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Healing Light

Proposal of
Child and Adolescent Psychiatry Department
with Daylight Design

Healthcare Architecture Studio
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MPArc | Master's Programme in Architecture and Urban Design
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THANKS

To my tutor Christine, examiner Peter,
Eva Ek from NU-sjukvården,
and all my friends,

Thank you for your help and support

ABSTRACT

Light is one of essential elements not only for architectural design, but also for us to satisfy both physiological and psychological needs during our daily life.

Research demonstrates that 80% information we obtained from the external world is by visual sense. Thus, light is an orientation for spatial cognition that enables people to have balanced visual psychology. However, it is a challenge for people who suffer from mental diseases. The main purpose of my thesis is exploring relationships between light and spaces, therefore, researching spatial impressions and psychological effects to create a healing environment for psychiatric patients, especially for children and adolescents in view of my experiences.

Studying references and statistics was my initial task in order to realize real demands of psychiatric patients and acquire deep knowledge about light, space, psychology, and healing environment. Besides of analysis, physical model is the tool to research and present directly. Meanwhile, computer modelling and digital visualization inform people rationally with evidence-based design.

The proposal is considered to be a child and adolescent psychiatry department (BUP), which belongs to the new construction for psychiatric care in Norra Älvsborgs Länssjukhus. Under Swedish context, I will consider the daylight design in different layers. Main focus is the healing environment for children and teenagers, which will be in an appropriate way both for physical and psychological health.

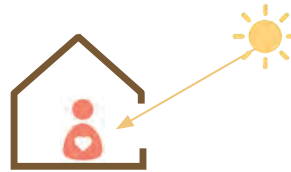
By my work, spaces with daylight design are hopefully applied to dwellings, care centres, and relevant organizations as suggestions. Giving feedback to rising public attention on healthcare system, an expanding thinking for future architecture is necessary and visualized.

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1 INTRODUCTION

Purpose, aim and result?
Background?
Methods and process?



O PENING

Healing light, is more than physical health.

My work of this thesis is exploring relationships between light and space, researching spatial impressions, and creating a healthy and convenient daily environment by daylight design for adolescents with mental illnesses.

A proposal of the psychiatry department for children and adolescents is my result. According to the plan of the new psychiatry construction in connection with Norra Älvsborgs Länssjukhus, besides of inpatient necessary facilities, additional part can be living spaces for parents, one small-scale school, staff area, etc.

BACKGROUND

Why I choose daylight design?

Daylight is so essential that it has been stressed for long time in most research fields.

On one hand, for architecture design, light always plays a significant role regardless of times. There is no doubt that every architect takes light into consideration of his/her projects, and some masters even design architecture for "light". On the other hand, light is a basic element that influencing our physical and mental health.

I always believe that a good architecture must talk to local context. Since daylight environment in Sweden is crucial for architectural design which also is a difficult factor to deal, I want to challenge myself and hope to realise certain satisfying result.

Why I focus on children and adolescents?

I had visited a special school several times with my friends during my bachelor study. Handicapped children study and live here. Maybe they couldn't have complete physical or mental health, however most of them enjoy their lives and try to stay positive attitudes while fighting with different illnesses. I noticed that it is difficult to understand the behaviour of psychiatric children, which thanks to their different thinking and psychology. However, spaces they were using could not meet their needs or were low-qualified for healing. So I think it is time for me to help them in an architectural view.

METHOD & PROCESS

Document study was the start of my work plan. I read and analysed relevant literature, articles, references, statistics(light and space, lighting design, visual psychology, environmental psychology, general lifestyle of target group, obstacles and real needs, healthcare projects, light application in healthcare buildings...), and try to find some answers to the theoretical problems. Also, the site and background investigation was basic task, which included analysis and summary.

Then I set out to design the whole psychiatric hospital. This mainly aimed at flows design and functional arrangement since my focus was only one part of whole building. Considering of local daylight condition in site layer, I proposed the building direction and architectural form.

When it came to the daylight study, I decided my main focus on single patient room and developed it by the physical model study and daylight stimulation. Since the typology is Research by Design, a mass of physical models were made to display different relevant factors, which is more direct and sensible for analysis and conclusion.

After that, I began the design of child and adolescent psychiatry department(BUP). As the result of my study, examples of the healing environment within BUP were demonstrated. Further, I hope that the conclusion from my thesis can be design suggestions and applied to other cases which are not only psychiatric hospital but also residential architecture, care centres, etc.

2 NORTH ÄLVSBERG COUNTY HOSPITAL AND NEW PSYCHIATRY

"A hospital in continuous development for the benefit of the patient."
----- *NU Healthcare Vision*

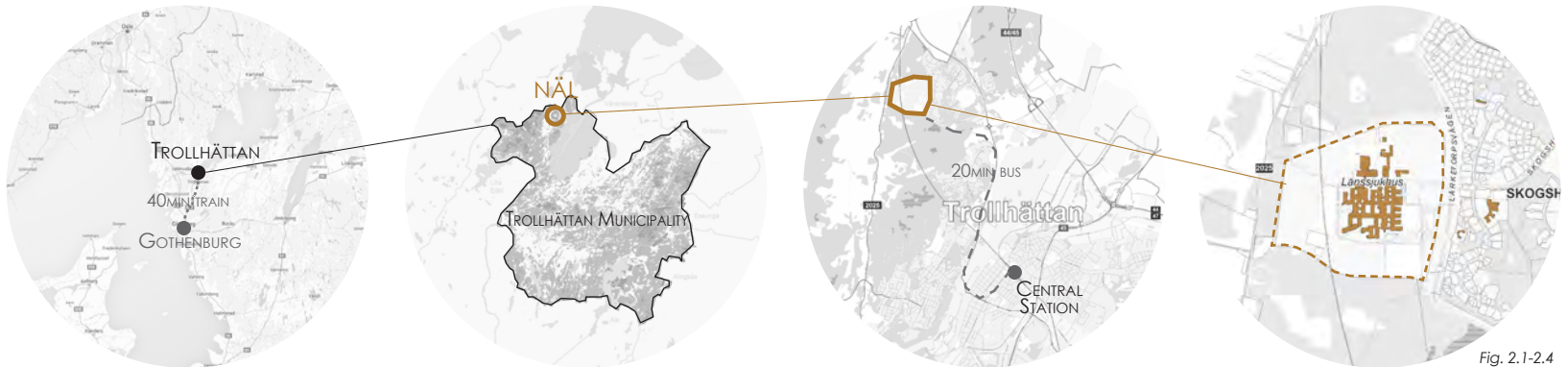


Fig. 2.1-2.4

2.1 NÄL

North Älvsborg County Hospital, in short as NÄL, is located in Trollhättan which is the seat of Trollhättan Municipality, Västra Götaland County, Sweden.

The hospital built in 1980 and finished in 1988, is a merger of two hospitals in Trollhättan and Vanersborg. Here are the Västra Götaland largest emergency department and a complete county health care.

NÄL is situated in a tranquil natural environment that is approximately 4 kilometers northwest of the center of Trollhättan. It is convenient for long-distance visitors by intercity traffic, meanwhile, it is easily reachable by bus or car in surrounding regions.

e.g. Gothenburg Centralstation $\xrightarrow{40\text{min train}}$ Trollhättan Centralstation $\xrightarrow{20\text{min bus}}$ NÄL



Fig. 2.5

2.2 NU HOSPITAL GROUP

As one of four hospital groups within Region Västra Götaland, NU hospital group consists of North Älvsborg County Hospital (NÄL) in Trollhättan, Uddevalla Hospital and Brinkåsen Hospital, but also serves 50 other supply points in the immediate area.

With 5500 employee, NU hospital group provides specialised healthcare and medical services in different levels for 280,000 inhabitants throughout Västra Götaland. The patients come mainly from Fyrbodal's 14 municipalities and Lilla Edet.



Fig. 2.6



Fig. 2.7 Uddevalla Hospital



Fig. 2.8 Brinkåsen Hospital

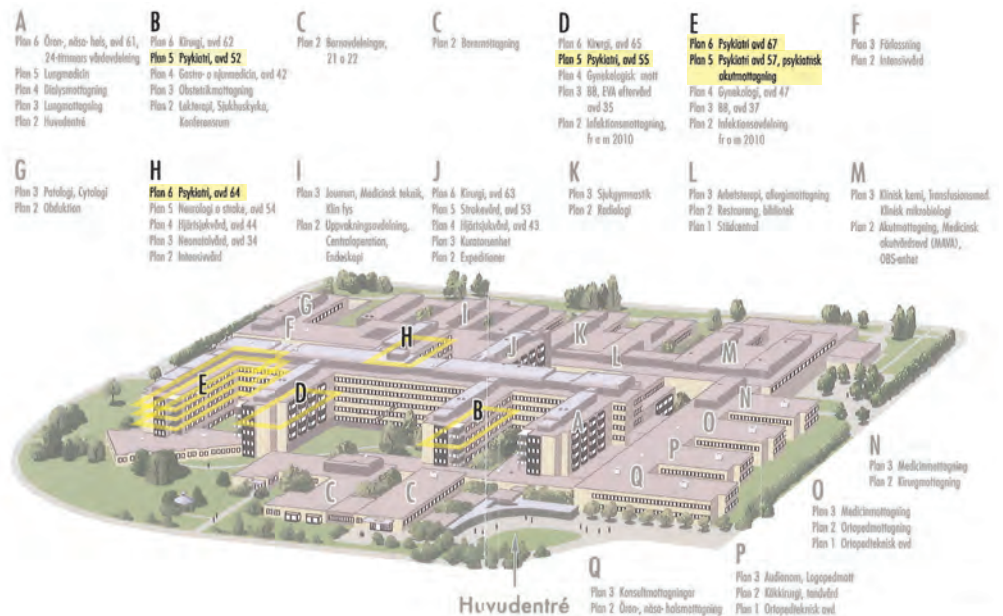


Fig. 2.9
2010-09-01

2.3 CURRENT PSYCHIATRY SITUATION

Psychiatry by four departments at NÄL are located in Building E at level 4, 5, 6, Building D level 5, Building B level 5, and Building H level 6. Building E were added in the final stages when the decision was taken to psychiatry that its emergency operations would move to NÄL.

Two departments are situated in Brinkåsen Hospital. The placement of these departments is not optimal with regard for logistics and that they are placed in a forensic psychiatric field.

Children's Psychiatric Emergency and Policy Department is currently placed in the external premises. Logistics and safety are difficult to satisfy.

Weaknesses

Patient and Personnel Security

The outdoor movements for company-needed patients may involve staff into unsafe working situations. One the other hand, it is non-ideal for department layout that the current psychiatry location is on three floors with entrance on the ground floor. All flows are crossing and chaotic in the hospital's general corridor which can result in a safety hazard.

Architectural Weaknesses

Generally speaking, the design as a whole does not contribute to a dignified care. For example, few single-patient rooms, lack of courtyard, and enclosed balconies with grilles are inappropriate and low-effecient during healing process. More patients can only go out with the staff. Due to less possibility of privacy, patients prevent the conversation between caregiver and patients.

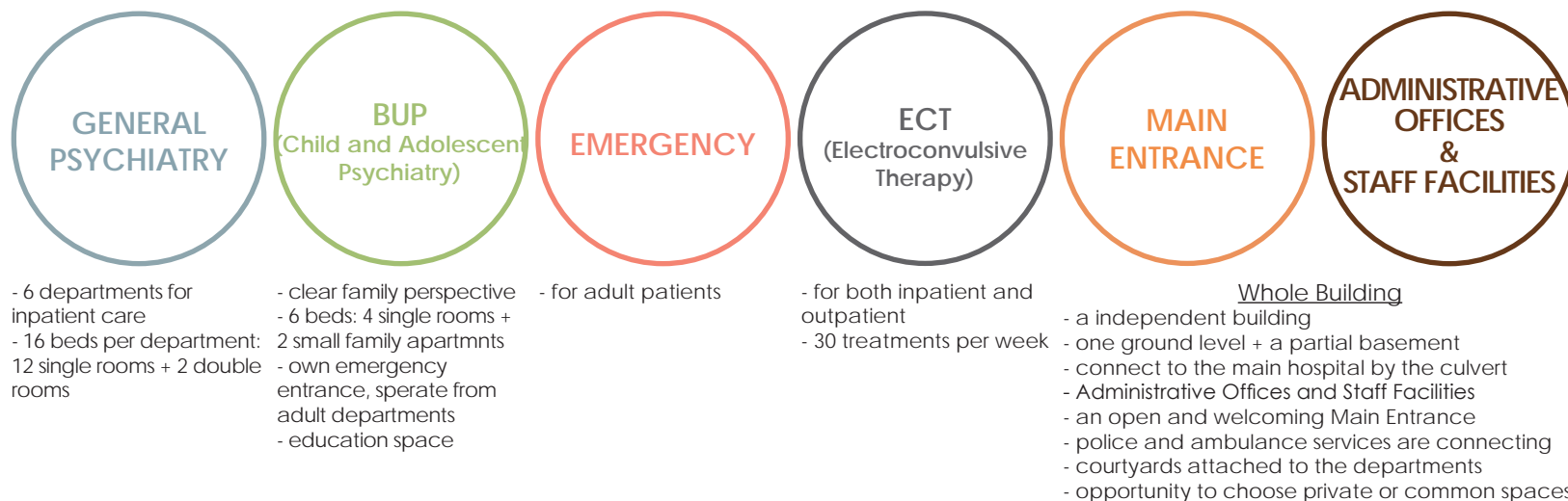
NU Brief facts in medical and psychiatric care

- has around 800 care places for in-patients
- treats outpatients over the course of 450,000 hospital visits per year
- treats inpatients over the course of 45,000 visits per year

In summary, current psychiatric care in NU hospital group consists of 6 departments and 1 child and adolescent psychiatry. The facilities provided in the existing building to NÄL will be used in future projects regarding infection control to create more single-patient rooms.



Fig. 2.10



2.4 NEW PSYCHIATRY

In May 13, 2014, Regional Council adopted a development policy documents for specialist psychiatric care in the Västra Götaland region. With a vision of "A psychiatry at the forefront", the goal is that people with mental illnesses or disabilities have access to equal, knowledge-based, safe health care of good quality.

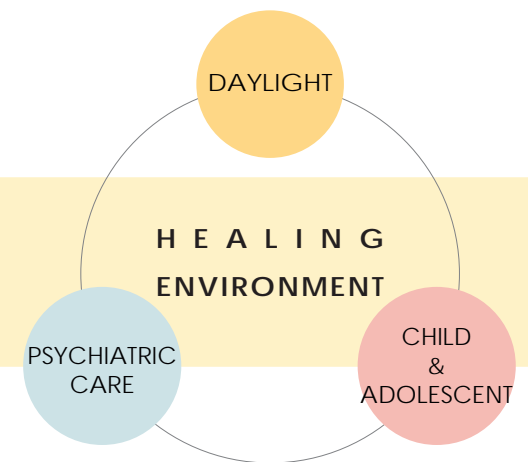
In June 17, 2015, NU hospital group conducted a feasibility study for a new psychiatry unit, which is a separate building with all care gathered at ground level to provide the basis for better safeguarding integrity.

New construction of a psychiatric hospital in connection to NÄL somatic care provides the best conditions for patients to receive care. It can be created as a healing environment for these patients in a better way than that did for somatic care.

The aim is to design a bright, peaceful and harmonious building that has rooms with plenty of natural light and beautiful views. A healing environment for body and soul.

The building has a great emphasis on creating an environment in accordance with research and feasibility study. The design has the potential to pursue a modern and stimulating care with attractive and optimal working atmosphere. Besides, sustainability is also stressed for providing spatial durability in the long term.

3 INSPIRATION FROM LITERATURE



3.1 DAYLIGHT --- SPACE & PERCEPTION

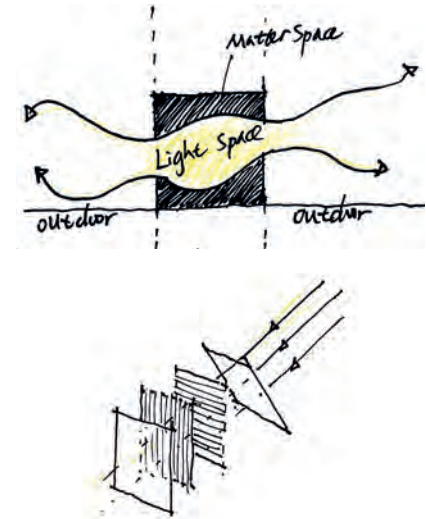
DAYLIGHT, SPACE

Since I try to use the natural light as an architectural design tool, I need to understand the basic relationship between daylight and space.

Rather than the vacant part that enclosed by various substance, space is more spiritual existence. Among all relevant matters, light is one of most changeable but essential factor for shaping space, especially on psychological aspect. In fact, the space that is revealed by light can be regarded as "light space" that is a field that generated by the contrast and difference. Thus, the complete architectural environment is cooperated by both matter space and light space.

So, how to use natural light sources to create lightscape?

There are 4 main light properties as design methods: Quantity, Variation, Distribution, and Depth of field. The quantity of natural light is more about indoor illumination. Variation always give space rich expression and characteristics. Well distribution leads to a continuous environment from the exterior to the interior. Comparing to previous properties, the depth of field is more controllable and the result can be obvious and direct.



DAYLIGHT, SPACE, PERCEPTION

How people see their environment?

How people react to their environment?

These two questions demonstrate that there is a certain gap between the external environment and the internal world.

Our perceptions are different from each other because of two facts. One is a layer of "symbolic value". Facing the entire external information, people always pick up only part of information by sensory organs. This already exist in our subliminal level due to instinctive abilities. Thus, the thoughtless action is the first step to differ each person's perception. The other one is a level of filtering. Diverse filters influence our mind such as past experiences and present expectations.

Overall, although it is hardly possible to change these facts only by architectural design, creating a good environment that can be perceived by most people is still feasible since architects have been offering people spaces for such a long time.



Focus on daylight design, my work is not changing people's perception but giving opportunities to them for better living experience, even enhancing their life qualities.

3.2 PSYCHIATRIC CARE --- NATURE & HEALTH

PSYCHIATRIC CARE, NATURE

Nature as Healer.

As one of environmental design elements in psychiatric care, nature has stress-reducing or restorative effects.

During European history, Pastoralism had been revived that the therapeutic connection between medicines and outdoor environment was raised and gardens were regarded as places of body and spiritual restoration.

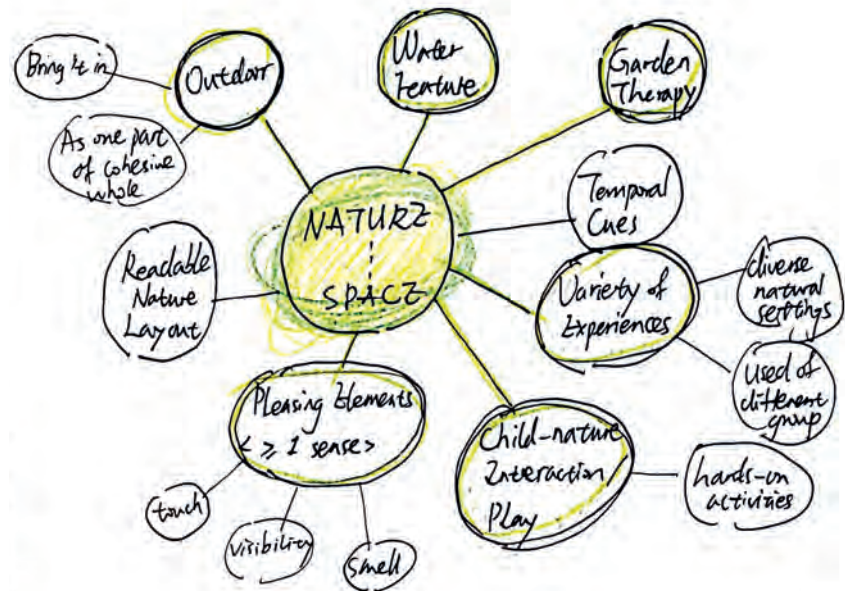


PSYCHIATRIC CARE, NATURE, HEALTH

Nature and space reinforce each other tightly and the outcome of which has enormous implications on mental health during patients' cure process.

