied structure.	Need a lot of heat and regular watering.	5
	29	Lycoris albiflora	Spider Lily	Height: 45 cm White flowers.	Moderate watering. Partial to full sun.	10
	30	Philodendron 'Congo'	Philodendron 'Congo'	Height: 150 cm Large, thick, glossy green leaves.	Moderate watering. Shade to partial sun.	1
	31	Philodendron 'Imperial Red'	Philodendron 'Imperial Red'	Height: 50 cm Large, red leaves.	Moderate watering. Shade to partial sun.	2
	32	Russelia juncea	Firecracker plant	Height: 90 cm Red flowers, attracts hummingbirds.	Moderate watering. Full sun.	20
	33	Spathiphyllum cochlearispathum	The Peace Lily	Height: 60 cm Green, large leaves and white flowers.	Moderate watering. Shade to partial shade.	20
	34	Wedelia trilobata	Orange Wedelia	Height: 10 cm Yellow flowers.	Well-drained soil. Full sun to partial shade.	70
	35	Chlorophytum comosum	Spider plant	Height: 30-60 cm Colorful leaves, white flowers.	Drought-tolerant. Part shade to full shade.	10
	36	Pennisetum alopecuoides	Fountain grass	Height: 90-120 cm Evergreen leaves, brown flowers.	Moderate watering. Full sun.	70
	37	Asparagus densiflorus	Asparagus fern	Height: 60 cm Long, plume-like stems hold soft leaves.	Moderate watering, partial shade. Easy care plant.	10
	38	Nephrolepis exaltata	Boston swordfern	Height: 50 cm Graceful green, drooping fronds.	Partial shade, moist soil. Water 2-3 times a week.	10
	39	Passiflora incarnata	Wild passion flower	Height: Climber Purple flowers, attracts butterflies.	Drought-tolerant. Full sun to partial shade.	4
	40	Thunbergia grandiflora	Bengal trumpet	Height: Up to 20 m Purple flowers.	Moderate watering. Grows fast in full sun.	12

● Not toxic ● Mildly toxic. Large amount of digestion can cause irritation. ● Very toxic

*Seeds for the potted section of the kitchen garden are not included in the plant list. These species will vary from one season to another.

PLAY SPACE 1 : 100

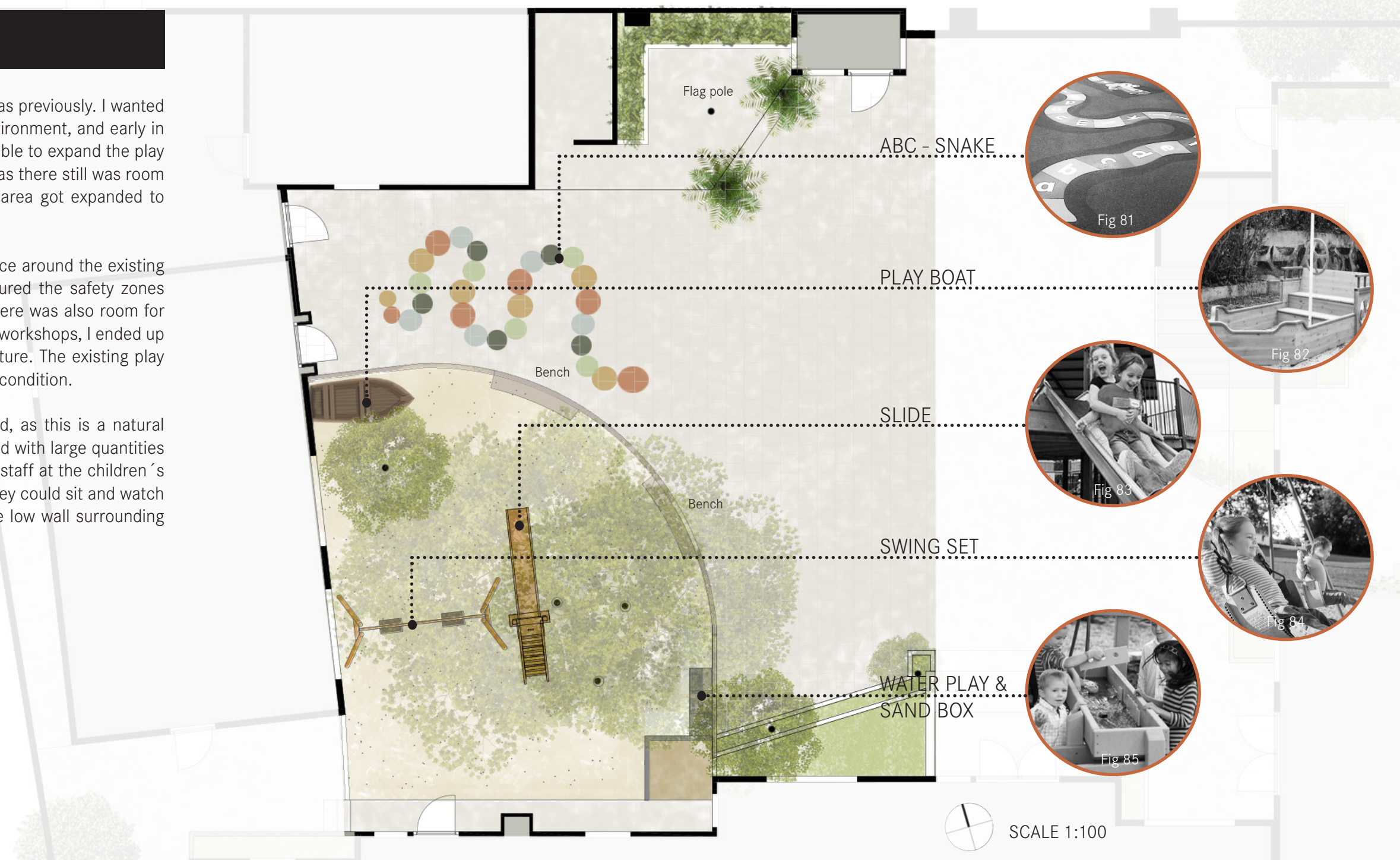
The play area has been enlarged compared to what it was previously. I wanted the children to have the priority in the new outdoor environment, and early in the process I asked the general manager if it were possible to expand the play area. She made it clear that this was desirable, as long as there still was room for cars to park in the front yard. Therefore, the play area got expanded to almost the double size of what it had previously been.

Because of the expansion of the play area, the free space around the existing play equipment also got expanded, and therefore ensured the safety zones that are required for these types of play equipment. There was also room for more play elements. Based on the information from the workshops, I ended up suggesting a play boat and a sandbox with a water feature. The existing play equipment needs to be fixed, but is generally in decent condition.

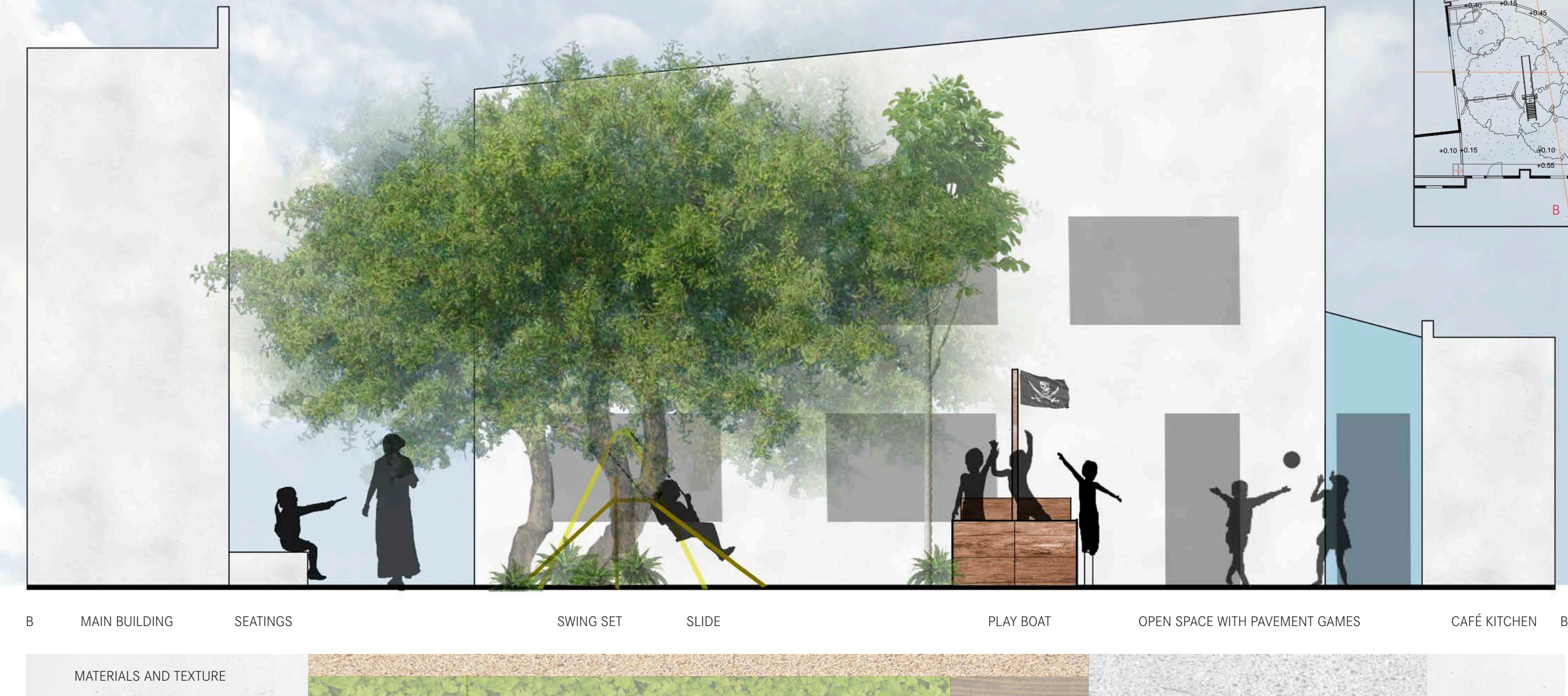
All ground surface in the play area will consist of sand, as this is a natural material that gives a nice expression. It must be supplied with large quantities of sand, since the play area is enlarged quite a bit. The staff at the children's home wanted more seatings around the play area, so they could sit and watch the children play, and this has been provided along the low wall surrounding the play area.

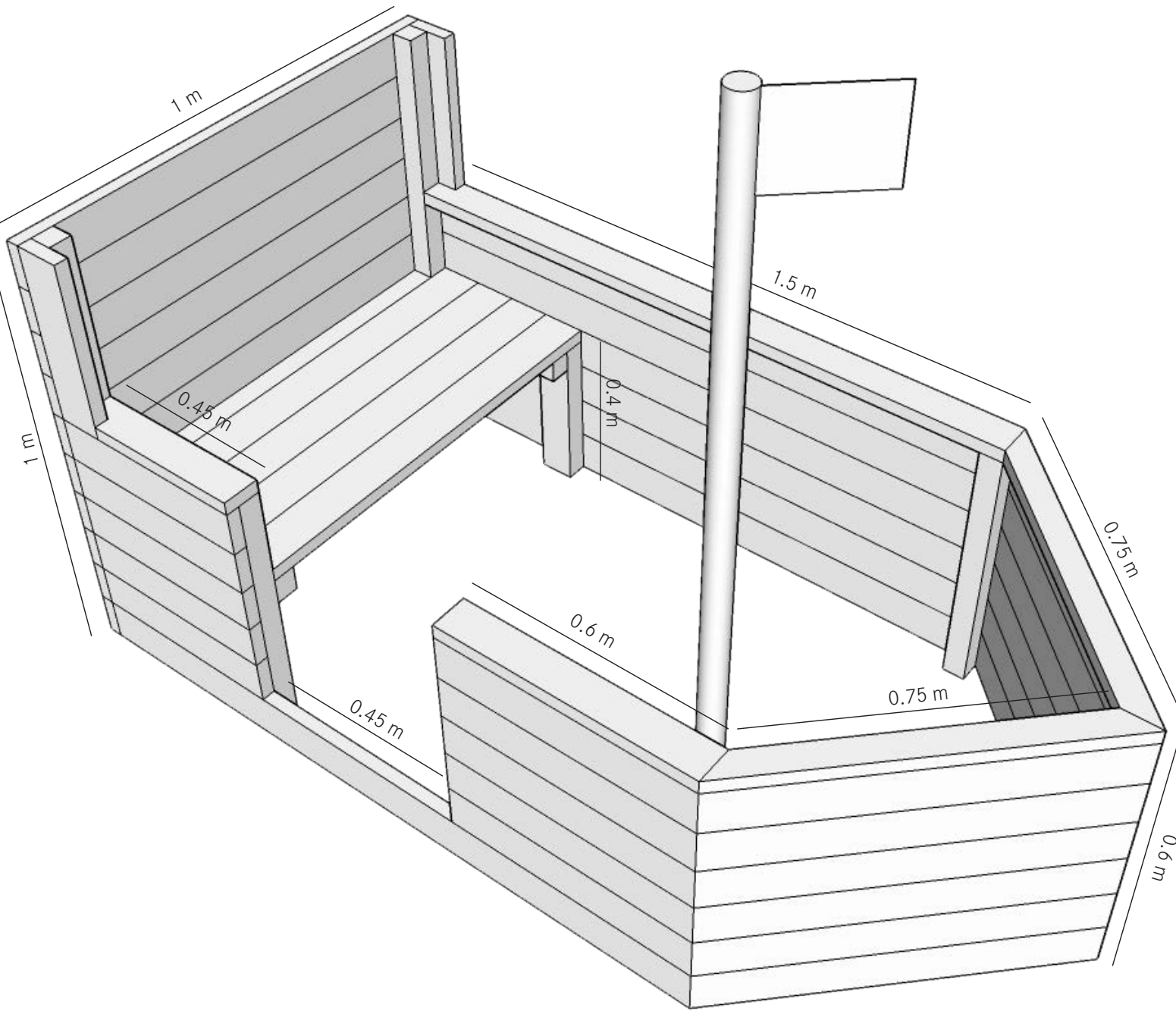


"I like boats, and I would love to go fishing some time."



