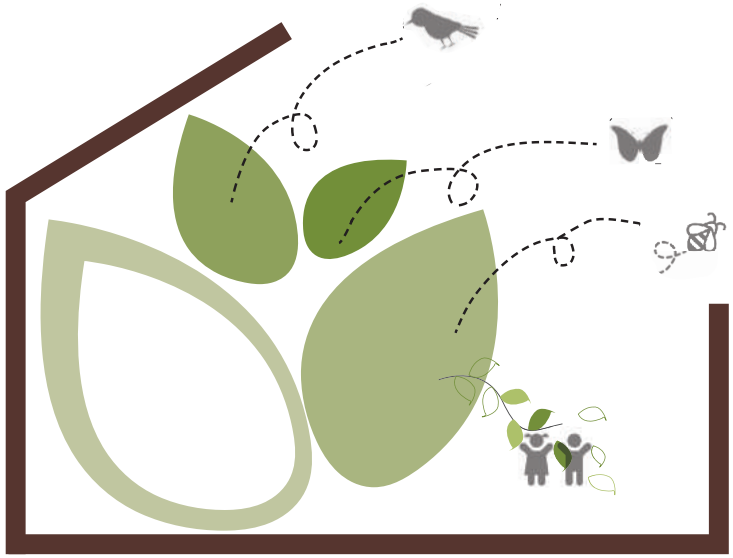

RESUSCITATE PETITE MINDS

Architecture integrating with Nature to promote mental health among Children

An attempt to integrate architecture and nature to create an environment for all ecosystem services of Nature like flora and fauna giving children a biophilic experience as part of the healing process in Children psychiatry.

Master Thesis

Chalmers School of Architecture
Department of Architecture and Civil Engineering

Praveena VP Ashok Jayasingh

Examiner : Peter Fröst
Tutor : Christine Hammarling
Elke Miedema

RESUSCITATE PETITE MINDS
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CHALMERS

Master Thesis

Chalmers School of Architecture
Department of Architecture and Civil Engineering
Architecture and Planning beyond Sustainability, MPDSD

Spring 2018

ABSTRACT

Increased mental health problems among urban children (Joanne Newbury Louise Arseneault Avshalom Caspi Terrie E. Moffitt Candice L. Odgers Helen L. Fisher 2016) and De- natured Childhood of urban children are societal problems (David Todt (2017) Louv, Richard. (2005)). However their cause may be linked to a study which shows that children living in urban environment have relatively less exposure and care towards nature (Sandford Gaster (1991 January). Therefore it is important to encourage children living in urban settings to grow with nature as it has more restorative benefits for children (Rita Berto (October 2014)).

In Sweden around 5% of the Children are treated for some kind of psychiatric issue every year and less attention has been given to the effective treatment of mild to moderate mental illness (oecd report sweden 2012-2016 mental health systems). Hence it is evident that there is a rising need to address the mental health issues among children with mild to moderate mental illness.

The purpose of this thesis is to propose a biophilic approach to create different nature experience which helps in promoting mental health among urban children.

This thesis comprises references with several literature, making live studies, case study visit to Uppsala and site visits. The author's experience as a mother has also given insights to this project. The areas of investigation are biophilic building designs, different attributes of biophilic architecture, integration of building design and garden spaces, ecosystem services, problems of urban children etc.,

The chosen site to demonstrate this approach is Children psychiatric facility in Östra Sjukhuset in eastern Gothenburg and is located towards the south-eastern part of the Östra Sjukhuset campus close to the adult psychiatric building. It is observed that the existing facility is old and too small to accommodate the rising demands.

The result of this thesis will be commissioned as a conceptual building design showing different nature experiences with butterflies, birds, fishes and bees as new stakeholders.

Hence the proposed biophilic approach serves as an eco-centered design where the environment is designed for all the ecosystem services of nature like fauna and flora (birds, butterflies, bees, insects, fish, trees) where human being is a part of the eco system model. This eco system model helps children to have different biohilic experiences as an active part of their treatment which compliments the medication led healing process of mental healthcare industry.

Keywords

Architecture, Mental Health, Fauna - centered, Flora- centered, Children, Biophilic building design, Biophilia, Nature, Eco system services, mental healing, Nature- centered, Nature experience, De- natured childhood, eco-centered, eco - complimenting

I would like to thank **Peter Fröst,** my examiner for his support and assistance. **Christine Hammarling,** my tutor for her continuous support by means of technical assistance, tutoring and encouraging feedback. Elke Miedema, my tutor for giving her insights from her perspective.

I would like to thank Anita Mustonen who did her master thesis (june 2017) on Children and adolescent psychiatry, Gothenburg focusing on inpatent area for helping me in describing about the site and its context . And I also thank everyone whom I have met during my study visit to Uppsala, Psychiatrin Hus. especially Susanne Ruckman Forsblom, biträdande sektionschef (Nurse Head) who took me to all the spaces and patiently explained all the technicalities of the facility.

I would like to thank my family my **Husband, Ashok Jayasingh** who have been supportive thoroughout my thesis project. my **children** who have very important role in my master thesis was very co-operative and it was fun to involve them in the process of my master thesis in making models and digitally coloring my sketches.

Praveena Vasantha Priya Ashok Jayasingh
Spring 2018

STUDENT INFORMATION

I did my Bachelors in Architecture from India, at MEASI Academy of Architecture in 2006. My bachelor thesis project was on psychosocial rehabilitation centre for mentally ill. I look at my master thesis as an extension of my bachelor thesis. My cousin, Rachel who is a social worker was living in our house when she did her studies . After hearing all the experiences, mood fluctuations, depression, stress and tension which the mentally ill people go through was quite heart breaking for me. I really believe that architectural space can have a tremendous impact on the user psychologically, physically and socially . I want to use that to reduce the stress. As i also came across a proposal of a Mentally Ill Centre in a neighboring city at that time, I decided to take that as my thesis project and experimented on forms and how it impacts the people with mental illness. Because of time constraint I could do only handful.

Then I stepped into my professional life the very next day after graduation and my journey continued to grow from Architectural Assistant, Junior Architect and Senior Architect and a Senior Grade Assistant Professor in one of the Architectural College in India.

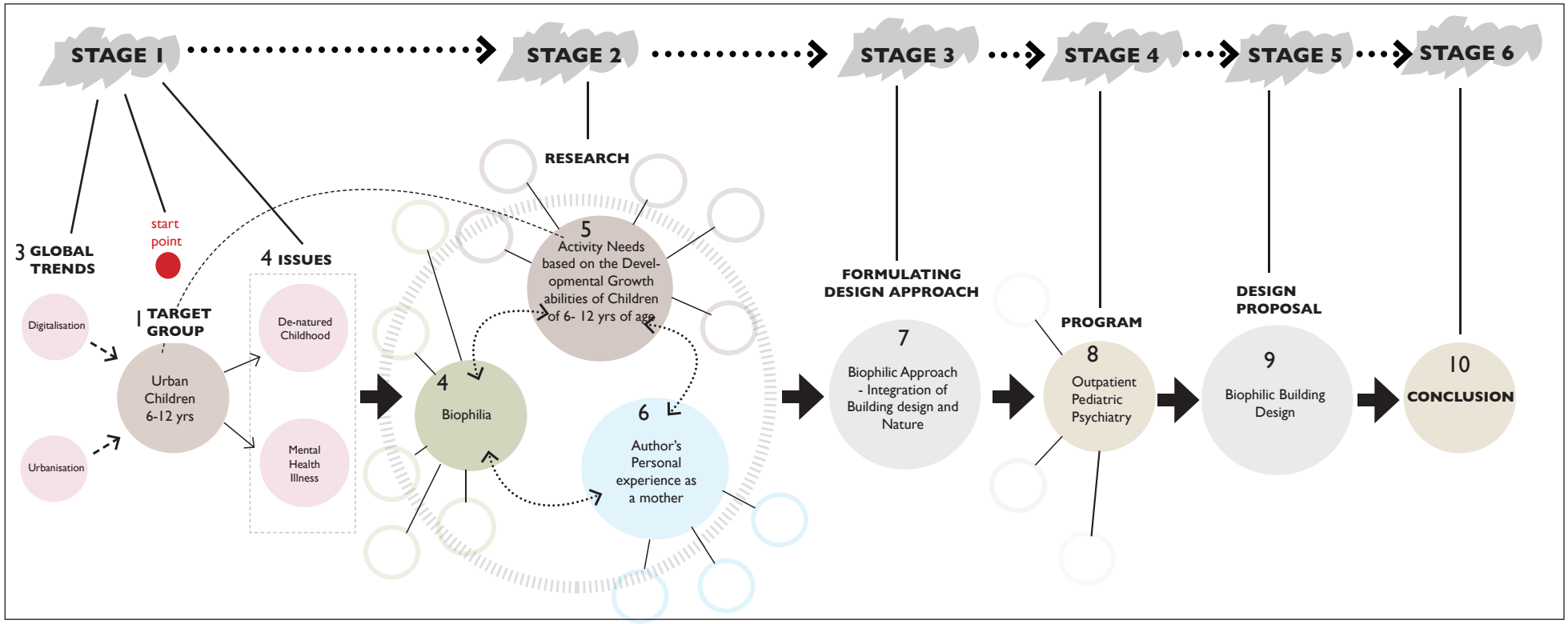
In August 2016, my student life sprouted again at Chalmers when I started my Masters Degree education .Without any second thought I decided to continue my research work in psychiatry in my master thesis. During my first and second term I was so inspired by biophilia and its health benefits. As it has health benefits I think using biophilia in healthcare industry would be very appropriate as the psychiatric illness willnot be treated only with medication process. This is about my professional experience and how it lead me to do this Master thesis project.

About my personal life, Iam a mother of two children who are 6 yrs and 5 yrs old. The kind of experience I have with them every day has also given me lot of insights and lead me to explore architectural aspects with them. That made me to fix my target group for this thesis project as Children between 6yrs to 12 yrs.

TABLE OF CONTENTS

1. DISCOURSE DIAGRAM

1.1 DISCOURSE DIAGRAM



DISCOURSE DIAGRAM

1. THIS THESIS STARTED WITH FIXING OF KEY TARGET GROUP AS URBAN CHILDREN BETWEEN 6 TO 12 YRS OF AGE.

2. STARTED WITH THE BROADER SPECTRUM OF ANALYSING THE GLOBAL TRENDS AND HOW IT AFFECTED THE TARGET GROUP.

3. IDENTIFIED KEY GLOBAL TRENDS WHICH ACTED AS EXTERNAL FORCES AND A REASON TO CAUSE ISSUES AMONG THE TARGET GROUP.

4. AFTER LISTING OUT ISSUES THE AUTHOR TRIED TO FIND A COMMON GROUND AS BIOPHILIA TO DEAL THE ISSUES.

5. DETAILED RESEARCH ON THE ACTIVITY NEEDS BASED ON THE DEVELOPMENTAL GROWTH ABILITIES OF THE TARGET GROUP (CHILDREN OF 6-12 YRS).

6. AS A MOTHER OF TWO CHILDREN OF 6YRS AGE THE AUTHOR CARRIES HER OWN EXPERIENCE TO PUT DOWN CLEAR OBSERVATIONS WHICH COMPLIMENTED THE RESEARCH FINDINGS

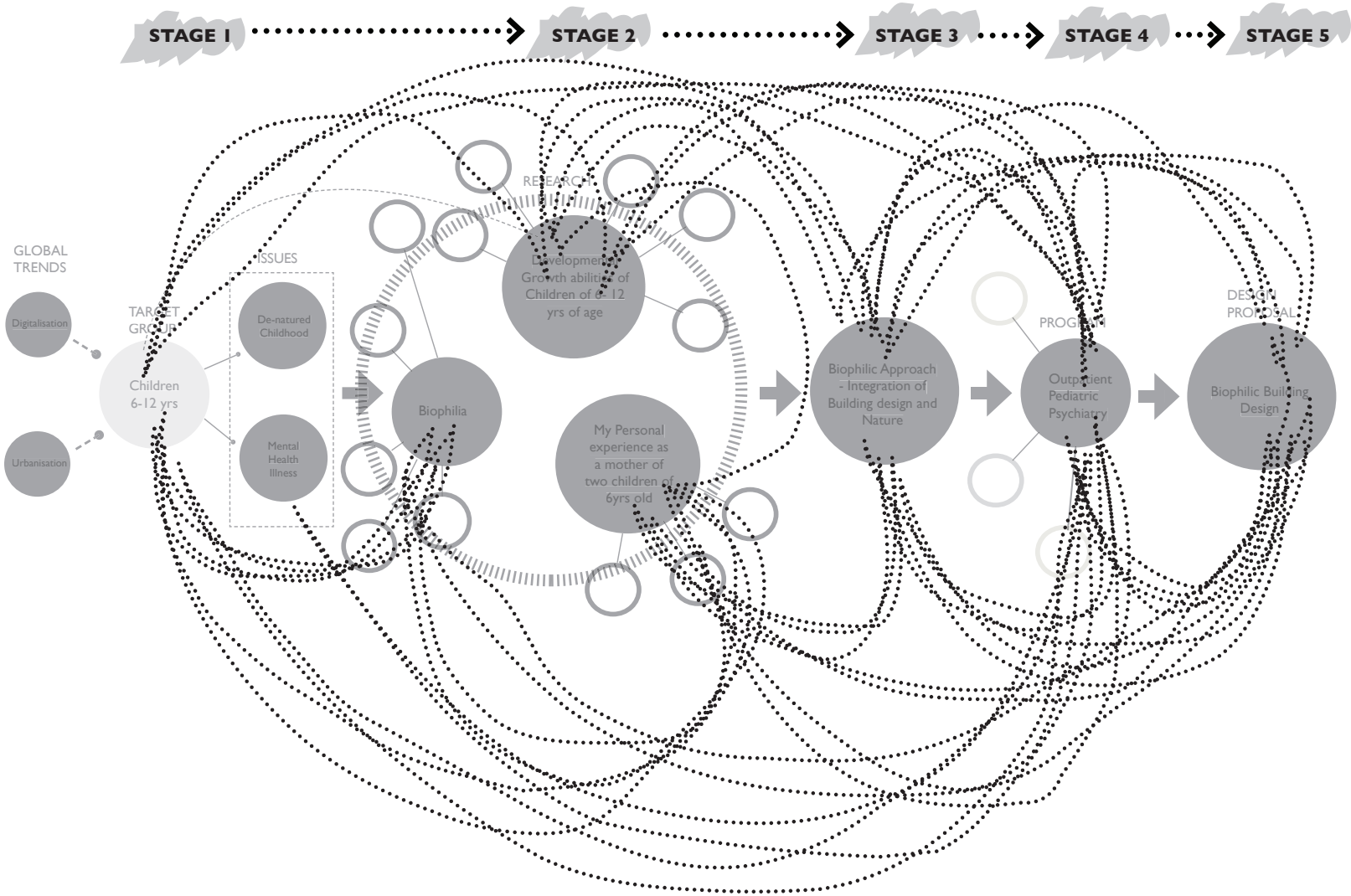
7. THESE FINDINGS FROM RESEARCH WAS THEN TRANSLATED TO DESIGN LANGUAGE.

8. IDENTIFIED SUITABLE PROGRAM AND SITE TO TEST THE FINDINGS AND CAME UP WITH THE DESIGN PROPOSAL.

9. DESIGN AND RESEARCH HAD TO WORK HAND IN HAND THROUGHOUT THE PROCESS.

1. DISCOURSE DIAGRAM

1.2 PROCESS OF DISCOURSE

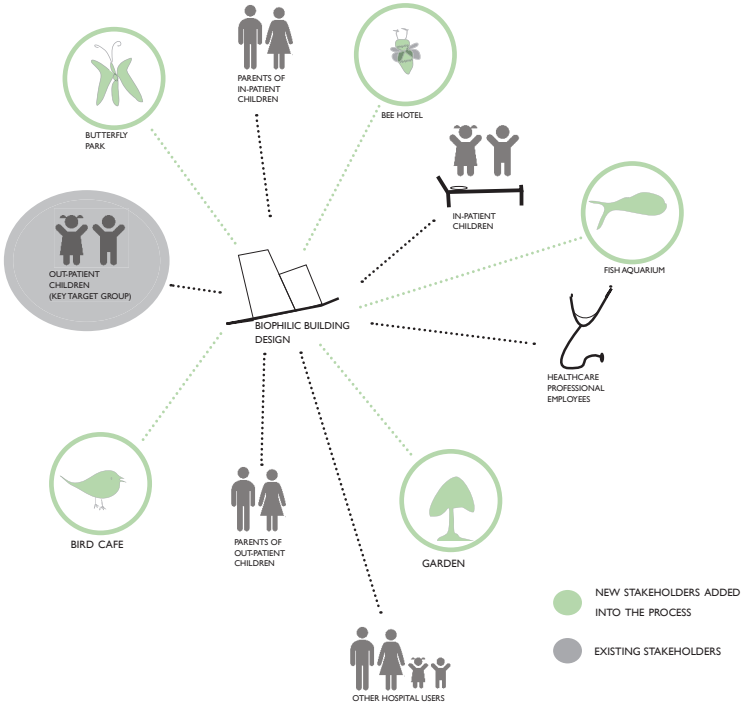


THIS IS HOW THE WORKING PATTERN LOOKED LIKE. THROUGHOUT THE PROCESS OF THE THESIS THERE WERE RESEARCH DONE ON VARIOUS FIELDS AND HAD INPUTS TO ALL THE PHASES. IT LOOKED LIKE EACH FIELD AS A CART AND AS THE PROCESS CONTINUED, EACH CART WAS FILLED WITH INPUTS.

2. INTRODUCTION
PURPOSE & DELIMITATION

PURPOSE STATEMENT

THE PURPOSE OF THIS THESIS IS TO STUDY HOW TO INTEGRATE NATURE INTO ARCHITECTURE WHICH HELPS IN PROMOTING MENTAL HEALTH AMONG URBAN CHILDREN. THE NATURE ELEMENTS ARE ADDED AS NEW STAKEHOLDERS TO REDUCE STRESS AMONG THE EXISTING STAKEHOLDERS AS A SYNERGY EFFECT.



STAKEHOLDER MAP SHOWING ALL THE ECOSYSTEM SERVICES AS NEW STAKEHOLDERS OF THE PROCESS - ILLUSTRATED BY AUTHOR

DELIMITATIONS

THIS THESIS FOCUSES ON OUTPATIENT AREAS SINCE THERE IS A GROWING NEED IN OUTPATIENT AREA AND LESS ATTENTION IS BEING GIVEN TO THE MODERATE MENTAL ILLNESSES AS MENTIONED IN THE ABSTRACT. HENCE INPATIENT AREA WILL BE SHOWN AS ONE ZONE OF THE CHILD PSYCHIATRIC FACILITY AND WILL NOT BE DETAILED.

AS THE FOCUS OF THIS THESIS IS THE RELATIONSHIP BETWEEN NATURE AND ARCHITECTURE, THE RESULT OF THIS THESIS WILL BE A CONCEPTUAL BUILDING DESIGN FOCUSING ONLY ON THE BIOPHILIC PERSPECTIVES.

3. RESEARCH QUESTION

Main question

How does biophilic building design help in promoting mental health among children in psychiatric building?

Sub question

How can architecture compliment the medication - led healing process in pediatric psychiatry?
what are the different ways of integration of building design and garden design?
how could children benefit from biophilic building design?

4. BACKGROUND

4.1 PROBLEMS OF URBAN POPULATION

SEDENTARY POPULATION

PSYCHOLOGICAL STRESS

CONTEMPORARY WORK PRACTICE

LACK OF PHYSICAL ACTIVITY

Today's urban population faces increased incidence of various forms of poor well-being as a result of unsustainable life style .

factors contributing to these are

1. increasingly sedentary population (Gray, C., Gibbons, R., Larouche, R., Sandseter, E. B. H., Bienenstock, A., Brussoni, M., ... Tremblay, M. S. (2015)
2. increasing levels of psychological stress related to urban living (Mazda Adil (2001, November))
3. contemporary work practices
4. lack of physcal activity (Pirgon, Ö., & Aslan, N. (2015))

These have led to increased occurence of poor physical illness and mental illness where the medication is perhaps only reducing the symptoms and not the real causes of illness and reduced quality of life.

HEALTHCARE TREATMENT MODE

INCREASED ILLNESS

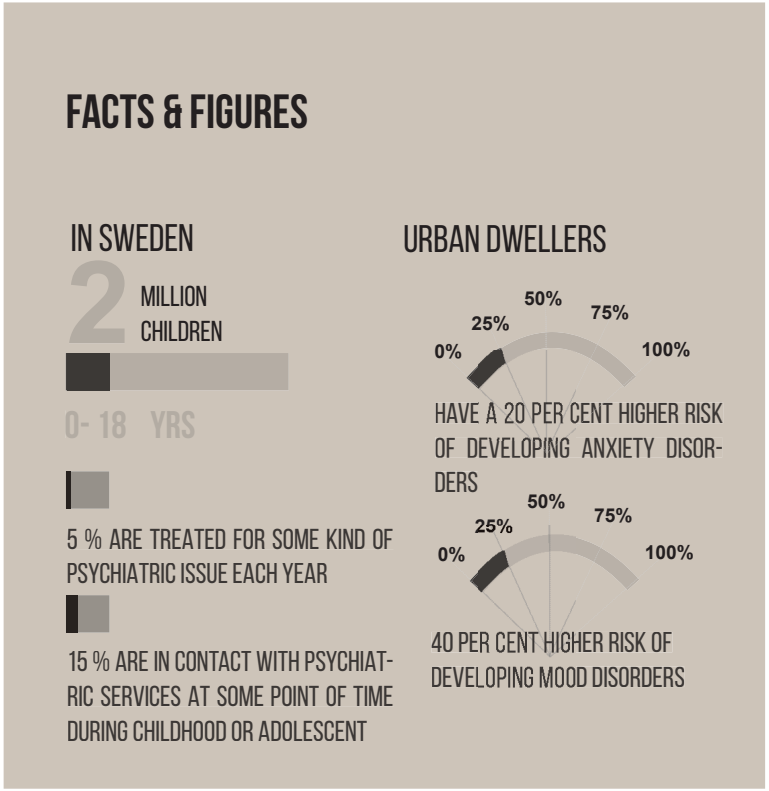
MEDICATION LED PROCESS

REDUCING SYMPTOMS

NOT REDUCING THE CAUSES OF SYMPTOMS

4. BACKGROUND

4.2 STATISTICAL DATA ON MENTAL PROBLEMS AMONG URBAN POPULATION



As stated by WHO 20% of the Urban dwellers have a high risk of developing anxiety disorders & 40% have a high risk of developing mood disorders because of prolonged exposure to the harmful conditions in early stages of life (Urban Stress and Mental Health - En Gb).

According to the " Mental Health Analysis Pro les (MhAPs): Sweden - 2015 OECD Report, around 5% of the Children in Sweden are treated for some kind of psychiatric issue every year and 15% of children are in contact with psychiatric services at some point of time during childhood or adolescent (Patana, P. (2015) OECD).

It is also stated that less attention has been given to the effective treatment of mild to moderate mental illnesses. Unfortunately, mild and moderate disorders are not a priority area in Sweden's mental health strategy.