An essential component of any inpatient mental health facility should be direct, yet secure access by patients to the outdoors. The flow between indoor space and external nature is also important to create various experiences, which benefits the architectural design in certain aspects.

Natural distractions not only fulfil people biological and psychological needs, but also promote patients healing conditions. No matter through which way, even only short-term visual contacts with nature, the speed of cure and result of treatment will be faster and better. There are even several therapies that based on nature involvement such as Milieu therapy and horticultural therapy. Thus, a healing garden is one alternative approach within daylight design to support garden therapies.



3.3 HEALTHCARE FOR CHILDREN AND ADOLESCENTS --- BEHAVIOUR & NEEDS

PATIENT GROUP

According to NU Hospital Group, BUP in this new psychiatry will help children who is aged between **10 and 18 years**.

ADOLESCENTS

The WHO defines an adolescent as someone who is aged between 10 and 19 years. Adolescents develop physically and emotionally at different rates. Assessing the needs of every individual is therefore paramount.

NEEDS OF YOUNG PEOPLE

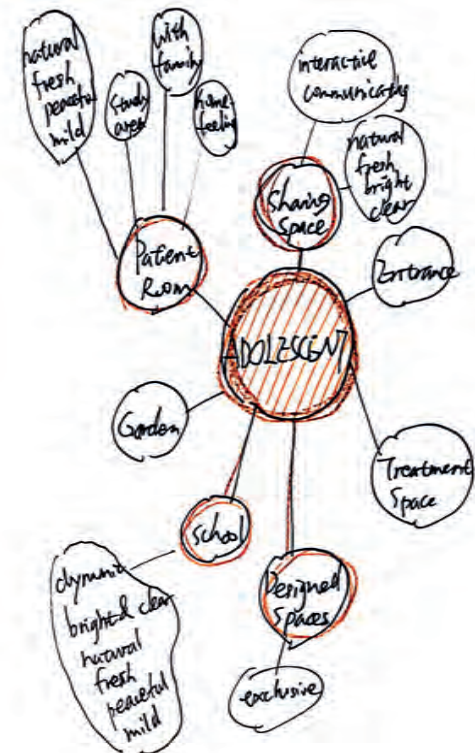
Different from children, young people have been gradually shaping their perception and the way of interacting with outer world. Thus, their behaviour and needs are becoming rational and diverse while their emotion and mind are more mature and complicated.

A wish list:

- a youth work project;
- a young people's special interest/working group (for staff);
- a young people's committee (for patients);
- an outdoor area for patients;
- a young people's unit or youth room with a kitchen facility;
- a playroom – separate from the under- 10s;
- appropriate décor and furniture for all ages;
- a suggestion box or graffiti board;
- patient information boards in each area;
- appropriate entertainment for all ages;
- an internet café with health advice/support worker;
- a "trendy" food area that attracts young people;
- a gym.

Expedition
Including functions

Information points
Spreading out in common area



SPACES FOR YOUTH

According to needs of young people, the special spaces for youth are integrant. In this thesis, I want to achieve the promotion of diverse activities to enhance youth's life qualities, which are leisure therapy, youth work, and play.

SENSE-SENSITIVE DESIGN

One necessary cure method for psychiatric patients is sense-sensitive therapy. When it comes to architectural design, there are several practical strategies such as sensory stimulation room, snoezelen room, and full-spectrum lighting. Sensory stimulation room and snoezelen room are similar and both for lifting patients' spatial perception and increase various experiences. As to full-spectrum lighting, it is a efficient tool to simulate daylight environment and good for overall improved performance.

YOUTH WORK

"Youth work changes lives. It provides opportunities for young people in a wide range of settings. It allows them to influence and shape their lives and the services available to them. There are few more important investments than in the future of young people, and few better ways of delivering change than through good youth work."

——David Blunkett, the Secretary of State for Education and Employment, 2001

PLAY

Play and interaction are recommended for all age children, including adolescents.

First, it is crucial to balance the contrast. A noisy indoor play area is needed, while a quiet indoor play area for activities such as reading and sitting at a computer is set. Also, a healing environment for adolescents contains not only an outside play area for patients and visitors but also a interior entertainment area.

Besides, leading patients to experience by architectural design is advantageous, such as playing with the natural elements(earth, wind, water, air), encouragement of movements(running, jumping, rolling, climbing), manipulating natural materials, etc.



Fig. 3.1



Fig. 3.2



Fig. 3.3

3.4 HEALING ENVIRONMENT IN BUP

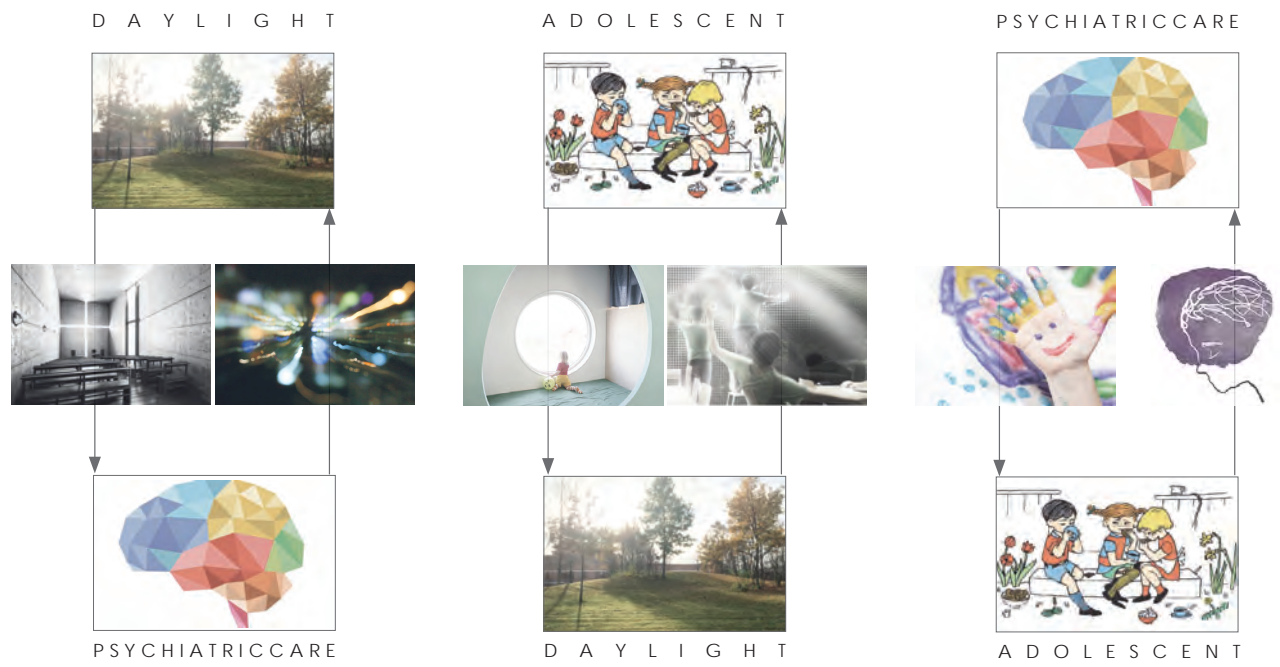


Fig. 3.4

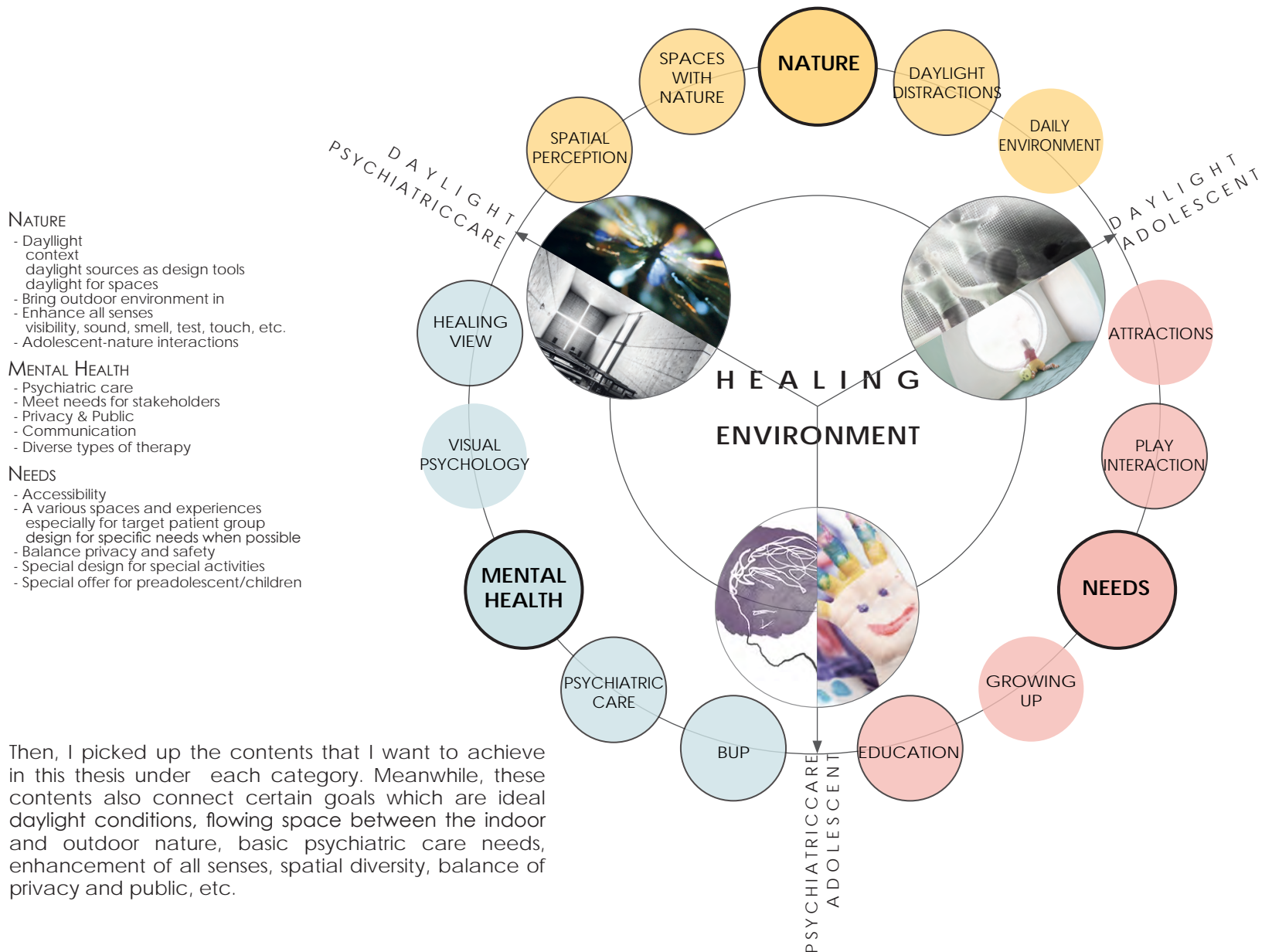
BUP

BUP offers specialized assessment and treatment of children and young people under 18 with mental health problems or illness, such as depression, anxiety, self-injury and disability. It also takes an relationship problems, sleep disorders, anxiety, etc. It also works to prevent mental illness. Caregivers meet patients with their parents and gives them support and an opportunity for change.

HEALING ENVIRONMENT IN BUP

During the literature study, I focused on three topics which are daylight, psychiatric care, and (children and))adolescent. Then I found out that each two of them can interrelate closely and interact deeply, thus it came to three design visions----- nature(corresponding to daylight), mental health (corresponding to psychiatric care), needs (corresponding to adolescent).

Following these visions, a diagram was generated. The central theme is healing environment, and there are five contents in every visions respectively which can be conducted by architectural design methods.



Then, I picked up the contents that I want to achieve in this thesis under each category. Meanwhile, these contents also connect certain goals which are ideal daylight conditions, flowing space between the indoor and outdoor nature, basic psychiatric care needs, enhancement of all senses, spatial diversity, balance of privacy and public, etc.

4 CASE STUDY



Fig. 4.1



Fig. 4.2-4.6

Sou Fujimoto Architects

CASE / CHILDREN'S CENTER FOR PSYCHIATRIC REHABILITATION

2006, Hokkaid, Japan
 Constructed Area: 2,536 sqm
 Gross Area: 14,590 sqm

Introduction

This is the treatment centre for mentally disturbed children where they live together to get regaining their mental health. Rather than a very special building, it is a truly rich-life space that like a large house and also like a small city. This is a proposal of a precise planning but accidental landscape with the method of being random. Moving a box delicately, the plan can be flexibly packed just because it is random in both positional and functional aspect. A surely irregular alcove-place is produced between the boxes placed at random. It can be said that there is nothing center here, and conversely, it can be said that there is a countless center.



Fig. 4.7 Ground Level



Fig. 4.8 2nd Level



Project Inspiration

Such a rich-life spatial complex can be regarded as a favourable example of healing environment with diverse means. It is a showcase that how the architect integrated daily spaces into a professional care institution. For instance, on the 2nd level, the fusion of play area, educational places, consulting rooms and outdoor gives patients a great deal of spatial experience that can avoid serious atmosphere. The irregular alcove-place in-between each boxes also is an exhibition of the mixture of private rooms and social areas.

As to “relative centre”, it is a result of flows and motion involving all stakeholders. These virtual centres are outcomes of different field's effects according to the property of users, which always interchanges and changes. There is one special situation referring to daylight conditions, which happens more possibly in common area that reflecting to time, season and local context.



Fig. 4.9-4.15

PLOT, BIG, Moe

CASE 2 HELSINGØR PSYCHIATRIC HOSPITAL

2005, Helsingør, Denmark
Construction Area: 6,000 sqm

Introduction

This project is a psychiatric clinic which extends an existing general hospital near Helsingør. The design follows the asymmetrical cross-shaped plan on two levels, merging into the landscape at the ends of each arm. On the lower floor – the part of the clinic where patients stay overnight – each room is given a view outwards, and the space between the rooms creates irregularly shaped indoor sharing spaces. On the upper floor – in the public treatment section – a bridge from the main hospital building arrives in the centre of a cluster of treatment rooms. This circulation enables solving conflicting requirements: to be centralized, but with private, decentralized accommodation for patients, to provide a sense of freedom within a controlled environment and to guarantee privacy within a social atmosphere.

Fig. 4.16 Programme



3x



Fig. 4.17 Plan

Project Inspiration

Since this project is creative in both architectural form and functional layout, I studied the programme as reference.

This plan shape is a good way to interact with the landscape, which importing more daylight from different directions along the sun path. Despite of unsafe factors, the ending corners offer more privacy for patients. The guarantee of views towards outside for every room realises better healing environment especially for ward area.

It is inspiring that enlarging and making use of the space between patient rooms, which can be called "wide common corridor", is beneficial both spatial qualities and balance of personal and social characters. The decentralisation of ward is also a method to decrease hospital-feeling. In addition, indoor activity area brings outdoor qualities in that builds normal daily environment.



Fig. 4.18-4.21

White Arkitekter

CASE 3 NEW ACUTE PSYCHIATRY, ÖSTRA HOSPITAL

2009, Gothenburg, Sweden

Gross Area: 18,800 sqm

Introduction

It is quite clear that the buildings' aesthetics and function play a major role in the recovery process. During the design, Architects have based upon three concepts: garden, heart, and residential group. *The Garden*. An oasis is surrounded by buildings. "Sheltered outdoor area" has been given a freer role. *The Heart*. The central area of the ward department with living room, kitchen, dining room, activity room and department station grouped around a small glazed conservatory. *Residential Group*. The traditional Swedish glazed veranda has inspired the social corner in the residential group (4-5 people). The residential group is visible from the "heart", but can be separated and used for patients with similar diagnoses.



Fig. 4.22

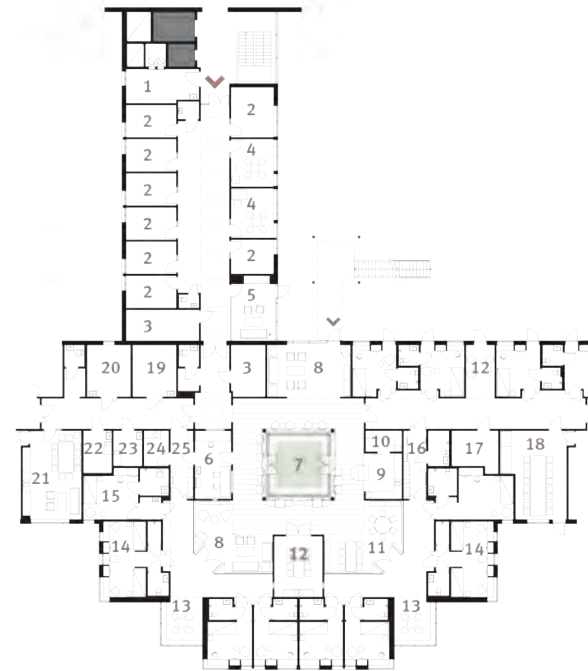


Fig. 4.22 Care Unit Plan

- 1 Recycling room
- 2 Office etc.
- 3 Services
- 4 Therapy/consulting rooms
- 5 Reception room
- 6 Care unit station
- 7 Atrium
- 8 Lounge
- 9 Kitchen
- 10 Larder, lockable
- 11 Dining area
- 12 Activity room
- 13 Common room
- 14 Patient room (2 beds)
- 15 Patient room, with isolation stairs
- 16 Cloakroom
- 17 Store
- 18 Team room/conference room
- 19 Treatment room
- 20 Restraint room
- 21 Staff room
- 22 Dirty utility room
- 23 Laundry
- 24 Clean utility room
- 25 Storage

Project Inspiration

As described in this project, architects want to create a spatial line to guide patients from their personal space to normal daily environment by garden, heart, and residential group.

Since my focus includes daylight, the garden concept set certain examples for me. Also, the chapter “*Green is beautiful*” in *Architecture as Medicine* by White Arkitekter inspired me about how architects use green spaces to create healing environment and how to merge different natural elements into the psychiatry department.

The Heart, which is the form of leisure functional rooms surrounding a green house, is beneficial for cure process and shaping daily spatial impressions. Moreover, this care unit plan inspired me for programme study.

From the residential group concept, I had a idea to design multi-functional rooms for youth because of the conclusion of the literature study. These spaces can be used for learning, discussion, chatting, and leisure activities.