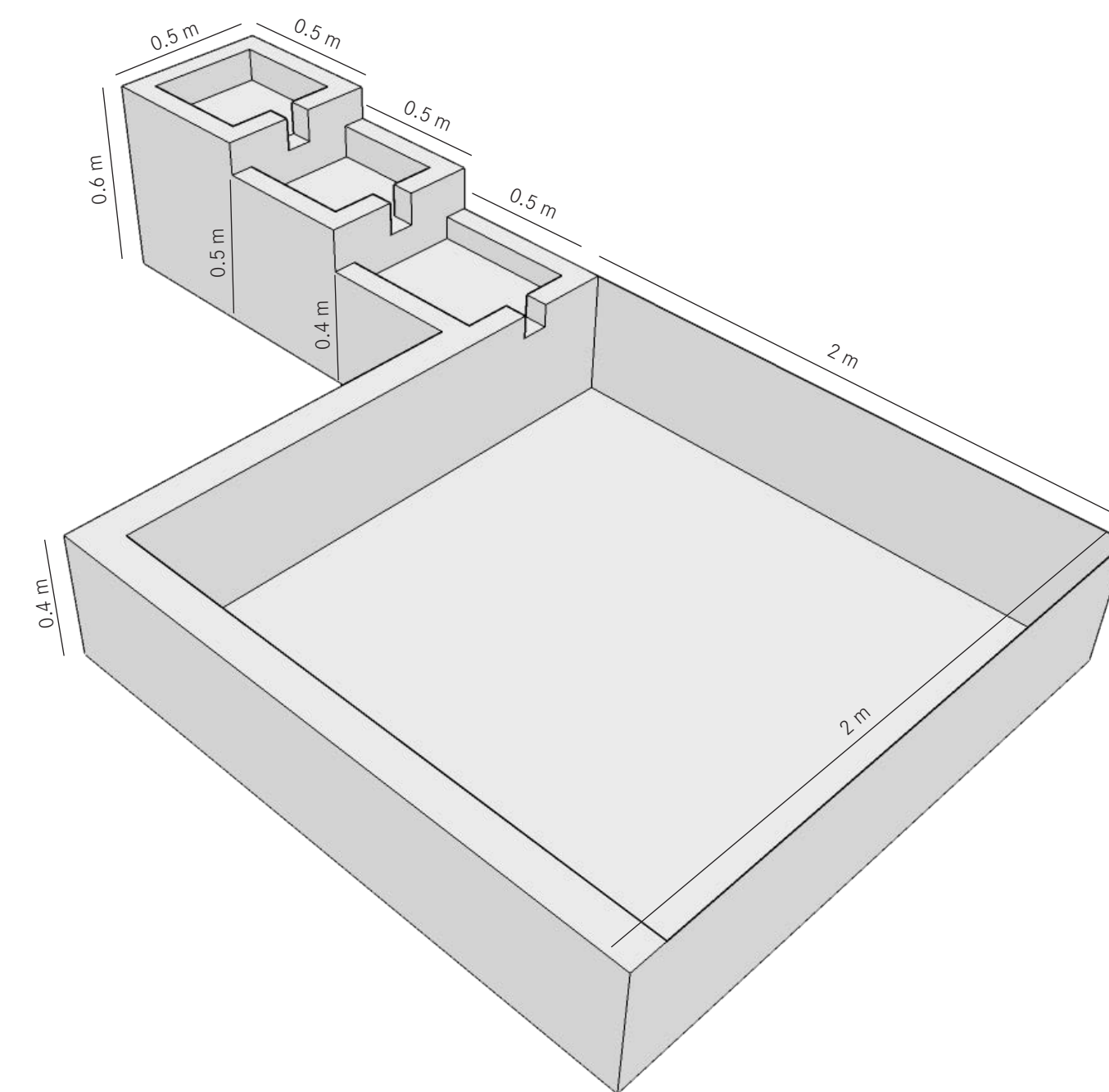
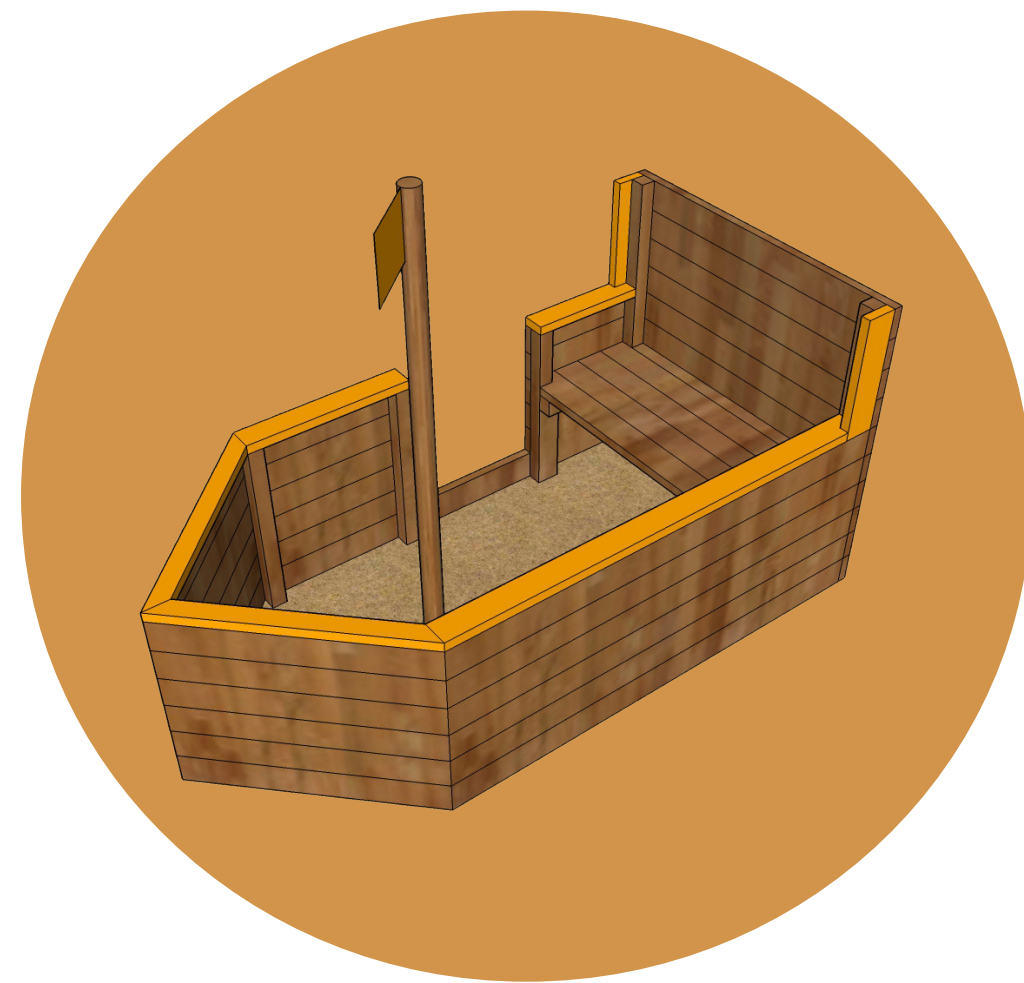
SECTION B-B' 1 : 50





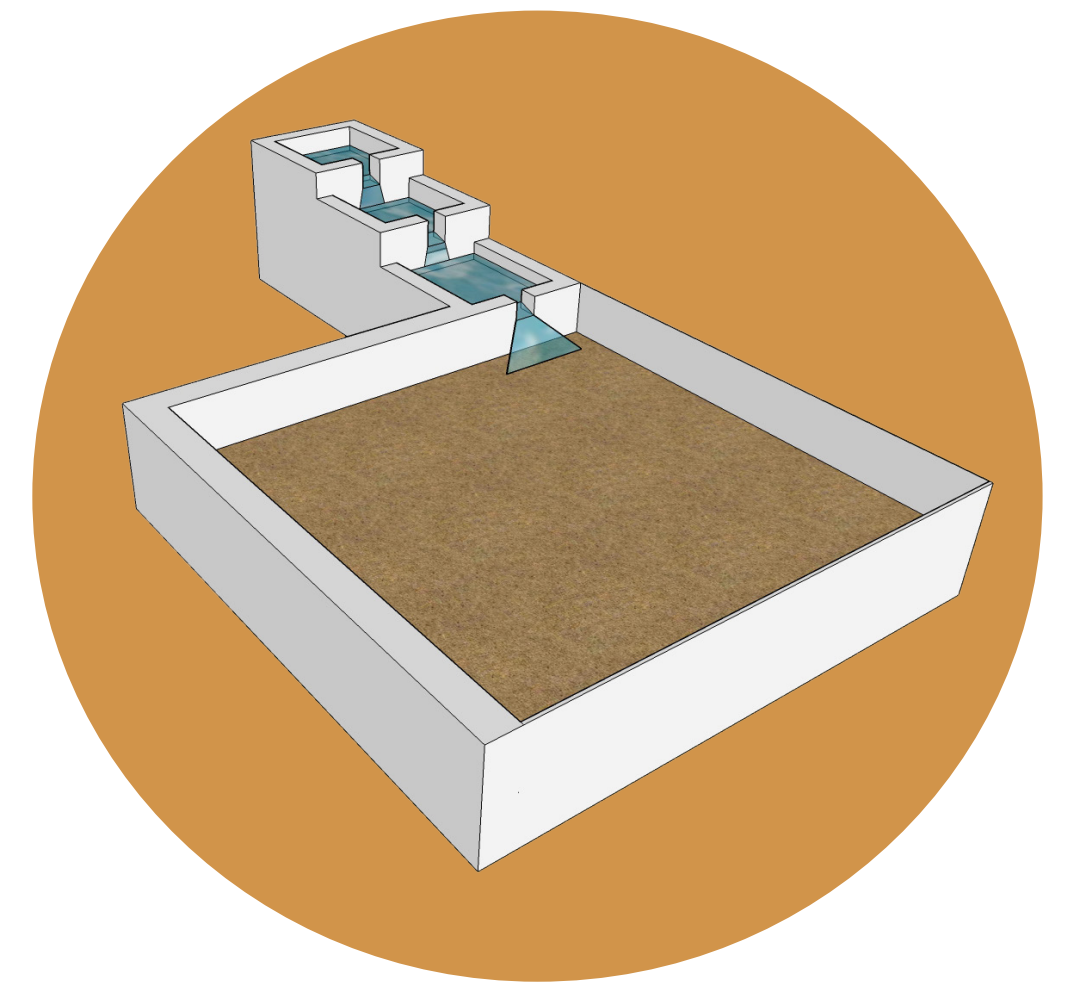
PLAY BOAT

The landscaper told me that the boat culture was once strong in Chennai. He had heard that we had plenty of boats in Norway, and told me that owning your own boat in Chennai was very rare. One of the children drew a boat in one of the workshops, and told me that he wanted to try fishing some time. Therefore, I suggested a play boat for the play area, where they could play games of fishing and sailing. I thought it would be fun for the children to have their own boat. When I asked the general manager of the children's home what she thought about the idea, she was thrilled and said that this was a fun concept. It turned out that play boats are not very common in India, but she insisted that it would be very special for the children to have their very own boat.

