PHOENIX:

Reborn into Community

RESEARCH BOOKLET

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Figure 1: Photo by One Eighty (2017), edited by author

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Designing for Health & Care:
Towards a Healthy and Inclusive Living Environment
AR3AD110

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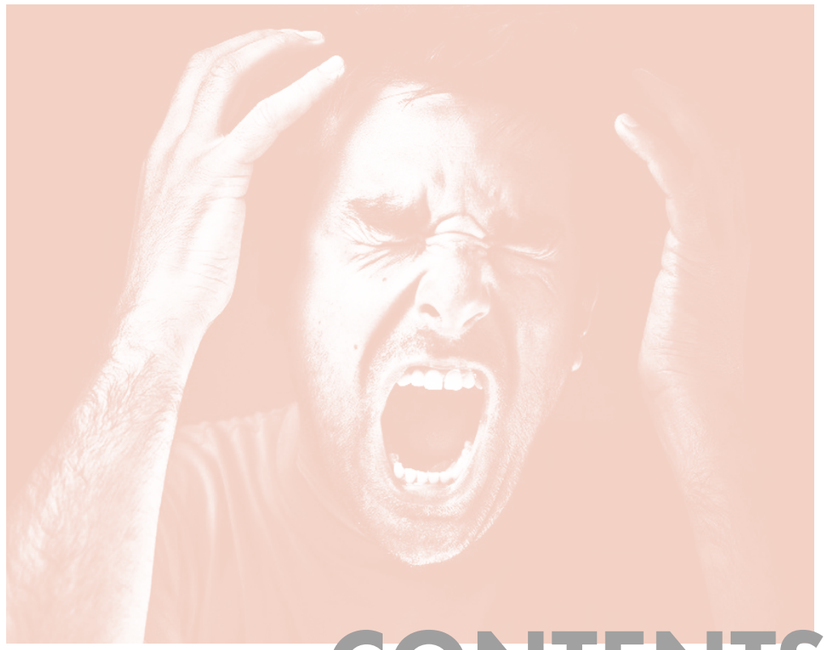

CONTENTS

Figure 2: Photo by Garber (2021), edited by author

- Abstract-

The purpose of this research paper is to find out in what way a semi-isolated living environment can provide rehabilitation to adults living with severe mental illnesses (SMI) to facilitate their transition from psychiatric hospitals into society. During the initial literature review, it was seen that the suicide and rehospitalization rates are very high during the period of discharge from psychiatric hospitals. Therefore, a rehabilitation facility that provides an environment where patients can slowly adjust to living independently and take over roles in the community while also being under the surveillance of caregivers was hypothesized to be beneficial in addressing this problem in psychiatric care. To do this, the needs and wishes of patients during the rehabilitation phase, existing rehabilitation facility design analysis, and how these can be reflected in architectural principles were set as sub-questions and literature review, fieldwork observations, fieldwork conversations, interviews, and case studies were chosen as research methods to find an answer to these questions. The background information showed that especially the first month of rehabilitation is very critical and topics like surveillance, the independence of the patient, social interaction, motivation, and security are the most important themes for the rehabilitation of patients. The findings from the fieldwork, interviews, and case studies showed the importance of these themes in practice and additional themes such as designing for physical disabilities and privacy. Based on the research, a set of architectural guidelines and a list of functions to be incorporated into the design phase have been developed.

Key Words: Semi- isolated living environment, Severe Mental Illness, Rehabilitation, Built Environment, Psychiatric Care.

- Acknowledgements-

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CHAPTER 1

INTRODUCTION

Figure 3: Photo by The Promise Act (2021), edited by author

- Background-

Severe mental illness, also known as SMI, is a term used for individuals that have psychiatric problems that create functional impairment which causes problems in daily activities (What is a Serious Mental Illness?, n.d.). The Diagnostic and Statistical Manual of Mental Disorders (DSM) includes bipolar disorder, borderline personality disorder, post-traumatic stress disorder (PTSD), major depressive disorder, schizophrenia, and obsessive-compulsive disorder (OCD) as diseases that count as severe mental illnesses. (What is a Serious Mental Illness?, n.d.).

In Europe, SMI affects 6.5 million people, representing 1.3% of the population (European Union, 2018). However, in the Netherlands, 1.7% of the population has SMI, and approximately 75% of the patients are in psychiatric care (GGZ Standaarden, 2021). Therefore, it can be interpreted as 216.750 people having a low ability to complete daily activities and functional tasks. In addition to this, their psychological disorder also causes physical conditions such as asthma, stroke, cancer, heart failure and hypertension. Therefore, the psychiatric treatment of these patients is very important for their physical health as well (Lachowycz, Celebi, Price, Lugton, & Roche, 2018). Especially, with the current challenge of the Netherlands with healthcare staff shortages (Visser, 2019) the treatment and rehabilitation of psychiatric patients is of great importance. According to the report of Medisch Contact in 2020, there are around 3.000 job vacancies for caretakers in the mental health department. This results in long waiting lines in mental health care facilities (NL Times, 2021).

In addition, even though hospitalization for severe mental illnesses is often needed and beneficial, psychiatric hospitalization often has a low satisfaction rate. Length of stay (LOS) is an important aspect that affects satisfaction after discharge, according to research, longer LOS often results in high suicide rates after discharge (Navarro, et al., 2021). However, the patient's background severity might require a longer LOS. On the other hand, shorter LOS also causes failure in treating all symptoms of the patients or creates a pattern called a "revolving- door" (Baeza, da Rocha, & Fleck, 2018) where patients get readmitted multiple times in a short period (Oyffe, Kurs, Gelkopf, Melamed, & Bleich, 2009). Therefore, even though the ideal LOS is still unknown, inpatient psychiatric admissions outcomes result in readmissions and high suicide rates (Loch, 2014). Especially, according to research, SMI patients of ages 26-45, have the highest chance of readmission (Teigland, Forma, Green, & Kim, 2018). This means that current psychiatric facilities fail to create a good transition from isolated psychiatric facilities into society for adults.

Creating a good transition from psychiatric facilities into society would be beneficial for the patient's quality of life, and society, and lastly, it would decrease the burden on the Dutch healthcare system with decreased readmissions, suicides, and physical health problems.

- Problem Statement-

Transitioning from the isolated environment back to the community is difficult for patients with severe mental illnesses discharged from psychiatric hospitalization. As psychiatric facilities offer controlled social interactions and routines, the readaptation of the patient to society is very hard, increasing rehospitalization rates (Loch, 2014). In Europe, the re-admission rate of an inpatient after 30 days varies between 9-15%, this rate is between 33-48% within a year (Hegedüs, Kozel, Richter, & Behrens, 2020). In addition to this, according to the Harvard Review of Psychiatry studies, suicide rates of SMI patients after discharge are 23 times greater than the general population. 26.4% of the suicides are attempted within a month of discharge, 40.8% within 3 months, and 73.2% within a year (Forte, Buscajoni, Fiorillo, Pompili, & Baldessarini, 2019).

Furthermore, according to the regional manager of Yulius, Ernst Schotting, one of the biggest problems is also the fact that patients that start living in rehabilitation facilities, which are aimed to be a passage from treatment centers to society, end up staying in these facilities for very long periods and refuse to move out. As a result, they can't move on to be integrated into society and require the resources of the government. This problem is illustrated in figure 5 with a patient journey diagram. The relevant steps are shown in steps 6- 8 and it shows that in current rehabilitation facilities even though the patient can engage in activities where they can develop themselves, it is observed that the patient becomes too comfortable and is unwilling to work or live outside the facility and become a valuable member of society. As a result, often the patient refuses to move out and live on their own and therefore survives by using the government's property by staying in the facility, eating, and drinking for free.

The fact is that semi-isolated living environments are not common or successful in psychiatric care was hypothesized to be the main problem in the transition after discharge. Architecture can help with implementing this semi-isolated environment in current psychiatric facilities as a step toward society. The patients that have been living dependently in strict and isolated psychiatric facilities for months/ years are expected to learn to live independently with their symptoms while also readapting to the social codes of society. Therefore, creating semi-isolated environments where patients can slowly adjust to living independently and take over roles in the community while also being under the surveillance of psychiatrists can be beneficial in fixing this problem in psychiatric care. In addition, it is important that this facility stays as a step toward society and not a destination, therefore, community integration and independence are important themes in the research as shown in ideal situation of step 7.

Hypothesis

I hypothesize that the main problem is the lack of a semi-isolated environment where the patients could learn to control their symptoms in contact with society and other patients while following certain activities that help them improve basic skills and behaviors and discover their strengths, their transition to society after discharge would be much better.

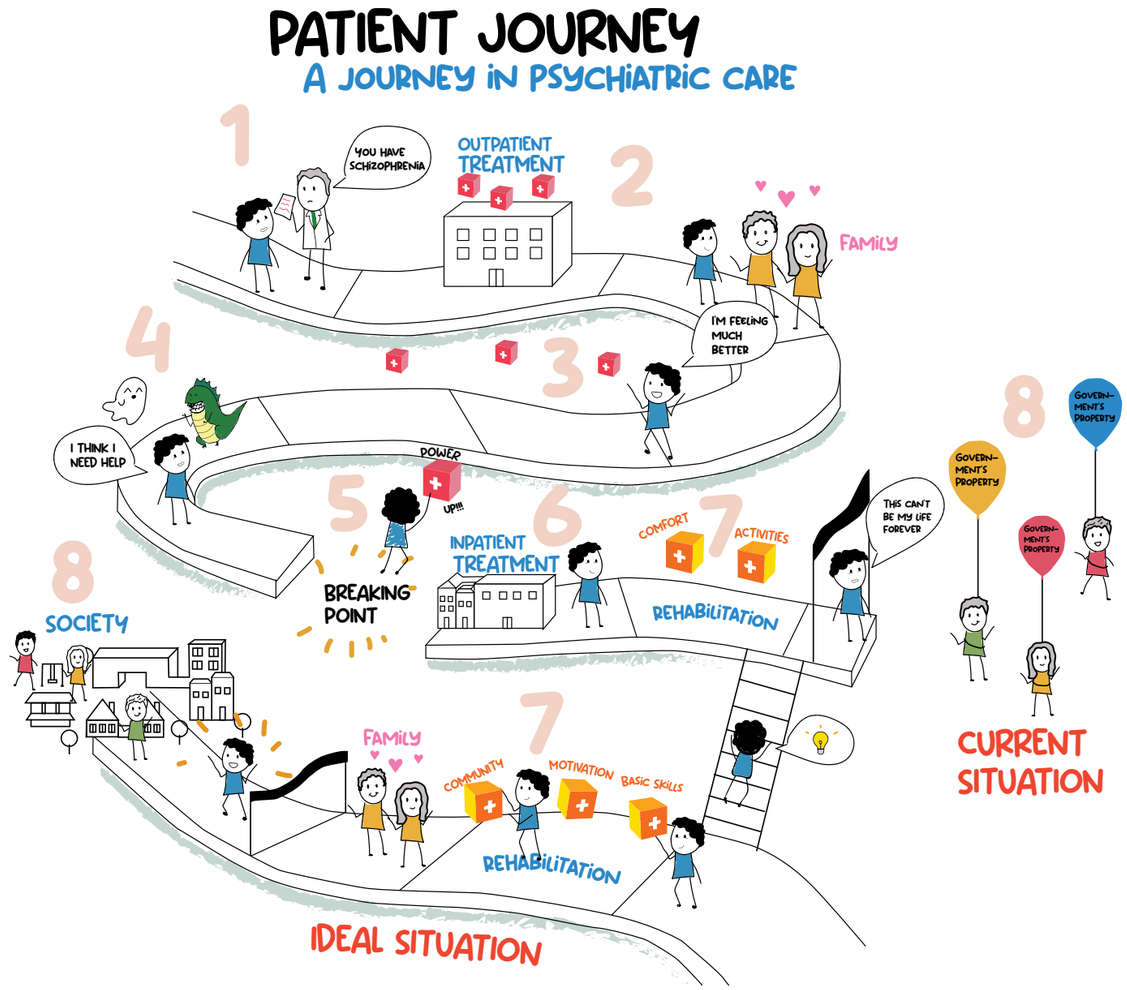


Figure 4: Patient Journey (author's work)

These steps were written with the help of literature, interviews, videos, and fieldwork. While it might not be completely correct, it is to give an idea about the journey that they follow and to get to know them better.

- Theoretical Framework-

The theoretical framework describes various research on severe mental illnesses and divides the research into three categories: rehospitalization and suicide attempts, severe mental illness and isolation, and lastly, rehabilitation. Various research on these different topics was collected to position me on the topic of severe mental illness. This chapter includes the ideas that different researchers defend and my position on this topic.

Rehospitalization and suicide attempts

According to the article published in Frontiers in Psychiatry journal written by Anna Hegedüs, the first month after discharge has the highest rehospitalization rates. (Hegedüs, Kozel, Richter, & Behrens, 2020). In addition to this, according to studies by Forte et al, suicide rates of SMI patients after discharge are 23 times greater than those of the general population. 26.4% of the suicides are attempted within a month of discharge, 40.8% within 3 months, and 73.2% within a year (Forte, Buscajoni, Fiorillo, Pompili, & Baldessarini, 2019).

According to Alexandre Loch, a researcher in the Laboratory of Neurosciences, psychiatric facilities offer artificial and controlled environments where patients learn to adjust their symptoms accordingly. However, as in social life, this controlled environment doesn't exist, and it is harder for them to adapt. Therefore, he claims that it is important for patients to learn readaptation skills during their stay (Loch, 2014).

Based on the research of Loch where he criticizes the direct transition from this isolated environment to society and, the research of Hegedüs and Forte where they show the statistics that the first month in the period after discharge the rehospitalization and suicide rates are the highest, it can be said that an additional phase right after discharge where a semi-isolated environment in which the patient can have a real-life society experience under their psychiatrist's surveillance can be beneficial to integrate into current psychiatric facilities for an easier transition.

Severe mental illness and isolation

In the CGLPL report, isolation of the mental illness patients is criticized. The author also criticizes the psychiatric facilities to be dehumanizing as the patients are deprived of contact with their families, are in constant surveillance, and are physically restrained by the nurses under certain circumstances. On the other hand, several reasons for isolation are also described to be useful for the treatment of the patients: to reduce the stimulation, prevention of self-harm, and reduce the possibility of a therapeutic rupture (CGLPL, 2016). Since the patients requiring inpatient care can have severe cases and be self-harming or suicidal, these preventions can also be appreciated.

In addition to this, in the article of Hegedüs, she also writes about the benefits of "transitional interventions with bridging components" which is the support given to the patient before and after in-patient treatment to facilitate their transition into society. For this, she argues that patients' community integration can be improved by transitional interventions at various social support levels, such as community care and support homes (Hegedüs, Kozel, Richter, & Behrens, 2020).

Furthermore, in the article Penny D. Xanthopoulou wrote in Community Mental Health Journal, she claims that the lack of support and isolation from society has a negative impact on patients with severe mental illnesses and increases the symptoms of psychosis. Furthermore, she argues that being included in the community can create a reliable support system, frequently considered essential to recovery, and creates higher life satisfaction (Xanthopoulou, Mbanu, Chevalier, Webber, & Giacco, 2022).

Rehabilitation

In the book A Primer on the Psychiatric Rehabilitation Process, the goal of Medicaid's rehabilitation of psychiatric patients is described as "the goal to attain or retain capability for independence or self-care" (Anthony & Farkas, 2009).

In addition, Japanese researchers Taniok, Mano, Takasaka, Tada, and Kawanishi conclude that self-efficiency is very important for rehabilitating psychiatric patients to improve their social and cognitive performance. Therefore, they advise the caretakers to incorporate programs where the patients improve their ability to complete daily tasks instead of getting them to follow strict rules and routines (Tanioka, Mano, Takasaka, Tada, & Kawanishi, 2006).

Therefore, from these two pieces of research, it can be concluded that it is important that SMI patients learn to live independently to complete their rehabilitation and integrate into society.

My Position

After reading different research on rehospitalization and suicide attempts, isolation, and rehabilitation, my theoretical position suggests that isolation is one of the biggest problems during the rehabilitation of an SMI patient.

In the sub-chapter "Research on rehospitalization and suicide attempts", the theory of Alexandre Loch on controlled environments and Anna Hegedüs' theory on the first months being the most critical months makes me believe that the time that patients spend in isolated psychiatric treatments is merely a temporary fix and after the patients leave this controlled environments they start having the same issues because they never learn to control their symptoms in a real-life setting. In addition to this, much research, including the research of Penny D. Xanthopoulou, suggests that isolation has a negative impact on human psychiatry. I also agree with this as I think that human interaction is very important for mental health, and I am very much opposed to keeping the patients in isolation and forbidding them from seeing their friends and family as part of treatment. However, I am also aware that isolation to a certain extent is needed for some cases such as reducing stimuli and self-harm as the CGLPL report explains.

