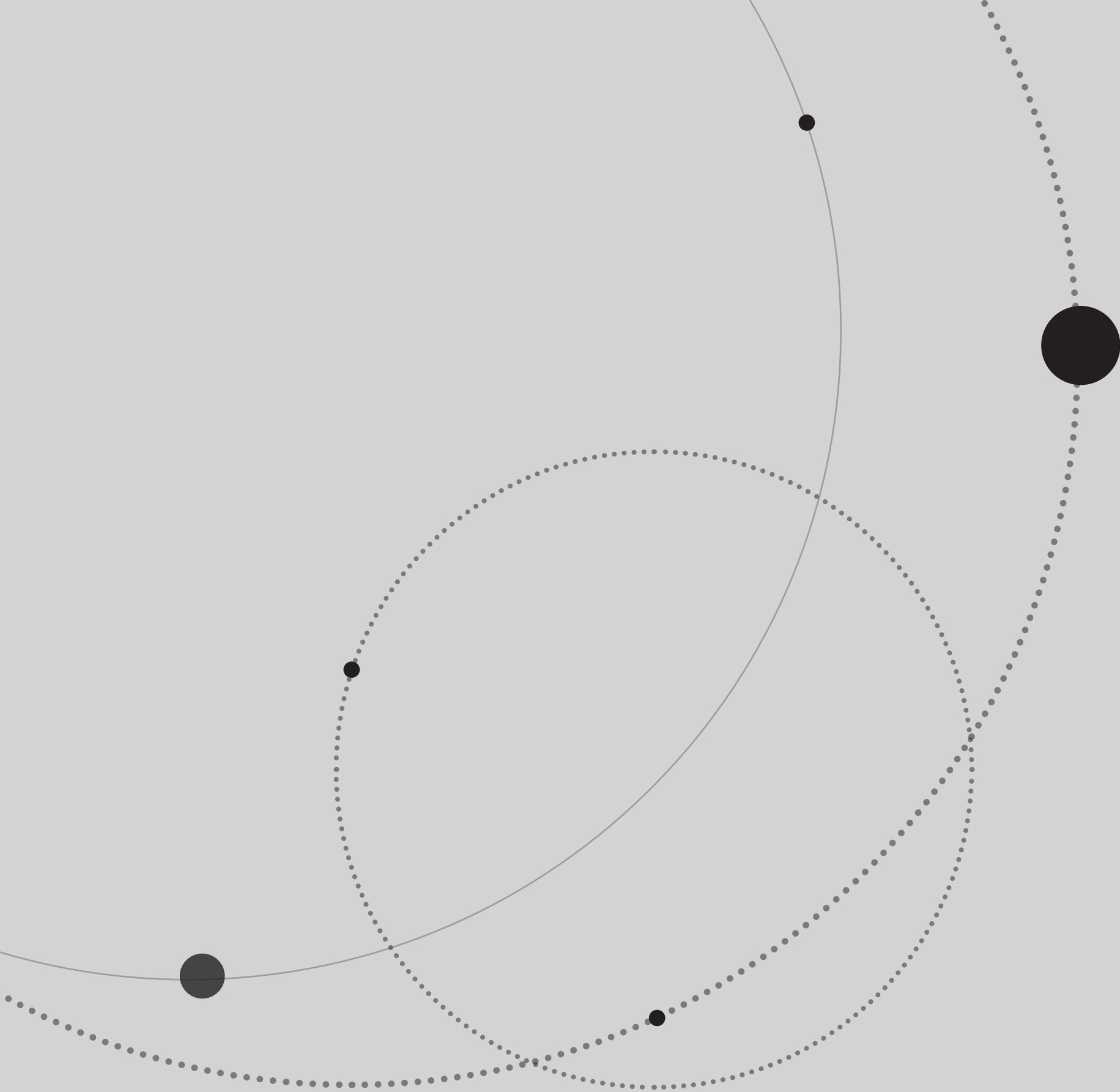




DISCONNECT TO CONNECT

Designing a retreat for Pathological Internet Users

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Designing a retreat for Pathological Internet Users

A Practicum submitted to the Faculty of Graduate Studies at the University of Manitoba in partial fulfillment of the requirements of the degree of:

**Master of Interior Design,
Department of Interior Design**

University of Manitoba, Winnipeg

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.abstract

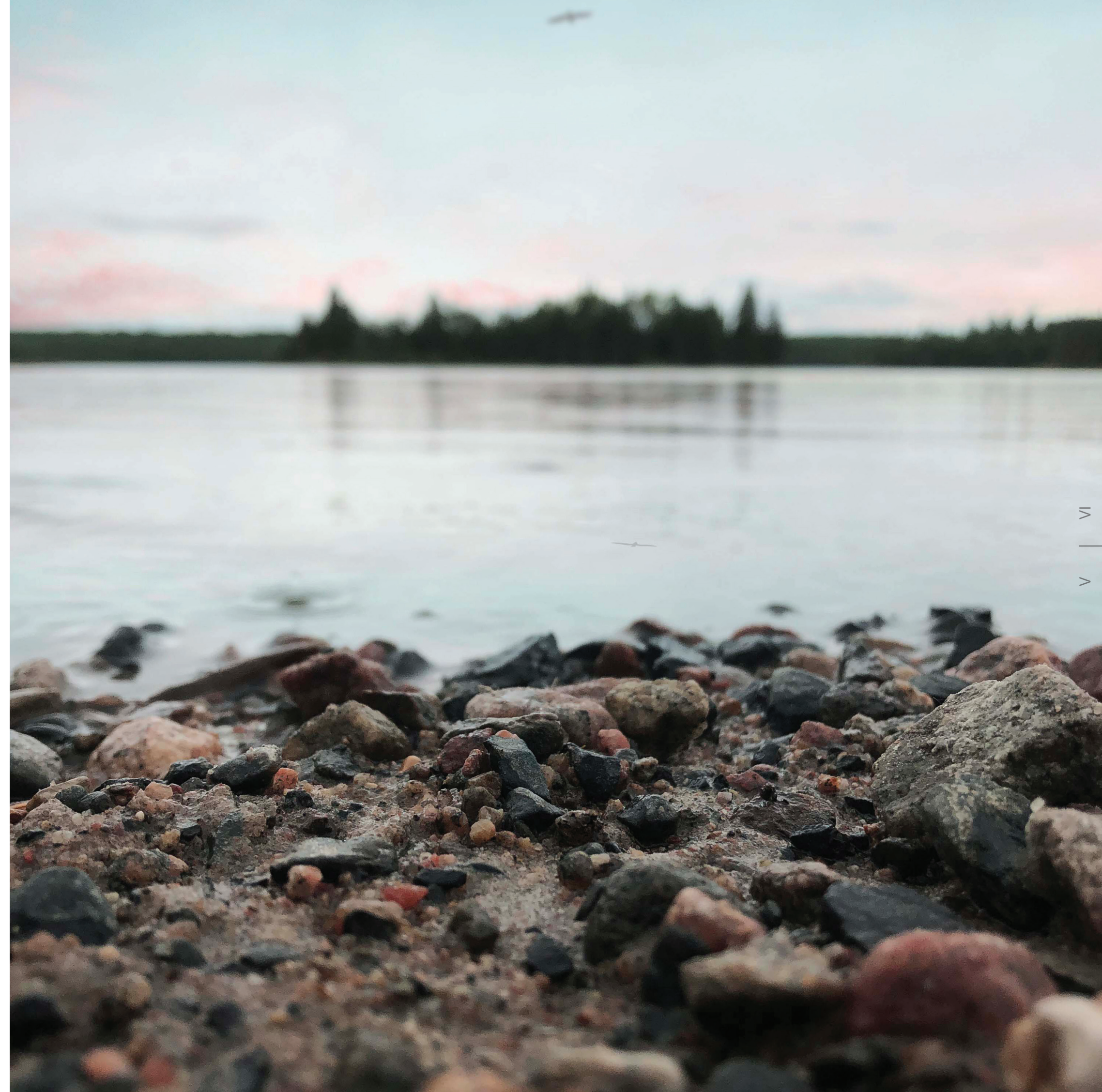
It is indisputable that we live in a time of technological reliance, with an ever-increasing amount of global citizens gaining access to the Internet. In Canada, Internet-related mental illness is on the rise, compounded by the lack of attention from the Canadian medical professionals, as well as the general public. Canadian Internet users are at risk; excessive and problematic Internet use causes the experience of disembodiment, disconnection from one’s surroundings, and isolation from society. This project responds to the needs of a specialized treatment facility for Pathological Internet users in Canada, based on the work of numerous medical, behavioural, and architectural authors. The studies of clinicians Kimberley Young and Richard Davis provide the clinical background for understanding Pathological Internet Use (PIU), its causes, and its treatments. French phenomenologist Maurice Merleau-Ponty’s perspectives on human perception and behaviour are also studied. His works on the relationship between the self and the natural world, the self and the built environment, as well as the self and other human beings lay the groundwork for exploring and treating Pathological Internet Users’ addictive behaviours through psychological and architectural lenses. Architectural theories, including Atmospheric Architecture, Biophilic Design, and Supportive Design, are investigated to further enhance treatments and optimize prevention strategies. Four projects, directly responding to the architectural theories, are dissected to show how architectural theories are translated into design solutions. The result of this theoretical analysis and precedent study is a fictional retreat specialized in treating Pathological Internet users called re:intent, located at Falcon Lake in the Whiteshell Provincial Park in Manitoba. The interior environment is designed to optimize the efficiency of the treatments by promoting inter-connection with nature, with architecture, and with other people.

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I would like to dedicate this book to my parents, The-Hung Ninh and Thi-Hien Phan, who have sacrificed their whole life to give my brothers and I a better life. Without your unwavering supports, everything would have been impossible. I am grateful to be your son as you have taught us to be a decent human being before anything else. Thank you for the opportunities you have given us, even when we felt or wandered into the wrong path. Thank you for showing us the priceless values of hardworking and being well-prepared. “Slow but steady wins the race” is what you have shown us through your own life and careers. Thank you for the great encouragements and unconditional love.

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.terminology

The following is a list of terms that are used throughout the document. A summary of each term will demonstrate how the term is used in the context of this Masters of Interior Design Practicum project.

Atmospheric Architecture is the theory proposed by Juhani Pallasmaa, suggesting architecture and interior space can have emotional and physical effects on occupants.

Biophilia is the combination of the word bio – life, and philia – love, referring to the inherited attraction we have toward nature. These attractions have various psychological impacts on human health and well-being.

Biophilic Design, thus, refers to the design trend that employs natural elements and components to create safe, healthy, stress-free, and relaxed environments.

Nature in this Practicum has two meanings. From the perspective of Biophilic Design, nature is defined as ecosystems that consist of living organisms (flora and fauna) and nonliving components (landscape, the ocean, the sun and moon, and more). The other concept of nature is from Merleau-Ponty's perspectives – a phenomenological nature, consisting of the time and space in which we exist and live. The two concepts of nature are neither the same nor different. Instead, they are one nature, being interpreted through different lenses. Although the two meanings are interchangeable, this Practicum leans towards the former.

Pathological Internet Use (PIU) is a compulsive disorder involving overuse and abuse of the Internet. There are two types of Pathological Internet Use, including Generalized Pathological Internet Use (GPIU) and Specific Pathological Internet Use (SPIU). Although their causes come from different sources, the two types usually result in similar mental, emotional, and physical consequences. PIU is different from normal Internet use as it responds to specific needs with particular effects on the patients. Normal Internet use has the potential to become PIU if it passes specific thresholds.

Phenomenology refers to a disciplinary field in philosophy which studies the human experience and meanings associated with such experiences.

Supportive Design Theory, proposed by Roger Ulrich, stating that stress has huge impacts on human health and well-being. The theory focuses on removing stressors to create a healthy and stress-free environment.

The lived body is a concept proposed by French phenomenologist Maurice Merleau-Ponty, suggesting that we are both object and subject, as opposed to Dualism's concept in which the body is an object in the mind-body relationship.

01.

PROJECT OVERVIEW

- 1.1 PREFACE
- 1.2 METHODOLOGY AND OBJECTIVES
- 1.3 RESEARCH QUESTIONS
- 1.4 PRACTICUM ORGANIZATION

CHAPTER ONE

PROJECT OVERVIEW

1.1 Preface

In the last thirty years, the world has witnessed the accelerated development of technology, especially the Internet and smartphones. These technological innovations not only result in new behaviours and attitudes, but also have several unintended consequences that can damage relationships with one’s self, other people, and the surroundings.^{1, 2} However, healthcare providers and the general public have not paid enough attention to this matter yet, putting the Internet and smartphone users at risk of the harmful effects of the Internet. The Canadian Mental Health Association reported that Internet users show similar symptoms to addiction when using the Internet more than four hours a day in an extended period.³ The research conducted by Richard Davis defines Pathological Internet Use (PIU) as a compulsive disorder, involving the overuse and abuse of the Internet. PIU is categorized into two types:

Generalized Pathological Internet Use (GPIU) and Specific Pathological Internet Use (SPIU).⁴ These two types of Pathological Internet users show similar symptoms, including compulsive thoughts about the Internet, irrepressible Internet usage, and dependency on online relationships. However, different factors cause these two types of PIU. While Specific Pathological Internet users exploit the Web to satisfy their primary psychiatric disorders, Generalized Pathological Internet users access cyberspace to avoid social responsibilities.⁵ The consequences of PIU include serious disembodiment experience, loss of connection with the physical world, and isolation from society.

Despite growing concerns over Internet-related mental illness, Canada does not have any specialized PIU treatment facility. An annual report from the Canadian Internet Registration showed that 68% of Canadian Internet users used the Internet more than four hours daily in 2016.

This number increased to 71% in 2017, 74% in 2018, and has not shown any sign of stopping.⁶ Cyber-bullying is also an alarming concern, with more than 58% of young Canadian Internet users experienced or witnessed bullying on the Internet.⁸ This unhealthy environment could make immense impacts on Internet users. Benjamin Wong, a Richmond Addiction Services counsellor, reported that since 2007, his clinic had treated around 20 to 30 families, who were dealing with digital addiction.⁹

Since the early 2000s, Asian countries, including South Korea, China, and Taiwan, have extensively studied PIU, leading to the development of inpatient treatment facilities and comprehensive prevention programs.¹⁰ Comparatively, North American countries have made little effort in researching and treating PIU. There are only two treatment facilities in North America, and both of them are located in the United States. These numbers and the lack of attention from healthcare providers suggest an urgent need to provide specialized PIU treatments in Canada.

Since 1996, researchers, therapists, and psychologists have proposed several treatment approaches, including pharmacology, physiology, motivational enhancement therapy, psychodynamic therapy, spiritual therapy, and cognitive behavioural therapy.¹¹ However, Breslau

et al. point out that these studies are inconsistent due to differences in criteria and approaches, such as control groups, sample sizes, and specification of the treatment procedures.¹² Despite such limitations, these studies still can inform future clinical research and efforts in treating PIU.

The majority of research on PIU treatment studies the effectiveness of Cognitive-Behavioural Therapy (CBT). The therapy focuses on helping patients identify and modify problematic thoughts and behaviours by teaching them how to restructure their maladaptive thoughts, set goals, and self-regulate.¹³ In 2007, Dr. Kimberly Young, a pioneer in researching PIU, reported successfully treating 114 clients suffering from PIU at her Centre for Internet Addiction in St. Bonaventure University, New York.¹⁴ This experiment marks the early success of the exploration and experimentation on treating PIU. In 2013, Young also reported treating 128 PIU clients successfully at the same facility.¹⁵ Chinese researchers Cao, Su and Gao reported an improvement in cognitive functions in 29 middle school students with PIU using CBT in 2009.¹⁶ These studies demonstrate the efficiency of CBT in treating PIU patients.

Nature-based therapy (NBT) has also been gaining recognition as an effective treatment for addicts over the last few years. The treatment requires patients to take part in various therapeutic activities outdoors. Horticulture therapy is held in

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gardens and on farms, while adventure therapy and wilderness therapy takes place in forests. These activities have shown to be effective in restoring psychological function, increasing mental well-being, boosting self-esteem, confidence and mood, strengthening social connections, and enhancing connectedness with nature. The therapy has shown success in treating alcoholics and drug addicts and with such restorative effects, this treatment has immense potential in treating PIU patients, whose connection with nature and other people have been disrupted.¹⁷ Patients at reSTART, a specialized branch of PIU rehab facilities in Washington, United States, are required to attend NBT, including horticultural activities such as tending gardens or feeding animals and additional wilderness therapy.¹⁸ ¹⁹ Hilarie Cash, the founder reSTART, claims to have successfully treated 19 adults in 2012, though the data was not published on any peer-reviewed manuscripts.²⁰ The success of reSTART inspired the author's decision to explore NBT as a means to inform the design of a hypothetical facility for PIU patients.

The proposed design is a retreat facility called *re:intent*, where patients can *reset* their lifestyle, *refresh* their health, and *reconnect* with themselves, other people, and nature. The main treatment program includes CBT for Internet Addiction and NBT. The architecture and interior spaces are designed to accommodate and support these treatments. *re:intent* will be located at Falcon Lake in the Whiteshell Provincial Park in Manitoba, Canada.

1.2 Methodology and Objectives
Methodology

An understanding of PIU, including its causes, symptoms, consequences and treatments as well as its relationship with architecture, needs to be established. Such information will equip the designer to provide appropriate interior design solutions to enhance PIU treatments. Therefore, this project creates a theoretical framework to study PIU and its relationship with architecture. The works of Richard Davis on PIU definition and its causes, as well as Kimberly Young's and Mark Griffith's works on PIU symptoms and treatments, are studied to gain a holistic understanding of PIU as a pathological disorder. Maurice Merleau-Ponty's works on perception and behaviour, which is relevant to both modern psychology and architecture, are also studied to provide the groundwork to reveal the relationship between PIU and architecture. Architectural theories, including Atmospheric Architecture, Biophilic Design, and Supportive Design, are explored in relation to Merleau-Ponty's works. These architectural theories provide conceptual standpoints to enhance PIU treatments through architectural and spatial design.