Fig. 4.23-4.25

White Arkitekter

CASE 4 NEW PSYCHIATRIC CLINIC OF SÄS

2013, Borås, Sweden
Gross Area: 11,500 sqm

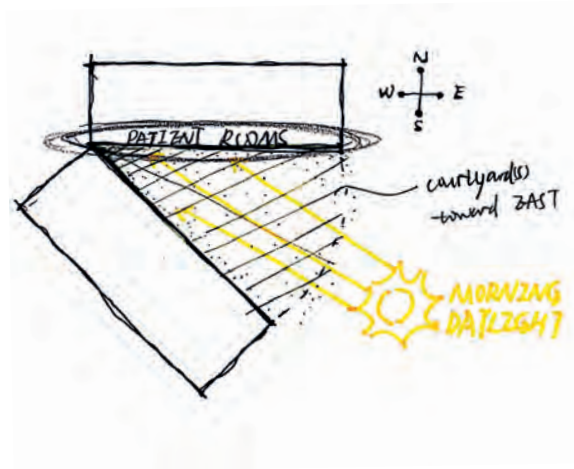
Introduction

The new Psychiatric Clinic is part of the Southern Älvsborgs Hospital (SÄS), and includes inpatient wards and an emergency department for both the Adult Psychiatry (about 80 beds) and for the Children and Adolescent Psychiatry (about 10 beds). Other services are a rehabilitation unit and a joint administrative unit.

The program is broken down into smaller units and the building adapts to the site. The interior space offers diverse views towards nature. The architecture puts the patient in focus that offering a welcoming participatory healthcare environment. All patient rooms are single rooms with private balconies that open to the surrounding nature.



PLAN 2/3 1:200 (A1) 1:400 (A3)



Project Inspiration

This project is a try based on sunlight conditions which has great relevance to my daylight study. The building is designed and orientated to take maximum advantage of natural light. Considering of morning daylight, the courtyards are toward the east. From the site plan, it is obvious that the orientation of new building also speaks to the existing hospital.

The method that breaking down the functional volume and creating small scale units in form of strips integrates into the topography and pine tree forest, which is similar to Helsingør Psychiatric Hospital. It also provides more opportunities for patients, visitors, and staff to interact with outdoor nature.



Fig. 4.26 Site Plan



Fig. 4.27-4.29

CREO ARKITEKTER A/S, WE architecture

CASE 5 NEW PSYCHIATRIC HOSPITAL IN BALLERUP, COMPETITION 1ST PRIZE

2014, Ballerup, Denmark
Gross Area: 6,000 sqm

Introduction

The proposal is fitted respectfully in structure of the existing buildings on site. Building and green spaces enrich each other in a mutually dependent symbiosis. The smaller scale buildings are transferred to the new building and expressed in a symphony of pitched roofs and gables reminiscent of a small village with low-dense dwellings. This gesture also adds a subtle, non-institutional appearance. The human scale and the worthy meeting between people are reflected in the project that is subdivided into smaller sections that are arranged in a checkerboard-like pattern.

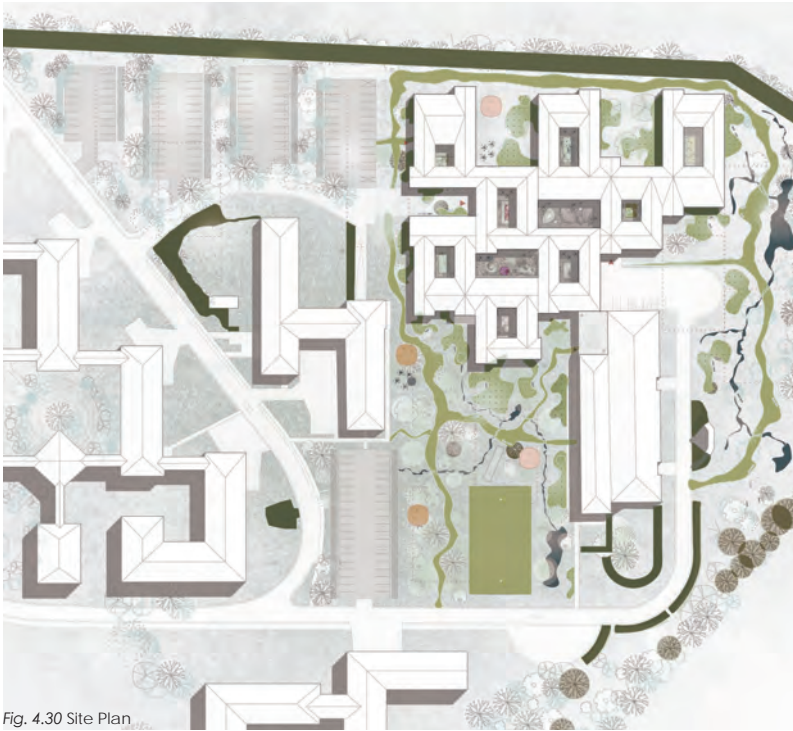
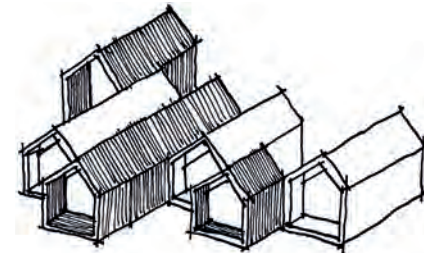


Fig. 4.30 Site Plan



Fig. 4.31



Project Inspiration

The pitched-roof wooden house is a reasonable architectural prototype that meets various needs of inpatient psychiatric care such as human scale, relaxed atmosphere, being closer to nature, respect to local context, etc. The type of roof also has possibilities of creating a variety of spaces with home feeling rather than the institutional atmosphere.

Multi-courtyard and low-rise typology achieve spaces within nature. Since the emphasis on empathy and openness, the interior design provides patients with experiences through a constant presence of different natural elements. Thus, the common corridor or sharing spaces reach the goal of sense-sensitive design that lift patients' life qualities by daily motions.



Fig. 4.32-4.37

70°N arkitektur

CASE 6 TROMSØ KINDERGARTENS

2008, Tromsø, Norway

Gross Area: 622 sqm

Introduction

From 2006 to 2008, in response to the government's decision to guarantee day-care for all children, total 6 kindergartens were built. According to the general concept, kindergartens are organised in a number of longitudinal zones that contribute to a soft transition from the exterior to the interior spaces. This concept also guarantees the possibility of having multifunctional rooms. In the first two kindergartens, each unit is furnished with two adjustable playing walls that are hinged in the centre. The walls contain a variety of playing elements, shelves, drawers, pull-out furniture, whiteboard walls, climbing walls, puppet shows, etc. In the four more recent kindergartens the wall theme is further experimented with playing features with diverse spatiality and use integrated into a fixed wall.



Fig. 4.38-4.41

Project Inspiration

How to PLAY?

This project starts from one simple method --- wall --- and generates a play system.

As I conclude before, play is essential for all age children. The playing wall system expresses the idea that how to transform the constructional element into sense-sensitive design. It is not only a matter space, but also records of daily behaviour and the reflection of mental growth. By architectural view, the playing wall breaks the rule of ordinary wall and contents multi-purposes, which is attractive and inspiring to children. In addition, the social and gathering spaces that created by this system are characteristic of enjoyment and educational.



Fig. 4.42-4.46

White Arkitekter

CASE 7 THE ASTRID LINDGREN CHILDREN'S HOSPITAL

1998, Solna, Sweden
Gross Area: 20,000 sqm

Introduction

The plan for the building is based on a concept that the care has been organised into function blocks, which cover both outpatient and inpatient care. Many facilities communicate by several activities within shared rooms, such as day rooms for parents, conference rooms and certain treatment rooms. Parents and siblings are important for a child's well-being and recovery. A care bed really means two beds – one for the child and one for a parent staying overnight. The relatives' apartment at the hospital also offers options to enable the rest of the family to stay for short or long periods. The buildings' austere external appearance links up with other blocks and buildings in the hospital complex. The interior and garden are designed more informally with a richer interplay of colours.

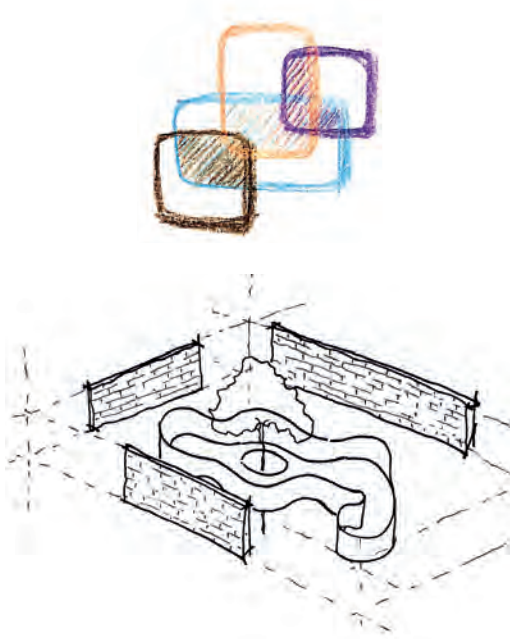


Fig. 4.47

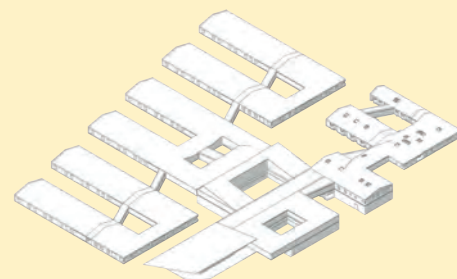
Project Inspiration

The overlapping zones in-between different departments provide patients, visitors and caregivers with chances of communication and cooperation, which promote the work efficiency and research quality. It is general and flexible that people can exchange experiences and co-work in these spaces with prospective value. Furthermore, sharing zones can be applied in each department that permeate as smaller scale. Supporting leisure therapies bestows additional values on these common places.

In terms of BUP programme, the clear family perspective is crucial that can be realised in both single patient rooms and apartment ward.

The contrast of different materials and architectural forms pays the respects to the whole hospital context while creates attractive environment for children.

5 NEW PSYCHIATRY PROJECT



5.1 PROGRAM STUDY

GROSS AREA 12900 sqm (include transport area)

The feasibility study proposes a new separate building with all care gathered at ground level. A limited portion on another level for the unit's staff, facilities and administration.

The project mainly includes entrance, emergency department, general psychiatry department, BUP department (child and adolescent psychiatry department), ECT, and administration & staff facilities.

Technology rooms are not included in the gross area.

GENERAL PSYCHIATRY 7000sqm

Including 6 departments.
Each department has same program.

WARD / DEPARTMENT	
SINGLE PATIENT ROOM	252
TWO PATIENTS ROOM	66

NECESSARY FUNCTIONAL SPACES / DEPARTMENT

DAY ROOM/COMMON AREA	60
KITCHEN&DINNING	40
DEPARTMENT EXPEDITION	12
ACTIVITY ROOM	12
MEETING ROOM	48
EXAMINATION/CONSULTING ROOM	48
THERAPY/TREATMENT ROOM	48
WORKING STATION	24
CONFERENCE/TEAM ROOM	12
DOCTOR/THERAPIST'S ROOM	12
STAFF ZONE	24
FIKA ROOM	12
WARDROBE/CHANGING ROOM	12
RESTRAINT ROOM	24
DRUG ROOM	12
LAUNDRY ROOM	24
MEDITATION ROOM	12
STORAGE/HYGIENE ROOM/TOILETS	48

x6

PUBLIC SPACES 650sqm

RESTAURANT	150
KITCHEN	75
LECTURE ROOM	100
LIBRARY/INFORMATION	50
SEMINAR ROOM	60
PSYCHOLOGY ROOM	60

ECT 350sqm

BUP 2100sqm

WARD	
SINGLE PATIENT ROOM	108
APARTMENT ROOM	130

NECESSARY FUNCTIONAL SPACES

DAY ROOM/COMMON AREA	60
KITCHEN&DINNING	40
DEPARTMENT EXPEDITION	12
ACTIVITY ROOM	12
MEETING ROOM	36
EXAMINATION/CONSULTING ROOM	36
THERAPY/TREATMENT ROOM	48
SCHOOL	60
WORKING STATION	24
CONFERENCE/TEAM ROOM	12
DOCTOR/THERAPIST'S ROOM	12
STAFF ZONE	24
FIKA ROOM	12
WARDROBE/CHANGING ROOM	12
RESTRAINT ROOM	24
DRUG ROOM	24
LAUNDRY ROOM	24
MEDITATION ROOM	12
STORAGE/HYGIENE ROOM/TOILETS	48

EMERGENCY

ENTRANCE HALL	50
RECEPTION	24
WARDROBE	12
INTERVIEW ROOM	16
EXAMINATION/CONSULTING ROOM	16
THERAPY/TREATMENT ROOM	40
OBSERVATION ROOM	24
POLOCE/SAFETY OFFICE	12
STAFF ZONE	24
DRUG ROOM	12
MEDITATION ROOM	12
STORAGE/HYGIENE ROOM/TOILETS	24

MAIN ENTRANCE 500sqm

ENTRANCE HALL	60
RECEPTION	24
WARDROBE/CHANGING ROOM	30
WAITING AREA	60
LIBRARY/INFORMATION CENTRE	24
CAFE	24
SHOP	24
PHARMACY	24
HWC/SHOWER	9
VISITOR HWC	9
VISIT ROOM	12
Kid's VISIT ROOM	12
PREPARATION ROOM	6
ASSESSMENT ROOM	6
TEST WC	3
WORKING STATION	24
COUNTY ADMINISTRATIVE COURT	16
POLOCE STATION	12
OFFICES	60
STORAGE	48
HYGIENE ROOM	24
SMOKING ROOM	9

EMERGENCY 1100sqm

ENTRANCE HALL	30
RECEPTION	12
WARDROBE/CHANGING ROOM	16
INTERVIEW ROOM	48
EXAMINATION/CONSULTING ROOM	60
PREPARATION ROOM	24
THERAPY/OPERATION ROOM	72
OBSERVATION ROOM	48
WAITING AREA	48
DAY ROOM/COMMON AREA	60
MEETING ROOM	60
PAUSE ROOM	12
POLOCE STATION	12
DEPARTMENT EXPEDITION	24
STAFF ZONE	48
DRUG ROOM	24
MEDITATION ROOM	18
CLEAN/HYGIENE/STERILE STORAGE	36
STORAGE	24
TOILETS	12
SMOKING ROOM	9

ADMINISTRATION&STAFF FACILITIES 850sqm

WARDROBE/CHANGING ROOM	24
SAFETY DEPOSIT BOX ROOM	12
OFFICES	120
STAFF TRAINING ROOM	48
OPEN LANDSCAPE OFFICE	80
COPY ROOM	12
ARCHIVES ROOM	48
FIKA ROOM	24
COMMON AREA	60
MEETING ROOM	60
SEMINAR ROOM	36
CARE PLANNING	24
DEPARTMENT EXPEDITION	24
STAFF ZONE	80
LAUNDRY ROOM	24
STORAGE	24
TOILETS	15
SMOKING ROOM	9

5.2 VISION



A HEALING ENVIRONMENT

- Context Integrate
- Good Qualities
- Balanced Qualities

Due to the consideration of harmonious, tranquil inpatient environment, the prototype of double-pitched roof wooden house has been used, which also fits the human scale. Besides of a bright, peaceful atmosphere, the building has spaces with plenty of daylight and beautiful views towards nature. During various diagnoses and care process, patients have different needs both for the quiet and privacy. It is equally important to create places for community and social interaction.



SAFETY & ATTRACTIVENESS

- the Public
- Staff

The design has the potential to pursue a modern and stimulating care with attractive working environment for staff which can be essential to attract skilled people to work here. It is also important to create good transparent and secured circumstances which is reassuring for staff.



FLEXIBILITY & GENERALITY

- In Different Scales

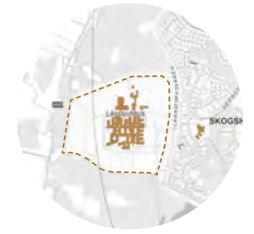
Several functions may use the same type of room, and to plan and build with this basic idea provides durability in the long term. As for the administrative offices, that should be considered as activity-based workplaces. Being able to choose the type of work that you need at the moment is encouraged.



RENOVATION & RESPONSE

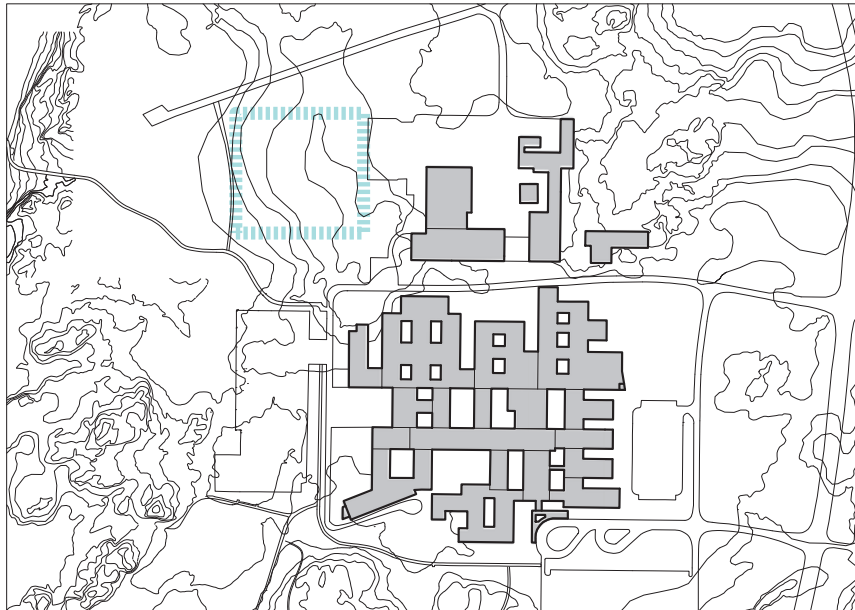
To make up for the lack of present psychiatry departments, the new building have the need of renovation and response to requirements for modern psychiatric care, which will mainly get feedback from the healing environment.