4. BACKGROUND

4.3 DE- NATURED CHILDHOOD AMONG URBAN CHILDREN

IT'S SOCIETY'S WHOLE ATTITUDE THAT NATURE ISN'T IMPORTANT ANYMORE,"

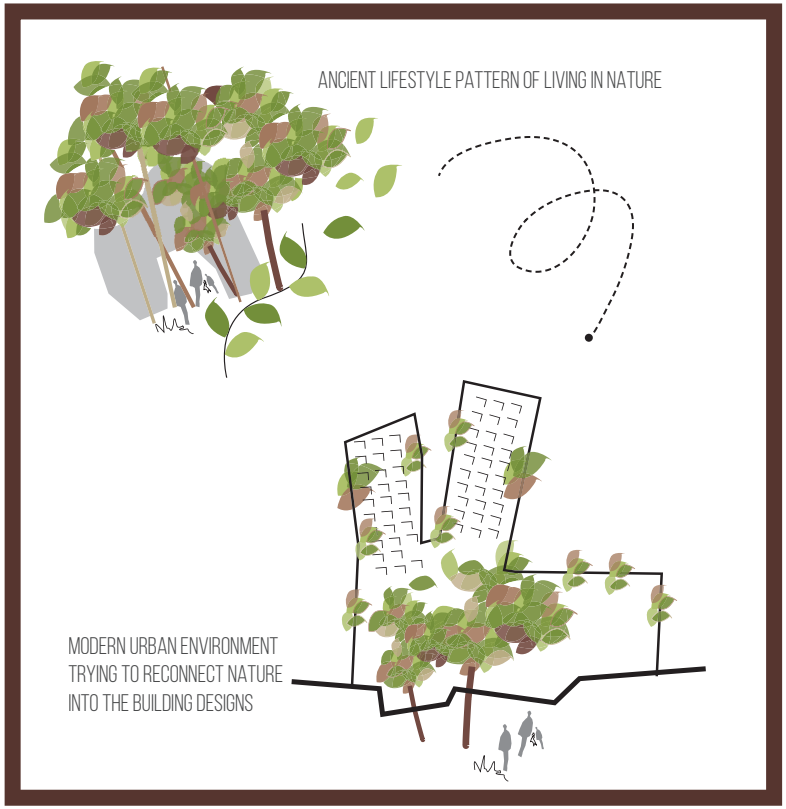
- says Mr. Louv, 56, who has two sons age 17 and 23 author of the book, "Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder" (Algonquin Books)

Children living in urban environment are growing up in a de-natured culture. author Richard Louv from NewYork in his book - last child in the woods says that " Children spend too much time staring at video screens, booked up for sports or lessons or sequestered by their parents against the remote threat of abduction. he calls this as nature- deficit disorder. He urges parents to restore childhood to the unplugged state of casual outdoor play that they may remember from their own youth but that few promote in their offspring" (Bradford Mckee (2005, April 28)).

A Kaiser Family Foundation nationwide survey of media use by 8 to 18 yr olds found that they are spending 7.5 hrs a day on average using media - TV, video games, music & internet. This study also found a correlation between heavy media use, poor grades and lower personal contentment (Henry J Kaiser Family Foundation - KFF (2010 Jan20)). The ability of children exploring nature when they walk back to homes from schools have diminished with our worries of traffic and crime and abductions (Bradford Mckee (2005, April 28)).

4. BACKGROUND

4.3 DE- NATURED CHILDHOOD AMONG URBAN CHILDREN



AS MENTIONED BY TIMOTHY BEATLEY IN HIS 'BIOPHILIC CITIES - INTEGRATING NATURE INTO URBAN DESIGN AND PLANNING'. MOST ALARMING IS THAT THE STUDY FOUND A CORRELATION BETWEEN HEAVY MEDIA USE AND POOR GRADES AND LOWER PERSONAL CONTENTMENT. THOSE WHO USE MEDIA HEAVILY OR MORE HOURS ARE MORE LIKELY TO SAY THAT GET INTO TROUBLE A LOT, ARE OFTEN SAD OR UNHAPPY AND ARE OFTEN BORED (VICTORIA MENTAL WEALTH 2015).

TODAY'S CHILDREN LOST THE FREEDOM TO EXPLORE AND INVESTIGATE NATURE BY CLIMBING TREES, BUILD FORTS AND TREE HOUSES. THE EXPLORING ABILITIES OF CHILDREN LIKE CLIMBING TREES, PLAYING IN NEARBY PARK HAVE REDUCED BECAUSE OF OUR TRAFFIC, CRIME FEARS AND ABDUCTION (SZIBBO, NICOLA. (2011). BIOPHILIC CITIES: INTEGRATING NATURE INTO URBAN DESIGN AND PLANNING BY TIMOTHY BEATLEY). THERE IS A RESEARCH SHOWING THAT 70 PERCENT OF A SAMPLE OF SIX THOUSAND CHILDREN AND YOUNG ADULTS WERE FOUND TO BE DIFFERENT, WITH DEFICIENCY ESPECIALLY PREVALENT IN CHILDREN WHO SPENT FOUR OR MORE HOURS EACH DAY INSIDE AND WATCHING TELEVISION (CHERYL CHARLES, PH.D., AND RICHARD LOUV- CHILDREN & NATURE NETWORK (2009 SEPTEMBER)). THUS NATURE IN OUR LIVES ARE NOT OPTIONAL BUT ESSENTIAL.

5. RESEARCH

5.1 DIAGRAM SHOWING DIFFERENT STAGES OF THIS THESIS

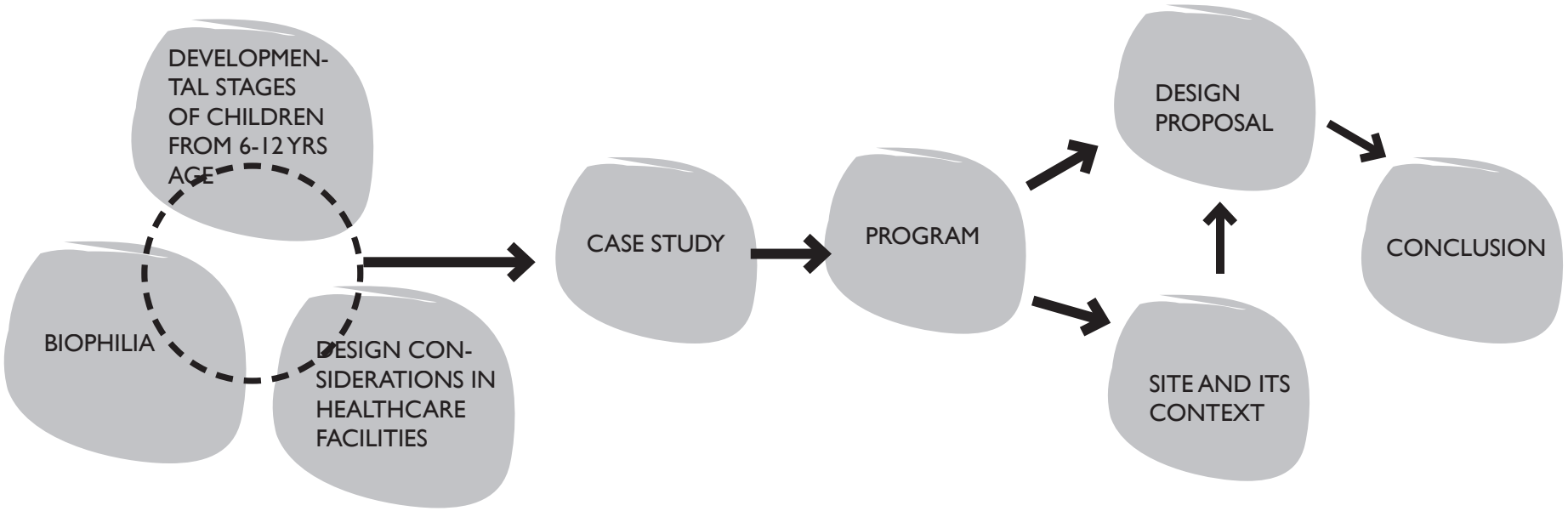
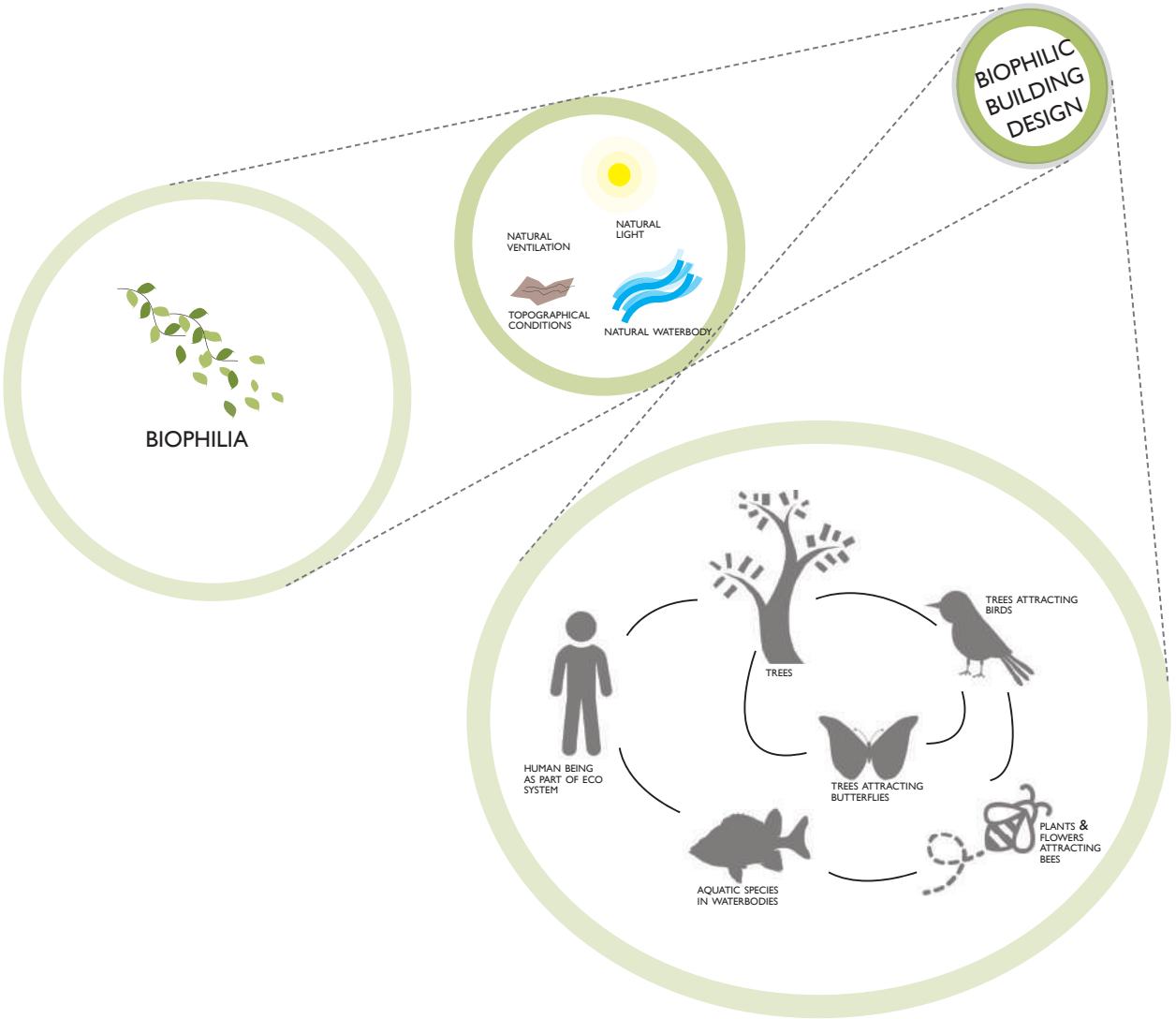


DIAGRAM DONE BY AUTHOR

5. RESEARCH
5.2 BIOPHILIA



5. RESEARCH

5. 2 BIOPHILIA

5.2.1 Biophilia / Biophilic building design

What is Biophilia

Our innate connection to nature, a phenomena rooted in neuroscience and psychology that describes an inherent human need to affiliate with life and life- like **processes (Wilson, E. O. 1984).**

What is Biophilic building design?

Iintegration of natural elements into built environment thereby creating, in the users of the environment, positive feelings and experiences such as calmness and satisfaction (Kellert S.R., Heerwagen J., Mador M. 2008).

In other words, It is a design trend which focuses on the human connection between nature & built environment.

5. RESEARCH

5. 2 BIOPHILIA

5. 2. 2. Benefits of Biophilia for Children

Promotes creativity

Unstructured playtime is a great way to develop creativity and imagination by exploring the surroundings (Kellert, 2005).

Improves physical activity

Outdoor is a good physical activity which will keep them healthy (Bell and Dyment, 2006) .

Enhances cognitive abilities

Children who go out in nature everyday are more focused and are good in cognitive abilities (environ. sci. technol., 2014, 48 (2), pp 1247–1255).

Improves academic performance

US studies indicate that children who have nature based education have significant academic gains in social studies, science, language arts and math by increasing the understanding capacity (Faber Taylor and Kuo, 2006).

Reduces ADHD symptoms

Since children who have connection with nature have a good physical activity, they are more focused. This is very good for children with ADHD - attention deficit hyperactivity disorder (Faber Taylor, Kuo and Sullivan, 2001).

Builds self confidence

Because of its unstructured and organic play pattern, there are infinite ways to interact with nature and they can choose and have power to control their actions (Faber Taylor, Kuo and Sullivan, 2001).

Teaches importance of preserving nature

Its important for children to understand nature and its surrounding that there is interconnectedness of different eco system is necessary. it mainly gives them the knowledge and how it functions. Thereby they also understand the importance of preserving nature (Mayer and Frantz, 2004).

Reduces stress

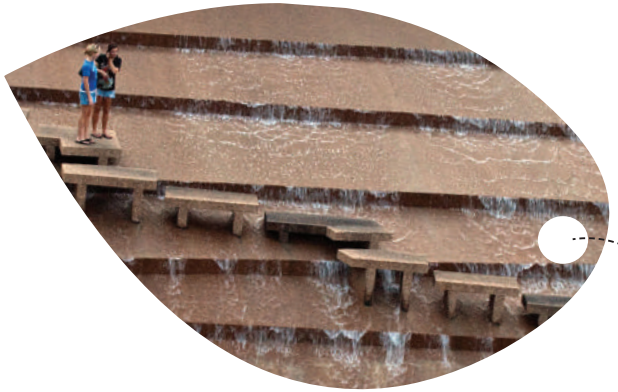
Continous exposure to nature always keeps the mind and body so refreshing thereby reducing stress (faber taylor and kuo, 2006).

5. RESEARCH

5. 2 BIOPHILIA

5. 2. 3. Patterns of Biophilic Design patterned by TERRAPIN, a sustainability firm in US

NATURE IN THE SPACE



NATURE OF THE SPACE

NATURE ANALOGUES

5. RESEARCH

5. 2 BIOPHILIA

5. 2. 3. Patterns of Biophilic Design - patterned by TERRAPIN, a sustainability firm in US

1.NATURE IN THE SPACE

- creates sensorial links between users and elements or attributes that are natural or nature like

1a. Visual connection with Nature

A view to elements of nature, living systems and natural processes.

1b. Non- visual connection with Nature

Auditory, haptic, olfactory or gustatory stimuli that engender a deliberate and positive reference to nature, living systems or natural processes.

1c. Non- rhythmic sensory stimuli

Stochastic and ephemeral connections with nature that may be analysed statistically but may not be predicted precisely.

1d. Thermal & airflow variability

Subtle changes in air temperature, relative humidity, airflow across the skin and suface temperatures that mimic natural environments.

1e. Presence of Water

A condition that enhances the experience of a place through the seeing, hearing or touching of water.

1f. Dynamic & diffuse Light

Leveraging varying intensities of light and shadow that change over time to create conditions that occur in nature.

1g. Connection with Natural systems

Awareness of natural processes, especially seasonal and temporal changes characteristic of a healthy ecosystem.

2.NATURAL ANALOGUES

- concerns itself with representations of natural forms or patterns

2a. Biomorphic forms & patterns

Symbolic references to contoured, patterned, textured or numerical arrangements that persist in nature.

2b. Material connection with Nature

Material and elements from nature that through minimal processing, reflects the local ecology or geology to create a distinct sense of place.

2c. Complexity & order

Rich sensory information that adheres to a spatial hierarchy similar to those encountered in nature.

3.NATURE OF THE SPACE

- juxtaposition of elements, alluding to similar experiences found in nature

3a. Prospect

An unimpeded view over a distance for surveillance and planning.

3b. Refuge

A place for withdrawal, from environmental conditions or the main flow of activity, in which the individual is protected from behind and overhead.

3c. Mystery

The promise of more information achieved through partially obscured views or other sensory devices that entice the individual to travel deeper into the environment.

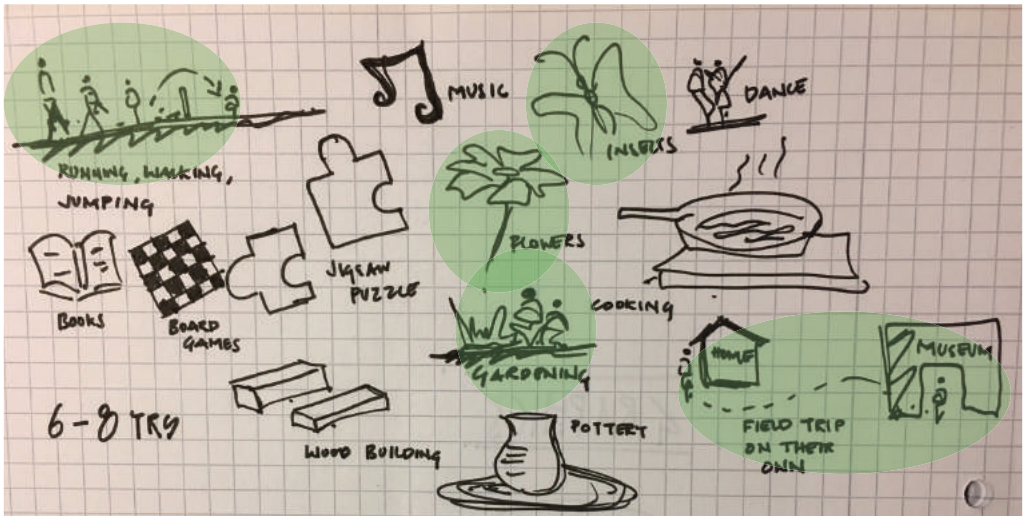
3d. Risk/ Peril

An identifiable threat coupled with a reliable safeguard.

5. RESEARCH

5. 3 CHILDREN

5.3.1 Activity needs of Children (6- 8 yrs)



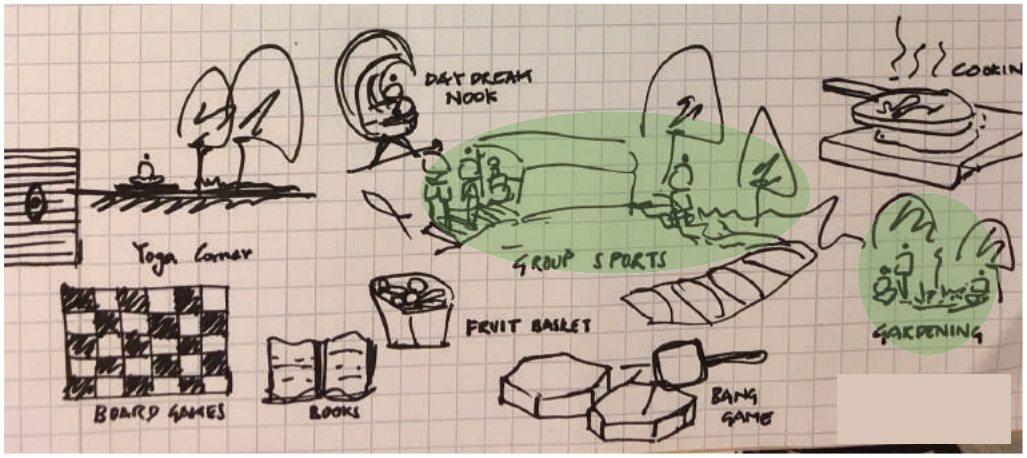
TO BE PROVIDED FOR CHILDREN OF 6- 8 YEARS

- PROVIDE OPPORTUNITIES FOR ACTIVE PLAY SUCH AS RUNNING, JUMPING ROPE, TUMBLING, AND DANCE. THROWING AT TARGETS AND BUILDING OBSTACLE COURSES MAY ALSO BE OF INTEREST.
- ENCOURAGE CREATIVE ACTIVITIES TO DEVELOP FINGER SKILLS: BASIC WEAVING, MAKING REAL POTTERY, WOOD BUILDING, JEWELRY MAKING.
- PROVIDE OPPORTUNITIES TO DEVELOP AN UNDERSTANDING OF RULES BY PLAYING SIMPLE TABLE GAMES: CARDS, DOMINOES, OR TIC-TAC-TOE.
- INVOLVE CHILDREN IN PLANNING DAILY EVENTS, ENCOURAGE THEM TO MAKE LISTS AND GIVE IDEAS.
- ENCOURAGE A SENSE OF ACCOMPLISHMENT BY PROVIDING OPPORTUNITIES TO WEAVE, BUILD MODELS, COOK, MAKE CRAFTS, PRACTICE MUSIC, OR WORK WITH WOOD.
- ENCOURAGE COLLECTIONS WITH SPECIAL STORAGE BOXES OR NON- FICTION BOOKS ABOUT ROCKS, COINS, INSECTS OR FLOWERS.
- ENCOURAGE READING AND WRITING BY ENCOURAGING CHILDREN TO WRITE SHORT STORIES, CREATE PUPPET SHOWS, JOT DOWN NOTES.
- SHOW CHILDREN HOW TO WORK TOGETHER TO SOLVE A JIGSAW PUZZLE, PLANT A GARDEN, OR MAKE A SNACK.
- HELP YOUR CHILDREN EXPLORE THEIR WORLD BY TAKING FIELD TRIPS TO MUSEUMS, WORK PLACES, AND OTHER NEIGHBORHOODS.

5. RESEARCH

5. 3 CHILDREN

5.3.2 Activity needs of Children (9- 11 yrs)



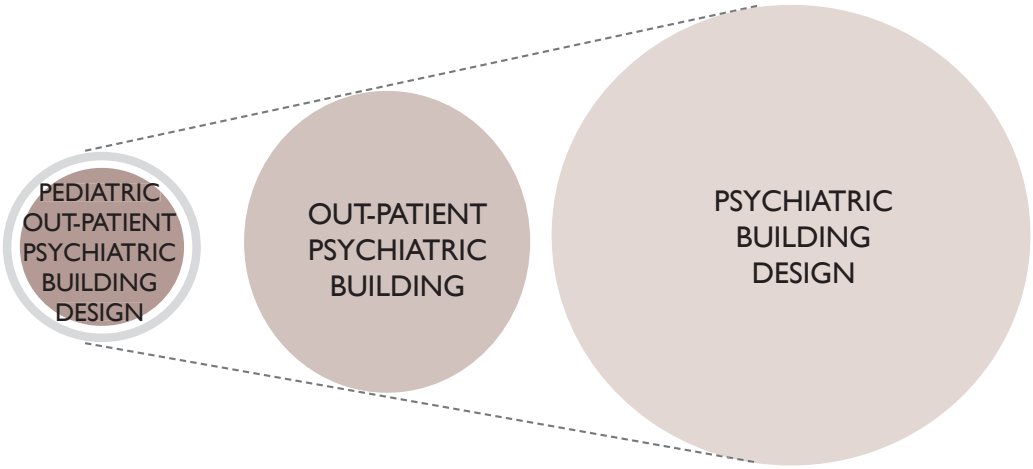
TO BE PROVIDED FOR CHILDREN OF 9- 11 YEARS

- ENCOURAGE A BALANCE OF PHYSICAL ACTIVITY THAT INCLUDES: GROUP SPORTS, INDIVIDUAL LIFE-LONG SPORTS (RUNNING, YOGA OR BIKING), AND COMMUNITY ACTIVITIES (GARDENING OR FOLK DANCE).
- PROVIDE PLENTY OF FOOD. OLDER CHILDREN HAVE LARGER APPETITES THAN YOUNGER CHILDREN AND WILL NEED TO EAT MORE.
- PROVIDE OPPORTUNITIES FOR OLDER CHILDREN TO PLAY GAMES OF STRATEGY. CHECKERS, CHESS, AND MONOPOLY ARE FAVORITES.
- PROVIDE OPPORTUNITIES FOR OLDER SCHOOL-AGERS TO HELP OUT WITH "REAL SKILLS" SUCH AS COOKING, SEWING, GARDENING, REPAIRING TOYS, OR DESIGNING DRAMATIC PLAY PROPS.
- PROVIDE A WIDE VARIETY OF READING MATERIAL: ACTION, NON- FICTION, MAGAZINES.
- PROVIDE TIME AND SPACE FOR AN OLDER CHILD TO BE ALONE. TIME TO READ, DAYDREAM.
- ASK CHILDREN TO TELL YOU ABOUT THEIR FRIENDS AND HOW THEIR DAY WENT WHILE IT IS STILL FRESH ON THEIR MIND. HELP AND CREATIVE OUTLETS FOR STRONG EMOTIONS.
- ENCOURAGE THEM TO TALK OUT LOUD ABOUT YOUR HOBBIES, DECISIONS, AND VALUES. ENCOURAGE RESPECT FOR OTHERS. DEMONSTRATE KINDNESS, FAIRNESS, HONESTY, AND COOPERATION.