Additionally, it is necessary to analyze previous projects that are closely related to the selected architectural theories. These precedent studies show what other designers have achieved by applying the aforementioned theoretical concepts into practice. Firstly, Rise-Up by reSTART, located in Washington State, in the United States, is studied regarding the current PIU treatment. This PIU treatment facility also shows how architectural and spatial design support such a treatment program. Secondly,

Qualico Family Centre, located in Winnipeg, in Manitoba Province, in Canada, is investigated as an example of Atmospheric Architecture. The third project is Santani Wellness Resort and Spa, located in Kandy, in Sri Lanka, providing strategies for introducing nature into interior environments. The last project is Maggie's Cancer Centre, located in Manchester, United Kingdom, illustrating the application of Supportive Design by creating a home-like setting.

Finally, the design of a hypothetical rehabilitation facility that specializes in treating PIU is the portion of the project where lessons learned in the review of literature will be applied and explored through the development of a comprehensive design solution. Moreover, the mistakes-and successes that this project achieves will equip future designers and researchers with lessons and guidance on how to approach such projects in the future.

Objectives

The project has two main objectives:

To understand the relationships between PIU and interior architecture by exploring literature on psychological, phenomenological, and architectural and spatial theories.

To understand the spatial requirements for a PIU treatment centre. Ergonomics and functional requirements in CBT and NBT are studied to provide efficient ways to create a safe and appropriately designed space for PIU patients.

1.3 Research questions

This project answers the following research questions:

- 1. What is the role of architecture and interior design in supporting the treatment process for Pathological Internet Users?
- 2. What design strategies could be employed to accommodate treatments for Pathological Internet Users, particularly nature-based therapy in Manitoba's climate?

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20 Breslau et al., "Prevention and Treatment Strategies," 22.

1.4 Practicum organization

This Practicum Project explores research on PIU and relevant architectural theories and ideas in order to inform an interior design proposal, as illustrated in figure.1.²¹ The first chapter is an introduction, consisting of the Practicum’ objectives and goals, as well as methodologies to reach those targets. It also raises the research questions, which the Practicum intends to resolve. Chapter 2 studies PIU through the clinical views, based on the works of Richard Davis, Kimberly Young, and Mark Griffith. Chapter 3 provides theoretical standpoints to understand PIU through philosophical and architectural lenses. Maurice Merleau-Ponty’s works on experience and behaviour, as well as Juhani Pallasmaa and Peter Zumthor’s Atmospheric Architecture, Stephen Kellert’s Biophilic Design, and Roger Ulrich’s Supportive Design, are analyzed to propose spatial design solutions that enhance PIU treatments. Chapter 4 investigates four preceding projects to study the possible applications of the discussed architectural theories into built forms. Chapter 5 explores the potential and constraints of the site and the needs of *re:intent’s* users to provide a suitable design program. Chapter 6 proposes interior design solutions for PIU treatments by applying the aforementioned architectural theories into designed objects and environments.

PRACTICUM ORGANIZATION DIAGRAM

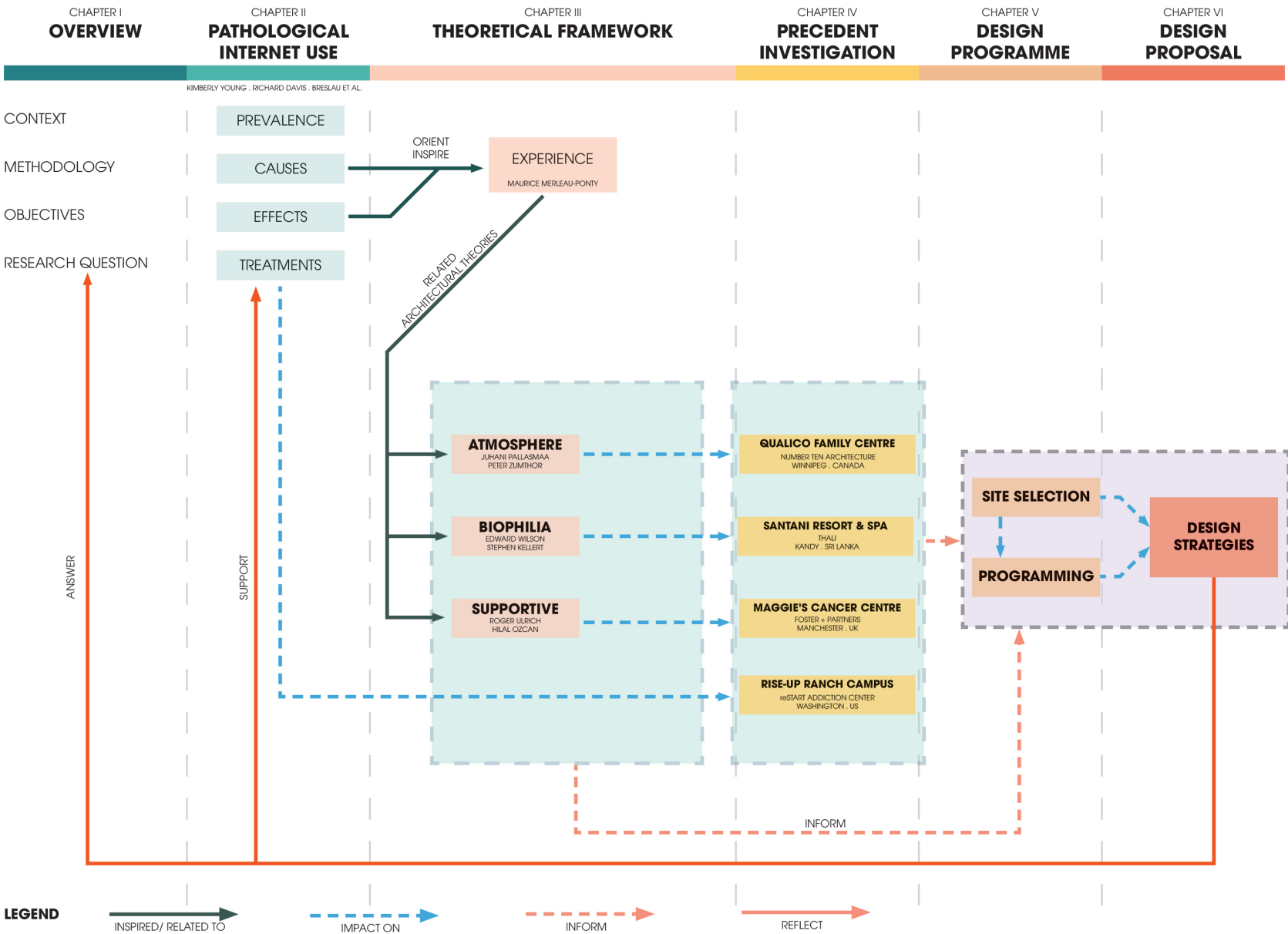


Figure 1. Practicum organization diagram illustrates the relationship between chapters.

21 The Huy Ninh, *Thesis Organization*, created November, 2019, digital illustration.

02.

PATHOLOGICAL INTERNET USE

- 2.1 CONTEXT & PREVALENCE
- 2.2 DISTINCTIVE CHARACTERISTICS OF THE INTERNET
- 2.3 PATHOLOGICAL INTERNET USE (PIU)
- 2.4 DEMOGRAPHICS
- 2.5 CAUSES
- 2.6 CONSEQUENCES
- 2.7 TREATMENT STRATEGIES

PATHOLOGICAL INTERNET USE

2.1 Context and Prevalence

The extraordinary development of technology and the rapid growth of the Internet has significantly changed our lives in different ways. Most daily activities, such as receiving and writing mails, purchasing groceries, or accessing information can be done easier and faster with the help of various online services. Social media sites such as Facebook, Instagram, and Twitter play a significant role in the young generation’s lifestyle and behaviours. The Internet became even more accessible with the help of smartphones and laptops. These changes have altered the relationship between individuals with themselves, the built environment, the natural world, and others.

Although the Internet has helped us in various aspects of life, it has some dangerous side effects that need to be addressed. Researchers have found that excessive Internet use could lead to psychological, physiological, and social problems. A study conducted in 1995 by Dr. Kimberly Young found over 600 cases of

people who had uncontrollable Internet use. These people also had to deal with real-life problems, including relationship and financial problems, along with a decrease in academic and professional performances.²² Erin Belfort and Lindsey Miller reported that there is a link between abusive Internet use and mental health problems, including self-injury and suicidality, through a study conducted in 2018 on North American Internet users.²³ In the UK, a study conducted in 2018 by Miles Richardson and Zaheer Husain, with the help of Professor Mark Griffiths at the University of Derby, United Kingdom, shows that excessive Internet usage, especially through smartphones, creates an undeniable disconnection between human and nature.²⁴ Other studies from other countries, including South Korea, China, and Iran, also point out the harmful effects of problematic Internet use.²⁵ These unintended consequences have negatively changed vulnerable Internet users’ lives in unique ways.

22 Young, “The evolution of Internet addiction,” 229.
23 Erin Belfort, and Lindsey Miller, “Relationship Between Adolescent Suicidality, Self-Injury, and Media Habits,” *Child Adolescent Psychiatric Clinical* (2018): 159 – 169.
24 Miles Richardson, Zaheer Huassain, and Mark Griffiths, “Problematic smartphone use, nature connectedness, and anxiety,” *Journal of Behavioral Addictions* 7, no. 1 (2018), 109 – 116, DOI: 10.1556/2006.7.2018.10.
25 Richardson, Zaheer Huassain, and Mark Griffiths, “Problematic smartphone use, nature connectedness, and anxiety,” 109 – 116.

2.2 The distinctive characteristics of the Internet

The Internet has four unique characteristics that set compulsive Internet use apart from other pathological behaviours or addictions. The first and foremost distinctive characteristic of the Internet is anonymity, which helps Internet users to hide their real-life identities. Associate Professor Keith Beard of Marshall University, West Virginia, pointed out in his report in 2005 that people find the Internet as a place to express their ideal self, which they cannot show in real life.²⁶ In cyberspace, they can be who they want to be. The Internet nowadays has many platforms for people to express their opinions, feelings, fantasies, and more. Popular online forums like *Reddit* or *ATRL* only require an email to sign up. These forums have hundreds of sub-forums focusing on various topics, from game to movie, from dating to sexual fantasies. With a throw-away email, one can sign up and access these sub-forums as well as discuss and express their feelings with like-minded people without being judged. In other words, the Internet offers its users the freedom they do not have in real life. The second defining characteristic of the Internet is the lack of security and regulation, which leads to cyberbullying and unhealthy online debate.²⁷ These harmful online interactions can easily lead to unease feelings or more serious mental health issues. Without a real consequence, Internet users tend not to hold back when discussing online. They can curse, call people by names, and other dirty words without being called out. Many celebrities have to take time off social media sites due to backlash or negative comments from anti-fans or ‘trolls’.

There are also cases of students and celebrities committing suicide due to cyber-bullying across the globe.²⁸ The third special characteristic is the accessibility of the Internet, which consequently puts Internet users at the risk of exposing to negative impacts at all times. According to the Canadian Internet Registration Authority, 97% of Canada’s population had access to the Internet at home by 2018. They also reported that Canadians are leaning toward portable devices such as smartphones and laptops to connect to the Internet. These numbers show that almost every Canadian can connect to the Internet just about anywhere at any time. Compared to substance addiction, this situation is equivalent to the scenario that the addicts have access to the substance (i.e. drug, alcohol) anywhere anytime. This accessibility is the main reason behind the high number of relapses in problematic Internet use, according to a report by Jerald Block in 2008.²⁹ The fourth and final characteristic of the Internet is interactivity. Unlike other media platforms, the Internet provides a space where the users can seek advice, discussion, gossip, and more without discrimination. As a result, Internet users rely on these online connections instead of face-to-face communication. The more dependent on these online services they are, the more time they spend on the Internet. Wang and Wang’s research on Internet users from the age of 19 to 60 shows that online social interaction is closely related to PIU.³⁰ These unique characteristics can couple up with each other, turning the Internet into a dangerous and unhealthy environment.

26 Keith Beard, “Internet Addiction: A review of Current Assessment Techniques and Potential Assessment Questions,” *CyberPsychology&Behavior* 8 (2005): 7 – 8.
27 Romeo Vitelli, “Can Compulsive Internet Use Affect Adolescent Mental Health?” *Psychology Today*, last updated January 6th, 2016, last accessed May 19th, 2019, retrieved from <https://www.psychologytoday.com/ca/blog/media-spotlight/201601/can-compulsive-Internet-use-affect-adolescent-mental-health>.
28 Sameer Hinduja, and Justin Patchin, “Bullying, Cyberbullying, and Suicide,” *Suicide Research* 14 (2010): 206 – 221. DOI: 10.1080/13811118.2010.494133.
29 Jerald Block, “Issues for DSM-V: Internet Addiction,” *Am J Psychiatry* 165 (2008), 3.
30 Edward Wang, and Michael Wang, “Social Support and Social Interaction Ties on Internet Addiction: Integrating Online and Offline Contexts,” *CyberPsychology, Behaviour, and Social Networking* 16, no.11 (2013), 843 – 849.

2.3 Pathological Internet Use (PIU)

There are two major streams of study defining abusive Internet use. The first one is the concept of Internet Addiction, which categorizes the phenomenon as a behavioural addiction. In 1996, Young conceptualized Internet Addiction by suggesting the disorder is akin to pathological gambling, which is defined as an impulsive control disorder without involving substance ingestion.³¹ Later on, in 2013, Griffiths et al. based on the principles of substance addiction to propose a definition of Internet Addiction:

(1) Salience: the Internet takes over the patient's life, controls their thinking, feelings, and behaviour even when they are not using the Internet.

(2) Mood modification: engaging with these activities might result in major emotional changes.

(3) Tolerance: the time invested in the Internet gradually builds up to achieve the desired mood.

(4) Withdrawal: any disruption of using the Internet could result in negative emotional and physical outcomes.

(5) Conflict: excessive Internet use could lead to conflicts between patients with other people, conflicts between activities, or self-conflicts.

(6) Relapse: the tendency of repeating excess Internet usage.³²

However, some authors argue that the Internet addiction narrative is a lack of a theoretical basis.^{33, 34} They criticize these studies for being misled by solely focusing on a symptom

(e.g., excessive Internet use). The origins and pathogenesis of this symptom were failed to be introduced. According to these researchers, this phenomenon is a group of all problems co-existing with abusive Internet use. The addiction concept failed to identify what people are addicted to.³⁵ This notion results in the second stream of defining abusive Internet use.

In this perspective, researchers lean toward defining problematic Internet use as a multidimensional syndrome rather than a behavioural cognition.^{14, 15, 16} Richard Davis proposes the term Pathological Internet Use (PIU), which is defined as "a dysfunctional pattern of cognitive and behavioural elements relating to one's Internet use and resulting in loss of control over one's behaviour and significant deterioration of one's social functioning, occupational functioning or functioning in another significant area."³⁶ This definition shows that excessive Internet users have a flawed pattern of cognitive-behavioural elements regarding Internet use. Davis suggests that these users struggle to connect to themselves, to society, and the surroundings. They then use the Internet as an instrument to express these negative feelings. He also includes the procrastination narrative as an element contributing to the excessive use of the Internet.³⁷ These Internet users exploit the Internet as a tool to delay tasks due to the lack of willpower. These actions lead to excessive and compulsive Internet interaction, which, in turn, negatively affects the user's social life, professional life, and other areas in their life.³⁸

2.4 Demographics

Although PIU is at an alarming rate to become a global epidemic, the majority of research on the affected demographics focuses on adolescents and young adults with the age range from 11 to 17 and from 18 to 31. This concentration comes from the point of view that these groups are better informed and more proficient in technology compared to other groups. Likewise, this group of young people not only grew up with the Internet and technology, but their work and education are also heavily dependent on it. This association with computers and smartphones puts them at risk more than the other age groups. Moreover, various studies indicate that adolescent and young adult males are more likely to associate with PIU than their female peers. In the research conducted by Ainin et al., which focuses on young adults from the age of 21 to 39, the male adult is observed to be more likely to have PIU: 53% of the male participants and 27.8% of the female participants showed positive connections with PIU.⁴¹ Morahan-Martin et al. studied a similar topic and came up with a similar result: 12% of the male participants and 3% of the female participants associated with PIU.^{42, 43} Another research on young adolescents conducted by Lee, Ko, and Chou suggests that the majority of male students with PIU are addicted to online gaming. At the same time, their female peers overuse the Internet for online social interaction.⁴⁴ This study shows that the male demographic is likely to have SPIU, which heavily implied in their association with online gaming addiction, pornographic addiction, and gambling addiction. Conversely, the female demographic

31 Kimberly Young, "Internet Addiction: The emergence of a new clinical disorder," Poster at the 104th Meeting of the American Psychological Association (Canada, 1996).
32 Halley Pontes, Daria Kuss, and Mark Griffiths, "Clinical psychology of Internet addiction: a review of its conceptualization, prevalence, neuronal processes, and implications for treatments, *Neuroscience and Neuroeconomics* 4 (2015): 11 – 23.
33 Richard Davis, "A cognitive-behavioral model of pathological Internet use," 187 – 195.
34 Nathan Shapira, Mary Lessig, Toby Goldsmith, Steven Szabo, Martin Lazoritz, Mark Gold, and Dan Stein, "Problematic Internet Use: Proposed Classification and Diagnostic Criteria," *Depression and Anxiety*, Vol. 17 (2003): 207 – 216.
35 Shapira et al, "Problematic Internet Use," 208 – 209.
36 Davis, "A cognitive-behavioral model of pathological Internet use," 188.
37 Davis, "A cognitive-behavioral model of pathological Internet use," 192.
38 Scott Caplan, "Preference for Online Social Interaction: A Theory of Problematic Internet Use and Psychological Well-Being," *Communication Research* 30, no. 6 (2003): 625 – 648.

Based on the origin of the disorder, Davis proposes that two types of PIU:³⁹

Specific Pathological Internet use (SPIU) links the Internet user's online activities to a particular addiction that they already have, such as gambling addiction or sex addiction.