Fig. 5.1-5.8

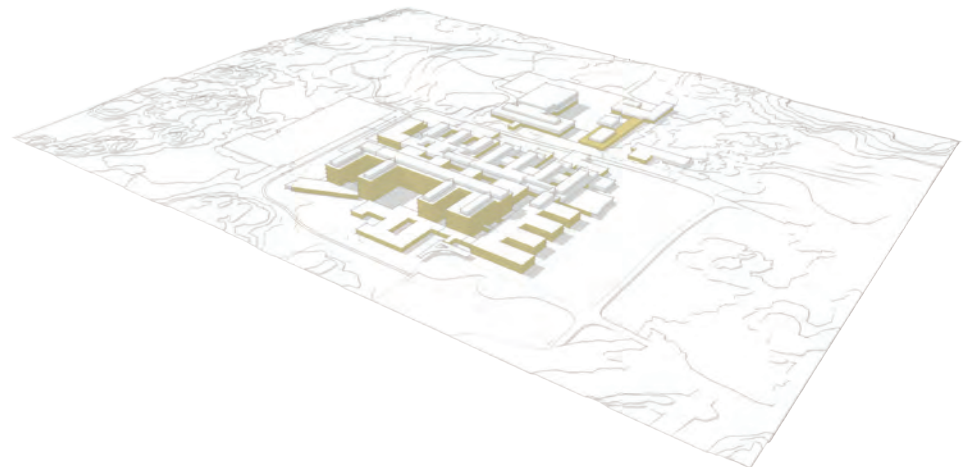


5.3 SITE ANALYSIS

SITE SITUATION

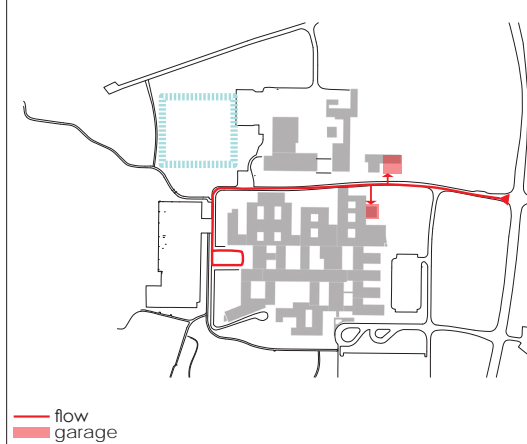


NAL
SITE

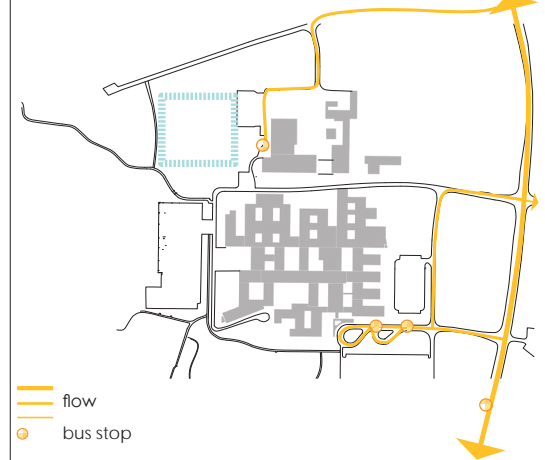


TRAFFIC FLOW

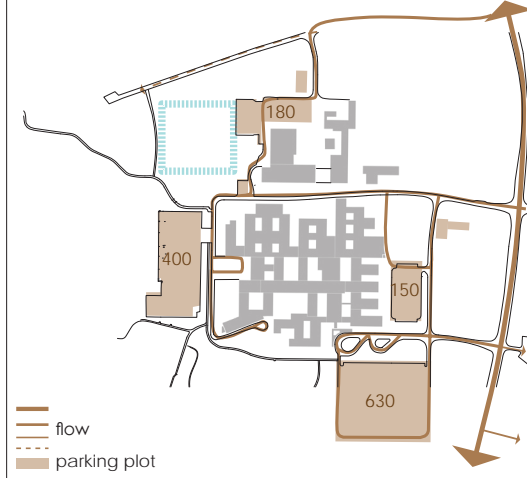
AMBULANCE



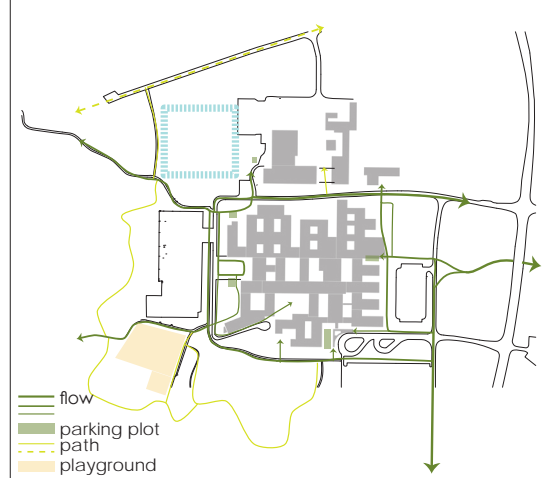
Bus



VEHICLE



BIKE & PEDESTRIAN



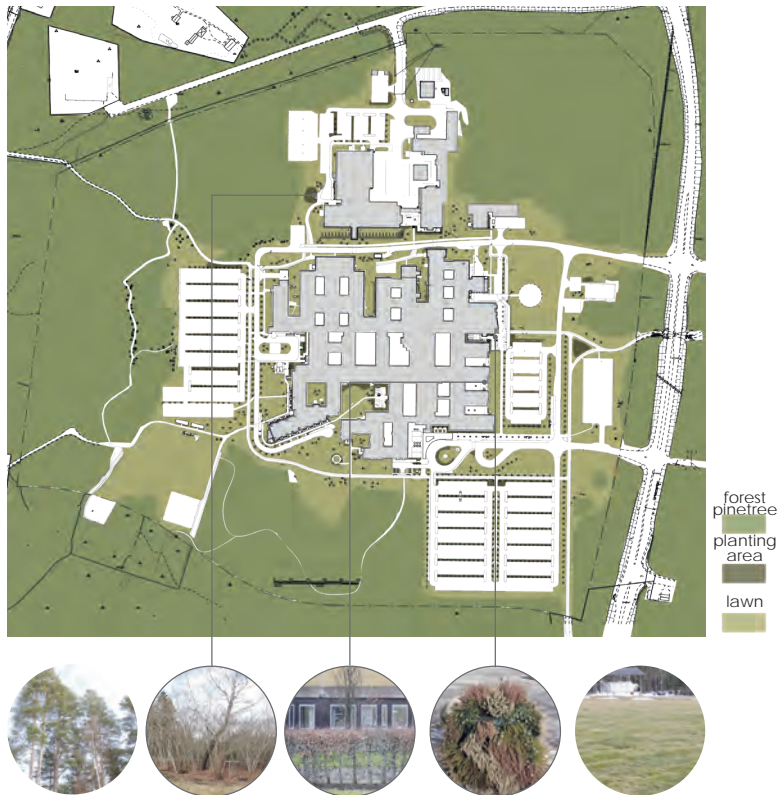
NOISE SURROUNDINGS



Conclusion of Traffic Analysis:

- Emergency flow with ambulance is valuable and easy to be extend. No need for new ambulance garage.
- It is convenient for patients, visitors and staff to go there either by car or bus.
- Diverse walking and biking paths are good for healthy promoting which should be kept.
- For public arriving: take advantage of the connecting point of different flows.
- For functional layout: inpatient ward--- closer to low-noise area

NATURE



Conclusion of Nature:

- The nature contains rich pine tree, planting area, and lawn. Starting from sustainability and respect, keep it as much as possible and use the chopped wood as materials for facade, decoration, etc.

SUNPATH IN TROLLHÄTTAN

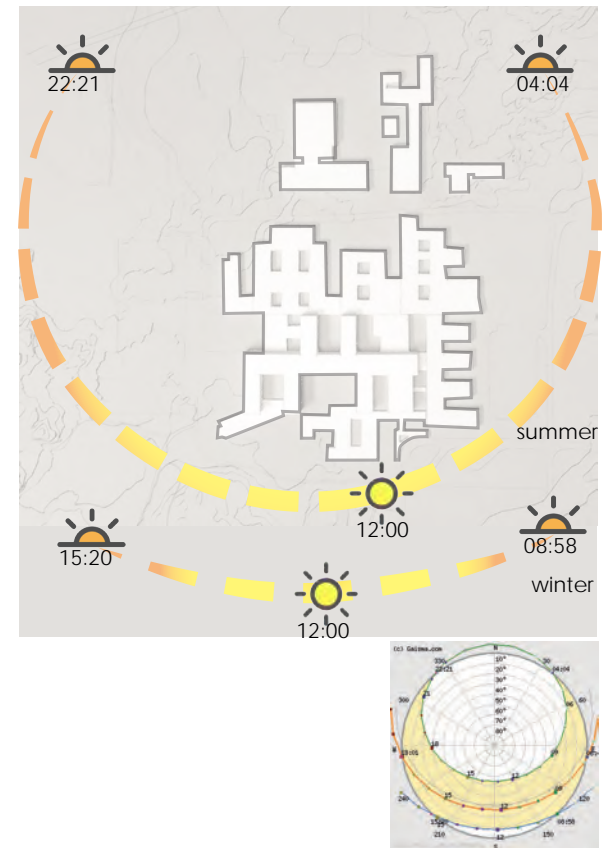


Fig. 5.1

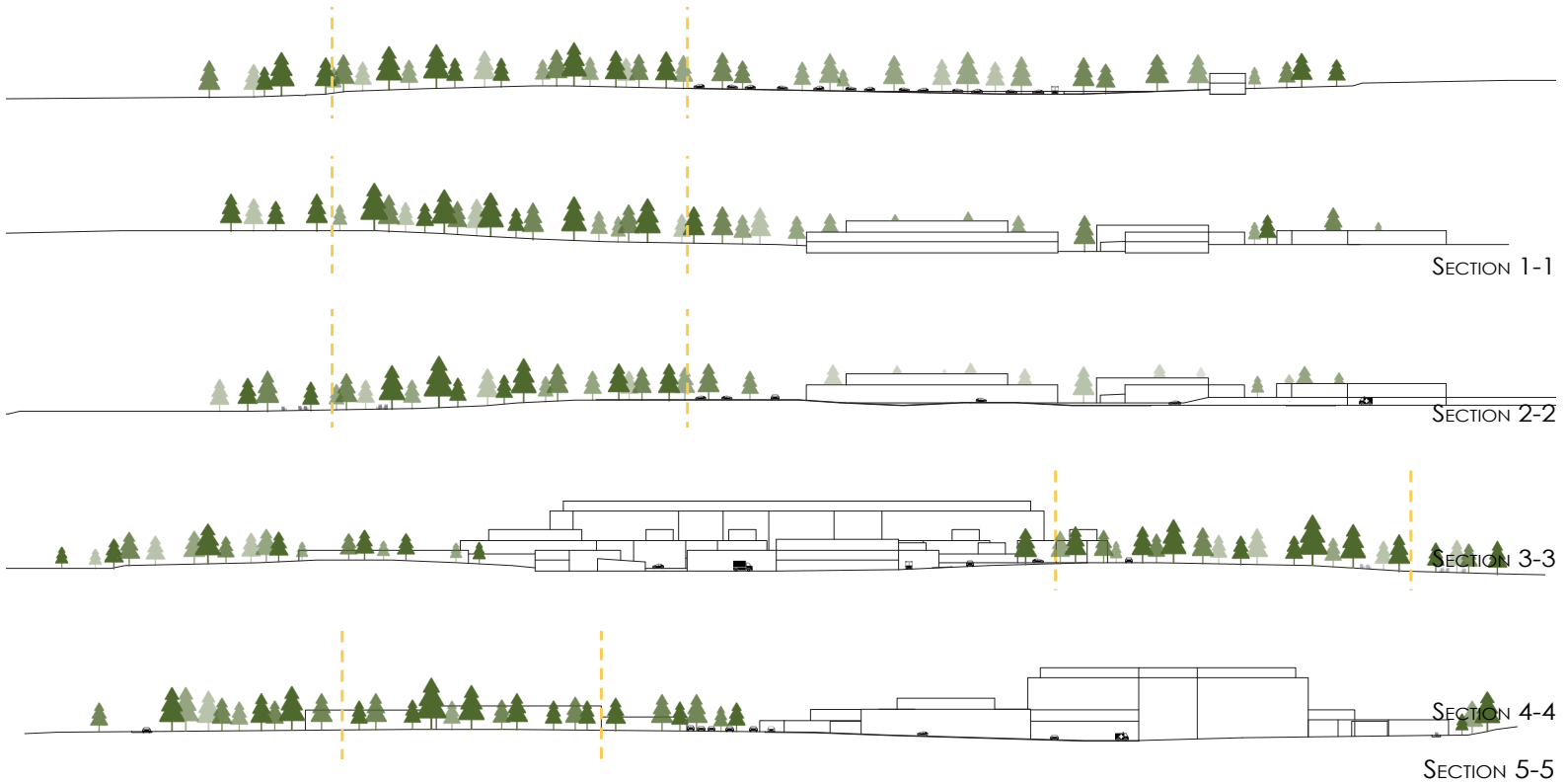
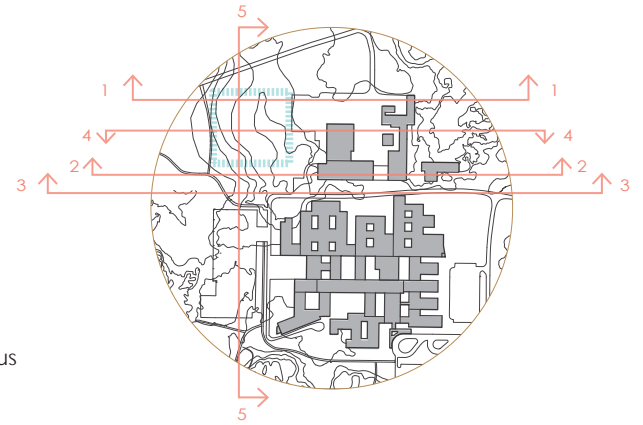
Conclusion of Trollhättan Sunpath:

- Keep local daylight condition in mind which is the essence of daylight study. Consider of time and season difference.
- Influence on building orientation, functional arrangement, etc.

TOPOGRAPHY

Conclusion of Topography:

- Use height differences to merge the building into the nature.
- Pine tree forest with gentle slopes helps to create tranquil and peaceful living environment, thus make whole building interact with nature such as multi-courtyards, especially in ward area.



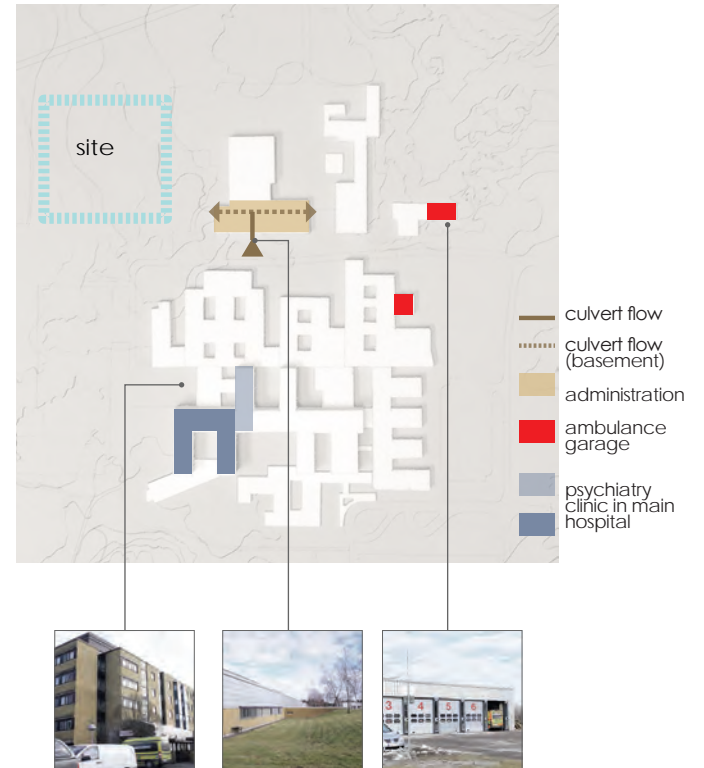
TPOLOGIES IN SITE



Conclusion of Building Features:

- Use similar building features to speak to the existing hospital, such as architectural typologies, facade design, materials, window elements, etc.
- Consider the connecting points with main hospital and the most important of which is the supply flow.

CONNECTIONS



BUILDING FEATURES



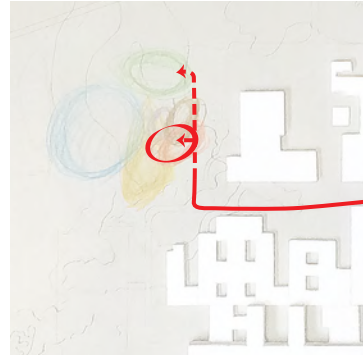
5.4 SITE DESIGN

FUNCTION ARRANGEMENT

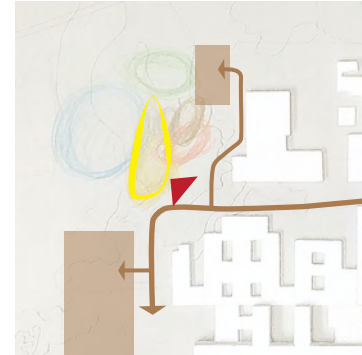


- entrance hall
- emergency
- administration & staff
- general psychiatry
- BUP

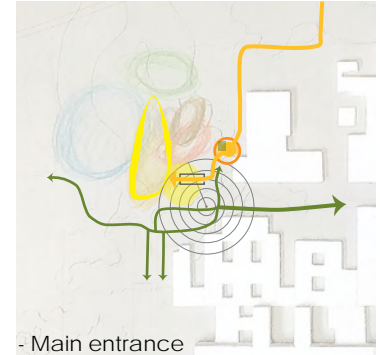
Flows



- Ambulance flow
- Entrances: LEVEL 1(+91.500)
- Emergency Department
- Emergency of BUP



- Main entrance: LEVEL 2(+96.000)
- Entrance hall
- Vehicle flows
- Parking plot



- Main entrance
- Over the bridge
- Pedestrian from bus flow
- Motion radiation (walking time: <1min)



- Administration & Staff
- Culvert
- Connecting point
- Kitchen in the administration on Level 2



- Inpatient ward
- General psychiatry & BUP
- Low-noise surroundings
- In forest



- Inpatient ward
- General psychiatry & BUP
- Therapeutic surroundings
- Nature

PREFERRED TYPOLOGIES

- Low-rise multi-courtyard:
human scale volume / possibilities of more daylight / access to nature / cohesiveness
- Finger plan (low-rise):
better daylight condition / access to nature / motional zoning
- Unbundled:
better daylight condition / access to nature / sharing circulation



DAYLIGHT DESIGN --- SITE LAYER

SOLUTION 1



- Summer sunpath

Considering of the longest daylight time, using long blocks facing south with enough nature gaps inbetween to gain as more light as possible.

- Winter sunpath

Considering of the shortest daylight time, beveling corners of long blocks and forming them as gradient descent in length.

- Morning sunpath

Considering of the best daylight period --- morning daylight, rotating some blocks and connecting with other parts for access and circulation.