Therefore, I suggest that what is needed is a semi-isolated rehabilitation environment in a non-isolated community where patients could go after treatment. Such an environment can firstly be beneficial in giving independence to patients which was proved to be very beneficial by Tanioka et. Al also allows them to be a part of a community and get used to a real-life setting after a controlled environment. It is my position that such an intervention would be much more beneficial than locking up the patients like prisoners and alienating them from society.

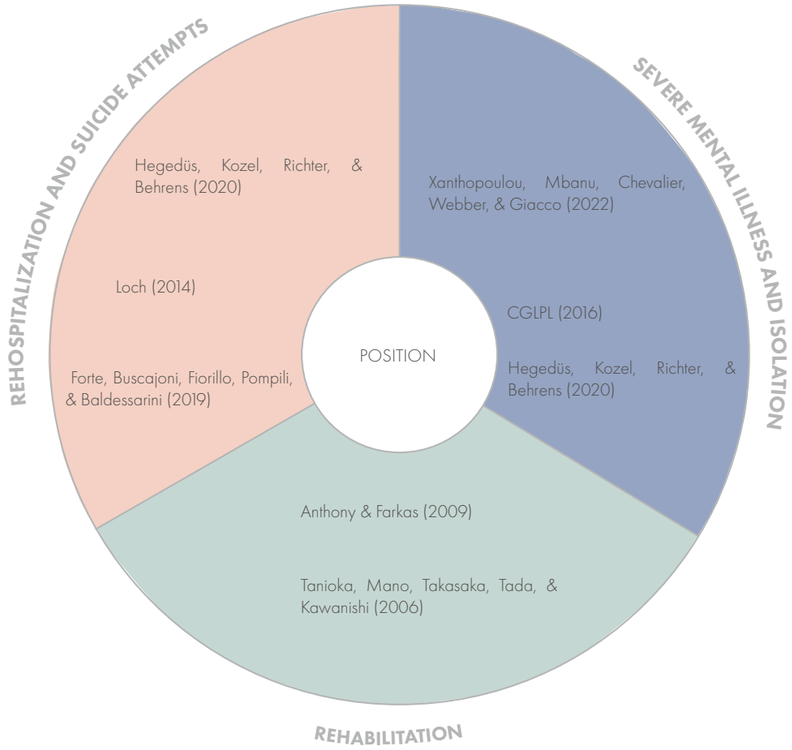


Figure 5: Theoretical Framework Diagram (author's work)

- Research Goal-

The aim is to increase the quality of life of severe mental illness patients and provide better rehabilitation in the community by increasing their self-esteem, teaching them to live independently, and preparing them for the social codes of society. As the current rehabilitation centers stay as a destination rather than a step toward society, the aim is to create an ideal rehabilitation center where patients acquire basic skills, and independence and learn to be valuable members of the community. With this, the aim is to facilitate the transition of SMI patients to society, hence, decreasing the number of rehospitalization and suicide attempts which will also result in decreasing the need for caregivers for the same patients which will reduce the burden of psychiatric care in Dutch healthcare.

- Research Questions-

Main Research Question:

In what way can a semi-isolated living environment provide rehabilitation to adults living with severe mental illnesses (SMI) to facilitate their transition from psychiatric hospitals into society?

Research Sub-Questions:

1. How can a living environment meet the wishes and needs of the patients after discharge?

2. In what ways do current rehabilitation facilities fail and achieve to facilitate this transition?

3. What design strategy can create an ideal living environment for the rehabilitation of SMI patients?

- Definitions-

Severe Mental Illness (SMI): People who have psychological issues so severe that they are greatly limited in their ability to engage in functional and occupational activities. Bipolar disorder, borderline personality disorder, PTSD, major depressive disorder, schizophrenia, and OCD are referred to as SMI (Lachowycz, Celebi, Price, Lugton, & Roche, 2018).

Rehabilitation: Restoring someone to normal life after illness. In this case, full recovery is rarely possible. However, patients may learn to complete daily life activities with their symptoms (Oxford Languages, n.d.).

Semi-isolation: The environment where patients can have some contact with the outside world, be a bit more autonomous, and learn how to function in the community while being watched over by medical workers and following certain therapy activities. The definitions of isolation and semi-isolation were written by the author to describe what is meant by isolation and semi-isolation in this research.

- Research Methods-

To answer the formulated research question "In what way can a semi-isolated living environment provide rehabilitation to adults living with severe mental illnesses (SMI) to facilitate their transition from psychiatric hospitals into society?" Three sub-questions were formulated. Each of these sub-questions acts as a stepping stone to finding out finding needs of the target group and how these needs can be applied to living environments which will be used to answer the main research question, hence creating architectural guidelines to design a rehabilitation facility for SMI patients.

The first sub-question aims to find out the needs and wishes of the patients during rehabilitation as they will be the primary users of the building that will be designed. To answer this question, firstly literature on the background information of the target group was collected. Even though literature is not an official research method, this background information was used to organize the findings in repeating themes, therefore, is worth mentioning. Thereafter, fieldwork at Yulius, a rehabilitation facility for mental illness patients in the Netherlands, was used to observe the patients and ask about their needs and wishes. During these conversations with patients, the aim was to ask them what they like about the facility and what they would change to get to know them and their needs better. However, it was also seen that what the patients want can be different from what they need, therefore during the fieldwork interviews with the nurses and other staff members were held. During this time, interviews with one of the coaches, the sports instructor of the facility, and the regional manager of Yulius, Ernst Schotting were held. During these interviews, the goal was to ask about what works in the facility and what does not according to the needs of the patients and for them. Additionally, an interview with a psychiatrist in Turkey, Dr. Sevil Altinkilic was held to get additional information on the needs of the patients from someone that is used to a different system. The information that was gathered by looking into the needs of the target group was also beneficial to see how the background information and practice would match and reflect what these needs mean for living environments.

The second sub-question was formulated to compare different projects in the field of rehabilitation. After answering the first sub-question, important themes that had to be looked into like privacy, circulation, nature access, materials, disability access, and what programs are in these facilities were chosen and used to compare different case studies. While choosing these case studies, the goal was to investigate three different projects with different typologies, sizes, and functions that have one shared goal: rehabilitation. Therefore, Yulius, the facility that was chosen for fieldwork, was chosen as one of the case studies, as the building had a very interesting circulation system and organization of functions with three big inner courtyards. In addition to this, Yulius is also the biggest facility compared to the other case studies which have 61 residents. The second case study that was chosen was a facility in Bolzano, Italy and even though this facility was like Yulius in some ways, the building is smaller and has a very different circulation system, materials, and organization of functions. The last case study that was chosen was meant for another target group, autistic adults, however, as the goal of the facility was rehabilitation, it was still an interesting case study to choose. Different from the other case studies, Sweetwater Spectrum had a very different typology as it was built as a small campus and not one building which was an interesting typology that could be investigated.

Lastly, the third sub-question was formulated to get a conclusion from all these different questions. By learning about the needs of the target group and how these needs are reflected in current facilities, a conclusion on what needs to be there in a new rehabilitation facility was done which resulted in architectural guidelines at both the landscape level and building level, these architectural guidelines are answering the main sub-question as they give an idea on how a semi-isolated facility can facilitate the rehabilitation. In addition to the guidelines, this data was also used to make a list of functions that the new building should have.

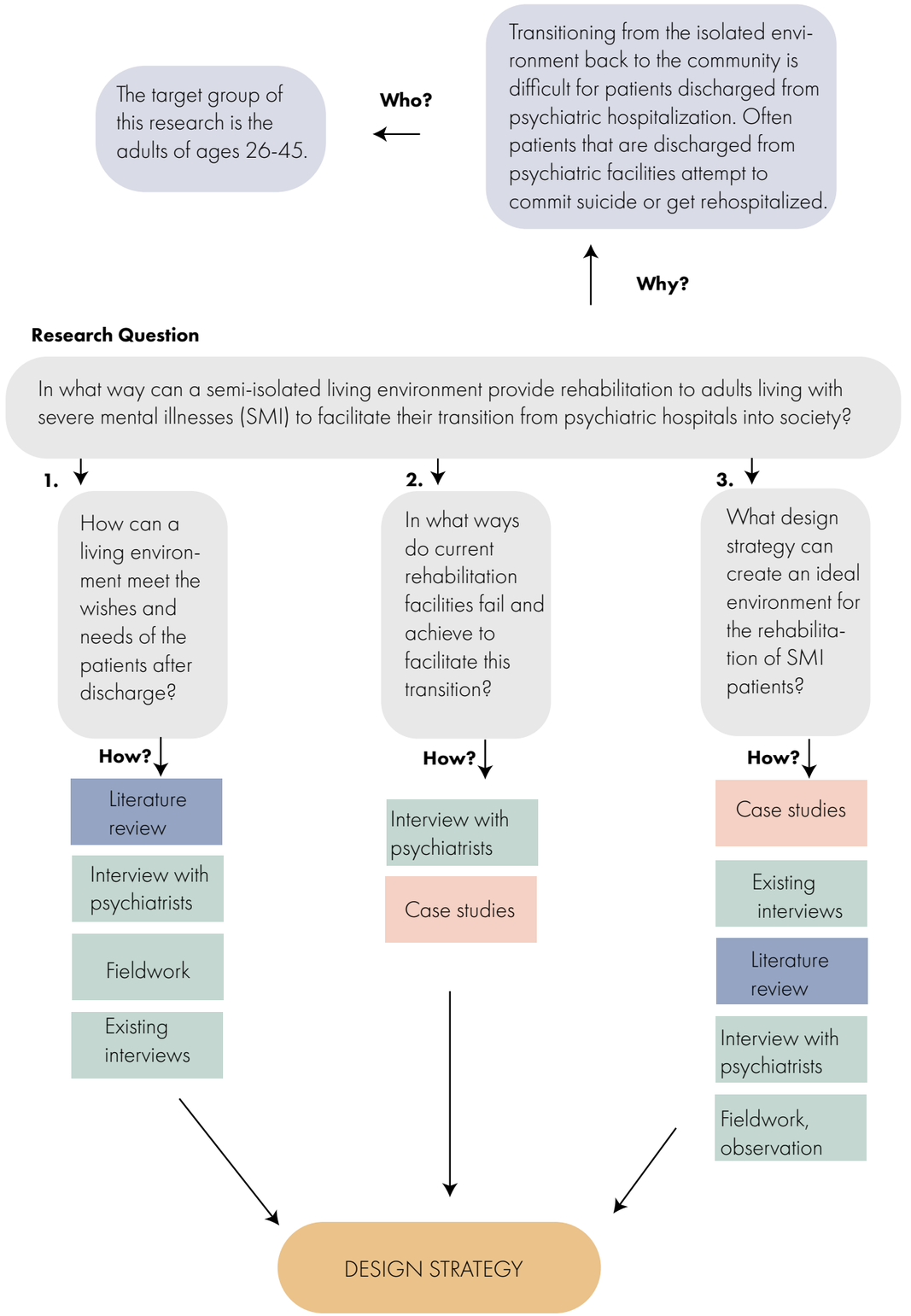
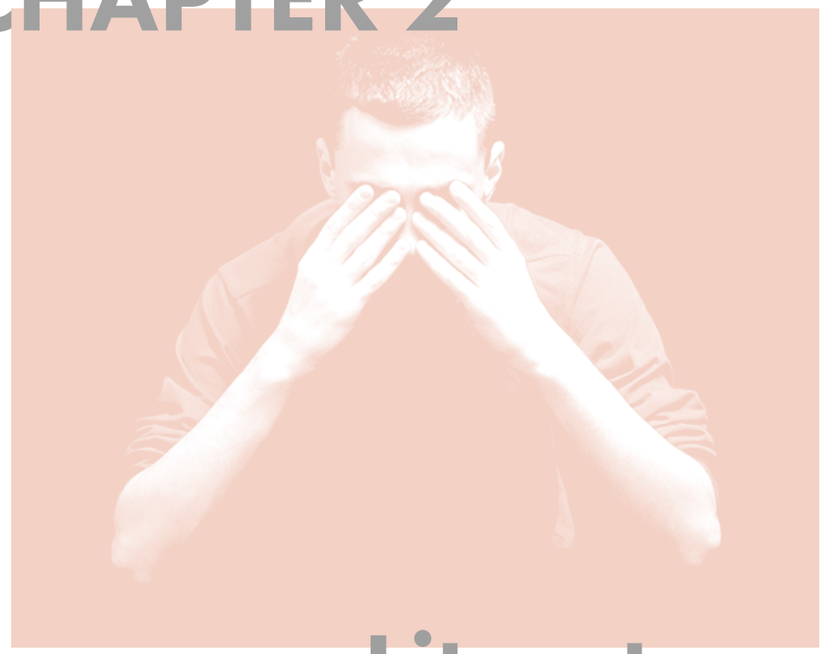


Figure 6: Research Diagram (author's work)

CHAPTER 2



Literature

Figure 7: Photo by Psycom (2022), edited by author

As it was described before, severe mental illnesses, also known as SMI, is a term used for individuals that have psychiatric problems that create functional impairment which causes problems in daily activities. Even though many different disorders are named SMI that have very different symptoms and challenges, there is a common patient journey, and the same problems exist in their rehabilitation. Therefore, in this chapter, the common challenges that the target group is facing and what the research suggests meeting the patient's needs during this period will be discussed.

1. The Needs and Wishes of the Target Group

In this chapter, the needs and wishes of severe mental illness patients will be explored which will give a base knowledge to create design guidelines that living environments should have for patients' health and happiness. As was explained in earlier chapters, the facility that will be designed will host patients that were recently discharged from psychiatric hospitals therefore the challenges that the patients in the rehabilitation phase and what they need during this period will be explored through literature.

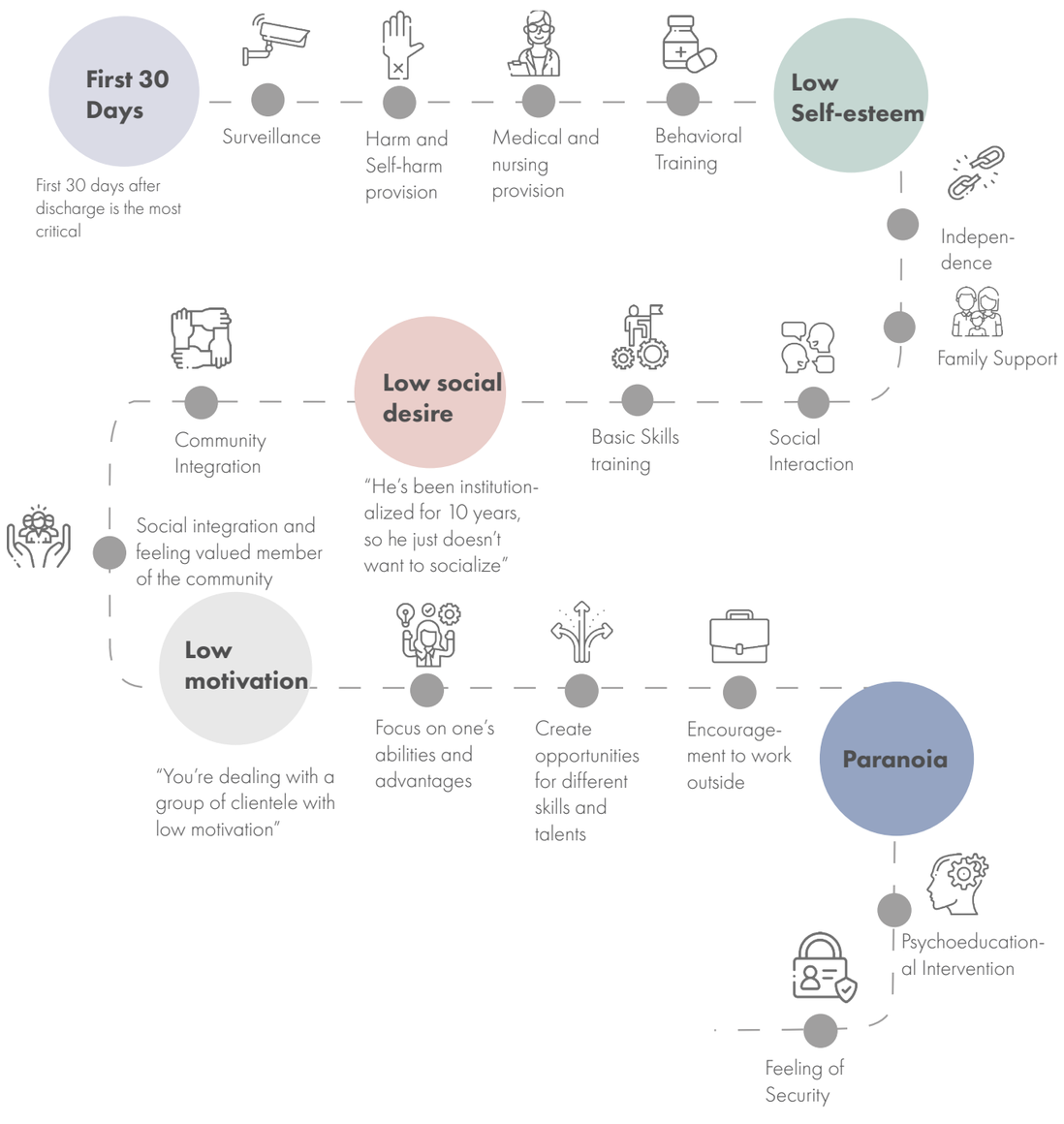


Figure 8: Rehabilitation steps (author's work)

According to the literature, there are many challenges during the rehabilitation phase of the patients and each challange comes with different needs and solutions as summarized in figure 8. These challenges are: surviving the first month which is proven to be the most critical time during recovery (Hegedüs, Kozel, Richter, & Behrens, 2020), low self- esteem of the patients which also brings low-social desire, low motivation and paranoia. The literature also offers some solutions to solve these challenges and help with rehabilitation of the patients.