Generalized Pathological Internet use (GPIU) connects with the discussed distinctive characteristics of the Internet. These Internet users employ the Internet to substitute face-to-face communication and other offline forms of interactions.

In other words, SPIU starts from one or more pre-existing disorders while GPIU comes from the lack of social support.

By categorizing PIU into these two groups, Davis sets this definition apart from the Internet Addiction narrative. However, this categorization does not change the symptoms that PIU patients have. Davis suggests that the symptoms identified by Young and Griffiths can still be used in his definition of PIU.⁴⁰ Hence, the symptoms of PIU are salience, mood modification, tolerance, withdrawal, conflicts, and relapse, as mentioned and explained above.

Moreover, with such a definition, Davis emphasizes on the differences between PIU and normal Internet use. While normal Internet use consists of every type of activity on the Internet, PIU is associated with the patient's pre-existing disorder, or their tendency to isolate from society. Although normal Internet users have the potential to become pathological Internet users, they need to meet one of the two said requirements or mentioned symptoms to be considered as one.

39 Davis, "A cognitive-behavioral model of pathological Internet use," 188.
40 Ibid., 193.
41 Sulaiman Ainin, Noor Ismawati Jaafar, Muhammad Ashraf, and Farzana Parveen, "Exploring the Role of Demographics and Psychological Variables in Internet Addiction," *Social Science Computer Review*, vol. 35, no. 6 (2017): 770 – 780.
42 Morahan-Martin and Schumacher, "Incidence and correlates of pathological Internet use among college students," *Computers in Human Behaviours*, vol. 16 (2000): 13 – 29.
43 According to Breslau et al., these research approach PIU with different criteria, resulting in different control groups and demography. Breslau et al., "Prevention and Treatment Strategies."
44 Yuan-Hsuan Lee, Chih-Hung Ko, and Chien Chou, "Re-visiting Internet Addiction among Taiwanese Students: A Cross-Sectional Comparison of Students' Expectations, Online Gaming, and Online Social Interaction," *J Abnorm Child Psychol*, vol. 43 (2015): 589 – 599.

is more likely to have GPIU, which shows in their pathological use of social network sites and interactive applications.

2.5 Causes

Multiple studies show that the distinctions between the two types of PIU are closely related to what causes them.^{45, 46} Davis et al. suggest that SPIU patients use the Internet as a mediate platform to satisfy their primary psychiatric disorders.⁴⁷ Shapira et al. identified at least one mental disorder predating PIU in a study in 2003. These disorders included mood disorders, substance use disorders, anxiety disorders, impulse control disorders, and personality disorders.⁴⁸ For instance, an individual with compulsive and pathological use of pornography has high chances to overuse and abuse pornographic materials online, leading to problematic Internet usage. This behaviour then becomes stronger and requires more explicit content, which can be easily accessed through the Internet. As a result, the individual demonstrates symptoms of SPIU.⁴⁹ This suggestion explains why a large portion of male adolescents and young male adults, who addicted to online gaming, also associate with SPIU. On the other hand, social context is a crucial element in forming GPIU. People with GPIU typically receive limited support from family and friends.⁵⁰ These patients spend most of their time on the Internet, either surfing or socializing with other Internet users through chat rooms, forums, and social media sites. Additionally, these patients use the Internet

to avoid their responsibilities, either professional tasks, school work, or daily functions. The more they procrastinate, the more pressure they face once they go offline. For that reason, they come back to the Internet as a stress relief method and as a way to avoid the stacked-up responsibilities. Moreover, face-to-face interaction tends to cause these Internet users social anxiety and stress. The Internet’s anonymity allows them to freely control and manipulate their self-presentation with less social risk and responsibilities. These mechanisms explain the indifferences in age and gender when it comes to GPIU. Although the two types of PIU develop under different circumstances, they both have similar substantial negative impacts on the patient’s life.

2.6 Consequences

Several studies reported that PIU was associated with a wide range of functional and psychological problems. Functional consequences include low life satisfaction, low academic and professional performance, lack of motivation, and poor physical health.^{51, 52, 53} For instance, Lam et al. point out the link between PIU and sleeping problems. This relationship is the reason pathological Internet users are 1.5 times more likely to suffer from sleep-deprivation compared to their peers.⁵⁴ Li et al. report that families with pathological Internet users face more challenges compared to other families. The individual tends to project their dissatisfactions onto their families so that the gap between parents and children

gradually gets bigger.⁵⁵ Psychological consequences are identified as social anxiety, attention deficit, hyperactivity disorder, depression, poor emotional well-being, high impulsivity, cognitive distortion, deficient self-regulation, higher mental distress, and loneliness.⁵⁶ Rucker et al. report that young pathological Internet users are likely to have substance use problems.⁵⁷ Gamez-Guadix et al. also back up this claim by confirming the relationship between young pathological Internet users with alcohol use through a longitudinal study in a group of 801 Spanish adolescents.⁵⁸ Moreover, a dozen of research linked physiological problems with extensive Internet use. Diomidous et al. suggest that musculoskeletal issues, headaches, and obesity are well-related to PIU.⁵⁹ Chern and Huang find the link between PIU and low health-related life quality, such as poor diet and physical inactivity.⁶⁰ Nalwa and Anand also indicate the relationship between excessive Internet use and sleeping deprivation in research on students in 2003.⁶¹ These studies show that abusive Internet use can cause psychological complications and physiological problems.

PIU not only affects pathological Internet users on a personal level but also accelerates the disconnection between them and nature. The more connected to the Internet one is, the more dependent they become. As a result, the gap between them and nature gets more prominent.

For example, people nowadays travel to places to show off on Instagram, Facebook, or Snapchat, not to experience the place. An Instagram account called Insta_Repeat was created to show how people take the same photo at the same place to demonstrate the significant influence the Internet has on human perception and behaviours.⁶² It is worse in the case of pathological Internet users who stick with their Internet-connected devices most of the time. Their behaviours are bound to these digital devices. Richardson et al. reveal the relation between smartphone use and nature-connectedness through a study of 310 smartphone users with an average age of 29.72 years: 75% of the participants show the connection between excessive smartphone use and a decrease in nature-connectedness.⁶³ Richardson et al. also propose that natural exposure may be the key to enhance the treatment strategies for pathological Internet users because nature can provide a psychological break from Internet usage.⁶⁴

2.7 Treatment strategies

As an emerging discipline that is full of unresolved aspects, treatment strategies for PIU require more research and studies. Breslau et al. reviewed 10 PIU treatment studies from 2008 to 2015 to look for the most potential PIU treatment strategies. They emphasize the disagreement between researchers on whether treatment

45 Davis, “A cognitive-behavioral model of pathological Internet use,” 193.
46 Shapira et al, “Problematic Internet Use,” 208 – 209.
47 Davis, “A cognitive-behavioral model of pathological Internet use,” 193.
48 Shapira et al, “Problematic Internet Use,” 208 – 209.
49 Davis, “A cognitive-behavioral model of pathological Internet use,” 193.
50 Ibid.
51 Amandeep Dhir, Sufen Chen, and Marko Nieminen, “A repeat cross-sectional analysis of the psychometric properties of the Compulsive Internet Use Scale (CIUS) with adolescenets from public and private schools,” *Computer and Education* 86 (2015): 172 – 181.
52 Phil Reed, and Emma Reay, “Relationship between levels of problematic Internet usage and motivation to study in university student.” *High Education* 70 (2015): 771 - 723.
53 Kevin Kelly, and Elon Gruber, “Problematic Internet use and physical health,” *J Behaviour Addictions* 2 (2013): 108 – 112.
54 Lawrence Lam, “Internet gaming addiction, problematic use of the Internet, and sleep problems: a systematic review,” *Current Psychiatry Reports* 16 (2014): 1 – 9.

55 Wen Li, Eric Garland, and Matthew Howard, “Family factors in Internet addiction among Chinese youth: a review of English and Chinese-language studies,” *Computer Human Behavior* 31 (2014): 393 – 411.
56 Pontes et al., “Clinical psychology of Internet addiction,” 13.
57 Jeanie Rucker, and Christina Akre, Andre Berchtold, Joan-Carles Suris, “Problematic Internet use is associated with substance use in young adolescents,” *Acta Paediatrica* 5 (2015): 504 – 507.
58 Manuel Gamez-Guadix, and Esther Calvete, Izaskun Orue, Carlota Las-Hayas, “Problematic Internet use and problematic alcohol use from the cognitive-behavioral model: a longitudinal study among adolescents,” *Addictive Behaviors* 40 (2015): 109 – 114.
59 Marianna Diomidous, and Chardalias Kostis, Adrianna Magita, Panagiotis Koutonias, Paraskevi Panagiotopoulou, and John Mantas, “Social and Psychological Effects of the Internet use,” *Journal of Academy of Medical Sciences of Bosnia and Herzegovina* 24 (2016): 66 – 68.
60 Kae-Chyang Chern, and Jiun-Hau Huang, “Internet addiction: Associated with lowe health-related quality of life among college students in Taiwan, and in what aspects?” *Computers in Human Behavior* 84 (2018), 460 – 466.
61 K Nalwa, and AP Anand, Internet addiction in student: a causes of concern, *CyberPsychology and Behavior* 6 (2003), 653 - 656.
62 Annabel Elliott, “Comical proof that all travel bloggers’ Instagram photos are essentially clones,” *Telegraph UK*, last edited on August 8th, 2018, accessed on December 16th, 2018, retrieved from <https://www.telegraph.co.uk/travel/news/proof-all-instagram-travel-bloggers-photos-are-the-same/>.
63 Richardson, Hussain, and Griffiths, “Problematic smartphone use, nature connectedness, and anxiety.”
64 Ibid.

approaches should focus on abstinence or harm reduction.⁶⁵ Researchers, who classify PIU as an addiction similar to substance addictions, prefer abstinence as a PIU treatment method. The strategy requires pathological Internet users to cut off completely their Internet use.⁶⁶ Harm reduction, on the other hand, refers to the reduction or limited use of the Internet to avoid adverse outcomes relating to PIU. This intervention strategy is preferred because it is more friendly, attractive, and realistic than abstinence.⁶⁷ Breslau et al. conclude that it is best to combine the two approaches: focus on continued harm reduction after a period of temporary Internet abstinence and technology detoxification.⁶⁸ The following part illustrates various PIU treatment proposals, which are currently being examined and applied.

A few studies examine the efficiency of pharmacological treatments on pathological Internet users. Han, Hwang, and Renshaw used an anti-depression drug called bupropion to treat 62 young Internet video game players diagnosed with attention-deficit hyperactivity disorder. They witnessed a decrease in PIU symptoms such as hunger for Internet and video game use. In another study, Shapira et al. discovered that mood stabilizers also improve the pathological Internet user's condition. However, these researchers agree that this treatment strategy requires more studies due to low methodological quality.

Physical exercise is also suggested as an approach to treat PIU. Researchers argue that physical activities can compensate for the decrease in the dopamine level in the brain.⁶⁹ Some studies propose that physical exercise with

a well-studied schedule can work as a support program for the cognitive behavioural therapy approach, enhancing the effect of the intervention on PIU.⁷⁰ In other words, physical exercises have the potential of a supporting treatment rather than the primary treatment.

NBT, which utilizes the restorative ability of nature, is also mentioned in a few studies. The therapy revolves around nature, using sensorial experiences, horticultural activities, and nature-related stories within a mindfulness-based cognitive therapy approach to treat patients. Several therapeutic gardens in Europe were built with this purpose.⁷¹ reSTART program, which is led by Hilarie Cash and Cosette Rae, claims to successfully treat pathological Internet users by providing NBT mixed with CBT.⁷²

Out of all the proposed treatments, researchers and practitioners lean towards CBT as the therapy demonstrates its effectiveness in treating patients with other psychopathological disorders, including depression, anxiety, pathological gambling, and substance addiction. CBT works by targeting both maladaptive thoughts and problematic behaviours and equipping them with coping strategies, emotions management, self-monitor techniques.⁷³ In treating pathological Internet users, researchers and therapists use CBT to control maladaptive thoughts and understand the triggers. Patients are also taught different coping strategies and Internet use management techniques. This treatment approach also requires PIU patients to identify and address their comorbid psychological problems in the case of SPIU. They are encouraged to find support from

65 Breslau et al., "Prevention and Treatment Strategies."

66 Young, "The Evolution of Internet Addiction Disorder."

67 Breslau et al., "Prevention and Treatment Strategies," 17.

68 Ibid.

69 Cash et al., "Internet Addiction," 294.

70 Zhang Lanjun, "The applications of group mental therapy and sport exercise prescription in the intervention of Internet addiction disorder," *Psychological Science* 32 (2009): 783 – 741.

71 Sus Corazon, Ulrika Stigsdotter, Anne Jensen, and Kjell Nilsson, "Development of the Nature-Based Therapy Concept for Patient with Stress-Related Illness at the Danish Healing Forest Garden Nacadia," *Journal of Therapeutic Horticulture XX* (2010): 35 – 51.

72 Cash et al., "Internet Addiction," 295.

73 Breslau et al., "Prevention and Treatment Strategies," 18.

real life, such as family, friends, and professional practitioners.⁷⁴ A study conducted by Li and Dai in 2009 examined the efficiency of CBT among 12 Chinese male adolescents. The results show promising outcomes with a significant decrease in negative cognition associating with PIU.⁷⁵ These studies indicate the crucial role of CBT in treating pathological Internet users.

CHAPTER SUMMARY

Along with all the convenience the Internet has brought to our life, Pathological Internet Use (PIU) is one of the unwanted consequences. The pathological disorder associated with a wide range of functional and psychological problems, including low life satisfaction, low academic and professional performance, lack of motivation, attention deficit, depression, and more. PIU patients tend to stay indoors for an extended period, thus disconnect with the outdoors and isolate from society. As a result, they face the harmful effects of nature deficit disorder and social anxiety.

The virtual space possesses four distinctive characteristics associated with PIU, including anonymity, the lack of security and regulation, accessibility, and interactivity. These traits potentially lead to two types of PIU: Specific Pathological Internet Use (SPIU) and Generalized Pathological Internet Use (GPIU). While SPIU evolves and revolves around the pre-existing comorbid disorders, GPIU is associated with interpersonal problems. Although different factors cause them, the two PIU types display similar symptoms, including salience, mood modification, tolerance, withdrawal, conflict, and relapse.

Various treatments have been researched and proposed. Although extensive studies on PIU treatments have been done, the majority of researchers suggest that more research needs to be performed to have a more effective treatment. Researchers and physician's consensus on PIU treatment are leaning towards CBT, with the addition of physical exercises and occasional medications use.

74 Breslau et al., "Prevention and Treatment Strategies," 18.

75 Breslau et al., "Prevention and Treatment Strategies," 18 – 19.

03.

LITERATURE INVESTIGATION

- 3.1 MERLEAU-PONTY AND EMBODIMENT - THE LIVED BODY
- 3.2 PATHOLOGICAL INTERNET USE THROUGH MERLEAU-PONTY'S PERSPECTIVE
- 3.3 CONNECTION WITH NATURE
- 3.4 CONNECTION WITH THE BUILT SPACE
- 3.5 CONNECTION WITH THE OTHERS

THEORETICAL FRAMEWORK

LITERATURE INVESTIGATION

1.

What is the role of architecture and interior space in supporting the Pathological Internet Use patient’s treatment process?
2.

What could design strategies be employed to accommodate nature-based therapy in the Manitoban climate?

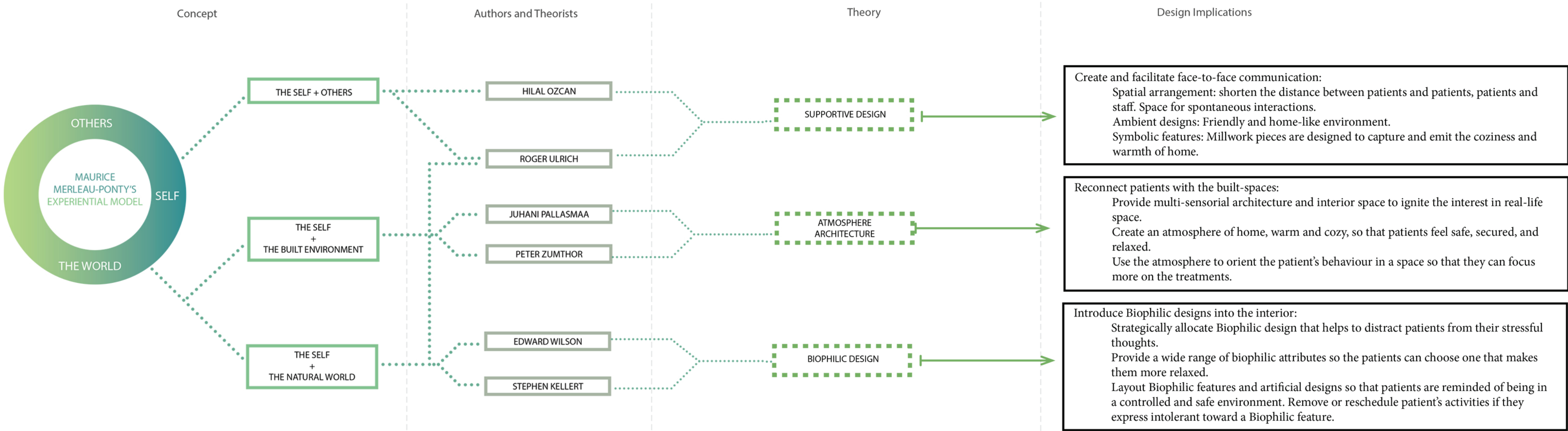


Figure 2. Theoretical Framework

LITERATURE INVESTIGATION

Introduction

As this Practicum Project questions the role of architecture and interior space in supporting PIU treatment at *re:intent*, the relationship between the two needs to be investigated. In Chapter 2, it is indicated that PIU patients tend to substitute their real-life experience with equivalent experiences in the virtual space. This phenomenon inspires the author to analyze and compare the two types of experience in order to understand the appeal of the virtual world. This investigation dives deeper than to further the discussion in Chapter 2 by showing the philosophical aspect of PIU patients' life in the virtual world. Through psychological, philosophical, and architectural research, the investigation arrives at the existential questions concerning the nature of an individual's life and experience in the real world and the virtual space. The works of Maurice Merleau-Ponty provide valuable insights into this situation.