Too Long travel distance

SOLUTION 2 --- REVISED SOLUTION



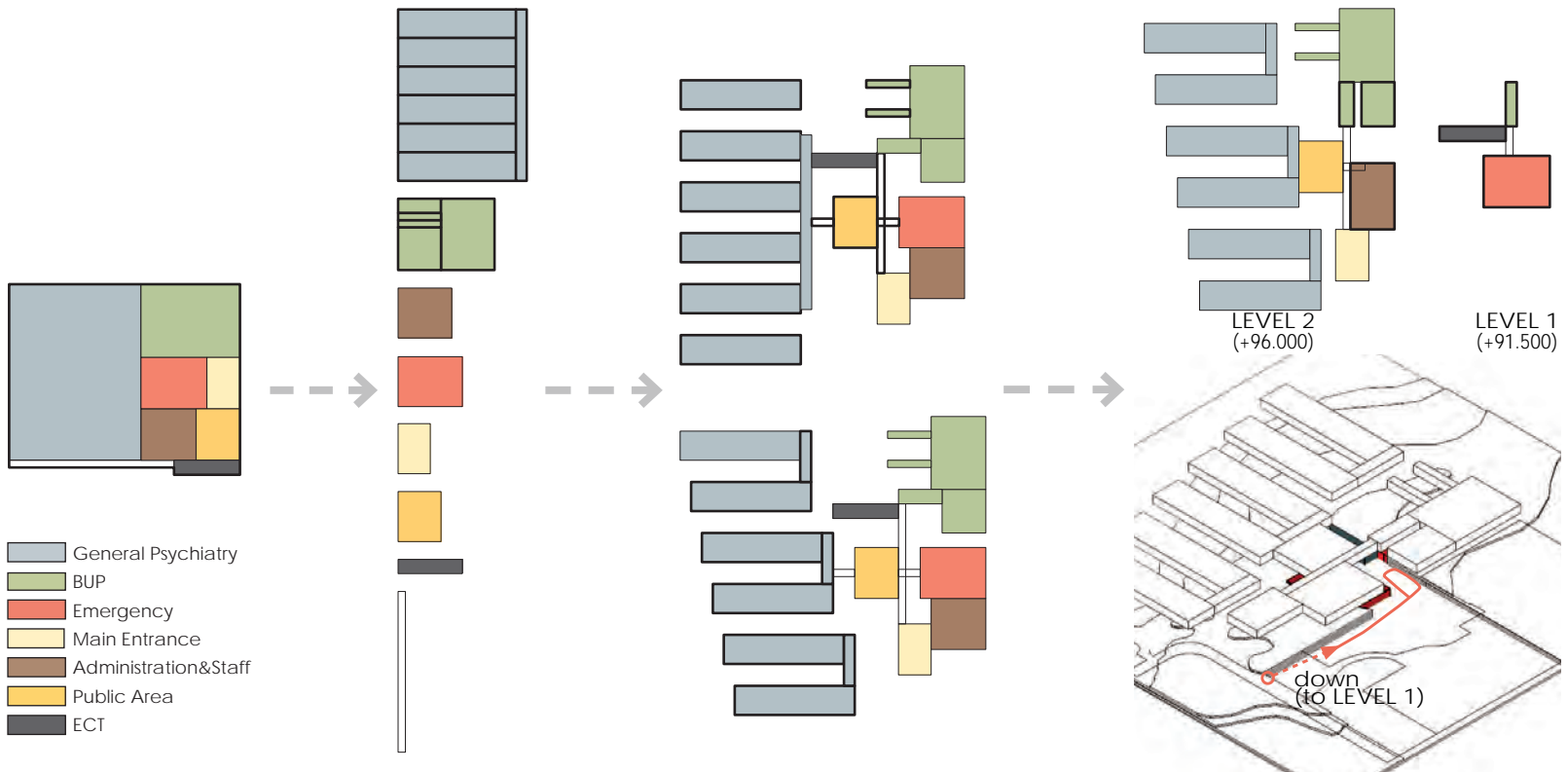
- Winter sunpath:

Considering of the shortest daylight time, arrange the same-distance gap inbetween departments. Then, stagger each department in same distance to guarantee enough daylight.

- Morning sunpath:

For best daylight period --- morning daylight, adding connections between each other for access and circulation with courtyards between every two blocks.

5.5 CONCEPT

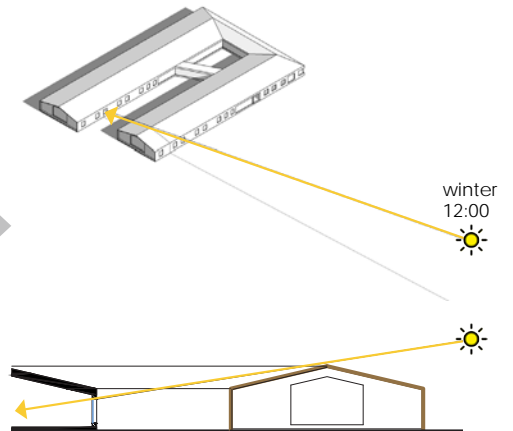
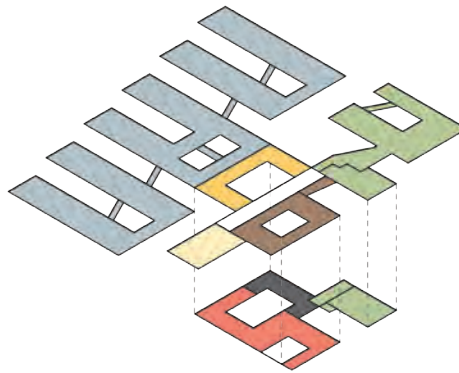


1 Functional blocks:
Create functional blocks according to the area of each department.

2 Break down blocks:
Divide General Psychiatry into 6 departments and 1 transport corridor; Divide BUP according to program, especially separate single-patient ward and apartment ward.

3 Respond to Daylight Design:
Considering of the shortest daylight time, arrange the same-distance gap(12m) in-between 6 departments, which is same for BUP ward. Then, stagger each department in same distance to guarantee enough daylight and breakdown the corridor as connection of each two departments.

4 Separate "Hot Floor":
Making use of the height difference of topography, move the Emergency department, ECT, and the fast track of BUP Emergency to the LEVEL 1(+91.500). The ambulance flow is extended from the original one and turned north, went down to the LEVEL 1.



5 Meet nature:

Interaction between the building and nature is significant, thus create courtyards in each functional blocks. The stream in the site is additional value which can be transferred to courtyard view.

6 Functional layout:

All departments are surrounded the public area as the centre and one wide corridor as the connection that can reach any department.

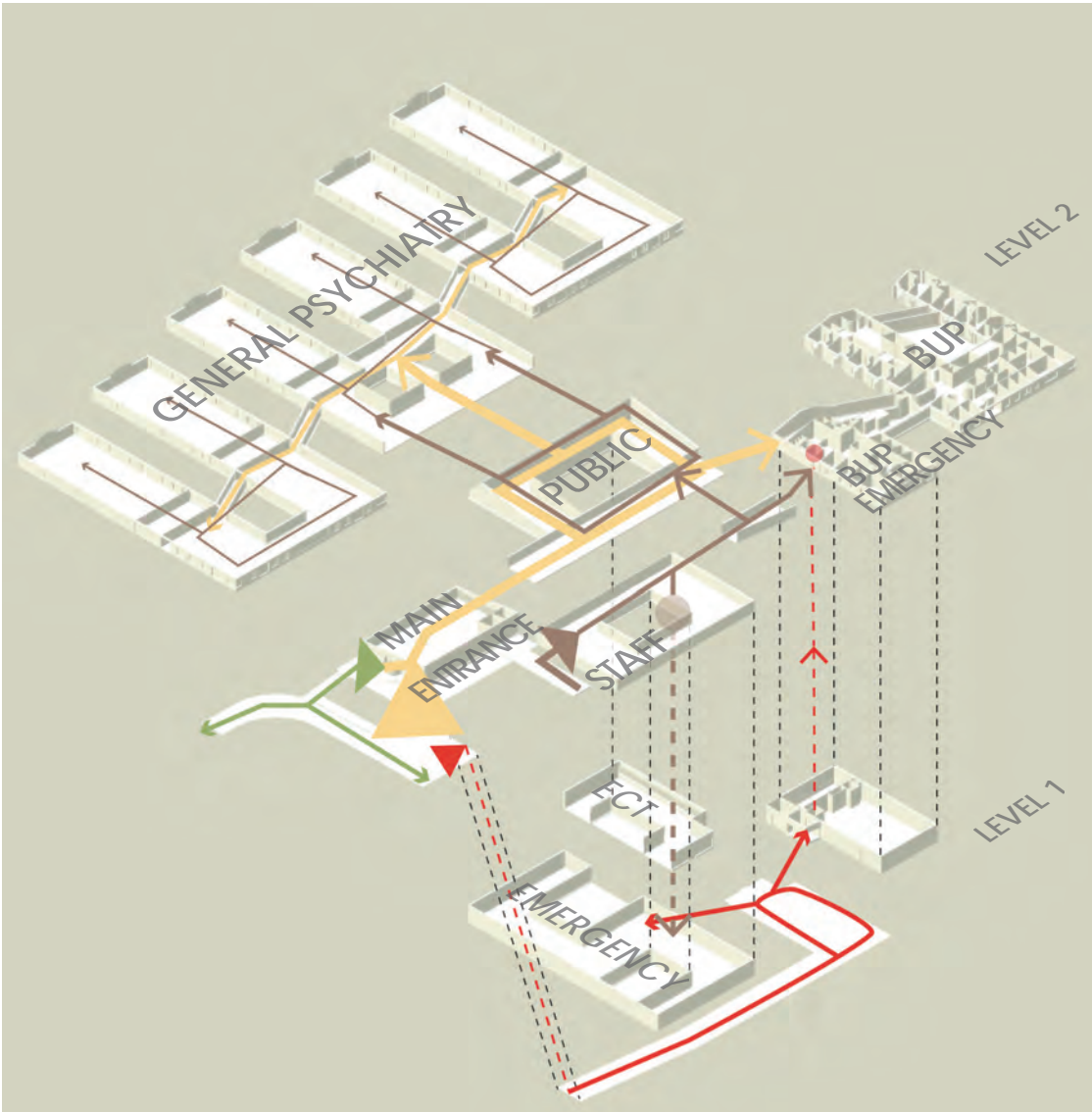
7 Respond to Daylight Design:

Since the double-pitch roof wooden cabin is the vision for ward area, the height of house is key consideration when it has to meet the needs of sun angle. Considering of the low angle in winter, I proposed that the sunshine duration has to be guaranteed at least at noon for one hour, which can decide the roof angle and the building height.

5.6 PROJECT

Flow

- emergency/ambulance
- public
- bike
- staff





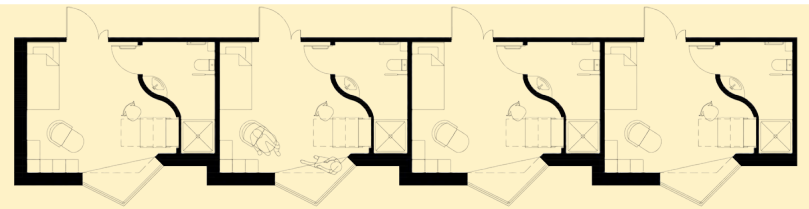
SITE PLAN
1:2000





BIRD VIEW PERSPECTIVE

6 BUP PROJECT



6.1 CONTEXT





p a r k i n g p l o t

e a m

+ 95

+ 96

+ 96

+ 95

6.2 VISION

In this thesis, I want to achieve activity promotion by lifting four activities to enrich patients daily life: learn, play, youth work, and leisure therapy.

LEARN. As one required function, educational spaces is basic for youth during their inpatient period. This can happen in classroom, information points that spreading out in whole common area, and patients' own room.

PLAY. Diverse play activities fulfill patients' needs to bring them to normal life, which take place in activity bubble, day room, common area, therapy room, and courtyard.

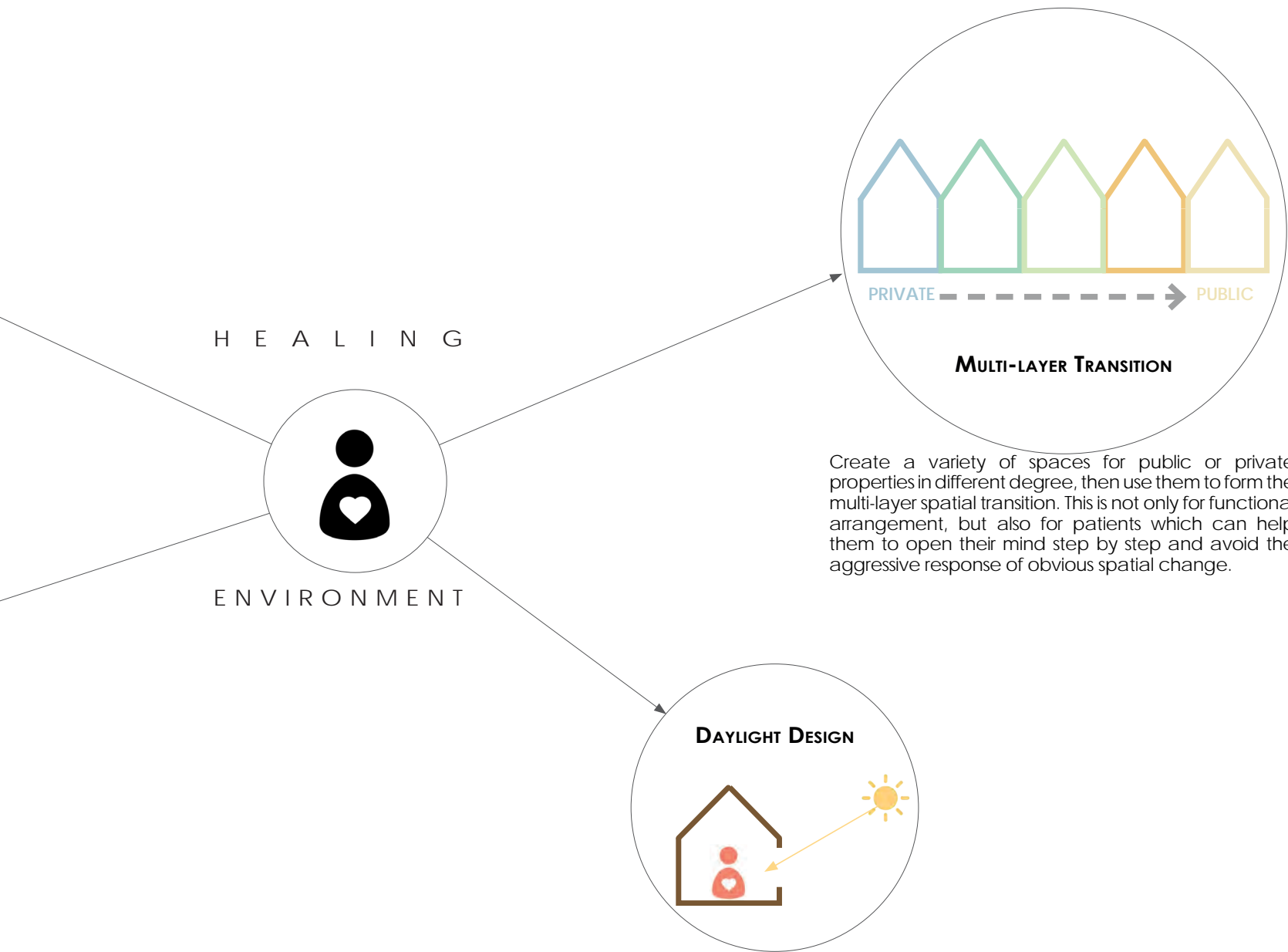
YOUTH WORK. This is not only a volunteer activity, but also an opportunity to work with others for promoting communication and recovery process. The special design is activity bubble, meanwhile, day room, common area, and courtyard are fittable.

LEISURE THERAPY. Although I want to design the environment as daily as possible, the project is still a psychiatric institution. Thus, therapies with enjoyable and leisure character are encouraged such as sense-sensitive therapy, horticultural therapy, exercise therapy, etc., which involve more patients participation. These can happen in therapy room, Snoezelen room, courtyard, etc.



Fig. 6.1-6.4



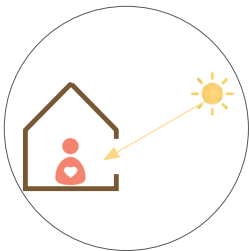


6.3 DAYLIGHT STUDY

DAYLIGHT CONDITION IN SINGLE PATIENT ROOM

Focus on healing environment of most motional spaces: Single Patient Room

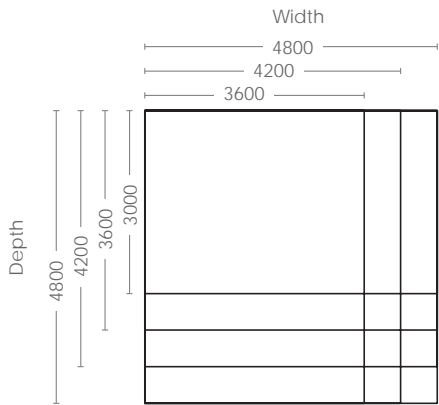
- living spaces + can be applied to APARTMENT ROOM
- influence elements of indoor quality
- create appropriate atmosphere



★ Before I start this study , I considered four matter factors in general single patient room and decided how to control these aspects.

MATTER FACTORS

1. WIDTH & DEPTH OF ROOM



2. WINDOW TYPE



TYPE A

- Triangular Oriel Window
- projecting distance: 300mm



TYPE B

- Square Bay Window 1
- projecting distance: 750mm



TYPE C

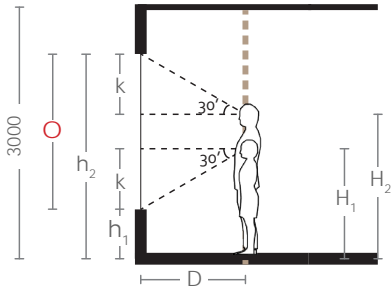
- Square Bay Window 2
- projecting distance: 450mm

3. WINDOW SIZE --- ROUGH OPENING

According to the mean height of patients(age 10-18)

H₁---(age 10) female mean eye height, 1310mm

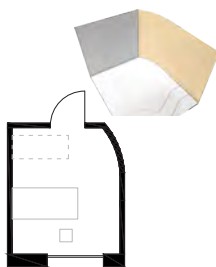
H₂---(age 18) male mean eye height, 1720mm



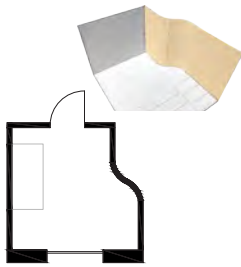
D	k	h ₁	h ₂	O
500	288	902	1888	986
1000	577	613	2177	1564
1500	866	324	2466	2142
2000	1155	35	2755	2720

D---distance between window and people
k---D*tan30°
O---window rough opening

4. SHAPE OF INNER WALL --- PARTITION WALL FOR HYGIENE ROOM



width:3600



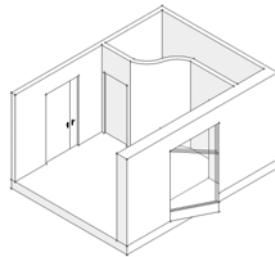
width:4200



width:4800

★ There are 4 criteria that can help me to evaluate each room type and analyse the result of this daylight stimulation study.

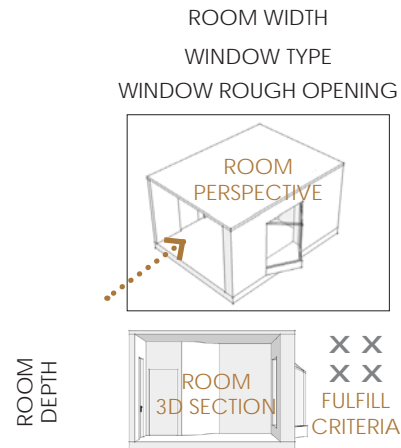
CRITERIA



- ✗ Be able to get abundant direct sunlight
- ✗ Good view to outside with easy eye travel
- ✗ Good reflecting daylight environment
- ✗ Accessibility & Space for daily behaviour
(eg. one extra bed for relative/read and write)

★ Before the introduction of model study, this guide is helpful to understand and clarify the expression of whole model process.

MODEL PROCESS GUIDE



★ Then I started my physical model study. During this study, I use daylight lamp to stimulate the real daylight conditions via adjusting the light intensity and angle of the picked time both in summer and winter. Now I'm showing all photos of different room types that based on time and 4 matter factors.