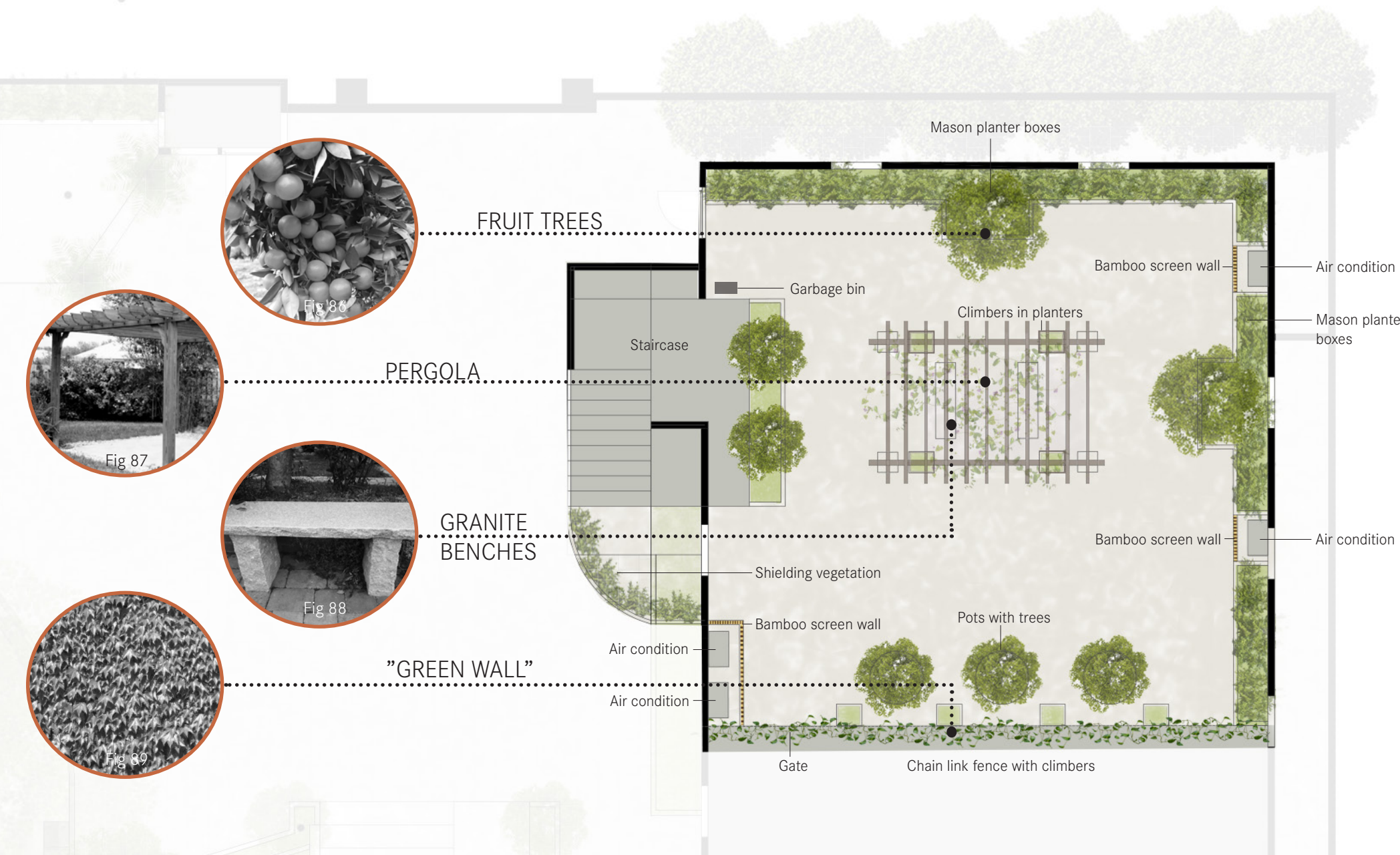


SANDBOX & WATER PLAY

Some of the children had told stories about how much they liked the beach. Many of them had not even been there, but had seen pictures and heard other people telling about it. The famous Marina beach, one of the largest beaches in the world, is located in Chennai. The problem is that it is very dangerous to play there, as the currents in the ocean are very strong, and many people have disappeared after swimming there. There were still opportunities for sand play, and this was very attractive to the children. Therefore, I decided to suggest a sandbox combined with a water element for sand and water play. Because of the heat, I figured that we needed to provide water to the sand to be able to build castles. By adding a water element, the thought was that the children actively added water to the sand themselves, but in a more exciting way than just pouring it into the sand.



ROOF TERRACE 1 : 100

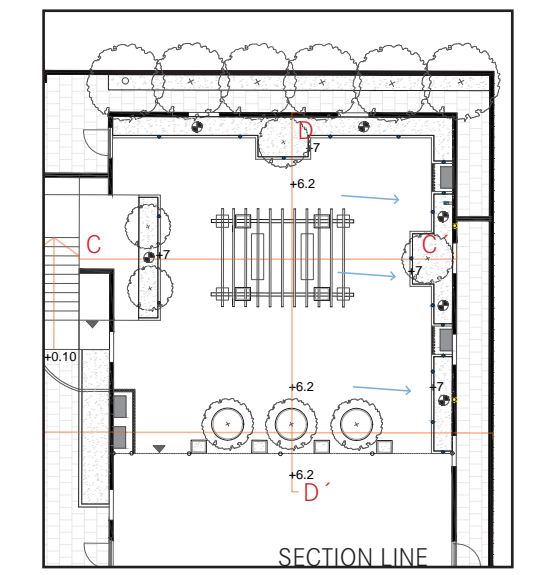


The roof terrace will be a small sanctuary where one can sit down, relax and talk. At the same time, it will be facilitated for activities and events. In conversation with one of the residents at the children's home, he expressed a desire to do yoga on the roof terrace in the mornings. With steel rods sticking up from the roof, this was difficult earlier. Now a large open space, where one can do yoga, play musical chairs and other activities in a safe environment, is arranged. With a flourishing life of hardy plants, the roof terrace has become more inviting for both the children, staff and visitors. The pergola provides some shade, so that one can enjoy the roof terrace during daytime as well. After a while it will be covered by climbers. It is envisaged that Sathyam Café can have outdoor dining on the roof terrace during cooler periods of the year, and also be rented out to generate funds for the children's home.

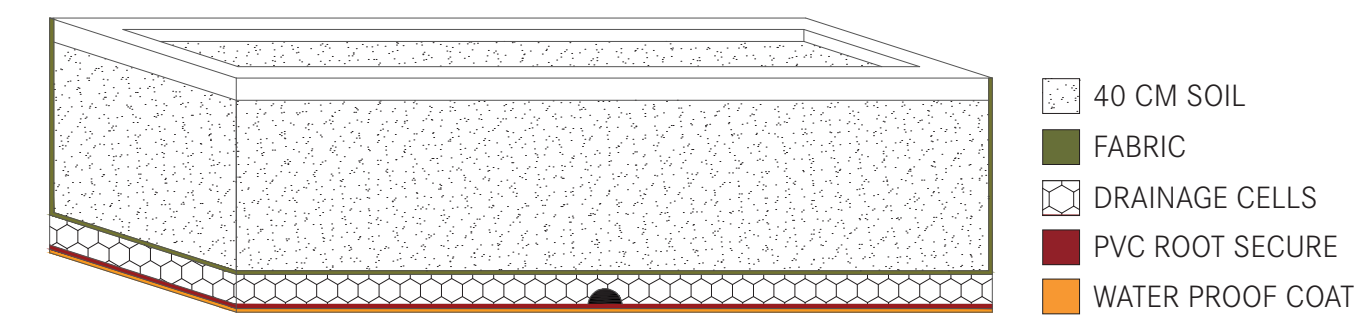
Two granite benches are located under the pergola, where the children can sit down and talk. The vegetation surrounding the terrace consists of ornamental grasses, plants that attract butterflies such as jasmine, and fruit trees. In this way, the children can pick fruits when they are relaxing at the terrace and enjoy the smell of the flowers. Jasmine is also a popular plant for decorating your hair in India.

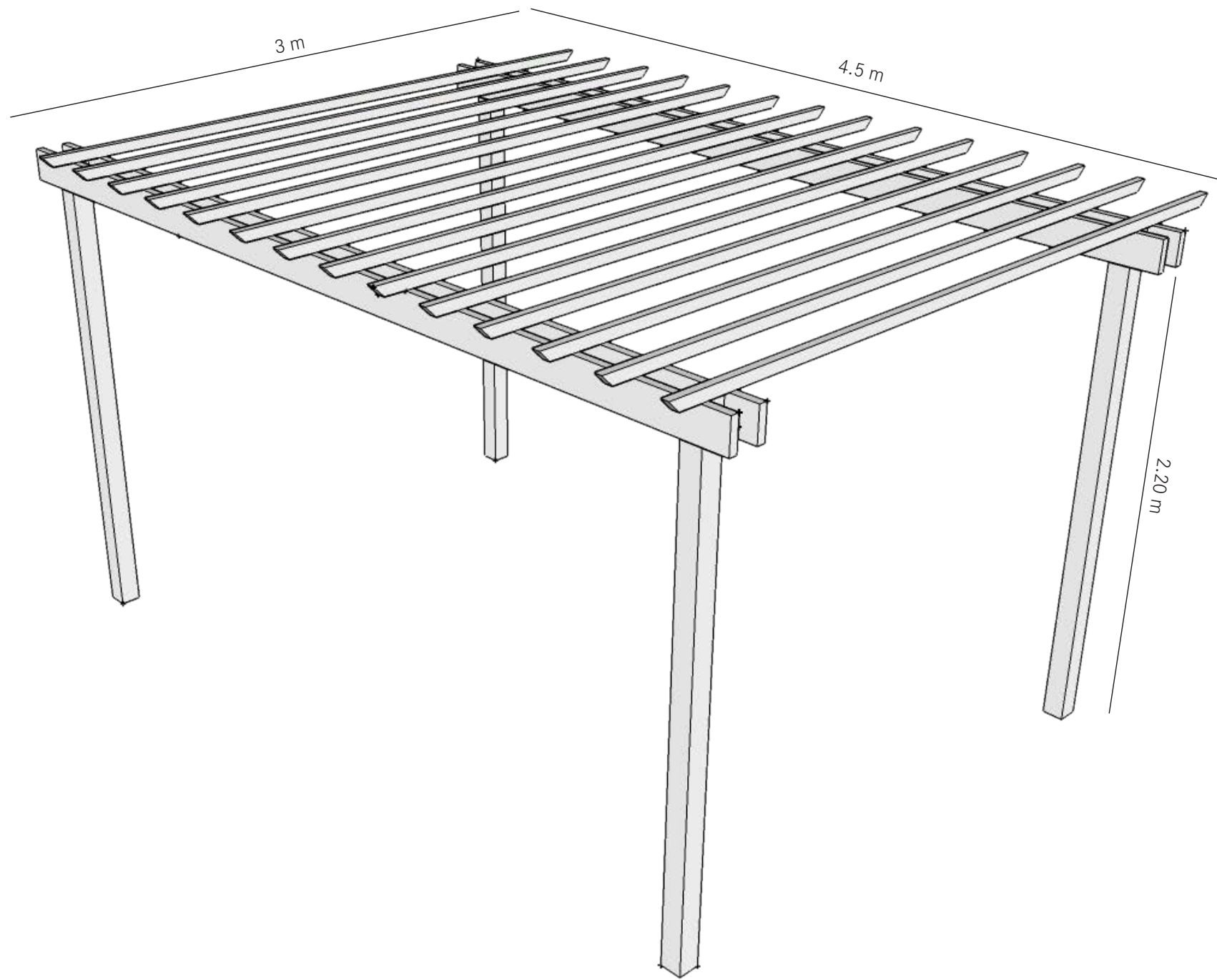
In front of the air condition dischargers, we have provided screen walls of bamboo to cover them up. This separates the planter boxes and gives a nice touch to the overall appearance. The chain link fence on the south side of the terrace will after a short time be covered by climbers. The chain link fence was chosen because of its cheap price, and since the Thunbergia grows really fast in the heat, it will soon appear like a green wall, separating the terrace garden from the rest of the roof terrace.