Merleau-Ponty's works are relevant and closely related to this Practicum project. In his short-lived career, Merleau-Ponty focuses on the experience of individuals in the world, which lays the groundwork for his other concepts and ideas, such as the relationship between individuals and the world and the others, behaviour, embodiment, and aesthetic. These concepts and ideas inspire

writers in other disciplines, namely psychology and architecture, to further explore the issues in their fields of work. In this document, the author focuses on Merleau-Ponty's concept of being-in-the-world, which explores the experience of individuals in the real-life setting and the virtual space environment. This concept helps to explain the experience PIU patients have in the two settings. Merleau-Ponty's works on body-schema and Don Ihde's study on individual and technology further the discussion by differentiating the relationship between individuals with architecture and the Internet. Additionally, Merleau-Ponty's experiential model that shows the basis of human interaction, helps to indicate the differences between real-life relationships and online relationships. These studies lay the groundwork for architectural and spatial design solutions in supporting PIU treatments in this project. In short, Merleau-Ponty's works play a crucial role in both the psychological and architectural analysis of this study. The following section explores Merleau-Ponty's phenomenological works concerning PIU and related architectural and interior design theories (refers to figure 2).

The first section introduces Merleau-Ponty's concept of embodiment and other concepts that are discussed in this document, including being-

in-the-world, the lived body, body schema, and intercorporeality. These concepts present a close relationship between individuals and the world, as well as individuals with the Others, establishing the basis for the following analysis regarding PIU and PIU retreat environment.

The second section examines PIU through Merleau-Ponty's works. This section shows how PIU affects PIU patients using the concept of body schema with the support from Don Ihde's take on the relationships between humans and technology.

The third section discusses the relationship between individuals and nature. As PIU patients connect with nature through mediated devices (computer screen and Virtual Reality (VR) set) in a compulsive way, their connection with nature, which is associated with a wide range of health and well-being benefits, may be damaged. Edward Wilson's works on Biophilia and Stephen Kellert's recommendations for Biophilic Design are investigated as possible methods to support PIU patients' treatment by reconstructing their connection with nature through architecture and interior design.

The fourth section investigates the relationship between individuals and the built world. PIU patients tend to detach themselves from their surroundings when entering the virtual space. Their body schema may change in a negative direction as their dependence on the virtual space increases. Atmospheric Architecture, a concept proposed by Juhani Pallasmaa and further explored by Peter Zumthor, is discussed as an attempt to rebuild PIU patients' connection with the built space.

Lastly, the fifth section discusses the relationship between

individuals and the Others. PIU patients substitute their offline social life with online social life, directly impacting their relationships with family and friends. The theory of Supportive Design, proposed by Roger Ulrich and extended by Hilah Ozcan, are explored to restore PIU patients' social life through interior design.

3.1 Merleau-Ponty and Embodiment The Lived Body

Embodiment and Experiential Model

As mentioned above, the phenomenological theories of Merleau-Ponty focus on the experiences of individuals in the world. By contrasting the traditional concept of body and soul, Merleau-Ponty creates his experiential model that is dialogical and relational to explain what we are as human beings and our relationship with the world and other human beings.⁷⁶ This experiential model suggests that psychologically, we possess a consciousness and pre-reflective bodily awareness. They influence how we think, act, and react. Merleau-Ponty emphasizes that bodily experiences come before intelligence and are fundamentally body-bound.⁷⁷ Through the lived-body, or more specifically, through our senses, we

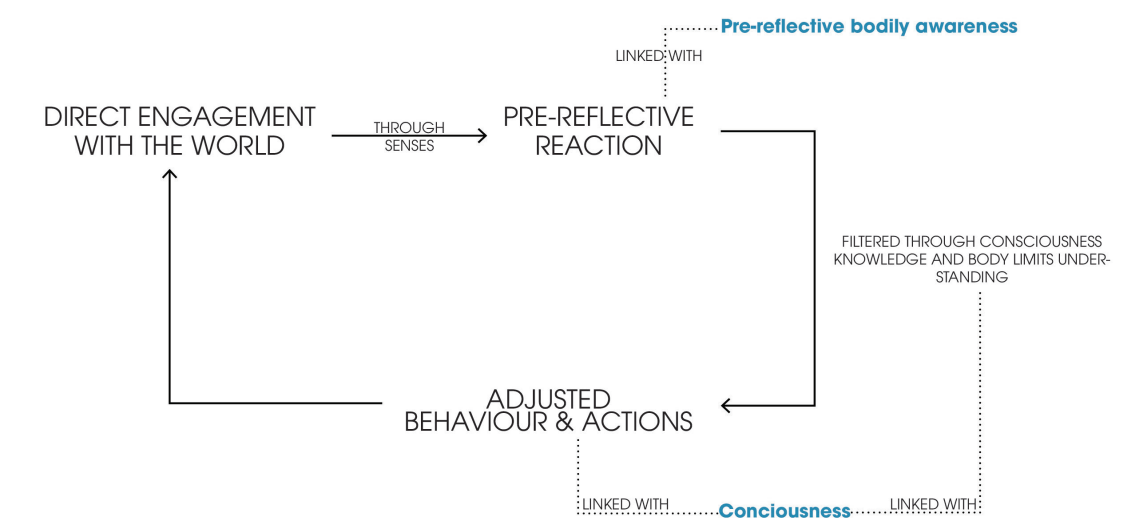


Figure 3. Merleau-Ponty's Experiential Model.

⁷⁶ Maurice Merleau-Ponty, *Phenomenology of Perception* (London: Routledge, 2002), 207 - 384.

⁷⁷ Merleau-Ponty, *Phenomenology of Perception*, 67 - 206.

experience the world and gain an understanding of our bodily limits.⁷⁸ This experiential process involves both pre-reflective bodily awareness and consciousness. As shown in figure 1, the process starts at the direct engagements with the world through our senses and leads to pre-reflective reactions. Such interactions are filtered through our knowledge of the situation and our understanding of body limits, producing adjusted reactions and behaviours.⁷⁹ In short, we experience the world in relation to ourselves through our perspectives.

This notion of an embodiment shows the potential of influencing people's actions and behaviours by manipulating their physical surroundings. Because we are fundamentally embodied, our consciousness is also embodied.⁸⁰ Inversely, changes in physical space can affect certain aspects of the physical body, influencing consciousness is also influenced, leading to adjustments in actions and behaviours. For example, the concept of home is popularly used in designing hotels and resorts because it associates with the idea of safety and comfort.⁸¹ By imitating specific characteristics of the home, these spaces evoke a sense of familiarity in the visitor, making them feel safer and more comfortable. This phenomenon can be explained through the phenomenological lens of Merleau-Ponty's theories. For example, a hotel room designed with an essence of a warm and cozy home triggers the visitors' reflective consciousness, making their body react to that space the same way it reacts to their home: relaxed and comfortable. After this

first impression, the visitors feel at ease whenever they are in the room because their consciousness has developed this sense of familiarity. Although Merleau-Ponty does not directly write about architecture and design, as English Architectural writer Jonathan Hale suggests, his embodiment concept lays the groundwork for the majority of architectural theories, especially the ones employed in this Practicum project.⁸² The following section introduces some of Merleau-Ponty's concepts that are mentioned and employed in the discussion of this document, including the concept of embodiment, the lived-body, body schema, and intercorporeality.

Being-in-the-world

First developed by Heidegger in *Being and Time* and later extended by Merleau-Ponty in *Phenomenology of Perception*, the notion of being-in-the-world expresses the way humans fundamentally exist in the solid relationships with the spaces, objects, and others (refer to figure 4).⁸³ However, the world is not only a spatial dimension where we exist⁸⁴, it is where we live our lives with

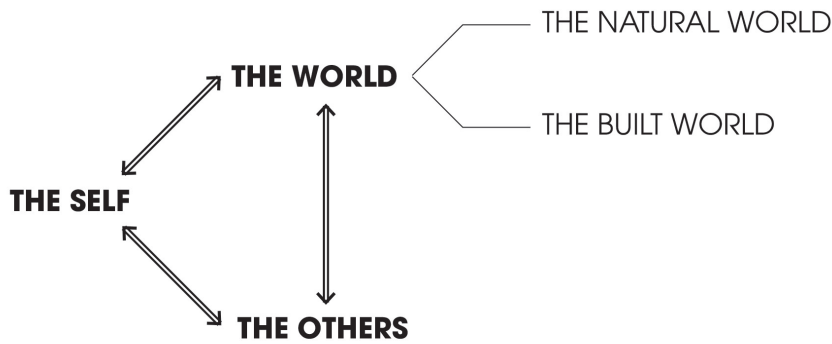


Figure 4. The relationship between the self, the world, and the others.

78 Ibid.
79 Merleau-Ponty, *Phenomenology of Perception*, 207 - 384.
80 Merleau-Ponty, *Phenomenology of Perception*, 67 – 206.
81 Gaston Bachelard, *The Poetic of Space* (Boston: Beacon Press, 1994), 38 - 73.
82 Jonathan Hale, *Thinkers for Architects 13: Merleau-Ponty for Architects*, (Newcastle: Routledge, 2016), 5 - 8.
83 Scot Barnett, "Being-In-The-World," *Psychoeographies of Writing (blog)*, Clemson University (n.d), retrieved from <http://kairos.technorhetoric.net/16.3/topoi/barnett/being.html>.
84 Eric Matthews, *The Philosophy of Merleau-Ponty* (Quebec: McGill-Queen's University Press, 2002) mentioned in Scot Barnett, "Being-In-

activities, convey intellectual thoughts, express emotional responses, and project imaginations. We live *in* the world, not observe the world from the *outside*. Being-in-the-world, thus, is our experience that involves the process of learning, exploring, and understanding the world, each other, and ourselves.⁸⁵

The lived-body

According to Merleau-Ponty, the body is the foundation of human existence. In *Structure of Behaviour*, he argues that the body only acts and reacts with its intentional relation to the contextual world.⁸⁶ In *Phenomenology of Perception*, he extends this analysis, suggesting that our body expresses our existence, which is opaque and fundamentally ambiguous.⁸⁷ Such characteristics are created because we have no clear separation between personal (subjective) and impersonal (objective) sides. The personal side is our consciousness, helping us understand, own, and choose. The impersonal side, in turn, is our pre-reflective bodily awareness, associating with unconsciousness and is outside of our control. These two sides are inseparable and are the basis of the ambiguity and complexity of our existence.

Body-schema

Body schema is a concept that Merleau-Ponty borrowed and developed from previous studies in psychology.⁸⁸ In *Phenomenology of Perception*, Merleau-Ponty suggests that body schema is a complex network of interrelated situational patterns of behaviours. It is the result of our continual interaction with the world. It relies on the body's senses of orientation and position

in space, as well as the relationship between body parts.⁸⁹ Through the two experiments, one with the blind man with a cane and the other with the woman with the feathered hat, Merleau-Ponty shows that body schema can extend to external instruments and consequently adjust over time. Precisely, the blind man naturally moves around with his cane without hitting any object. The man's body schema extends to the cane, while the cane becomes his visual and spatial perception. Similarly, the woman with the feathered hat changes her posture so that the feather would not hit the door frame when she walks through a door. Her body schema, in this situation, extends to the feathered hat, giving her a new spatial perception. This adjusted body schema helps her move around without knocking off the feather. The two experiments illustrate that body schema is situational and adjustable.⁹⁰

Intercorporeality

Intercorporeality is a notion proposed by Merleau-Ponty emphasizing the embodied characteristics of social interaction. It is where the perception-action loops between one and the other occur.⁹¹ Merleau-Ponty points out that when we perceive other people's actions, we unconsciously react by mirroring the actions or its possibilities, as well as responding to such action with pre-reflective movements. According to Shogo Tanaka, intercorporeality enhances the understanding of social cognition because it focuses on the connection between one's body and that of the other.⁹²

The-World."
85 Matthews, *The Philosophy of Merleau-Ponty*.
86 Maurice Merleau-Ponty, *Structure of Behaviour* (Boston: Beacon Press, 1967), 93 -123.
87 Merleau-Ponty, *Phenomenology of Perception*, 67 - 206.
88 Hale, *Thinkers for Architects* 13, 14.
89 Ibid.
90 Ibid.
91 Shogo Tanaka, "Intercorporeality as a theory of social cognition," *Theory and Psychology* 25, no. 4 (2015), 455 - 472, DOI: 10.1177/0959354315583035.
92 Tanaka, "Intercorporeality as a theory of social cognition," 460 – 468.

3.2 Pathological Internet Use through Merleau-Ponty's perspective

As previously mentioned, the experiments with the blind man with a cane and the woman with the feathered hat show that body schema can change by incorporating objects into it.⁹³ The cane becomes the blind man's visual perception, while the feathered hat becomes a part of the woman's body schema. These changes in body schema effectively change their way of projecting their embodiment into the world. These extensions allow us to find meanings in the world.

Our body is not merely one expressive space among all others... Our body, rather, is the origin of all the others... it projects significations on the outside by giving them a place and sees to it that they begin to exist as things, beneath our hands and before our eyes.⁹⁴

Technological devices such as computers, laptops, VR sets allow us to expand visual, auditory, spatial, and even temporal perception. The use of technological devices can change our body schema in meaningful ways. These devices, after all, are instruments that help us project our embodiment to the physical world and onto virtual space. However, compulsive use of the Internet can be harmful. Hubert Dreyfus warns us that extensive Internet use can prevent the users from getting "a maximum grip on the world that gives us our sense of the reality of things."⁹⁵ Marshall McLuhan also emphasizes that these instruments can numb the body part that they

amplify.⁹⁶ Don Ihde, when expanding Merleau-Ponty and Heidegger's theoretical works, points out that these instruments incorporate into the body schema, inevitably extending one or more senses. Once incorporated, the instrument becomes transparent, and the human-technology relationship transforms into, as Pallasmaa says, "a simultaneous sensory-extension-reduction-relation."^{97, 98} The use of a telephone can illustrate this statement: it extends the user's auditory sense while reducing the other senses.

However, the relationship between PIU patients and the Internet cannot be seen simply as an act of extending the body schema. There is an interplay between the patients and the Internet. If the child's play, which is discussed in *Structure of Behaviour*, is an entirely different mode of being-in-the-world compared to the child's everyday life-world, PIU is also PIU patients' distinct mode of being-in-the-world.⁹⁹ During the child's play, the world is seen differently. A tree branch becomes a stick. A table becomes a house. During the play, the child transforms its playthings into something else - something meaningful. After the play, these playthings turn back into a stick and a table. Through the play, the child creates a meaningful structure that only exists during that play.¹⁰⁰ Similarly, the relationship between PIU patients and the Internet creates a new mode of being-in-the-world. During the compulsive use, they develop a structure that is meaningful to them. The Internet changes the patient's mode of being-in-the-world. They turn into a vicious critic,

joining arguments to express their opinions in aggressive ways. Their pre-existed disorders get worse and more aggressive. The Internet creates a meaningful world for PIU patients, but unlike the child's play, the patients are dependent on the Internet more than the child depends on its toys. Their life revolves around these Internet-world views because they need the Internet to satisfy their needs. They substitute their real-life relationships with online ones. Online activities replace their education and career, while online friends replace their family and friends.

These negative changes in body schema and being-in-the-world lead to various negative consequences, as discussed in Chapter 2. The numbness, disembodied feelings, and the decrease in physical strength may be the result of the excessively and problematically extended body schema. The changes of being-in-the-world mode may also be the cause of psychological issues such as anxiety disorder and depression. In other words, PIU creates significant changes in body schema and being-in-the-world mode, leading to the disconnection between the patients with themselves, with the world, and with others.

As PIU patients go through treatments, their mode of being-in-the-world is reconstructed and reversed back to the normal state without the influence of the Internet or PIU. Architecture and interior space in the PIU retreat environment support the treatments by providing the designs that enhance their embodiment and create a healthy mode of being-in-the-world. The following sections explore the relationship between PIU patients with the world and the others to gain more understanding and inform the design decisions.

3.3 Connection with Nature

In *Phenomenology of Perception*, Merleau-Ponty emphasizes that as embodied entities, we perceive the world as a whole, not as a collection of separate qualities.¹⁰¹ Our bodily knowledge of an object gradually emerges and continuously evolves. The more we encounter an object, the more qualities we can perceive. Once we gain enough experience with that object, we tend to merge its qualities unconsciously. Merleau-Ponty uses the example of a lemon's colour and taste to illustrate this idea: "it is the sourness of the lemon, which is yellow; it is the yellow of the lemon, which is sour."¹⁰² After various encounters with lemon, the colour and the taste, or visual and gustatory quality, we associate them with one another. From that moment of realization, a yellow lemon will always be sour, and such a sour taste will remind us of a yellow lemon. The qualities are bound to the object, and thus, we perceive them all together.

My perception is (...) not a sum of visual, tactile, and audible givens. I perceive in a total way with my whole being: I grasp a unique structure of the thing, a unique way of being, which speaks to all my senses at once.¹⁰³

The world possesses infinite sensorial qualities that ignite the desire to explore. We are drawn into this world of enriched sensorial qualities to satisfy our curiosity. With what it can offer, nature encourages us to explore and investigate. These activities, as Pallasmaa said, anchor us in the world.¹⁰⁴ In other words, the natural world signifies embodied experience, enhancing our connection with nature.