Surviving the first month

According to research mentioned in earlier chapters, the most critical period after discharge from the hospital is the first month after discharge (Hegedüs, Kozel, Richter, & Behrens, 2020). During this period, a high percentage of patients attempt suicide or require rehospitalization as they cannot handle everyday life struggles after being isolated for so long and with their recurring symptoms. Therefore, certain steps are important, especially during this time to protect the patients and prepare them for adaptation.

Firstly, behavioral tailoring is something that was mentioned both in the literature and something that was observed during fieldwork. Behavioral tailoring is a recovery-oriented strategy where patients learn to reach certain goals, for example making the patients part of their routine to take medicines (Drake, Green, Mueser, & Goldman, 2003).

Lastly, even though the patients that are in rehabilitation are the patients that are done with treatment, the adaptation is not easy therefore, even though the patients should have freedom and independence during the first month period they should have self-harm prevention and medical and nursing provision (Chrysikou, 2021).

Self- confidence

Another important issue for patients recently discharged from the hospital is the fact that they have low self-esteem as they had very small contact with people outside the institution they were in treatment and therefore when they get out, they don't know what to do with their lives and they lose contact with some of their friends and families. (Xanthopoulou, Mbanu, Chevalier, Webber, & Giacco, 2022). In much research, independence is a very important step toward rehabilitation. One of the main reasons is the fact that the feeling of competence and looking after oneself increases self-esteem (Bitsoli, 2022). Therefore, the research advises that the patient works and produces.

Furthermore, even though independence is very important, it should be noted that not all patients are capable of cooking on their own or cleaning up after themselves. Therefore, basic skills training is also very important for the self-confidence of the patients. Basic skills training aims to teach the patients skills that they would need to have to complete daily tasks like cooking, cleaning, using public transport, etc. (Drake, Green, Mueser, & Goldman, 2003). For example, a common activity area where patients can learn to cook or clean with other patients would be beneficial to create this environment.

Additionally, family support and social interaction are very important for the self-confidence of the patients. As it was mentioned earlier, the treatment does require isolation and limits social interaction. This is also one of the reasons why some patients pick up bad habits like smoking which was observed during the site visit as well as a lot of patients were smoking. A mother with a son with SMI says, "That's when my son started smoking heavily, in the hospital the only social interaction they have is smoking.". In addition to this, after leaving the hospital, the patients lose track of some friends from before or they lose the desire to socialize with people (Xanthopoulou, Mbanu, Chevalier, Webber, & Giacco, 2022). Hence, the facility firstly should stimulate the social interaction between patients with a good circulation system and common activity areas and secondly, should be located in a non- isolated area and should have public functions to stimulate community integration.

Lastly, exercise is also a great way of increasing self-confidence by easing depression and giving them an hour of peace away from their symptoms (Gardens for Mental and Behavioral Health Facilities, 2013).

Social interaction

As mentioned earlier, social interaction is important for building the confidence of the patients. In addition to this, it is reported that socially isolated environments create a higher chance of relapse. However, it is common that a lot of patients have a hard time trusting people that are mentally healthy and are afraid to tell them about their mental health problems (Xanthopoulou, Mbanu, Chevalier, Webber, & Giacco, 2022).

Community integration is very important to build confidence as feeling a valued member of a community also creates the feeling of achievement (Anthony & Farkas, 2009). Therefore, the research suggests that the rehabilitation facilities are not in isolation but in a neighborhood with mentally healthy people as well.

Motivation

After leaving the treatment, the patients are most of the time disoriented and they don't know how to continue with their lives. Therefore, it is important to increase their motivation and help them find a direction in their lives (Drake, Green, Mueser, & Goldman, 2003). The research also says that activities that are meaningful to the patient and that they enjoy are very important during their rehabilitation (Xanthopoulou, Mbanu, Chevalier, Webber, & Giacco, 2022).

On the other hand, it is important to also create work opportunities outside the facility. The research says that if the patient finds satisfaction for all their needs in the facility, they would be unwilling to develop an autonomous existence outside (Baker, Davies, & Sivadon, 1959).

Feeling Secure

The security of the patients is very important as most severe mental illnesses cause paranoia in patients. Architecture can help with creating a feeling of security in two ways: by having spaces for psychoeducation and by designing an environment that creates familiarity for each patient (Schütz & Wicki, 2011).

Psychoeducation is important for both patients and their close circle to improve education on their mental illness. Increasing. Therapy is a good way for the patient to learn about their illness and discover themselves (Drake, Green, Mueser, & Goldman, 2003).

In addition to this, the feeling of familiarity is a very important aspect. According to World Health Organization (WHO), familiarity with a place increases the feeling of security (Schütz & Wicki, 2011). For this, it is important to avoid institutional architecture in rehabilitation facilities both in the interior and exterior design. So, the facility should look like other houses in the community for better community integration and security.

Furthermore, natural, and familiar materials like wood, wool, stone, and perhaps clay should be used (Schütz & Wicki, 2011). However, it should be noted that some natural materials like wood might have patterns that can cause psychosis as they can appear as figures during a psychotic episode therefore the type of these materials should be chosen carefully (Gardens for Mental and Behavioral Health Facilities, 2013).

Also, having a clear circulation is important to create familiarity with a place, if the patient keeps getting lost and needs to ask for directions it will be hard for them to feel at home (Schütz & Wicki, 2011).

Additionally, having contact with nature is also important while decreasing anxiety and depression and has positive influences on both physical and mental health (How can nature benefit my mental health?, 2011).

CHAPTER 3

FINDINGS

Figure 9: Photo by Yoho (2020), edited by author

In this chapter, the findings are shown in two sub-chapters. The sub-chapter "Living environments" discusses findings that were found from the fieldwork in Yulius in Elzengaarde which is a rehabilitation facility for mentally ill people. The findings from the fieldwork will be backed up with the interview with Dr. Sevil Altinkilic and will include observations, and conversations that were done in Yulius. The information will be given in the same order as the information in "Chapter 2: Literature" as the themes that were discussed in the literature are like themes that were found out during the fieldwork. The sub-chapter "user journey" is merely the findings from the fieldwork observations and conversations and this sub-chapter aims to describe different user groups that use the facility and which amenities are used by each user group. The aim is to understand the journey that each user group goes through in the building and use this information in the design phase to figure out the organization of functions in the building.

1. Living Environments

To get to know the target group closer and observe the way they live in a living environment, Yulius, a rehabilitation facility for mental illness in Elzengaarde in The Netherlands was chosen as the fieldwork location. Over the course of five consecutive days, the facility was and many different activities with the patients were done such as helping in the kitchen, gardening, playing games, doing improv theater, and painting wood which created an opportunity to spend time with the patients and learn how things work in a rehabilitation facility. Afterward, the information that was gathered during the fieldwork was used to prepare interview questions for Dr. Sevil Altinkilic, a psychiatrist that works in Turkey. This chapter explains how and why certain things are done in rehabilitation facilities and what could be ignored in a new rehabilitation facility.

Surveillance

During the fieldwork, it was observed that during the daily check-ups by the coaches, each patient is being accompanied to the medicine room every morning, when this was questioned the coach explained: "*We don't want to bring the medicines to their room because some patients are not very capable of being independent but we at least want them to have the habit of taking their medicines, we also want them to get out of their pajamas and come downstairs to socialize but some patients aren't capable of doing that so sometimes we just want them to leave their room get something to eat and take medicine, this is just a step.*". This is a good way to create the habit of moving and taking medicine with the help of architectural design. In addition to this, the coach explained that it's important that the medicine room has an escape door as sometimes patients become impatient and can get aggressive which is why the medicine room of the facility was changed to a bigger one with two doors after a few years. It was also observed that a circular circulation system is implemented in the building and that every room has an escape on the other side.

In addition to this, surveillance is very important during the rehabilitation period as the medicines might have different side effects or take some time to work. For this reason, the facility has a FACT area where the psychiatrists and coaches have meetings after daily check-ups. During these meetings, the coaches tell the psychiatrists if they observed a different behavior from the patients, and the psychiatrists decide if a change in medicine is required for them or not. For example, it was observed that a lot of the patients were pacing up and down the corridors. When this was discussed with the psychiatrist Dr. Sevil Altinkilic, she explained that one of the common side effects of the medicines is that the patients feel the need to move a lot and that they feel the need to walk around the facility. Therefore, a corridor system that is wide enough and provides easy circulation between the patient rooms and the FACT area is needed.

Figure 10: Surveillance diagram of Yulius

Self- confidence

Previous research explained the importance of independence while building self-confidence of the patients (Bitsoli, 2022). To help with patients' low self-esteem, there were some solutions that Yulius implemented.

In chapter 4: Case Studies, it will be seen that not every rehabilitation facility offers private apartments to patients. However, Yulius, by giving each patient a small apartment with a living area, kitchen, bedroom, and toilet/ bathroom allows each patient to learn to live on their own and take care of themselves. During the conversations with patients, most of them mentioned that they li having their private rooms and having the option to cook in their rooms.

The importance of basic skills training was also observed in fieldwork. This training was done by having an extra activity room with an open kitchen, and every Wednesday some patients come together with the chef and cook together. While this is a very good opportunity for patients that are incapable of cooking to learn it, it was observed that the chef and a few patients that are already good at cooking were doing the tasks while the others were waiting. However, to make sure all patients participate in the cooking activities, and thus build their self-confidence, it may be beneficial to an alternative design where a small group of patients get a small cooking area and cook as suggested in the illustration.

The coach in Yulius also mentioned that they observed that patients that exercise seemed to be doing better and their confidence is increasing. Therefore, Yulius wants to increase the exercise opportunities in their facilities. In a conversation that was held with one of the coaches, they mentioned that they didn't like the shape of the gym since it was hard to see everyone in a group training and fit the appliances in a useful way, however, he mentioned that that as some patients don't like looking at themselves in the mirror, the shape of the room also allows avoiding seeing themselves in the mirror.

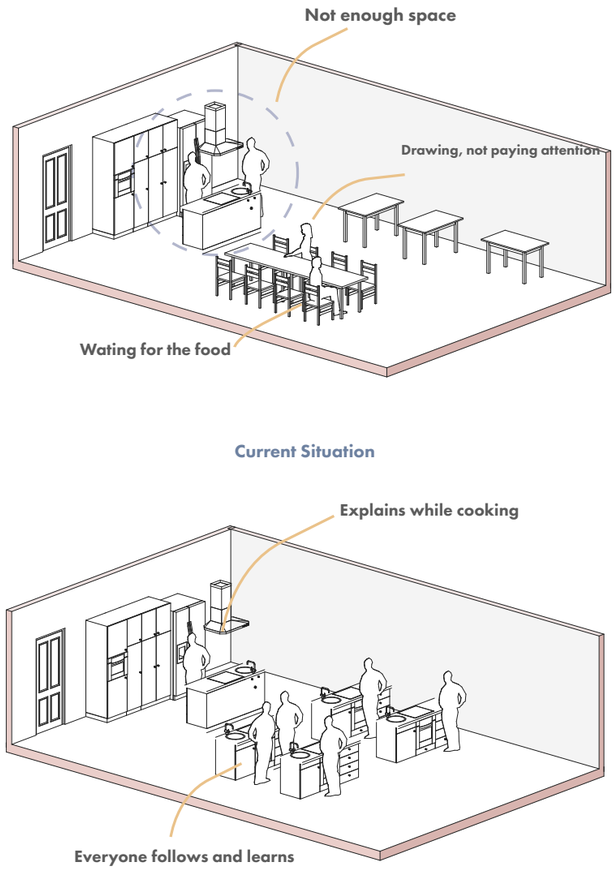


Figure 11: Illustration showing the current activity set up and the option that is proposed

Social interaction

During the fieldwork, it was noticed that the Yulius facility didn't have any connection with surrounding buildings and that the patients were just socializing with other patients which proved to be a wrong approach in the research. As Dr. Sevil Altinkilic explains, while mentally ill people need to socialize with other people that are going through the same things, these protective attitudes should be dropped for better rehabilitation. Therefore, an environment where patients live and socialize with neurotypical people should be created, otherwise people want to stay in their comfort zone and refuse to move out.

On the other hand, even though the main aim of rehabilitation centers is to push the patient to eventually be capable of living independently, it should be kept in mind that the severity of the disorders for each patient is different hence, some patients might require more alone time or might feel safer to socialize with other patients that they are familiar with. In the fieldwork, it was observed that a lot of the residents were just sitting in the common areas and were too shy to interact with others. Therefore, it is important that the building has common and outside spaces that are private to patients.

It was however seen that a lot of the patients were used to being around people and they were very tolerant towards each other. They expressed that they were happy that there are different common areas in the facility and in this way, they can change rooms if someone or something bothers them in another common area and still be around people.

In addition to this, it was also observed that a lot of the residents enjoyed meeting and talking, and they reflected this in how they decorated their doors. Many residents had pictures and drawings that reflect them and keep their doors open when they are spending time in their rooms. When this was discussed with one of the residents, they explained that sometimes they don't want to talk to a lot of people but still enjoy hearing some voices from outside.

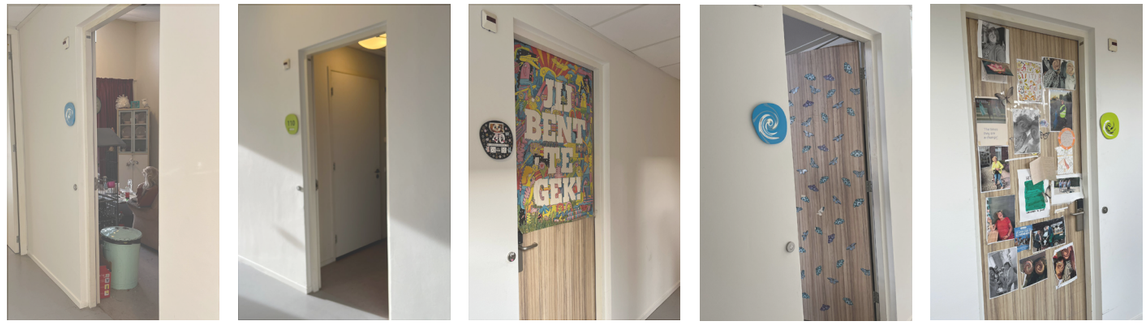


Figure 12: Set of pictures showing different door decorations (author's photograph)

Motivation

In addition to socializing, having a hobby and work also increases the confidence of the patients as the patient feels competent, can provide for themselves, and becomes independent.

Therefore, the motivation of patients, it's important to focus on the advantages and talents of the patients; so, areas where the patient can try different activities and find a hobby, are important. For example, in Yulius, there are many common activity areas where patients can find a hobby like a gym, arts and crafts area, room with a piano, and a small greenhouse. This also seemed to work for the patients as one of them was being trained to become a gym trainer and is planning to move into his own house later.

