THE BRIDGE

A Bridge Back into Community

A health-promoting center for holistic psychiatric rehabilitation in Landscape settings

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ACEX35 - Healthcare direction

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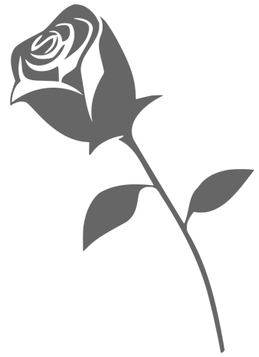
Finally, I would like to express my gratitude to my parents, my wife and my children. Without their exceptional understanding and help, it would be impossible for me to accomplish this study.

This thesis is proudly dedicated to my beloved family; my mother, late father, wife, and children. Thank you all for your endless support, advice, prayers, and love.



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Abstract:

Mental illnesses are steadily increasing among people worldwide, especially in countries with high GDP rates. Its effects are reflected on individuals, families, and whole societies. In Sweden, mental illnesses are in third place among diseases leading to death. However, an addressed gab can be seen in its healthcare system. In their long journey to complete recovery, patients with mental illnesses usually visit more than one healthcare service provider; primary care centres, department of social services, residential and daycare centres, clubhouses, or psychiatric hospitals, to receive the holistic care they need. Despite the vital role that psychiatric rehabilitation plays in the patient's treatment and recovery journey, it has unfortunately not been perceived as a phase that requires dedicated facilities that offer a holistic approach to psychiatric rehabilitation in Sweden.

The purpose of this research is to emphasize the strong impact of architecture and landscape elements on promoting psychological health and wellbeing when sustainable- and health-promotive approaches, including Salutogenesis and biophilia, are employed in the design.

The research designs a health-promoting centre that offers a holistic psychiatric rehabilitation approach to bridge patients, in their aftercare phase of treatment, back to their communities and have a healthy and functional life. The impact of the centre's varied activities and services are extending to include and engage with a broad group of society. A research-for-design approach has been applied in the study. Literature reviews, reference projects, interviews, and implications of evidence-based design findings, and health-promotive approaches, will be employed in the design process.

The outcome leads to the fact that architecture, together with nature and other health-promotive approaches if applied wisely, could work as a catalyst in promoting societal health and wellbeing. Furthermore, it could play a key role in fighting the stigma associated with mental-health-related facilities.

Keywords:

Healthcare, psychiatric Rehabilitation, Health-promotion, Salutogenesis, Biophilia, Evidence Based Design, Design for research.

Architecture &
Landscape settings

Mental health &
Well-being

Contents

INTRODUCTION

Research Justification:

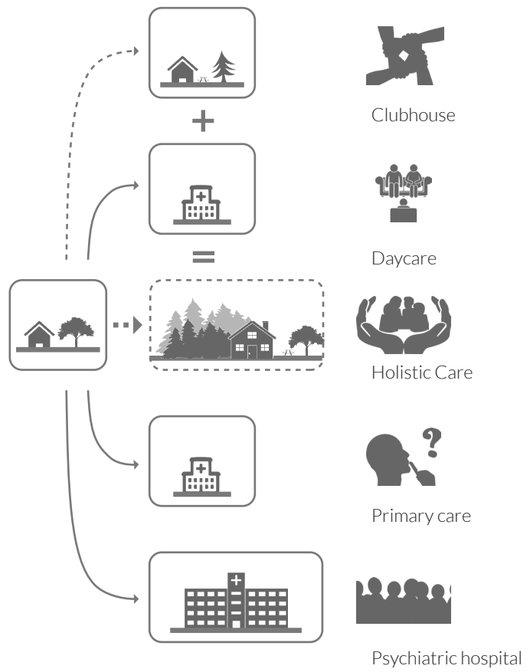
The proposed project is mainly intended to help people suffering from mental disorders, life stresses, bad habits, and ill-being to get back actively to their societies and have a normal and healthy life; at home, school, and work. Those people are considered to be in their aftercare phase of the treatment.

The project has come mainly as a response to the "WHO "World Health Organization's vision 2030, "Rehabilitation 2030: a call for action," which highlights the importance of dealing with mental illnesses and calls to fight its related stigma and discrimination by adopting a shift from humanitarian to the humanistic approach of treatment. This goal can be achieved by building more deinstitutionalized and community-based facilities to become more connected to the patients' easy-to-reach residential area. Thus, the project fills the gap between the humble and tiny consultation rooms in local primary-care centres and the big and stigmatized psychiatric hospitals located away from the urban communities.

The study is intended to present a comprehensive rehabilitation plan in one place instead of being divided among different mental healthcare facilities in Sweden. In other words, daycare centres (öppenvård) pay more attention to the therapeutic side, while the rare club-house models focus mainly on the social side of treatment in Sweden. Furthermore, the pandemic of Covid-19 has come to make the situation even worse, where mental ill-health has become more prevalent and severe during the COVID-19 pandemic, according to a study conducted recently by Uppsala University. It is also important to mention that medication or a combination of medication and therapy is sufficient to help many patients get back to a functional life. At the same time, rehabilitation may be an essential part of the treatment cycle for some other patients.

Research Question:

In this study, we are trying to demonstrate and answer how architecture and landscape elements in mental healthcare settings can address and promote mental health and wellbeing among individuals diagnosed with mental disorders in our societies. Furthermore, to showcase the potentials of architecture in creating destigmatized and deinstitutionalized mental health facilities holistically where treatment processes are combined with complementary approaches.



The illustration shows the proposed project with regards to other mental healthcare facilities in Sweden. The proposed project is considered as a hybrid model of both the daycare- and the clubhouse models. The building is located near the residential areas in a community-based environment and offers holistic care and mental rehabilitation services to its users.

Methodology:

A research-for-design methodology will be conducted to design and propose an outpatient mental rehabilitation centre where people with specific mental illnesses are supposed to visit to get the help needed to come back to their lives and communities more actively. The research process will start by studying related literature to get a historical background of psychiatric treatment and rehabilitation and collect data regarding best practices and evidence-based findings concerning salutogenic- biophilic- and sustainable design recommendations.

An analytical case study will be conducted for three healthcare facilities with different treatment approaches (reference project). The target group will be involved in some interviews and Co-design sessions to get better design outcomes. And finally proposing a building design and concluding with brief reflections & recommendations.

Literature reviews

Reference Projects

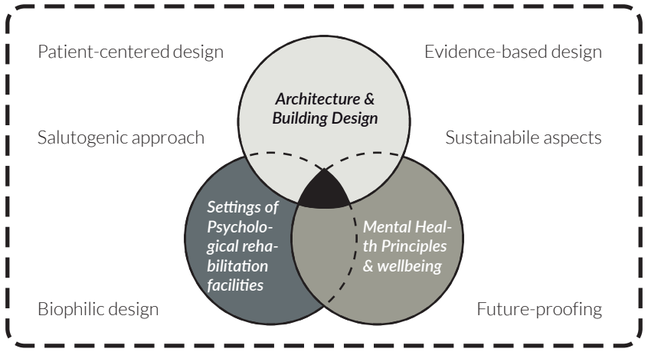
Observations, Analysis, & Site visits

Interviews Co-design

Design Proposal, Design Test.

Conclusions & Recommendations

Scope of Study



Tools and areas of study

CHAPTER ONE

LITERATURE REVIEW

Mental Health & Mental Disorders

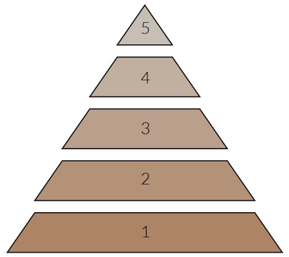
Mental health is a basic need and crucial issue for all individuals, families, and societies. It affects mood and social well-being and determines how people think, feel, act and relate to others daily. Mental health is more than the absence of mental illness. The World Health Organization has defined it as:

> "... a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" *(WHO 2001a, p.1).*

Mental illnesses are usually linked to distress and problems on the social, working, or family levels. Such problems could last for a short or long period and affect a person's ability to manage his/her daily life. Mental illness is also called a psychiatric disorder, psychiatric illness, or psychological disorder. The American Psychiatric Association (APA) has defined mental illnesses as:

> "health conditions involving changes in emotion, thinking or behavior (or a combination of these)." *("What Is Mental Illness?", 2021)*

The most recognized and common psychiatric Disorders are Anxiety-, Depression-, Eating disorders, Personality disorders, Post--traumatic stress disorders, and Psychotic disorders, including schizophrenia



1- Physiological needs
2- Safty needs
3- Social needs
4- Esteem needs
5- Self-actualization needs

Maslow's Hierarchy of Needs

The Burden Of Mental Disorders – Key Facts

The substantial increase of mental disorders has negatively affected different aspects of life, including health, social life, human rights, and economic burdens. Mental illnesses are responsible for many chronic physical problems, including stroke, diabetes, and heart disease. The strong impact of mental disorders is reflected on individuals, families, communities, and the world. It is considered as cause number one of disability worldwide surpassing all other illnesses.

Depression is a leading cause of disability worldwide. 615 Million people worldwide have some type of mental disorder.

90% of people who died by suicide have experienced symptoms of mental health conditions.

GLOBAL SCALE

People with mental disorders die 20 years younger than the general population. Mental disorders are responsible for 30-40% of chronic sick leave.

Mental disorders are costing 3% of the total European GDP every year.

EUROPEAN SCALE

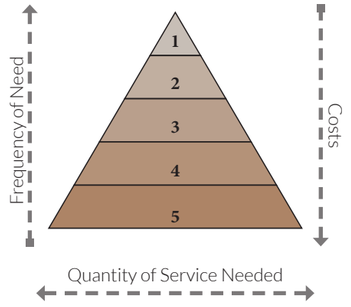
The national public health survey 2020 In Sweden has shown that almost every fifth person has been diagnosed with depression at some point in life.

Mental illness and behavioural disorders are considered the third cause of death in Sweden.

NATIONAL SCALE

The European Mental Health Action Plan 2013–2020

The European Action Plan emphasizes the need to invest in mental health and focuses on seven practical goals for promoting mental health and well-being. Among these seven goals, we can mention:



Pyramid of Services Needed for Mental Health services

1. Long stay facilities and Specialist psychiatic services.
2. Psychiatric services in general hospitals and Community mental health services
3. Primary care mental health services
4. Informal Community care
5. Self Care

Fighting the stigma: Due to stigma and discrimination (being treated differently or fears of losing a job), many people with mental health problems choose not to engage in mental healthcare services.

Empowerment: all people with mental health problems have the right to be independent, and have the opportunity to take responsibility and control their lives, health, and well-being.

Healthy places: promoting mental health by adopting alternative approaches such as healthy nutrition, sport and other activities.

Recovery enhancement: recovery should not only treat the symptoms of mental disorders but also build hope and create opportunities for patients.

The Benefits Of Adopting Community-Based Healthcare Facilities

Reduce Stigma

More Accessibility

Cost-saving

Psychiatric Rehabilitation

Rehabilitation helps people to be able to manage their everyday activities independently. It enables them to actively participate in different life aspects, including social life, education, work, and meaningful life roles. *The American Psychological Association APA* has defined Psychiatric Rehabilitation as:

> "the process of enhancing the recovery of individuals with severe mental illness by teaching or restoring psychological, behavioral, social, and vocational skills that will enable them to function in their community and by facilitating that endeavor through a continuum of services such as psychotherapy, family psychoeducation, illness management, and supported employment."

Psychiatric rehabilitation is also called psychosocial rehabilitation PSR and is sometimes simplified to psych rehab. Psychosocial rehabilitation is a holistic approach that links different interventions such as treatment, rehabilitation, and support, in customized and individualized programs. More importantly, rehabilitation is not a luxury nor an optional health service to try when other treatments fail to cure illnesses.

The Emergence of Psychiatric Rehabilitation & its Facilities

Psychological rehabilitation has its roots in the early nineteenth century. People with mental illnesses were freed from prisons and poor homes and cared for in asylums, which soon became large custodial institutions. During the sixties, de-institutionalization was implemented, which led to releasing large numbers of mental ills from these institutions and integrate them into the community. At this point, recovery has emerged as an urgency to follow these patients up and help them feel satisfied and successful in their environments of choice—residential, educational, vocational, and social. Initially, psychological rehabilitation focused on service users' goals rather than their problems.

Social skills training was one of the first officially recognized psychological rehabilitation interventions. Another early intervention is the clubhouse. In the early de-institutionalization stage, when there were insufficient community services, some ex-patients, with some doctors' help (who were discharged due to the closure), self-organized and established the early clubhouses, such as the Fountain house and Horizon House in the US. These Clubhouses have facilitated the birth of later holistic multiservice psychosocial rehabilitation centres later.