5. RESEARCH

5. 4 DESIGN CONSIDERATIONS OF HEALTHCARE BUILDINGS

5.4.1. Design Considerations of Healthcare Facilities



- Provide sufficient natural lighting and artificial lighting over work stations and medicine storage areas.
- Provide good visibility of consultation rooms from work stations.
- Exposure to daylighting reduces patient's stress, sleep, pain and the treatment period, staff well being.
- Good navigation and easy to understand building signages will reduce stress among the patient's family members.
- Positive distractions in healthcare includes gardening, pets, art, music and nature. distraction could be induced if the physical environment is attractive. Well designed gardens reduces stress among the family members of the patient. windows with nature's view reduces stress and increases job satisfaction (Ulrich, 1984).
- Reduced sound improves patient's health and treatment period, staff stress.
- Adding visual aesthetic properties like art installations, to the physical environment is attractiveness to the place. this has positive impacts on patients and staff health.

Reference taken from (Roger S. Ulrich PhD Lennart Bogren MD, PhD Stefan Lundin SAR/MSA (2012 October))

5. RESEARCH

5. 4 DESIGN CONSIDERATIONS OF HEALTHCARE BUILDINGS

5.4.2 Importance of nature in healthcare facilities

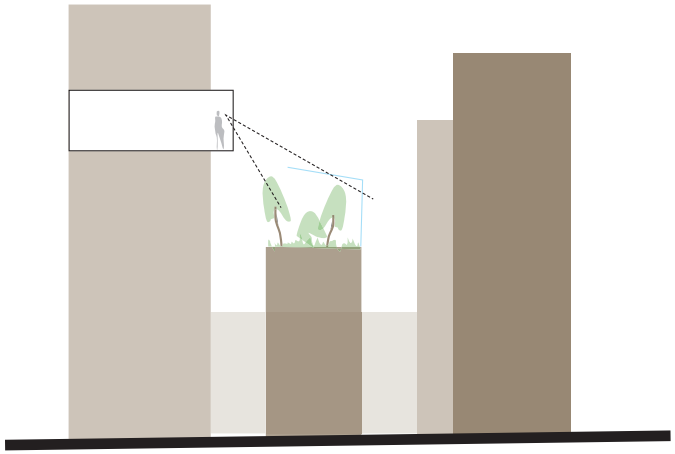


FIG 02 CONCEPTUAL SECTION SHOWING AN URBAN DWELLER GROWING UP LOOKING AT THE GREEN ROOF

"REDUCING STRESS, AND DISTRACTING PATIENTS FROM THEIR INTERNAL FOCUS OR THEIR OBSESSION ON THEIR OWN PAIN, REDUCES THE PAIN,"

SAYS ULRICH, RESEARCHER IN EVIDENCE-BASED HEALTHCARE DESIGN

NOWADAYS HEALTHCARE FACILITIES ALSO FOCUS ON HEALTH AND WELL-BEING RATHER THAN A MEDICATION LED HEALING PROCESS. RECENTLY, THE ENVIRONMENTAL STANDARDS COUNCIL (ESC) OF THE CENTER FOR HEALTH DESIGN SUBMITTED A SUCCESSFUL PROPOSAL TO THE FACILITY GUIDELINES INSTITUTE TO INCLUDE "ACCESS TO NATURE" AS ONE OF THE KEY ELEMENTS OF THE PHYSICAL ENVIRONMENT IN THE CHAPTER ON ENVIRONMENT OF CARE FOR THE 2014 GUIDELINES FOR DESIGN AND CONSTRUCTION OF HEALTH CARE FACILITIES (JENNIFER SILVIS (2013 JULY 03)).

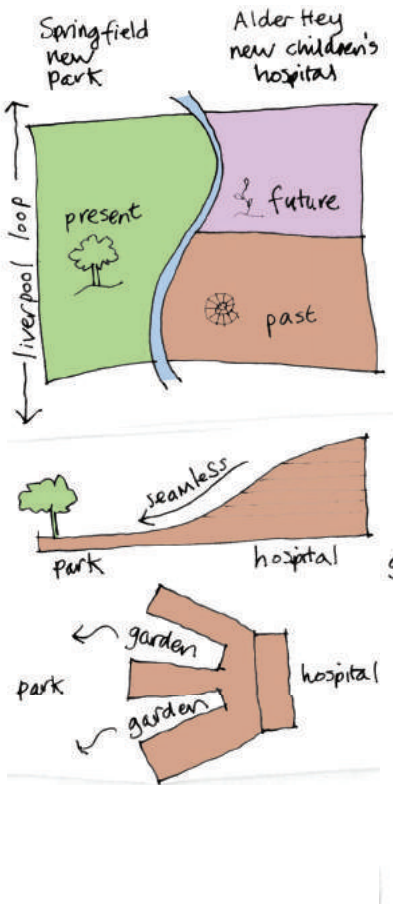
ROGER ULRICH'S STUDIES ALSO SHOWS ACTUAL MEASURE OF SHOWS REDUCED PSYCHOLOGICAL STRESS AND INCREASED POSITIVE FEELINGS AMONG THE PATIENTS LOOKING AT A CITY IMAGE THAN A NATURE IMAGE. ADDITIONAL STUDIES SHOWS THAT URBAN DWELLERS WHO GREW UP LOOKING AT GREEN ROOF AND ITS PERFORMANCE ON ALL SEASONS ARE CALM, HAVE BETTER CONCENTRATION, IMPROVED PROBLEM SOLVING, HEIGHTENED SENSE OF HOPE AND ASSOCIATED IT WITH POSITIVE CHILDHOOD EXPERIENCES IN NATURE (ZOE MAYERS (2017 AUGUST)).

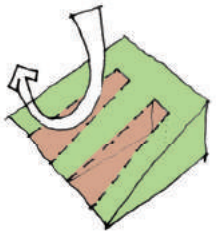
6. CASE STUDY

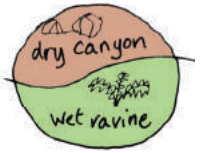
6.1. LITERATURE CASE STUDY

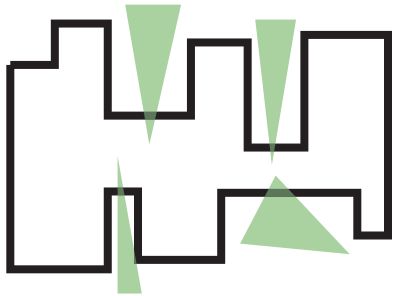
Alder Hey Children's Hospital, Liverpool, UK

-The new children's hospital with its undulating profile merges into the adjacent Springfield Park in Liverpool.
-The three fingers of the new building create a series of garden spaces for the therapeutic benefit of children, their families and staff – including
a Garden of Reflection,
play spaces within the 'Wet Ravine' and
a quieter gardens in the 'Dry Canyon'.
- creating a woodland walk along the top of the bank of the Liverpool loopline.
- forest school area to have forest school sessions with local primary school
- edible planting trail
- during construction few trees are removed which are dead where native species and additional trees replanted.
- in partnership with Lancashire Wildlife Trust (charity dedicated to protect wildlife and natural habitats)









WHAT I WILL TAKE FROM THIS CASE STUDY

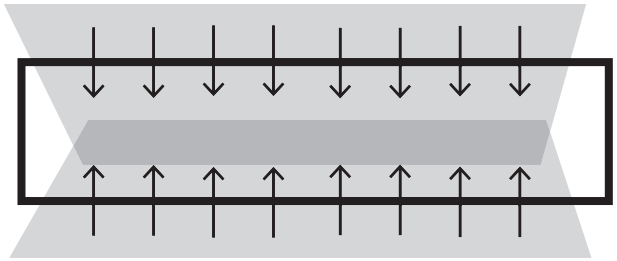
PLAY OF BUILDING LINE GOING IN AND OUT CREATES SMALL POCKETS WHICH COULD DRAW/WEAVE IN THE GARDEN SPACES INSIDE THE BUILDING VOLUME THERBY COMPLIMENTING EACH OTHER.

6. CASE STUDY

6.1. LITERATURE CASE STUDY

Rehabilitation Centre Groot Klimmendaal / Koen van Velsen

- From a small footprint, the Rehabilitation Centre Groot Klimmendaal designed by Koen van Velsen gradually fans out towards the top and cantilevers out over the surrounding terrain.
- Full height glazing along the central space connecting the various different internal elements of the building ensures an almost seamless continuity between interior and exterior.
- The meandering facade in the restaurant results in a building in between trees and invites the forest inside the building.
- The surrounding nature has a strong visual and tangible presence everywhere in the building; it allows the user to revalidate whilst walking.
- rigidity of the built structure is broken down to blend with the surrounding.



THE BLOCKS TO HAVE MINIMUM WIDTH SO THE BUILDING COULD ALLOW MAXIMUM NATURAL DAYLIGHT THERBY THE BUILT STRUCTURE DOESNOT FEEL TOO HEAVY.

WHAT I WILL TAKE FROM THIS CASE STUDY

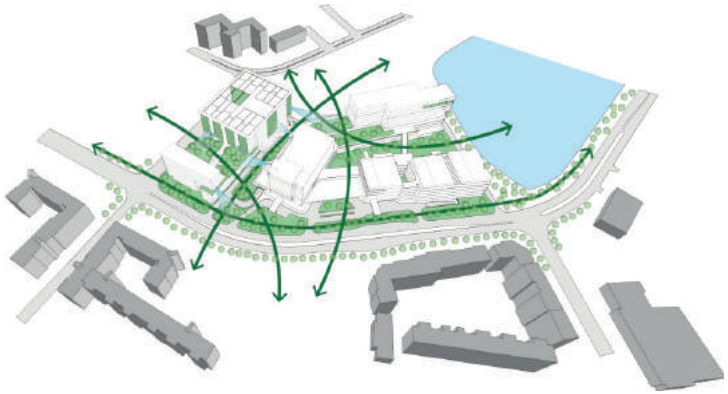
6. CASE STUDY

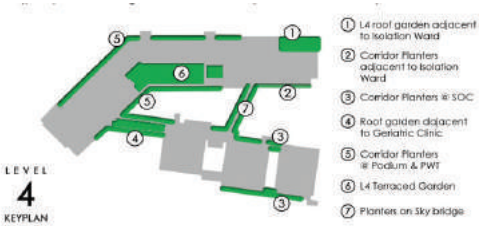
6.1. LITERATURE CASE STUDY

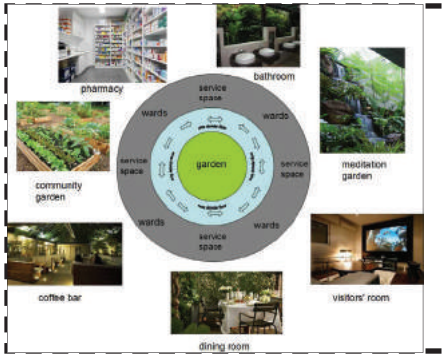
KHOO TECK PUAT HOSPITAL IN SINGAPORE

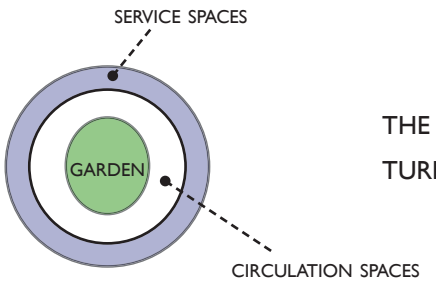
- THIS IS GARDEN IN HOSPITAL AND HOSPITAL IN A GARDEN. THE PROJECT TAKES ADVANTAGE OF THE NATURAL CONDITIONS OF THE SITE; YISHUN POND IS A CENTRAL FEATURE OF THE DESIGN; INPATIENT UNITS FACE THE POND, WITH EXERCISE PATHS AND FOOD PAVILIONS. THE POND PROVIDES A SOOTHING WATERSCAPE VIEW FOR STAFF AND PATIENTS IN THE NURSING TOWERS AT THE EASTERN EDGE OF THE 32,000 SQUARE METER SITE, WHILE

THE GARDEN LANDSCAPE GREETS VISITORS, SCHOOL CHILDREN, PATIENTS AND STAFF AT THE ENTRY TO YISHUN CENTRAL AVENUE AT THE WESTERN EXTREMITY. A SERIES OF PLANTED TERRACES BETWEEN UPPER FLOOR PATIENT TOWERS CULMINATE THE "GARDEN HOSPITAL" EXPERIENCE.









THE CONCEPT MODEL OF THE BUILDING IS TO PLACE GARDEN AS A CENTRAL FEATURE AND ADDING ALL THE FUNCTIONS FACING THE GARDEN.

WHAT I WILL TAKE FROM THIS CASE STUDY

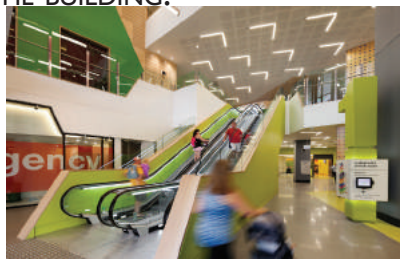
6. CASE STUDY

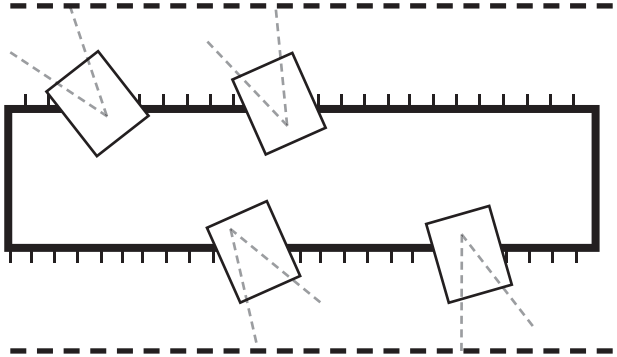
6.1. LITERATURE CASE STUDY

New Lady Cilento Children's Hospital by Lyons + Conrad Gargett

THIS PROJECT HAS THE ENVIRONMENTAL APPROACH TAKEN IN THE DESIGN EXPRESSED ON TWO LAYERS

- EXTERNAL LAYER BY EXTENSIVE SUNSHADING AND
- INTERNAL BY THE TREE AND BRANCH STRUCTURE WHICH ALLOWS THE BUILDING TO BREATHE.
- A PART OF THE GREEN SPACE OPENED FOR PUBLIC.
- IT'S BRIGHTLY COLOURED EXTERIOR, INCORPORATING THE GREEN AND PURPLE COLORATION OF THE NATIVE BOUGAINVILLEA PLANTINGS IN THE ADJACENT PARKLANDS, SPEAKS OF A BUILDING DESIGNED FOR CHILDREN.
- THE USE OF FRAMED PODIUMS LOOKS LIKE A GIANT TV SCREENS FORECASTING INSIDE BEAUTY OF THE BUILDING.





THE EXTERNAL SKIN OF THE BUILDING CAN BE INTEGRATED WITH AN ENERGY EFFICIENT STRATEGY.

THE BUILDING CAN HAVE VIEW BOX TO EXHIBIT OR SHOWCASE THE INTERNAL FUNCTION WHICH COULD ALSO ADD BEAUTY TO THE BUILT STRUCTURE.

WHAT I WILL TAKE FROM THIS CASE STUDY

6. CASE STUDY

6.2. CASE STUDY VISIT

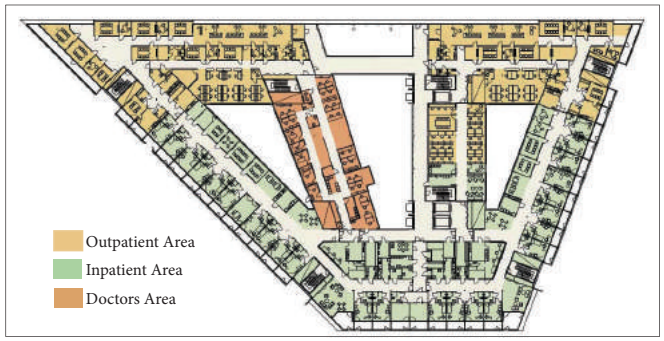
Psychiatrin hus, Uppsala

Each floor has the outpatient areas, the inpatient areas, staff administration staff and rest areas.

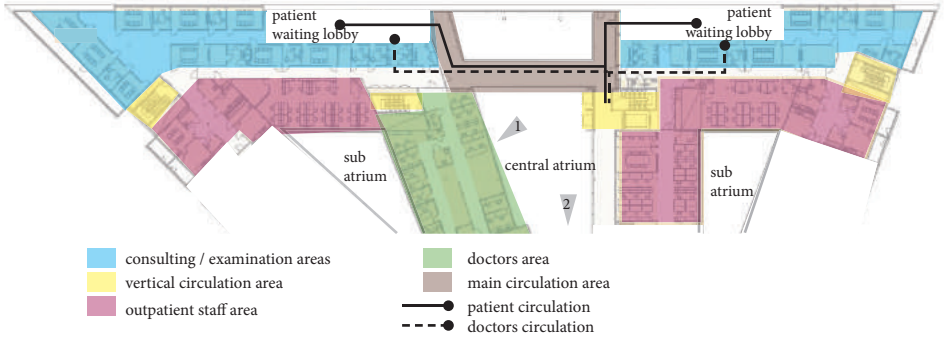
The staff area is placed around the central courtyard while the outpatient consultation rooms and the inpatient ward areas are placed along the fascade to capture an enjoyable and appreciating city views.

In the outpatient area, the patient circulation and the doctors circulation are separate and very clear as shown in the Outpatient layout plan.

The Counseling rooms have two doorways to support the doctor to exit the room as soon as possible if in case of any problem or emergency.



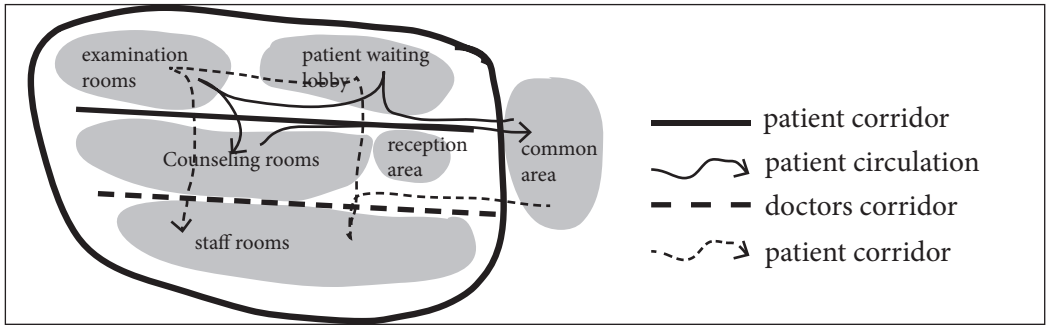
Plan layout showing the Outpatient and Inpatient areas

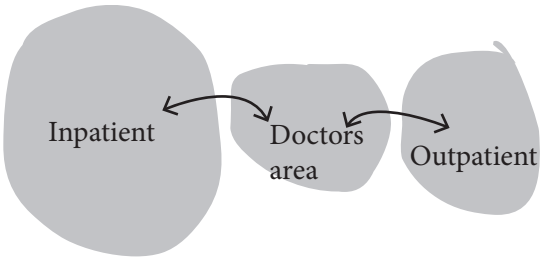


Blow up layout showing the Outpatient area

Photo taken by Author

Photo taken by Author

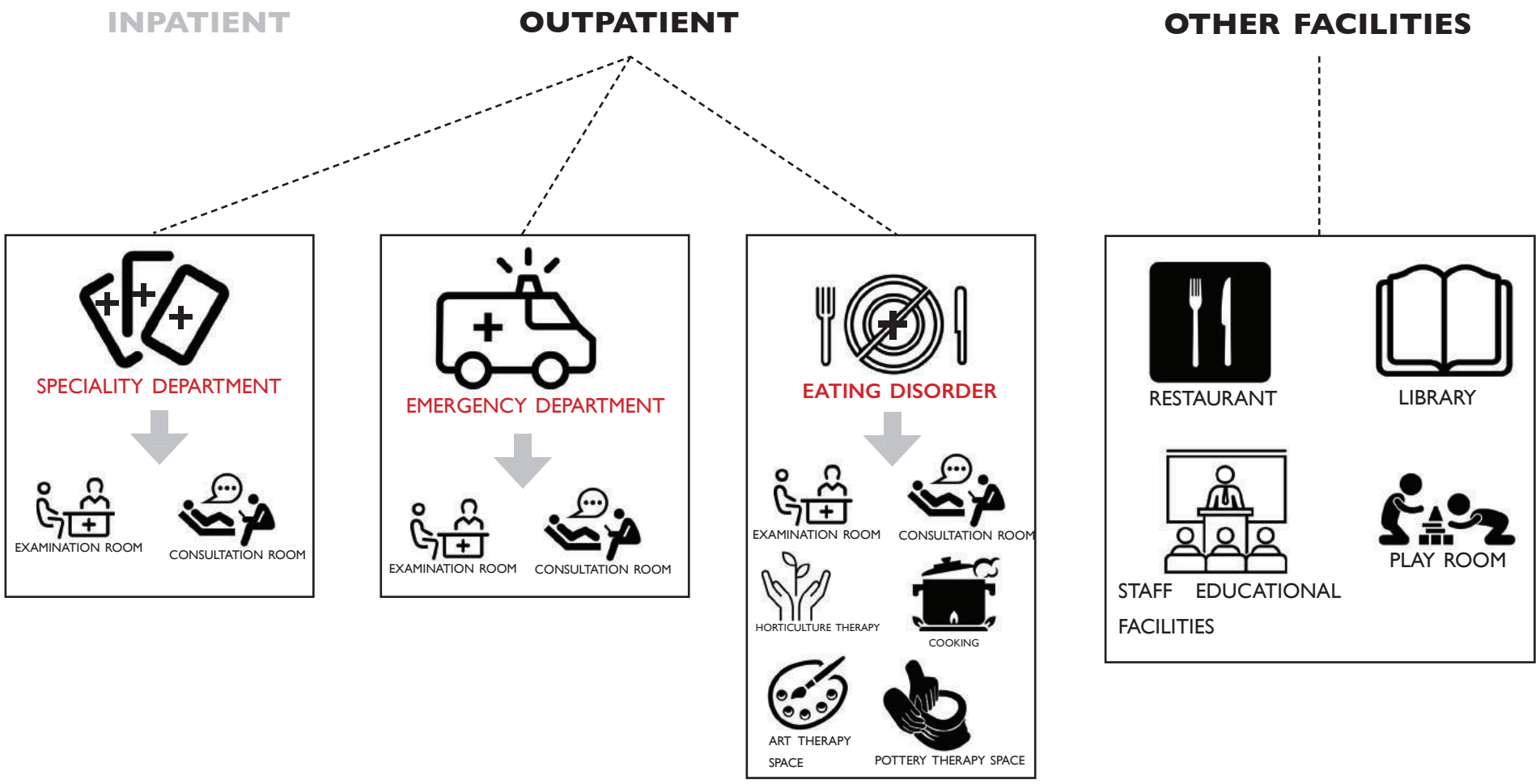




WHAT I WILL TAKE FROM THIS CASE STUDY

7. PROGRAM

7.1. DIFFERENT PROGRAM



7. PROGRAM

7.2. AREA STATEMENT

Building gross area : 10303sq.m

Total Built up area of Outpatient Department : 3797 sq.m
Total Built up area of Inpatient Department : 3205 sq.m
Total Built up area of Common Facilities : 1262 sq.m
Total built up area of Educational Facilities for staff : 639 sq.m
Total Built up area of Technical areas : 260 sq.m