SECTION C-C' & D-D' 1 : 50



PRINCIPLE FOR PLANTER BOXES 1:20





PERGOLA

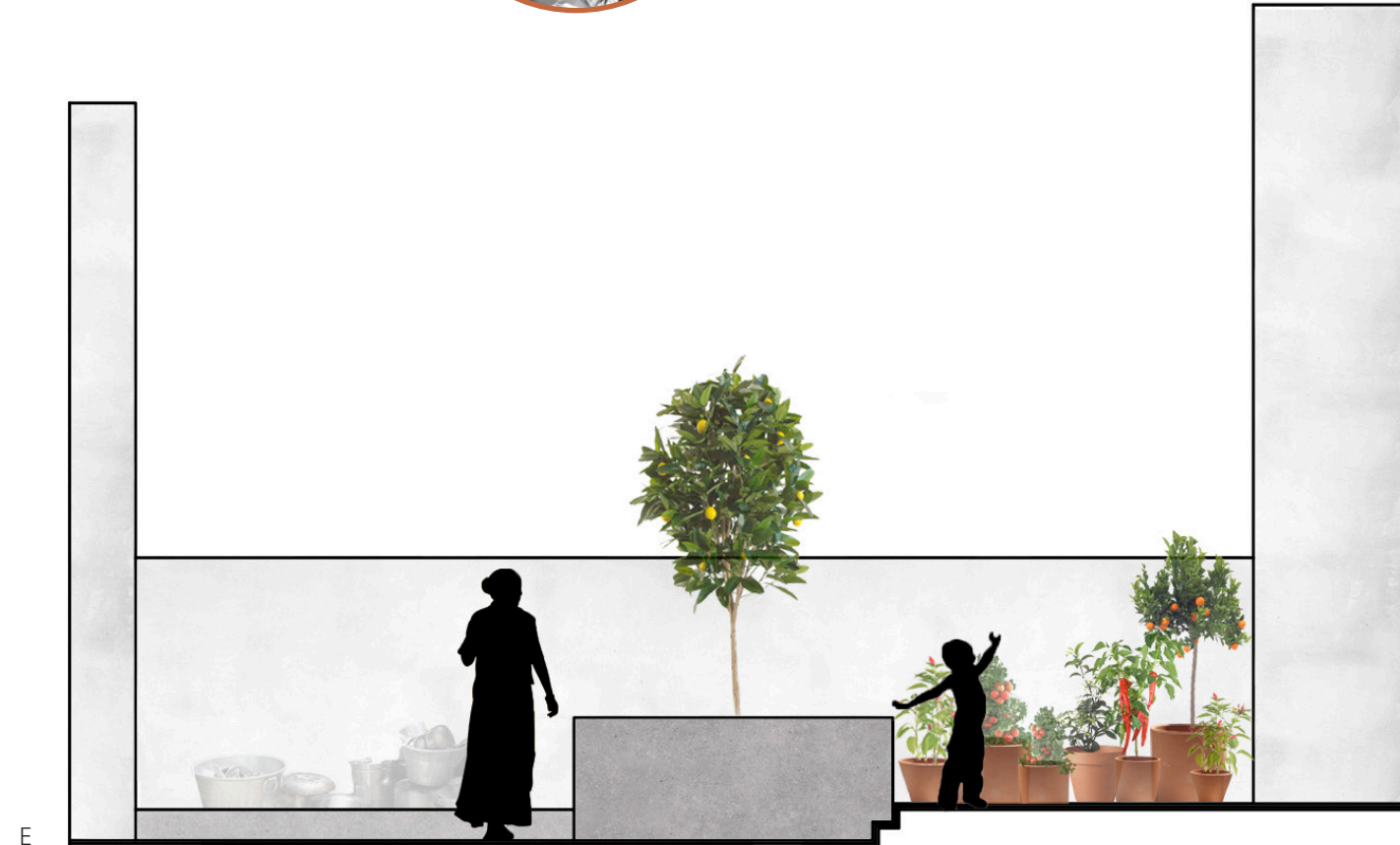
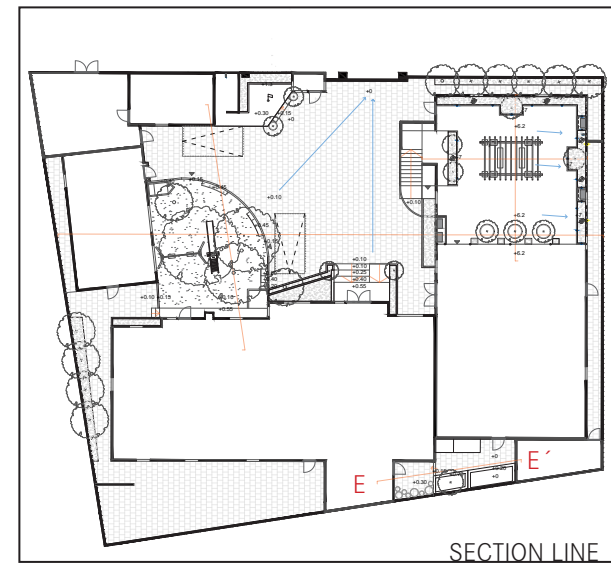
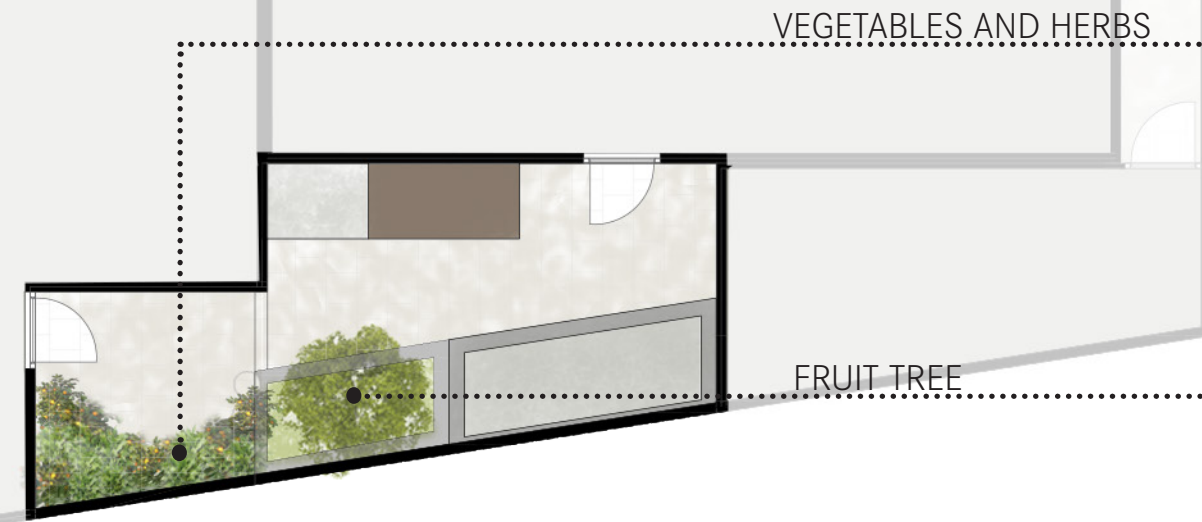
The pergola will be in a simple and classic design. With climbers in pots surrounding the pergola, the roof poles will soon be covered by a green carpet. The climbers have to be fast growing plants that can resist the heat on the terrace, and provide shade under the pergola. The pergola is initially planned in wood, but there can be some changes due to costs and availability. A steel pergola is also suggested, but this will be further investigated during the building process.

The actual structure of the pergola will be discussed and finalized on site with the landscaper in cooperation with a building engineer. We have to ensure that the pergola is soundly constructed from an engineering aspect.



KITCHEN GARDEN 1:100

The area for the kitchen garden is a very small space, and parts of the space is currently used for dish-washing and storage. A desire to have a kitchen garden in this area was expressed by the general manager, because it is located just outside the children's home's kitchen. They also wanted the pots to be able to move, so that they eventually could organize them in another way if they wanted to. I suggested a permanent solution with a planter for a fruit tree, and many pots where they could plant what ever vegetables and herbs they wished. There is a large interest for pots in gardens in India, and terra cotta pots are very popular. With the ability to grow vegetables and to use them in cooking, the kitchen garden will be a practical facility of the new outdoor area. In addition, it is fun for the kids to take part in the cultivation of vegetables, and they get to learn how this happens.



DISH WASHING PLANTER BOX WITH FRUIT TREE VEGETABLES AND HERBS

MATERIALS AND TEXTURE



MODEL



Top view of the model.



Play area.



Tree row.



Roof terrace.



Play area.



Play area.



Watering the plants on the roof terrace.


NOTES	MONDAY 29/02/2016	TUESDAY 01/03/2016	WEDNESDAY 02/03/2016	THURSDAY 03/03/2016	FRIDAY 04/03/2016	SATURDAY 05/03/2016	SUNDAY 06/03/2016
Volunteers		Caroline Amalie	Caroline, Amalie, me	Caroline, Amalie, me	Caroline, Amalie, me	Caroline, Amalie, me	Caroline, Amalie, me
09.00-11.30		T R A V E L T O I N D I A	Visit the children's home and meet with the general manager. Meeting with the founder of the organization.	Inspection of the site with the landscaper. Preparation of construction site.	Project start up. Final preparations of construction site.	Perikali work on fence and masonry on roof terrace.	Perikali work with pergola and masonry.
11.30-12.00			Break	Break	Break	Break	Break
12.00-15.00			Meet with Perikali at his office and go through the contract and budget one final time.	Inspection of site with the landscaper. Preparation of construction site.	Perikali cut steel rods on roof terrace.	Volunteers arrange for the kids to paint on stone slabs. Perikali work with masonry for planters.	Perikali work with pergola and masonry.
15.00-15.30			Break	Break	Break	Break	Break
15.30-18.00			Make sure the containers and gloves are ready for preparation of the site.	Preparation of construction site.	Perikali starts with fence and masonry on roof terrace.	Volunteers arrange for the kids to paint on stone slabs. Perikali starts with foundations for pergola.	Perikali work with pergola and masonry.
Prepare for next day			Containers		Stone slabs for the kids.		
Other				Water for workers and volunteers.	Water for workers and volunteers.	Water for workers and volunteers.	Water for workers and volunteers.

NOTES	MONDAY 07/03/2016	TUESDAY 08/03/2016	WEDNESDAY 09/03/2016	THURSDAY 10/03/2016	FRIDAY 11/03/2016	SATURDAY 12/03/2016	SUNDAY 13/03/2016
Volunteers	Me: Coordinate and arrange activities with the kids.	Me: Coordinate and arrange activities with the kids.	Me: Coordinate and arrange activities with the kids.	Me: Coordinate and arrange activities with the kids.	Me: Coordinate and arrange activities with the kids.	Me: Coordinate and arrange activities with the kids.	Me: Coordinate and arrange activities with the kids.
09.00-11.30	Perikali work with the pergola and masonry.	Perikali work with the pergola and masonry.	Perikali work with the pergola.	Perikali work with the pergola.	Perikali work with the pergola.	Perikali work with the pergola.	Perikali work with the pergola. The kids and I make games with different materials.
11.30-12.00	Break	Break	Break	Break	Break	Break	Break
12.00-15.00	Perikali work with the pergola and masonry.	Perikali work with the pergola and masonry.	Perikali work with the pergola.	Perikali work with the pergola.	Perikali work with the pergola.	Perikali work with the pergola. The kids and I make games with different materials.	Perikali work with the pergola. The kids and I make games with different materials.
15.00-15.30	Break	Break	Break	Break	Break	Break	Break
15.30-18.00	Perikali work with the pergola and masonry.	Perikali work with the pergola and masonry. Finish the masonry.	Perikali work with the pergola.	Perikali work with the pergola.	Perikali work with the pergola.	Perikali work with the pergola. The kids and I make games with different materials.	Perikali work with the pergola.
Prepare for next day							
Other	Water for workers.	Water for workers.	Water for workers.	Water for workers.	Water for workers.	Water for workers.	Water for workers.

NOTES	MONDAY 14/03/2016	TUESDAY 15/03/2016	WEDNESDAY 16/03/2016	THURSDAY 17/03/2016	FRIDAY 18/03/2016	SATURDAY 19/03/2016	SUNDAY 20/03/2016
Volunteers	Me: Coordinate and arrange activities with the kids.	Me: Coordinate and arrange activities with the kids.	Me: Coordinate and arrange activities with the kids.	Me: Coordinate and arrange activities with the kids.	Kent, Reidun, Åsmund, me	Kent, Reidun, Åsmund, me	Kent, Reidun, Åsmund, me
09.00-11.30	Perikali work with the pergola. Start preparing the plant bed in the kitchen garden.	Perikali work with the pergola. Start preparing the plant beds in the front yard.	Perikali work with the pergola. Preparing the plant beds in the front yard.	Perikali work with the pergola. Start preparing the plant beds on the roof terrace.	Perikali finalizes the pergola. Preparing the plant beds on the roof terrace.	Introducing new volunteers to the children and the workers.	Perikali, kids and volunteers work with the planting, volunteers work with the play boat.
11.30-12.00	Break	Break	Break	Break	Break	Break	Break
12.00-15.00	Perikali work with the pergola. Preparing the plant bed in the kitchen garden.	Perikali work with the pergola. Preparing the plant beds in the front yard.	Perikali work with the pergola. Preparing the plant beds in the front yard.	Perikali work with the pergola. Preparing the plant bed on the roof terrace.	Preparing the plant beds on the roof terrace. Make sure materials are in place for new volunteers.	Tour at the site with the new volunteers. Start working on the play boat and start planting.	Perikali, kids and volunteers work with the planting, volunteers work with the play boat.
15.00-15.30	Break	Break	Break	Break	Break	Break	Break
15.30-18.00	Perikali work with the pergola. Preparing the plant bed in the kitchen garden.	Perikali work with the pergola. Preparing the plant beds in the front yard.	Perikali work with the pergola. Preparing the plant beds in the front yard.	Perikali work with the pergola. Preparing the plant beds on the roof terrace. Get materials for play boat.	Perikali work with the pergola. Preparing the plant beds on the roof terrace. Prepare for new volunteers.	Perikali, kids and volunteers work with the planting, volunteers work with the play boat.	Perikali, kids and volunteers work with the planting, volunteers work with the play boat.
Prepare for next day				Materials for play boat.	Materials for play boat.		
Other	Water for workers.	Water for workers.	Water for workers.	Water for workers.	Water for workers. Pick up volunteers at the airport.	Water for workers.	Water for workers and volunteers. Pick up volunteer at the airport.

NOTES	MONDAY 21/03/2016	TUESDAY 22/03/2016	WEDNESDAY 23/03/2016	THURSDAY 24/03/2016	FRIDAY 25/03/2016	SATURDAY 26/03/2016	SUNDAY 27/03/2016
Volunteers	Kent, Reidun, Åsmund, Henrik, me	Kent, Reidun, Åsmund, Henrik, Thea, Christina, me	Kent, Reidun, Åsmund, Henrik, Thea, Christina, me	Kent, Reidun, Åsmund, Henrik, Thea, Christina, me	Kent, Reidun, Åsmund, Henrik, Thea, Christina, me	Kent, Reidun, Åsmund, Henrik, Thea, Christina, me	T R A V E L T O N O R W A Y
09.00-11.30	Perikali and volunteers work with the planting, volunteers work with the play boat.	Introducing new volunteers to the children and the workers. Tour at the site with the new volunteers.	Perikali and volunteers work with the planting, volunteers work with the play boat.	Perikali, kids and volunteers paint pavement games. Volunteers work with the play boat.	Volunteers organize pots and furnitures.	Documenting the result. Last finish. Prepare for the party.	
11.30-12.00	Break	Break	Break	Break	Break	Break	
12.00-15.00	Perikali and volunteers work with the planting, volunteers work with the play boat.	Perikali and volunteers work with the planting, volunteers work with the play boat.	Perikali and volunteers prepare the pavement for painting. Volunteers work with the play boat.	Perikali, kids and volunteers paint pavement games. Volunteers work with the play boat.	Go through the maintenance plan with the staff and the children.	Documenting the result. Last finish. Prepare for the party.	
15.00-15.30	Break	Break	Break	Break	Break	Break	
15.30-18.00	Perikali, kids and volunteers work with the planting, volunteers work with the play boat.	Perikali, kids and volunteers work with the planting, volunteers work with the play boat.	Perikali and volunteers prepare the pavement for painting. Volunteers work with the play boat.	Perikali, kids and volunteers paint pavement games. Volunteers work with the play boat.	Go through the maintenance plan with the staff and the children.	Opening party!	
Prepare for next day			Paint for pavement games.		Prepare for party.	Clean up after party.	
Other	Water for workers and volunteers. Pick up volunteer at the airport.	Water for workers and volunteers. Pick up volunteer at the airport.	Water for workers and volunteers.	Water for workers and volunteers.	Water for workers and volunteers.	Water for workers and volunteers.	