93 Merleau-Ponty, *Phenomenology of Perception*.
94 Ibid.
95 Hubert Dreyfus, *On the Internet* (New York: Routledge, 2001), 6 – 7.
96 Marshall McLuhan, *Understanding Media* (London: Routledge, 2001), 63 – 70.
97 Phillip Brey, "Technology and Embodiment in Ihde and Merleau-Ponty," *Metaphysics, Epistemology, and Technology. Research in Philosophy and Technology*, vol. 19, ed. C. Mitcham (London: Elsevier/ JAI Press, 2000).
98 Marga Viljoen, "Embodiment and the experience of built pace: The contributions of Merleau-Ponty and Don Ihde," *South African Journal of Philosophy vol.29* (2010): 306 – 329.
99 Merleau-Ponty, *Structure of Behaviour*, discussed in Kevin Standish, "The Experience of Addiction: An Exploration of the Being-In-The-World of The Substance Dependent Person," (2012).
100 Bertha Mook, "Imagineative Play in Child Psychotherapy: The Relevance of Merleau-Ponty's Thought," *Journal of Phenomenological Psychology vol.29*, no. 2 (1998), discussed in Standish, "The Experience of Addiction: An Exploration of the Being-In-The-World of The Substance Dependent Person," (2012).

101 Merleau-Ponty, *Phenomenology of Perception in Hale, Thinkers for Architects 13*, 65.
102 Maurice Merleau-Ponty quoted in Hale, *Thinkers for Architects 13*, 39.
103 Maurice Merleau-Ponty, *The film and the new psychology*, in Id., Sense and non-sense, Evanston (Northwestern University Press: 1964) quoted by Juhani Pallasmaa, "Space, Place and Atmosphere. Emotion and peripheral perception in architectural experience," *Lebenswelt* (2014).
104 Juhani Pallasmaa, "Body, Mind, and Imagination: The Mental Essence of Architecture," in *Mind in Architecture: Neuroscience, embodiment, and the future of design*, ed. Sarah Robinson, and Juhani Pallasmaa (Cambridge: The MIT Press, 2015), 52.

Biophilia

Biophilia is the inclination towards the natural environment, expressing through nine fundamental values of nature (refers to table 1), which Stephen Kellert identifies in his book *Building for Life*.¹⁰⁵ These values are the result of human interpretation and analysis of nature’s sensorial qualities.¹⁰⁶ In 1986, Edward Wilson coined the term Biophilia in *Biophilia Hypothesis*, stating that it is an innate, inherent affection that we have toward nature.¹⁰⁷ In his 2005 book, *Building for Life*, Kellert points out that these inherent affinities are not only weak and subtle genetic tendencies but also highly dependent on learning, experience, and culture to be fully expressed and functioned.¹⁰⁸ He also explains that these tendencies developed through our evolution and remained until today because they enhance individuals and society in different, subtle, and sophisticated ways to adapt and survive.¹⁰⁹ In other words, after thousands of years of evolution, through natural selection, we inherently know what is dangerous and what is safe.

As a result, our reactions to these nature’s sensorial qualities varied from people to people. Kellert suggests these variations of reaction is closely related to cultural and personal experience.^{110, 111} For instance, in many cultures, snakes are described as evil and malicious creatures, but there are also places where snakes are respected and worshipped. In Nordic mythology, the World Serpent Jormungand is seen as a vicious monster and responsible for

Table 1. Nine Biophilic values

Value	Meaning
Aesthetic	Physical appeal of and attraction to nature
Dominionists	Mastery and control of nature
Humanistic	Emotional attachment to nature
Moralistic	Moral and spiritual relation to nature
Naturalistic	Direct contact with and experience of nature
Negativistic	Fear of and aversion to nature
Scientific	Study and empirical observation of nature
Symbolic	Nature as a source of metaphorical and communicative thoughts
Utilitarian	Nature as a source of physical and material benefits

Source: Stephen Kellert, *Building for Life: Designing and Understanding the Human-Nature Connection* (Washington DC: Island Press, 2005).

Ragnarok, the Nordic apocalypse.¹¹² Apophis is the Egyptian snake God, an enemy of sun God Re, representing the underworld and symbolizing evil.¹¹³ However, Nguia, a snake with a woman’s head, is the Goddess of Marriage, who plays an essential role in Chinese mythology.¹¹⁴ King Cobra Nagas, a godly cobra, is also worshipped and

respected across Western India.¹¹⁵ These cultural depictions, along with personal experience, create a wide range of emotional reactions toward snakes. Each of us has a different experience with snakes. Some only see them on TV; some have faced them in real life in a friendly way; others, fatal encounters. These experiences lead to a wide range of responses: some people are scared of snakes, some indifferent, some admire them. Kellert believes these reactions occur along a continuum spectrum, varying from extreme intolerance to extreme affection.¹¹⁶ The Biophilic Design features, thus, need to be strategically allocated and designed so that occupants understand that they are in a controlled and safe environment. If the reactions lean toward the intolerant end, reducing contact or removing patients out of the space should be considered.

Through Merleau-Ponty’s points of view, these characteristics of Biophilia can be easily explained using the embodiment concept and the aforementioned tendency of merging sensorial qualities. As embodied entities, our experience comes from within and affected by the outer environment. Hence, Biophilia is the result of both subjective and objective experiences. Moreover, as we tend to merge sensorial qualities, natural features tend to have a certain stereotype that we assign to them. For instance, although not all snakes are venomous or aggressive, most people still react negatively when they encounter one. From their perspectives, snake and snake-like creatures are dangerous and avoiding or stopping them is the most appropriate response.

Biophilic Design

Biophilic Design is the architectural and spatial design application of Biophilia. It is one

of the most significant design movements in reconnecting humans with nature in the last few decades. Biophilic Design fundamentally focuses on creating positive and valuable experiences of nature for humans in the built environment. Bringing these natural archetypes into buildings would have tremendous impacts on the occupant’s health and well-being. As discussed earlier, each person has different reactions to nature and natural attributes. Grant Hildebrand suggests that designers can bring simulation of nature into the designed space as a possible solution to prevent said extreme reactions from occupants.¹¹⁷ This suggestion means the Biophilic attributes do not require to be a literal feature of nature, but the symbolized versions that deliver the essence of such attributes are enough. However, it does not mean nature simulations can replace the natural environment. Ulrich suggested that the health and well-being impacts from nature are more effective than its simulations over long-term exposure thanks to the on-going visual changes and multisensory stimulation in the real environment.¹¹⁸ This effect also explains how nature in virtual space cannot replace true nature. Despite the ability to mimic nature, the digital realm still falls short compared to the real one over long term exposure.

Biophilic Design Attributes

To help architects and designers navigate in the world of Biophilia, Browning et al. have identified 14 Biophilic Patterns as well as the psychological and physiological effects associated with them (refers to table 2). These patterns are divided into three categories – Nature in Space, Natural Analogues, and Nature of the Space.

105 Stephen Kellert, *Building for Life: Designing and Understanding the Human-Nature Connection* (Washington DC: Island Press, 2005), 34.
106 Kellert, *Building for Life*, 1 - 7.
107 Edward Wilson, *Biophilia Hypothesis* (Cambridge: Harvard University Press, 1984).
108 Kellert, *Building for Life*, 4.
109 Ibid.
110 Kellert, *Building for Life*, 4.
111 To focus on PIU and related issues, this practicum will not go deeper on this issues. More analysis and information are provided in Roger Ulrich, “Biophilia, Biophobia, and Natural Landscapes,” in *The Biophilia Hypothesis*, ed. Edward Wilson (Washington DC: Island Press, 1993), and Kellert, *Building for Life*.
112 Go Mandt, “Fragments of Ancient Beliefs: The Snake as Multivocal Symbol in Nordic Mythology,” *ReVision Publishing* vol. 23, no. 1 (2000).
113 Britannica, “[Apopis: Egyptian God](https://www.britannica.com/topic/Apopis-Egyptian-god),” *Britannica*, last updated February, 19th, 2020, last accessed March, 20th, 2020, retrieved from <https://www.britannica.com/topic/Apopis-Egyptian-god>.
114 Britannica, “[Nugua: Chinese Mythology](https://www.britannica.com/topic/Nu-Gua),” *Britannica*, last updated February 12th, 2012, last accessed March, 20th, 2020, retrieved from <https://www.britannica.com/topic/Nu-Gua>.

115 Felix Yuan, Prashanth Ballullaya, Ramesh Roshnath, Timothy Bonebrake, and Palatty Sinu, “Sacred groves and serpent-gods moderate human-snake relations,” *People and Nature* volume 2, no. 1 (2019) DOI: 10.1002/pan3.10059.
116 Kellert, *Building for Life*, 9 - 62.
117 Grant Hildebrand, “Biophilic Architectural Space,” in *Biophilic Design: The Theory, Science, and Practice of Bringing Buildings to Life*, ed. Stephen Kellert, Judith Heerwagen, and Martin Mador (Hoboken: John Wiley & Son, 2008), 263 - 276.
118 Roger Ulrich, “Biophilia, Biophobia, and Natural Landscapes,” in *The Biophilia Hypothesis*, ed. Edward Wilson (Washington DC: Island Press, 1993).

Table 2. 14 Biophilic Patterns and their impacts on humans

14 PATTERNS		STRESS REDUCTION	COGNITIVE PERFORMANCE	EMOTION, MOOD, AND REFERENCE
NATURE IN THE SPACE	Visual connection with nature	Lowered blood pressure and heart rate	Improve mental engagement/ attentiveness	Positively impact attitude and overall happiness
	Non-visual connection with nature	Reduced systolic blood pressure and stress hormones	Positively impact on cognitive performance	Perceived improvements in mental health and tranquility
	Non-rhythmic sensory stimuli	Positively impact on heart rate, systolic blood pressure, and sympathetic nervous system activity	Observed and qualified behavioural measures of attention and exploration	
	Thermal & Airflor variability	Positively impacted comfort, well-being, and productivity	Positively impacted concentration	Improve the perception of temporal and spatial pleasure
	Presence of water	Reduced stress, increased feelings of tranquility, lower heart rate and blood pressure	Improved concentration and memory restoration. Enhance perception and psychological responsiveness	Observed preferences and positive emotional responses
	Dynamic & diffuse light	Positively impacted circadian system functioning Increased visual comfort		
	Connection with natural systems			Enhanced positive health response Shift perception of the environment
NATURAL ANALOUGUES	Biomorphic forms and patterns			Observed view preferences
	Material connection with nature		Decreased diastolic blood pressure Improved creative performance	Improved comfort
	Complexity and order	Positively impacted perceptual and physiological stress responses		Observed view preferences

NATURE OF THE SPACE	Prospect	Reduced stress	Reduced boredom, irritation, fatigue	Improved comfort and perceived safety
	Refuge		Improved concentration, attention and perception of safety	
	Mystery			Induced strong pleasure responses
	Risk/ Peril			Resulted in strong dopamine or pleasure responses

Source: William Browning, Catherin Ryan, and Joseph Clancy, *14 Patterns of Biophilic Design: Improving Health & Well-Being in the Built Environment* (New York: Terrapin Bright Green, 2014).

Design Implication

In the PIU retreat environment, Biophilia and Biophilic Design support PIU treatments by playing two primary roles. First, the Biophilic attributes are positive distractions. PIU patients in the PIU treatment environment can easily feel stressed and exhausted because they live in a foreign environment for weeks and go through intense psychological treatments. An external distraction like nature, or Biophilic Design, can draw their attention away from stressful thoughts. A study conducted by Ulrich shows that patients who have views of nature recover faster than other patients.¹¹⁹ He later considers nature as a positive distraction in his theory of Supportive Design.¹²⁰ Therefore, Biophilic features should be located carefully in the retreat environment in order to support the reduction of the patient's stress. For instance, patients who come out of therapy treatments should have a view of nature to cool down after a stressful and intense session. Therefore, the corridor adjacent to the therapeutic areas would be excellent places to introduce

connections to nature through design. Second, repeated and continuous contact with Biophilic features can evoke and enhance the connection with nature, which patients have traded for the virtual space. Reviving this relationship between PIU patients and nature can lead to an improvement in health and well-being, as discussed earlier. Moreover, as nature possesses endless sensorial qualities, the application of Biophilia can show PIU patients that real-life can be as interesting and mysterious as the virtual space. Providing a wide range of natural attributes that have different characteristics is a viable design strategy. For instance, providing seasonal trees, ponds with fish, and evergreen plants at *re:intent* can enhance the patient's health and well-being. Each of the mentioned features possesses distinctive Biophilic traits, and this diversity can associate with a wide range of psychological and physiological benefits. Furthermore, the variety of reactions toward nature requires the design to remind PIU patients that they are in a controlled environment

119 Roger Ulrich, "Effects of Interior Design on Wellness: Theory and recent scientific research," *Journal of Health Care Interior Design* (1991), 97 - 107.
120 Ulrich, "Effects of Interior Design on Wellness," 102 – 104.

with the least risk. A possible approach is strategically allocating natural elements and artificial designs so that they are intertwined with each other. In the courtyard, for example, the main features can be vegetation like trees, bushes, and prairie grass. The artificial features can be seats or art installations. This placement assures that patients are in an artificial space instead of the wilderness. Moreover, patients can be removed and rescheduled so that they are not required to take part in the activities near or in the source of their stress. For instance, patients who are scared of water will be scheduled to attend horticultural activities - away from any lake or pond. It is in this way that the natural environment can be easily adapted to meet the needs of individual patients.

3.4 Connection with the built space
The task of architecture

Ihde considers built spaces as technological artifacts as it mediates the body with the world.¹²¹ However, buildings are not the same type of artifact that the Internet and related technological devices are.¹²² Built spaces not only extend the body schema of its occupants but also protect them from the outside world. This is why Marga Viljoen, while discussing Merleau-Ponty and Ihde theories, points out that the built space embodies its occupants to withstand impacts of nature.¹²³ Similarly, Bachelard believes the house is our “corner in the world,” protecting humans in its warm and enclosed body.¹²⁴ Pallasmaa has similar ideas as he points out that the sensorial richness and the spaciousness of the world do not always result in positive consequences. Architecture space “frames, halts, strengthens and focuses

our thoughts, and prevents them from getting lost.”¹²⁵ Architecture is not a simple artifact, either. As it provides multi-sensorial experience, the built space can be seen as a digestible microcosm of the outside world. It requires our eyes, ears, nose, skin, tongue, skeleton, and muscle to fuse into each other to experience.¹²⁶ In a sense, it strengthens our existential experience.

Despite living in the world, we were born in and inhabited the built space for most of our life.¹²⁷ It starts with the house where we grow up, then the school where we study and make friends, and then the workplace where we work and socialize. Built spaces are reservoirs of meanings and memories; we pour our memories, feelings, dreams, and thoughts in. It gives us culture and identity and fills our minds with memories and feelings when we revisit it. In short, as architecture mediates our connection with the world, it makes the connection more tangible and personal.

Atmospheric architecture
Architecture plays a crucial role in our existential experience, and so do the ways in which we experience architectural space. Although each of us reacts to a space differently, the process that we examine a space is similar. It starts with an unconscious grasp of the space’s essence, which occurs through our peripheral perception rather than any focused approach.¹²⁸ This peripheral experience is a fusion of all senses, from hearing to touching, from seeing to moving. This initial impression of the space is its atmosphere. Pallasmaa poetically describes this moment of realization as an exchange process between the materiality of the properties of the

space and the immateriality of human perception and imagination.¹²⁹ The atmosphere is embedded in the materiality, physicality, colours, sound, scent, and light of the space. What we feel when entering a space is an essence, a feeling, something abstracts rather than a literal feature. We perceive the space as a whole, which is a fusion of its sensorial qualities.

The spatial experience on the Internet, through a computer screen or a VR set, is different. The experience of an individual in a built space and their experience in virtual space are two different types of human-technology-world relationships (refers to figure 5). From Ihde’s viewpoint, architecture belongs to the “technosphere,” a group of background technological artifacts, which exist on the edge of perception, or peripheral perception as Pallasmaa notes.¹³⁰ The Internet, reversely, is in direct contact with us and extends our senses through a “simultaneous sensory-extension-reduction relation.”¹³¹ In this instance, the technological artifact extends one or a group of senses while reducing the other. From Pallasmaa’s point of view, the virtual space is experienced through our focused vision.¹³² In architectural space, the individual is inside the space, engaging and anticipating its atmosphere. Conversely, the lack of sensorial qualities as well as contextual qualities of the virtual space put the individual in the role of an observer, detached looking from outside (refer to figure 5). Neither of the experience types is bad, simply different. If architectural space evokes senses and gives the individual the context and multi-sensorial experience, the virtual space provides opportunities to experience situations (through limited senses) in a safe environment.

Spatial experience in virtual space is considered unhealthy when the Internet is compulsively used. Despite providing PIU

patients spatial experience within a safe and controlled environment, the Internet possesses the aforementioned numbing effect when it is extensively and problematically used without limitation. Moreover, the advancements of technology give the virtual spatial experience a considerable appeal with its interesting and extraordinary designs, as well as the infinite choices it can offer. PIU patients, as a result, abandon personal, educational, and professional responsibilities in favour of virtual activities. This imbalanced lifestyle leads to various personal and social issues.

Multi-sensorial space
A potential architectural and spatial design approach to support PIU treatment is to make architecture and interior space more stimulating and interesting. Because we experience architectural space as a whole, creating a multi-sensorial space may feed our imagination and thoughts and, thus, increase the appeal of the physical space. The following section lists Pallasmaa’s proposed spatial qualities, which can enrich our spatial experiences, with some additional suggestions from Peter Zumthor.

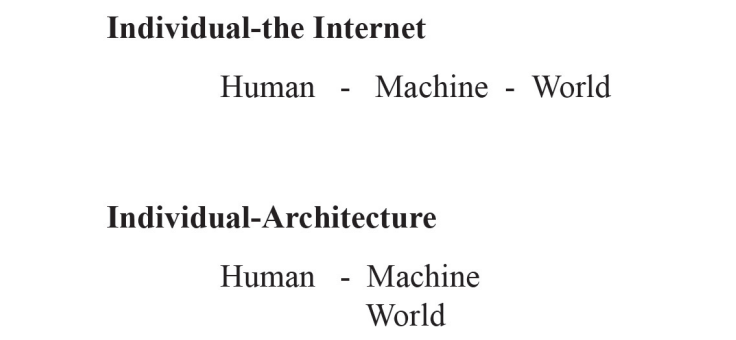


Figure 5. Ihde’s variation of the human-machine relationship.