In addition to this during the drawing workshop, it was observed that a lot of patients enjoy drawing and painting, and they were very good at it. This was observed in the fieldwork that a lot of patients were unwilling to get out of their comfort zone and find hobbies and work outside the facility. However, some patients were working on a farm and steel/ wood production outside the facility, and it was observed that the patients that engaged in these activities seemed to communicate better compared to other patients.

Feeling Secure

Firstly, even though the patients are no longer in inpatient treatment, it is still important to continue with therapy along with medicine intake and educate the patients and their families about the disorder and the symptoms that it can cause. During the fieldwork, one of the coaches explained "When they have delusions and see some figures, we try to tell them things like 'I'm sure it's scary for you to see such things' and never look at the direction they are pointing... It is also important to explain to them that the things they are seeing are caused by the imbalance in their brain, knowing the reason behind their psychosis decreases the fear.". In a YouTube video with a woman with Schizophrenia patient, Cecilia, explains that she knows that the figures she sees are caused by her disorder and that she doesn't want to discuss them with other people because when other people also look in that direction, she is pointing the reality and delusions mix and it's hard for her to tell what's real or not. Therefore, it is also important to educate other people about how to act around patients that are struggling with these issues.

In addition to this, it was observed that in Yulius, the common spaces were very cozy and comfortable. Therefore, it was visible that the residents were comfortable feeling safe being in the common areas. It was observed that there were Halloween decorations and drawings that the residents made hung on the walls. This is also a good way for the residents to see that the products that they produce are being appreciated.

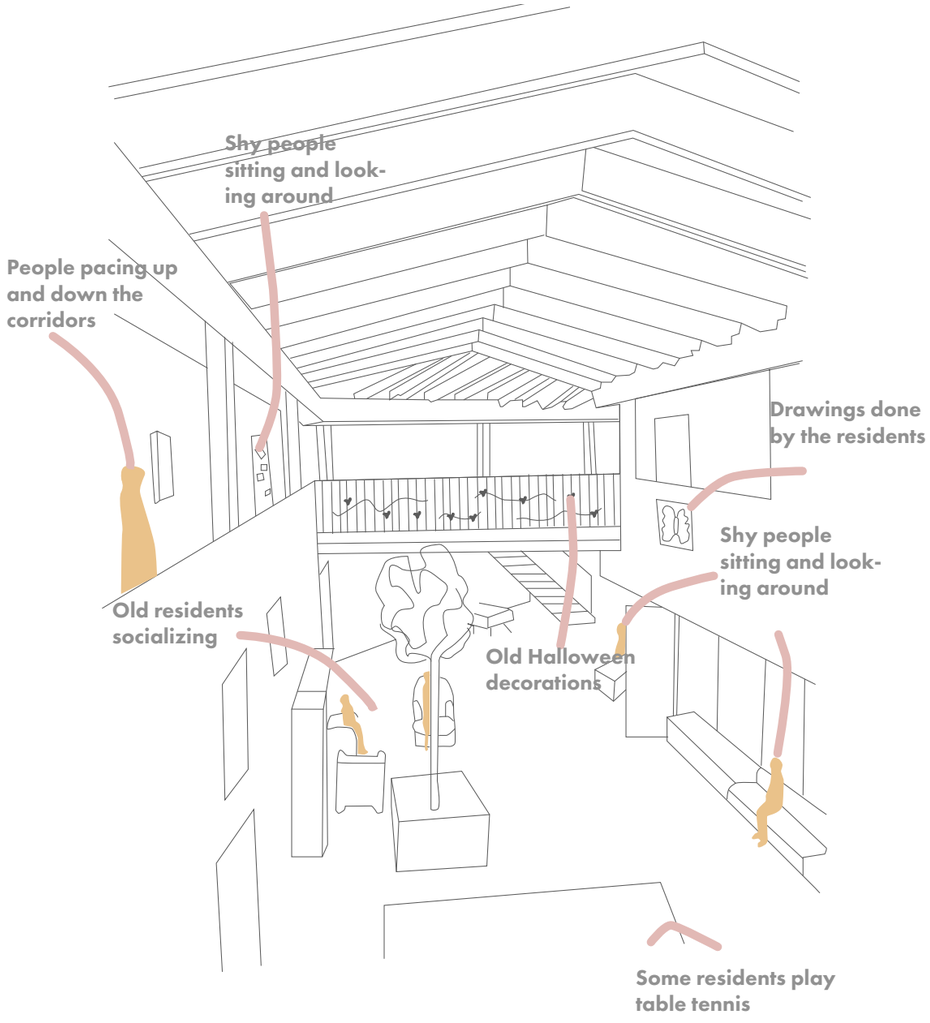


Figure 13: Sketch showing atrium (sketch by the author)

In Yulius, it was also observed that a lot of patients enjoyed joining forest walks with the gym trainers and said that walking in the forest makes them feel relaxed and safe. They also expressed that they would like it better if there was a forest area near-by where they could go on walks themselves. Furthermore, some patients might also have a distorted sense of time which could confuse them, therefore elements that can give an idea of time could increase the feeling of familiarity, hence, security. Lastly, Considering the paranoia and the tendency of self-harming of the target group, it was observed in the fieldwork that the building should ideally be low-rise.

On the other hand, one might think that creating familiar environments might also motivate the patient to stay in the rehabilitation facility for longer than anticipated if it's too comfortable and familiar. However, during the interview with Ernst Schotting, he mentioned that Yulius also opened a building that had plastic furniture and was less comfortable, but the patients still refused to move out and be integrated into society. Therefore, it's important to create opportunities and motivation for patients to move out rather than making the building uncomfortable and institutional.

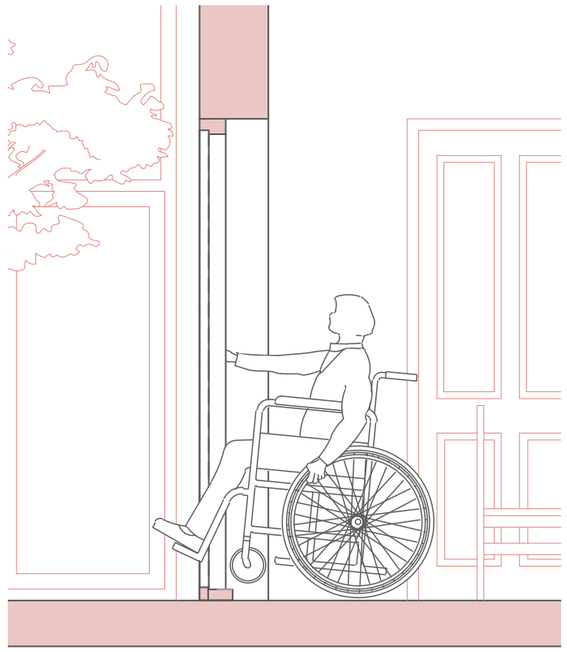


Figure 14: Sketch showing current situation (drawing by the author)

Inclusive for physical disabilities

Lastly, it is important to create an environment where patients with physical disabilities can move around easily and feel included. During the fieldwork, it was observed that a lot of the patients in the facility used walkers or wheelchairs which was unexpected as the patients are there because of mental disorders and this problem was never mentioned in the literature. However, Dr. Sevil Altinkilic explained that some psychological disorders like schizophrenia destroy the brain cells of the patients which can result in impairment in functional mobility, lack of thinking logically, calculation, etc.

Due to this problem, many patients were complaining about the fact that there is only one elevator, and when it breaks down, they have a hard time going downstairs to activity areas. Furthermore, door frames going to inner gardens were problematic according to the patients as a person with a walker or wheelchair couldn't pass with it and needed help. Therefore, small details that create a problem for wheelchair and walker users should be avoided.

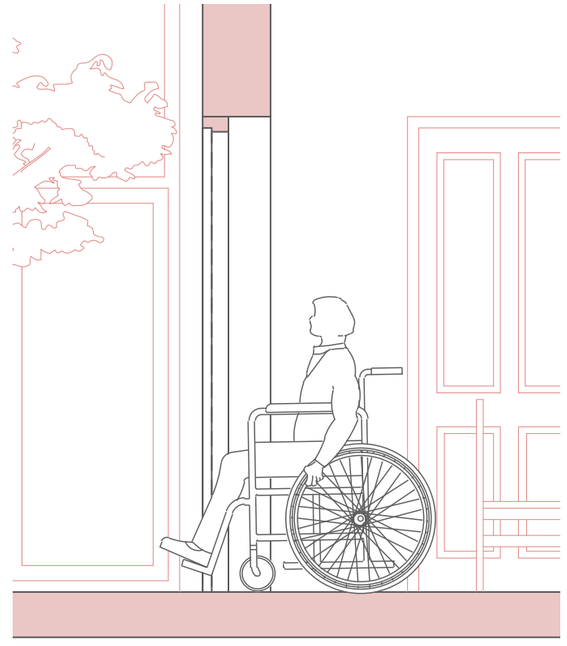


Figure 15: Sketch showing how it should be (drawing by the author)

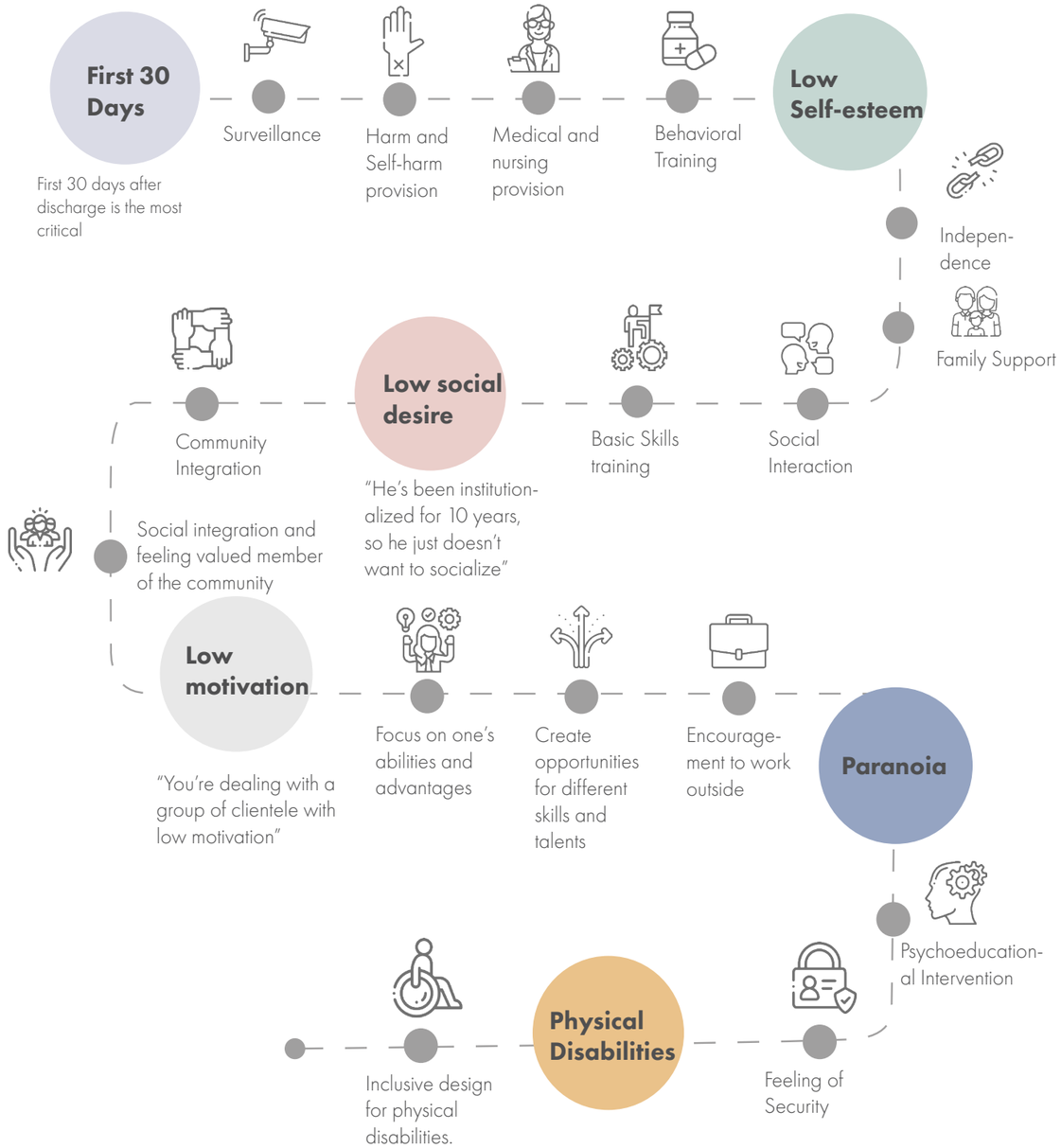


Figure 16: Rehabilitation steps after findings (author's work)

2. User Journey

In this chapter, different users that were observed during the fieldwork and their journeys in the day will be explained. These users are psychiatrists, coaches (or nurses), outpatients, and inpatients. Their journeys will give an idea of how to create an ideal environment for all these users.

Psychiatrists

The unexpected finding that was observed during the fieldwork was the fact that the psychiatrist is rarely in contact with inpatients, and they are not in the facility every day. Therefore, the psychiatrist is not the priority user of the building. The psychiatrist comes to the facility a few times a week depending on their schedule, and they are just using the therapy rooms and the FACT meeting area. They have therapies with outpatients as well as with inpatients. Furthermore, once a week, they meet with coaches in the FACT meeting area and discuss medicine adjustments of the patients.

Figure 17: Psychiatrist's journey in the building

Coaches

Unlike the psychiatrist, the coaches are in the facility every day and they are very much in contact with all the patients. During the fieldwork, a coach was observed for a day. Firstly, their day starts early, at 08:30, with a coach meeting where every coach is assigned a patient to wake up. This is done by reading the patients' names out loud and every coach has to pick a certain number of patients. After picking the patients, the coaches look through the list and visit the apartments of patients. Their priority goal is to get the patients out of bed and bring them to the medicine room. As it was explained earlier, creating habits is important for behavior tailoring, therefore, they accompany patients to the medicine room every day to create the habit of taking medicine and eating breakfast. After visiting every apartment, some coaches go to FACT meetings and explain to the psychiatrist certain behaviors that they observed, according to their report, the psychiatrist decides on adjustment of medication. Thereafter, the coaches usually go to their meeting room to either get some work done or to get lunch while chatting with other coaches. During this time a lot of patients knock on the door and ask for assistance with certain things. For example, one patient asked for one coach to go grocery shopping with them. After lunch, the coaches usually help patients with certain things or do some activities.

Figure 18: Coaches' journey in the building

Patients

The priority users of the building are the patients. Even though most of the patients are the ones that live in the building, inpatients, some patients visit the building for therapy or to socialize and join activities with other patients which will be referred to as outpatients.

Inpatients

The inpatients' day starts with a knock on the door by the coaches to be accompanied to the medicine and breakfast rooms. Depending on the severity of their illnesses, they also want to change and take a shower before heading downstairs. Thereafter, the patients go to the medicine rooms and get something to eat in the breakfast room. The patients that are able to work , goes to work outside the facility and spend their day at work or choose to spend their day in the activity areas, socializing with other patients, or going to the gym. The patients that are in somewhat more severe situations, either sit silently in the common areas and observe their surroundings, pace around the building, or go back to their rooms and isolate themselves. However, usually, lunchtime brings everyone together as the free lunch starts at 12 and continues till a specific time. After lunch, the patients continue with their days. It was also observed that the patients are free to do anything or go anywhere they want. Therefore sometimes, some patients also go grocery shopping and prepare dinner for themselves but if they are not able to cook for themselves or they don't want to do that they can also get dinner in the eating area. It should be noted that the building has one eating area and a cafeteria, the food that is served in the cafeteria is cheap but not free whereas the eating area has free food, in this case for future design, it could be beneficial to open the cafeteria to perhaps to students to increase the interaction between the healthy and mentally ill people. At the end of the day, usually patients either hang out in the common areas or go back to their rooms and watch movies.

Figure 19: Inpatients' journey in the building

Outpatients

The outpatients are in the facility for two reasons: therapy or social interaction. As the patients usually are more comfortable socializing with people that are in similar situations as them, and as the facility offers various meeting areas where the patients can paint, play games, or even do impro theater, they like to come to the facility and spend time there. In addition to this, as the facility offers therapy, some patients also come to the facility to meet with the psychiatrist and get therapy.