BUDGET



Perikali

PERIKALI TRADING CO/ KAIVALYA Nursery
 Office:
 J 862, New # J 85,
 13th Main Road, Anna Nagar,
 Chennai - 600 049
 Tel: +91 44 65516416
perikali_trading@yahoo.co.in
www.perikali.com

Date: 20.02.16

Estimate

Client: Ms. Hanna Tryggvastad
 Address: Kalahelvi Karunalya, Mogappair West, Chennai

Description:

The site is a Shelter for Children and aged Women. The scope of the landscaping work can be divided into three sections. The first section is the ground floor section located in the front square of the property. In this section the front main garden, shade garden, play area and the area around the flag staff will be landscaped. A retaining wall will be built around the play area with an open entrance.
 The second section is the Terrace garden in which built-in planter boxes will be constructed along with a Pergola and a chain link fence around the perimeter of the roof.
 The third section is a kitchen garden at the rear of the property along with trees planted on the western wall.
 All plants have been carefully selected based on site location and the plants on the terrace are all very hardy and easy to maintain.
 The Designs have been verified and approved by the client.

Detailed Estimate:

S.No	Description	Qty	Rate	Amount
Planting Stock				
<i>All Plants and Trees supplied by us will have a mature root ball and will be free from any disease or pathogens at the time of planting</i>				
SEC 1 - Shade Garden + semi shade garden at front of Children's Block				

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1	Caladium bi color red	12	45	540
2	Asparagus densiflorus	10	35	350
3	Fox tail PALM Tree 10' ht	2	1500	3000
4	Canna indica regular	3	20	60
5	Canna indica dark brown leaf	3	50	150
6	Cordyline Purple	4	150	600
7	Heliconia rostrata	5	75	375
8	Alocasia	2	200	400
9	Colocasia	2	200	400
10	Plumeria dwarf	3	1000	3000
11	Peters croton	4	350	1400
12	Alphina variegated	6	100	600
13	Ornamental red ginger	6	100	600
14	Nephrolepis fern	10	75	750
15	Raphis exelata palm	4	450	1800
16	Schefflera variegated	20	100	2000
SEC 2 - Shade Garden middle section				
1	Philodendron congo mature	1	950	950
2	Dracena messeragana mature	2	1200	2400
3	Spathiphyllum Peace Lily	20	75	1500
4	Philodendron imperial red mature	2	1200	2400
5	Schefflera green	10	95	950
SEC 3 - FRONT AREA/ Flag Pole				
Dypsis lutescens (Areca Palm) Potted Plants as backdrop to Flag pole area in a diagonal axis				
1	Lagerstroemia speciosa TREE in planter	1	450	450
2	Agave americana in planter	2	350	700
3	Cycad palm in planter 2' dia	1	1250	1250
4	Silver Oak Trees (Tall and conical habit/ fast growing) compound wall	6	350	2100
SEC 4 - Kitchen Garden				
1	Vegetable seeds in 25 gms packets	10	25	250
2	Greens seeds in 25 gms packets	10	25	250
3	Costard Apple tree Grafted	1	350	350

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points. We are not responsible for any issues that can arise due to lack of proper waterproofing.

5. Only the specified works in the above contract are to be completed by Perikali.

6. The specified works in the contract will be completed in 20 working days starting from the day of commencement, provided the staff has full access to the site without any delays. We cannot be responsible for any delays caused by extraordinary circumstances such as pets or natural calamities such as heavy rainfall, flooding, mudslides etc.

7. It is the responsibility of the site owner to make sure that watering is always guaranteed and done routinely as per the instructions of Perikali. We will not be responsible for any plant loss due to negligence of watering.

8. This work contract does not include any maintenance. We will be honoured to work out an AMC with you.

9. This estimate is valid for the period of 3 weeks from the date of issue.

10. Payments can be made by Online Transfer/ Cash/ Credit-Card/ Cheque in the name of "PERIKALI TRADING COMPANY".

For PERIKALI
 Harbara Sudham M
 Business Head

SEC 5 - Roof Garden (Pergola + Built in Planters and potted plants)				
1	Dypsis lutescens	8	300	2400
2	Plumeria alba potted plant	3	1000	3000
3	Lantana yellow	20	20	400
4	Pomegranate Bhagwa variety TREE	2	250	500
5	Sweet Lime TREE grafted	1	450	450
6	Pennisetum grass	40	45	1800
7	Spider lily	10	35	350
8	Bougainvillea	30	150	4500
9	Adesium obscurum potted plant	4	350	1400
10	Mandevilla red creeper (potted plant/pergola)	4	550	2200
11	Jasmine + Thunbergia grandiflora creeper (Middle separation fence)	12	50	600
12	Sapota TREE grafted	1	450	450
SEC 6 - Tree planting (adjacent to compound wall on western wall)				
1	Jackfruit grafted TREE	2	300	600
2	Star Fruit grafted TREE	2	300	600
Other Materials and Expenses				
1	Top soil in units (1 unit = 100 cuft)	3	6500	19500
2	River sand in units (1 unit = 100 cuft)	1.5	7000	10500
3	Farm Yard Manure in bags	50	60	3000
4	Bricks for retaining wall in play area, 60' length and 2' ht	816	7	5712
5	Cement in bags	10	380	3800
6	Bricks for retaining wall in roof garden area, 125' length and 2' ht	1645	7	11515
7	Pergola:- Concrete pillars and beams :- 12' * 10' :- 7' 6" ht	1	85000	85000
8	Drainage Cells 30 mm thickness in soft for built in planter boxes	360	35	12600
9	Geotextile 250 GSM sqft for built in planter boxes	600	10	6000
10	PVC Roof guard for roof section	360	14	5040
11	Water proofing FOSROC for planter box in Terrace section	1	5000	5000
12	Chain Link fence 1.75' length * 5' ht in soft	875	15	13125
13	Chain link poles for support at 10'	15	300	4500
14	Large cement planters 2'6" dia and 1' 10" ht	5	550	2750
15	Medium cement planters 1'6" dia and 1' 6" ht (14 Terrace + 10)	24	350	8400
16	Grow bags (2'6" wide and 1' ht) Kitchen garden	12	150	1800

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17	Neem Cake - Organic fungicide soil additive in 50 kg bags	1	1200	1200
18	Paint in litres	7	250	1750
19	Labour - Inclusive of the following: 1. Site Preparation 2. Filling of soil, Manure and sand in ground floor and roof garden 3. Addition of farm yard manure 4. Planting of all plants/ trees and shrubs 5. Building of retaining walls for play area and the roof garden. 6. Pergola 7.Chain link fencing 8.Laying of Drainage cells and geo textile in Roof garden 9. Painting 10. Finishing			40000
20	Transportation Costs all inclusive			9500
NET				302717
Please note:				
1 The above work can be completed in a period of 20 working days.				
2 No electrical, plumbing or lighting is part of this estimate				
3 No furniture is part of this estimate				
4 No play equipment is part of this estimate				
The pergola rate is not fixed as the design and budget considerations can be finalised upon arrival.				
In words: Net amount is Rupees Three Lakhs two thousand seven hundred and seventeen only.				
Terms and Conditions:				
1. The work contract cannot be cancelled once it has been signed.				
2. We will require an advance of 50% to commence work, 30% upon arrival of all of mentioned materials and 20% upon completion.				
3. All costs are not final and can vary according to the conditions on ground for any given day. We do our best to minimize any cost overruns that may occur due to external factors such as increase in transportation costs.				
4. The above contract does not include the costs for removal of building material and other materials such as construction waste and debris that are present at site. The site will have to be clear of all such material before Perikali can commence Operations. For Terrace gardens it is the client's task to waterproof and slope the surface of the terrace towards the drainage				

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SUM UP

Through concept development, testing in model and dialogue with the landscaper, the design part was a fun and educational process, and I feel that we have come up with a feasible and attractive design that will suit well at the children's home. After deciding on the design, I was able to set up a week schedule for the building process, with a day-to-day plan for what will be done. The landscaper made a budget for the project, and I feel ready to go on to the next step of the process, the actual building phase.



 04 BUILD

INTRODUCTION

In this chapter I will present a full report of the actual realization of the project. Along with two friends, I traveled to Chennai on the 1st of March, 2016, to begin with the construction phase. Within 25 days, the project was realized with the help of the landscaping company "Perikali", the children and staff at the children's home, volunteers and family. In this chapter, I will discuss the challenges, opportunities and lessons that came along during the process.

DAY ONE 02.03.2016 WEDNESDAY

The first day of the project realization was very eventful. My two friends and I went to the children's home early and met with the general manager and the founder of the organization, KKSS. They were given a thorough briefing of the project schedule and a clearer explanation of all the plans. It had not been easy to convey everything by mail, so it was very nice to go through everything face to face. They were very positive, and confirmed once again that we had free hands to carry out the project. They assigned us an office where we could sit and work on the project and store all equipment.

We walked around the site to see what had happened since the last time I visited. Because of a flood in November-December 2015, they had to cut down two of the trees in the play area. This was very sad, because these trees provided much of the shade for the play area. The play area was nonetheless fortunately still well positioned for shade thanks to the remaining trees and the buildings.

After the meeting with the administration of the children's home, I went to visit Hari, the landscaper, at his office, to go through the contract for the project. Over lunch, we discussed the final layouts, and went through the budget for the project one more time. He had a lot of useful input, and made several good suggestions. We discussed the work schedule, and reorganized it due to new information regarding arrival of materials. I tried to organize for a container to clear waste from the construction site, but Hari explained that they used to dump everything on the street and got someone to come and retrieve it later. After the meeting I went back to the children's home, where we handed out toys that Haugen Kindergarten once again had donated to the children.



Water testing.



Measuring.



Measuring.

DAY TWO 03.03.2016 THURSDAY

We met with Hari and his appointed project manager at the children's home early the next morning, and went through the entire outside environment together with the general manager of the children's home. We started with the play area, where two cars that had not been in operation for almost a year were parked. The cars completely clogged up the play equipment, making it hard for the children to play there. We contacted a towing company, who could come and pick up the cars the following week.

On the roof terrace we discovered a few challenges. The building structure on the north side of the building proved to be weak and was not good enough to withstand the weight of the planter boxes that were initially planned in this area. In the beginning, we believed that a beam supported the overhang, but it turned out that the beam was not there, due to costs saving during construction of the building. Hari scheduled for a building engineer to take a closer look at the building structure to make sure that the building could take the weight from relocated planter boxes and the pergola.

We marked the original suggestion for the location of the planter boxes on the terrace, and marked the spot of the pergola and fence poles. We ran a water test, to ensure that the water was going to the drain openings, and thereafter marked where drainage holes in the planter boxes should be located. The

general manager of the children's home suggested that the volunteers could make a wall painting on the staircase to freshen up the atmosphere on the roof terrace. We thought this was a very good idea and started planning how this could look.

After the inspection, we had another meeting to go through the plan for maintenance after project completion. We solved how the watering routine was going to be implemented in the children's weekly schedule, and made a deal with Perikali to visit every second week after completion and make sure everything runs as it should, and provide additional nutrients to the plants if needed. I will personally support the children's home with the costs of the maintenance to ensure that their garden is withheld. Hari said "maintaining is 70% of the work with establishing a garden", and pointed out how sad it is when he see finalized project decay due to lack of understanding of the importance of maintenance. The general manager made sure that the children had understood the importance, and we all agreed that their participation in the planting process also would help them see the value of the plants.

Later that day, my friends and I started the work with preparing the site for the project. We cleaned up the garbage and organized the existing building materials on site.



Visiting children's home.



Handing out toys.



Visiting Hari's office.



Handing out toys.



Cleaning the front yard from garbage.



Preparing the site.

DAY THREE 04.03.2016 FRIDAY

I soon got to experience that Indians do not have the same concept of time as I was used to, as the workers did not show up before an hour later than agreed. Hari had warned me that this could happen, but reassured me that I could be confident that all the work would be done in time. And as I got to experience, the workers were extremely efficient when they first got started. My friends and I started to help out with the preparation work, but the workers instructed us to sit down and relax. We insisted on helping, but they also insisted on letting them take care of their work. Whether it was because we were guests or women, it was at least clear that we were not supposed to do any hard work.

After an inspection, the building engineer determined that the overhang on the north side of the building was too weak for the planter boxes, but that the rest of the building was fine. We decided to relocate the planter boxes, and this resulted in a narrow passageway on the north side of the roof terrace where a satellite operator could reach the antenna if needed. We marked up the new location of the planter boxes and scheduled for the masons to start their work the following day.

Large piles of rubbish and building materials started to form, and we made the founder go through everything with us and decide what we could keep and what we could reuse. Not far from the children's home, the organization KKSS had almost finished the work with building a new home for the elderly that currently were staying at the children's home. The elderly are supposed to move in to their new facilities during June, 2016. Parts of the redundant building materials could be used in the garden project, and the rest could be transported to the new elderly home for reuse. An interesting observation was that the founder and I had quite different views on what was trash and not. Reuse of materials is important, but when materials are not stored properly it gets damaged and useless. Much of the wood was rotten and several of the bricks were about to crumble. Yet there was some skepticism from their part about getting rid

of it. However, some things that I did not see the value of, proved to be of great benefit to them. This showed the importance of going through everything together with users of the site, to ensure that nothing important was thrown or relocated. Another interesting observation was the difference when it comes to safety. One can say that safety measurements on construction sites is a non-existing phenomenon in many parts of India. Safety boots, goggles and other protective equipment were not obtainable, nor desirable by the workers. I thought this was odd, but decided to let them do it their own way.