Evidence-based Practices for Psychosocial Rehabilitation

Evidence-based psychiatric rehabilitation models have been developed considerably in the last few years. These models include cognitive rehabilitation, Family psychoeducation, Peer Support, Illness self-management training, Social skills training, Physical aerobic exercise, healthy lifestyle intervention, Supported employment, Education, Leisure, Wellness, and the clubhouse model. However, emphasizing an individual's strengths, addressing self-esteem and confidence are essential elements in any recovery process. ***Therefore, these Evidence-based practices will be used as a guiding framework while setting the proposed program later in this research.***

Types Of Mental Health Facilities And Settings:

Receiving mental health treatment or care can be done in three main treatment settings defined according to the person's mental- and physical health condition and the treatment prescribed. These three primary types of treatment settings are:

- Hospital inpatient,
- Residential, and
- Outpatient facilities, such as, outpatient clinics and daycare facilities, clubhouses, practitioners in private practice, and Telepsychiatry.

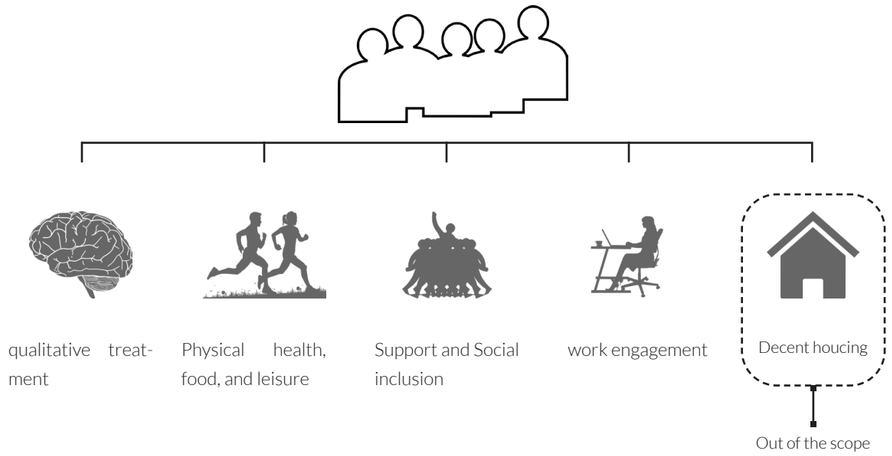
Outpatient programs are designed for those who have completed their inpatient stay and looking to continue their journey of recovery.

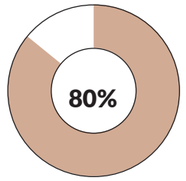
The environment of the proposed project in the research will be a hybrid environment from daycares and clubhouses to achieve a comprehensive treatment environment that could offer psychological, social, and complementary treatments under one roof.

Designing for Psychiatric Rehabilitation

The architect and Medical Planner *Evangelia Chrysikou* have defined in her book "*Architecture For Psychiatric Environments And Therapeutic Spaces*" the needs of the mental health service users. In her book, she mentions the study outcomes of the *Sainsbury Centre* in the *UK* in which states that qualitative treatment, good food, leisure, information, support, social integration opportunities, employment and housing as aims for mental care provision. *(Chrysikou, 2014)*

Those with mental health issues are commonly asking for:





The proposed project offers 80% of its users' basic needs undewr one roof

Health Promotion

It has been proven that architecture has powerful impacts on people's health and wellbeing. Health care settings are often referred to as healing environments. *Ulrich's* study in 1984 shows that a patient room in a hospital with a window view of a natural setting might have restorative influences on its users. The study shows that patients in rooms with windows looking out on a natural scene took fewer medications, required shorter hospitalization stays, and faster recovery times than other patients in similar rooms with windows facing a brick building wall.

Health promotion is an interdisciplinary approach that covers a wide range of social and environmental interventions and goes beyond healthy lifestyles to wellbeing. In The 1st International Conference on Health Promotion, *Ottawa*, 1986, the *World Health Organization WHO* has defined health promotion as:

> ' The process of enabling people to increase control over and to improve their health [in which] health is a state of complete physical, social and mental well-being, and not merely the absence of disease or infirmity' (WHO, 1986a).

Since Ulrich's study about architecture's ability in promoting physical and mental health, most later studies connect architectural design features to its target groups and outcomes such as treatment, health protection, collaboration and satisfaction. Target groups mentioned in health promotion are; Patients, staff, caregivers, people with diverse abilities, and the local community.

Characteristics of Health-Promotive design:

According to Miedema, Distinguishing health promotion from other healthcare approaches requires meeting a set of six factors:

- Holistic view: health promotion has a holistic approach and exceeds the physical, mental, and emotional aspects of health to include the built environment.

- Socio-cultural perspective: individuals are not individually responsible for their health, but communities are taking part in this responsibility together with them.

- ***Salutogenic orientation*** studies the origins and causes of health instead of having a disease or problems as a starting point.

- Equity and social justice: huge attention is paid to consider equality and equal care, such as accessibility to healthcare facilities to people with diverse abilities.

- Participation of communities and individuals to empower those involved and adjust strategies to their needs and values.

- Intersectional collaboration: Collaborations between different settings such as schools, workplaces, and the building design sectors are required.

Health- Promotive Healthcare:

According to Hancock, there are three types of healthcare:
- Traditional healthcare focuses on diseases and treatment.
- Healthy healthcare focuses on treatments and the protection of all building users together with the natural environment. This type adopts the prevention strategy and the pathogenic perspective
.- The Health-promotive healthcare HPH, which, according to Miedema, focuses on all building users, including staff and families, local community, and the natural environment. (Miedema, 2020). This type adopts the salutogenic approach. (Hancock, 1999).

Potential places of Health Promotion in Healthcare:

In her dissertation, Elke has defined possible places where health promotion could happen or be implemented:

Patient environment, staff environment, the healthcare environment, supportive environment, circulation environment, and the outdoor environment. According to Elke Miedema, design features related to health promotive approaches are categorized as:

- Ambient, such as lights, acoustics, and air quality.
- Interior, such as types of equipment, finishings, and furniture.
- Architectural; such as plan layout, room sizes and shapes.
- Maintenance; such as durability, cost, and cleanliness.

Social; such as control, privacy, and familiarity.

Ambient aspect

Interior aspect

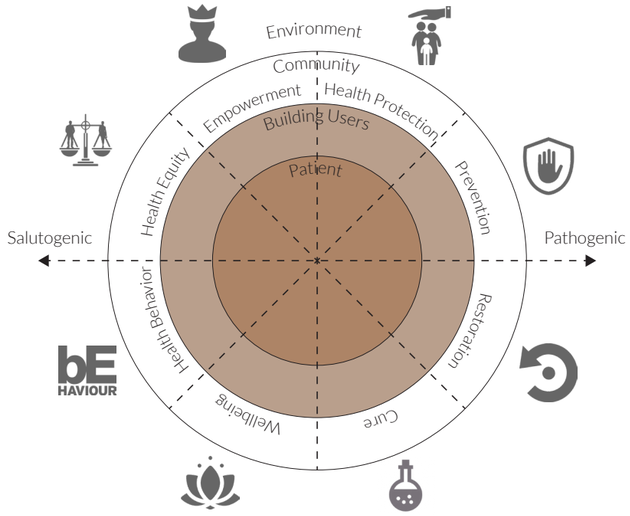
Architectural aspect

Maintenance aspect

Social aspect

Health Promotive Building Design Model:

Elke Miedema developed a model that illustrates different aspects of the health promotive building design to help designers position and evaluate their design according to health promotion.



Different health promotive aspects will be addressed, by their respective icons, in the architectural layout later in this study.

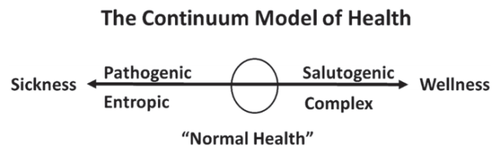
Through her improved model, Miedema refers to four different levels to be considered while designing health-promotive buildings; patients, users, community, and the environment. The model also indicates eight different applications areas; health protection, prevention, restoration, cure, wellbeing, health behaviour, health equity, and empowerment. The left half of the circle indicates the salutogenic approach, while the right half indicates the pathogenic one. Since the design aims to build a facility that offers holistic rehabilitation services to its users, aspects from both approaches will be considered in the design proposal.

Salutogenic Model in Architecture:

Architectural design plays an important role in healthcare facilities. It has been proven that there is a strong relationship between patients and their surrounding environments. Consequently, even minor design choices could have significant negative or positive effects in psychiatric-related facilities. *(Golembiewski, 2010).*

Antonovsky's salutogenic theory states that better health results from a state of mind with a better sense of coherence (SOC), which is strongly connected to better resistance to illnesses. The coherence can be enhanced through the patient's ability to understand the environment, be effective in his actions, and find meaning.

'Salutogenesis' is the term coined in 1979 by sociologist Aaron Antonovsky which means 'health origins'. It studies the origins and causes of health and focuses on promoting active health and well-being over the pathogenesis, which focuses on one's resultant "disease or injury." (*Golembiewski, 2010).* Accordingly, pathogenesis has a disease as a starting point and how to avoid a problem, while Salutogenesis start with an idealized outcome and how to approach a potential. The pathogenesis is reactive and measures the end-point, while Salutogenesis is proactive and measures the gain.



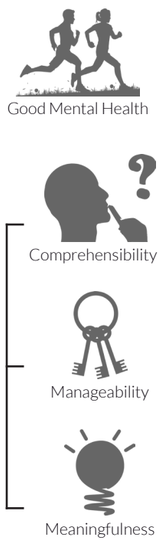
According to Golembiewski in his paper "*Start making sense*", the salutogenic theory is considered a good structure that offers guidelines for designing mental health facilities and improving health outcomes. It provides a direct link between architecture and psychiatry. *(Golembiewski, 2010).*

These factors are working together to create architectural spaces that serve the needs of patients, strengthen their sense of cohesion, mental well-being, and improve recovery. (Golembiewski, 2010).

***Comprehensibility**: This is done by ensuring the presence of sensory cues that aid in cognitive processes, such as good choices of texture and materials, controlling space sizes, and expressing environmental features in a natural way.*

***Manageability**: This is done by enabling patients to practice control over their surrounding environments, such as opening windows and providing Activities of Daily Living (ADL) and sports facilities.*

***Meaningfulness**: This is done by enriching the environment with order, complexity, and aesthetic features, as well as providing convenient spaces for visitors and patients' relatives.*



Biophilia

Biophilia is considered as humans' innate connection to nature. It explains, for example, the reasons for the innate human attraction to nature and the sea, as well as the reasons behind the garden's ability to improve a person's ability to create. Biophilia can also explain why we prefer some parks and buildings over others. Thus, Biophilia, as a notion, presents a scientific framework that connects human biological science and nature.

Biophilic design is considered a fundamental approach where it provides us with healthy working and living environments with less stress and greater health and wellbeing.

> "Biophilic design can reduce stress, improve cognitive function and creativity, improve our well-being and expedite healing" *(Browning et al., 2014)*

Patterns of Biophilic Design:

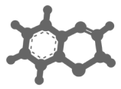
In their paper "*14 Patterns of Biophilic Design*", the authors Browning, Ryan, and Clancy articulate the relationships between nature, science, and the built environment in fourteen patterns to be employed while designing a built environment. Among others, we can mention what has been actively included in the project:

Visual Connection with Nature:
A view to natural elements and living systems,

The None Visual Connection with nature which can be achieved by the human senses, which generate intentional signals and allusions to nature

The presence of water enhances the experience of a place whither through seeing, hearing or touching it.

Material Connection with Nature: using natural materials which reflects the local environment and create a distinct sense of place.



Biomorphic Forms & Patterns. Symbolic references to different factors in nature, such as forms, patterns, or textures.

Prospect: by securing unblocked view over distance for surveillance and planning.

Mystery: It is achieved by presenting partially-obscured views that tempt user's curiosity to go further into space.

Refuge: by securing a place for escaping from natural conditions, situations, or people.

Different patterns of biophilic design will be addressed, by their respective icons, in the architectural layout later in this study.

The Healing Gardens Of Mentally Ills

Healing gardens are designed to support and improve the health and well-being of their visitors. Studies have shown that Healing gardens can enhance the quality of life for both patients and employees and shorten certain diseases' recovery time. Based on previous research and practices, some principles that should be included in designing treatment gardens for people with a mental health condition have been identified. *(Erbino et al. 2019)*. Among others, we can mention:

Connection with nature

patient autonomy and freedom

ease of orientation

safety and comfort

areas for relaxing and activities

family atmosphere

The Effects of Light and Color:

The human mind perceives the surrounding environment in a complex way as it summons all physical senses, memory and subconscious for this purpose. Thus, light, colour and sounds collectively define the environment in which we live and contribute to the rehabilitation process. As a result, it becomes clear that everything the eye sees or the ear hears and the brain understands can affect the healing process, whether the illness is psychological or physical.