121 Don Ihde, *Technology and the Lifeworld: From Garden to Earth*, mentioned in Marga Viljoen, “Embodiment and the experience of built pace: The contributions of Merleau-Ponty and Don Ihde,” *South African Journal of Philosophy* vol.29 (2010): 306 – 329.
122 Marga Viljoen, “Embodiment and the experience of built pace.”
123 Ibid.
124 Gaston Bachelard, *The Poetic of Space*, 4.
125 Juhani Pallasmaa, *The Eyes of the Skin* (West Sussex, John Wiley & Sons Ltd., 2005), 48.
126 Pallasmaa, *The Eyes of the Skin*, 43 - 76.
127 Studies show that we spend 91% of our life indoors. Sarah Robinson, *Nesting: body dwelling mind*, (California: William Stout Publishers, 2011).
128 Pallasmaa, “Space, Place and Atmosphere,” 243 - 244.

129 Pallasmaa, “Space, Place and Atmosphere,” 232.
130 Don Ihde, *Technology and the Lifeworld*.
131 Ibid.
132 Pallasmaa, *The Eye of the Skin*, 14 - 15.

Light and shadow: If light reveals details and creates distance and separation, shadow blurs borders and promotes nearness and intimacy.¹³³ Light is made for the eyes and intellectual thoughts. Shadow and darkness are the playfield of the sense of hearing, the sense of touch, and imagination. The many levels of illumination trigger different senses. Thus, strategically allocating and controlling the brightness of the lighting system in interior space can result in various emotional and psychological effects. Pallasmaa suggests light and shadow can create senses of control, senses of community, and senses of solidarity.¹³⁴

Sound of space: From Pallasmaa’s point of view, the sound of a space is the bridge connecting the occupant with such a space because architecture communicates through sound.¹³⁵ As sound is omnidirectional, it is the spatial quality of interiority. Sound approaches and ears receive. Sound reveals the characteristics of a space: is it empty, is it occupied, or is it crowded?

Scent of memories: Pallasmaa, Zumthor, and Bachelard agree that scent has the ability to evoke memories. The scents of kitchens remind Pallasmaa of his grandparents’ house.¹³⁶ At the same time, Zumthor’s childhood home has a specific scent of his mother’s cook.¹³⁷ Bachelard remembers the specific raisin odour in the cupboard.¹³⁸ Since each space has its specific scent, such a scent is assigned with that space in one’s memories. In a way, the scent of a space is associated with its identity.

Materiality: Material usage can produce various effects. Zumthor points out that each type

of surface treatment influences our experience differently.¹³⁹ And even if two materials have the same type of surface, they do not always produce the same feeling. When putting together, materials also tell different stories.¹⁴⁰ The versatility of material treatment is sensed by the eyes, ears, and skin. Pallasmaa believes we can connect more with a space through the histories, memories, and traditions embedded in its materials.¹⁴¹

Temperature: Not only temperature is closely related to one’s comfort, but it also has the power of storing and evoking memories. Pallasmaa quotes Marcel Proust to suggest that the experience of home is the experience of intimate warmth and comfort: “It is like an immaterial alcove, a warm cave carve into the room itself, a zone of hot weather with floating boundaries.”¹⁴²

The Taste of Stone: As senses combine and trigger the body, vision and tactile experiences can be associated with the taste experience. Hence, there is a subtle connection, a very intimate relationship between the space and individuals through oral sensation.¹⁴³ The texture and roughness of the surface, as well as the colour of the space, can all interact with the sense of taste. In a way, the subtle sensation of the combined senses transforms into an oral sensation and triggers other senses in the body.

Images of Action: With inherent knowledge and habit embedded within, we are triggered when encountering certain architectural features. The corridor is for walking (horizontally), the stair is for moving up (vertically), and the door

is symbolized of entering a new zone. These reactions are our bodily reactions, which come from our architectural experience in the interior space. Pallasmaa describes architectural space as the stage of a play of memory and action.¹⁴⁴ One reminds of the other. It is also crucial to provide occupants with a sense of direction, allowing them to navigate easily. Zumthor jokingly describes what he avoided when designing the Therme Vals: “...Direction, seduction, letting go, granting freedom. There is a practical situation where it is more sensible and far cleverer to induce a calming effect, to introduce a certain composure rather than having people running around and looking for the right door.”¹⁴⁵

The tension between Interior and Exterior: The way the exterior appears and how the interior should be framed can be used to control the appeal and narrative of the two spaces. The juxtaposition between the infinite and ungoverned sensorial qualities of the exterior and the limited and well-controlled sensorial qualities of the interior emphasize each other’s distinctive characteristics. By carefully considering the two spaces to be harmonious or dissonant, the designer can suggest the occupant’s activities and emotions. Zumthor emphasizes this idea by questioning the implanted messages in each space: “... And whenever I’m doing a building, I always imagine it in those terms: what do I want to see – me or someone else using the building later – when I am inside? And what do I want other people to see of me? And what sort of statement do I want to make publicly?”¹⁴⁶

Design Implication

In the PIU retreat environment, architecture should provide PIU patients with multi-sensorial experiences to support their treatments by reconstructing their relationship with the built space. The drawbacks that PIU patients have

when they compulsively use the Internet are the numbness coming from the imbalanced extension of body schema and the irresistible distraction from real-life responsibilities. In this case, a multi-sensorial-qualities-designed-space would benefit their treatment process. Firstly, such a space would remind them of a world outside of the Internet. This designed space should be able to strengthen the appeal of the physical, while subtly emphasizes the lack of sensorial qualities in the virtual space. These real-life sensorial qualities can also act as a distraction, drawing patients from their stress and worries.

Secondly, the retreat should be designed to make PIU patients feel at home. As mentioned earlier, the warmth and comfort of the home is its atmospheric essence. Although the image of home is not always associated with good memories and feelings, the home essence, which is the coziness, might help them feel more relaxed and at ease. Therefore, the retreat does not aim to recreate the exact image of a home, but the nourishing essence of such a space.

Lastly, as the atmosphere of a space sets the tone of one’s action within it, the retreat aims to subtly influence a PIU patient’s actions by creating subtle behavioural clues in each area. When carefully and strategically apply, the atmosphere helps patients to follow the rules and regulations within the retreat. The lack of strict authoritative enforcement would help patients focus more on their treatments, rather than stressed out by concentrating on following such regulations.

3.5 Connection with the Others

As human beings, we not only exist in the relationship with the world but also exist in the relationship with the others (the social world). This relationship, however, has changed significantly with the introduction of the Internet and social network sites. The rapid development

133 Pallasmaa, *The Eyes of the Skin*, 43 - 76.
134 Ibid.
135 Ibid.
136 Ibid.
137 Peter Zumthor, *Atmosphere: Architectural Environments – Surrounding Objects* (Berlin: Birkhauser, 2003).
138 Bachelard, *The Poetic of Space* (Boston: Beacon Press, 1994) in Pallasmaa, *The Eyes of the Skin*, 28.
139 Zumthor, *Atmosphere*.
140 Ibid.
141 Pallasmaa, *The Eyes of the Skin*.
142 Marcel Proust, *Kadonnutta aikaa etsimassa, Combray* [Remembrance of Things Past, Combray] (Helsinki: Otava, 1968) in Pallasmaa, *The Eyes of the Skin*, 63.
143 Pallasmaa, *The Eyes of the Skin*, 63.

144 Pallasmaa, *The Eyes of the Skin*.
145 Zumthor, *Atmosphere*.
146 Ibid.

of technology allows us to converse regardless of participants’ whereabouts. It also changes how we communicate. If telephone transmits auditory communication and online forum allows communicating through texts and emoji, a lot of online communication services provide video and audio chat as well as group video meetings. Recently, with the impacts of COVID-19 and the Government’s effort to control the situation, the Internet and online communication services play a crucial role in helping people connect and work with each other from afar. These conveniences and benefits lead to a question about the significance of face-to-face interaction, as well as the quality of online relationships and interactions compared to offline ones. The following section reviews Merleau-Ponty’s works on intercorporeality to understand the structure and importance of face-to-face interaction. The differences in quality between online and offline relationships are also examined. Lastly, the role of online and offline relationship to PIU patients’ life and PIU retreat environment are discussed.

Intercorporality

In *Phenomenology of Perception*, Merleau-Ponty suggests that interaction between two people is an embodied process, which involves the participants’ body in an intertwining exchange:

The communication or comprehension of gestures comes about through the reciprocity of my intentions and the gestures of others, of my gestures and the intentions discernible in the conduct of other people. It is as if the other person’s intention inhabited my body and mine his.¹⁴⁷

This concept of intercorporeality means social understanding is a process of the other’s body extending to one’s body and one’s body extends to that of the other. In other words, social interaction links both participants through mutual perceptions and actions, resulting in a circular and encompassing system. These perceptions and actions, or behaviour matching and interaction synchrony respectively, are the two manners of intercorporeality. Precisely, in every social encounter, we unconsciously match the other’s actions or its possibilities in order to understand their emotion and intention. At

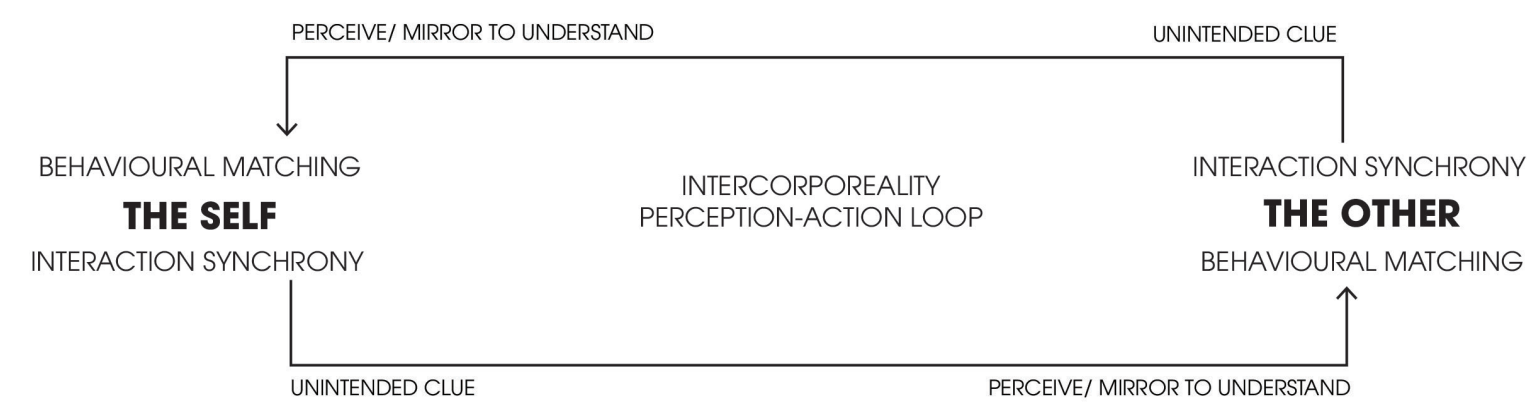


Figure 6. Perception-Action Loop

147 Maurice Merleau-Ponty, *The Visible and The Invisible* (Evanston: Northwestern University Press, 1968).

the same time, our body reacts with interaction synchrony. This reaction gives clues to the other’s perception-action loop. As a result, the two lived-bodies intertwined through their continuous modification of actions and effort of reading the other participant (refers to figure 6).

Offline and Online Relationships

The concept of intercorporeality helps in analyzing the distinctions between online and offline interactions. Most arguments are based on the differences in the sensorial qualities of the two interaction methods.^{148, 149} For some, without the involvement of the body, the perceive-action loop cannot take place properly due to the lack of senses involved in the process. For instance, in *On the Internet*, Dreyfus uses this argument to dismiss online education, stating that the quality of craftsmanship and affection cannot be transferred through the Internet.¹⁵⁰ However, Rothfork points out that the same thing can be said in traditional settings. Undergrads in Dreyfus’s class at UC Berkeley barely have any chances of talking to him, and thus there is not any close communication.¹⁵¹ Moreover, the rapid growth of technology provides more options in online communication, especially in educational settings. Dreyfus himself has to dismiss the argument in his 2001 book, stating that it is out of date in an interview with Harry Kreisler at UC Berkeley in 2005.¹⁵² Such an argument is even weaker in the setting of 2020 when universities offer hundreds

of online courses through *Coursera* and *edX*, as well as independent organizations such as *Skillshare* or even *Youtube* offering artists and creators’ online courses.¹⁵³ Audio, text, and video materials, as well as real-time online meetings, are somewhat equally effective compared to the traditional approach.¹⁵⁴ With interactivity being one of the leading Internet traits, the perceive-action loop surely can take place in the virtual space.

However, in defense of Dreyfus’s book, there are indeed several differences in qualities between the two methods of communication. The point that Dreyfus missed is that these differences do not always result in negative consequences or make online communication any less legitimate than face-to-face interaction. The lack of authority and control on the Internet can result in uncooperative students, but the same thing can be found in the traditional approach. With how advanced the technology is, this issue will be better dealt with. On the bright side, the online environment reduces the stress of speaking in public or the feeling of being intimidated by others. This helps students to be more involved with discussions in online classes. The lack of other’s presence can help the students to express ideas easier. The differences in sensorial qualities between online and offline communication do exist, but it does not make one any less valid than the other. Likewise, Lucy Osler’s study, which compares the quality of offline-based and online-based relationships, finds that the two types of

148 Wang, and Wang, “Social support and Social interaction on Internet Addiction: Integrating Online and Offline context.”
149 Hubert Dreyfus, *On the Internet* (New York: Routledge, 2001) in John Rothfork, “Review of On the Internet,” *Workplace volume 10* (2003), 203 – 207.
150 Dreyfus, *On the Internet*.
151 John Rothfork, “Review of On the Internet,” *Workplace volume 10* (2003), 203 – 207.
152 Hubert Dreyfus, “Meaning, Relevance, and the Limits of Technology: Conversation with Hubert L. Dreyfus,” interviewed by Harry Kreisler, *Conversations with History* (Institute of International Studies, UC Berkeley: 2005).
153 Skillshare is a platform where well-known artists and creators share their approaches, working etiquettes, and tips and tricks for a much wider audience than traditional methods can ever provide. It is also more personal and more practical, hence, Dreyfus’s argument on craftsmanship is somewhat invalid in the current setting.
154 It is also needed to note that there are subjects, majors that would be more effective in the traditional physical setting. For instance, studio courses in interior design programs require hands-on experience, as well as model experimenting. Such activities need the faculty’s support in terms of tools and instruments. These issues, however, only applied for some special major and subjects. The majority of courses can still be provided through online classes. Moreover, the center of the argument is about interaction and communication, not about equipment.

relationship are barely different despite the lack of sensorial qualities in virtual space.¹⁵⁵ Olser also points out that online relationships require more attention and involvement than an offline one since one of the participants can log off anytime, leaving the interaction interrupted.¹⁵⁶ In a face-to-face relationship, there tends to be at least a closure with each encounter.¹⁵⁷

As PIU patients tend to substitute their real-life relationships with online ones, the similarities in the quality of the two communication methods put PIU patients in a more vulnerable position. The ties between Internet users can be as strong as family ties or friendship in real life, but such relationships are more time-consuming than face-to-face relationships.¹⁵⁸ This means the patients not only substitute relationships but also invest more time and put more effort into creating and sustaining online relationships. This disproportion of time and task allocation causes decreases in various real-life aspects of PIU patients, such as educational, professional, and personal activities, as discussed in Chapter 1. Furthermore, the more advanced technology gets, the more problematic online relationship can be. For instance, a recent experiment allowing a mother to contact a digital version of her dead daughter to give her a proper farewell is a dangerous experiment. At first sight, it seems to be a humane approach, but in the worst scenario, it can mess up the mother’s mental health. She may keep coming back for her digital daughter and consequently gives up her other real-life relationship. This unhealthy experiment may disarrange the mother’s coping process and disturb her psychological health. Therefore, in a

PIU retreat environment, face-to-face interaction needs to be promoted in order to prepare patients for post-retreat social interaction, as well as act as an effort to prevent relapse.

Supportive Design

The theory of Supportive Design, proposed by Roger Ulrich in 1991, suggests that patients can benefit from social interaction and social support. Before Ulrich, various studies have confirmed the links between social interaction and physical space. Extensive studies in the educational environment conducted by Latane et al. suggest that spatial closeness influences interaction between students.¹⁵⁹ The studies indicate that the further the distance between the occupants gets, the fewer the chance they interact with each other. Ulrich’s Supportive Design Theory proposes that access to social support is one of the three primary spatial factors influencing patients’ health and well-being in the healthcare environment. The other two main factors are access to control and access to positive distraction.¹⁶⁰ He also suggests several design strategies to enhance social support such as overnight services for family, outdoor spaces for social interaction, and moveable furniture for group interaction, to name a few.¹⁶¹ Ulrich also notes that occupants’ privacy should be respected in order to reduce unwanted interactions with other patients or visitors.¹⁶² Ulrich’s research and especially Hilal Ozcan’s follow-up study highlight how the relationship between physical space and social interaction influences the patient’s healing process. Through analyzing interior space, mapping occupants’ behaviour, interviewing

patients, and analyzing medical records, Ozcan identifies three spatial elements that can create and facilitate social interaction.*^{163, 164}

Spatial arrangement: refers to floorplans and room location. Ozcan suggests social interaction benefits from location and proximities between spaces.¹⁶⁵ Rooms should be allocated in a way that increases opportunities for spontaneous interactions. The right scale and walking distance also play a role in promoting collaboration between staff, as well as the interaction between patients. Through Merleau-Pontian’s point of view, these spatial allocations provide a chance for the lived-body to explore the space and meet other people.

Ambient: refers to the home-like environment. Ozcan argues that a sense of comfort and dwelling can enhance the full potential of interaction between occupants.¹⁶⁶ Since the lived-body takes hints from the surroundings, dressing the areas with home-like features helps patients and visitors feel at home, making it easier for them to open up, share stories, interact, and connect. This spatial element links with Pallasmaa’s Atmospheric Architecture as they both discuss the atmosphere of interior spaces.