The volunteers and I went to the store to buy brushes, paper, paint for outdoor use and stone slabs. When we returned to the children's home, we prepared for a small workshop with the children the following day.



Materials that were lying around were gathered in piles.



Preparing for workshop with the children.



Perikali's workers in action.

DAY FOUR 05.03.2016 SATURDAY

The project manager from Perikali was already on site when we arrived at the children's home. Along with the master mason, we went through the plans and the location of planter boxes and brick walls. I had hoped that we could begin the bricklaying work that day, but it turned out that it was not possible before two days later. I got a bit stressed by this, but Hari assured me that the masonry work would not take many days. Hari also said that the pergola installers would arrive later than scheduled, but again he assured me that we had plenty of time to complete the work.

During the day, the workers from Perikali emptied all existing plant beds from nutrient-poor soil. The towing company had not yet arrived to pick up the cars, so the workers decided to move the cars themselves by pushing them away, so that we could start with some of the work in the play area. Meanwhile, the steel rods on the rooftop terrace were removed. The mason sand for the planter boxes arrived, and things started to get ready for the masonry work.



Workshop with the children.



Workshop with the children.



Wall painting on the roof terrace.

The volunteers and I organized a small workshop with the children. Only the youngest children were available at daytime, and they were involved in shaping forms that were to be painted on the roof terrace. The children were a bit skeptical at first when we asked them to lie down on the paper, but once they got to see what their body outline shapes were used for, they thought it was much fun.

The general manager and the founder liked the wall painting so much that they wanted us to paint the same on the wall behind the play area as well. We thought this was a good idea, and started with the painting immediately. We also began to prepare for the paint stations for the children for when they got home from school. When all the children got back, we organized them in groups and let them paint on stone slabs. The children painted with great enthusiasm. My friends work as a teacher and a nurse, and this came in handy with all the organization of the kids. Perikali's project manager also actively participated in translating for the kids, helped them and washed their hands afterwards. It was very good to have such professional people around to help out.



Workshop with the children.



Workshop with the children.



Removing steel rods.



Removing soil.



Dumping soil on the street.



Workshop with the children.



DAY FIVE 06.03.2016 SUNDAY

My friends traveled to Goa for backpacking this day, and I moved in with the general manager of the children's home. Since most of the materials would not arrive until Monday, 07.03, we decided that the workers from Perikali could take a day off. The site was cleared, so they could take a well deserved break. I spent the day writing down observations and documenting the process so far.

DAY SIX 07.03.2016 MONDAY

This day did not turn out as planned. All of the bricks were supposed to arrive at 10 o'clock, but only a small truck with a fraction of the bricks that we needed arrived. In addition, the master mason was supposed to organize for workers to start on the masonry that day, but he had misunderstood and did not send anyone. Perikali's project manager took care of the matter and sorted out the misunderstanding. Later that day, at 2 pm, the big truck with the rest of the bricks arrived. The project manager assured me that the mason workers would come the next day and start the work.

It turned out that the truck with the second load of bricks had had some trouble on the way. That kind of big vehicles are not allowed to drive on the main road during the daytime, so they had to take a detour. In addition, one of the wheels punctured, so this took extra time. When they finally arrived, they ran over a manhole cover in the driveway, crushing the cover. Fortunately the children's home had an additional manhole cover to spare, so this worked out.



Bricks for the masonry walls and planter boxes finally delivered.



Crushing the manhole cover.



Luckily we had an extra cover.

DAY SEVEN 08.03.2016 TUESDAY

This day started much better than the day before. When I arrived at the site, Perikali's workers had started to move materials from the driveway and up to the roof terrace. I suppose that this job would have been done within one hour with a crane in a similar project in Norway, but Hari explained to me that using man power was actually cheaper than renting a crane in India. During the day, the workers from Perikali and the masons worked very effectively in making the plant boxes on the roof terrace. I was very impressed with the pace. I realized that it was hopeless to try to follow my project schedule, since delays and unpredicted challenges turned up without notice. Hari assured me that we had plenty of time to finish the project, and that he would make sure that everything on the schedule would be done in time.

Throughout the day, I tried as best as I could to help out carrying bricks, but got told to leave the dirty work to the men, and put on a hat in the heat. I felt a little redundant, but settled for observing the mason's work and learning about their methods.



Little helpers.



Working on the planter boxes.

Perikali's workers removed the old coping around the play area, and made it ready for the masons to start working there. I had to revise the plans for the sandbox, as I had designed it too big compared to the space that actually was available in the play area. Having marked up how the new outline was supposed to be, the janitor at the children's home came up with a desire for a paved passage through the play area. He told me that he sometimes used to roll heavy objects to the back of the building, and therefore would prefer it to be an open passage. We listened to his proposal, and revised the plans for the play area. The problem was that the passage would interfere a little with the security zone for the swing set, but the general manager of the children's home decided that this was fine, and took on the responsibility if anything should happen.



Working on the planter boxes.



Working on the planter boxes.

DAY EIGHT 09.03.2016 WEDNESDAY

Another successful day! I arrived at the children's home early and Hari's workers were already on site. They continued with the planter boxes on the roof terrace. I slowly got accepted as part of the work team and got to carry bricks up to the roof terrace. The elderly at the children's home were completely given by the fact that I wanted to help out, and claimed that this kind of work was not suitable for a girl like me. One of the workers came up to me and told me that it was best that I handed the job to them, and explained that it was about respect for their role as workers. I could not do other than observing, working with documentation and revision of plans.

One of the suppliers of the pergola came on inspection at the site to see the location of the pergola and calculate the amount of work. He was positive, but demanded a higher price than what we had budgeted for. Hari also had contact with two other pergola suppliers, and we decided to wait for their offer. I had originally planned for a wooden pergola, but it turned out that this was the most expensive type, and also the type that would demand most maintenance. We considered several types of materials, both metal, bamboo and concrete, but the most promising material was metal. In that case, we would have to bind bamboo in the top poles to enable the climbers to get well-established.



Discussing project development.



Foundations for steel poles.



Work in progress.



One of the elderly inspecting the work.

Later that day, Hari and I returned to his office to go through the work schedule so far in the process. He told me that he assumed that their work would be completed within the next 13 days. This I was very surprising to me, because I had expected that we were going to work 24/7 throughout the whole period. I knew that delays and other challenges still could emerge, but had a positive feeling about the project so far. The contract with Perikali stated that 50% of the amount should be paid in advance, 30% when the materials were in place, and 20% after the work was completed. After eight days I had still not heard anything regarding the payment, so asked about how we were going to solve it. Hari assured me that I did not need to think about it, and that I could pay the first 50% whenever I wanted, and the remaining 50% when the project was completed. One of my biggest fears when planning the project was that I could get ripped off, and I was once again extremely thankful for meeting Hari. I felt a huge responsibility when handling the donated money, and wanted to make sure that every penny got spent the right way. We went through the budget so

far, and everything looked fine. Hari worked every day to make sure there was no waste of materials, and that the work was done thoroughly and efficiently.

After the meeting, we got back to the children's home and could see that the masons had completed almost all of the planter boxes on the roof terrace during the day, and prepared the foundations for the steel poles for the fencing.



Working on the planter boxes.



Working on the planter boxes.

DAY NINE 10.03.2016 THURSDAY

The day began with a review of the work that had been done so far. The masons worked very efficiently and were finished with the planter boxes during the first hour. All foundations for the fencing were ready. During the day, the planter boxes were molded with a rough surface. When the masons had finished the planter boxes on the roof terrace, they started with the outline of the play area. Since there had been a problem with visitors parking their cars, we had decided to shield the play area by a low wall, which also could be used as seating. The intention was that it should function as a shield, but not as a barrier. I think we solved this in a good way, and already from the first day when it was finished the children sat around on the wall. We used some of the existing leca blocks at the site to cast the benches along the wall.

The elderly thought it was very exciting to watch the process, and carried their chairs to sit and observe everything. The children came home from school 5pm as usual, and I had prepared for another paint workshop. The goal was to make two board games that could be part of the new playground. Both the staff and the children worked very concentrated on the task, and the result was great. Earlier that day, I had collected round stones from the street, and clearly got the message that I was very weird. The children, however, thought it was very funny, and were happy to paint the stones that should become the pieces for the board games.



Working on the masonry wall.



Working on the planter boxes.



Workshop with the children.



Workshop with the children.



Working on the planter boxes.



Workshop with the children.

On the roof terrace, Perikali's workers set up the fencing. The chain link fence was covered by green rubber, and was about two meters high. We chose the chain link fence because it had a reasonable price and was easy to install. The main function of the fence on the north side of the building was to protect against falls from the roof terrace, as the existing wall was very low. The main function of the fence on the south side of the building was to divide the roof terrace into smaller rooms and contribute to a more intimate atmosphere. I thought the green color fitted fairly well into the background, so it was not too prominent. The fence would be pretty invisible in the background when the ornamental grass in the planter boxes got established. On the south side of the terrace, the fence would be covered by climbers, and after a short time perceived as a green wall. We finally decided to go with the metal pergola. This construction was lighter than the others, and also significantly less expensive. We made a deal that the supplier would make all the pieces at their factory, and then install it as soon as possible.



Removing old masonry walls.



Workshop with the children.



Workshop with the children.

DAY TEN 11.03.2016 FRIDAY

The masons continued their work at the play area. During the day, they completed the masonry around the play area, and removed all molded masses that were too close to the playground equipment. Later they also began to mortar the new sandbox and the water element. We readjusted some dimensions so that it would fit better. The day's lesson was that no matter how much you plan, you always have to be open for readjustment when it comes to the actual construction. Sometimes, things are not quite as originally envisaged, and it is important to listen to the experts and consider their suggestions. After all, those who have worked with the execution of brick work for decades generally know what they are talking about.

On the roof terrace, the rest of the planter boxes were molded with a rough surface, and the last fence was installed. Construction waste was transported away during the day, and before midnight a load of red soil was scheduled to arrive. The soil was gathered outside the city, in a village known for its nutrient-rich soil. Hari was positive that we could start planting in the next five days. The board games were frequently used throughout the day by the elderly. That something as simple as that can cause so much joy was very rewarding.



Foundations for steel poles.



Working on the masonry wall.



Working on the masonry wall.



Playing the board game.

DAY ELEVEN 12.03.2016 SATURDAY

The masons finished their work with the play area, and during the day they finished the benches, and gave everything a rough finish. It was very liberating to be finished with most of the mason work. The water element construction turned out a bit massive, but the children loved it, and they almost could not wait for it to dry so that they could play with it. We had made sure that the water element had the correct slope, so that the water would flow and give the nice effect that I had envisaged.

At the same time all planter boxes on the roof terrace got the first layer with a waterproof agent. It got to dry all day, so that it was clear for a new layer the following day. Hari had had contact with the pergola installers, who announced that they worked on cutting all the metal pieces for the pergola, and that they were soon finished. They would be ready to install it the coming Monday.

The truck with the red soil, which was supposed to be delivered by midnight the day before, had been stopped by traffic police and were not allowed to drive any further. They drove during daytime, and were therefore stopped and delayed for another day. Hopefully they would arrive before midnight this day.



Working on the masonry wall.



Working on the masonry wall, giving it a rough surface.



Rough surface on the planter boxes at the roof terrace.

DAY TWELVE 13.03.2016 SUNDAY

It made me really happy when I came to the children's home and saw that the planting soil had been delivered during the night. It was well placed in two large piles; one with fertilized brown soil and one with red soil. Everything was clear to start filling the soil in the planter boxes. Perikali's project manager told me that we could start planting the following Tuesday, since most of the plants would arrive at site that day. He also said that we could go and get the hardwoods on Wednesday. Then the wood materials would be in place when my family arrived on Friday.

The masons fixed the existing damaged planter boxes and control checked their work to ensure everything looked as it should. On the roof terrace, the planter boxes got the second layer of waterproofing agent, and it was left to dry all day. The kids thought it was very exciting to follow the development of the site, and helped to clear away some waste that had piled up during the day. The water element aroused great interest, and it was especially fun to climb on it. They had never seen anything like it and thought it was great that they were the only kids in their class that had access to this kind of water play.



Soil delivered at site.



Looking forward to the water element dries up.



Spending time at the roof terrace.



Water element.



Fun to climb on the water element.

DAY THIRTEEN 14.03.2016 MONDAY

On this day we could really start to see the outline of the new outdoor environment. Drainage cells, PVC root cover and geotextile were installed in all planter boxes on the roof terrace. Simultaneously, the materials for the pergola were delivered and the installers started there immediately. They had done a thorough job with the welding, and installed the pergola on the roof terrace in no time. The steel beams that would carry the pergola were strong, with a deck surface that was installed in the ceiling with large bolts. When all parts of the pergola were installed, they painted it with a green color to blend well with the climbing plants, and to prevent some heating from the sun.

Perikali's men worked all day to fill the soil in the existing planter boxes at ground level. When the drainage cells and the fabrics were assembled on the roof terrace, they started filling soil there as well. Meanwhile, I worked to rake sand in the play area, as it was filled with large rocks, sharp objects and debris. In addition, I made sure to irrigate all the molded walls, to prevent them from cracking in the hot sun. During the break, some of the elders came out and sat on the newly casted benches and some of the youngest children thought it was really fun to balance on the wall. In the evening, 27 concrete pots got delivered to the site, ready to be filled with soil the following day.



Drainage cells delivered.



Drainage cells.



Balancing on the masonry wall.



Two elderly women sitting on the new bench.



Installing the pergola.



Filling soil in the planter boxes.