The Effects of Natural Light

The sun provides the basis for all life on earth, and natural sunlight is synonymous with healing and rehabilitation. The Greek healing theatre at Epidaurus dates back to the fourth and third centuries BC, combining light and theatre to heal the patients. Dr Bernarr McFadden, in his article "*Sick? Well? ... Sunbathing Helps You and Everyone*"

The Greek healing theatre at Epidaurus. Source: wikipedia.com

> "From the dawn of history, the sun has been utilized specifically as an aid to the restoration of health and as a means of maintaining and increasing it" *(McFadden, 2010).*

In addition to its endless healing capabilities, natural light is more enjoyable and inspiring than artificial light. Natural light raises the patients' spirits, mood and helps create a positive mood that supports the patient's recovery. The positive effect of light is not limited to patients but also affects employees. When employees are in a positive mental state, it is more likely that this will be positively reflected in their work so that they want to treat patients rather than having to. This action will eventually be reflected on patients' mental state and foster the healing process.

> "More and more studies are substantiating this fact that natural light has a huge impact on the healing process. There is mounting evidence that light is critical to human functioning and can be extremely beneficial to patients as well as staff in healthcare settings." *Singh, Nancy, healing Architecture, (2007)*

Different lighting levels can affect the attitude towards space. Low lighting levels can make a place attractive or dangerous in different situations. In general, sunny rooms evoke feelings of happiness, while dull rooms can be discouraging. Dr Joseph indicates in his study that light positively affects human health and performance by enabling visual tasks and critical chemical reactions in the body and influencing and controlling the biological clock system, mood, and perception. Among the many results, it can be mentioned that higher luminance levels are associated with better performance of complex visual tasks. Light also reduces depression among patients, improves sleep, reduces lessening agitation, increases the metabolism process and increases satisfaction with the work environment. *(Roselli, 2011)*

The Effects of Colour

Scientists have studied chromology, or the psychology of colour, which studies the effects of color on emotions, mood, and behavior. It has been shown that there are strong links between colour and emotion which enable architects to benefit from in order to create healing environments. Faber Birren argues in *Light, Color, and Environment, 1982* that patients will have different psychological and physical responses when specific colours are applied to the buildings' different spaces. However, one must keep in mind that colours' effects on humans can vary from one to another depending on the personal variance.

> "The physical effects of color on the human organism will induce psychological reactions...A person is likely to feel cheerful on a sunny day and glum on a rainy one" *(p. 27).*

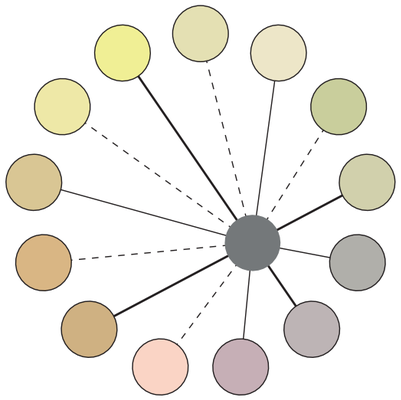
> "colour perception is not an art involving only the retina, and consciousness, but the body as a totality" *(p.29).*

Birren claims in his study that high illumination levels with warm and bright colours are usually suitable for work and action environments.

> "with high levels of illumination, warm and luminous colors in the surroundings (yellow, peach, pink), the body tends to direct its attention outward. There is increased activation in general alertness, outward orientation. Such an environment is conducive to muscular effort, action, and cheerful spirit. It is a good setting for factories, schools, homes where manual tasks are preformed or where sports are engaged in" *(p. 31)*.

In contrast, cooler colours are more suitable for occupations and activities that require higher levels of concentration.

> "color… with softer surroundings, cooler hues (gray, blue, green, turquoise) and lower brightness, there is less distraction and a person is better able to concentrate on difficult visual and mental tasks. Good inward orientation is furthered. Here is an appropriate setting for sedentary occupations requiring severe use of eyes or brain – offices, study rooms, fine assembly in the industry" *(Birren, 1982, p. 31)*.



Birren's recommended rational-circle of colours

In his recommended rational circle of colours, Berrin differentiates between «warm» and «cold» colours and groups 13 different colours around a grey which is displaced from the centre. This displacement has led to assigning more space to the «warm» colours between red and yellow than the «cold» colours locating between the green and the violet. Birren believes that warm colours' effects are more dynamic and intense, and the eye can distinguish more warm colours than cold. The diagram's thick lines refer to the primary psychological colours, and the dashed lines refer to mixtures, while the thin lines represent secondary colours. (*G. Hoeppner, 1994*)

It should be noted that art was presented by some researchers as an alternative solution to introduce colours into architectural environments. The art enriches the physical spaces, reduce stress levels and improve the mood of the space users. Art galleries are considered one of the best examples of utilizing art in health promotive and healing architecture.

CHAPTER TWO

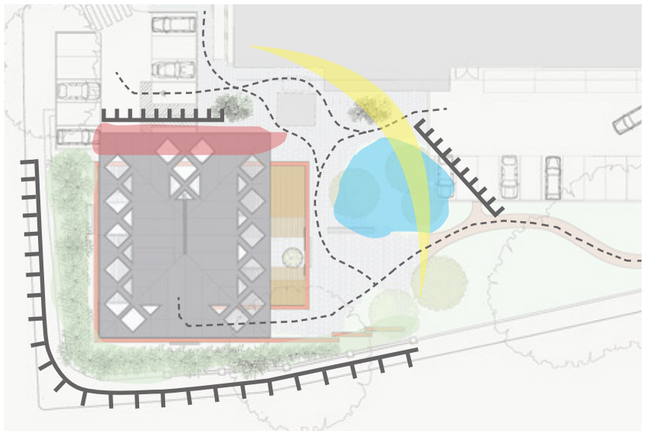
REFERENCE PROJECTS

Maggie's West London Center - UK

Maggie's West London Center, the bright orange building, was completed in April 2008. The centre is located adjacent to Charing Cross Hospital at Hammersmith, London.

The Context and Landscaping:

The building's entrance is approached from within the hospital grounds via the car park. The non-institutional building environment is amazingly secluded from its challenging surroundings, street noise and hospital environment. Alongside the turning path towards the main entrance, stone sculptures and wooden benches provide welcoming and peaceful areas for the visitors to sit and enjoy.



Maggie' background

After she was diagnosed with cancer, Maggie Keswick, with her husband Charles and some of their architect friends, designed the Maggie Centers' initial prototype.

Maggie believed that patients' mental and physical condition could be improved by encouraging and providing advice and assistance. So, Maggie wanted to bring people together in a quiet and pleasant place to obtain comfort, advice, and experience from those suffering from the same disease. Unfortunately, Maggie passed away before the opening of the first center. Thanks to Maggie's husband and her medical team, the vision has come into life. The first center was opened in Edinburgh in 1996. Now many centers have been built in the UK and around the world.

Maggie's Center primarily provides emotional, practical, and psychological support for people with cancer, their families, and friends in a quiet, home-like environment. It is a place where a person -with no referral- can relax and meet other people.

The Building

Despite the small size of Maggie's buildings, their architecture is fascinating. Rogers Stirk Harbour and Partners designed a 370 square meters building to be accessible, domestic, welcoming as possible. Spaces within the building have different degrees of privateness. The design idea was inspired by a heart wrapped from its sides to reduce the hospital's impact on the project.

Four components are forming the building; the central double--height kitchen area considers the project's heart and its main focus; the annexes around the central space, designed as sitting, meeting, and consulting rooms; the wall wraps the building spaces from four sides and protecting them from their surroundings; and finally, the floating roof which acts as a lid to the building's heart.

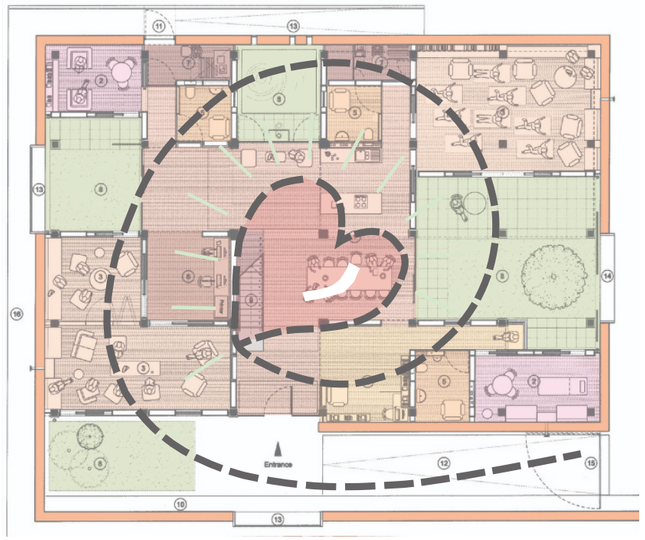
> "The idea was to try to minimise the overbearing impact of Charing Cross Hospital. The roof, the landscaping, the hearth inside, the views out, each was to take you away from the hospital and the bustle of the road." Rogers

Together with the central kitchen's refuge area, the three embedded fireplaces reflect the natural home-like environment of the building. The building's adaptable and human-scaled spaces offer control and ownership to the users rather than the sense of being a visitor. The building heart was enhanced by its adjacent surrounding courtyard, winter gardens, meeting rooms, and private spaces. Next to the kitchen, an important yet active big multi-purpose room for relaxation groups, yoga, lectures, meetings, or even fundraising events. Additionally, the building accommodates spaces for education and reading - It is the case of all Maggie's centres.

Colours were chosen with great care, where bright and vibrant colours were mixed well with calm colours to create indoor and outdoor environments that suit all tastes and moods.

Furnishings, calm colors, and a fireplace gives a comfortable, home-like feeling

Furnishings, calm colors, and a fireplace gives a comfortable, home-like feeling



Sustainable Features

The opennings were carefully located to allow looking at specific locations Outdoor greeneries are designed to be parts of the indoor environments

The smart use of the floating roof, which has some openings, allows natural light, wind, and rain into the inner gardens, shade the façades beneath, and lightens the inner rooms and spaces despite the wrapping wall's existence that creates the isolated and protected environment. Fast-growing birch trees were planted on the site to filter street noises and provide a lovely view from the inside and out.

Acoustics has been a significant aspect of the study since it is the window to create a comfortable environment for both employees and visitors. Together, the high exterior walls, with the outdoor plants and trees, are protecting the indoor spaces from outside noise. Different degrees of sound insulation has been used to allow some private and confidential conversations in the rooms. Carpets and furnishings are used in double-height spaces to reduce echo and emphasize a homey environment.

Building rooms were ventilated naturally by the use of gardens inside and on the roof. Rainwater is collected from the roof and stored in a large underground tank to irrigate the outdoor gardens.

Many other sustainable approaches have been implemented in the design, such as using sustainable materials from renewable sources and high-level insulation to reduce heat loss and energy consumption.

Building's Awards

The successful and health-promoting design of the project has enabled it to be recognized. The project won many awards:

- 2009 RICS London Award Community Benefit Category.
- 2009 RIBA London Building of the Year.
- 2009 RIBA Award for London.
- 2009 RIBA Stirling Prize.
- 2009 Special Award for Best Primary Care Design.

Nuuk's Psychiatric Clinic - Greenland

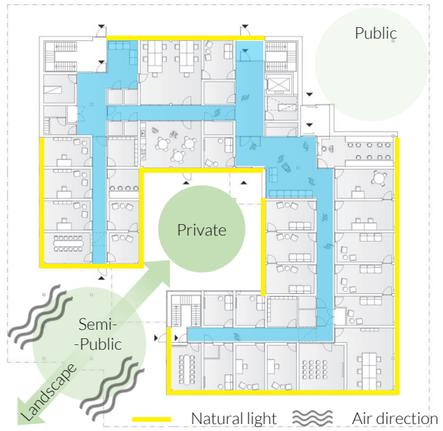
In their design, the architects at White's Arkitekture Office are trying to design a space that fosters the patients' healing process and combat the stigma associated with this type of building, namely, the mental health buildings.

The project is located near Dronning Ingrid Hospital's main entrance, a short distance from the centre of Nuuk, Greenland's capital. The site overlooks stunning views of icy waters and snowy cliff peaks. The square-shaped project consists of two floors that mainly contain the treatment and administrative rooms. The clinic's health-promoting architecture has been addressed in many ways in the project. The ground floor plan has an open ground floor corner to maximize daylight and nature connection regarding the building typology. Large windows and glazing panels were used in the patient rooms and the ground floor's common areas to provide maximum natural light and connection to nature for most rooms and spaces in the project. On the other hand, the inner garden, the outdoor gym, and the covered patio offer patients excellent outdoor experiences like training, sitting, relaxing, and enjoy natural views. The project offers a different scale of space privacy to achieve a human-scaled design.