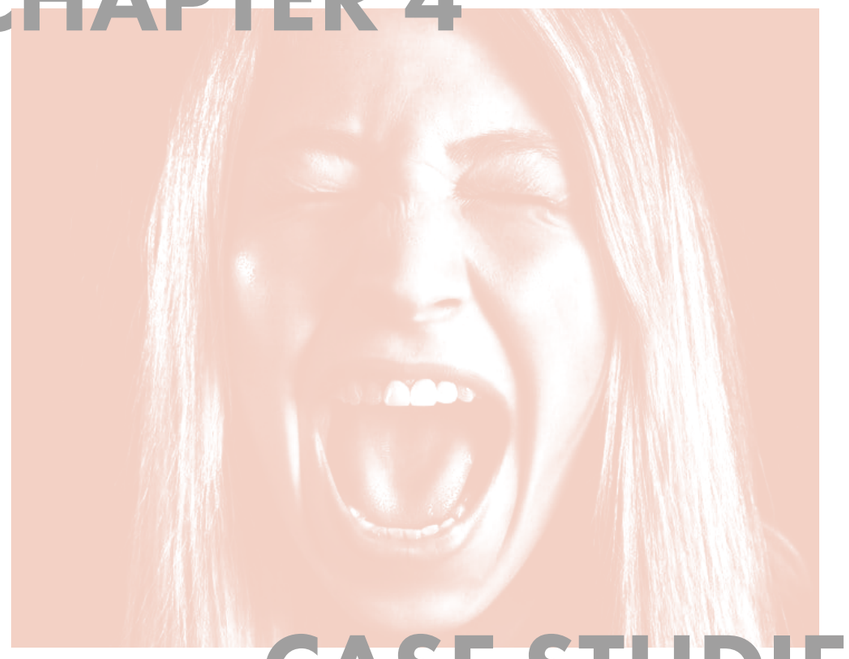
Figure 20: Outpatients' journey in the building

Interaction Points

As a result, the interaction points in the building are illustrated as shown in figure 21. The last interaction happens closer to the entrance of the building where the FACT area is situated. The reason for this is the fact that only staff members and the psychiatrist use this spot in the building during the meetings and therapies. Furthermore, the second least interaction happens on the first floor as it is also the meeting room of the coaches, and it was observed that they are only there in the morning meetings and lunchtime, and they spend the rest of their day downstairs in activity areas or with patients. In addition to this, the most interaction happens in the heart of the building, these highlighted areas include activity rooms, a cafeteria, and a common meeting area, these are the spots where both staff and patients use and interact. Lastly, it was observed that there is also high interaction in the courtyards as patients usually smoke there and socialize. However, it was also seen that usually staff members do not join the patients.

Figure 21: Interaction points in the building

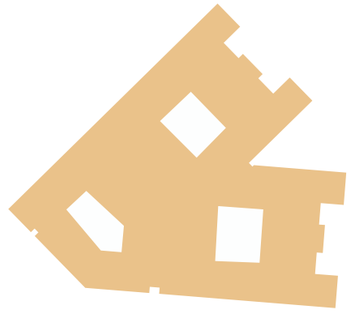
CHAPTER 4



CASE STUDIES

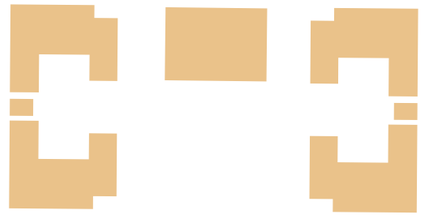
Figure 22: Photo by Sharma (2019), edited by author

In this chapter, several case studies that aim for rehabilitation will be analyzed. Even though some facilities do not aim for psychiatric rehabilitation, as the goal is the transition from hospitals into society, the general idea of rehabilitation was taken into consideration while choosing these case studies. The case studies will be analyzed according to proximity to nature, connection to the neighborhood, materials, and the volume of the buildings, if they offer working opportunities, programs, circulation, access for physical disabilities, and lastly privacy. The aforementioned research and findings showed the importance of these themes, however, privacy was added to the analysis of case studies as it was observed that some case studies offer housing on the ground floor.



1. Yulius, Elzengaarde

2. Psychiatric Ce nter and Sheltered Housing



3. Sweetwater Spectrum

1. Yulius, Elzengaarde

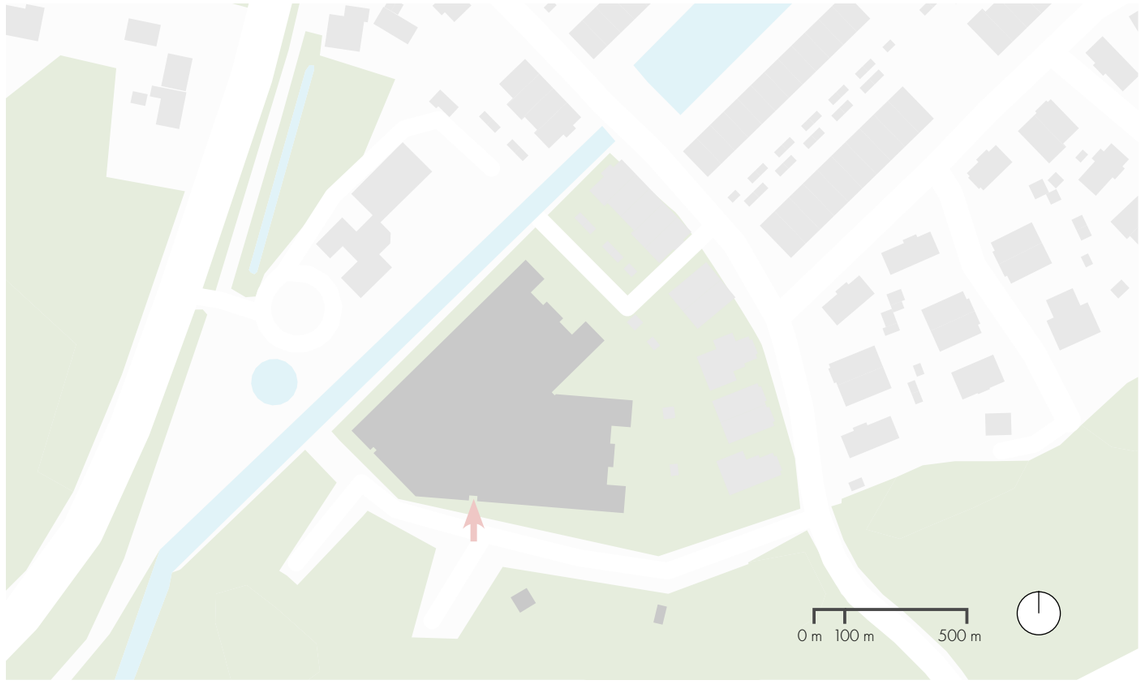


Figure 23: Site Plan, Yulius (drawing by the author)

Location: Hendrik-Ido-Ambacht, The Netherlands
Built in: 2011
Architect: Gortermaker Algra Feenstra
Number of Residents: 61
Type of Patients: Mental Illness

Yulius is an organization that helps children, young people, and adults with psychological problems, and it has many locations around the Netherlands. The chosen location is one in Elzengaarde and it focuses on the rehabilitation of people with severe mental illnesses. The building was also chosen as fieldwork therefore observations and pictures from the fieldwork will also be shared in this chapter.

Figure 24: Entrance, Yulius (Google Maps, 2022)

Nature

Figure 25: Photo showing people inside the greenhouse in Yulius ***(Author's photograph)***

Figure 26: Photo showing planted fields ***(Author's photograph)***

The building has some green fields and water surrounding it and it is well-preserved. In addition to existing nature, there is a community garden where patients can do some gardening. During the fieldwork, a chance to garden with some residents was created and it was observed that the residents were very passionate and good at gardening. On the other hand, most of the residents critiqued that the building is not close to any nature parks or forests, and they cannot walk in nature without depending on coaches to take them by bus.

Connection with the Neighborhood

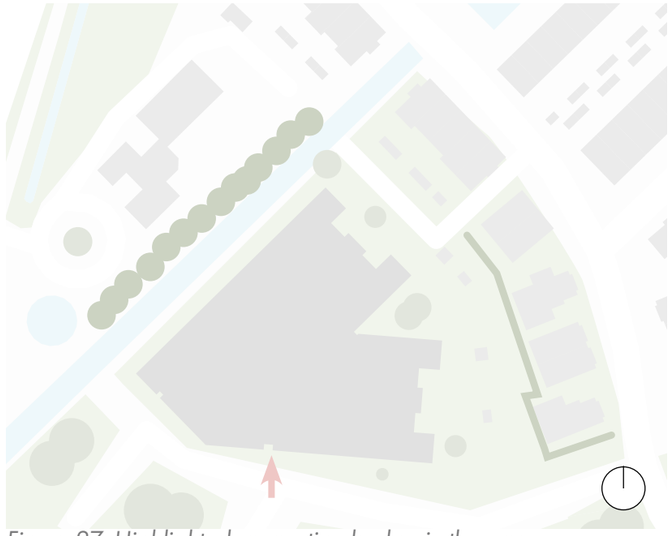


Figure 27: Highlighted separation bushes in the map (Drawing by the author)

Figure 28: Bushes blocking visual connection to surrounding houses(Author's photograph)

Even though the building is in a residential neighborhood and buildings are close by, it can be seen that the bushes and trees around the houses close the visual connection that the facility has with the rest of the buildings. The reason behind this is unknown however one of the residents mentioned that the neighborhood was unhappy with the opening of this facility: "Before we moved here there were a lot of protests 'we don't want crazy people' and stuff. But when we moved here, they understood that we don't cause problems, we are also just living.".

Materials and volume

Figure 29: Yulius(Google Maps, 2022)

Figure 30: Surrounding Buildings(Google Maps, 2022)

The building has masonry bricks and a glass façade which gives the building an almost natural and familiar look. In addition to this, even though the building doesn't have much connection with the surrounding buildings, the brick façade helps the facility to look more like the surrounding buildings and hence, fit a little more. This quality also creates some familiarity and takes off the "institutional architecture look". In addition to this, just like the surrounding buildings, Yulius is a low-rise building with two floors which creates openness on the inside.

Work Opportunities

Even though the location is unknown, it is known that the facility has connections with some factories and farms for residents that are capable of working. One of the residents explained that she works on a farm and her duty there is to pick the sorted potatoes, peel, and cut them. She also explained that she brings some of the potatoes back to the facility and they are using them in the kitchen for the cafeteria.

Privacy

The building was built for 61 residents and all residents have a private apartment of approximately 40 m2 with a bedroom, kitchen, bathroom, living room, and a small balcony. Even though having an independent apartment gives the residents privacy, the apartments in the ground floor have windows from the ground to 2,5 meters up both in the living room and bedroom which makes it easier for strangers to look into the bedroom and living area.

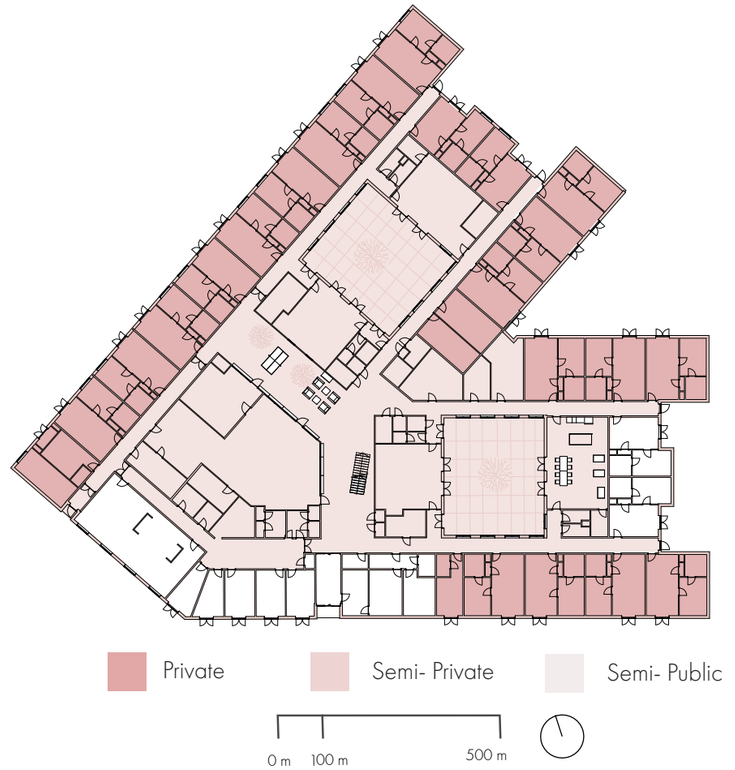


Figure 31: Privacy Diagram, ground floor (Drawing by the author)

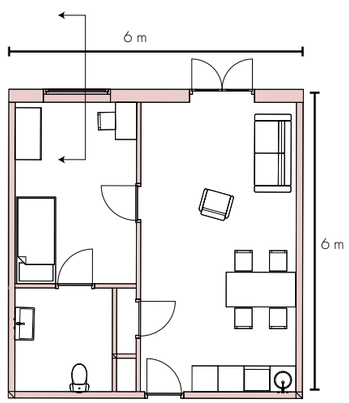


Figure 32: Apartment type showing the section cut (Drawing by the author)

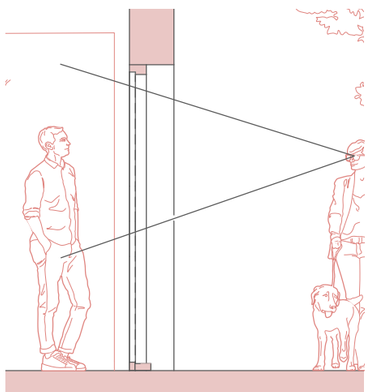


Figure 33: Section showing the issue (Drawing by the author)

Program

Along with private apartments, the building also has three activity areas, two dining areas, three court-yards, a shared laundry room, and a gym that is open for residents to use. In addition to the shared areas, for the staff, the FACT area where coaches meet with the psychiatrist to discuss the progress of patients and therapy rooms, a meeting room for coaches, and one sleep watcher room are placed in the building.

Figure 34: Cloud room, one of the activity rooms (Author's photograph)

Figure 35: Courtyard in the facility (Author's photograph)

Figure 36: Main common area (Author's photograph)

Figure 37: Basic Skills training room (Author's photograph)

Figure 38: Program diagrams of Yulius (Drawings by the author)

Circulation

The building has a very smart circulation system that could be applied to the design as every common room has access from both sides, creating a circular circulation system. This system creates safety for fire but also for situations where some residents can get aggressive. In the illustration below the circulation and the exits of each room are shown.

Figure 39: Circulation diagram of Yulius (Drawing by the author)

Access for the disabled

As discussed in chapter 3, the building has some issues with people in wheelchairs or using walkers as door frames on the ground making it inaccessible and there is only one elevator in the facility. It was also reported that the elevator breaks down often and disabled residents cannot go upstairs or down-stairs when needed.

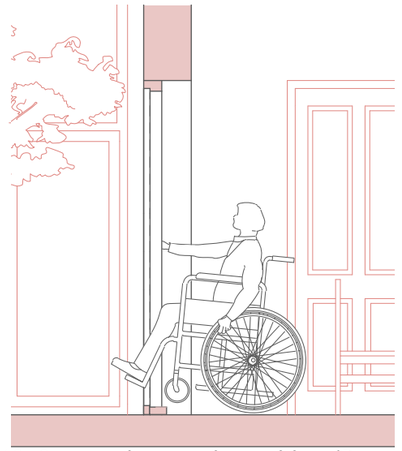


Figure 40: Section showing the problem (Drawing by the author)

2.Psychiatric Center and Sheltered Housing

Figure 41: Site Plan, Psychiatric Center(drawing by the author)

Location: Bolzano, Italy
Built in: 2014
Architect: MoDus Architects
Number of Residents: 37
Type of Patients: Mental Illness

The building serves as a psychiatric rehabilitation center with an independent sheltered housing unit and is located in a residential district in Bolzano, Italy (Bercah, 2016).

Nature

Looking into the situation plan, it can be said that the building is located near a small park that is open to the public. However, when analyzed it can be seen that the park doesn't offer long walking paths.

Figure 42: Close- by park next to the facility (Google Maps, 2022)

Volume

The building volume creates an H shape with the help of the briges that connects the two parts of the building and compared to other case studies the building is taller as it has four stories.

Neighborhood connection

Unlike the other case studies, the ground floor of the building serves the community around the building and not just the residents. However, there is no information on which functions there is an if it is in use. In addition to this, the earthy colors that were used for the building come from the chromatic character of the surrounding area (Modus Architects Psychiatric Center And Sheltered Housing, 2014).