Total Garden area integrated with built area : 2034 sq.m**

OUTPATIENT DEPARTMENT

Total Vertical Circulation areas and service areas : 360 sq.m
Total Care areas : 1741 sq.m

SPECIALTY Outpatient Department
area mentioned is for one room

Lobby	25 sq.m
Reception	20 sq.m
Office	10 sq.m
Waiting	48 sq.m
Counseling room(5nos.)	12 sq.m
Exam room (2nos)	10 sq.m
wc (2 nos.)	4 sq.m
rwc (1)	6 sq.m
silent room (1)	12 sq.m
Family room (1)	16 sq.m
Day room (1)	13 sq.m
Doctors room (3)	12 sq.m

Emergency Department

Entrance Lobby	15 sq.m
Reception	13 sq.m
Office	10 sq.m
Waiting	29 sq.m
Counseling room(3nos.)	12 sq.m
Exam room (2nos)	10 sq.m
wc (2 nos.)	4 sq.m
rwc (1)	6 sq.m
silent room (1)	12 sq.m
Family room (1)	16 sq.m
Disinfection room	13 sq.m
Doctors room (1)	12 sq.m

Eating Disorder Outpatient
Department area mentioned is for one room

Lobby	25 sq.m
Reception	20 sq.m
Office	10 sq.m
Waiting	48 sq.m
Counseling room(5nos.)	12 sq.m
Exam room (2nos)	10 sq.m
wc (2 nos.)	4 sq.m
rwc (1)	6 sq.m
silent room (1)	12 sq.m
Family room (1)	16 sq.m
Day room (1)	13 sq.m
Doctors room (3)	12 sq.m

Eating Disorder Day Facilities
area mentioned is for one room

Lobby	30 sq.m
Reception	20 sq.m
Office	10 sq.m
Waiting	20 sq.m
Pause area (1no.)	40 sq.m
Main Kitchen (1no)	15 sq.m
wc (2 nos.)	4 sq.m
rwc (1)	6 sq.m
Training Kitchen (2 nos.)	12 sq.m
Family room (1)	16 sq.m
Day room (2 nos.)	15 sq.m
Store room (1 no.)	12 sq.m
Therapy room for horticulture art therapy, clay therapy (4 nos.)	40 sq.m
Store	20 sq.m

Educational Facilities area
mentioned is for one room

Conference room	80 sq.m
Research Lab	20 sq.m
Lobby	50 sq.m
Waiting	35sq.m

Administration Department

Open Office	212 sq.m
Changing room	20 sq.m
Private Office (7 nos)	15 sq.m
Staff Pause	48 sq.m
Doctors room (3nos)	15 sq.m
Day room (2)	18 sq.m

Recreational Facilities area
mentioned is for one room

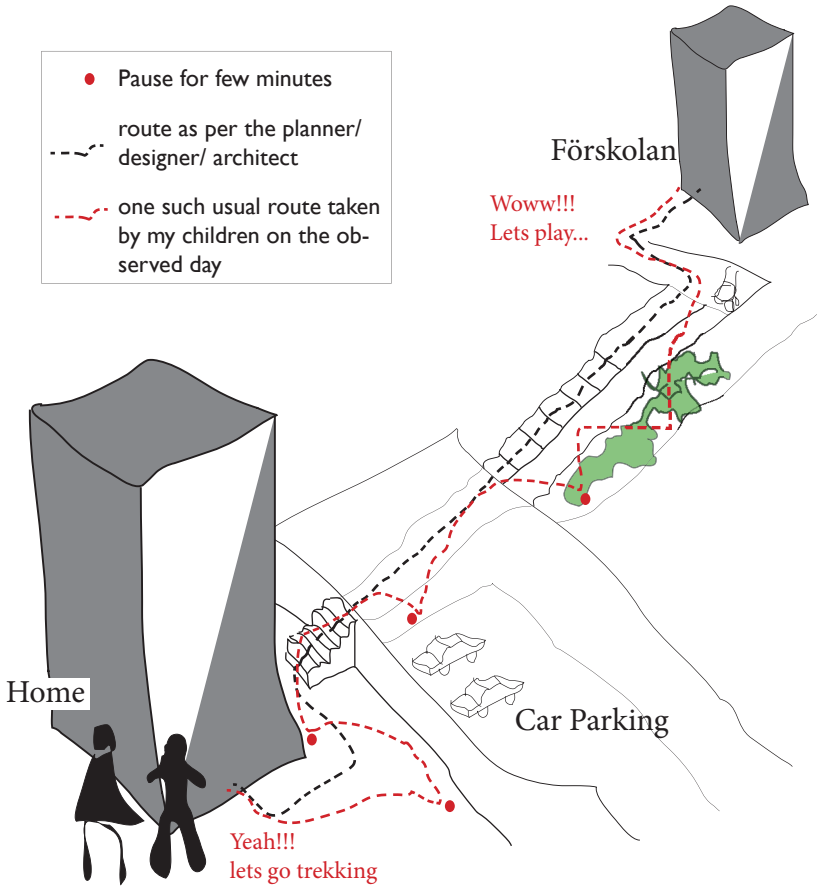
Lobby	40 sq.m
Library	50 sq.m
Sand room	29 sq.m
Viewing Gallery	50 sq.m
Play room	72 sq.m

Garden Areas, Viewing Corridors, Circulation areas, Technical areas are additional from these areas mentioned above

8. AUTHOR'S EXPERIENCE AS A MOTHER

8.1. OBSERVATION

EVERYDAY JOURNEY OF MY CHILDREN TO FÖRSKOLAN



THINGS OBSERVED:

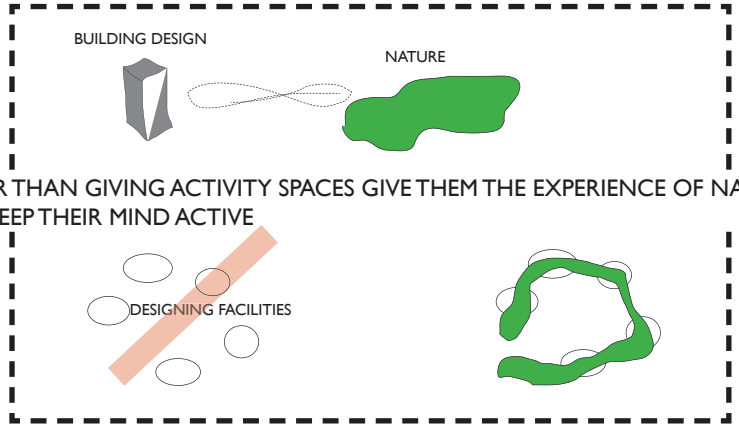
1. WE AS DESIGNERS/ PLANNERS/ ARCHITECTS SPECIFY AREAS FOR CHILDREN TO WALK, PLANTS TO GROW, CARS TO BE PARKED, STROLLERS TO MOVE ETC., BUT IT IS NOT THE SAME WAY BEING USED BY CHILDREN. **THEY DONT DO WHAT WE WANT THEM TO DO**

2. FOR AN USUAL 2 MINS WALKING ROUTE MY CHILDREN TAKE NEARLY MINIMUM 7 MINS AND THEY TAKE SEVERAL PAUSE POINTS TO OBSERVE, APPRECIATE, LEARN, INSPIRE, KIND OF DONT UNDERSTAND FEW THINGS WHICH THEY SEE ALONG THE ROUTE LIKE WHY DO SHADOWS ALWAYS FALL ON THE OTHER DIRECTION OF THE SUN AND NOT ON THE SAME DIRECTION OF THE SUN. **PAUSE POINTS - POSSIBLE POINT TO INTERACT WITH NATURE**

3. THEIR INTERESTS AND DESIRE ALWAYS KEEP GROWING AS THEY MOVE AROUND. **IMAGINATION WHEN THEY MOVE**

8. MY EXPERIENCE AS A MOTHER

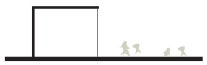
8.2. INFERENCE FROM OBSERVATION



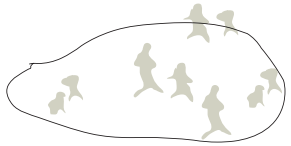
INFERENCE FROM PERSONAL EXPERIENCE

MORE PAUSE POINTS

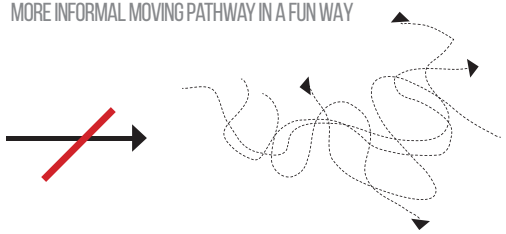
OUTDOOR PLAYSPACES



MORE ROOM TO MOVE AROUND

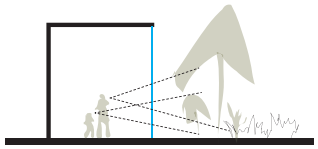


MORE INFORMAL MOVING PATHWAY IN A FUN WAY

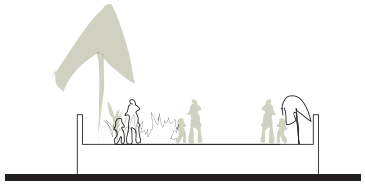


DESIGN ELEMENTS

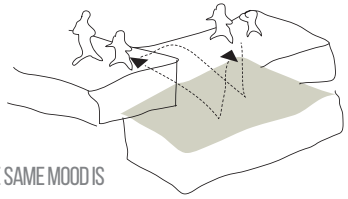
NATURE PAUSE AREAS NEAR THE RECEPTION AND WAITING LOBBY AREAS



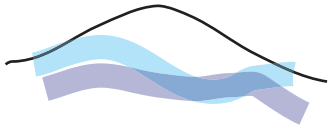
PLAY WALKWAY



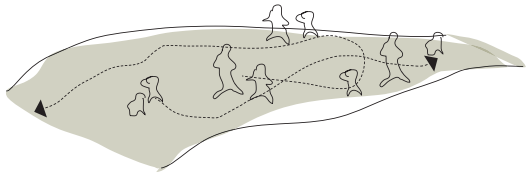
STEPPED PLATFORMS



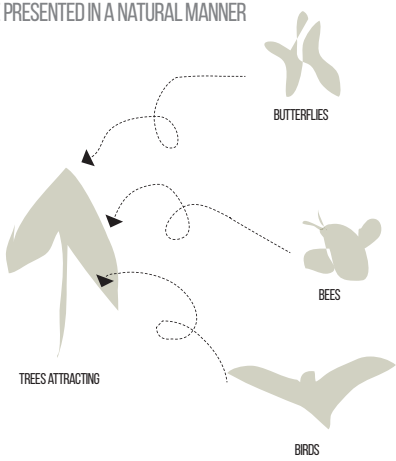
VISUAL REPRESENTATION OF NATURE IN INTERIOR SPACES - THE SAME MOOD IS CARRIED INDOORS



MORE ROOM FOR OUTDOOR PLAY

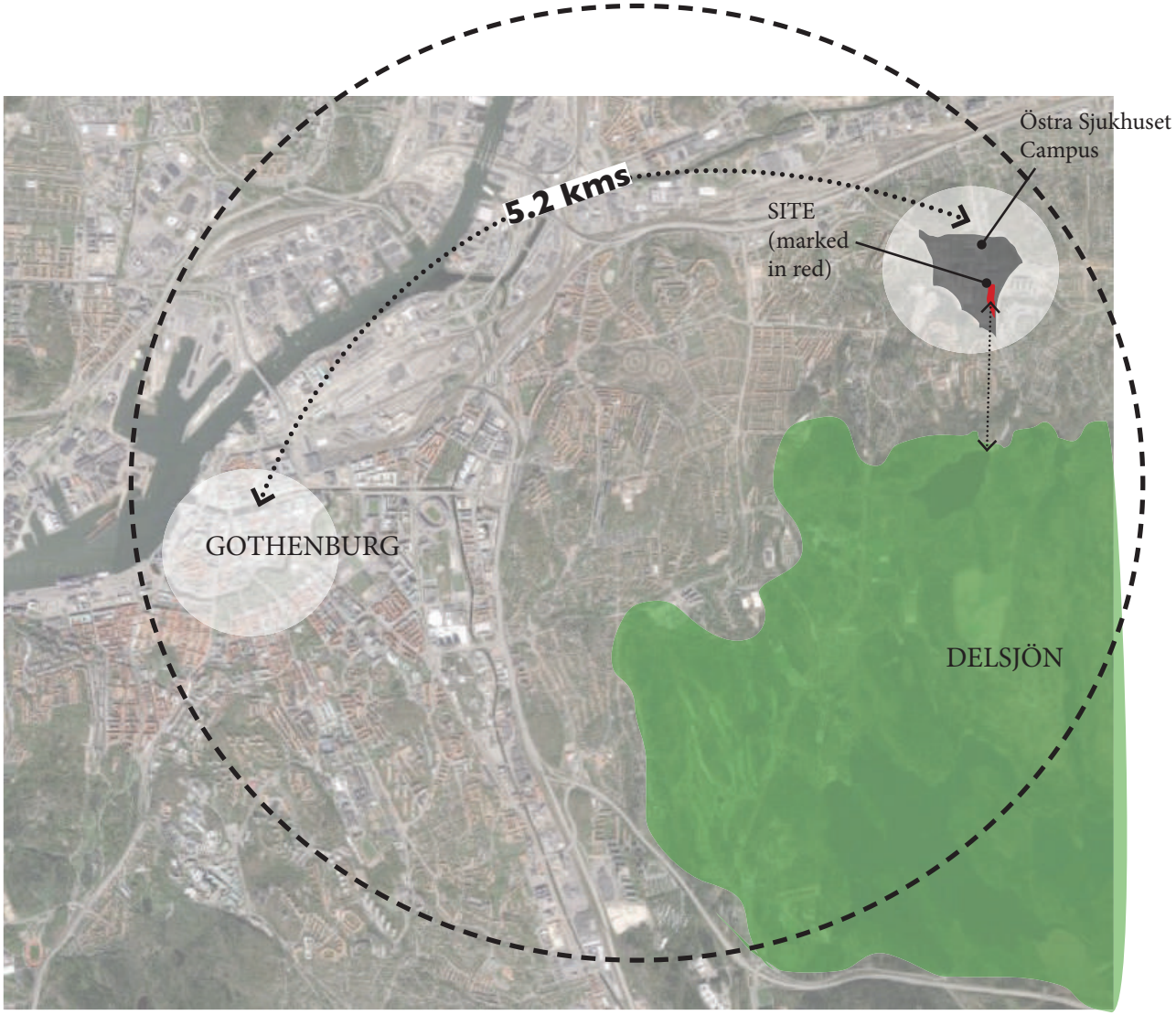


NATURE TO BE PRESENTED IN A NATURAL MANNER



9. SITE

9.1. SITE CONTEXT



The chosen site is situated in Eastern side of GOTHENBURG. Site is marked in Red.

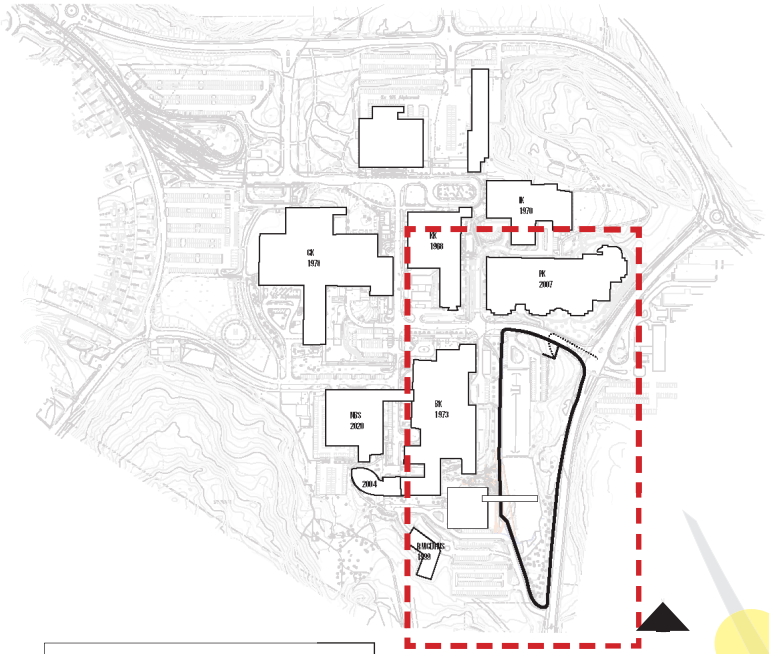
Interesting features around the site is Delsjön, a nature reserve area.

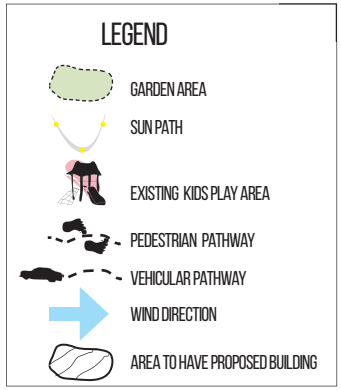
9. SITE

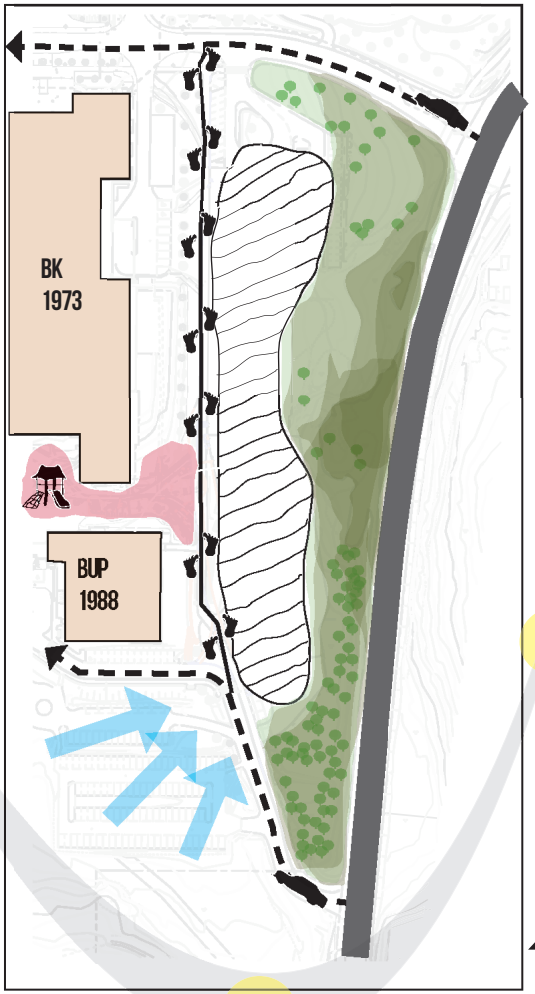
9.1. SITE CONTEXT

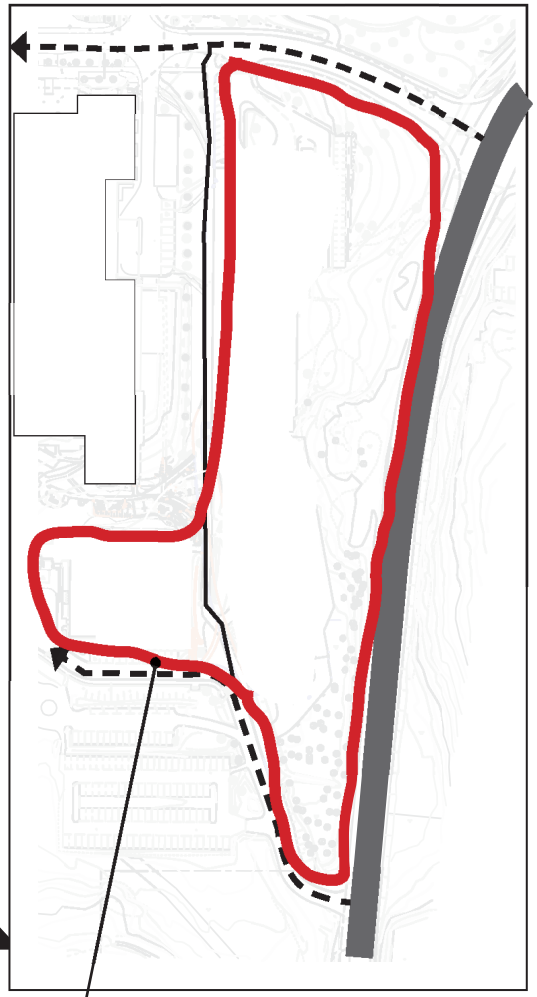
9. SITE

9.1. SITE CONTEXT





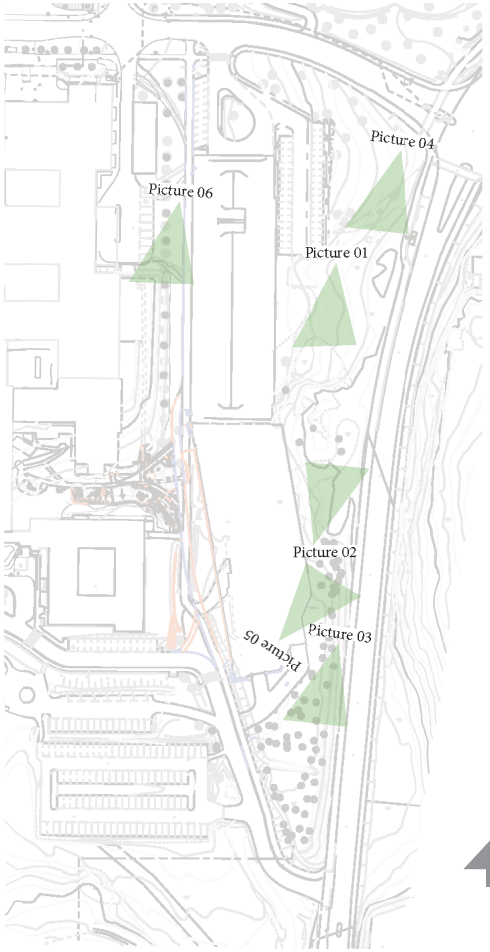




Desired area to have the proposed design

9. SITE

9.2. SITE PICTURES



Site Plan showing the Pictures angles

Photo taken by Author

Photo taken by Author

Photo taken by Author

Photo taken by Author

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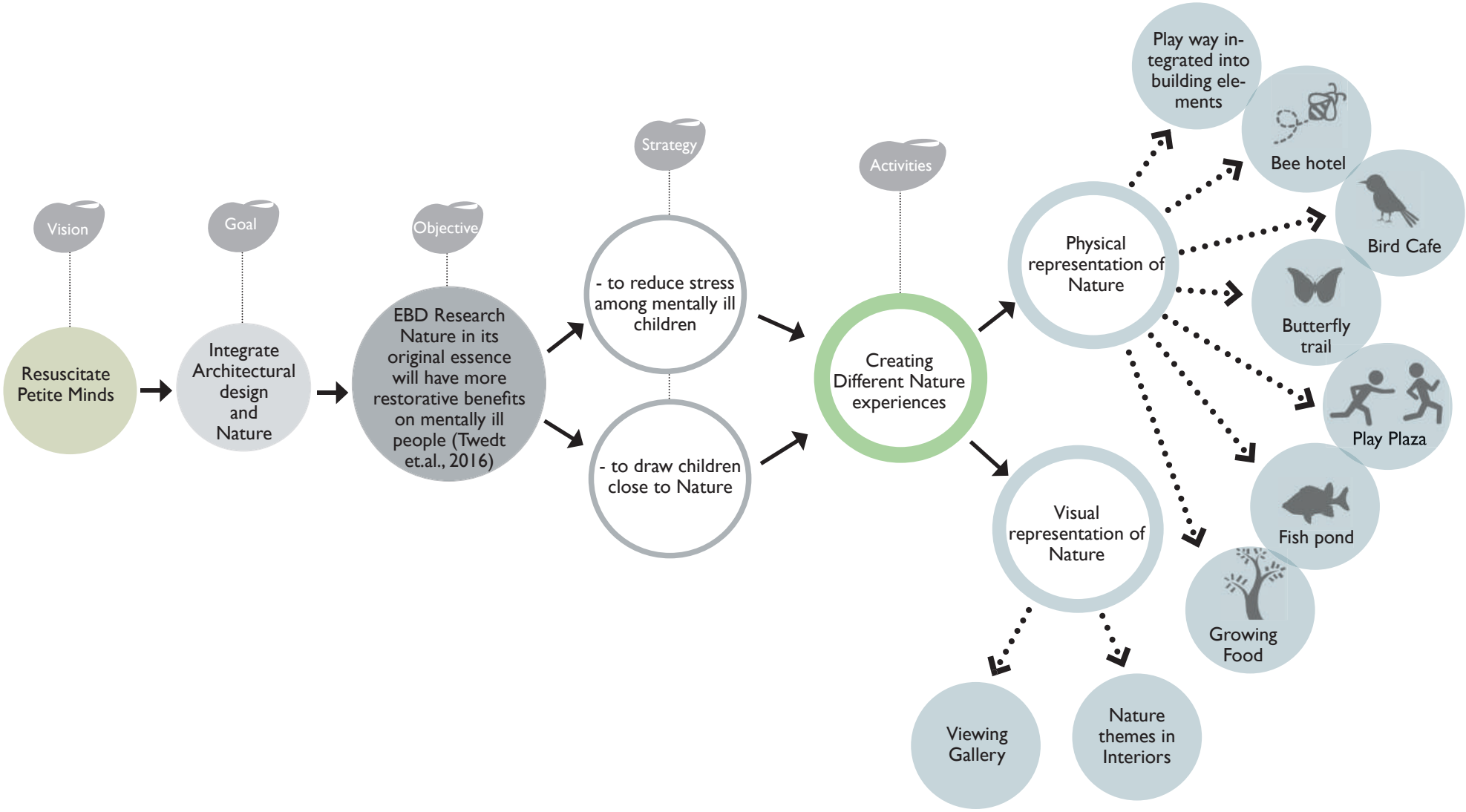
Photo taken by Author