Health-Promotive & Sustainable Aspects:

Sustainable aspects are reflected by the abundance of natural wood in the project, which also has health promotive effects in reducing stresses.

The project's low height and the perforated yellow facade -the colour in which the hospitals are traditionally painted in the city- helped the building lovingly and strongly blend with its surroundings and the small-scale buildings throughout Nuuk.

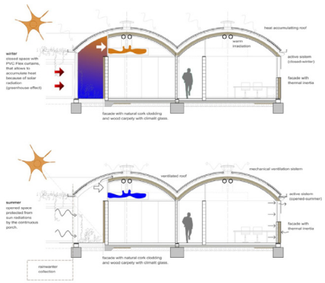


Awards:

White Arkiteker office was rewarded at the World Architecture Festival, which was held in Amsterdam for their psychiatric clinic in Nauk, in the category of "Future Projects – Health."

> "An open, healing and caring environment for the patients and a safe and attractive work place for the staff" (A New Type of Psychiatric Clinic in Nuuk, n.d.)

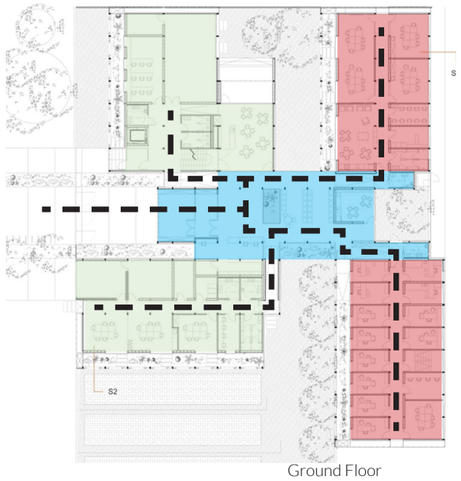
Psychopedagogical Medical Center- Spain



The project is located in the outskirts of Vic city, Spain, just outside one of the city's primary health centres, where all psychiatric rehabilitation services are offered in one place. Sustainability standards and structural systems used together with the human scale design and the place's warmth -due to the connection with nature- have made this building amazingly healthy. They placed the building's energy certificate in category "A," the most efficient. The building was designed by " Comas-Pont Arquitectos" and completed in 2015 with a total area of 1657 square meters.

The building can be divided into three main functional spaces; The central public space together with spaces of service, spaces and rooms for providing psychological rehabilitation counselling, and spaces dedicated for rehabilitation activities. The physical distribution of spaces and functions in the building achieves easy navigation for the building's users since the suites are located on both sides of one large central void. In terms of construction, the building adopts a 6 meters module.

User's Main Flow



Ground Floor

Green spaces merge with the building and permeate it to achieve maximum contact with nature. Plants are grown in these spaces by the patients themselves as part of the rehabilitative treatment activities. Sustainably, wood is used as the primary construction material for all internal spaces. the roof is equipped with a light layer that creates an air chamber that can be opened to increase the building's ventilation in the summer or closed in the winter to save heat and energy. In its southern façade, the building has a linear 1.5 meters-balcony to take advantage of the greenhouse effect. The balcony can be opened and used as a protection element from the sun in the summer or closed to add a unique interior elegance to the winter.

Vejle Psychiatric Hospital - Denmark

Vejle Hospital for mental illness was opened in February 2017 in the Danish city of Vejle. The project, which the Arkitema office designed, is conceived as an application of the Public-Private Partnership. The ninety-one-bed hospital was built to represent an ideal vision of mental hospitals, children's ambulatory, psychiatric ER, and ECT (the electroconvulsive therapy). The hospital has made an outstanding achievement by reducing physical restraint by fifty per cent since its opening.

The Building Design And Context

The project location, environment, and conditions are very similar to the proposed project's environment and conditions; this research's subject. The hospital is located at the bottom of a forest--covered hillside at the city skirts. One main street is bordering the western side of the site, while forests are bordering from all sides.

This massive yet new psychiatric hospital has an area of 17,000 square meters. The building layout consists of eight masonry building blocks assembled and twisted around a central linking body. The design secures an excellent connection with nature.

The design adopts the concept of a seamless and hierarchical transition of functions and spaces from public to private throughout the project. The ER and the children's psychiatry units on the ground floor are seen as inviting units on arrival. The wards are designed deep inside the Building. The enclosed first floor connects the admi-

nistrative part and discreet patient transport in a closed circular structure.

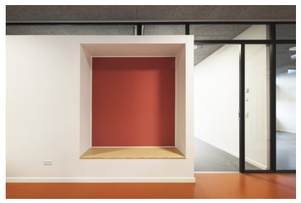
The architectural health-promoting approaches are reflected in the project by presenting an architecture that encourages physical activity and creates healthy indoor and outdoor environments for patients, employees, and visitors at the same time.

Health Promotive And Sustainable Approaches

The building promotes health by blending beautifully with its surrounding environment, where the layout's shape breaks the size of the building and allows green spaces to permeate between and within the project blocks. In other words, the building reflects human-scaled design and nature connection design approaches. In addition to securing natural light and direct access to nature, the inner courtyards provide safe and transparent environments for all users in the building to be engaged with outdoor activities or to sit, relax and enjoy natural views.

Light Element

The design team did not study natural light only but also focused on artificial light due to its essential role in promoting the healing process. The large glass panels which overlook the inner courtyards bring daylight deep into the building. Moreover, coloured-light therapy has been applied all day long in the wards due to its role in achieving a calm recovery process, eliminating depression, supporting sleep, and maintaining a circadian rhythm for both patients and staff.



Awords

The project won the European Healthcare Design Award 2018 for the Mental Health Design category.

Reflections Upon Reference Projects

The previous study of some relevant projects has provided a good insight into different mental health facilities with different environments and settings, such as hospitals, clinics, and clubhouse models. These settings and environments differ according to the patient's psychological state and the treatment provided.

Maggie London represents the clubhouse model, focusing primarily on providing psychological and social support in home-like environments. These services are provided in relatively small rooms and spaces for private and public meetings. The building provides education and guidance through the presence of a small dedicated library. Physical rehabilitation services and meditation spaces are provided as part of complementary psychotherapy approaches. Fountain House "Föntänhuset", the American version of the clubhouses, is an example of the low-prevalence clubhouse models in Sweden.

On the contrary, as seen in the Vejle Hospital, psychiatric hospitals' environments focus on providing psychological treatments for patients with severe mental disorders rather than those who finished their treatment course. Unfortunately, securing patient autonomy and adopting home-like and friendly environments instead of the institutional ones in psychiatric hospitals is not an easy task due to many issues, including surveillance, safety, and security.

Daycare centres, part of the outpatient facilities, usually deal with less severe psychological cases that do not require hospitalization. These centres mainly provide psychosocial treatments and alternative rehabilitation programs, including educational, vocational, and physical rehabilitation programs. Unfortunately, daycare facilities in Sweden are not offering holistic rehabilitation programs; thus, the settings applied are more like primary-care facilities.

In Sweden, Psychiatric rehabilitation services are divided among different facilities. This division makes it harder for patients to benefit from holistic treatment programs in one place and potentially decreases accessibility rates to such facilities.

These illustrations represent the best lessons, and architectural practices learned from its respective reference project

CHAPTER THREE

INTER-VIEWS

Interviews:

A focus group has been involved in the research from its early phases up till the final proposal. The focus group includes psychiatrist and psychotherapists with many years of experience in their profession. It is important to mention that permission to include names and pictures of the interviewees has been taken.

Interview #1

The first interviewee, "Inger", is a licenced psychiatrist and psychotherapist. She has been working for "ages and ages" in these professions, as she said. She was the head of clinics in one Swedish region. Moreover, she was involved in the private health sectors as well. Now, she is working as a none-paid-head of Sveriges Fontänhus Riksförbund, the Swedish coalition of the Fountain clubhouses.

The Fountain House has come to light in the '40s of the last century in the USA. Nowadays, there are around 320 clubhouses around the world; thirteen of them are located in Sweden. The first clubhouse outside of the USA was founded in Stockholm in 1980. *Fontänhuset* in Sweden is considered one of thirteen smaller organizations that work under the National Collaboration for Mental Health (NSPH), which works hard to fight the stigma attached to mental illnesses.

Clubhouses in Sweden are public-funded mainly by the municipalities as well as the state. **Clubhouses primary goals are psycho-social and vocational rehabilitation**. *Fontänhuset* has managed to work efficiently under the pandemic of Covid-19 by using the digital platform. Thus, *Fontänhuset* is constantly making sure that all people who have experienced mental disorders "or the members as they are called" are not excluded from the digital development at any time. **Members visiting the clubhouse are between 16 to 65+ years old,** and no referral is needed. The clubhouse has no registers or statistics regarding its patients' gender nor background.

More than 2000 active members are visiting the club every year in Sweden. **20-25% of the active members' total number succeed in continuing their life and being engaged with some work or education.** This per cent is not applicable in the pandemic year 2020. The number of Fontänhuset's active members varies significantly from one club to another, depending on the city's size. However, it is between 10 - 85 active members every day. Fontänhuset members are referred to the National Board of Health and Welfare in their economic issues. The **Fontänhuset shows shortcomings regarding creating or strengthening the social network around the member, where no contacts with the patients' caregivers are conducted.** As members' stability is considered a crucial aspect of the rehabilitation process, no volunteers will be involved in the clubhouse.

Members of the Fontänhuset usually have an active working day with different activities. Food preparation, maintenance, cleaning, administration, reception, job searching, and public relations are among others.

Due to its limited prevalence, evidence-proven and positive impact, the Swedish public health authority has newly funded a project to help Fontänhuset opening more branches nationally. However, the road is very long to reach the neighbouring Fountain house in Norway.

Unfortunately, the significant shortage of offering the needed rehabilitation and follow-up services compared to the demand is not only seen in the Fontänhuset but on the national scale as well. According to the Swedish National Board of Health and Welfare's recommendations for care and support in schizophrenia and schizophrenia-like conditions, in 2018, community-based psychiatric rehabilitation facilities like daycare centres and clubhouses are badly needed in Swedish society.

There is no trend regarding building and space-related complaints coming from the Fontänhus in Sweden. However, clubhouses in bigger cities are moving towards bigger buildings with more centralized locations in the city.

SVERIGES FONTÄNHUS
RIKSFÖRBUND
Medlem i Clubhouse International

Interview #2

The second interviewee (Dr Essam) is a general practitioner who worked as a substitute psychotherapist in one daycare centre in Västra Götaland for some time.

Many factors could be considered as causes of mental illness; genetics, environment, childhood trauma, stressful events, negative thoughts, unhealthy habits, drugs and alcohol and Brain chemistry. The variation of causes leads to a wide variety of treatment approaches. Consequently, **environmental and architectural settings should be flexible, calm and neutral enough to satisfy different personalities with different diagnoses.** For example, patients with eating disorders, depression, and schizophrenia visit the same treatment rooms and waiting areas in these daycare centres. Patients visiting daycare centres are usually referred by hospitals, primary care centres, and the department of family and social services.

Psychiatric treatment approaches have been developing over time, thanks to the findings of evidence-based best practices, which enriched this branch substantially. I think that **psychotherapy is a holistic, interdisciplinary approach. However, it worth saying that rehabilitation processes are usually starting during the treatment phase.**

Daycare centres' working days in the Swedish context are very organized. It begins with a morning's meeting where psychiatrists and psychotherapists discuss updates and cases of newly registered patients. Afterwards, meetings with patients will be held all day long. In typical situations, psychotherapists start the treatment process by talk sessions, diagnosis, and, in some cases, urine and blood tests, where small labs and nursing rooms are usually located near the treatment-unit rooms.

While working here, I have experienced the **importance of architectural elements in mental health. Lights, colours, materials, and patterns are crucial while designing for people with a mental health condition, where these elements could work against our will if not wisely selected.** It is recommended, for example, to avoid complex plan solutions, where the patient's mental state could not help him find his way easily. Furthermore, it is also recommended to avoid sharp edges and dead corridors, leading the patient to feel trapped or cheated. Similarly, strong and exciting colours are not prefered in the interiors. Worm and calm colours have proven their ability to improve mental health over time. As for the environment and materials, it has been proven that wood is a very sustainable material that always temps the user to touch and feel. It has a nice and lovable smell as well. **Wood has positive effects on reducing stress and creating good moods.**

One of the most distinguishing features of the daycare facilities is having good contact with nature, which plays an essential role in the patients' healing process. **Unfortunately, no outdoor activities in nature are being offered by Swedish daycares. Likewise, social interactions are not clearly presented in the daycare treatment methodologies, whereas it is addressed as an essential factor of the rehabilitation phase.** However, fresh air and natural daylight are always present with regards to the inner spaces.