MODEL PROCESS

SUMMER SOLSTICE 9.00
SUN'S PATH ON THE 21ST JUNE



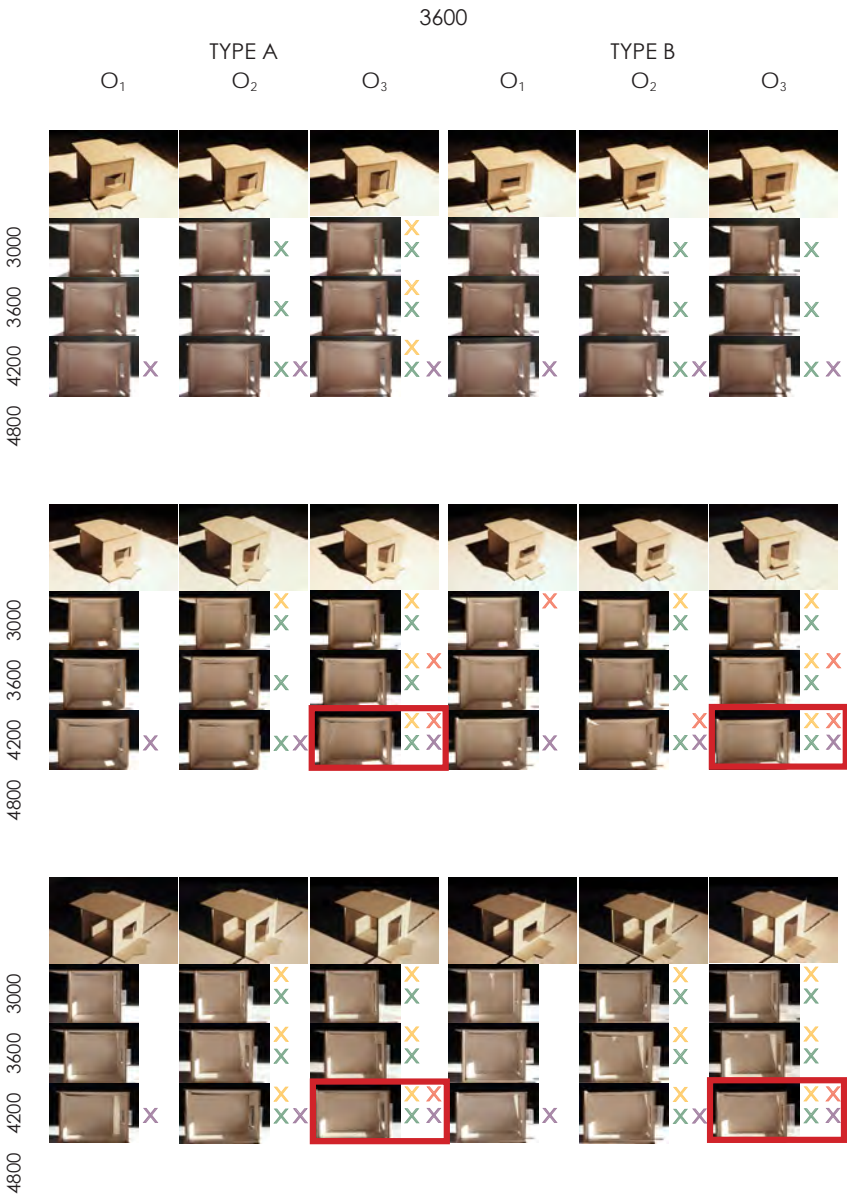
WINTER SOLSTICE 9.00(SUNRISE)
SUN'S PATH ON THE 21ST DECEMBER

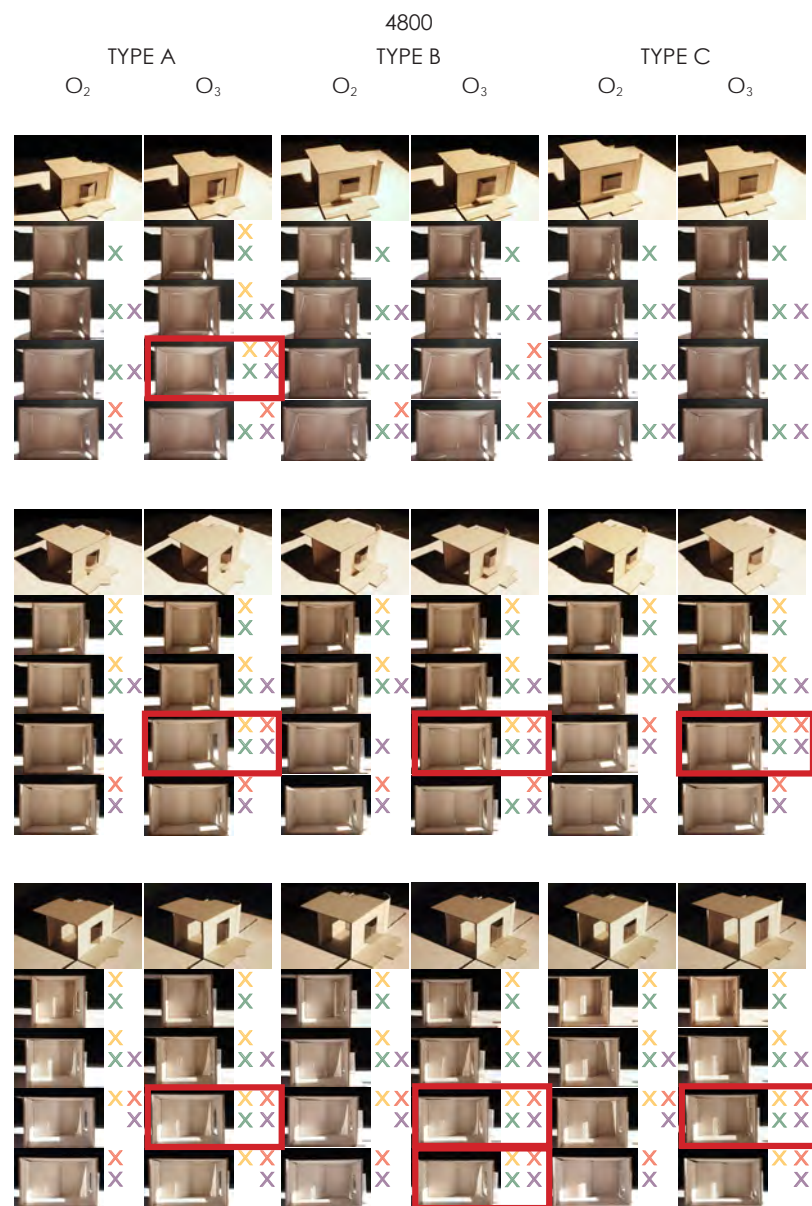
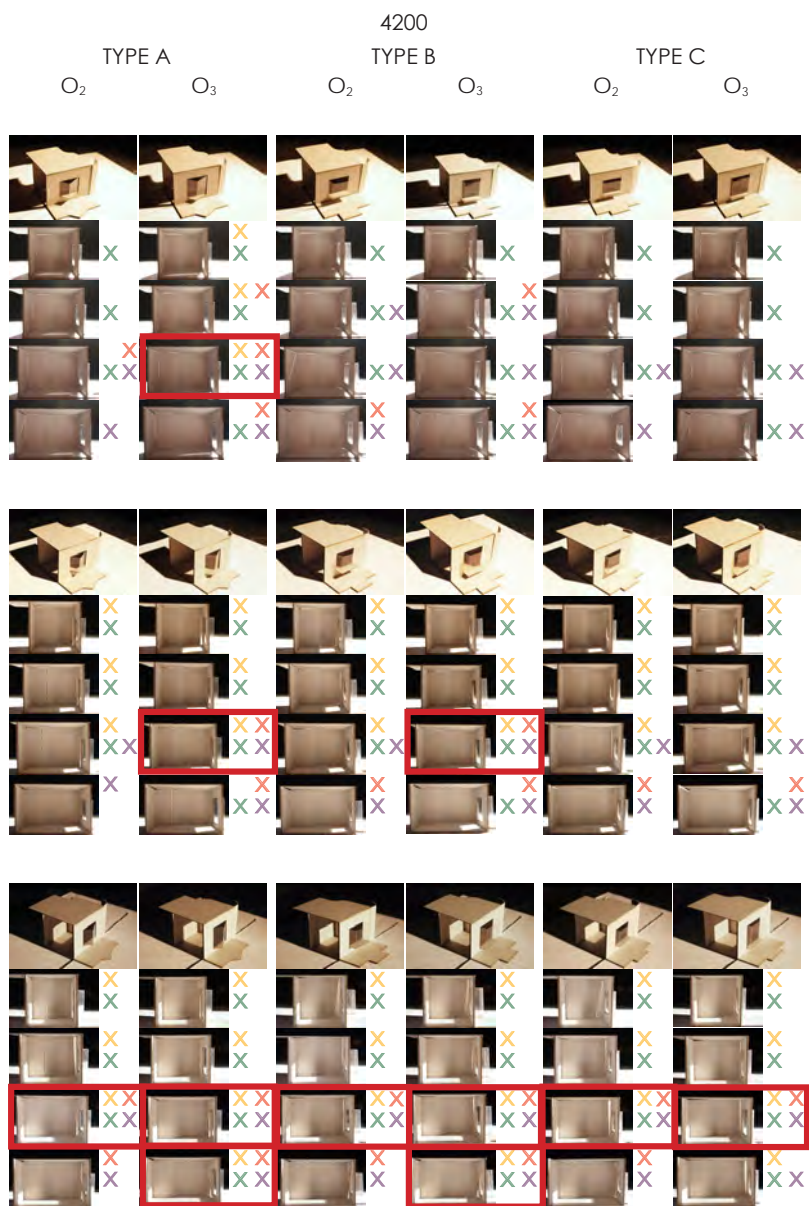


SUMMER SOLSTICE 12.00
SUN'S PATH ON THE 21ST JUNE






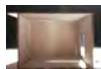


















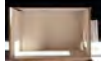

WINTER SOLSTICE 12.00
SUN'S PATH ON THE 21ST DECEMBER





★ Mainly according to the 4 criteria that I listed before, I picked up the room types that fulfil all criteria then compare dtheir best daylight condition time and the spatial quality at that time. At laset, I chosed the best room prototype to show the healing environment.

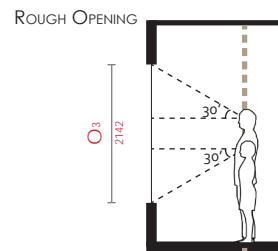
ANALYSIS & RESULT

ROOM WIDTH ROOM DEPTH	3600		4200						4800		
	TYPE A	TYPE B	TYPE A		TYPE B		TYPE C		TYPE A	TYPE B	TYPE C
	O ₃	O ₃	O ₂	O ₃	O ₂	O ₃	O ₂	O ₃	O ₃	O ₃	O ₃
											
4200											
											
4800											

STEP 1
PICK UP PHOTOS

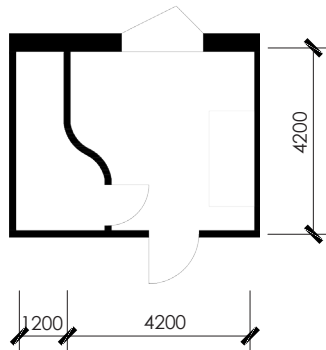
WINDOW

TYPE A

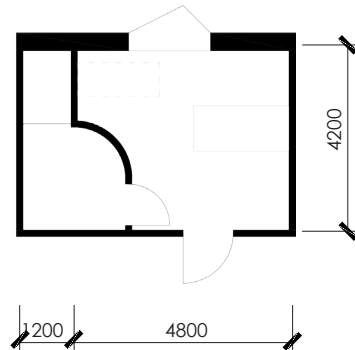


ROOM PLAN

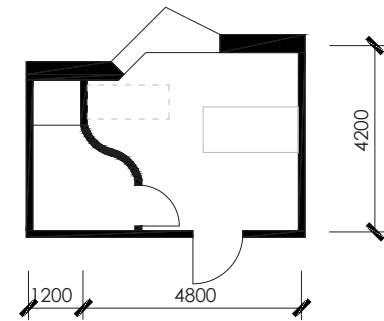
ALTERNATIVE 1



ALTERNATIVE 2



ROOM PLAN

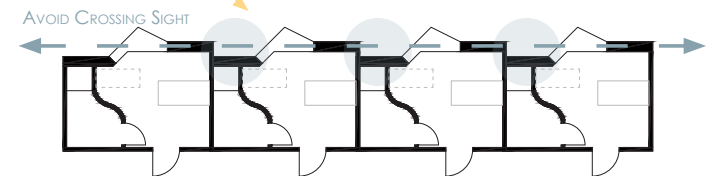


MORNING SUNLIGHT



AVOID CROSSING SIGHT

ARRANGEMENT OF 4 SINGLE PATIENT ROOMS



STEP 2
CONCLUDE ROOM TYPE

STEP 3
RESULT

★ This is a combination of the 2 room types that I picked up. I did some adjustment such as bay window design and step-back some portion of outer wall to gain more daylight.

6.4 PROJECT



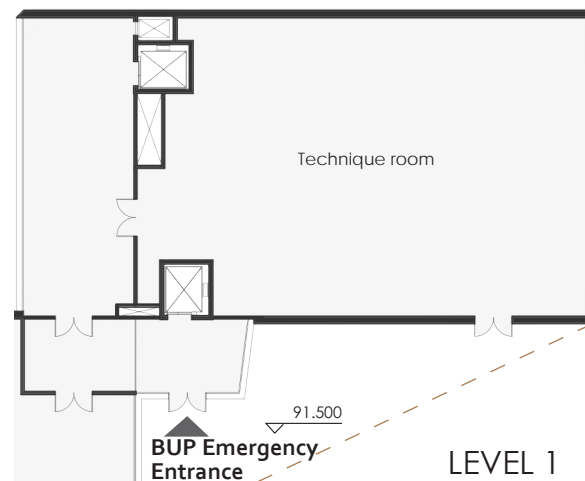
RECEPTION PERSPECTIVE

Apartment Ward
Entrance



- | | |
|-------------------------|--------------------------|
| 1 Reception | 16 Prepare room |
| 2 Meeting room | 17 Therapy room |
| 3 Common area | 18 Pause room |
| 4 Day room | 19 Observation room |
| 5 Classroom | 20 Office |
| 6 Activity room | 21 Police office |
| 7 Semi-private corridor | 22 Restraint room |
| 8 Single patient room | 23 Snoezelen room |
| 9 Apartment ward | 24 Working station |
| 10 Dining room | 25 Department Expedition |
| 11 Kitchen | 26 Fika room |
| 12 Laundry room | 27 Staff zone |
| 13 Meditation area | 28 Drug room |
| 14 Consulting room | 29 Hygiene room |
| 15 Interview room | 30 Storage |