10. DESIGN PROPOSAL

10.1. CONCEPT



10. DESIGN PROPOSAL

10.2. DESIGN SKETCH SHOWING DIFFERENT WAYS INTEGRATING NATURAL ELEMENTS INTO BUILDING DESIGN

DIFFERENT WAYS OF INTEGRATING BIOPHILIC FEATURES AND BUILDING DESIGN AS TWO SEPARATE ENTITIES

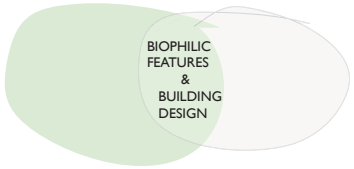
BIOPHILIC FEATURES OUTSIDE THE BUILDING DESIGN

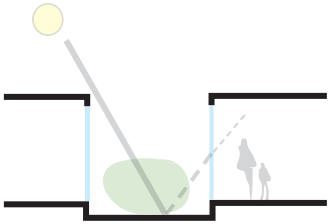
BIOPHILIC FEATURES WITHIN THE BUILDING DESIGN

BIOPHILIC FEATURES ENCLOSED IN BUILDING DESIGN

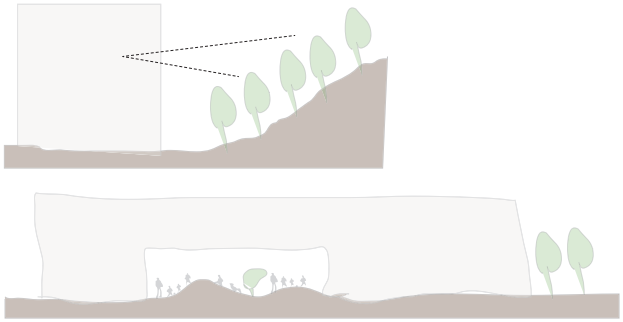
BIOPHILIC FEATURES INSIDE BUILDING DESIGN

DIFFERENT WAYS OF INTEGRATING BIOPHILIC FEATURES AND BUILDING DESIGN AS ONE ENTITY





BIOPHILIC FEATURE INTEGRATED INTO BUILDING DESIGN TO HAVE VISUAL EXPERIENCE



INTEGRATION OF NATURAL SITE CONDITION AS PART OF BUILDING DESIGN TO HAVE A PHYSICAL EXPERIENCE

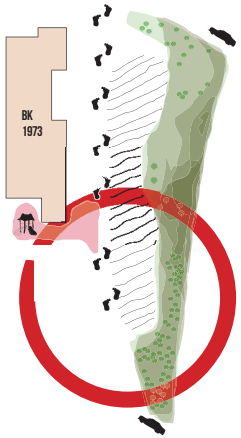
Garden as part of the building design
eg: garden as green pockets in the building allowing it to breath

Garden as part of building element
eg: greenery is integrated into a wall as a living wall

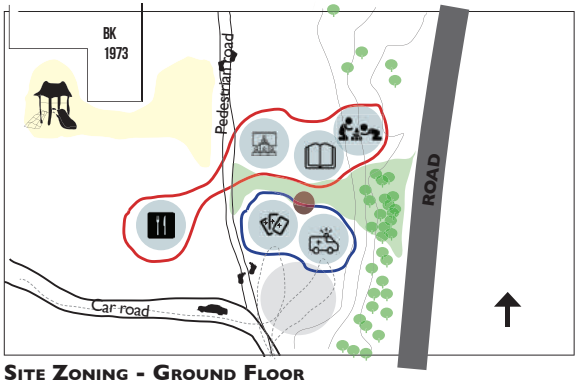
Garden as building design
eg: the peripheral garden enclosed to grow food throughtout different seasons & is a part of building design

10. DESIGN PROPOSAL

10.3. FLOORWISE BUBBLE DIAGRAM

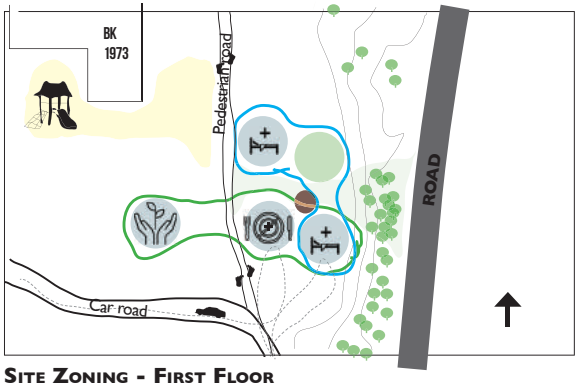


KEY PLAN



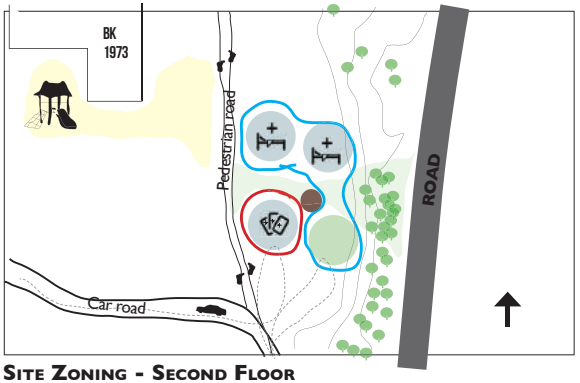
SITE ZONING - GROUND FLOOR

1. RED BUBBLE IS A COMMON FACILITY
2. DARK BLUE ZONE IS OUTPATIENT ZONE
3. BROWN DOT IA ADMINISTRATION DEPARTMENT
4. GREY CIRCLE IS CAR DRIVEWAY



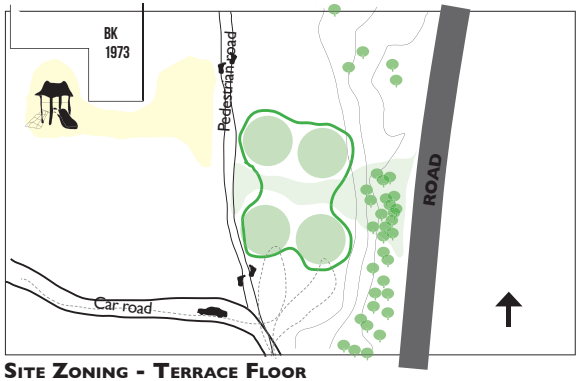
SITE ZONING - FIRST FLOOR

1. GREEN BUBBLE IS A OUTPATIENT ZONE
2. SKY BLUE ZONE IS INPATIENT ZONE
3. GREEN CIRCLE IS BUTTERFLY PARK
4. BROWN DOT IA ADMINISTRATION DEPARTMENT



SITE ZONING - SECOND FLOOR

1. SKY BLUE ZONE IS INPATIENT ZONE
2. RED ZONE IS PAUSE AREAS FOR STAFF AND OUTPATIENTS
3. BROWN DOT IS ADMINISTRATION DEPARTMENT
4. GREEN CIRCLE IS BIRD CAFE

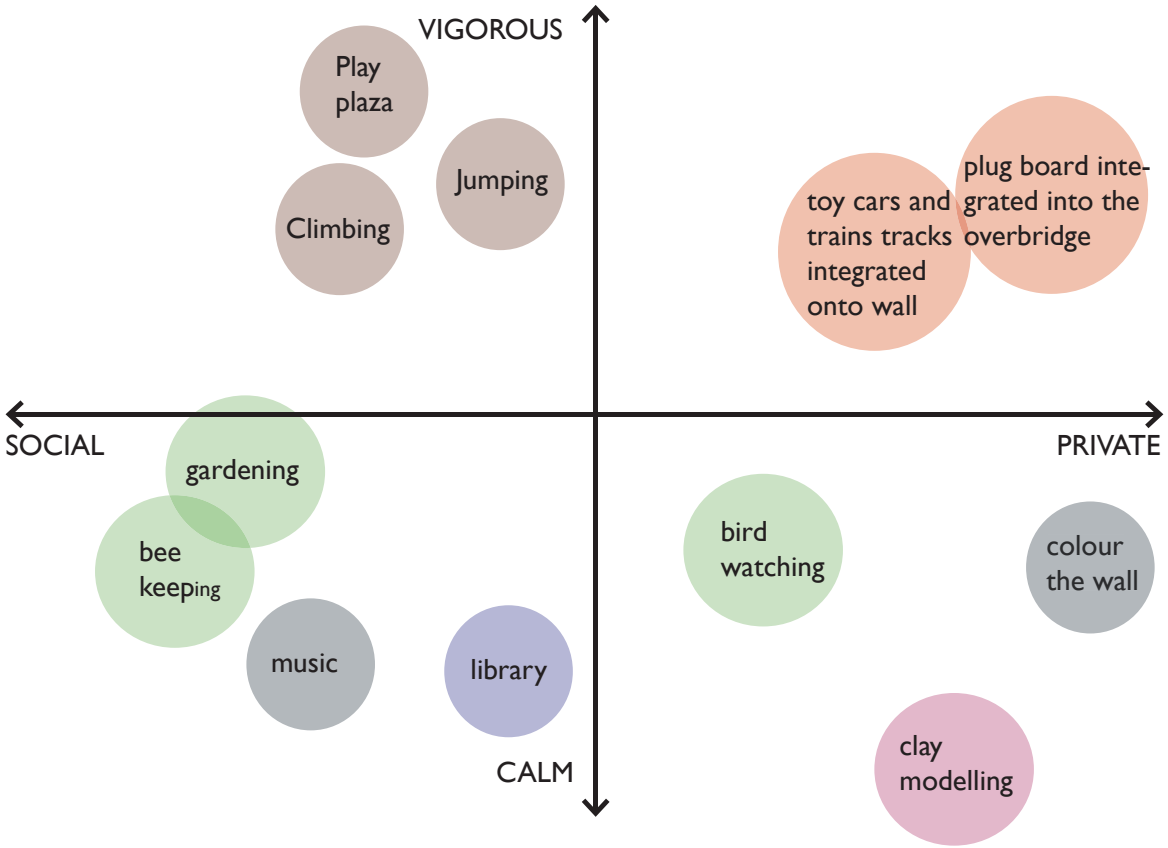


SITE ZONING - TERRACE FLOOR

1. GREEN CIRCLES ARE ROOF TERRACE

10. DESIGN PROPOSAL

10.4. MAPPING OF DIFFERENT ACTIVITIES DEPENDING ON THE MOOD



Activity Needs catagorised under different moods of Children done by Author

THIS IS THE MAPPING OF DIFFERENT ACTIVITIES FOR CHILDREN BETWEEN 6-12 YRS OLD WHICH WILL HELP IN

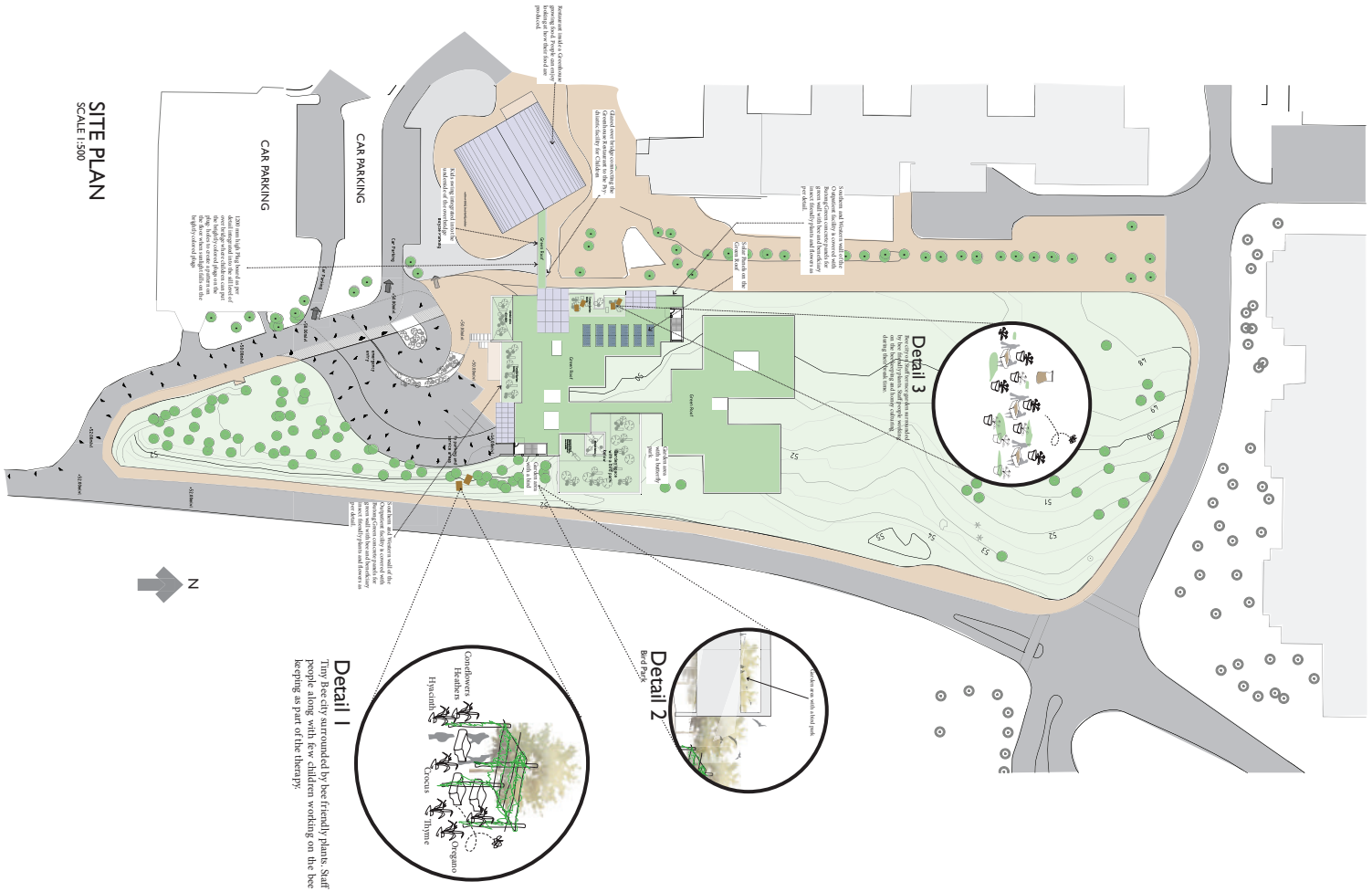
1. REDUCING STRESS
2. PROMOTING MENTAL HEALTH

AMONG MENTALLY ILL CHILDREN. THE MAPPING IS DONE BASED ON THE MOOD INVOLVED IN THE ACTIVITIES.

THESE ACTIVITIES ARE PROVIDED IN THE DESIGN AND SPREAD-OUT TO BLEND THE ARCHITECTURE AND NATURE INTEGRATION IDEA.

11. RESULT

11.1. SITE PLAN



11. RESULT

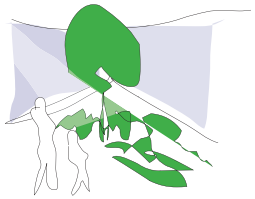
11.2. FLOOR PLANS

GROUND FLOOR PLAN

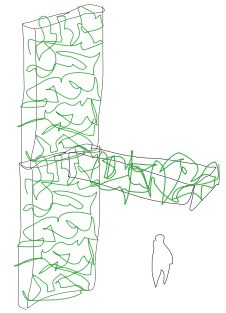
11. RESULT
11.2. FLOOR PLANS

1 Kids walkway with natural berms
2 Green Atrium within the building
3 Double storied high Green Wall
4 Green wall integrated into the western and southern building skin
5 Green house for growing crops
6 Bird Park
7 Butterfly Park
8 Bee Hotel
9 Fish Aquarium integrated into waiting lobby wall
10 Terrace Garden

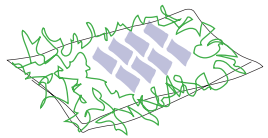
1 KIDS WALKWAY WITH NATURAL BERMS



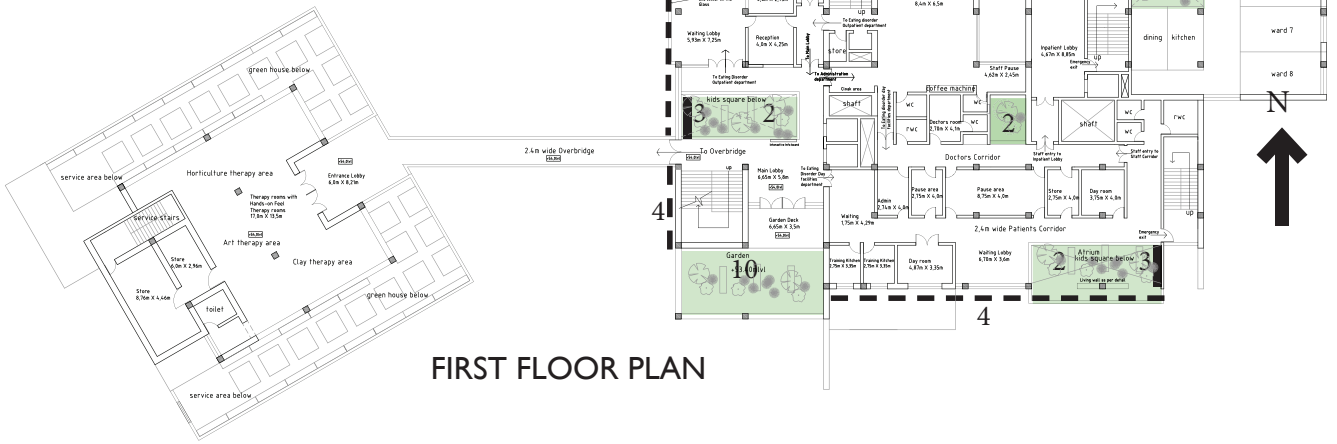
2 GREEN ATRIUM WITHIN THE BUILDING



3 DOUBLE STORIED HIGH GREEN WALL



10 TERRACE GARDEN / ROOF GARDEN



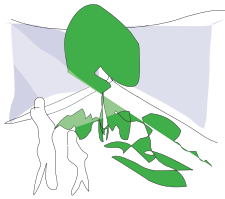
FIRST FLOOR PLAN

11. RESULT

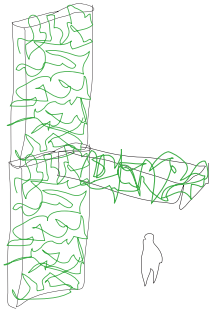
11.2. FLOOR PLANS

1 Kids walkway with natural berms
2 Green Atrium within the building
3 Double storied high Green Wall
4 Green wall integrated into the western and southern building skin
5 Green house for growing crops
6 Bird Park
7 Butterfly Park
8 Bee Hotel
9 Fish Aquarium integrated into waiting lobby wall
10 Terrace Garden