DAY FOURTEEN 15.03.2016 TUESDAY

On this day much of the practical work was completed. All planter boxes were filled with soil, and were ready to be planted the following day. It took a really long time to transport all the soil masses from the ground floor and up to the roof terrace. Perikali had sent four men who worked all day with the task of carrying the soil up to the roof terrace. I continued to go through the sand in the play area, and found both glass breakage and brick waste.

When all the sand was gone through, I leveled it out so that it would work as a base for the new sand that would fill in a few days later.

When the children came home from school, we had a small voting on what should be written above the new play area. They wanted it simple, and went for "Children's play area." The staff and children took care of the painting of the letters, while I took care of the organization. During the evening we got a big audience who wanted to comment and make suggestions for improvements.

In the evening, the larger concrete pots arrived. The pergola installers were supposed to show up at 4pm the same day, but we were told that they had been completely burnt out the day before and needed a day off to recover. I was told that all the plants were to be delivered the following day as well, so I had high hopes for Wednesday.



Filling soil.



Concrete pots delivered.



Audience.



Pieces of glass and rocks found in the sand at the play area.



Painting in action.



DAY FIFTEEN 16.03.2016 WEDNESDAY

When I arrived at the children's home, I met the pergola installers at the door. He could announce that the pergola had been virtually assembled during the morning hours. This was good news. The only thing that remained was additional water protection around the foundations, and an extra coat of paint. During the day, everything got fixed, and the pergola could be declared completed, after only three days of installation work. I had predicted three full weeks for this job, so I was quite happy. Material choice had a lot to say for the workload, yet I had never imagined that it could be completed that fast.

At lunchtime I went to the office of Perikali and went through the preliminary budget and work schedule so far. We had saved a bit of money on the pergola, and because of this we were well within our budget. There had been some additional costs associated with labor, waste transport and extra sand for the play area, but these were not large sums and could be fitted into the budget. The work schedule seemed to be going well, and Hari stated that all their work would be completed by the 21.03.2016.

We went back to the children's home and were met by the first load of plants that had just been delivered. They seemed to be of good quality, and the children were very interested in touching and smelling them. Perikali's men had worked on mixing fertilizer into the red soil the whole day, to ensure that the plants would have good establishment conditions. We planted vegetables and herbs in the grow bags in the kitchen garden. This was a lot of fun, and the kids really enjoyed to take part in the planting. We made an inspection of the day's work, and the kids joined in and tested the stability of the pergola. The pergola was actively adopted as a gymnastics stand, and it was very popular to dangle.



Working in the kitchen garden.



Testing the stability of the pergola.



Plants arrived at site.



Plants arrived at site.



Plants arrived at site.



fertilizer mixed with red soil.

DAY SIXTEEN 17.03.2016 THURSDAY

Three loads of plants were delivered during the morning. The plants were sorted and carried to the spot where they should be planted. Hari came to make sure everything was properly done, and helped with the placement of the plants. We started by placing the plants on the roof terrace, and we made sure that every plant clump was moist and in good condition when we took it out. Some of the plants were not of the desired quality, and were thus returned and replaced with new ones.

I was supposed to go with the project manager to get the wood materials for the play boat that day, but his mother felt ill, so he had to take the day off to take care of her. Therefore, it was postponed to the next day.

When the kids came home from school, everything was ready for them to help out with the planting. After giving them instructions, they started planting with great enthusiasm. They learned how the plants should be treated and how much work it takes to establish a planter bed. They were very cautious and careful in their work, and thought it was really fun to be a part in the planting. By the evening, almost all the planter boxes were planted, and only a few spaces remained on the ground level.



The children enjoyed planting.



DAY SEVENTEEN 18.03.2016 FRIDAY

When I arrived at the children's home, the workers had started the work with white washing the mason surfaces. It looked really good, but I had to complain that they did not use anything to cover the ground with, resulting in paint marks everywhere. Fortunately it was easy to remove this, but I thought it would be easier to do it properly from the beginning. Hari had arrived just in time to prevent one of the workers to paint above a planter box without any cover above the plants. Some of the plants were already full of paint stains, so Hari got the workers to replace these. Another challenge also came up, as it turned out that someone from the children's home thought it would be a good idea to place bleach on the edge of all planter boxes to keep ants away. With her good intentions, she did not know that if the bleach got mixed with the soil, the plants would die. Fortunately, this was early discovered and we made an announcement that this should not happen again.

Later the same day, the sand for the play area arrived. It was supposed to be dumped directly into the play area, but the truck did not fit the driveway, so they heaped it just outside the play area, leaving some extra loading work for us. In the evening, I went with two employees from Perikali to retrieve the wood materials. The selected supplier was located on the other side of town, so it took some time to go there. When we arrived, we spent some time to make sure that they understood the dimensions, and then got the wood cut up into appropriate lengths. This would save us a lot of work, and we could fit all the materials in the van. At midnight, I went to the airport to pick up my family who were excited and ready to help out with the final phase of the project.



DAY EIGHTEEN 19.03.2016 SATURDAY

This day was spent showing my family around at the children's home, and meeting with all the children, staff and the workers from Perikali. My family were given a warm welcome. Perikali's workers continued the work with the play area. During the day they had filled all the sand in the play area, and this was very popular with the children. They ran around barefoot in the sand and beamed over the soft ground. The mason surfaces got a second coating of white wash, additional foundations and water protection for the pergola was installed. An additional step in the stairs up to the rooftop terrace was also installed, since the elderly had a little trouble with stepping over the top step. After the introduction, my family expressed their motivation for an exciting week of work, and they were very positive to the development at the site. My father inspected the pine wood materials for the new play boat and approved that the wood was of good quality.



DAY NINETEEN 20.03.2016 SUNDAY

My father and my brother began working on the play boat and collated all the materials to create a framework for the boat. Those who had cut up the materials had been somewhat inaccurate, so there were some differences in the lengths of the materials. They worked quickly, and put together a frame within a short time. My father is fortunately a very solution oriented carpenter, and he came up with a good solution despite the irregular materials.

Meanwhile, my mother, some of the staff, the children and I started to paint the play equipment. We wanted it to be in bright and natural colors to freshen up the expression. With natural green and fresh yellow, we figured that the play equipment would get new life. The kids were very helpful with the painting, and they also took pieces from the play boat and painted them to decorate in their rooms.

When it was ready for the day's watering routine, the children got completely crazy and ran around with the water hose. The children were very enthusiastic and did a proper job with the watering. It was especially popular to use the water hose on the new water element. The water poured down the water fall, providing moist sand in the sandbox, and the kids had a lot of fun shaping sand castles.



I do not know why, but I had started to develop an anxiety concerning the thought that maintenance would be sloppy when I got back to Norway. I had emphasized repeatedly the importance of watering, and the children had already implemented it as part of their daily routine, but still I was nervous. I had another meeting with the general manager who assured me that I could relax. One of the mothers living at the home was appointed the leader of the watering group, and got the main responsibility of organizing the children in smaller groups for watering. I had developed a close friendship with this woman, and knew that she would take her job very seriously. I think the nervousness developed because I knew that I was leaving soon, but in the end, I knew that they would take really good care of their new garden.

DAY TWENTY 21.03.2016 MONDAY

This was yet another eventful day. When we arrived at the site, the first mission was to get more screws for the play boat. My boyfriend had arrived the same night, and helped my father with the construction of the boat. To obtain good screws proved to be an adventure itself. We had to go through two different "hardware stores" to find some usable, since half of the screws were either rusty or not suitable for wood.

When screws finally were located, my father, boyfriend and brother continued working on the play boat, along with some good helpers that got to learn how to use the drill. One of the children was very helpful with counting the screws.

Hari came on inspection and got to meet the family. Perikali's workers installed the bamboo screen walls on the roof terrace, and we could see that the climbing plants had already begun to establish themselves on the fence. Hari said that during a two month's period the plants would cover much of the fence.

The pots were painted in a natural tan color, which would even out to a lighter brown color in the sun. It was a very hot day and we could not keep on with the work for a long time. The temperature was an average of 40 degrees each day while we worked, and this was very challenging. We made sure to drink plenty of water and take breaks in the shade. With our luck, it turned out to be the warmest year in over 100 years, so Hari joked that we had really chosen the right time to visit India to work.





One of the elderly women at the home was an interested observer throughout the process.

DAY TWENTYONE 22.03.2016 TUESDAY

My father finished the play boat, and it was prepared for the first layer of termite agent the following day. We worked on clearing the site of waste, and my sister and her friend took care of cleaning the roof terrace. All plants were watered, and Perikali completed the work on the installation of bamboo screen walls.

Once again I went through the watering routine with the children and made sure that they understood the importance of watering. They seemed very motivated to take care of the plants, and I started to relax about all my concerns.



My father working on the play boat.



Cleaning the roof terrace.



Cleaning the roof terrace.



Play boat ready for termite coating.



DAY TWENTYTWO 23.03.2016 WEDNESDAY

Once again an eventful day. We started the day with buying paint for the boat, and gave the boat a layer of termite agent. When this was dried up, we could start painting. It was important to lay a thick layer of paint to ensure that unnecessary moisture did not go through to the material. First coat was laid on the boat. All of my family members had been assigned different duties, and they all ran around to complete their jobs. When the children came home from school, they were very excited to see the new boat.

The entire site got cleared of building materials and excess soil and sand. This was a demanding job in 40 degrees, but after a few hours we were complete with the task. New bolts for the swing set were ordered and were to be installed the following day. We finally got to move the last car that has been parked there for over a year because of a flat battery. Then we washed the paving, so that it was ready for painting the ABC-snake some time in the next few days.

We had purchased a large amount of pillows for the roof terrace for the children to sit on. We also bought plenty of large water cans that were easy for the kids to carry so that they could more easily take part in the watering of the plants.



Play boat with termite agent.



Enjoying the water play element.



Work in progress.



Work in progress.

DAY TWENTYTHREE 24.03.2016 THURSDAY

The family took a day off to see the city and therefore all liability for watering was entrusted to the children and staff at the children's home. This was the first day they had the complete responsibility of watering the plants without me following up, so I was a bit nervous and excited. During the evening, the general manager sent me a picture of the kids doing their watering routine, and I was reassured that the children took their job very seriously.



the children watering the plants.



painting surfaces.

DAY TWENTYFOUR 25.03.2016 FRIDAY

I was very pleased to see that the responsibility for watering had been taken very seriously while we had been away. They had implemented the watering in their morning routine, and at 7am, they went around watering all the plants. In this way, the plants would have moist soil throughout the day while the sun was up. All the plants seemed to be in a very good condition and the soil was moist. I was touched to see that the children had engaged so much in watering the plants, and made sure to give them a lot of credit for their work.

The family and I started with the second coat of the boat, and we also painted unattractive looking surfaces, like an old brick wall in the background of the playground. The kids helped us to paint the ABC-snake and did a great job. With precision and accuracy we painted the entire snake in a short time. One of the positive consequences of the high temperature is that the paint dries very fast. Perikali had replaced the weak screws at the swing set with new, strong bolts. Garbage cans had been delivered and placed on the outside of the play area and on the roof terrace.



Painting ABC-snake.



Painting ABC-snake.



DAY TWENTYFIVE 26.03.2016 SATURDAY

The last day at the children's home was filled with laughter and joy. We began the day with the final preparations before the opening party. The boat had dried and been placed in the right spot. We put out chairs, and a cake was ordered by management of the children's home. We made a cord that was to be cut at the ceremony.

The party was a great success, and I was moved to tears by all the nice words from the children and the staff. They had made a small model of their new play area as a present, along with a book full of drawings and greetings. In one of the speeches a girl said "Before, our children's home was a bud, now it is blooming". This really made an impression on me, and I was proud of the result. The general manager said in her speech that "Earlier, when we had visitors, they could not even see that children lived here judging by our outdoor environment. Now, the children have a great play area that we can show our guests with pride".

The evening was spent with a variety of games, activities and laughter. I was so glad to see that the outdoor environment was finally used to the fullest, and we enjoyed the cool breeze on the roof terrace during the evening.



Cake at the opening party.



Speeches at the opening party.



Speeches at the opening party.



Games on the roof terrace.



Opening party.



Games on the roof terrace.



The kids had made a model of their new outdoor environment as a gift for me.



Water and sand play.



Water and sand play.



Water and sand play.



Dancing on the roof terrace.



Dancing on the roof terrace.



"Everybody make a monster face!"