Symbolic features: refers to meaningful messages, ideas, or concepts that building and interior spaces can convey, showing through the choice of materials, colours, textures, furniture, and finishes.¹⁶⁷ These features have significant impacts on patients’ behaviours, especially their socialization. The discussed research has shown the potential of furniture selection to increase interaction and support between occupants. The lived-body read furniture and other physical cues of the space as opportunities and possibilities,

thus it is willing to make contact with others. For instance, using moveable soft seating would give the cue of flexible group formation and make it easier to interact face-to-face, while fixed or heavy chairs cannot do that.

Design Implication

Face-to-face social interaction and social support are essential in supporting the treatment process of PIU patients. Therefore, this project focuses on creating and facilitating face-to-face communication, whether it is spontaneous or planned. Ozcan identifies spatial arrangement, ambient, and symbolic features as the main architecture and interior design attribute that influence such interactions:

Spatial arrangement: reduce the distance between patients and patients, as well as patients and staff whenever appropriate. The corridor will have pocket spaces and seats dedicated to spontaneous interaction. In other areas, furniture is movable and flexible to create different groups, from groups of two to groups of eight.

Ambient features: create a friendly and welcoming atmosphere, so that patients do not feel pressured and stressful when entering public areas. For instance, the community areas give an intimate feeling so that patients feel more comfortable with starting and maintaining conversations with one another.

Symbolic features: millwork pieces are designed to remind patients of positive experience, especially the home image. Working counters can be designed with the image of a kitchen island, for example.

155 Lucy Olser, “Feeling togetherness online: a phenomenological sketch of online communal experiences,” *Phenomenology and the Cognitive Sciences* (2009) DOI: <https://doi.org/10.1007/s11097-019-09627-4>.
156 Lucy Olser, “Feeling togetherness online.”
157 Ibid.
158 Ibid.
159 Bibb Latane, James Liu, Andrzej Nowak, Michael Bonevento, and Long Zheng, “Distance Matters: Physical Space and Social Impact,” *Personality and Social Psychology Bulletin*, Vol. 21, no. 8 (1995): 795 - 805
160 These two factors have been briefly mentioned in Atmospheric Architecture (access to control), and Biophilic Design (positive distraction).
161 Roger Ulrich, “Effects of Interior Design on Wellness: Theory and recent Scientific Research.”
162 Ulrich, “Effects of Interior Design on Wellness: Theory and recent Scientific Research,” 101 – 102.

163 Hilal Ozcan, “Healing Design: A Holistic Approach to Social Interaction in Pediatric Intensive Care Units in The United States and Turkey,” *1st Internation CIB Endorsed METU Postgraduate Conference: Built Environment and Information Technologies* (Ankara, 2006), 248 - 258.
164 Ozcan actually identified six spatial elements: Scale, Room Location, Distance, Floor Plan Layout, Ambient, and Symbolic feature but I put the first three in one category called Spatial Arrangement because they all deal with interior spatial allocation. Ozcan, “Healing Design: A Holistic Approach to Social Interaction in Pediatric Intensive Care Units in The United States and Turkey,” 248 – 258.
165 Ozcan, “Healing Design,” 250 – 252.
166 Ozcan, “Healing Design,” 256 – 257.
167 Ozcan, “Healing Design,” 254 – 255.

CHAPTER SUMMARY

This chapter examines the works of French phenomenologist Maurice Merleau-Ponty on the embodiment concept, body-schema, and intercorporeality. These concepts show the relationship between individuals and the natural world, the built world, and society. As human beings, we are fundamentally embodied and exist in and rely on these relationships. However, the Internet, when being compulsively used, detaches PIU patients from these ties. Consequences are disembodiment feelings, musculoskeletal issues, social isolation, anxiety, depression, and more. Architecture and interior design solutions are proposed to enhance PIU treatments: Atmospheric Architecture, Biophilic Design, and Supportive Design. Based on the study of Merleau-Ponty's works, the above design strategies have been identified for potential success in this project, which aims to restore and enhance the broken relationships between PIU patients, the natural world, the built world, and other people. A summary showing how these design strategies are explained through Merleau-Ponty's point of view, as well as potential implication in designing *re:intent*, is shown in table 3 below.

These theories will play a significant part in creating and facilitating an environment where reactions are predictable. Applying them into this project will support treatment for PIU patients by helping them make healthier choices on their own while giving many worthwhile avenues to explore from the perspective of interior design.

Table 3 - Spatial Design Theories and Design Implications

THEORY	AUTHORS	DESCRIPTION	DESIGN IMPLICATION
Biophilic Design	Edward Wilson Stephen Kellert	Human have an innate attraction toward nature. Interaction with nature may result in positive psychological, mental, and physiological effects. Designers thus can introduce nature into the interior space, or invite occupants to the outdoors.	Strategically allocating Biophilic features that help to distract PIU patients from their worriedness and stressful thoughts. Repeated and continuous interactions with nature can enhance the relationship between occupants and nature. Provide a wide range of Biophilic attributes so they can choose one that makes them more comfortable. Allocating Biophilic features and artificial designs in the way that patients are reminded that they are in a controlled and safe environment. Remove or reschedule a patient's activities if they express intolerance toward a Biophilic feature.
Atmospheric Architecture	Juhani Pallasmaa Peter Zumthor	The atmosphere of a space is the immediate impression when first entering the space. It influences the actions and feelings in that space. Designers can control the atmosphere by influencing occupant's senses through materiality, light, sound, and more.	Providing multi-sensorial architecture and interior space to ignite the interest in real-life space in the patients. Creating an atmosphere of home, which is warm and cozy, so that the patients feel safe, secured, and comfortable. Utilizing atmosphere of a space to orient the patient's behaviour so they can be more focused on the treatments
Supportive Design	Roger Ulrich Hilal Ozcan	Human-human interactions result in social interactions and social support, which benefits the participants psychologically. Designers, therefore, can create and facilitate interactions between occupants through spatial arrangement strategies, ambient design, and symbolic features.	Creating and facilitating face-to-face communication using: - Spatial arrangement: shorten the distance between patients and patients, patients and medical staff. Space for spontaneous interaction. - Ambient design: friendly and home-like environment. - Symbolic features: millwork pieces are designed to remind patients of positive experience such as the home image.

04.

PRECEDENT ANALYSIS

- 4.1 RISE-UP BY RESTART | WASHINGTON, THE UNITED STATES
- 4.2 SANTANI WELLNESS RESORT AND SPA | KANDY, SRI LANKA
- 4.3 QUALICO FAMILY CENTRE | WINNIPEG, CANADA
- 4.4 MAGGIE'S CANCER CENTRE | MANCHESTER, THE UNITED KINGDOM

CHAPTER FOUR

PRECEDENT ANALYSIS

Introduction Analytical Framework

The following chapter discusses and analyzes four projects to further inform and inspire the design of *re:intent*. This precedent study further explores the research questions by examining the potential for interior design solutions to support PIU treatments as well as the significance of site-specific design approach in interior design regarding the connection with nature. These selected projects are analyzed for possible connections or manifestations of the subject matters discussed in Chapter 2, which are Biophilic Design, Atmospheric Architecture, and Supportive Design, and are investigated through the lenses of Merleau-Ponty's works. The goal of this study is to draw light on how theoretical ideas could inform the making and usage of interior space. Each precedent study consists of five sections:

1. **Project Description:** provides the precedent's basic information, including size, designers, and location.
2. **Topic of Interest:** identifies the prominent design strategies that can inform the design of *re:intent*.

3. **Theoretical Relevance:** revisits the discussed architectural and interior design theories concerning the precedent to lay the groundwork for the following design analysis.
4. **Design Analysis:** based on the relevant theoretical background, these following aspects of the precedent are analyzed:
 - **Site location:** looks for reasons behind site selection and how the local climate, geography, and nature affect architecture and interior design strategy.
 - **Design strategy:** analyzes the design strategies through Merleau-Ponty and mentioned theorists' standpoint, and how such designs affect the user experience.
5. **Design Implications:** suggest how the precedent study informs the design of *re:intent*.

1. **Rise-UpbyreSTART | Washington, the United States** which is a non-institutional retreat specialized in treating PIU patients. The treatment model and architectural design accommodating it are studied.

2. **Santani Wellness Resort and Spa | Kandy, Sri Lanka** which is an eco-friendly retreat for workaholic and overuse Internet users. Approaching PIU from the commercial angles, the resort proposes temporary abstinence and utilizes Biophilic designs as positive distractions.

3. **Qualico Family Centre | Manitoba, Canada** which a multi-purpose centre located inside an urban park. Architectural solutions for Manitoba's climate and how Atmospheric Architecture is applied to dictate visitor's behaviours are investigated.

4. **Maggie's Cancer Centre | Manchester, the United Kingdom** which a non-institutional outpatient therapy clinic for cancer patients. The way the design creates and facilitates interaction is examined.



4.1.



Figure 7. Rise-Up is surrounded by nature

PROJECT DESCRIPTION

Operator	reSTART Centre
Typology	inpatient retreat for PIU patients
Location	Washington, the United States

TOPIC OF INTEREST

- Site selection
- Therapeutic Program
- Architecture and interior design spaces that accommodate the treatment programs

Theoretical Relevance

As Breslau et al. proposed, PIU treatment strategy is divided into two main phases.¹⁶⁸ The first phase focuses on abstinence, while the second phase concentrates on harm reduction and relapse prevention.¹⁶⁹ For the treatment to succeed with the least potential of relapse, patients are required to live on campus under supervision with daily therapy sessions.¹⁷⁰ According to reSTART’s website, Rise-Up is developed to accommodate the first phase, Abstinence, of this treatment program (refers to table 4).¹⁷¹ Cutting off all Internet usage is the first thing PIU patients need to do when they enter the retreat. They are provided with activities and workshops to learn how to operate by themselves and cooperate in a group.¹⁷² This step takes a month to complete. The second step requires patients to attend intensive clinical therapy sessions to prevent relapse and decrease reliance on the Internet. In the second step, workshops on acquiring healthy lifestyles are added to prepare the patients for the next phase.¹⁷³

In the following twenty-four months, patients follow the second phase called Harm Reduction and Relapse Prevention. This phase consists of two steps. The first step is called Open World. For three to eight months, patients live independently in a transition house, slowly returning to work and school, and connect with the community. The second step is Sustainability, lasting from nine months to a year. During this time, the patients keep in touch with a support

network while returning to a normal life.¹⁷⁴ They are encouraged to continue the healthy lifestyle they have developed to maintain and enhance the connection with themselves, with nature, and with other people.

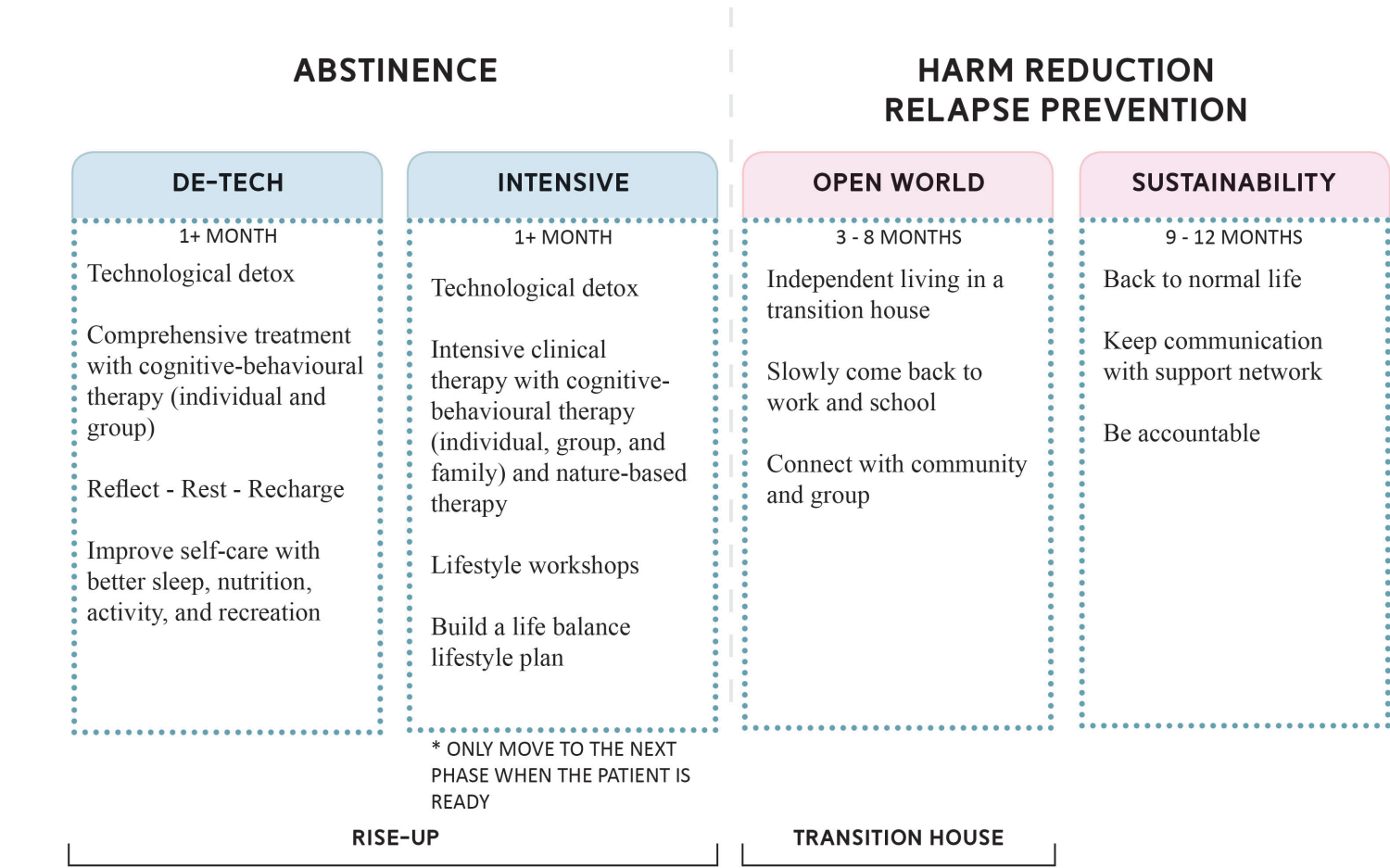
Architecture and design have the potential to support and improve the Abstinence phase and prepare the patients for re-entering society. As discussed in Chapter 3, the three architecture and interior design theories, namely Biophilic Design, Atmospheric Architecture, and Supportive Design, can help PIU patients in different aspects of their life in the retreat environment, whether it is emotional, physical, or mental support. The following section analyzes the design of Rise-Up to investigate the applications of these design theories and how they support the treatment program.

Design analysis
Benefits from site selection

Rise-Up is located thirty-minute-drive from downtown Bellevue city, Washington State. The ranch is situated in the middle of a forest, distancing from polluted air and traffic noise of urban areas (refers to figure 7).¹⁷⁵ This isolated location brings various advantages to the patients. They are not only protected from negative urban distractions but also provided with spacious outdoor space and mild weather, allowing them to participate in numerous nature-related activities all year round.¹⁷⁶ reSTART understands such values from nature. Hence, they list connection with nature

168 Breslau et al., “Prevention and Treatment Strategies,” 16 -25.
169 Ibid.
170 Ibid.
171 reSTART, “Programs for Adults,” *NetAddictionRecovery*, accessed November 17, 2019, retrieved from <https://www.netaddictionrecovery.com/services/program-for-adults/>.
172 reSTART, “Program for Adults.”
173 Ibid.
174 reSTART, “Program for Adults.”
175 reSTART, *Virtual Tour of Our Campus: Rise-Up Ranch – Enter Rise-Up Ranch*, 2018, digital photograph, *NetAddictionRecovery*, accessed November, 2019, <https://www.netaddictionrecovery.com/virtualtourriseup/>.
176 Weather Spark, Average Weather in Bellevue, accessed December 5, 2019, retrieved from <https://weatherspark.com/y/948/Average-Weather-in-Bellevue-Washington-United-States-Year-Round>.

Table 4. Treatment plan proposed by reSTART



Source: Data adapted from reSTART, “Programs for Adults,” NetAddictionRecovery, accessed November, 2019, retrieved from <https://www.netaddictionrecovery.com/services/program-for-adults/>.

as one of the main factors contributing to PIU patient’s treatment success.¹⁷⁷

Architecture and Interior Design

The goal of Rise-Up is to create a safe and healthy living space for PIU patients during their stay. The facility is designed to build a stable foundation for the patient’s therapeutic journey. The architectural and spatial design of the ranch, thus not institutional nor extravagant. It resembles a typical North American log cabin, suggesting familiar feelings in the patients (refers to figure 8).

¹⁷⁸ A patient even suggests the place is “almost a second home.”¹⁷⁹ Through Pallasmaa’s viewpoint, the use of wood logs at Rise-Up emits the warmth and relaxation essence of a home. The retreat can be seen as PIU patient’s second “corner of the world” – as French writer Gaston Bachelard describes a home.¹⁸⁰ Considering Rise-Up is where PIU patients start their treatment journey, it is metaphorically their new beginning, a new corner of life after PIU. Filling this inpatient facility with the essence of the home seems like an effective design strategy to meet the aforementioned goal.



Figure 8. Rise-Up interior space resembles North American log cabin



Figure 9. Patients sleep in a shared bedroom

reSTART states that Rise-Up is created for PIU patients to reflect and explore themselves, but the design of their sleeping areas does not convey this message.¹⁸¹ The patients have spent most of the day with each other to attend fellowship

meetings, group counselling sessions, and other daily activities. Resting, reflecting, and other private activities, however, also occur in shared bedrooms (refers to figure 9).¹⁸² Constant social interaction can exhaust them easily, especially with this demographic of shy and socially awkward people.¹⁸³ Unintended communications in these shared rooms may result in stress and aggressive reactions.¹⁸⁴ Therefore, to achieve their goal, Rise-Up should provide patients with a personal resting space for reflection and relaxation, namely a private bedroom.