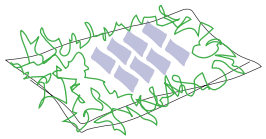
1 KIDS WALKWAY WITH NATURAL BERMS



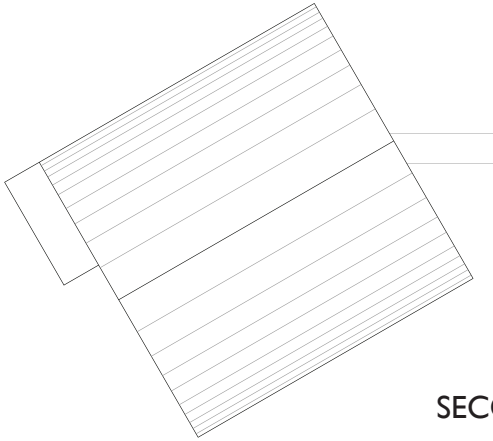
2 GREEN ATRIUM WITHIN THE BUILDING

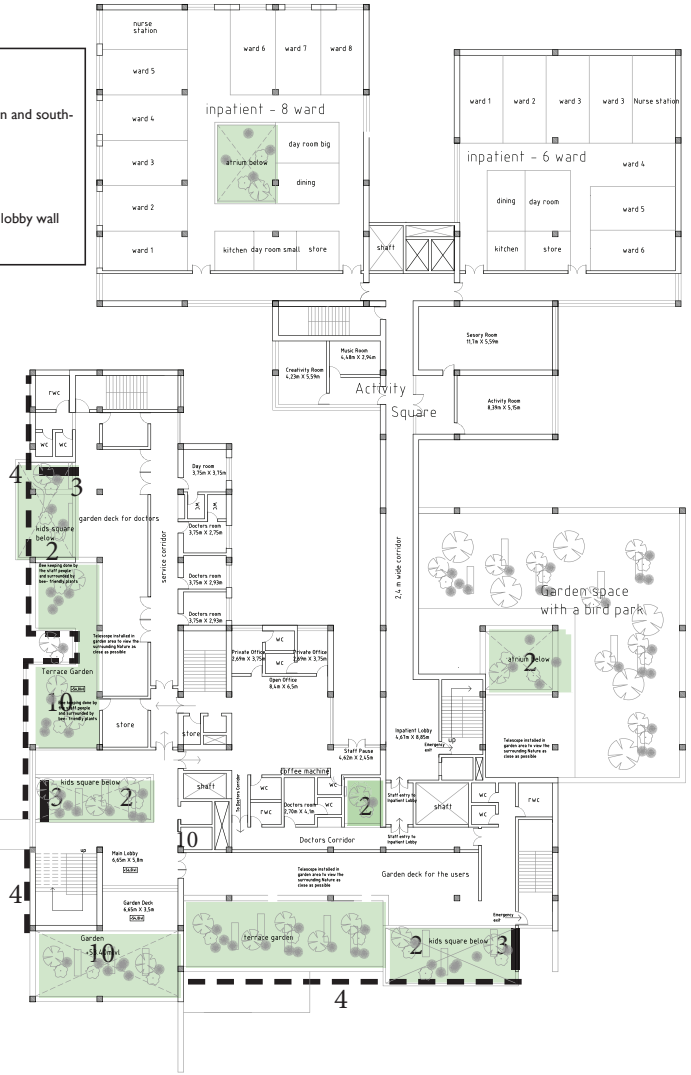


3 DOUBLE STORIED HIGH GREEN WALL



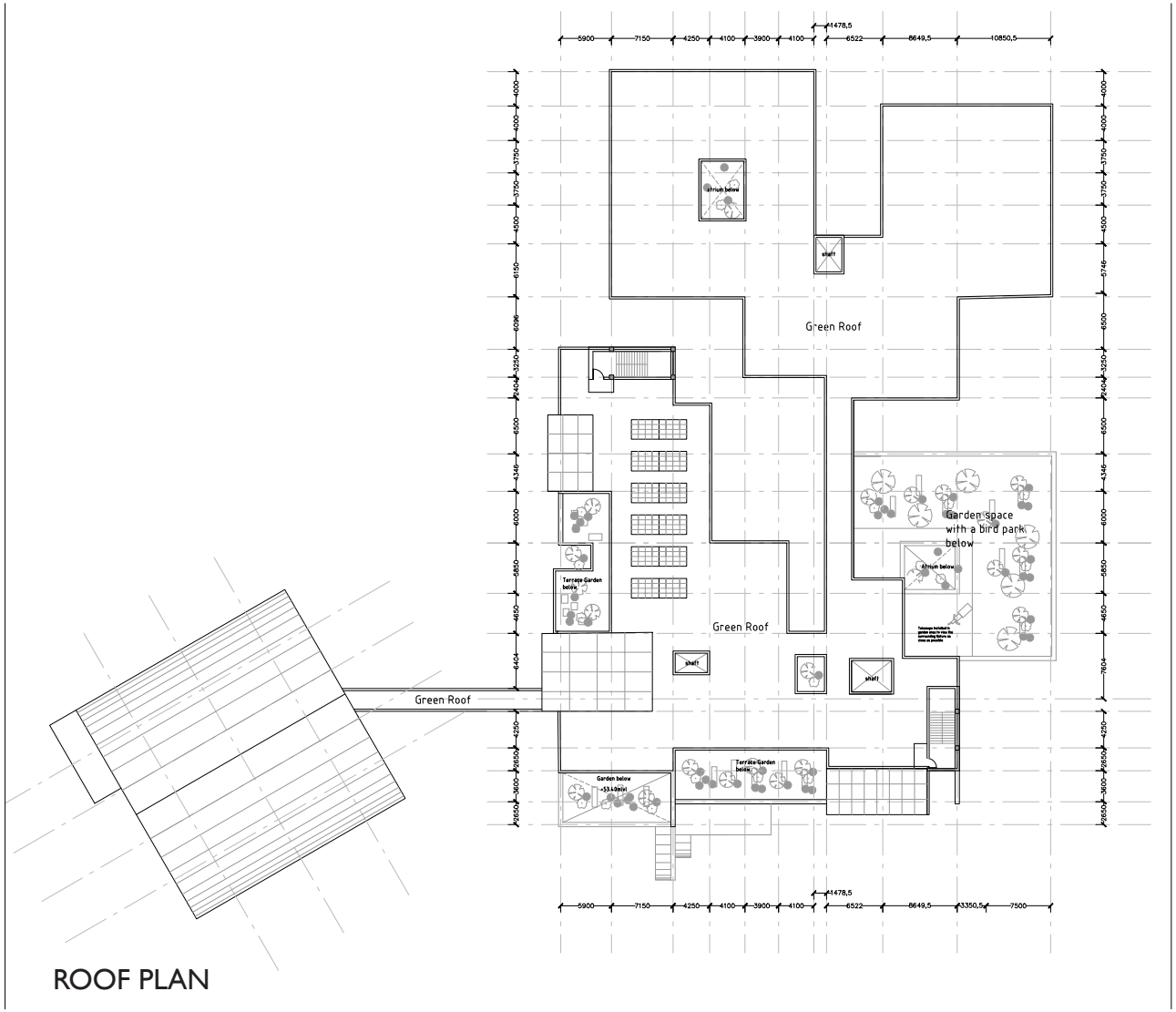
10 TERRACE GARDEN / ROOF GARDEN





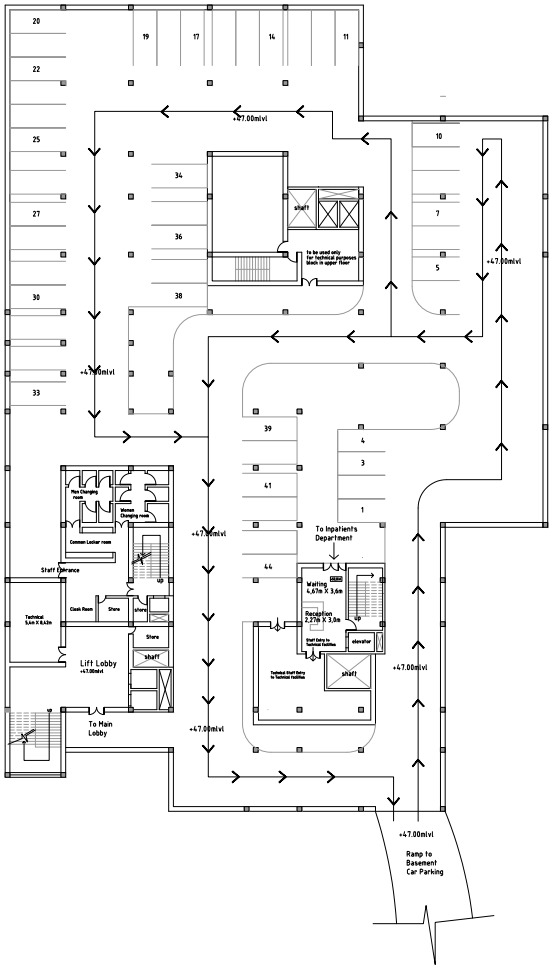
SECOND FLOOR PLAN

11. RESULT
11.2. FLOOR PLANS



ROOF PLAN

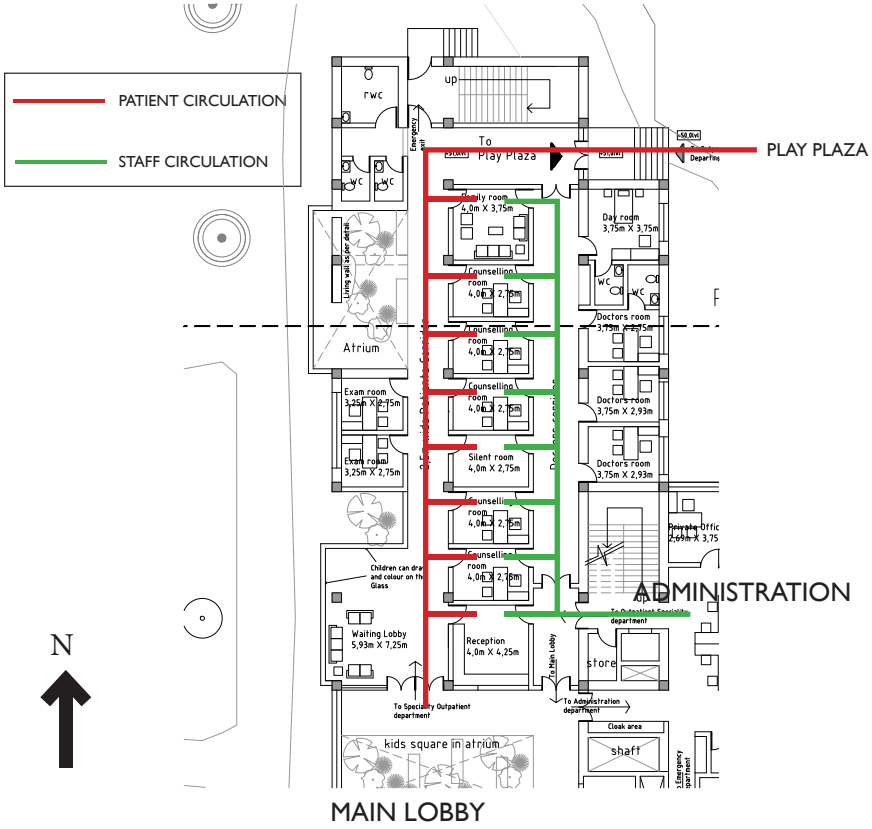
11. RESULT
11.2. FLOOR PLANS



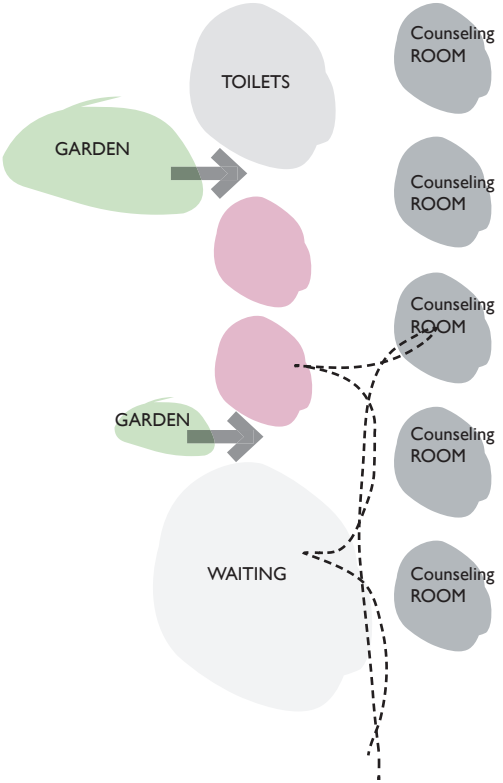
BASEMENT PLAN

11. RESULT

11.3. DETAILED PLANS



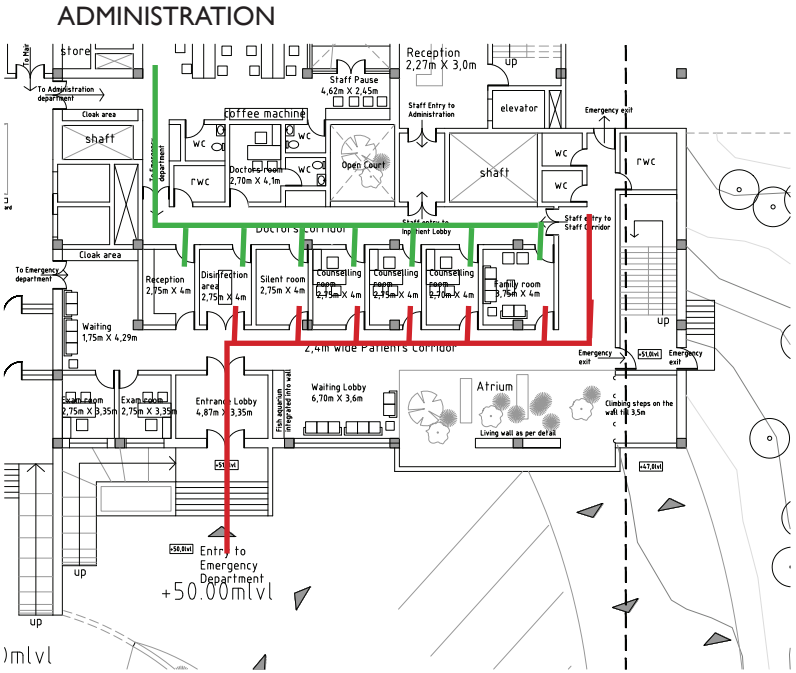
GROUND FLOOR PLAN SHOWING THE PATIENT & STAFF CIRCULATION



GROUND FLOOR PLAN BUBBLE SKETCH

GROUND FLOOR PLAN - SPECIALTY OUTPATIENT DEPARTMENT

11. RESULT
11.3. DETAILED PLANS

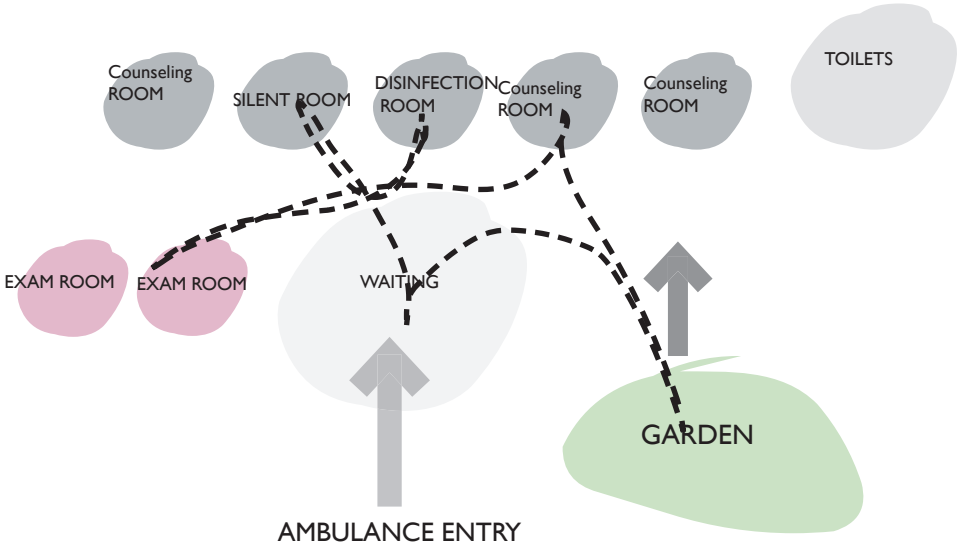