Figure 43: Façade (Riller)

Privacy

As mentioned earlier, each floor of the building represents a different privacy level: the ground floor is open to the use of the public, the first floor is semi-public as therapy functions are placed and the third and fourth floors are private since housing is placed in these floors. The division of private functions to upper floors also decreases the visual connection of rooms towards the street, creating privacy for the residents.

In addition to this, the residential floors also have mixed privacy as some rooms are designed for one occupant while some rooms are shared rooms. Therefore, the single rooms are marked as private whereas the shared rooms are marked as semi-private. Furthermore, there are also common rooms that are open to residents therefore these are marked as semi-public.

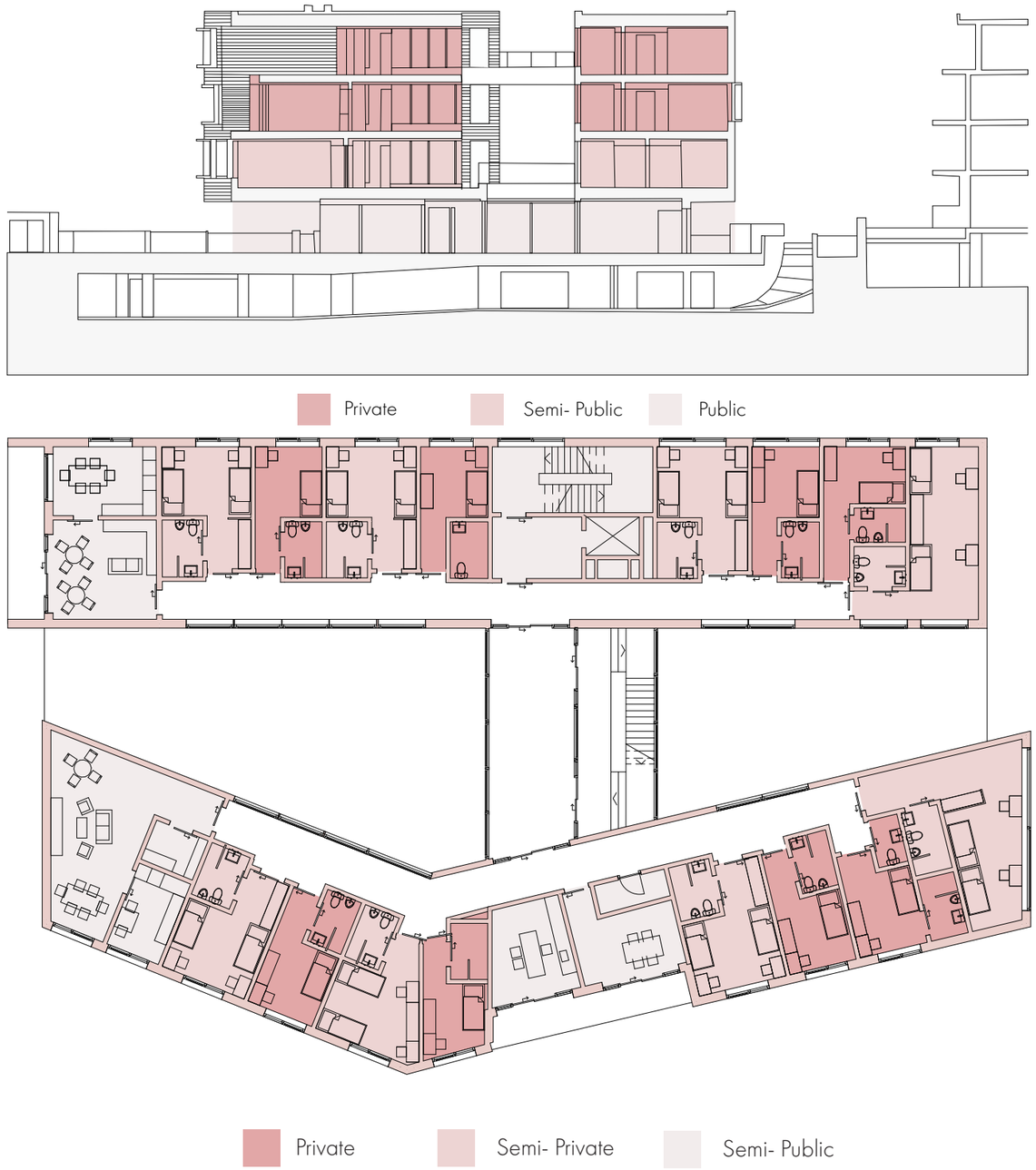


Figure 44: Privacy Diagrams (Drawings by the author)

Program

As there is no information on all the functions of the facility a more general division of the program is shown in diagrams for the first two floors. On the residential floors, it can be seen that the residents don't have much living space in their rooms and they have to go out of their rooms to use the kitchen and common areas. While this takes away the independence of the resident, it could be a good method to force them to socialize. In addition to this, the building is formed by two buildings and is connected by central corridors and courtyards on some floors.

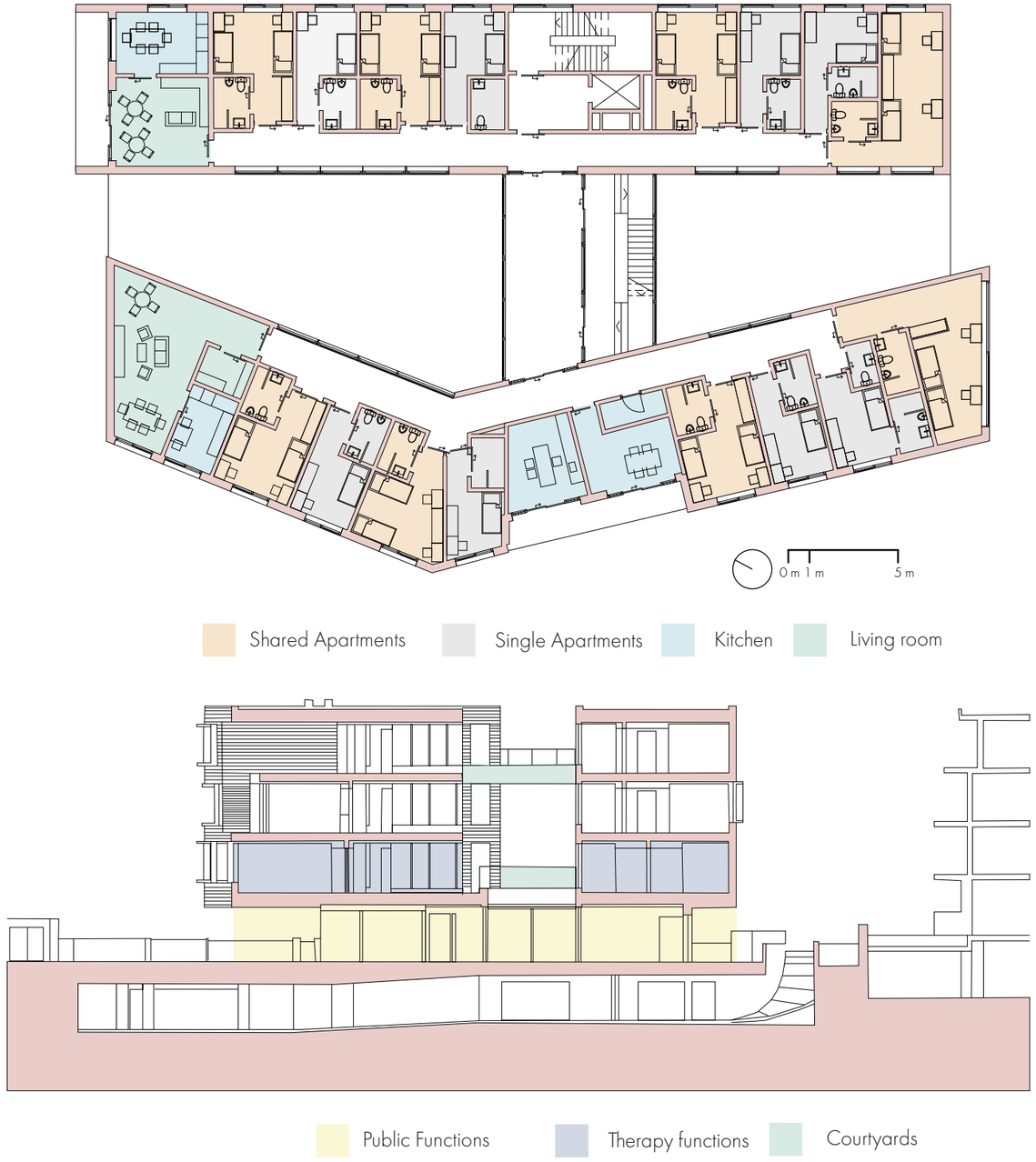


Figure 45: Functions Diagrams (Drawings by the author)

Circulation

Both buildings have linear corridor circulation systems, and the corridors are connected by a bridge. While one of the buildings has stairs and an elevator, the residents living in the other building must use the bridge to move around the floors. On the other hand, the corridors are wide enough and gets enough sunlight.

Figure 46: Circulation Diagram (Drawing by the author)

3.Sweetwater Spectrum

Figure 47: Site Plan, Sweetwater Spectrum (Drawing by the author)

Location: Sonoma, USA
Built in: 2013
Architect: LMS Architects
Number of Residents: 16
Type of Patients: Autism

Sweetwater spectrum community was built as housing for adults with autism and to help them improve their independence. The community has 4 housing buildings and a community building with various activity spaces. The community is located in a residential area in Sonoma, USA (Sweetwater Spectrum Community / LMS Architects, 2013). Different from the other two case studies, the functions in the community are spread in smaller buildings and offer a different massing approach than creating big buildings with inner courtyards.

Nature

The community offers many activities in nature like outdoor therapy, a therapy pool, an organic farm, a greenhouse, and orchards as visible in the illustration.

Neighborhood Connection

Even though the community has an open plan with 6 small buildings, it is surrounded by fences and a gate which creates a separation from the surrounding area. In addition to this, the facilities that are offered are private to the residents therefore there is not much of a connection with the surrounding neighborhood.

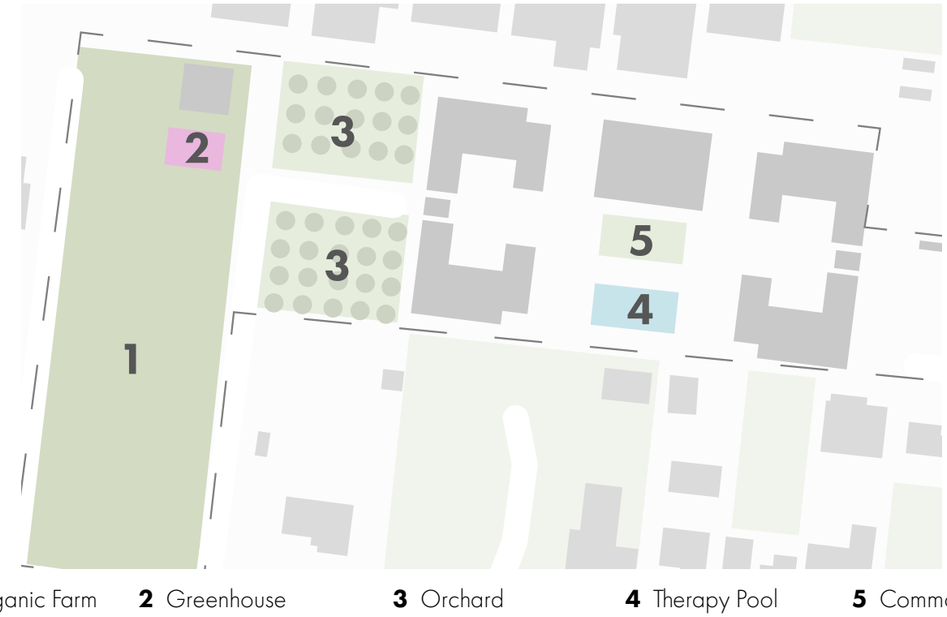


Figure 48: Site Plan, showing the outdoor spaces in the nature (Drawing by the author)

Materials and volumes

Each building has only one floor and is very similar to each other with rectangular forms, wooden and concrete façade design to create familiarity and predictability for the patients.

Figure 49: Eye level photograph into the community (Griffith)

Privacy

The community has 5 buildings, besides the introduction building and four of these are residential buildings and one of them is the community building for residents. The community building is shown as semi-public while the residential buildings are semi-private.

In addition to this, each residential building has a shared kitchen and living room and private bedrooms with bathrooms. Therefore, an environment that pushes the residents to be fully independent is not created.
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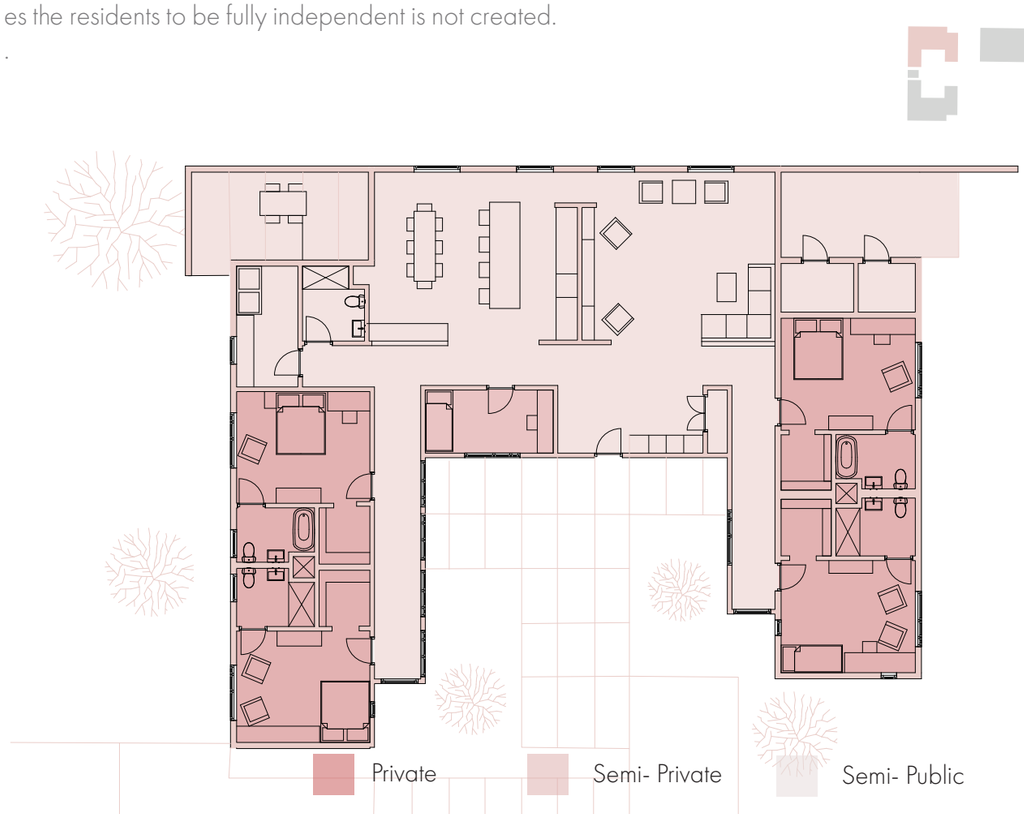


Figure 50: Privacy diagram (Drawing by the author)

Program

The community building offers many different activities like a gym, common area, kitchen, and library. Compared to the other two projects, the community building offers fewer meeting areas, and all functions are placed around the common area. In the residential building, there are 4 dwellings, and they all share the kitchen, common area, two terraces, and a laundry room.