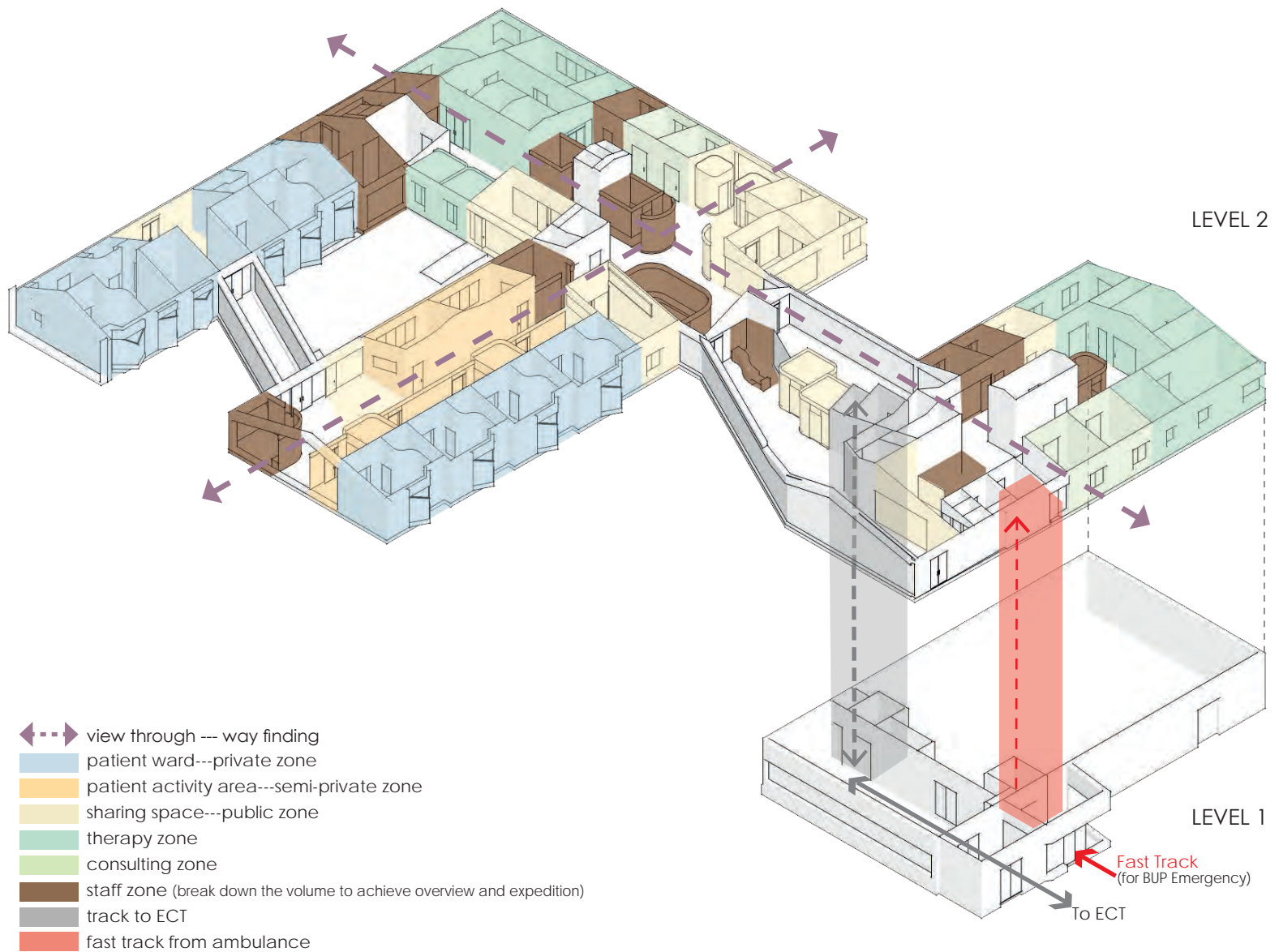
BUP PLAN
1:400



LEVEL 1

LEVEL 2

BUP Public Entrance
BUP Staff Entrance



FUNCTIONAL LAYOUT



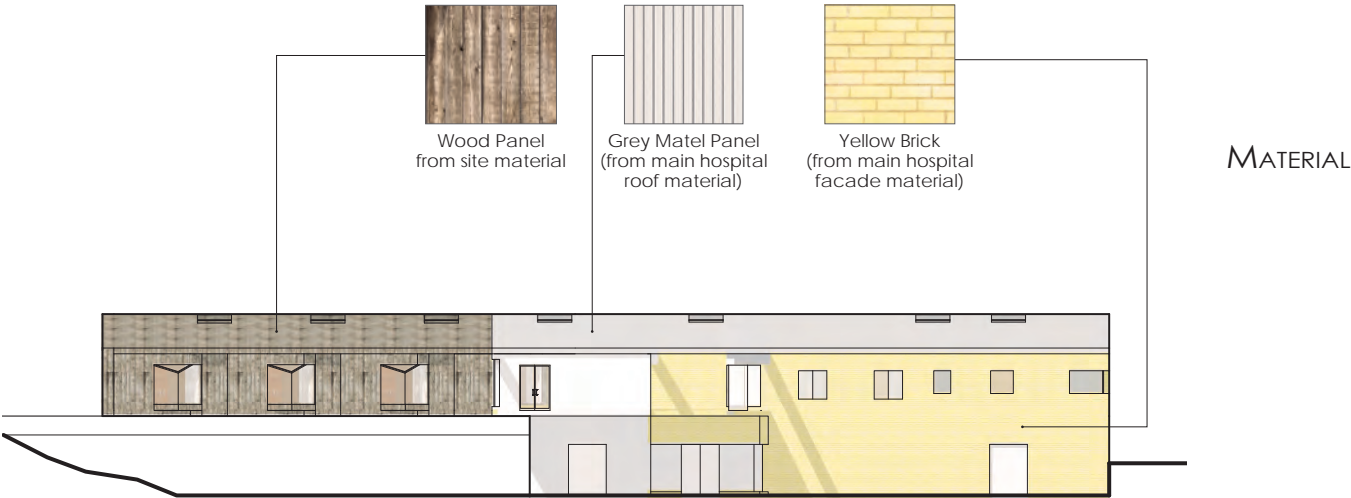
SECTION A-A

1:100

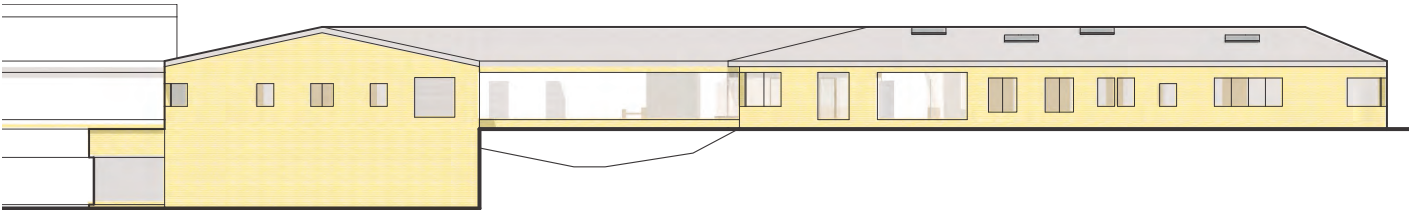


FACADE

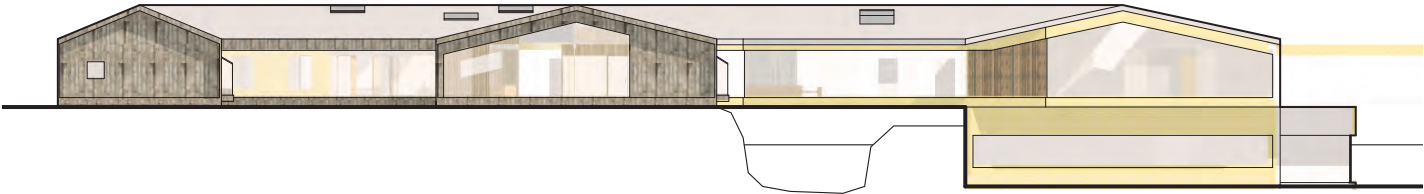
1:400



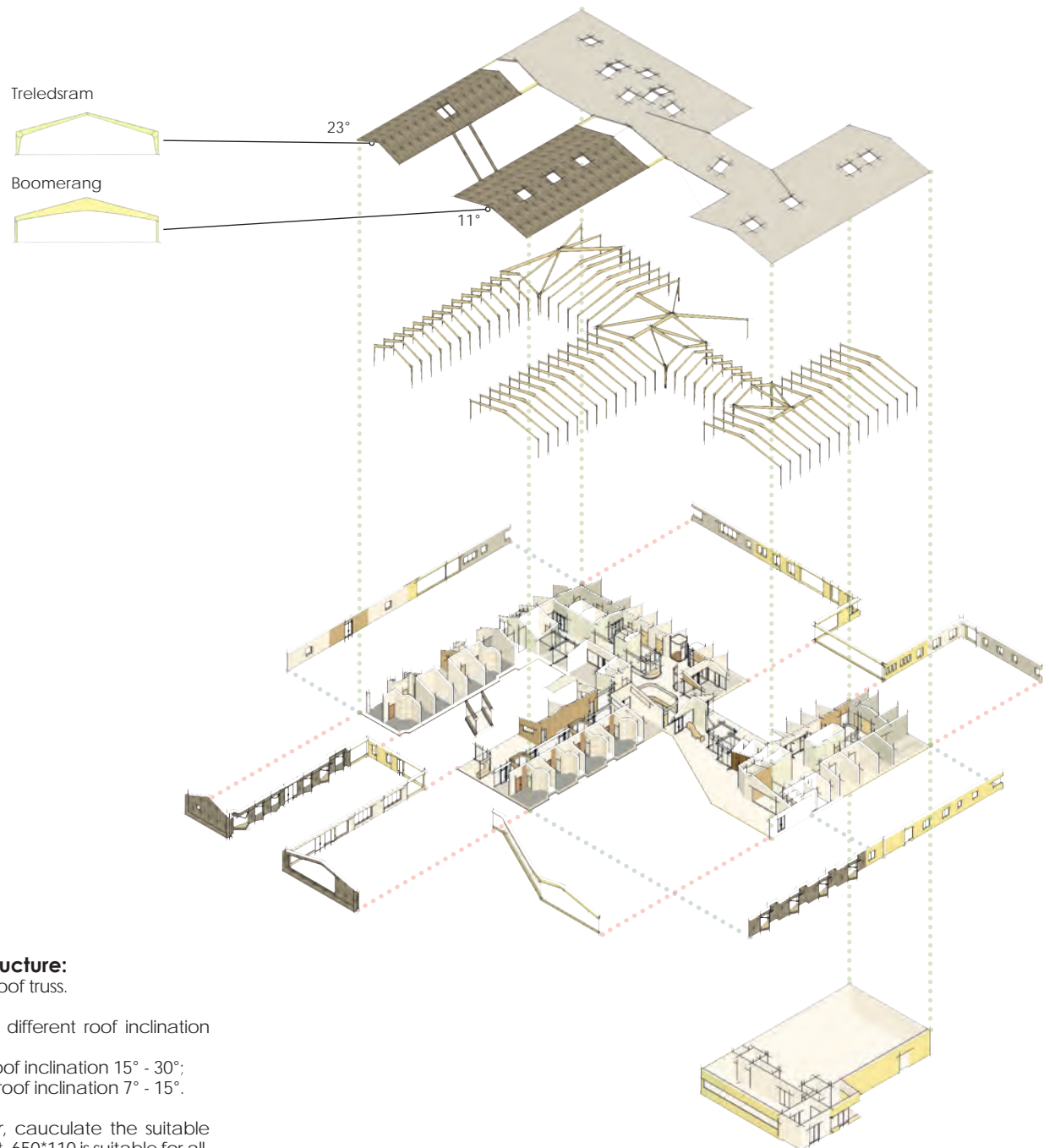
SOUTH FACADE



EAST FACADE



WEST FACADE



STRUCTURE EXPLOSIVE

Double-pitch Roof House Structure:

Application of glulam beam for roof truss.

There are 2 types according to different roof inclination and spans:

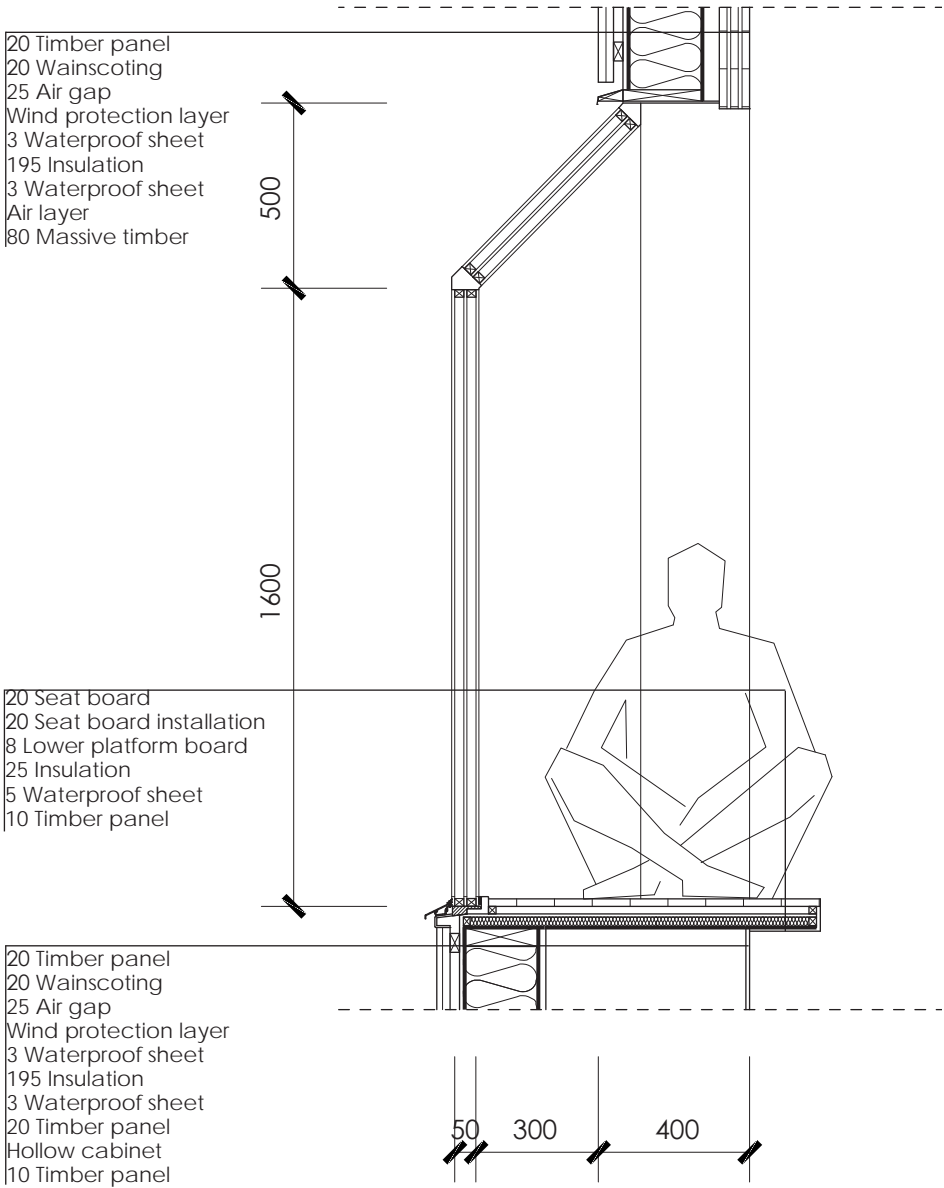
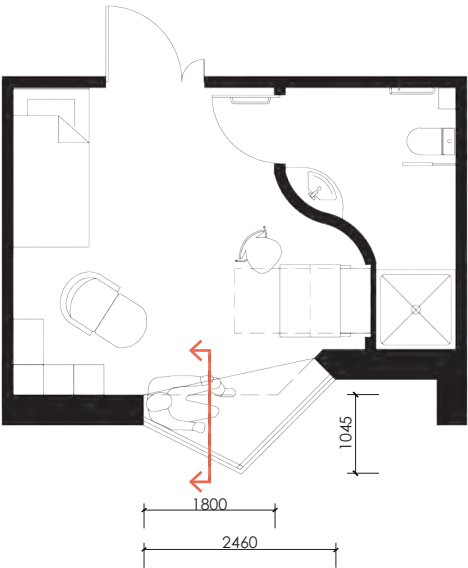
- Treledsram: spans up to 25m / roof inclination 15° - 30°;
- Boomerang: spans up to 30m / roof inclination 7° - 15°.

According to *Moelven Industrier*, calculate the suitable size of glulam beam for each part. 650*110 is suitable for all.

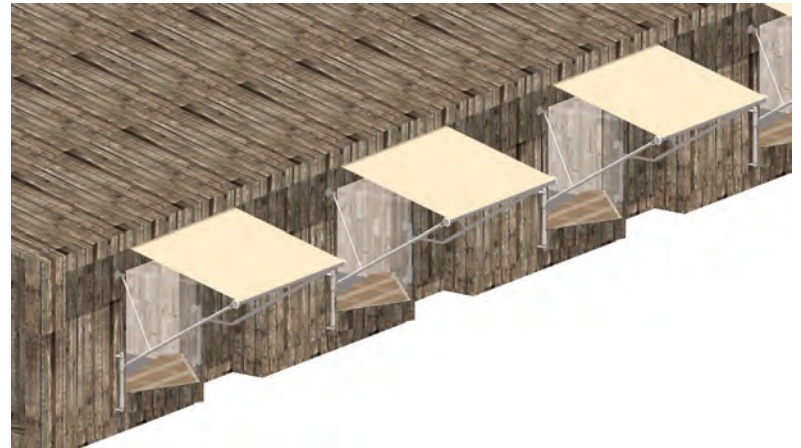
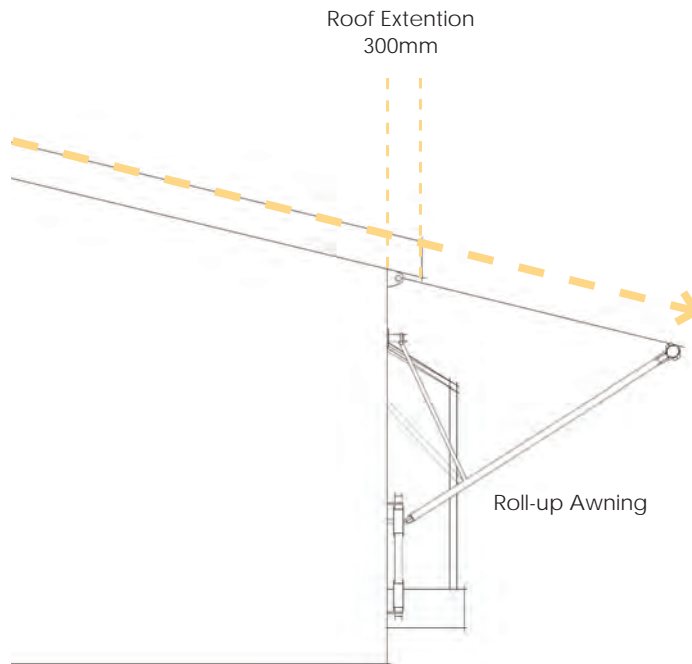
DETAIL SECTION

Bay window in single patient room

1:20



SUN PROTECTION



Daylight has two-sided impact on interior environment.

On one hand, as my model study demonstrated, there is no doubt that abundant importing natural light is ideal for healing environment, especially in Sweden context. On the other hand, it can be overheated thanks to the heat accumulation by bigger window rough opening especially in summer time. The indoor temperature could be too high to stay.

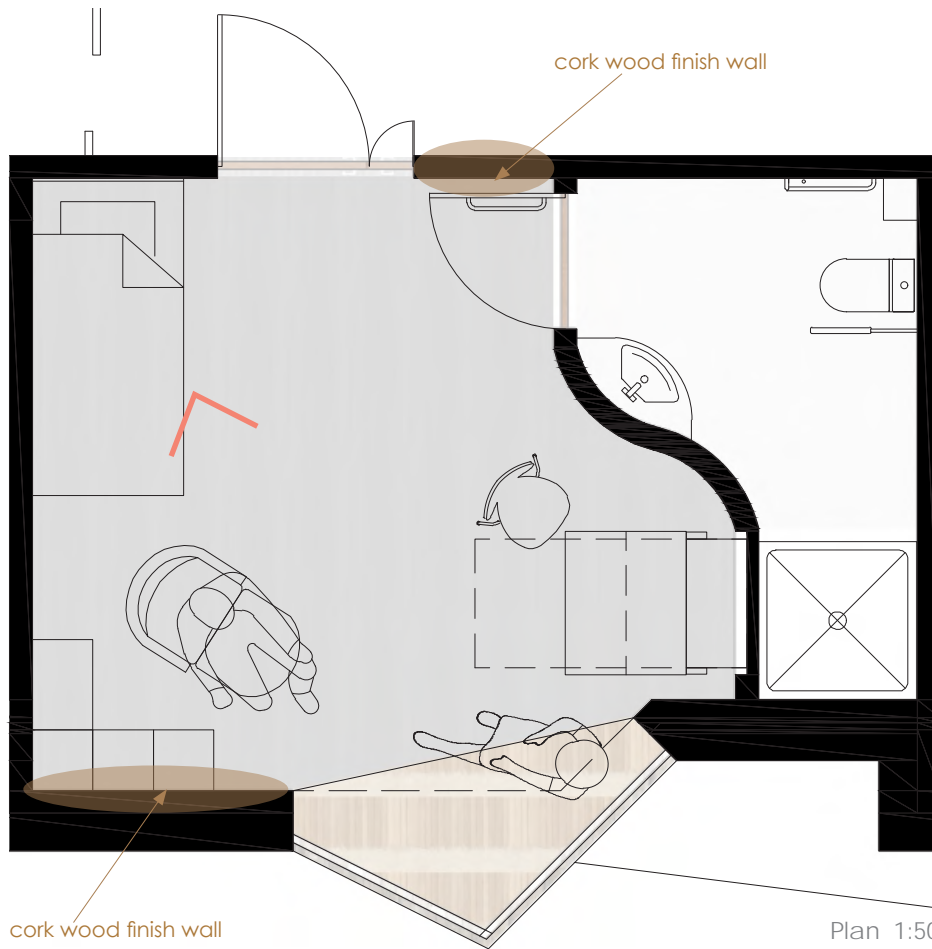
Thus, sun protection is necessary. I take two measures to balance the thermal environment. One is extending the roof, which can not stretch too long because of the structure. The other method is installation of roll-up awning, which is kept the same angle as the roof inclination.

6.5 HEALING ENVIRONMENT

Most Motional Space

ENVIRONMENT 1 SINGLE PATIENT ROOM

Gross Area: 22.5 sqm



Single patient room, for adolescents, aims to not only fulfil NU hospital group's requirement, but also provide an appropriate therapeutic environment during their in-patient period, even have advantage for their growth.

As one outcome of daylight design, this type of bay-window is multi-functional. The patient can reach more daylight, meanwhile, it offers a open indoor spatial impression for both patients and visitors. There is also a hidden cabinet under the sill.

Considering of family perspective, an extra foldable bed is installed along the inner wall for his or her parent to accompany overnight, which is combined with a foldable desk to meet quite study needs.

There are two cork wood finish wall for the patient to design and decorate by himself or herself. One is just next to the patient room door that can be information board, while the other one is facing the bed and next to the window for creation.