REGION VÄSTRA GÖTALAND

CHAPTER FOUR

CURRENT SITUATION

4

Site Selection - Criteria and Motivation

The project's proposed location has come after fulfilling a pre-set criteria to be adopted while selecting a proper location for the project.

The proposed site should be in a dense urban area to secure that the service provided reaches a larger segment of people.

The site, should have high accecibilty values to nature.

The site, also, should be away from unhealthy facilities, such as industrial development and facilities that produce noise, air pollution, hateful smell, or toxic fumes.

Furthermore, and for sustainability purposes, the project's proposed location should be in an area where no or minimal number of trees/ greeneries are required to be cut or removed while the development process.

Motivational Reasons for The Site Selected

The previously defined site selection criteria have led to adopting Kortedalavallen as the proposed site. It is located in the northeastern part of Gothenburg and adjacent to Almanacksvägen, which connects Bergsjön to the city. In addition to fulfilling the conditions mentioned, the proposed site possesses more valuable features that assure this choice.

VISION 2035

The project site has been chosen based on the Municipal Development Vision 2035.

The approximate travel time to reach the site from the main city station is 22-25 minutes by using the public city transport, and 31 minutes by using a bicycle.

Kortedala residents are considered middle to low income compared to some other city areas, making them more vulnerable to mental illness.

Site Evaluation - SWOT Analysis

Strength:

- Direct connection to nature.
- Proximity to residential areas, cultural, and sport facilities.
- Well known by the locals as an active place.
- The site is located away from unhealthy facilities and/ or environments.
- No trees or natural elements to be destroyed.

Strength

Weaknesses:

- No direct reach by public transportation is available.
- The difficulty of cars entering the site.
- The site is being included in the city's development vision 2035.

Weaknesses

Opportunities:

- The site offering well secluded natural spaces for mental health activities like meditation.
- Diverse neighbouring activities.
- There is uncertainty regarding the urban residential environment's density where the urban development has not started yet.

Opportunities

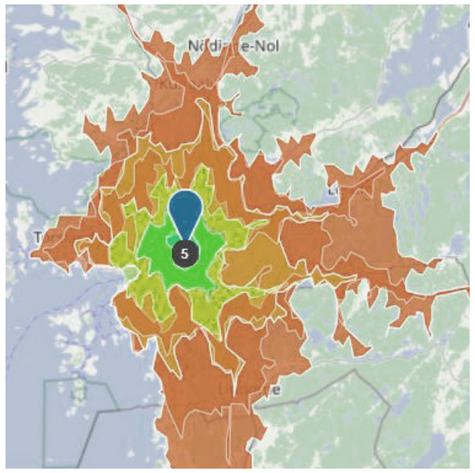
Threats:

- The need of demolishing one existing building that is already located in the site (will be reallocated).

Threats

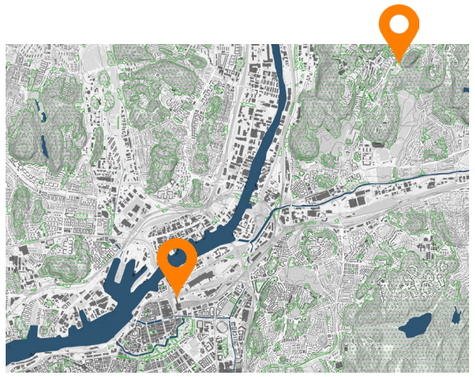
Travel map: 30 min, 5 min intervals.
Departure: City main transport station

A travel map has been created to help filter the potential locations according to the criteria.



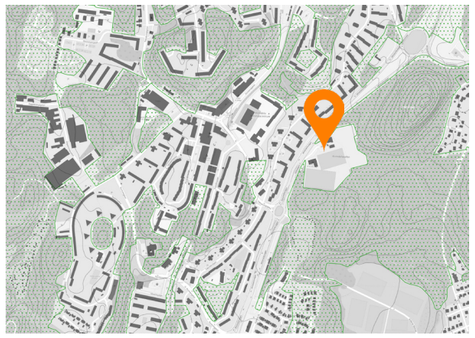
Kortidala- Gothenburg

The proposed site is located in Kortedala, Östra Göteborg. Kortedala is Gothenburg's first suburb and was built during the 1950s. The current area is almost 387 hectares. The area has many trees and parks. Some of the farms in the southern parts still existed in the early 1960s. Kortedala is divided into Norra Kortedala and Södra Kortedala, which are parts of the urban Northeast area.



Site location with regards to the Gothenburg's main transport station

Kortidala district, mainly residential, is located in the north-eastern part of Gothenburg, about 7 kilometres outside central Gothenburg. Kortedala has about 16,000 inhabitants. Kortedala has good connections to central Gothenburg by a tram that takes about 15 minutes. It can be reached with tram lines 6, 7, and 11. Line 6 is signposted Kortedala and runs to the end stop, Aprilgatan. Lines 7 and 11 continue to Bergsjön.



Site location with regards to Kortedala area and Almanacksvägen main street.

The area's buildings show significant variation, from one to thirteen stories in different house types. Nowadays, Kortedala has mixed housing, but mostly apartment buildings. In Kortedala, there are two churches, a fire station, a water tower, and Isdala, which is Gothenburg's largest ice-skating rink. There are four local squares, three smaller ones, and the larger Kortedala Torg. Kortedala square has all services, shops, restaurants, bingo, library, pharmacy, dental care, and health centre.

In 2007, the Swedish musician Jens Lekman released an album titled Night Falls Over Kortedala. He also wrote "Tram 7" to Heaven about the tram to Bergsjön, passing through Kortedala.

Kortedala Torget "Kortedala square"

Kortedalavallen - The Site

The proposed site is located at the bottom of a forest-covered hillside in Kortedala at the entrance of "Kvibergs Park" at the city skirts and adjacent to one main street, "Almanacksväven", which borders its north-eastern side, while forests are bordering from all sides.

The site, at present, cannot be reached directly by a vehicle, where the visitor has to use the neighbouring parking or by using the public transport where the bus stop is 7 minutes walk away. Two pathways are bordering the site from its western and north-western sides.

The site's approximate area is 4860 square meters, and two sandy unfinished playgrounds occupy it. The site is characterized by good qualities like nature and neighbouring activities where cultural and sports activities are within immediate reach. However, the site has a very natural and calm environment that perfectly fits a mental rehabilitation activity.

Photo-

Documentaion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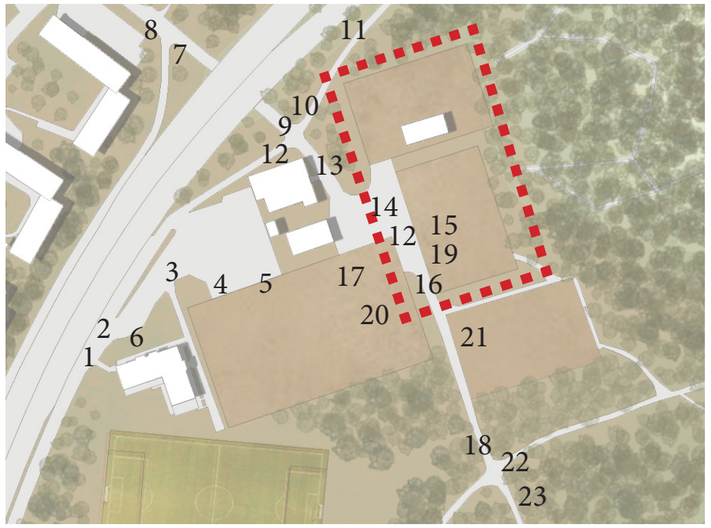


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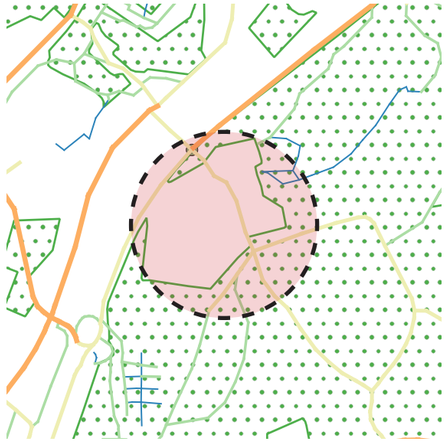
Site Analysis

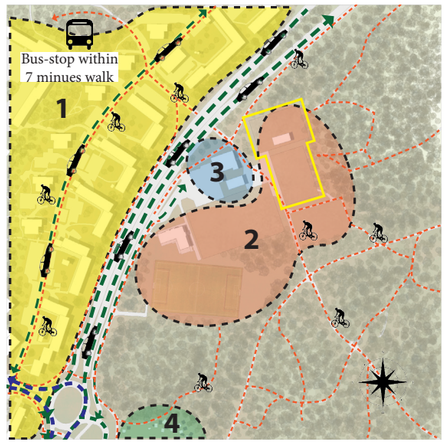


Angular Integration Map 2K - 1:10,000

0 100 200 300 500

A 2k angular integration analysis shows that the site has moderate to low integration values among its surroundings, which would fit rehab services facilities. However, this map will be changed by 2035, where much more premises will be built around the area.

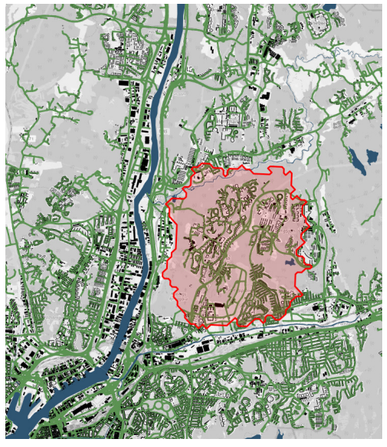
These illustrations show the land-use and Accessibility maps and the infrastructure, main and pedestrian flows, opportunities, environmental analysis within the area. The site is not connected to the street network, and the nearest bus stop is only seven minutes away. The site is now used as two unfinished playgrounds, among three more playgrounds. Besides sports, there are also cultural and gardening activities in the neighbourhood.



Land-use, Infrastructure, Type of Flow Analysis

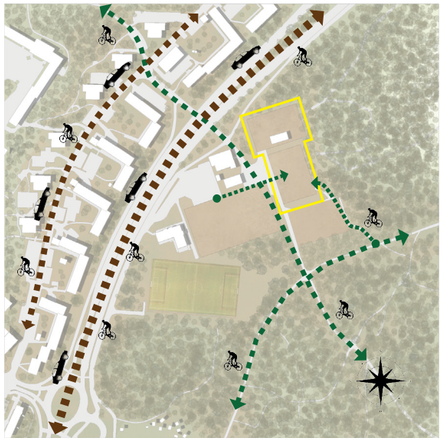
0 50 100 200 300 m

- Project Location
- 0.08 - 0.5
- 0.5 - 0.65
- 0.65 - 0.7
- 0.7 - 1.0
- 1.0 - 7.96
- GOT_MS_UnlinksBuff10Km
- GOT_NMS_Unlinks_190611
- Buildings_Baselayer_5Km
- WaterUPD
- Park_Greenareas_nms
- 1- Residential area
- 2- Sports activity
- 3- Cultural activity
- 4- Gardening activity
- Main street
- Pedestrian pathway
- Bus stop
- Noise source
- Potential area
- Sun- raise/set



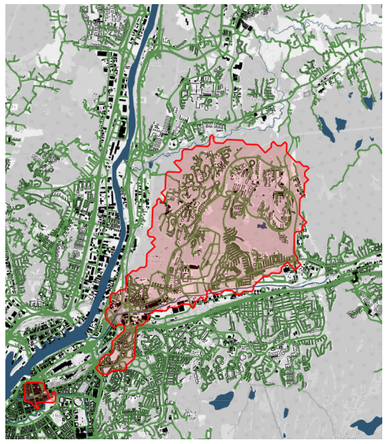
Isochrone/ Travel map 1:150,000
Intervals: 30 Minutes - Walking

0 2 4 6 8 10 KM



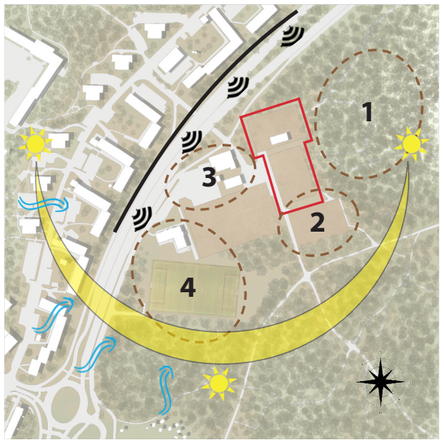
Main flow, Accessibility map

0 50 100 200 300



Isochrone/ Travel map 1:150,000
Intervals: 30 Minutes - Public Transport

0 2 4 6 8 10 KM



Opportunities, Solar chart, dominated wind direction, and noise.