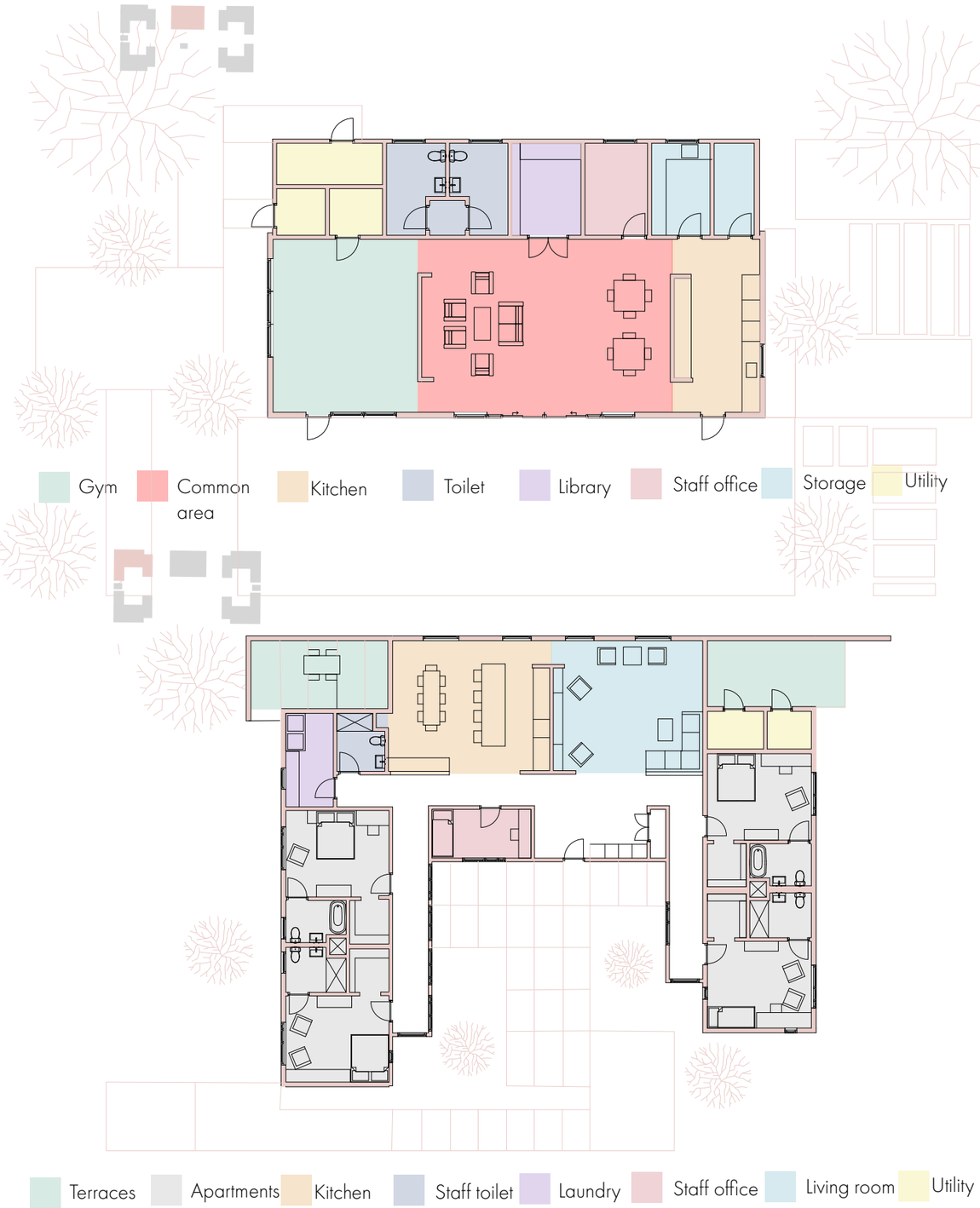


Figure 51: Functions diagrams (Drawings by the author)

Circulation

The two buildings have different circulation systems, while the community center has a circulation around one main common area, and the residential building has a U-shaped corridor system around the apartments. In this way, it can be said that the circulation system in the community center puts importance on the meeting areas while the residential building has a more functional circulation system.

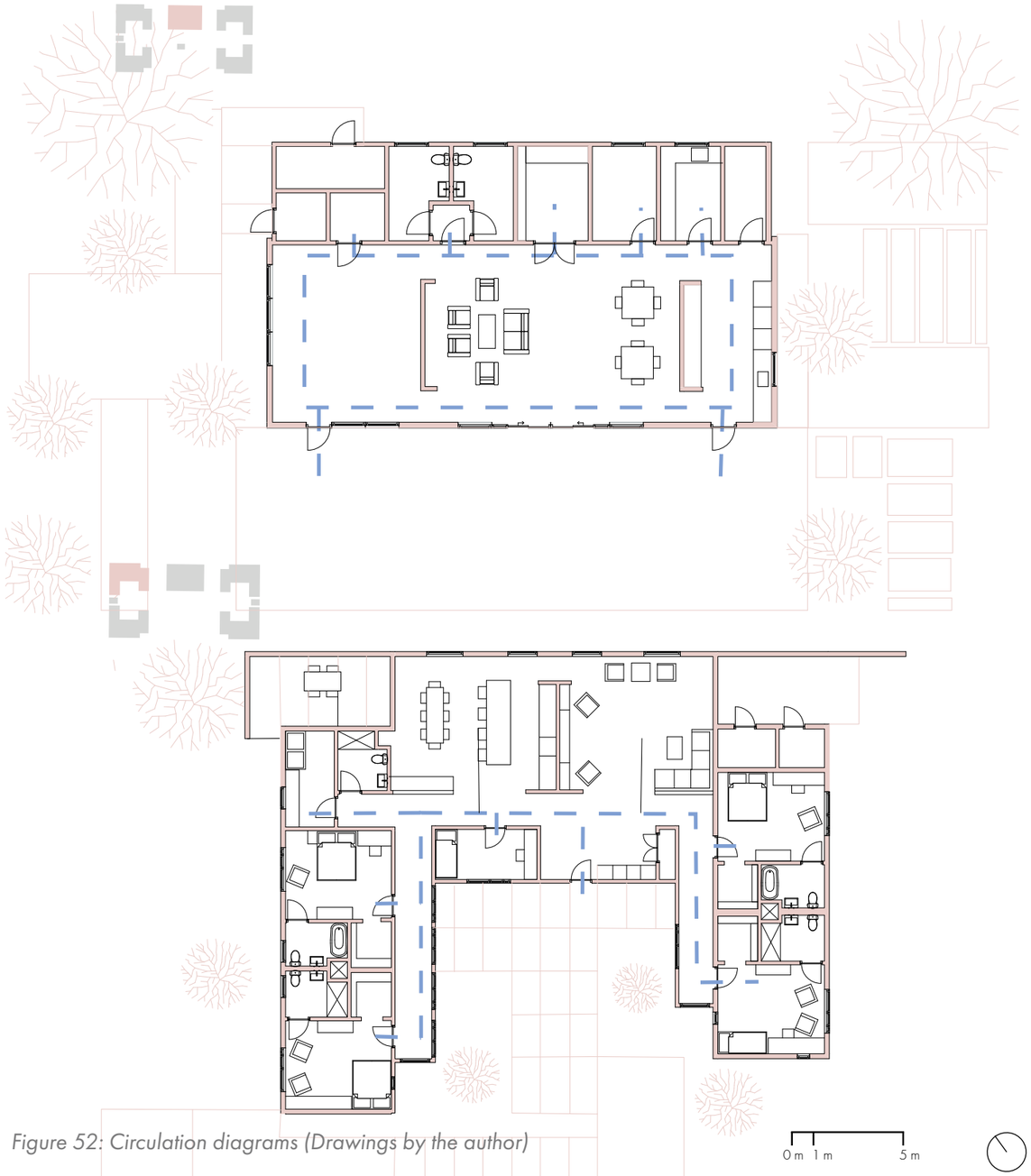


Figure 52: Circulation diagrams (Drawings by the author)

Access for the disabled

Even though the community is paved with smooth concrete floors which makes it easier for walker and wheelchair users, it can be seen from the pictures that the doors going to terraces have frames on the ground as illustrated below.

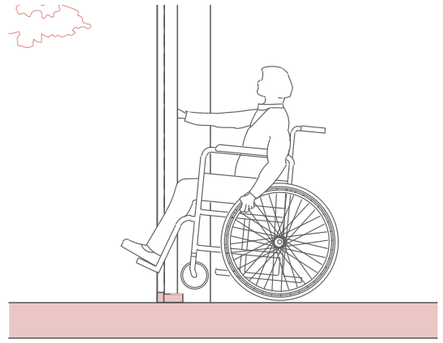


Figure 53: Section showing the problem (Drawing by the author)

4. Conclusion

As a result, it was seen that while there are activity areas for the residents in all case studies, there is a lack of community integration in the facilities: while all these facilities fit in their context with the use of materials and volumes, and are placed in residential contexts, they lack meeting points where the patients can spend time with people from the community. Therefore, it can be said that even though there is an effort in creating some connection with the surrounding community, the rehabilitation facilities are still segregated from the rest of the community.

In addition to this, while certain elements are thought of, like smooth surfaces around the buildings, all case studies lack small details that can be improved to make the buildings more disabled accessible, for example, the lack of a second elevator for emergencies and existing door frames on the ground that keeps the people with disabilities from being fully independent.

Furthermore, during the privacy analysis, it was analyzed that both buildings except Yulius lack to give patients full autonomy by integrating shared amenities with private or semi-private rooms and not apartments which was found out to be a wrong approach from the research. On the other hand, it was also found out that it is important to avoid using big windows in the private functions of the ground floor as it creates privacy problems for the patients.

CHAPTER 5

RESULTS

Figure 54: Photo by Bansal (2021), edited by author

This chapter presents a function list that was created with the help of both literature and findings from fieldwork, interviews, and case studies. Furthermore, architectural guidelines that will be used to establish a connection to the research during the design phase were developed.

1. List of Functions

To design a new rehabilitation facility, the first step is to create a list of functions as this will be used throughout the design process. To do this, firstly, the users of the building were decided, these are the patients, staff (including the psychiatrist), and the common areas. After this, a list of functions with the necessary sizes was created with the help of field-work, case studies, and reference projects. The decision was made to design the facility to accommodate a total of 40 residents, in addition to the necessary staff, as well as visitors from the community.

Common Areas

- Cafeteria
  - o Kitchen (35-40 m2)
  - o Storage (10 m2)
  - o Cool storage (8 m2)
  - o Eating area (70 m2)
- Activity rooms (can vary between 50-60 m2), approx. 2-3 of them depending on sizes: small workshop like ceramics, wood, etc., music room, sitting area.
- Storages (can vary between 10-15 m2)
- Toilets (4-5 m2), approx. 1-2 of them for visitors and easy access from activity areas)
- Gym (50 m2)
- Laundry room (25 m2)
- Medicine room (20m2)
- Cafe for the community (50-60 m2)

Patients

- Apartments (approx. 35-40 m2), for 40 residents.

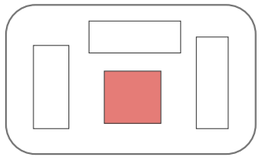
Staff

- Sleep watcher room (15 m2)
- Reception area
  - o Reception (12 m2)
  - o Storage (10 m2)
  - o Administration (15-20 m2)
  - o Office/s (15 m2)
- Staff room (55 m2)
- Staff toilet (4-5 m2)
- FACT
  - o Meeting room (80 m2)
  - o Therapy rooms (15 m2), 3-4 of them.
  - o Group therapy room (30 m2)
  - o Toilet (4-5 m2)

2. Architectural Guidelines

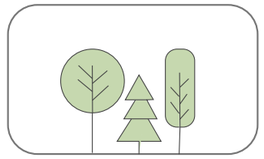
To make a design for the target group, their needs, and their wishes, it is crucial to have guidelines that can be used to go back and be reminded of who the main object of this design is. Therefore, architectural guidelines that were derived from the research were created on both landscape and building scales. All these guidelines relate to the themes that were explained in the second and third chapters: surveillance (surviving the first month), self-confidence, social interaction, motivation, security, and inclusivity for physical disabilities.

- Landscape Scale-



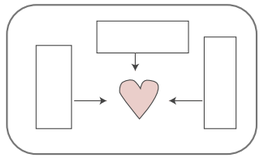
Avoiding Isolation

The facility should be placed in a residential neighborhood with mentally healthy people (not too densely populated).



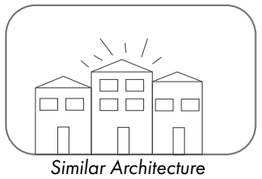
Connection with nature and animals

Forests, farms, or parks should be provided for patients.



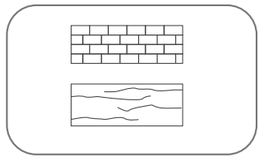
Creating Interaction Points

To motivate both the patients and other residents to socialize with each other, creating community activity areas where they can interact should be created.



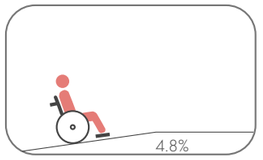
Similar Architecture

The facility should have similar architectural qualities to the surrounding buildings.



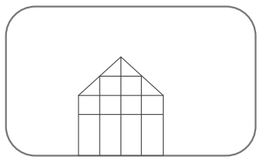
Natural and Familiar materials

Natural and familiar materials should be used in the exterior façade of the buildings and ideally in the surrounding buildings.



Access for physically disabled people

Smooth surfaces should be used in the path design and ramps should be available when providing stairs.

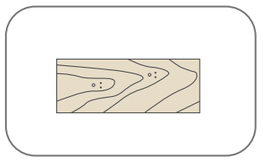


Work Opportunities

Working opportunities near the rehabilitation facility should be created for patients and motivate the patients to create and produce.

Wayfinding

The patient must be capable of finding the way on their own after going outside the facility, therefore the circulation around the neighborhood shouldn't be confusing and signs that can help them find their way should be provided.



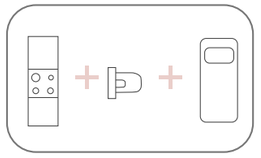
Avoid materials that can cause psychosis

Materials with long patterns on them that cause glare should be avoided.

Temporal clues

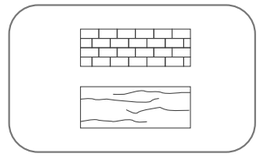
Elements that can give a sense of time should be placed in landscape design. For example, sunflowers move to face the sun which makes it easier to track time when being outside.

- Building Scale Scale-



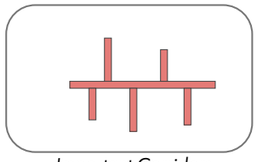
Private Apartments

Apartments with living area, kitchen, bedroom, and toilet for each patient.



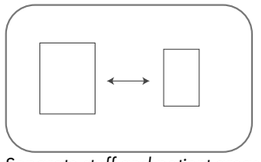
Natural and familiar materials

Natural and familiar materials should be used in the exterior façade of the buildings and ideally in the surrounding buildings.



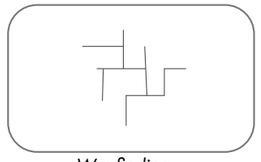
Important Corridors

The corridors should be wide and should take good daylight as patients usually pace up and down.



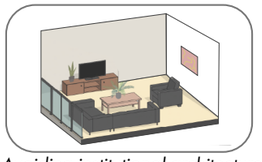
Separate staff and patient areas

Staff and patients should have separate living environments and a FACT area should be included.



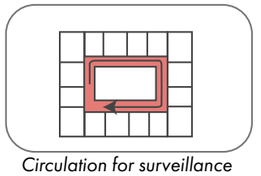
Wayfinding

The patient should be able to find their way inside the facility.



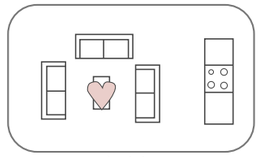
Avoiding institutional architecture

Plastic furniture, rubber flooring, hospital beds, etc. should be avoided for patients to feel more comfortable.



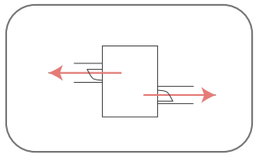
Circulation for surveillance

Staff and nurses need to be aware of the residents and their behaviors to report them to FACT team, therefore the circulation around public areas and apartments should be easy and visible to the coaching team.



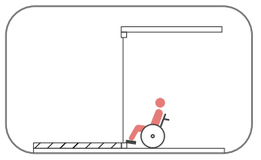
Activity

Activity areas inside the building should be created for patients to find hobbies and motivation. These activities should include all talents like art, music, sports, cooking, gardening. This is also a good opportunity for patients to socialize.



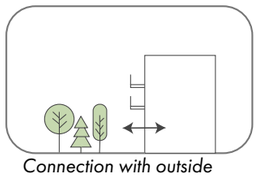
Safety

Both the staff and patients should feel safe in the building. Therefore, every common room should have two exits and the building should have fire exits.



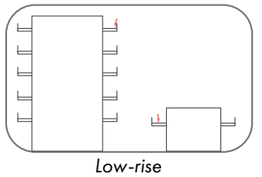
Physical disabilities

Door frames on the floor and the height difference between the floors on the inside and outside should be avoided for wheelchair and walker users. In addition to this, all toilets should be accessible for wheelchair users.