GROUND FLOOR PLAN SHOWING THE PATIENT & STAFF CIRCULATION

PATIENT CIRCULATION

STAFF CIRCULATION

N

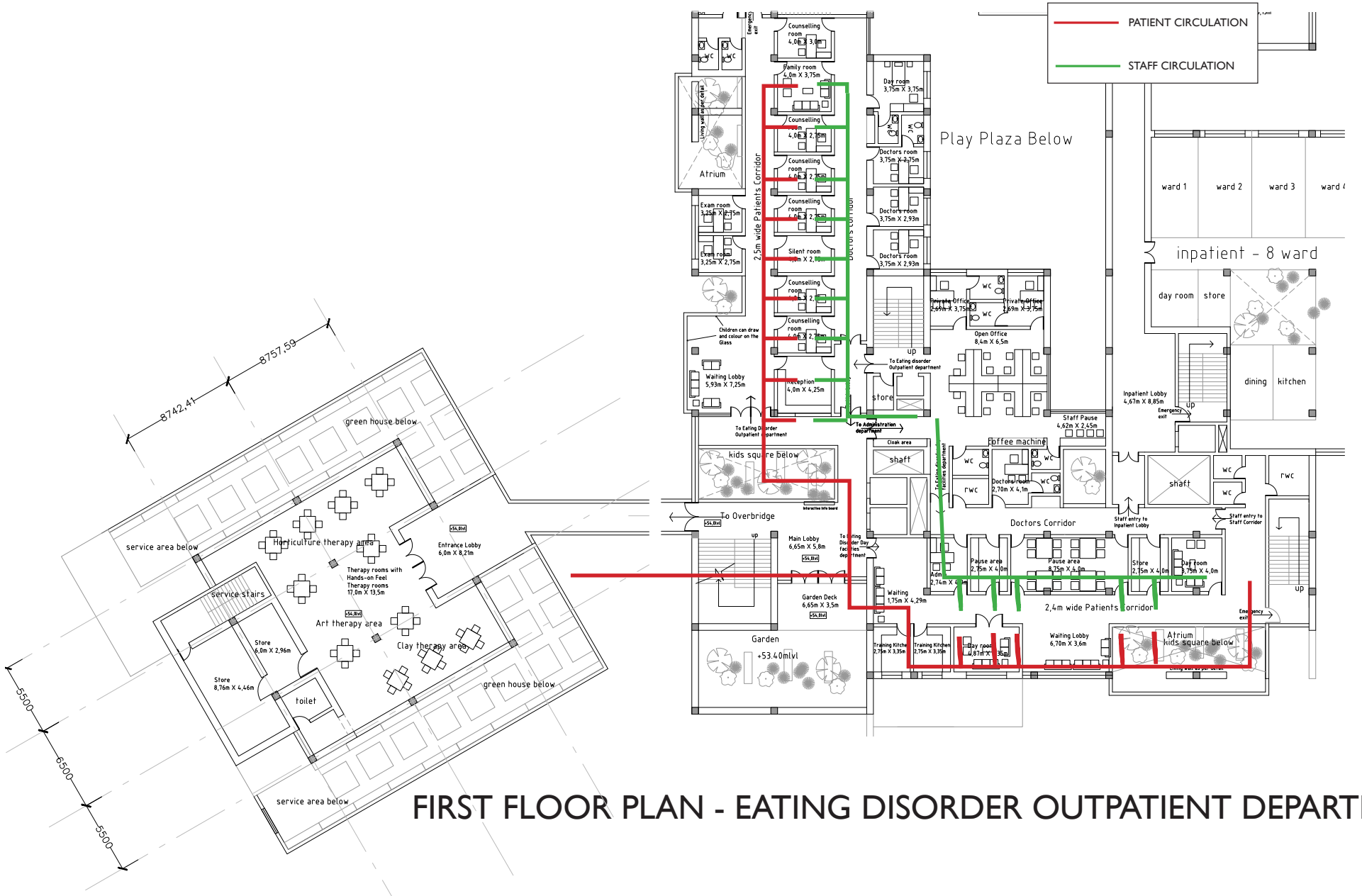


GROUND FLOOR PLAN BUBBLE SKETCH SHOWING THE PATIENT MOVEMENT

GROUND FLOOR PLAN - EMERGENCY DEPARTMENT

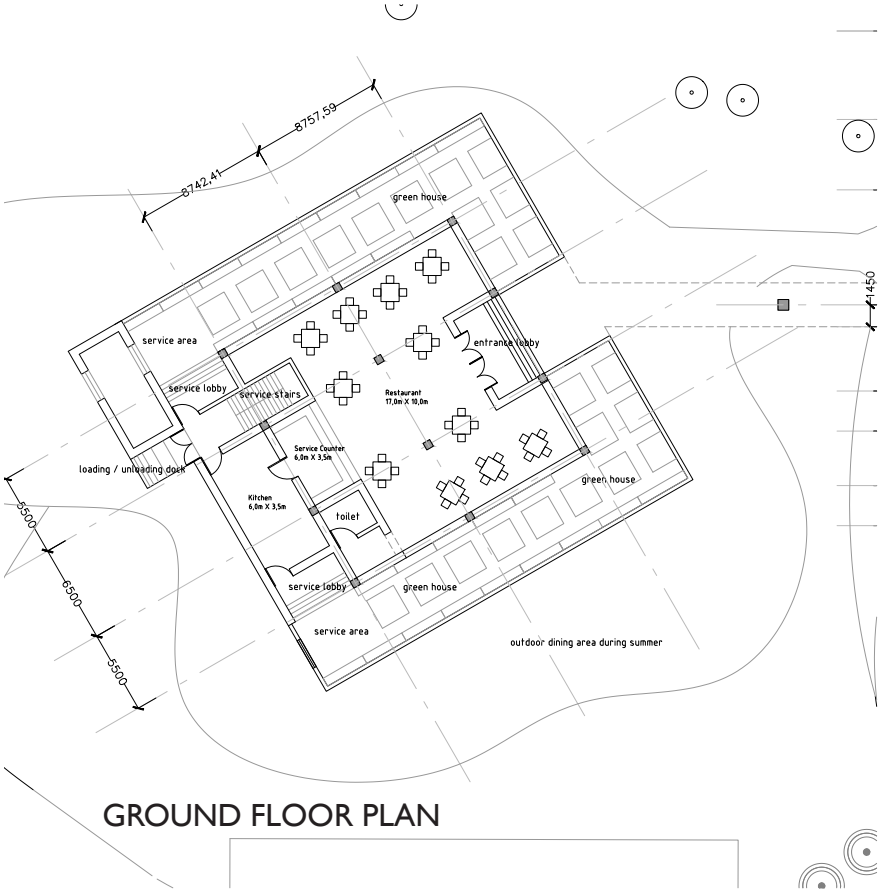
11. RESULT

11.3. DETAILED PLANS

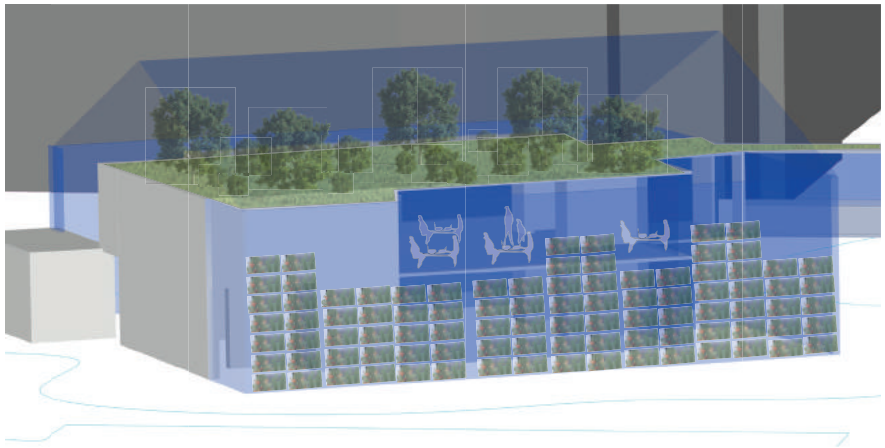


FIRST FLOOR PLAN - EATING DISORDER OUTPATIENT DEPARTMENT

11. RESULT
11.3. DETAILED PLANS



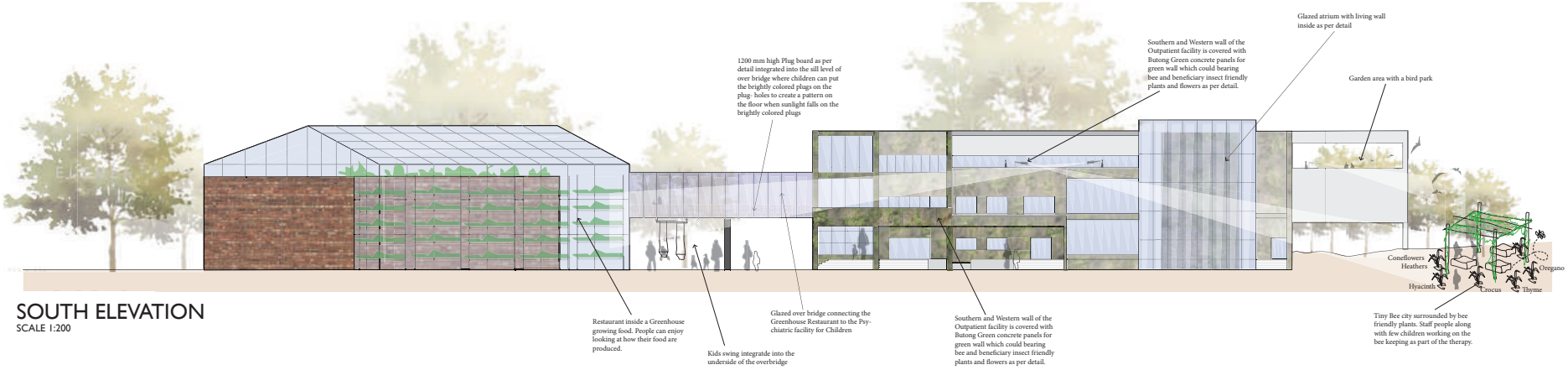
GROUND FLOOR PLAN



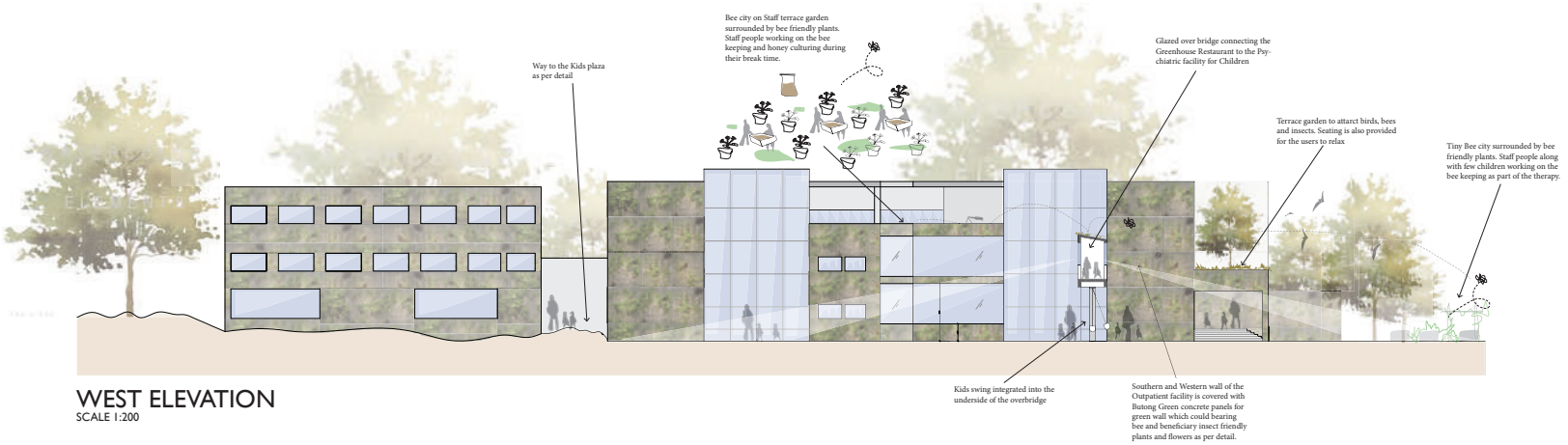
CONCEPTUAL VIEW OF THE PROPOSED GREENHOUSE RESTAURANT

GREENHOUSE

11. RESULT
11.4. ELEVATIONS

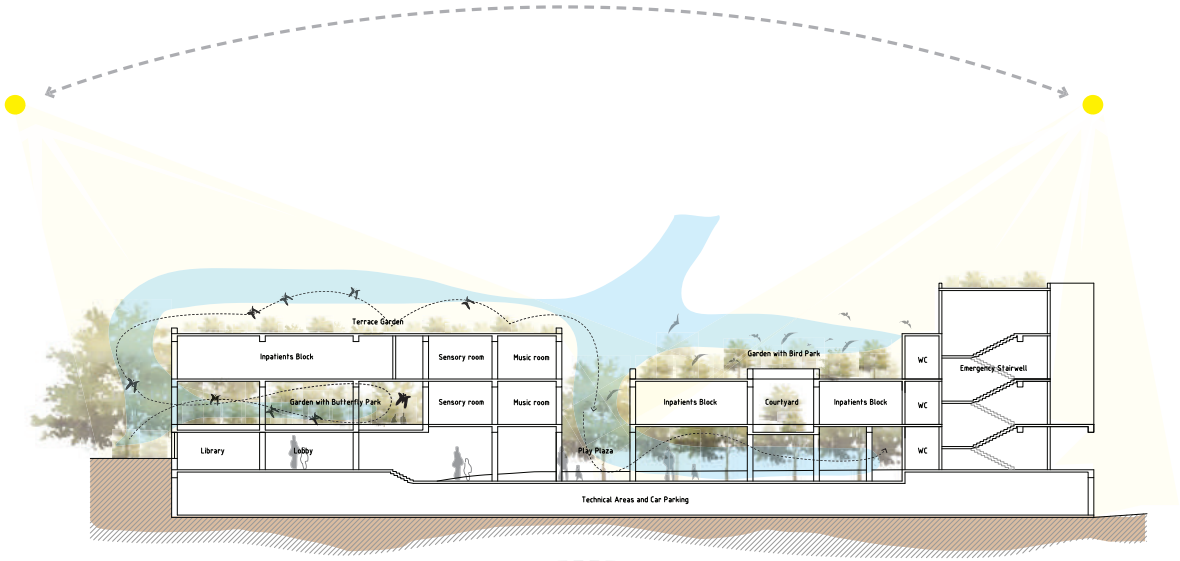


SOUTH ELEVATION
SCALE 1:200

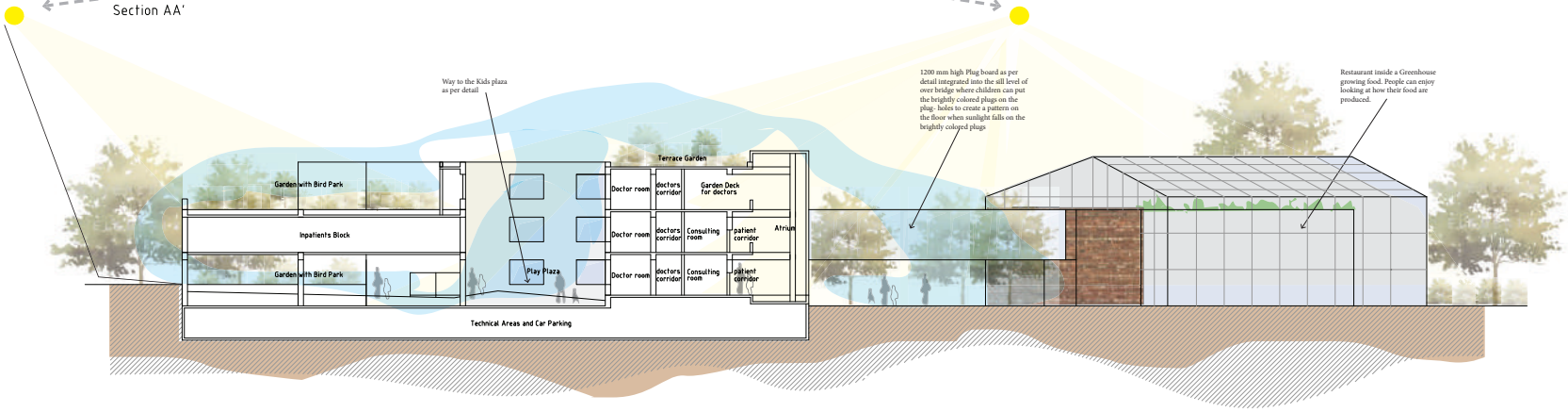


WEST ELEVATION
SCALE 1:200

11. RESULT
11.5. SECTIONS



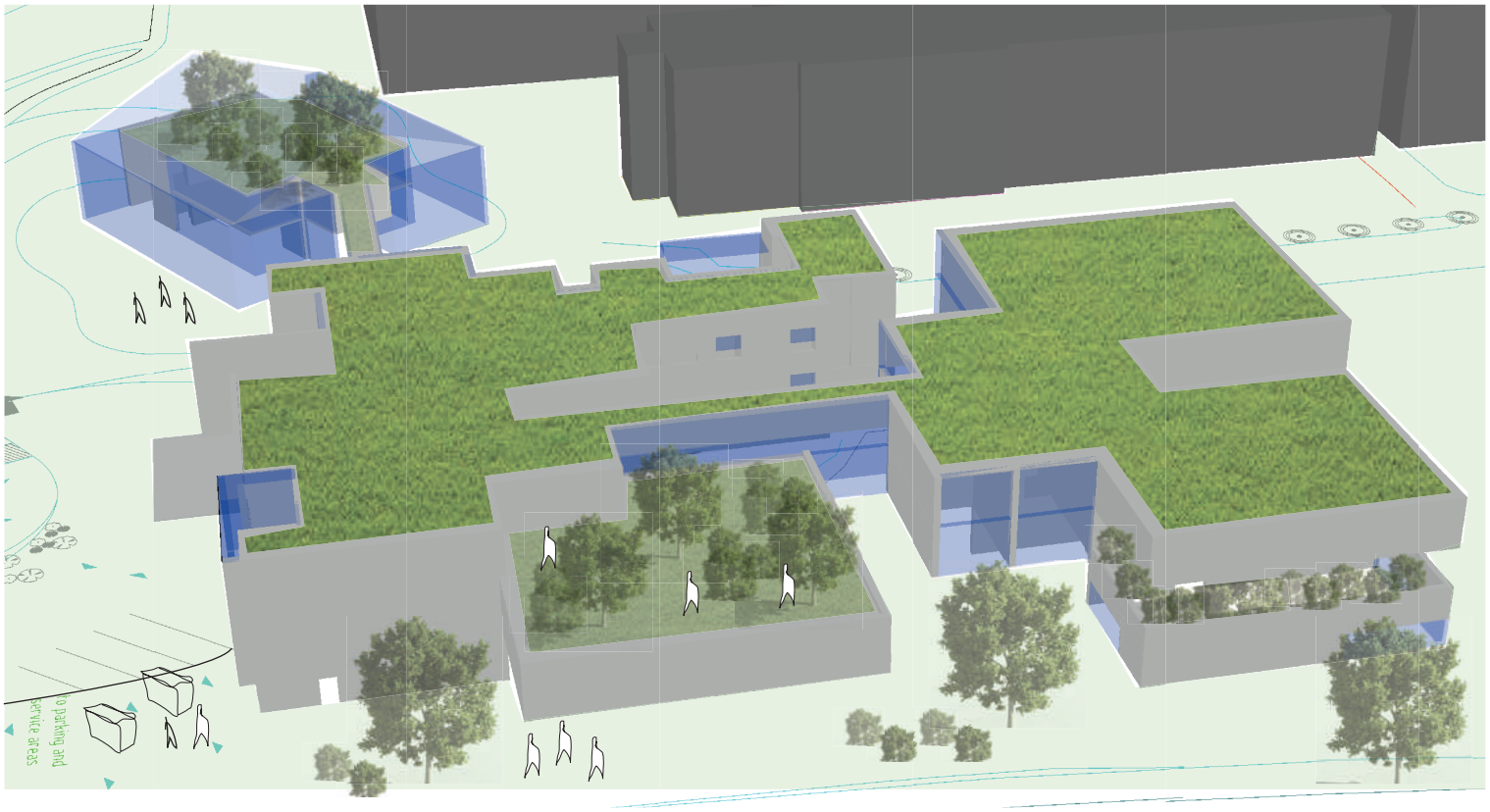
Section AA'



Section BB'