FINAL BUDGET

PERIKALI TRADING CO/ KAIVALYA Nursery
 Old # 1862, 13th Main Road, Anna Nagar, Chennai - 600 040
 Telephone : +91 44 6551 6416, 2616 2087
 E-mail : perikalitrading@yahoo.co.in
 www.perikalitrading.com www.greenplants.in

Date: 26.03.16

INVOICE # 260316/01

Client: Ms. Hanna Tryggvastaad
 Address: Oslo, Norway
 Site: KKSS, Mogappair West, Chennai

Detailed Billing:

S.No	Description	Qty	Rate	Amount
Planting Stock				
SEC 1				
Shade Garden + semi shade garden				
1	Caladium bi color red	12	45	540
2	Asparagus densiflorus	10	55	550
3	Fox tail PALM Tree 10' ht	2	1250	2500
4	Canna indica regular	3	20	60
5	Canna indica dark brown leaf	3	50	150
6	Cordylone Purple	4	150	600
7	Heliconia rostrata	5	75	375
8	Alocasia	2	200	400
9	Colocasia	2	200	400
10	Plumeria dwarf	2	600	1200
11	Petra croton	4	150	600
12	Alpinia variegated	6	100	600
13	Nephrolepis fern	10	75	750
14	Raphis exelsa palm	2	450	900
15	Schefflera variegated	20	100	2000
16	Dracaena reflexa new var	4	70	280
17	Philodendron ceylon gold	4	25	100
18	Chlorophytum comosum	10	50	500
19	Philodendron congo mature	1	950	950
20	Dracaena messengeana mature	2	1200	2400
21	Spathiphyllum Peace Lily	20	75	1500
22	Philodendron imperial red mature	2	1200	2400
23	Schefflera green	10	95	950
24	Plumeria pudica	2	450	900

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SEC	Description	Qty	Rate	Amount
SEC 3				
FRONT AREA/ Flag Pole				
1	Dypsis lutescens (Areca Palm) Potted Plants as backdrop to Flag pole area in a diagonal axis	9	300	2700
2	Lagerstroemia speciosa TREE in planter	1	450	450
3	Silver Oak Trees (Tall and conical habit/ fast growing) compound wall	6	350	2100
4	Nerium Oleander (5 pink, 5 red)	10	15	150
SEC 4				
Kitchen Garden				
1	Vegetable seeds in 25 gms packets	10	25	250
2	Greens seeds in 25 gms packets	10	25	250
3	Custard Apple tree Grafted	1	350	350
SEC 5				
Roof Garden (Pergola + Built in Planters and potted plants)				
1	Dypsis lutescens PALMS 6' ht	13	300	3900
2	Plumeria alba TREE potted 6' ht	3	1000	3000
3	Russelia juncea	20	30	600
4	Pomegranate Bhagwa variety TREE 6' ht	2	250	500
5	Sweet Lime TREE grafted 7' ht	1	450	450
6	Pennisetum grass	70	45	3150
7	Spider lily	10	35	350
9	Adenium obesum potted plant	4	350	1400
10	Passiflora Creeper Mature 12" root ball (potted plant/pergola)	4	550	2200
11	Jasmine + Thunbergia grandiflora creeper (Middle separation fence)	12	50	600
12	Sapota TREE grafted 7' ht	1	450	450
13	Jasmine madural	10	25	250
14	Wedelia	70	20	1400
SEC 6				
Tree planting (adjacent to compound wall on western wall)				
1	Jackfruit grafted TREE 4' ht	1	300	300
2	Star Fruit grafted TREE 5' ht	2	300	600
3	Soursop TREE 4' ht	1	300	300
4	Shade grass in bags	2	250	500
Other Materials and Expenses				
1	Top soil in units (1 unit = 100 cuft)	4	6000	24000
2	River sand in units (1 unit = 100 cuft) (2 units for masonry work) (3 units for filling of play area)	5	6000	30000

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SEC	Description	Qty	Rate	Amount
3	Farm Yard Manure (1 unit = 100 cuft)	1	3000	3000
4	Cement in bags	13	380	4940
5	Bricks for retaining wall in roof garden, retaining wall in play area and Sand Box.	1500	7	10500
6	Pergola: METAL :: 10' * 8' * 7' ht inclusive of 2 coats of Special Enamel painting	1	50000	50000
7	Drainage Cells 30 mm thickness in sqft for Built in planter boxes	300	35	10500
8	Geotextile 250 GSM in sqft for built in planter boxes	600	10	6000
9	PVC Root guard for roof section planter boxes	300	14	4200
10	Water proofing for planter box in Terrace section	1	3000	3000
11	Chain Link fence 500 sft + binding wire and stay wire	500	15	7500
12	Chain link poles galvanised iron (for support) 2"	15	300	4500
13	Large cement planters 2'6" dia and 1' 10" ht	6	750	4500
14	Medium cement planters 1'6" dia and 1' 6" ht	25	350	8750
15	Grow bags (2'6" wide and 1' ht) Kitchen garden	10	180	1800
16	Bamboo Poles 5' ht and 3" width (inclusive of termkill and exterior weather guard coating)	120	80	9600
17	Paint (Dark brown) for all cement planters in litres	3	250	750
18	Stone Bench 2 seater (stone with dressing)	2	5500	11000
19	Cuddapah stone slabs 50 cm * 60 cm 1" thickness (for sand box play area)	3	200	600
20	Metal frame for Door + hinges / Chain link fence section	1	1200	1200
21	Labour - Inclusive of the following: 1. Site Preparation and clearing of waste materials from site 2. Breaking and removing of old brick wall and pavers around the play area 3. Filling of soil and sand in ground floor and roof garden 4. Addition of farm yard manure in all planting beds 5. Planting of all plants/trees and shrubs 6. Building of retaining walls for play area and the roof garden and white wash 7. Pergola / Metal with concrete base for posts. 8. Laying of Drainage cells and geo textile and root barrier in Roof garden 9. Painting of all planters and pots 10. Setting up of grow bags for kitchen garden 11. Laying of shade lawn under the fruit tree section 12. Finishing 13. Transportation Costs all inclusive			9500
22	Clearing of old debris/waste materials from site (in small truck loads)	5	1000	5000
23	White wash materials + binding agent in kgs	40	10	400
24	Garden Water Hose 100 feet (PVC braided)	1	500	500
25	Garbage bin	1	520	520
26	NET			300065

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ILLUSTRATION PLAN AS BUILT 1:200







AFTER



AFTER



BEFORE



AFTER





AFTER



AFTER



BEFORE



AFTER



BEFORE



AFTER



BEFORE



AFTER



BEFORE



AFTER



BEFORE



AFTER



BEFORE



AFTER



BEFORE



AFTER



BEFORE



AFTER

SUM UP

The building process went better than I could have ever hoped for. Time went by so quickly, and without any big challenges, the project was realized right on time. The children and staff at the children's home were helpful throughout the whole process, and could enjoy their new outdoor environment at the end of the month.





 05 MAINTAIN

INTRODUCTION

In this chapter, I will shortly present a plan for maintenance of the children's home new outdoor environment. The children and the staff will be responsible for taking care of most of the maintenance, with the support from Perikali landscapers.

MAINTENANCE

From the start of the project, the general manager pointed out the importance of low maintenance plants. Despite the fact that the selected species are both hardy and drought-tolerant, it is inevitable that some maintenance is required. The general manager and the staff understood this, and it was also important for us to teach the children how to take part in the maintenance. With help from Perikali courses were held on how plants should be treated and taken care of. As mentioned earlier, Tamil Nadu has a hot and dry climate, and Hari pointed out that regular watering is elementary for the plants to survive.

In addition, we made a plan for two of Perikali's workers to come by every second week to make sure everything is ok, and prune and fertilize the plants if needed. I will support the children's home with the monthly expense of the maintenance, to ensure that the outdoor environment is well taken care of after I returned to Norway. No matter how much I trust the staff and children to take care of their garden, I think it is important to keep some professional follow up and supervision to ensure a successful outcome. In everyday life the staff and children have the full responsibility of taking care of the plants.

WEEK SCHEDULE

To make sure that the watering would be properly done I had to make sure that the children understood the importance of watering. Through participation in the planting of the plants, they got to experience how much work it is to establish a planter bed. They had also learned about keeping plants at school, so they assured me that they understood the importance of watering.

Together with the general manager, we developed a new weekly schedule, where watering got implemented as a part of the daily routine. Every day before school, the children would take part in watering the plants. The kids took on the task with joy, and assured me that they would do their best to take care of the plants. By watering every morning, the soil would keep moist throughout the whole day, and the plants would soon be well established.



The children taking care of the plants.

MAINTENANCE CHECKLIST

- TERMITE COATING FOR THE BOAT EVERY HALF YEAR
- PAINT THE PLAY EQUIPMENT IF THE PAINT STARTS TO FLAKE
- RAKE THROUGH THE SAND IN THE PLAY AREA TO MAKE SURE THERE ARE NO SHARP OBJECTS
- KEEP THE OUTDOOR ENVIRONMENT CLEAN FROM WASTE
- WATER THE PLANTS EVERY DAY
- PERIKALI TAKE CARE OF PRUNING AND FERTILIZING THE PLANTS

WASTE MANAGEMENT

The children's home managers have arranged for a garbage person to come and collect the garbage every day. He did a fairly good job with managing the waste, but he always left the site quite messy. I asked him to make sure that all the garbage would be removed from now on, and that it was important that waste did not float around in the plant beds. He was not very happy with the fact that we had planted trees in the passage where he handled the garbage, but this would be of no inconvenience for him at all, except the fact that he had to clean up after himself when removing the garbage.

To make the passage look nicer he agreed to put the garbage containers around the corner, so that this was not the first thing you could see when you entered the front yard. The problem was that plastic waste came flying in from the streets and scattered around in the front yard. Mogappair neighborhood is floating with garbage, and it is not easy to keep a place clean when everywhere around you is messy. Both the children and the staff was very good at keeping the outdoor environment clean from garbage, but nobody had heard of garbage sorting. Everything goes in the same bin, except plastic bottles. It would be of little purpose for me to educate them about waste management and sorting, as it all ended up in a garbage heap anyway. I told them about the concept, and they thought it sounded really funny. But they understood the importance of keeping the outdoor environment clean, and made sure that they would keep up this job.



WORK IN PROGRESS

After my return to Norway, I received several photos of the children taking care of the plants. The general manager of the children's home tells me that they have become very attached to the plants, and that they really enjoy their new morning routine. Some days they see new buds, and then arrange guessing competitions for when it will bloom.

Hari could tell me that the plants have started to establish really well, and many of the plants have grown quite a bit since I left. All the pictures on the side are taken after I left, and one can see that many of the plants have developed. With the engagement of the children, I am positive that the plants will thrive, and the outdoor environment will continue to develop into a flourishing garden.



DEVELOPMENT OF THE GARDEN

In just a two weeks time, the garden developed really fast. Thanks to the warm climate, and the children's dedication to watering the plants, the garden has already started to get the flourishing expression that originally was envisaged. I received the pictures of the development from the landscaper only two and a half week after my return to Norway, and I was astonished by the quick development. The Passiflora had started to cover the pergola, fruits were growing on the trees and the ornamental grass was lush.



SUM UP

The children and the staff at the children's home will take on the full responsibility to maintain their new outdoor environment, and until now, they are doing a great job. I will follow up the project, and the landscaper will check in from time to time to make sure everything is going well.

REFLECTION

In this final chapter, I will reflect upon the process of the Kalaiselvi Project and discuss how things possibly could have been done differently. I will reflect on how the literature helped me in the planning process, and look at the challenges from the process.



REFLECTION

In the beginning of the thesis I asked the questions;

What are the challenges and opportunities for a Norwegian landscape architect when planning the outdoor environment for a children 's home in India?

How can participation be used to achieve a result that satisfies the wishes and needs of the residents of the children 's home?

To start with the first question, many thoughts came through my mind during the project process. One of the first things I noticed in the building process was the different comprehension of time. I was worried that I had planned for way to little time for the actual building phase, but the landscaper and his workers assured me that 25 days would be more than enough, even with all the delays of materials and so on. This proved to be right, and I learned to stress down and enjoy the process.

I started with the project quite early in my studies, and I feel that much of the work from the beginning could have been done much better if I had had more knowledge. I would have started on the participation process much earlier, and engaged the children even more in the process. I could also have done a more in-depth material study, to prevent changes because of costs or maintenance. Luckily, this did not cause any trouble in the building phase, as the landscaper was solution oriented and always came up with suggestions for improvement. This has been of much help to me, and I have learned a lot working with a professional landscaping firm.

I also learned that plans are not carved in stone, and they often change during building. It was important to have a finalized illustration plan, planting plan and technical plan before I left to India, but as it turned out, the plans changed during the building phase because of new information that was revealed through the process. Still, I feel that it was important to have the plans as a base, and allow for change where it was necessary. This was the same case with the weekly schedule. The first two days, everything went as planned, but when materials were delayed and things did not happen the way I had planned, it was still nice to have the schedule for goal setting.

It has been extremely educational to work with landscape planning in another country. In the beginning of the building phase I was quite strict on the matter of security in the outdoor environment, and I was surprised to learn that this was not an issue at all in landscape planning for children spaces in Chennai. I had to become more flexible with problem solving to meet the management of the children 's home 's requests. The conditions in Chennai are very different from what I am used to, and this challenged me to acquire knowledge and understanding of a different culture and different design preferences and plant selection. It has been both exciting and a bit overwhelming, but with the help of the local landscaper and the people at the children 's home it all turned out all right.



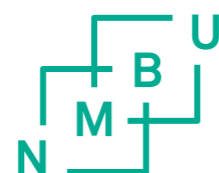
As for the second question, I feel that I have managed to engage the children and staff at the children 's home, in the process as best as I could. It was a bit challenging to include them in the planning and design process, due to the long distance and the limited conversation opportunities. Still, I feel that they were a part of the whole process, as the material from the listen step of the project has been included in the planning, and all their input has been considered.

In the beginning of the process I envisaged that this project could be used as a small example of a participatory way of planning, but whether this project promotes landscape democracy or not can be discussed. Children do not have a voting right in governmental affairs, but they can still provide useful knowledge in landscape planning. Children are a valuable resource in the planning process, and can provide a lot off useful input. They change their minds very fast, but their opinions are still to be considered as important.

The literature study helped me to understand the importance of participation in the planning of landscapes, and it was very useful for me in the process, even though the project might not relate to all of the literature. When working with a small client, like the children 's home, it is common for the planner to include the client in the planning to ensure that their wishes are fulfilled. To promote landscape democracy, one has to include a community and give everyone a voice. The Kalaiselvi Project does not adress a community as such, but is still a humble, but adequate example on how minor projects can include the residents in the planning and execution process, and let them feel ownership to their environment through participation.

Being a part of this project has taught me a lot, and I have gained experiences that always will be with be. In the future, I want to work with participation and community planning, and this project has given me a good start. I will keep in touch with the children 's home and visit them again as soon as I get the chance, and hopefully I get to work with a similar project in the future.





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