0 50 100 200 300

The two travel maps show the project reach area covered in thirty minutes while travelling by foot or using public transport. According to shown results, the project can serve Kortedala and reach the city main transport centre within the time given.

CHAPTER FIVE

PROGRAM & BRIEF

Project Impacts with relation to the SDGs:

The 2030 Agenda for Sustainable Development, which all United Nations member states adopted in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and in the future. The agenda has seventeen Sustainable Development Goals (SDGs) representing an urgent call for action by all countries in a global partnership. The agenda states that ending poverty and other deprivations must go hand-in-hand with strategies that improve health, education, equality, and economic growth – all while tackling climate change and working to preserve our oceans and forests.

The proposed project outcome positively affect and works as a catalyst for some goals of the 2030 agenda "SDGs", such as:

As a healthcare facility and through its provided services in mental and physical rehabilitation, the building will positively enhance its visitors' health and wellbeing.

The project contains a department for educational rehabilitation that provides, with the help of its competent and licensed employees, the necessary and needed education for patients to continue their journey after the rehabilitation phase.

The application of biophilia and health-promotive building standards contributes to creating an appropriate work environment and improving employees' and patients' health. Likewise, the cognitive and intellectual therapy department provides skills required to qualify patients to enter the job market after the rehabilitation phase.

The community-based nature of the project and the rehabilitation programs provided, together with the accessibility features of the building, works together as a catalyst for social equality and to combat discrimination which is usually associated with mental health issues.

The proposed design, sustainable construction materials, and location of the project cause no harm to the environment. On the contrary, it adds more values and qualities to the place through its inner garden and green roof.

It is given that the mentally ill are more vulnerable to crime, either as a victim or as an offender than other individuals. *(Deza, Maclean & Solomon, 2020).* Accordingly, the building services will have positive impacts on reducing the crime rates in society.

Project Users:

The project focuses mainly on persons with psychiatric disability or illness that limits their ability to perform or behave in a right way (e.g., connecting with family, friends, and relationships, applying for a job, studying, or working)

Patients

Individuals, children, young, adults, or elderlies

parents, couples, or families

People experiencing sexual or gender identity issues.

People being bullied and/or abused, or even bullies and/or abusers

Employers and/or employees.

Caregivers

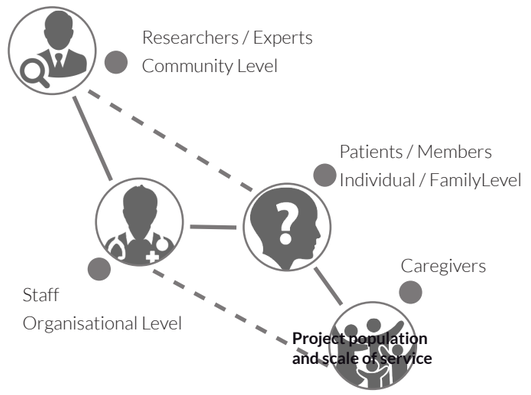
Who can be family members, friends, or social- or medical-communal employees.

Staff

Psychiatrists, Psychologists, Nurses, Occupational therapists, Peer Specialists, School counsellors, Social workers, and rehabilitation counsellors, Administrative, Complementary-activities' staff, technical and service staff

Researchers, and Visitors

These people are usually visiting the project occasionally for a limited period of time. they are allowed to visit most of the facility's spaces



Potential Stakeholders and their Contributions

Based on some relevant studies and the WHO recommendations, it is necessary to involve and collaborate with more significant segments and organizations to achieve a holistic approach towards mental health and combating its related stigma and prejudice.

Municipalities play an essential role in providing financial support, facilitation, and advice. Companies and organizations can become supportive members of the project by offering internships and job opportunities to the patients or providing sponsorships in financial contributions, products, or services. Likewise, schools and educational facilities can occasionally offer courses, lectures, or seminars to patients and staff.

REGION VÄSTRA GÖTALAND

ARBETSFÖRMEDLINGEN
SWEDISH PUBLIC EMPLOYMENT SERVICE

Idrottsföreningen Kamraterna Göteborg

Svenska kyrkan
MOTALA FÖRSAMLING

Länsförsäkringar Stockholm

Göteborgs Stad

Socialstyrelsen
THE NATIONAL BOARD OF HEALTH AND WELFARE

SVERIGES FONTÄNHUS RIKSFÖRBUND
Medlem i Clubhouse International

Polisen

Three Ultimate Goals:

Based on the gained knowledge from literature reviews and the information collected from the interviewees, three main goals will be adopted in the design due to their key role in promoting mental and physical health and achieving higher accessibility by de-stigmatizing the healthcare facilities. These goals will form the outline of the selected strategies.

DESIGN FOR PHYSICAL HEALTH

DESIGN FOR MENTAL HEALTH

DESIGN FOR SOCIAL HEALTH

Design Strategies:

Brief, Logistics And Health Promotion

Symmetric Design

Adopting symmetric design would create predictable environments and increase the probability that things will work out as well as can reasonably be expected. (Antonovsky, 1987; Bahrs et al., 2003)

Friendly & Human scaled Environments

De-institutionalized, Calm and friendly environments that give relief and comfort to their users

Physical encouragement

Wide and naturally-lit corridors together with the inner garden can be used as means to encourage physical activities, social interactions, and physical connection to nature.

Positive Distractions

Using large glass panels and seating areas alongside wide corridors would secure access to nature, artwork, and natural light

Site And Context

Nature in reach and sight

One big and centralized inner garden would secure a direct connection with nature and positively enhance orientation and wellbeing.

Bridging with the surroundings

Which cab be addressed by adopting low-height building, wooden finishes and creating permeated natural welcoming spaces.

Emphasizing the existing path

Building alongside the plot would emphasize and enhance the park entrance axis from the tunnel towards nature.

Ease of Accessibility & Orientation

Adopting symmetry and simple design approaches (central garden, circular flow) would offer extra help to navigate the building and enhance the sense of expectation for patients.

Sustainability And Biophilia:

Refuge & Mystry

The inner garden's curved lines increase the sense of curiosity and exploration. At the same time, the presence of the mountain and the back seating areas provide refuge for meditation and nature connection.

Material Choice

Wood will be used as the primary material for construction, sustainable material with health-promotive impacts in reducing stresses.

Utilizing nature

Green Roofs and Water Harvesting Management will have positive sustainable and ecological impacts on the site.

Healthy & Natural Resources

Natural daylight and ventilation will be satisfied by designing adequate openings and windows in most of the rooms.

IN THIS BUILDING, VISITORS WILL GET:

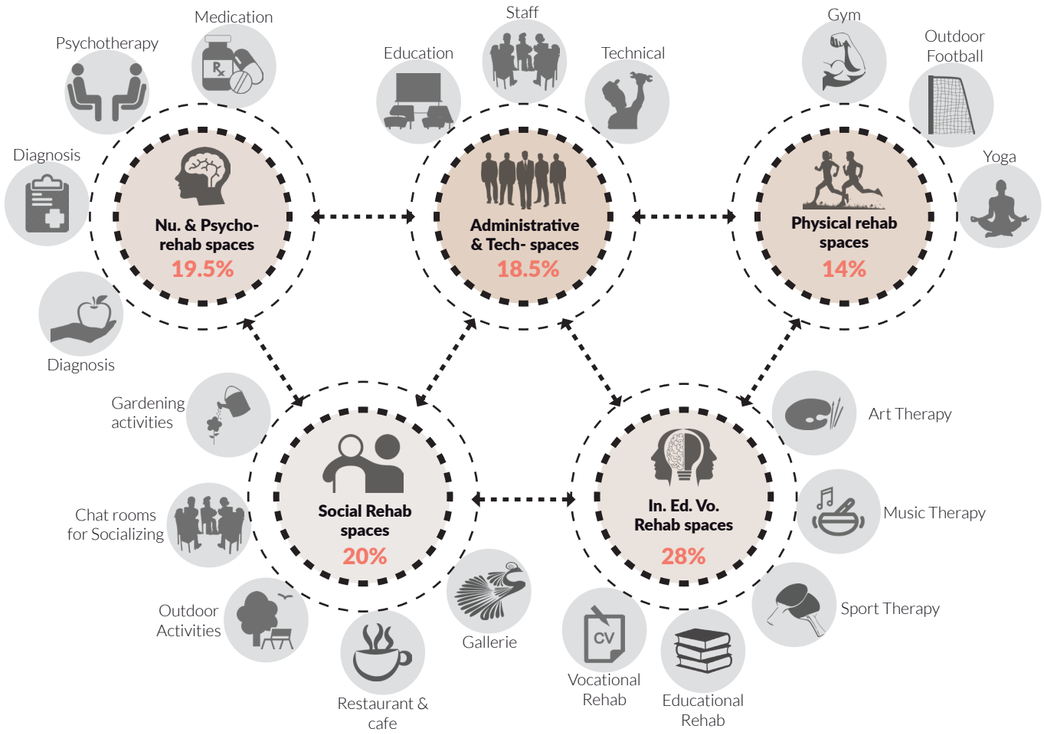
Counsultation and therapy.

Gaining or regaining new skills.

Social support

The program:

The project brief and program were mainly formed -as already mentioned in the literature- based on the given evidence-based Practices for Psychosocial Rehabilitation. In other words, based on the three main approaches for mental rehabilitation, the psychotherapeutic rehabilitation, social rehabilitation, and the varied complementary approaches such as the physical, intellectual, and vocational rehabilitation. Since the proposed project represents a hybrid model of both the daycare and the clubhouse models, the project program has also been enlightened by Maggie's architectural brief, given to every architect who designs a Maggie's centre worldwide. *(Maggie's Architecture and Landscape Brief, n.d.)*



Holistic treatment Plan in a Natural, Sustainable and Health promotive settings

Psycological Rehabilitation Approach		
Diagnose & Assesment Unit	**NO.**	**Size**
RWC	1	5 m
Sampling	1	8 m
Small lab	1	12 m
Nursing	1	12 m
store	1	5 m
Psychotherapy Unit	**NO.**	**Size**
Individual therapy	4	12 m
Group therapy	2	20 m
Family therapy	2	18 m
Peer Support group therapy	2	22 m
Office 1 Person	3	12 m
Office 2 Person	3	16 m
Office 4 Person	1	22 m
Rest room	1	18 m
Copy room	1	4 m
Cleaning room	1	4 m
RWC	2	6 m
WC	2	2 m
Medication Management Unit	**NO.**	**Size**
Intensive care	1	15 m
Medication Management	1	12 m
Nursing	1	10 m
Specialized Pharmacy	1	30 m
Medicin store	1	8 m
Rest room with pantry	1	15 m
RWC	1	5 m
Nutritional and Diet Therapy Unit		
Nutrition and Diet therapy	1	16 m
Chat room	1	10 m
Copy	1	6 m
store	1	6 m
Rest room	1	12 m
RWC	1	5 m

Diagnosis

Psychotherapy

Medication

Nutritional Rehabilitation

PSYCOLOGICAL APPROACH

Physical Rehabilitation

COMPLEMENTARY APPROACH

Intellectual Rehabilitation

Educational & Vocational Rehabilitation

Complementary rehabilitation Approach		
Physical Rehabilitation Unit	**NO.**	**Size**
Gym with own store	1	90 m
Yoga hall with own store	1	55 m
Dressing	2	12 m
Showers	2	12 m
RWC	2	5 m
Massage	2	16 m
Chat	1	9 m
store (oil, Linen)	1	5 m
Office 4 persons	1	22 m
Office 1 person	4	10 m
Copy	1	6 m
Store	1	16 m
Rest room	1	12 m
RWC	1	5 m
Intellectual Rehabilitation Unit	**NO.**	**Size**
Art therapy hall with own store	1	80 m
Music hall (Piano)	1	80 m
Sport hall (table Tennis) with own store	1	80 m
Multifunction hall with own store	1	80 m
Table game room	1	40 m
Office 2 person	3	15 m
Meditation and rest room	2	12 m
Waste	1	5 m
Cleaning	1	5 m
RWC	1	5 m
WC	2	2 m
Educational & Vocational Rehabilitation Unit	**NO.**	**Size**
Computer room	1	40 m
Specialized Libray	1	40 m
Educational room	2	25 m
Vocational rehabilitation office	3	15 m
Office 1 person	3	12 m
Office 2 persons	2	16 m
Office 4 persons	1	22 m
Copy	1	4 m
Cleaning	1	4 m
Store	1	10 m
RWC	1	5 m
WC	2	2 m

Social Rehabilitation		
Main hall with art gallerie and seating areas	1	250 m
Resturant with Accessible kitchen and own store	1	120 m
Cafe´	2	50 m
Chat room for bigger groups	2	18 m
Chat room for smaller groups	2	14 m
RWC	1	5 m
WC	2	2 m
Outdoor spaces for different activities		
Schedueled spaces for meditation and rest.		
Greeneries adapted for gardening activities.		
Common Spaces		
Administrative Spaces	**NO.**	**Size**
Reception Desk	1	22 m
Archieve	1	10 m
Receiption	1	13 m
Conference room with accessable pantry	1	50 m
Conference room	1	30 m
Office 1 person	1	15 m
Office 2 person	3	16 m
Office 3 person	2	20 m
Main restroom	1	45m
Change room	1	35 m
Rest room	1	13 m
RWC	1	5 m
WC	1	2 m
Dusch	1	5 m
Technical Spaces	**NO.**	**Size**
Technical room	1	50 m
Mechanical room	1	45 m
Data/IT room	1	30 m
Store	1	30 m

Gallerie

A restaurant & cafe

Indoor & Outdoor seating areas for Social interactions

SOCIAL APPROACH

Gardening activities

Plot area: 4860 m
Ground Floor: 2145 m
First Floor: 2345 m

Total Built area:4815 m (With basement and roof)
Ground Space Index (GSI): 44%
Floor Space Index (FSI): 92%

508 m^2	350 m^2	740 m^2	543 m^2	488 m^2
19.5%	*14%*	*28%*	*20%*	*18.5%*
Psychotherapy	*Physical Rehab*	*In.Ed.Vo. Rehab*	*Soical Rehab*	*Administrative & Tech- spaces*

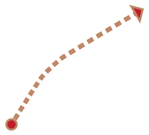
Space sizes according to the program

CHAPTER SIX

DESIGN PROPOSAL

Site Connection:

Option One



Option Two

Option Three

Alternative One

The site can be accessed by creating a street exit (Pocket) right after the tunnel. This exit would avoid intersections with the primary pedestrian path at the tunnel entrance. The problem is that this new exit would still intersect with the secondary pedestrian path, and more importantly, the steep is firm and not suitable for cars.