11. RESULT

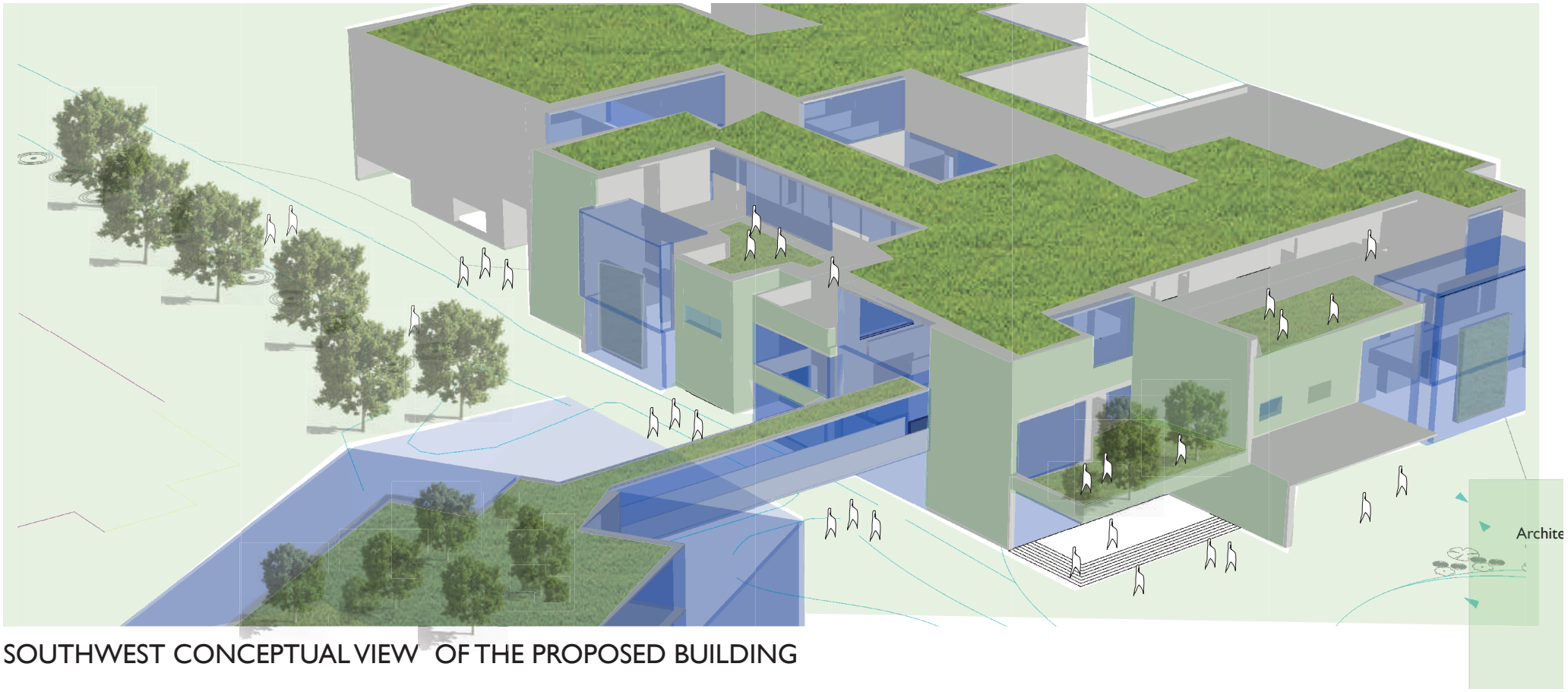
11.6. 3D VIEW OF THE BUILDING



SOUTHEAST CONCEPTUAL VIEW OF THE PROPOSED BUILDING

11. RESULT

11.6. 3D VIEW OF THE BUILDING



SOUTHWEST CONCEPTUAL VIEW OF THE PROPOSED BUILDING

11. RESULT

11.6. 3D VIEW OF THE PHYSICAL MODEL OF THE BUILDING

SOUTHERN VIEW OF THE BUILDING

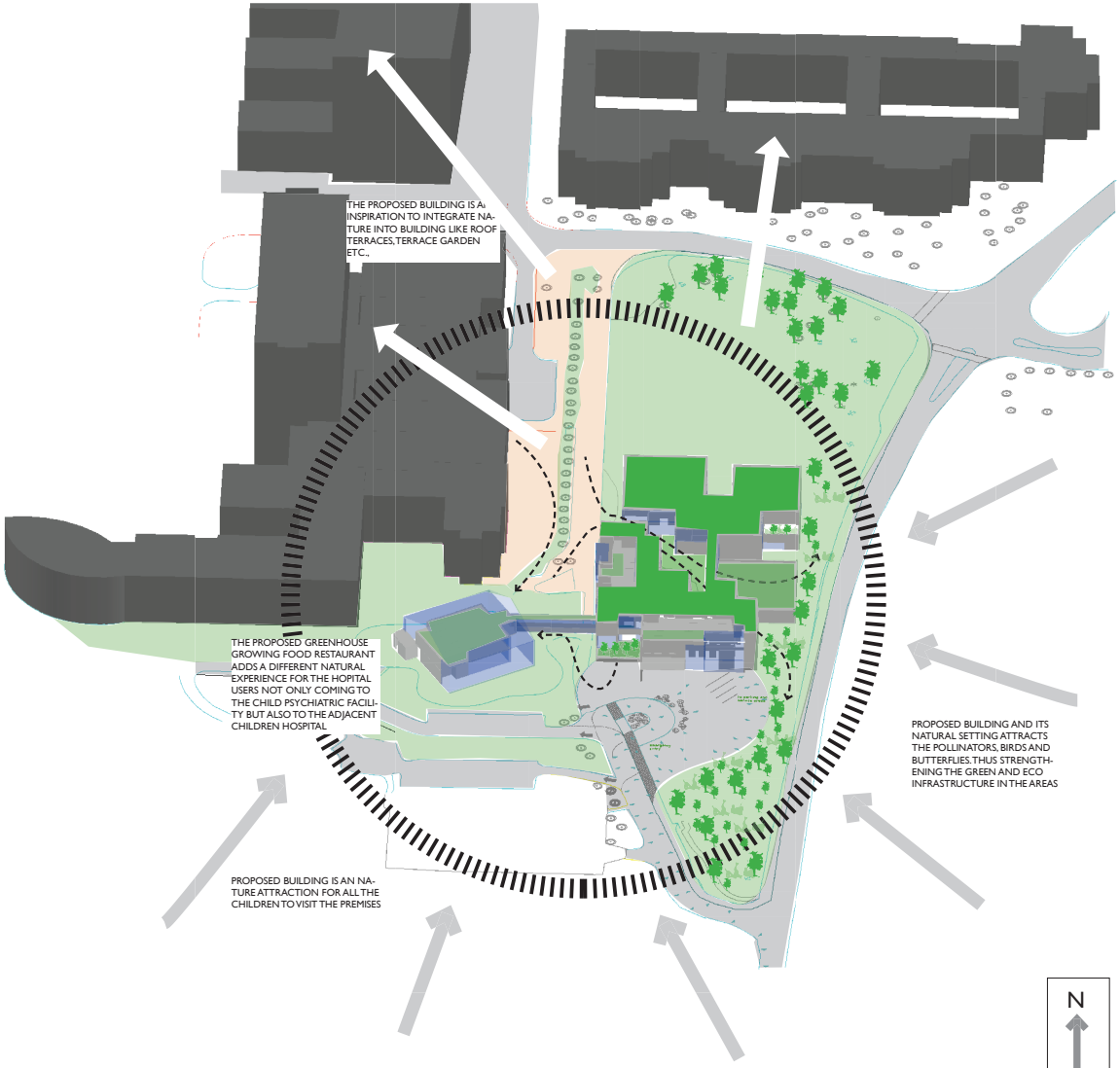
11. RESULT

11.6. 3D VIEW OF THE PHYSICAL MODEL OF THE BUILDING

SOUTHEAST VIEW OF THE BUILDING

11. RESULT

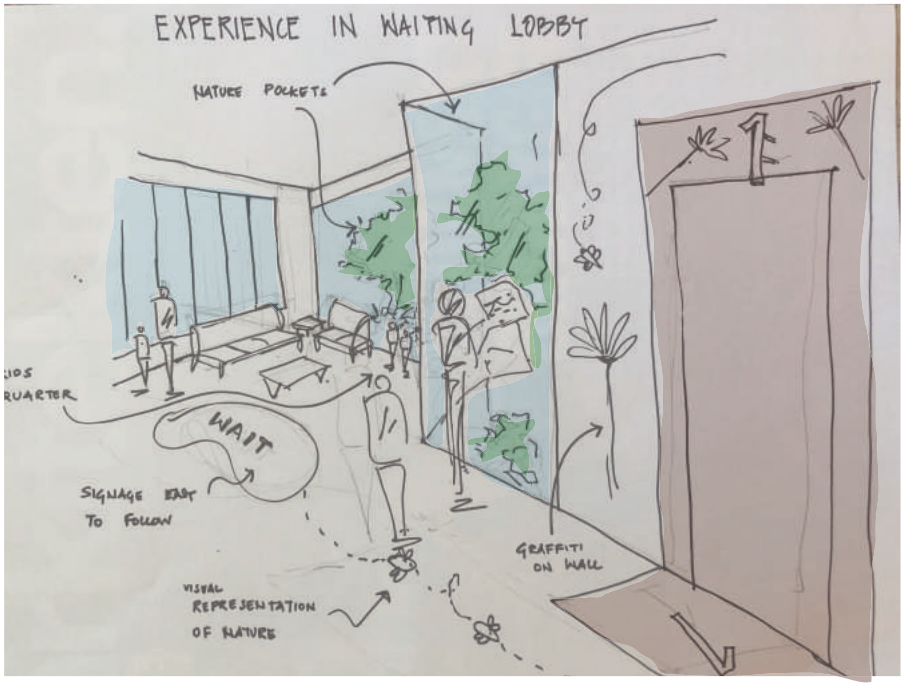
11.6. 3D VIEW OF THE BUILDING WITH RESPECT TO THE SITE CONTEXT

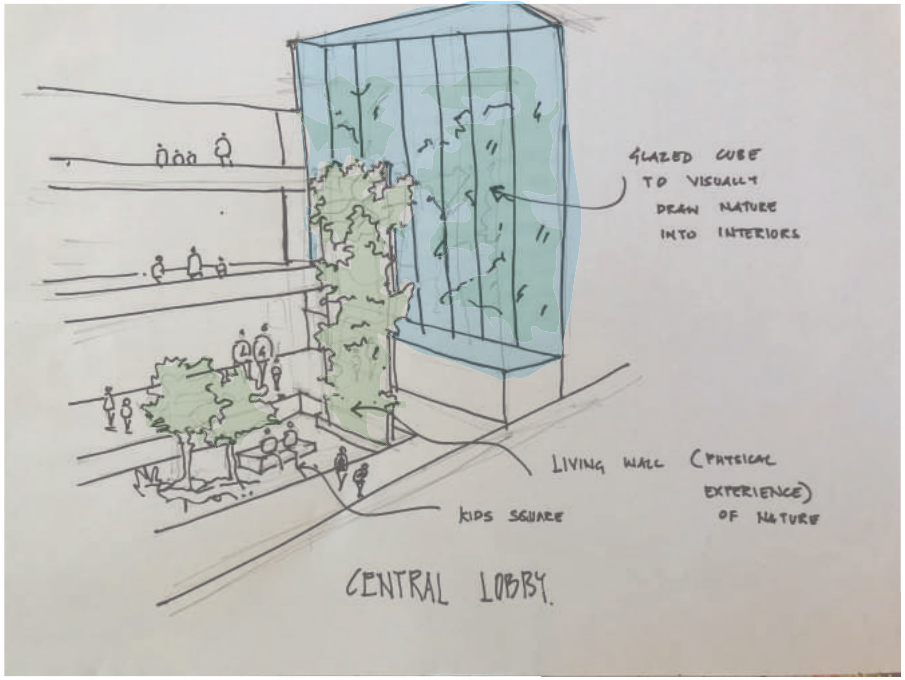


THE PROPOSED BUILDING WITH RESPECT TO THE SITE CONTEXT

11. RESULT

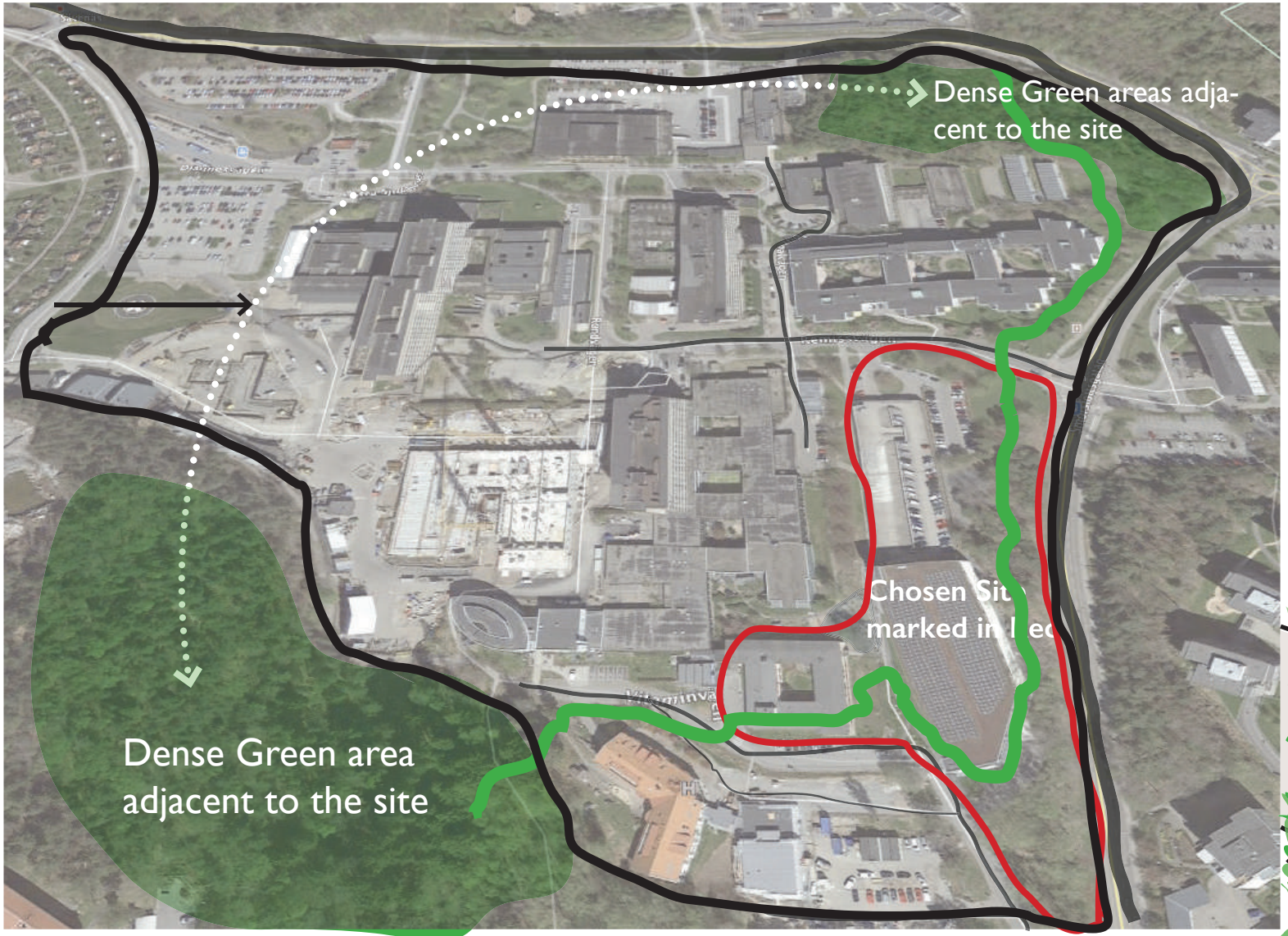
11.6. 3D SKETCHES OF THE BUILDING INTERIORS





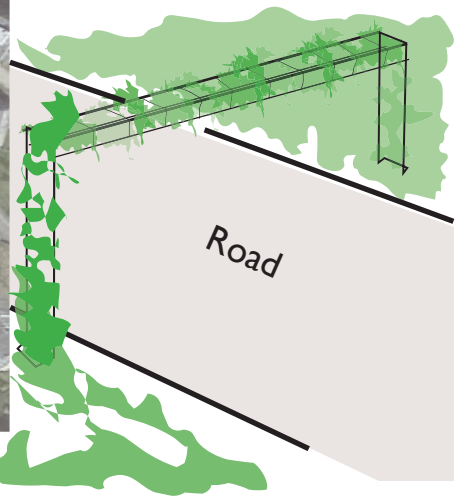
11. RESULT

11.6. DESIGN SKETCH OF THE BIOPHILIC CONNECTION OF GREEN AREA ADJACENT TO THE SITE



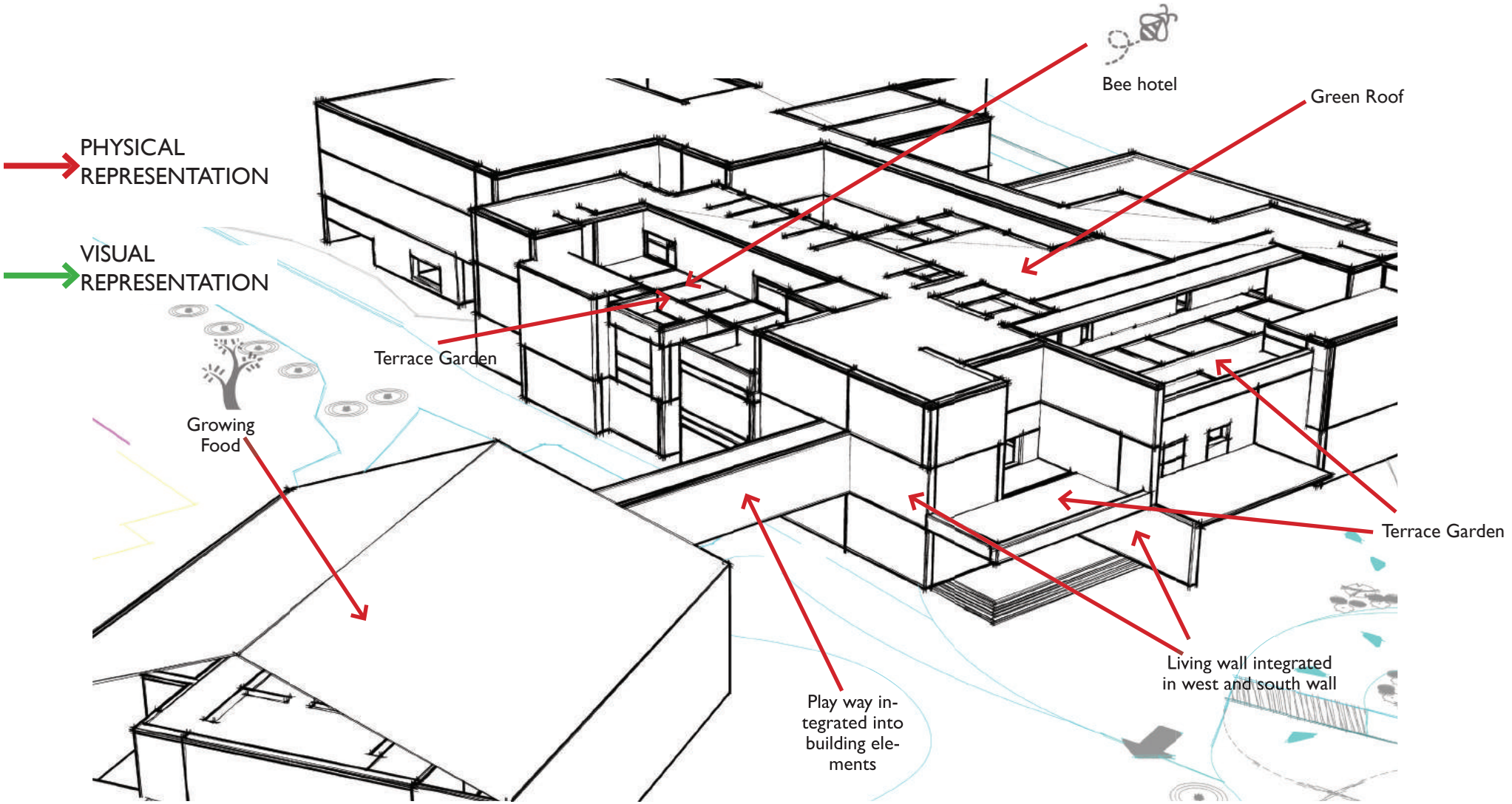
This Layout shows the biophilic connection of the two dense green areas adjacent to the chosen site (marked in red).

This biophilic connection is an eco link with steel structure running across the roads where the plants attracting bees, butterflies and birds are colied around the steel structure.



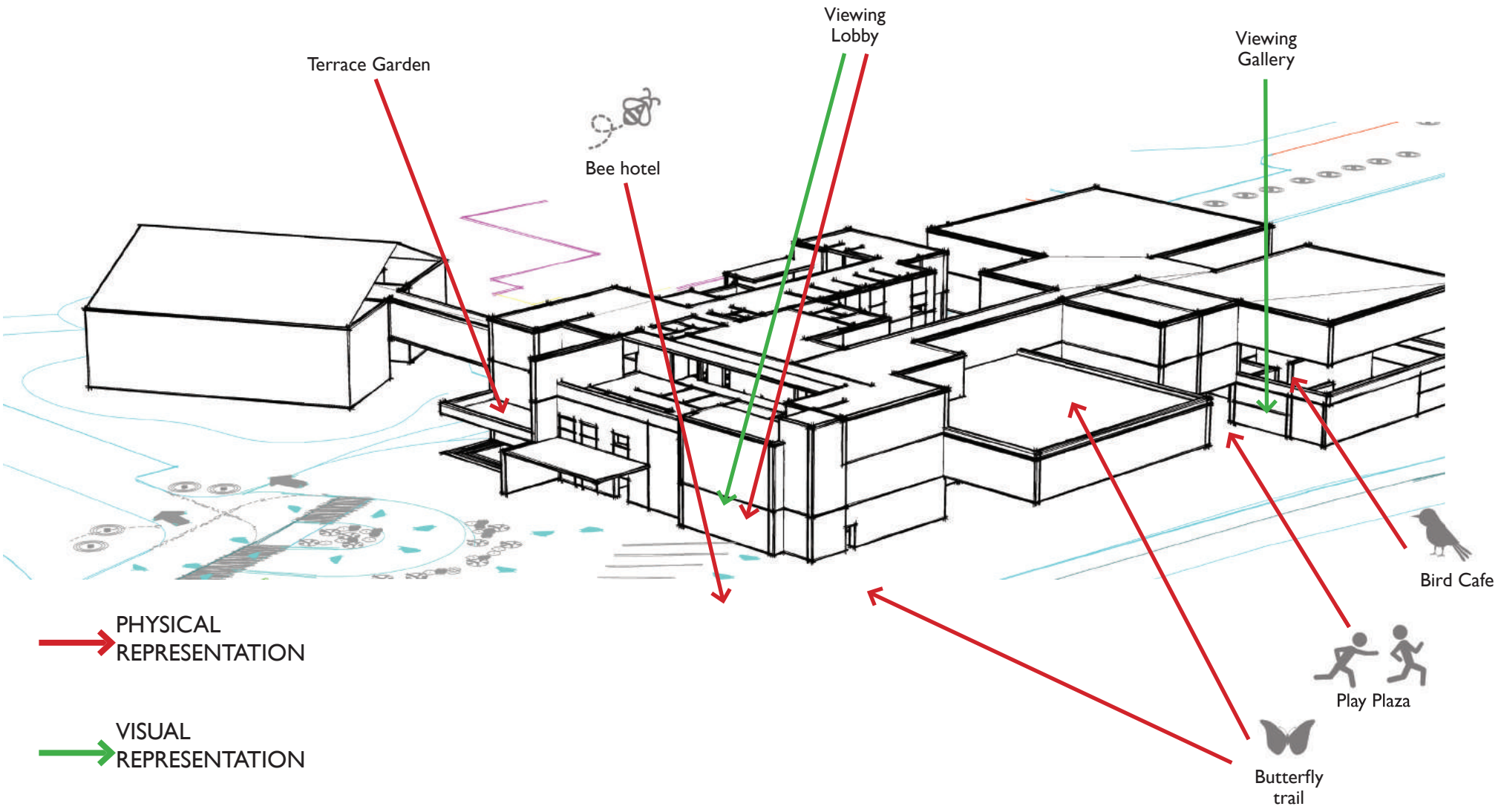
12. CONCLUSION

12.1. WHAT HAVE BEEN ACHIEVED IN THE DESIGN THROUGH PHYSICAL REPRESENTATION AND VISUAL REPRESENTATION MARKED IN SOUTHWEST VIEW



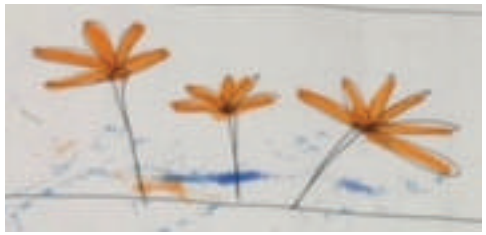
12. CONCLUSION

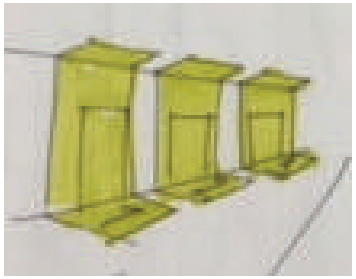
12.1. WHAT HAVE BEEN ACHIEVED IN THE DESIGN THROUGH PHYSICAL REPRESENTATION AND VISUAL REPRESENTATION MARKED IN SOUTHEAST VIEW

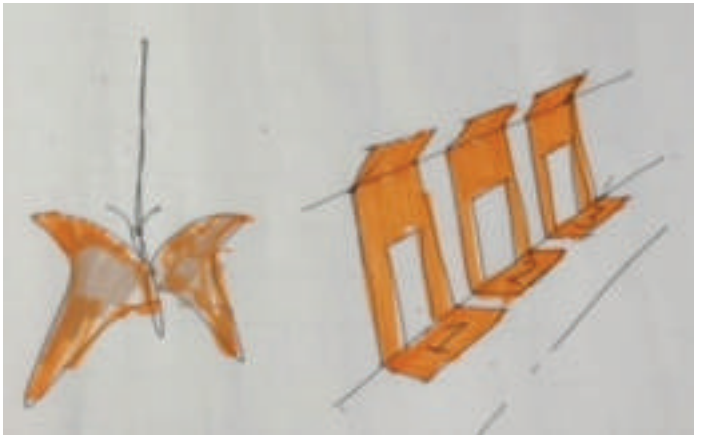


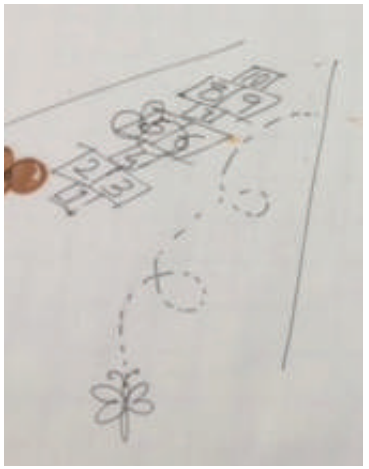
12. CONCLUSION

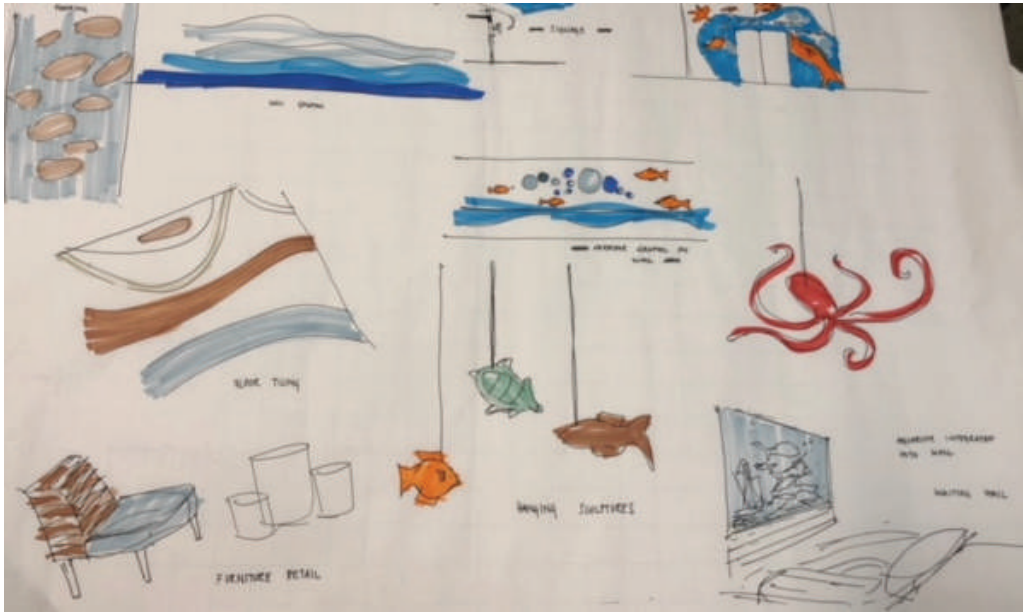
12.1. WHAT HAVE BEEN ACHIEVED IN THE DESIGN THROUGH VISUAL REPRESENTATION IN INTERIORS

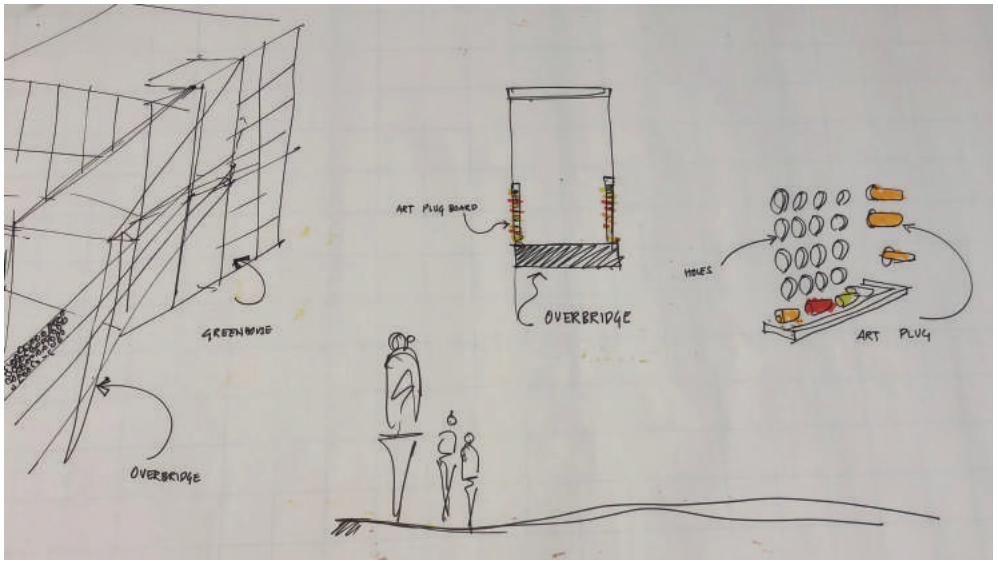






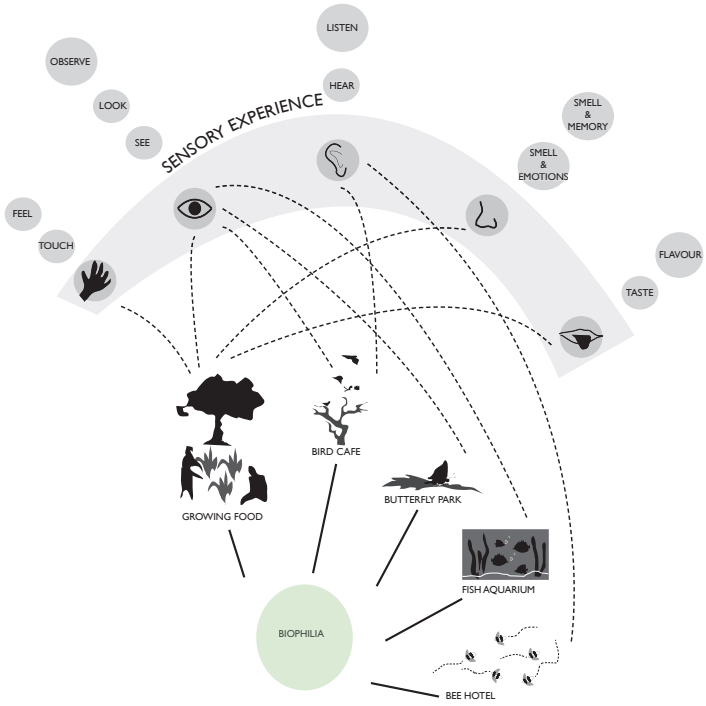






12. CONCLUSION

12.2. STATEMENTS



CHILDREN PSYCHOLOGY

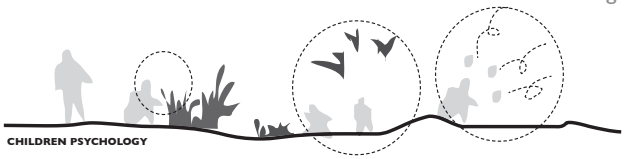
CHILDREN TOUCH, BITE EVERYTHING, TAKE NUMEROUS PAUSE TO EXPLORE WHEN THEY MOVE IN A SPACE IN ORDER TO GET A BETTER UNDERSTANDING OF THE ENVIRONMENT. RATHER THAN STIMULATING SINGLE SENSE, STIMULATION OF MULTI-SENSORY EXPERIENCE HELP CHILDREN TO LEARN MORE ABOUT THEMSELVES, THEIR ENVIRONMENT AND OTHER PEOPLE IN A SHORTER TIME.

JUST AS JUHANI PALLASMAA SAID, MEANINGFUL BUILDINGS ALWAYS GUIDE OUR CONSCIOUSNESS BACK TO THE WORLD AND TO OUR SENSE OF SELF. THE WAY SPACES FEEL, THE SOUND AND SMELL OF THESE PLACES, HAS EQUAL WEIGHT TO THE WAY THINGS LOOK. IT IS VERY DIFFICULT TO PHOTOGRAPH ACOUSTICS, SCENTS OR TACTILITY, BUT IT IS HARD TO FORGET THE DISTINCTIVE THINGS WE HEAR, SMELL AND TOUCH. THE SENSES GIVE US SOMETHING TO REMEMBER (DIACONU 53).

CONSTANT EXPOSURE TO BIOPHILIC FEATURES AS THEY MOVE AROUND THE SPACE MAKES THE CHILDREN TO GET FURTHER MORE COMPLETE EXPERIENCE LIKE VISUAL EXPERIENCE DEVELOPS INTO ACT OF 'SEE' THEN TO ACT OF 'LOOK' FINALLY TO 'WATCH'.

"Good and thoughtful design can not only awaken our senses, but reconnect us to place and to ourselves."

-David Darling



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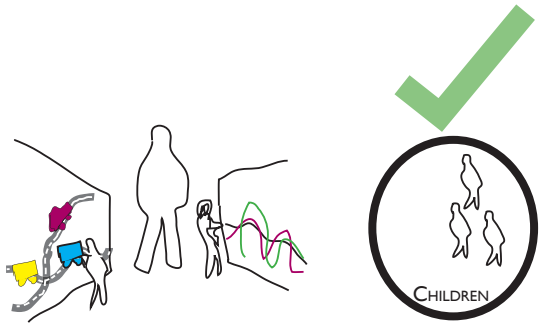
1. CLOSENESS TO NATURE CAN ALWAYS REDUCE STRESS AND IMPROVE MENTAL HEALTH .

2. LIVING AMONG ECO SYSTEM WILL HELP UNDERSTAND ITS QUALITIES AMONG CHILDREN.

3. MENTALLY ILL CHILDREN ESPECIALLY BENEFIT FROM NATURE AND OUTDOOR PLAY.

4. PLAYWAY INTEGRATION COMPLIMENTS THE WHOLE PRESENTED IDEA OF BIOPHILIC BUILDING DESIGN FOR CHILDREN.

5. A PSYCHIATRIC FACILITY SHOULD NOT ONLY BE FOCUSED ON MEDICAL/ CLINICAL DESIGN CONSIDERATIONS.



PLAYWAY INTEGRATED ON BUILDING ELEMENTS

NATURE (FLORA AND FAUNA) INTEGRATED IN BUIDING DESIGN

illustration sketch done by Author

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