Connection with outside

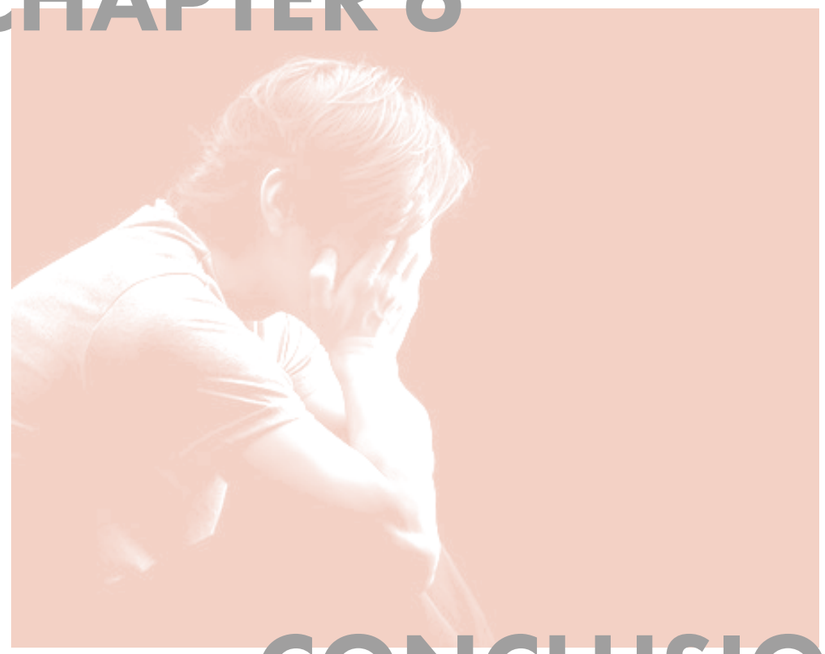
The patient should be able to go outside without getting out of the building. Therefore terraces, inner gardens, and/ or balconies should be implemented.



Low-rise

The patients already have paranoia and tendencies to hurt themselves and high buildings can also make patients feel enclosed. Therefore, the building should be low-rise to give them more security and comfort.

CHAPTER 6



CONCLUSION

Figure 55: Photo by The Wind (2022), edited by author

- Conclusion-

In this research, the research question "In what way can a semi-isolated living environment provide rehabilitation to adults living with severe mental illnesses (SMI) to facilitate their transition from psychiatric hospitals into society?" was formulated to find a solution to the problem statement that states that current rehabilitation facilities stay as a destination rather than a step and that patients often do not integrate into society after being in treatment. To answer this question three sub-questions were formulated. The first sub-question was directed at getting to know the target group, the second sub-question was aimed to create a comparison with the existing situation and the last one was formulated to find out how these can be reflected in an ideal living environment.

In the 2nd and 3rd chapters an answer to the sub-question "How can a living environment meet the wishes and needs of the patients after discharge?" was searched through literature background and findings from interviews, fieldwork observations, and conversations. As a result of the literature in chapter 2, it was found out that 5 critical challenges are important during rehabilitation: the critical first month, low self-esteem, social desire, and motivation of the patient, and lastly, paranoia that some patients might be dealing with. To solve these challenges, certain needs that might have an impact on the living environments were discussed like the need for surveillance, basic skills training, providing independence, community integration, and creating a feeling of security. In this chapter, certain solutions that these needs can reflect in living environments were also discussed, such as avoiding an abundance of patterns in certain materials and big heights to create the feeling of security, creating a basic skills training area to push patients to learn certain basic skills and creating community functions in the facility to stimulate interaction between patients and public. Thereafter, in chapter 3, through interviews and fieldwork, how certain things are done in practice was discussed. As a result, it was found out that certain design aspects should be considered to meet the needs of the patients such as: creating an efficient circulation system to ensure both surveillance and safety in the building but also to stimulate interaction, taking patients on a walk in nature to decrease their stress, giving each patient a private apartment to increase their independence and self-esteem which were points that were mentioned in the literature. In addition to these, the importance of other needs was found out such as avoiding door frames on the ground and adding two elevators in the building as SMI also impacts the physical abilities of the patients and adding all common rooms two entrances to provide an escape if things get out of hand. In addition to this, in this chapter, it was found out that each user group has a different journey in the building and that their needs can depend on it. For example, since coaches have different aims in the building, they have different spatial needs than the patients. For instance, for coaches circulation is important for the surveillance of the patients, on the other hand, for patients, circulation is important as it's a way of interacting with other patients and clearing their heads while pacing in corridors.

In chapter 4, an answer to the sub-question "In what ways do current rehabilitation facilities fail and achieve to facilitate this transition?" was searched. To do this, three different case studies with different typologies and sizes were chosen, these were Yulius, Psychiatric Center by Modus Architects, and Sweetwater Spectrum. While looking at these case studies, themes that were found to be important in chapters 2 and 3 were investigated such as connection to nature and community, circulation systems, disability access, and program. In addition to this, during analysis, privacy was found to be lacking for some case studies like Yulius and Sweetwater Spectrum therefore privacy theme was also added. As a result, it was found out that while all these facilities had the aim of rehabilitation, community integration was lacking in Yulius and Sweetwater spectrum as Yulius was covered with bushes and didn't offer public functions that the rest of the community can use, and Sweetwater Spectrum was also surrounded with gates and the functions that were provided was only for the patients. However, the Psychiatric Center by Modus Architects had public functions where rest of the community can

use which is a good example of how the transition of the patients to the rest of the community can be facilitated. In addition to this, it was analyzed that all three of the facilities had a connection with nature. However, some facilities offered activities in nature like greenhouses and farms which could be taken as a good example for the new building to be designed.

Lastly, the sub-question "What design strategy can create an ideal environment for the rehabilitation of SMI patients?" was posed to put together all these findings into architectural guidelines for both neighborhood and building scales. As a result, avoiding isolation, creating a connection with nature, creating interaction points, creating similar architecture to fit in the context, using natural materials and avoiding risky materials, access to the disabled, designing smart corridors for both surveillance and social interaction, building low-rise and giving private apartments to each patient were chosen as important strategies.

In the beginning of the research, a rehabilitation facility that provides an environment where patients can slowly adjust to living independently and take over roles in the community while also being under the surveillance of caregivers was hypothesized to be beneficial in addressing high suicide and rehospitalization rates in psychiatric care. Even though this research is not enough to prove this hypothesis the literature, fieldwork, and interview findings are all showing the positive effects of community integration and independence.

- Reflection-

Looking at the research process, it can be said that the problem statement and the research questions that were formulated worked well while exploring the target group of people with severe mental illnesses and the research process was successful in resulting enough data to design a new semi-isolated rehabilitation facility that can accomadate the needs and wishes of the patients.

Finding an answer to all these sub-questions and creating architectural guidelines were found to be good methods as the design for the new facility can be based upon the needs and wishes of the patients. However, if given more time, it could also be beneficial to investigate the results from each case study as now there is no information on whether the users are happy in the building or not as it could be beneficial to compare the analysis with results.

Furthermore, given additional time, it would be also interesting to add the sub-question "What makes patients hesitant to leave rehabilitation facilities, and what can be done to encourage them to live independently?" which is a question that was explored during the design phase. However, investigating this problem with literature, interviews and different fieldworks would be beneficial during the design phase.

CHAPTER 7

REFERENCES

Figure 56: Photo by A New and Effective Treatment for Schizophrenia (n.d.), edited by author

Anthony, W. A., & Farkas, M. D. (2009). *A Primer on the Psychiatric Rehabilitation Process*. Boston University. Boston: Center for Psychiatric Rehabilitation.

A New and Effective Treatment for Schizophrenia. (n.d.). Retrieved October 16, 2022, from AFC Counselors: https://afccounselors.com/schizophrenia/

Baeza, F. L., da Rocha, N. S., & Fleck, M. P. (2018). Predictors of length of stay in an acute psychiatric inpatient facility in a general hospital: a prospective study. *Brasileira de Psiquiatria*, 89-96.

Baker, A., Davies, R. L., & Sivadon, P. (1959). *Psychiatric Services and Architecture*. Geneva: World Health Organization.

Bansal, P. (2021, September 6). *What Is Psychotic Depression? Symptoms And Tips To Manage This Mental Illness*. Retrieved October 16, 2022, from Only My Health: https://www.onlymyhealth.com/condition-of-psychotic-depression-symptoms-and-tips-to-manage-it-1630905122

Bercah, C. (2016, March 24). *Psychiatric Center and Sheltered Housing*. Retrieved from The Plan: https://www.theplan.it/eng/magazine/2016/the-plan-089/psychiatric-center-and-sheltered-housing-theplan-089

Bitsoli, H. (2022, May 3). *Mental Health Benefits of Independence for People with Disabilities*. (V. Leeper, Editor) Retrieved from Disability Action Center NW: https://dacnw.org/newsletter/mental-health-benefits-of-independence-for-people-with-disabilities/

Casarella, J. (2020, December 13). Schizophrenia : When Do Symptoms Usually Start? Retrieved from Web MD: https://www.webmd.com/schizophrenia/schizophrenia-onset-symptoms

CGLPL. (2016). *Isolation and Restraint in Mental Health Institutions*. Paris, France: Contrôleur général des lieux de privation de liberté .

Chrysikou, D. (2021, November). *Design For Psychiatric Patients: The Complexities Of Therapeutic Architecture Decision- Making*. The Bartlett Real Estate Institute, UCL, United Kingdom. Retrieved from https://www.researchgate.net/publication/356557349

Drake, R. E., Green, A. I., Mueser, K. T., & Goldman, H. H. (2003, October). The History of Community Mental Health Treatment and Rehabilitation for Persons with Severe Mental Illness. *Community Mental Health Journal*, 39(5), 427-439.

European Union. (2018). *Promoting mental health in Europe: Whyandhow?* Paris.

Forte, A., Buscajoni, A., Fiorillo, A., Pompili, M., & Baldessarini, R. J. (2019, September 7). Suicidal Risk Following Hospital Discharge: A Review. *Harvard Review of Psychiatry*, 27(4), 209-216.

Gardens for Mental and Behavioral Health Facilities. (2013). In C. C. Marcus, & N. A. Sachs, *Therapeutic Landscapes : An Evidence-Based Approach to Designing Healing Gardens and Restorative Outdoor Spaces* (pp. 181-184). John Wiley & Sons.

Garber, L. (2021, September 5). *The Downside of Rage: Why Anger Can Indicate Weakness Just as Much as Strength*. Retrieved October 16, 2022, from Existential Cafe: https://existentialcafe.blog/2021/09/05/the-downside-of-rage-why-anger-can-indicate-weakness-just-as-much-as-strength/

GGZ Standaarden. (2021). *Ernstige Psychische Aandoeningen*. Retrieved from https://www.ggzstandaarden.nl/generieke-modules/ernstige-psychische-aandoeningen/inleiding

Griffith, T. (n.d.). *Sweetwater Spectrum Community. LMS Architects*. Retrieved from https://www.archdaily.com/446972/sweetwater-spectrum-community-lms-architects

Hegedüs, A., Kozel, B., Richter, D., & Behrens, J. (2020, January 21). Effectiveness of Transitional Interventions in Improving Patient Outcomes and Service Use After Discharge From Psychiatric Inpatient Care: A Systematic Review and Meta-Analysis. (D. Roe, Ed.) *Frontiers in Psychiatry*, 10, Article 969.

How can nature benefit my mental health? (2011). Retrieved from Mind: https://www.mind.org.uk/information-support/tips-for-everyday-living/nature-and-mental-health/how-nature-benefits-mental-health/#:~:text=Spending%20time%20in%20nature%20has,with%20mild%20to%20moderate%20depression.

Lachowycz, K., Celebi, S., Price, G., Lugton, C., & Roche, R. (2018). *Severe mental illness (SMI) and physical health inequalities: briefing*. UK Government, Public Health England. National Mental Health Intelligence Network. Retrieved from https://www.gov.uk/government/publications/severe-mental-illness-smi-physical-health-inequalities/severe-mental-illness-and-physical-health-inequalities-briefing#:~:text=The%20phrase%20severe%20mental%20illness,an%20SMI%20%5Bfootnote%201%5D.

Loch, A. A. (2014, April 28). Discharged from a mental health admission ward: is it safe to go home? A review on the negative outcomes of psychiatric hospitalization. *Dove Press Journal*, 137-145.

Modus Architects Psychiatric Center And Sheltered Housing. (2014). Retrieved from Divisare: https://divisare.com/projects/268914-modus-architects-rene-riller-psychiatric-center-and-sheltered-housing

Navarro, F. C., Villalobos, N., Muñoz, A., Medrano, A., Rodríguez, N., & Uribe, E. (2021). Predictors of the length of stay of psychiatric inpatients: protocol for a systematic review and meta-analysis. *Systematic Reviews*.

NL Times. (2021, August 5). *Waiting lists and patients refused at mental health centers due to staff shortage*. Retrieved from NL Times: https://nltimes.nl/2021/08/05/waiting-lists-patients-refused-mental-health-centers-due-staff-shortage#:~:text=In%20the%20last%20quarter%20of,care%20professionals%20in%20the%20Netherlands.

Obsessive-Compulsive and Related Disorders. (n.d.). Retrieved from Stanford Medicine: https://med.stanford.edu/ocd/about.html#:~:text=Age%20at%20Onset,earlier%20in%20men%20than%20women.

One Eighty. (2017, March 7). *How to Spot the Warning Signs of Declining Mental Health*. Retrieved October 16, 2022, from One Eighty: https://www.one-eighty.org/news/how-to-spot-the-warning-signs-of-declining-mental-health/

Oxford Languages. (n.d.). Retrieved from https://languages.oup.com/google-dictionary-en/
Oyffe, I., Kurs, R., Gelkopf, M., Melamed, Y., & Bleich, A. (2009, December). Revolving-door Patients in Public Psychiatric Hospital in Israel: Cross Sectional Study. *Croatian Medical Journal*, 50.

Psycom. (2022, September 27). *Major Depression (Unipolar Depression)*. Retrieved October 16, 2022, from Psycom: https://www.psycom.net/major-depressive-disorder

Riller, R. (n.d.). Retrieved from https://divisare.com/projects/268914-modus-architects-rene-riller-psychiatric-center-and-sheltered-housing

Schütz, B., & Wicki, L. (2011). *Architecture for psychiatric treatment*. Lausanne: Ecole Polythechnique federale de Lausanne.

Sharma, S. (2019, September 24). *Is Your Anger Making Your Pain Worse?* Retrieved October 16, 2022, from Core Medical Wellness: https://coremedicalwellness.com/is-anger-making-pain-worse/

Sweetwater Spectrum Community / LMS Architects. (2013, November 12). Retrieved from ArchDaily: https://www.archdaily.com/446972/sweetwater-spectrum-community-lms-architects

Tanioka, T., Mano, M., Takasaka, Y., Tada, T., & Kawanishi, C. (2006). *Challenge of psychiatric rehabilitation for patients with long-term hospitalizations using the Nirje's normalization principles as a valuation standard: two case studies*. Tokushima: Department of Community and Psychiatric Nursing, School of Health Sciences, The University of Tokushima.

Teigland, C., Forma, F., Green, T., & Kim, S. (2018, September 1). Prevalence and Likelihood of Hospital Admission and Readmission in Patients with Serious Mental Illness. *Value in Health*, 21, 74.

The Promise Act. (2021, October 7). *Military General with Bipolar Was "Fit for Duty"*. Retrieved October 16, 2022, from The Promise Act: https://thepromiseact.org/general-battles-bipolar/

Visser, J. (2019, Dcember 2019). *The Netherlands has an urgent need for cops, nurses and teachers*. Retrieved from Holland Times: https://www.hollandtimes.nl/articles/national/the-netherlands-has-an-urgent-need-for-cops-nurses-and-teachers/

What is a Serious Mental Illness? (n.d.). Retrieved from SMI Adviser: https://smiadviser.org/about/serious-mental-illness#:~:text=Serious%20Mental%20Illness%20(SMI)%20is,or%20more%20major%20life%20activities.

Xanthopoulou, P. D., Mbanu, J., Chevalier, A., Webber, M., & Giacco, D. (2022, January 25). Social Isolation and Psychosis: Perspectives from People with Psychosis, Family Caregivers and Mental Health Professionals. *Community Mental Health Journal*, 1338–1345.

Yoho. (2020, August 27). *Understanding Depression and Ways to Prevent It*. Retrieved October 16, 2022, from Emerald Psychiatry: https://emeraldpsychiatry.com/understanding-depression-and-ways-to-prevent-it/