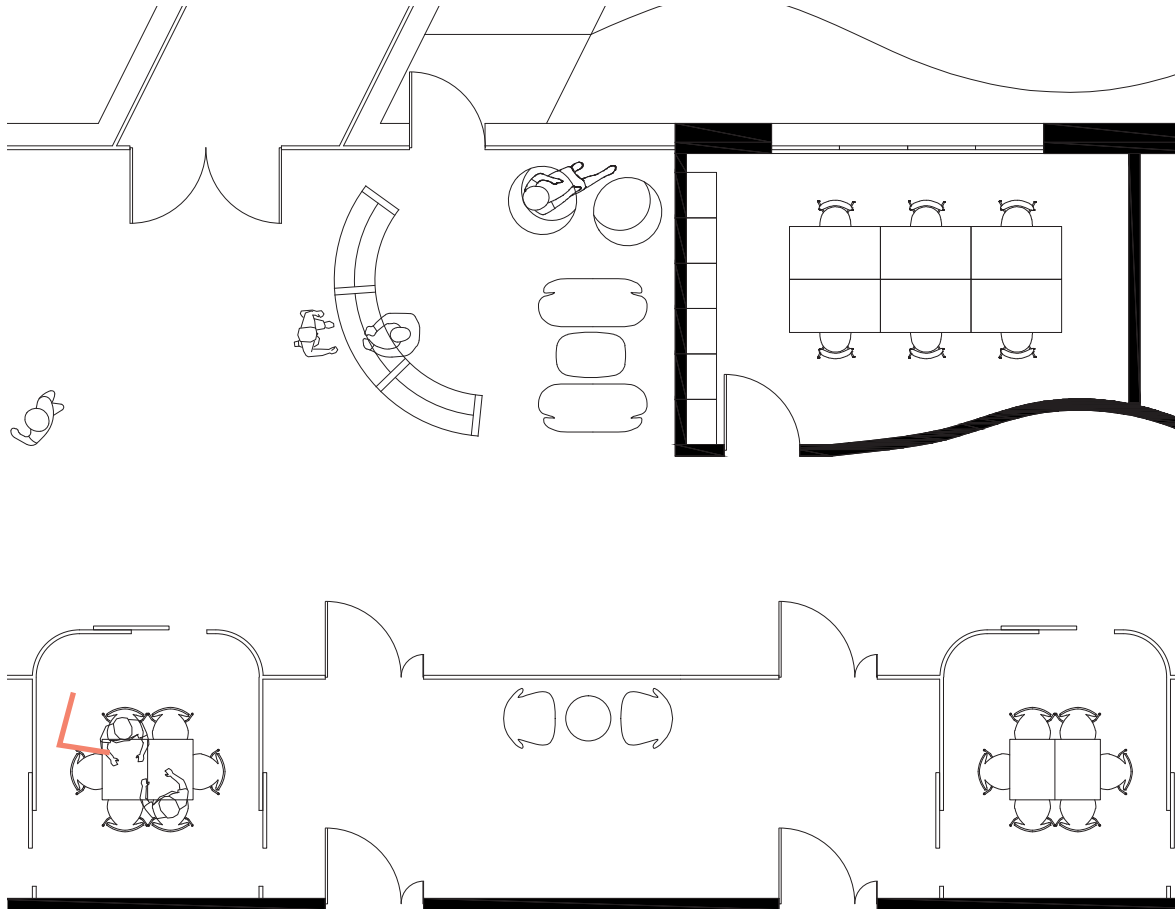
1 bay window + hidden cabinet
2 foldable bed with desk
wood panel finish

3 cork wood finish wall
4 lounge

Youth Work

ENVIRONMENT 2 **ACTIVITY BUBBLE** Gross Area: 10.6 sqm

Activity Bubble is a type of individual space separated from whole building structure, and is designed for youth work or team activity, which is also a good way to promote patients' both physical and mental health.



Plan 1:100



ENVIRONMENT³

Gross Area: 21.5 sqm(without corridor)

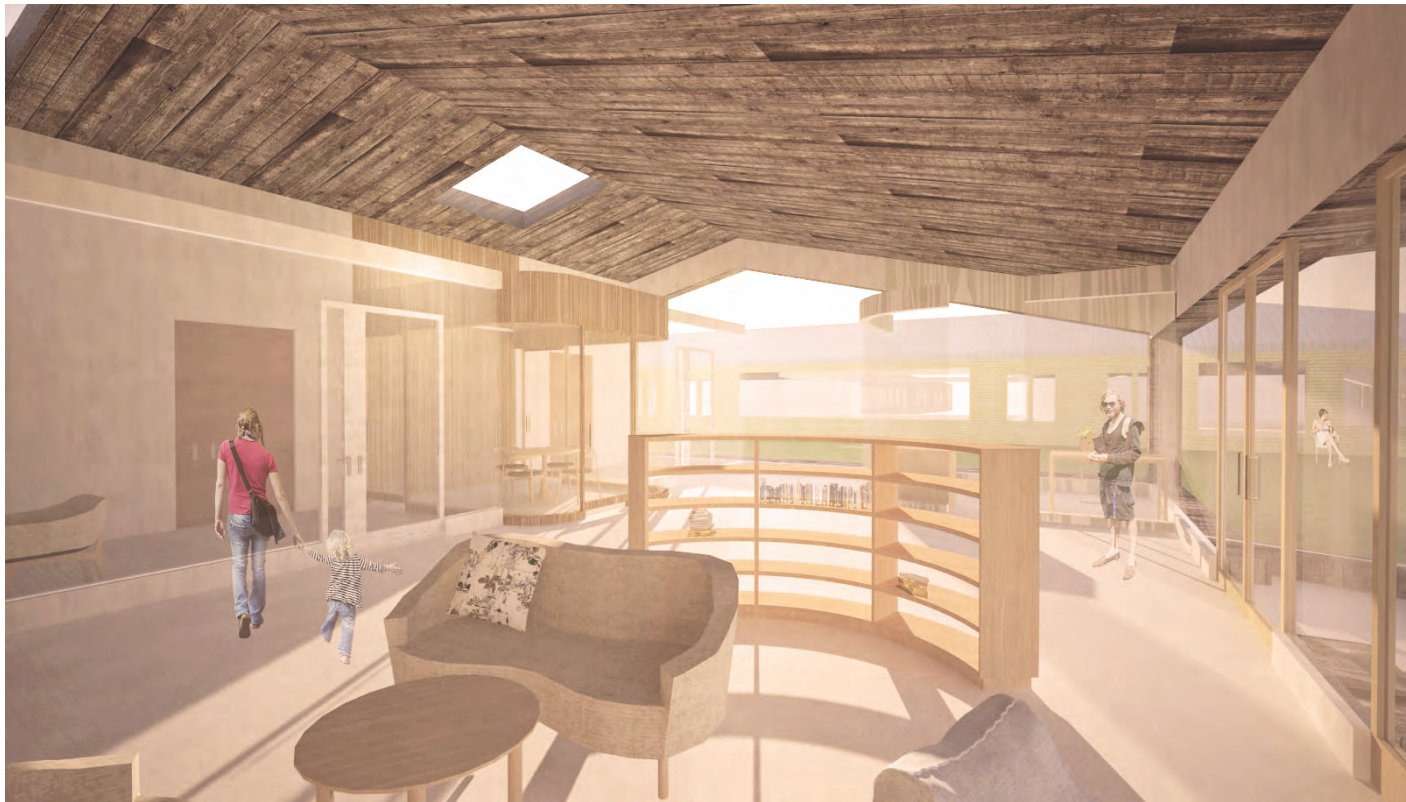
Gross Area: 21.5 sqm (without corridor)

Plan 1:100

This architectural floor plan illustrates a restaurant layout with a gross area of 21.5 sqm (excluding the corridor). The plan is oriented with a dashed line at the top, likely representing a window or entrance. A central vertical corridor, highlighted with a dashed orange line and an upward-pointing orange arrow, divides the space. To the left of the corridor, there is a curved bar area with stools, a small square table with four chairs, and a curved booth with a small table and two chairs. To the right of the corridor, there is a curved bar area with stools, a small square table with four chairs, and a curved booth with a small table and two chairs. A red L-shaped symbol is located near the top right of the corridor. The bottom of the plan shows a series of small, rectangular rooms, possibly restrooms or storage areas, separated by a thick black line. The overall layout is compact and efficient, utilizing curved walls and furniture to maximize space.

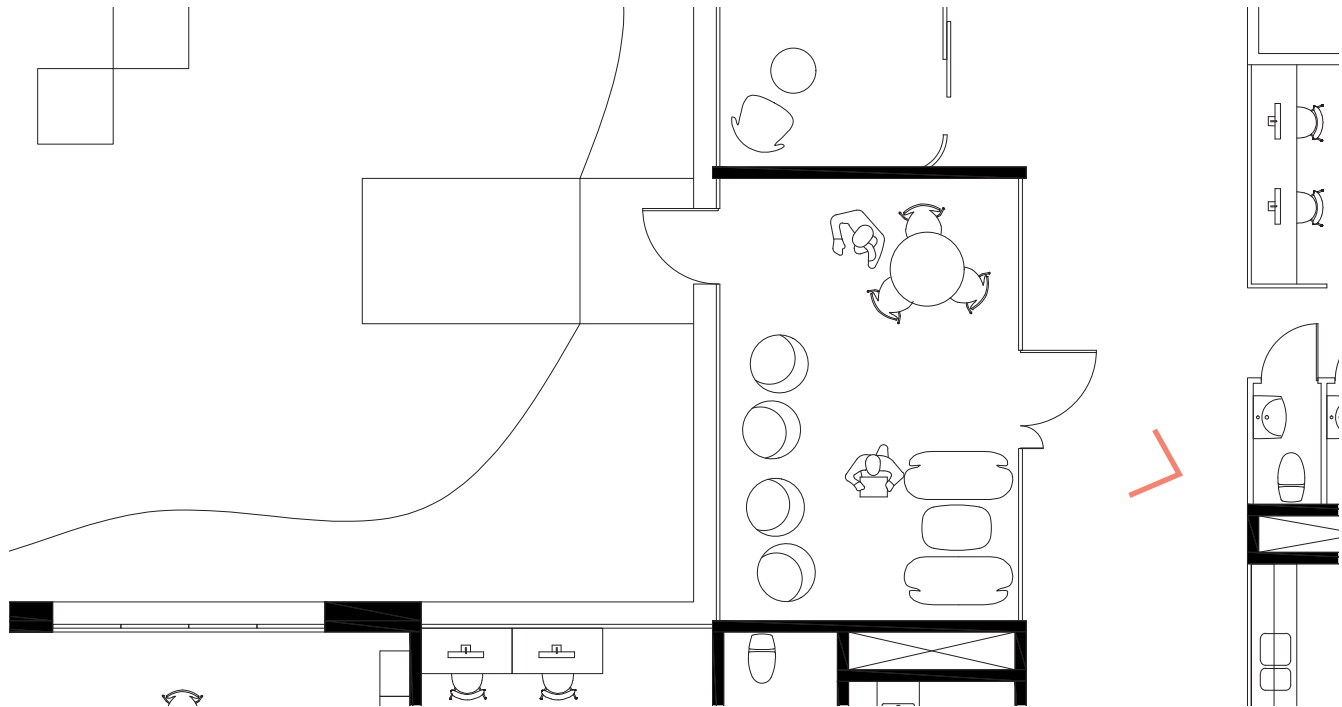
This common area, together with open corridor, is a part of public-layer. As showing in section A-A, the spatial transition is from single patient room, to semi-private corridor, to open corridor, to nature. This transition also reflect spatial impression which is from private, to semi-private, to indoor public, to the outdoor.

This position can be best view position because of the continuous glass facade. The transparency of the corridor connecting to the apartment ward also gives more possibilities of nature and daylight.



Meet Others

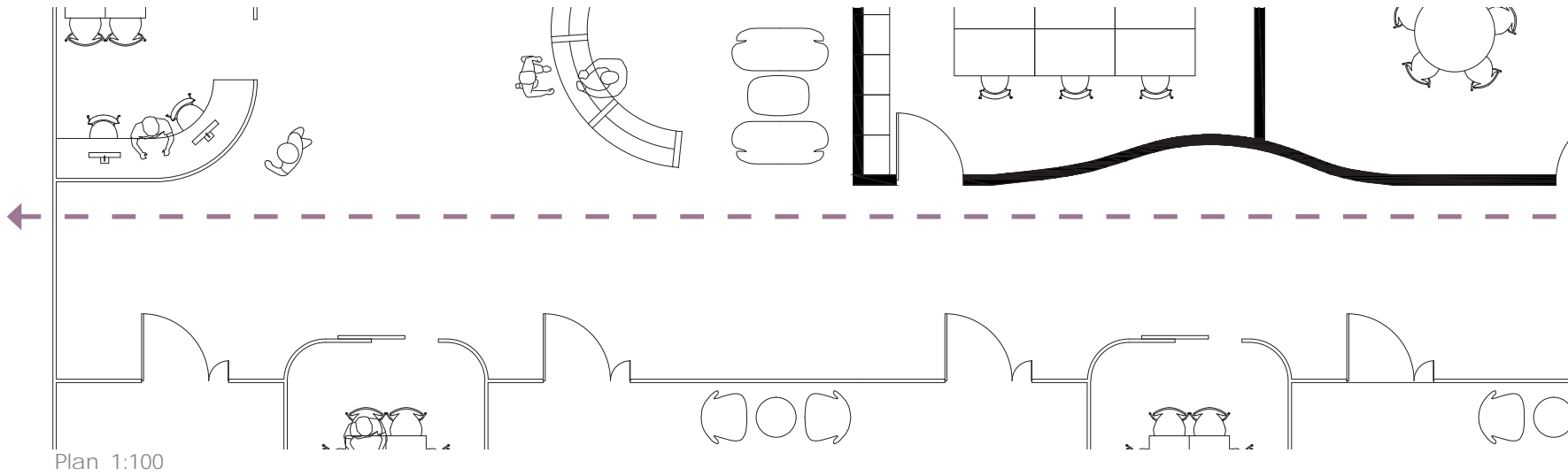
ENVIRONMENT **4** DAY ROOM
Gross Area: 23.1 sqm



Plan 1:100

With good views towards the courtyard, day room is more than a place for communication between different people, but a health promoting place from outdoor nature and indoor activities.





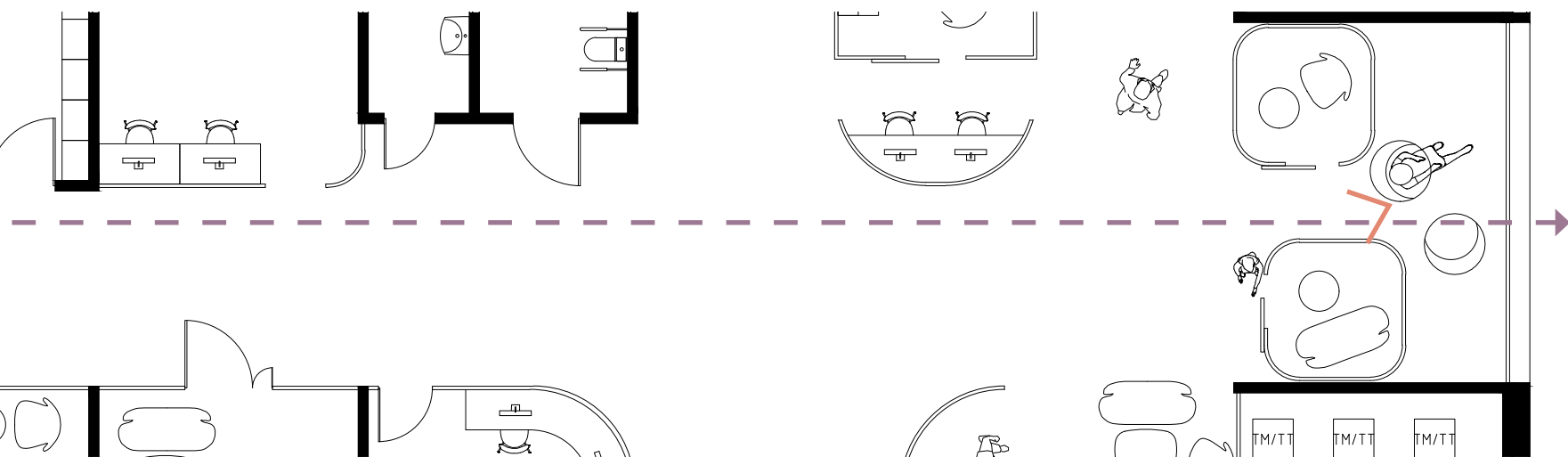
Meet Yourself

ENVIRONMENT 5 MEDITATION AREA

Gross Area: 21.7 sqm

The meditation area contains two private glass rooms and sharing space with cozy sofas and the view towards outdoor. The glass rooms balance the privacy and staff supervision in certain degree and support the sharing space more personal environment.

Regarding as an ending point of this west-east corridor, this space with glass curtain window provides wayfinding. Besides, the sky windows above also create more obvious leading sign with daylight.

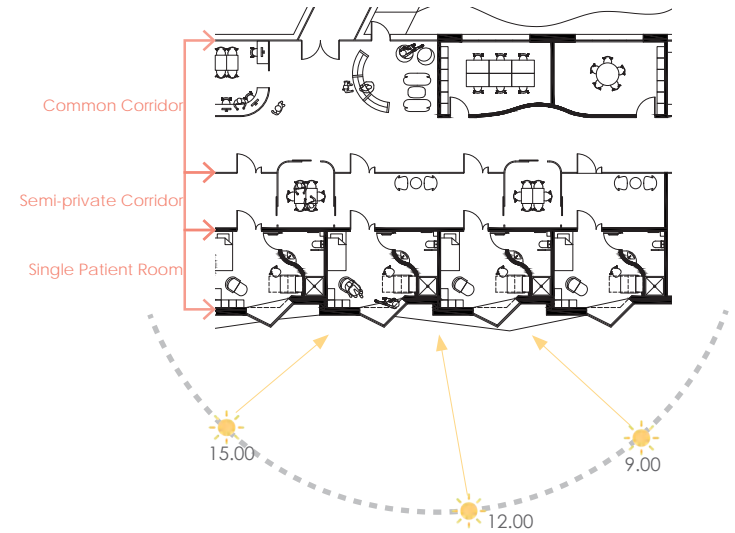


7 REFLECTION

SECTION MODEL REFLECTION

After the project design, I tested the daylight condition through the multi-layer transition zone - common corridor, semi-private corridor, single patient room - by photographing the physical section model under real natural light.

In my view, thanks to big windows, glass wall, and skylight, this zone is capable of providing enough sunshine duration and good luminous environment. However, the common corridor may needs full-spectrum lighting after the noon.



Common Corridor

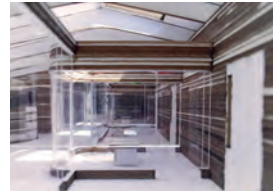
Semi-private Corridor

Single Patient Room

SUMMER 9.00
9TH JUNE



SUMMER 12.00
9TH JUNE



SUMMER 15.00
8TH JUNE



CONCLUSION

Four months' thesis journey temporarily comes to an end. It is glad that I reached most targets and gained so much that unexpected.

Daylight Design Extension. The daylight study that focused on single patient room has chances to improve. I will learn deeper knowledge, conduct more workshops, and finally generate, if time permits, relatively mature and complete daylight design suggestion at the end. After that, the suggestion can be utilised in other spaces such as general hospital, care centre, school, residence, etc.

Learn By Process. During carrying the thesis forward, several concepts other than my focus have kept jumping out. Some of them are inspiring and valuable while others are disturbance. Thus, the first thing I summarised from the work is clarifying my ideas in order to insist on what I really want to achieve. The other tip is taking a step backward sometime. It is a efficient way to revise and develop. Moreover, maybe something new is ready to be discovered.

Not Only Daylight. I realised that there are a great deal of matter factors impacting on the healing environment when I just started my thesis. However, the daylight factor caught my eyes so early due to my personal interests and Swedish context. Now I hope that I will have opportunities to think about other factors, develop systematic methods, and apply them into better therapeutic environment and recovery process.

Healthcare architecture should be paid more attention by the public. It is not only social service facilities, but also spaces promoting health and enhance life qualities, which can be regarded as care spirit that spread in daily life.

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- <http://iva.velux.com/>
- <http://en.white.se/>
- <http://www.70n.no/>
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Healing Light

Proposal of Child and Adolescent Psychiatry Department with Daylight Design



Healing Light

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MPArc | Master's Programme in Architecture and Urban Design
Master's Thesis 2016 Spring
Chalmers University of Technology