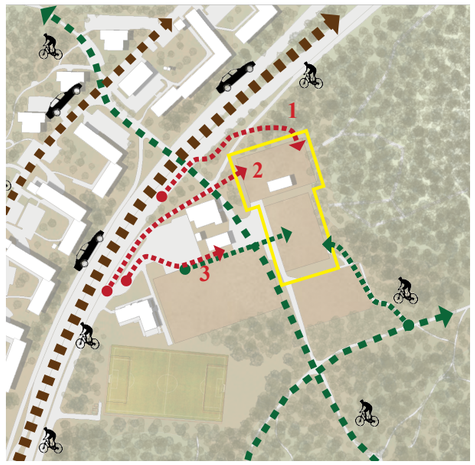
Alternative Two

The site can be accessed by extending the existing entrance, which now stops at the car parking. This extension would intersect with the main pedestrian path, coming from the tunnel, after 25m. Car speed in this street should be reduced to the minimum by using signages or stone blocks as street material.

Alternative Three

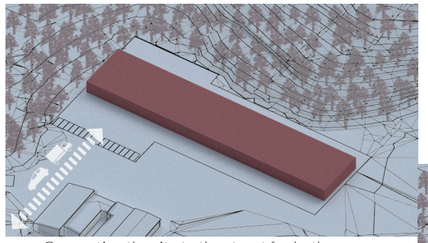
In this option, The spacious existing parking lot can be used. The distance between the site borders and the edge of the parking is 65m. This alternative might look like the cheapest alternative. Cars can not reach the site directly, which would cause issues for some people with disabilities and the delivery cars.

The second option will be adopted to reach the site based on these alternatives, but high safety measures should be considered while designing this entrance.

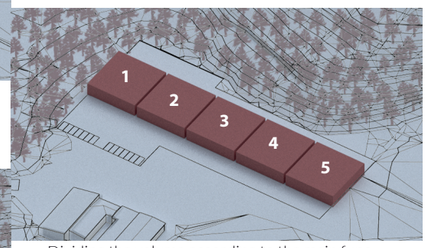


Site Plan:

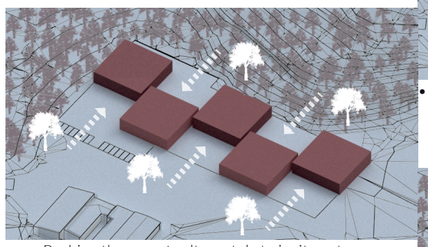
Conceptual Design-Process:



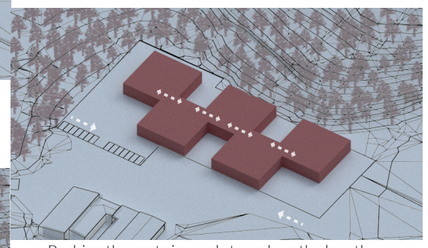
- Connecting the site to the street for both cars and deliveries
- Setting the volume needed for the building.



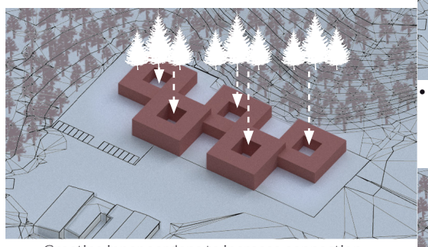
- Dividing the volume according to the main functions into the five pieces.



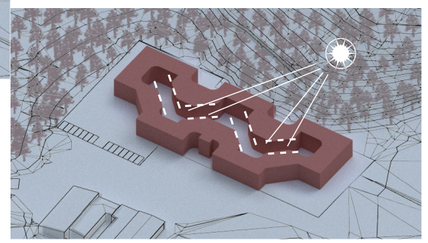
- Pushing these parts alternately to invite nature, people and create inner spaces.



- Pushing the parts inwards to reduce the length of the building.



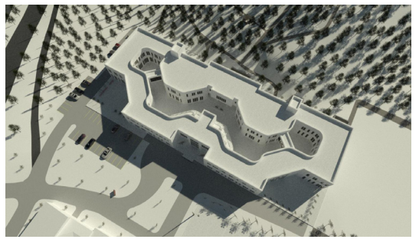
- Creating inner gardens to increase connection to nature, get better daylight, and natural air ventilation.



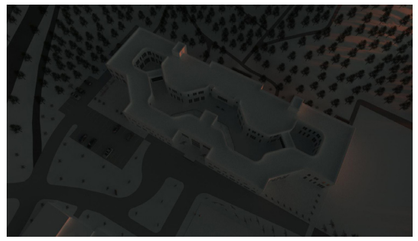
- Cutting the intersected areas to achieve better lightning conditions and to have one big inner garden with higher orientation potential.

Shading Analysis:

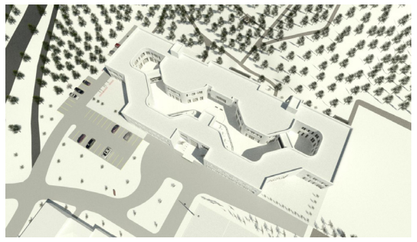
A solar study was conducted for two days during the year; The summer solstice on June 21 and the winter solstice on December 21. Three different times have been chosen to represent the sun and shadows; morning 08:00 am, midday noon, and sometime at 04:00 pm to represent the sunset.



Summer Solstice - June 21 - 08:00 AM



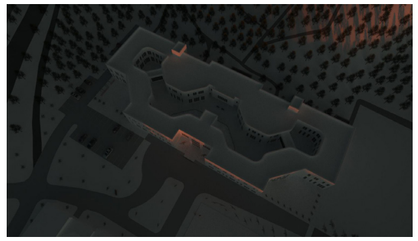
Winter Solstice - December 21 - 08:00 AM



Summer Solstice - June 21 - 12:00 PM

Winter Solstice - December 21 - 12:00 PM

Summer Solstice - June 21 - 04:00 PM

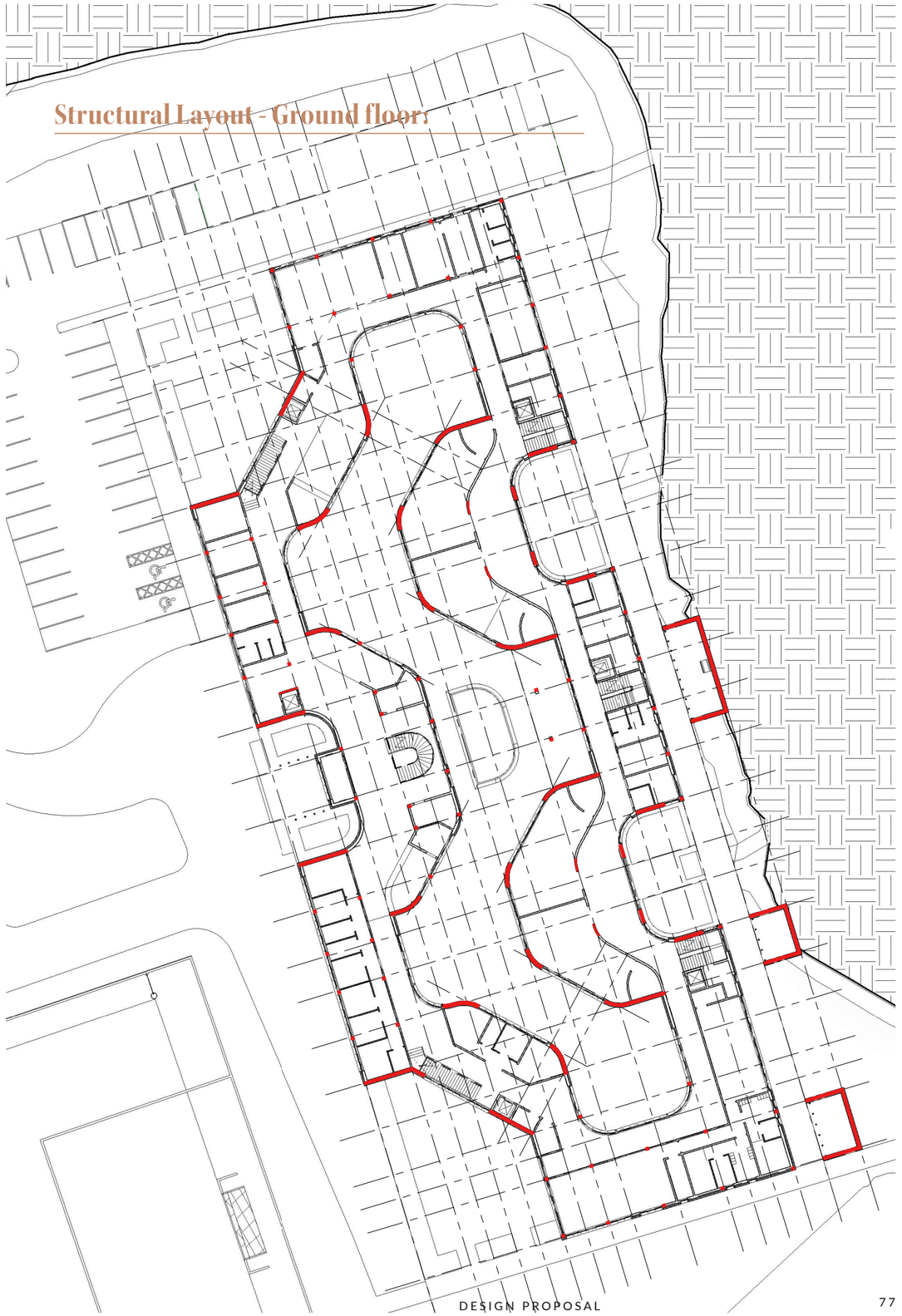


Winter Solstice - December 21 - 04:00 PM

Ground Floor Level:

First Floor Level:

Structural Layout - Ground floor:



Elevations:

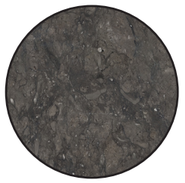
Western Elevation 1:500

Natural stone is used to build the three seating area in the back alley adjacent to the mountain. Another material to be touched by the visitors.

Natural planks of Birchwood for the exterior envelope the whole building and some selected inner spaces for decoration purposes

Eastern Elevation 1:500

Cast-in-place concrete is used as a construction material in the basement floor.



Chamfered natural and locally produced stone is used as a wall coping material.

Northern Elevation 1:500

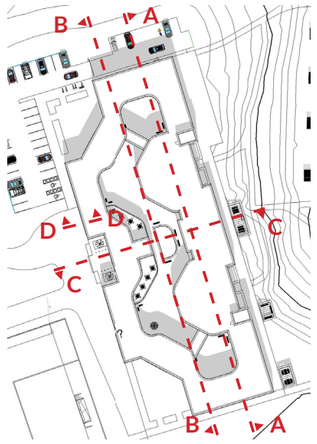
Southern Elevation 1:500

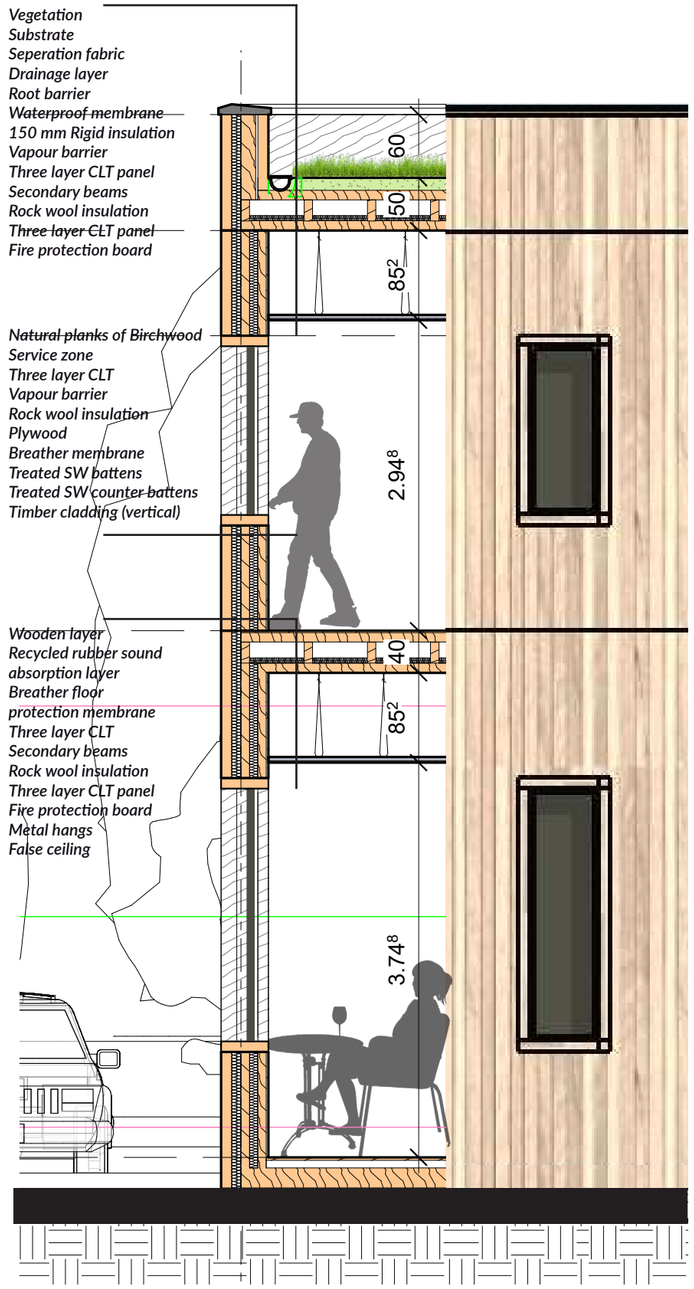
Sections:

Section A-A 1:500

Section B-B 1:500

Section B-B 1:500





Wall Section D-D 1:50

7

CHAPTER SEVEN

DISCUSSION

Biophilic- & Health-Promotive design factors:

In this chapter, a quick and brief reading of the building layouts will be given according to its different departments. It will also shed light on how health-promotive approaches and biophilic patterns are reflected on the design according to their respective numbers in the drawings.

HEALTH PROMOTION

BIOPHILIA

1- The placement of the centralized exposed lit-stairs and the accessible-hidden elevator are working together to promote physical activity and (***healthy behaviours***). Water elements and nature (which are physically and visually accessible - have brought inside through large glass panels and the greeneries underneath the stairs (***Visual Connection with Nature***). Both brick walls and wooden floors are natural materials that connect the space with nature (***Material Connection with Nature***). The spacious, well-decorated lobby and the centralized stair offer a more welcoming and legible environment for facility users (***Accessibility, orientation, Empowerment***).

HEALTH PROMOTION

BIOPHILIA

2- The existence of the natural light, wood, low-heigh trees and grass, ***water elements*** (***Material Connection with Nature***), seating areas, together with the spacious enclosed typology of the inner garden, allows patients to actively experience nature by hearing, smelling, and touching it (***Visual / None Visual Connection with Nature***). Furthermore, to feel ***autonomous, safe, and socially included***. The curvy-shaped inner garden (***Biomorphic Forms & Patterns***) urges patients' curiosity to discover the (***mystery***) and go further in space for more exploration. Needless to say that, natural sunlight has positive effects on ***Cure, health protection, and prevention*** from many illnesses. Moreover, the simplicity of the building's symmetrical layout (circular movement around one big centralized garden) would help patients with low awareness of space to navigate easier (***Accessibility and orientation***), predict the space and be more confident of their moves (***Empowerment and Manageability***).

HEALTH PROMOTION

BIOPHILIA

3- The shared kitchen (***Activities of Daily Living ADL***), the Restaurant, the café, and the nutritional rehabilitation unit, help users to have healthier food and healthier eating behaviours (***healthy behaviours***). This is done by the cooking courses that teach how to cook and eat healthy, especially for those having eating disorders (***Empowerment***). It offers a place for visitors and caregivers that promotes social interactions, ill ***Prevention, and Manageability*** over the place for the patients (***Prevention and Healthy behaviours***).

4- Greeneries provide a convenient place for patients to do

HEALTH PROMOTION

BIOPHILIA

gardening work as part of their healing program (***wellbeing and Healthy Behaviours***). In addition to their sustainable role, these gardens play an important role in providing a place where patients feel ***Empowered***, physically active, and control the space (***Manageability***) by personalizing his/ her spot in a semi-secluded area (***Refuge***).

HEALTH PROMOTION

BIOPHILIA

5- The mountain-adjacent back-alley contains seating areas that provide secluded and familiar environments that allow private conversations (***Empowerment and Cure***). Patients can walk and practice outdoor activities and eat where an outdoor barbeque grill is provided (***Healthy behaviours***). The small huts in the mountain and the private rooms that face the mountain provide secluded places for meditation and private retreat (***Refuge***). The existence of places designated for smoking would act as a ***prevention*** element for such harmful actions inside the building

HEALTH PROMOTION

BIOPHILIA

6- The gym that can be opened to the outside (***Manageability***), the yoga hall, and massage rooms help to provide social and healthy environments (***Healthy behaviours***) for patients where ***Cure, prevention, and wellbeing*** are offered. Similarly, the wisely chosen materials, comfortable colours, texture and decorations, together with the wide opening towards nature, are working as a catalyst for patients' health promotion.

HEALTH PROMOTION

BIOPHILIA

7- The building accommodates four halls that offer social, intellectual and cognitive rehabilitation programs for patients (***Cure***); Art-, music-, and sports- therapy (***Healthy behaviours, Manageability***). Moreover, nearest to the kitchen, the multi-purpose hall can host external visitors for events like collecting donations (***Community engagement***). Each hall contains its store with a total area of 80 square meters for each hall. These halls are visually connected to the inner garden and the water element outside

HEALTH PROMOTION

BIOPHILIA

8- The ease of access to the main staff restroom, in addition to its central location overlooking the water fountain and the main garden, provides a rich and comfortable environment for the employees that help them work. Its strategic location helps to provide indirect control over patients in the park. Small and open restrooms are designed in each unit to promote spontaneous meetings between staff and patients. These meetings would enhance patients' sense of belonging and empowerment. Employees' meeting rooms provide a fertile environment that provides them with the latest scientific studies in this field and a point for the external connection between the building and other institutions.

CHAPTER EIGHT

CONCLU-SION

As the study aims to answer the question of how architecture can address and promote mental health in healthcare settings, it was unfair to mention health-promotive design approach, including the salutogenic design, without mentioning biophilia, which, from my point of view, should be fall under the different dimensions of health promotion (referred to Elke's improved model of health promotion).

As seen, community-based healthcare facilities are highly required and recommended due to their crucial role in working against the stigma related to mental health facilities. It could, furthermore, play a crucial role in achieving higher accessibility to its services. Similarly, it is highly recommended to adopt health-promotive approaches, including the salutogenic design, as it offers guidelines for designing mental health facilities and improve health outcomes. The positive and cost-free impacts of nature in healing people (physically and mentally) should always be considered by adapting the biophilic design. Needless to mention that sustainable actions should always be considered in any design process to help to protect and to conserve environmental and ecological resources on this planet.

Besides emphasizing the importance of community-based mental health facilities, this study focuses on the need for concerted efforts between all stakeholders, governmental and private, in mental health matters to provide a holistic mental healthcare service. Psychotherapy together with other complementary services. Mental rehabilitation processes usually start to parallel with psychotherapeutic treatment due to the long treatment periods for such illnesses. Such community-based facilities, a collaboration between stakeholders, and a combination of treatment and rehabilitative services would not have positive economic impacts. However, it would also play a role in fighting the stigma and increasing the number of people receiving such services. These projects are sustainable as they save time, money, and global resources spent by patients moving between different service providers.

Despite the deep involvement of the two interviewees since the early stage of the study, the study has relied heavily on literature reviews, reference projects, and analyzes. Time limitation and the quarantine resulted from the epidemic of Corona have, unfortunately, affected the methodology. It was not easy to hold more interviews with a wider focus group. It was planned to conduct interviews with a larger number of specialists as well as patients. These interviews would be useful in understanding these environments and eventually translating the hopes of both patients and staff into a better design proposal.

The study is not necessarily presenting the optimal design for the building. Such evaluation necessarily differs according to different factors, including those related to place, culture, environment. However, this study proposes a translation and embodiment of a program, standards, and many prerequisites that should be considered when designing any psychological care facility. I think I was very successful in finding such a good site for the project in terms of the area that fulfilled the site selection criteria set in advance. In real life, designers may not have such privilege of choice. Therefore, several factors and limitations may play on drawing the components and the program of the project. Nevertheless, I strongly advise that some elements of complementary therapy should be incorporated into any proposed design.

This study has demonstrated how architecture and landscape elements in mental health settings can play a major role in promoting psychological health and wellbeing, especially when sustainable- and other health-promotive design approaches – including Salutogenesis and biophilia – are actively featured in the design. Furthermore, it could play a critical role in lowering the stigma associated with mental health-related issues.

In my opinion, architecture and buildings are not considered a neutral element that provides a place to live and work only. Buildings constantly interact with their residents and users and affect their social, physical and psychological lives. Location, form, light, colour, material, together with comprehensibility, manageability, and meaningfulness, are just a few examples of architectural aspects that could have huge impacts on people's health and their perceptions of space. Consequently, architecture is considered a double-sided weapon, where it could bring devastating impacts on people and communities if it not carefully studied.

CHAPTER NINE

VISUALIZATIONS

Renderings:

1- A bird's-eye view from the northern-west side of the site.

2- The North-western side of the building is designed to be more visible and welcoming for both cars on the main street and the pedestrians coming from the tunnel. The shot is taken from the main visitors' parking area.

3- The building defines and strengthens the pathway between the natural park and the residential area. The semi-enclosed courtyard (used for sport & outdoor activities) offers a good and safe environment for socialization and societal engagement.

4- The centralized- and retreating part of the building helps define the entrance and make it more visible and welcoming. Thus, more legible for patients.

Renderings:

5- A perspective of the inner garden towards the central fountain. The spacious, curvy, and enclosed-shaped inner garden encourages physical behaviours by urging patients to go further in space for exploration.

6- A perspective of one far-end of the inner garden. These semi-enclosed courtyards offer safe and less public spaces for smaller groups or social retreat. Natural settings and decorations offer positive distractions.

7- The backside alley offers a calm environment for patients for sport, gardening, and different outdoor activities.

8- The seating areas in the backside alley adds another level of privacy to the hierarchy of public-private spaces. Grilling and other different outdoor activities can be hosted.

Renderings:

9- A perspective of the side-stairs. Both large glass panels and greeneries underneath the stair are creating seamless, natural environments and lit corridors.

10- A perspective shows the warm and friendly environment of the cafe, which has a direct visual connection to nature from both sides.

11- A perspective shows the main entrance hall with the decorative and centralized stair. The side location of the reception desk offers a good location for observation and a sense of freedom for people who know their destination as well.

12- A perspective shows the accessibility from the entrance hall to the central garden where the fountain is located.

Renderings:

13- A perspective of the art therapy hall which allows patients to develop their intellectual and cognitive abilities.

14- A perspective shows the music therapy hall that could be merged with the multi-purpose hall to create a bigger room for special events. The hall is visually connected to the water element in the main inner garden.

15- Tennis table sport have proven its positive impacts on promoting patients' mental health. The sports hall offers a good environment for both physical and social activities.

16- Psychotherapeutic rooms come in three different sizes to match their purpose; individual, family, and group therapy. The rooms are well-lit and decorated to offer a good level of comfort to patients.

CHAPTER TEN

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