Design implication

Rise-Up shows the crucial role of site selection in creating a retreat environment for PIU patients. The isolated location helps to separate the patients from harmful disturbance and constant temptation. The climate and the surroundings also help patients to achieve sobriety and independence by providing access to nature, which offers emotional, psychological, and physical support through Biophilia.

Utilizing the familiarity with North American design that PIU patients have, Rise-Up helps the patients feel at home, relaxed and comfortable. The use of materials also contributes to this result. Bringing this strategy to *re:intent*, which targets the same demographic, can support PIU patients and enhance their treatment experience.

Moreover, the needs of a private space for patients’ personal needs and self-reflection should be considered at *re:intent*. Social support and interaction should be moderated carefully, so the patients would not suffer from unnecessary stress. Such a private space can also be a self-contained space to prevent unwanted conflict between patients.

¹⁷⁷ reSTART, Program for Adults, NetAddictionRecovery, accessed May 2, 2020, retrieved from <https://www.netaddictionrecovery.com/services/program-for-adults/>.

¹⁷⁸ reSTART, Virtual Tour of Our Campus: Rise-Up Ranch – Dining Hall, 2018, digital photograph, NetAddictionRecovery, accessed November, 2019, <https://www.netaddictionrecovery.com/virtualtourriseup/>.

¹⁷⁹ reSTART, “Program for Adults.”

¹⁸⁰ Bachelard, The Poetic of Space, 17 – 21.

¹⁸¹ reSTART, “Rise-Up Ranch | Life-Sharing Community Living De-Tech,” NetAddictionRecovery, accessed May 2, 2020, retrieved from <https://www.netaddictionrecovery.com/restart-rise-up-ranch/>.

¹⁸² reSTART, Virtual Tour of Our Campus: Rise-Up Ranch – Resident Bed Room 2, 2018, digital photograph, NetAddictionRecovery, accessed November, 2019, retrived from <https://www.netaddictionrecovery.com/virtualtourriseup/>.

¹⁸³ Young, “The evolution of Internet Addiction.”

¹⁸⁴ Joel Dvoskin, Steven Radomski, Charles Bennett, Jon Olin, Robert Hawkins, Linda Dotson, and Irene Drewnicky, “Architectural Design of a Secure Forensic State Psychiatric Hospital,” Behaviour Science and the Law 20, no.5 (2002), 481 – 493.

4.2.

SANTANI WELLNESS RESORT & SPA
KANDY | SRI LANKA



Figure 10. Buildings are built on stilts to prevent negative impacts from the tropical climate.

PROJECT DESCRIPTION

Architect	Thisara Thanapathy Associates
Typology	Hospitality
Location	Kandy, Sri Lanka
Area	4645 m ²

TOPIC OF INTEREST

Site-specific design approach concerning architecture on hillsides as well as grouping and zoning buildings. How interior space can present nature in different ways, thus convey different messages.

Theoretical relevance

As discussed in Chapter 3, Biophilia can provide comfort and various positive mental and psychological reactions when it is designed to be a positive distraction. Ulrich explains that such responses are the result of our parasympathetic nervous system activating when we have access to nature.¹⁸⁵ It is why he suggests applying Biophilia and Biophilic Design in healthcare environments to reduce stress and stress-related illness.¹⁸⁶ The concept, however, does not stay exclusively in the healthcare environment. Various eco-resorts focus on nature and its effects on people to build and conceptualize their architecture and design around nature. The current trend is highlighting nature by bringing it into the interior space, but it is not the only way to enhance connectedness to nature.¹⁸⁷ The design at Santani Wellness Resort and Spa encourages visitors to go outside and explore nature in an unforceful way. The following analysis examines the Biophilic approaches and the flexibility in presenting nature in various ways to convey different messages at Santani.

Design analysis
Location and Architectural Design

Santani resort is located in the Af climate zone, which has high temperatures throughout the year.¹⁸⁸ The average temperature is 24.5°C. The area also has a high precipitation number with an

average of 2083 mm rainwater annually.¹⁸⁹ This tropical climate requires architectural solutions to reduce heat gain, enhance ventilation, and prevent harmful effects from rainwater and moisture. To meet these challenges, the designers at Thisara Thanapathy Associates build most of the buildings on stilts (refers to figure 10).¹⁹⁰ By raising these buildings above the ground, rainwater and humid air are prevented from entering the indoors. The strategy also allows these buildings to have fresh air through passive ventilation. The retreat claims that it consumes 70% less energy compared to other air-conditioned local hotels.¹⁹¹

The resort has three main building groups:

- Back-of-house buildings include an operation building and staff quarters.
- Services buildings consist of an entrance building, a spa, a restaurant and lounge, and a swimming pool.
- Guest buildings have 16 single villas, two double villas, and four family villas.

As shown in figure 11, each group resides in a well-defined zone: Back-of-house buildings is located at the south end of the property, Services buildings are in the center, and Guest buildings spread over the hillside toward the south end.¹⁹² This master plan results in several outcomes. First, the back-of-house buildings are placed away from the Guest buildings to avoid disturbing guests. Second, service buildings are easily reached by both staff members and guests. Finally, there

185 Roger Ulrich, “Effects of Interior Design,” 102.
186 Roger Ulrich, “Effects of Interior Design,” 102 – 103.
187 Tim De Chant, “Can We Stop Drawing Trees on Top of Skyscrapers?” *Archdaily*, last edited March 21, 2013, last accessed November 18, 2019, retrieve from <https://www.archdaily.com/346374/can-we-please-stop-drawing-trees-on-top-of-skyscrapers>.
188 Af climate zone stands for Tropical, rainforest climate according to Koppen-Geiger climate classification.
189 Climate-Data, “Climate Kandy,” *climate-data.org*, accessed April 30, 2019.
190 Mahesh Mendis, *Santani Wellness Resort and Spa: Hillside, 2017*, digital photograph, *ArchDaily*, accessed November, 2019, <https://www.archdaily.com/906417/santani-wellness-resort-and-spa-thisara-thanapathy-associates/5bf69e-b708a5e51c350000f9-santani-wellness-resort-and-spa-thisara-thanapathy-associates-photo>.
191 Santani, “Santani Fact Sheets,” *santani.lk*, accessed April 30th 2019, retrieved from https://www.santani.lk/wp-content/uploads/2018/11/Santani_FactSheet_Final-v3.pdf.
192 The Huy Ninh, *Santani Wellness Resort and Spa zoning*, digital illustration, created November, 2019, based on Thisara Thanapathy Associates, *Santani Wellness Resort and Spa layout plan, 2017*, digital illustration, *ArchDaily*, accessed November, 2019, <https://www.archdaily.com/906417/santani-wellness-resort-and-spa-thisara-thanapathy-associates/5bf6978508a5e566ee000153-santani-wellness-resort-and-spa-thisara-thanapathy-associates-layout-plan>.

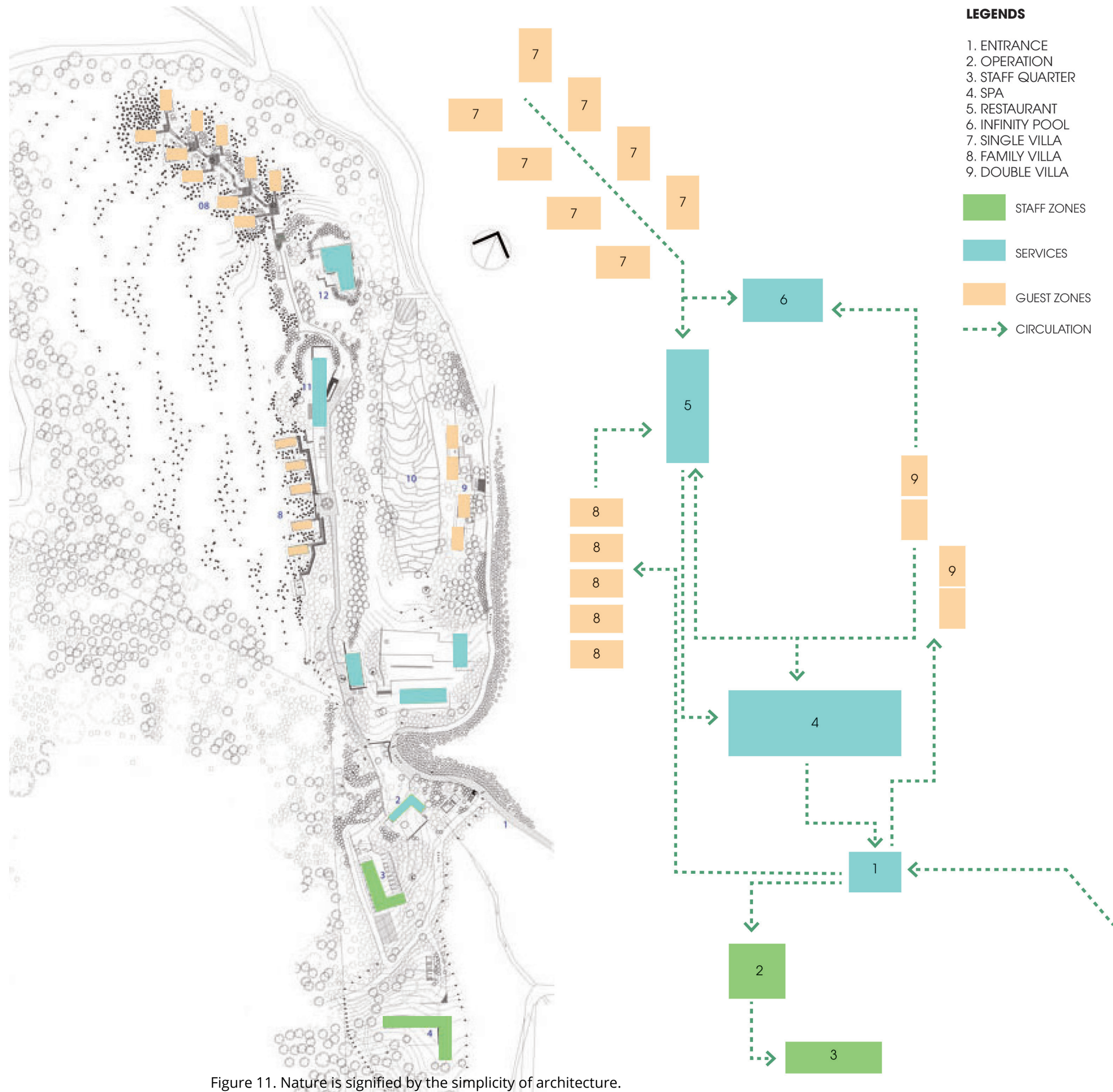


Figure 11. Nature is signified by the simplicity of architecture.

are mutual benefits for guests at single villas and family villas as the two are separated. Children in the family villas area make noise during the day and sleep early in the evening. Conversely, adults in the single villas area stay up late at night and relax during the day. By separating the two groups, none of these activities are compromised by the other group. These boundaries improve staff services and enhance guests' experiences.

Biophilic Design

Santani resort promotes nature connectedness by designing architectural elements around nature. Always changing and always full of lives, nature is enriched with stimuli that can attract one's attention. The simplicity of the design language, the neutrality of natural materials, and the calmness of colour scheme amplifies the characteristics of nature and shift the focus to the outdoors. Specifically, the swimming pool, as shown in figure 12, does not feature any Sri Lankan ornaments, which is a typical local decorating technique.¹⁹³ Instead, nature takes that role and becomes a decorative feature. The rawness of gray concrete walls and the purity of water fill the space with tranquillity. Such a simplicity amplifies the outside scenery, which is captured and framed through a wide horizontal opening. Without a glass divider like a typical window, this opening allows wind to enter the indoors, bringing scents and breezes along. Nature exists not only outside but also inside. The resort's intention of enhancing connections with nature is achieved by both orienting the attention towards nature and bringing nature into the indoors.

Moreover, to emphasize the role of nature, the designers create three types of openings. These openings are framed differently, offering different experiences. The swimming pool's opening is long, narrow, and only shows one side of the hill to draw attention toward that side of the resort. The restaurant's glazed façade is long, wide, and shows three sides, turning nature into a background rather than a focal point (refers to figure 13).¹⁹⁴ Here, the designers orient the attention to the restaurant's interior space. The third type of opening is the mixture of the previous two. It is long, wide, and has no divider. It encourages guests to get outside and engage with nature. The designers allocate this type of opening next to enclosed areas (refers to figure 14).¹⁹⁵ The sudden change of lighting, scent, and temperature highlights nature's attractiveness, drawing guests to the outdoors. Repeatedly using nature as an architectural feature, the designers prime the image of nature into the guest's mind. Nature is also framed differently in each space to make it less repetitive and convey the message of each space effectively. These strategies of presenting not only strengthen the connection between guests and nature but also do it in unforceful ways.

Design implication

The architectural designs of the Santani Wellness Resort and Spa confirm the relationship between climate and topography characteristics of the site and buildings' form and function. The architecture of *re:intent*, therefore, should learn these architectural solutions from Santani to utilize the local climate and topography so that it

¹⁹³ Thilina Wijesiri, *Santani Wellness Resort and Spa: Spa*, 2017, digital photograph, *ArchDaily*, accessed November, 2019, <https://www.archdaily.com/906417/santani-wellness-resort-and-spa-thisara-thanapathy-associates/5bf69f-8d08a5e566ee000167-santani-wellness-resort-and-spa-thisara-thanapathy-associates-photo>.

¹⁹⁴ Mahesh Mendis, *Santani Wellness Resort and Spa: Restaurant*, 2017, digital photograph, *ArchDaily*, accessed November, 2019, <https://www.archdaily.com/906417/santani-wellness-resort-and-spa-thisara-thanapathy-associates/5bf69dd408a5e566ee000163-santani-wellness-resort-and-spa-thisara-thanapathy-associates-photo>.

¹⁹⁵ Thilina Wijesiri, *Santani Wellness Resort and Spa: Opening*, 2017, digital photograph, *ArchDaily*, accessed November, 2019, <https://www.archdaily.com/906417/santani-wellness-resort-and-spa-thisara-thanapathy-associates/5b-f6a1f008a5e51c35000100-santani-wellness-resort-and-spa-thisara-thanapathy-associates-photo>.



Figure 12. Nature is signified by the simplicity of architecture.

has not only excellent views to nature, but also passive ventilation, passive heating, and passive cooling.

Both Santani and *re:intent* focus on nature, utilizing it as one of the main architectural components. At Santani, the architectural design and interior features are simplified to highlight nature. Putting nature at the focal point is Santani's method to deliver the message that they promote: enhancing connectedness with nature. This harmony between messages and presentation are successfully delivered to improve visitors' connection with nature. The design at *re:intent*, thus, should be simplified to accentuate nature as well as shaping it into one of the primary design features.

Nature at *re:intent* plays a crucial role in the occupants' health and well-being. It is not only an architectural feature but also a therapeutic component that supports patients' treatment and rehabilitation process. The ways Santani resort

presents nature show that there are various methods to feature and emphasize nature. Especially when nature is the primary design element, it should be presented in different ways to avoid repetition.



Figure 13. The restaurant introduces nature as a general architectural element.



Figure 14. The opening encourages physical contact with nature.

4.3.

QUALICO FAMILY CENTRE
WINNIPEG | CANADA



Figure 15. Rise-Up interior space resembles North American log cabin

PROJECT DESCRIPTION

Architect	NumberTEN Architectural Group
Typology	Hospitality
Location	Winnipeg, Canada
Area	1000 m ²

TOPIC OF INTEREST

Architecture and interior design strategies in Manitoba’s climate.
Atmospheric architecture dictates occupants’ behaviours.

Theoretical relevance

As discussed in Chapter 3, the atmosphere of a space can have psychological impacts on occupants. Zumthor also emphasizes the role of furniture and its allocation in creating an atmosphere. He suggests that furniture pieces not only project a lifestyle but also indicate the supposed function of the space.¹⁹⁶ In this precedent project, furniture pieces are carefully selected and allocated to dictate different manners required in each space.

Both Pallasmaa and Zumthor agree on the flexibility of material usage and its impacts on the atmosphere of a space. While Zumthor considers building materials as organs of architecture, Pallasmaa believes materials can connect occupants with the past and culture.^{197, 198} Materials convey messages and meanings through their physical characteristics. Such messages can be altered by adjusting the size, surface finishes, or integrating with other materials. Zumthor points out that there are “a thousand different possibilities in one material alone,” meaning there are many approaches to create an atmosphere of a space through material treatments.¹⁹⁹

These approaches and strategies are linked to create an overall atmosphere, as discussed in Chapter 3. Material usage, furniture selection and allocation, and other strategies can also contribute to creating a tension between the indoors and outdoors. It is, then, depends on the goal of the project to frame the scenes and deliver messages. At the Qualico Family Centre, the juxtaposition between the inside and outside is emphasized to

attract more visitors.

Design Analysis
Climate and Architectural Design

Located in the heart of Assiniboine Park in Winnipeg, Manitoba, the Qualico Family Centre faces a serious climatic challenge: a long freezing winter and a short hot summer. The temperature gap between the two seasons is typically 80°C.²⁰⁰ To combat such an extreme climate, the designers at NumberTEN Architectural Group orient the building to minimize solar heat gain and maximize daylight illumination (refers to figure 15)²⁰¹. The ratio of glaze surfaces to walls ratio on the north side is maximized, bringing in more light to the indoor. This façade also has tall seasonal trees, which prevent solar heat gain during the summer and allow significant solar heat gain during winter in the indoors. The number of windows on the east and west façade is minimized to prevent direct solar heat gain. Another challenge in this Humid Continental climate is the amount of snow might pile up on the roof during the six-month-winter. One-third of the time of the year, the city has at least one centimetre of snow on the ground.²⁰² The roof structure and load-bearing structure should be able to carry around 113.7 centimetres of snow for four months.²⁰³ The solution is an inclined roof allowing snow to slide off. The architectural design of the Qualico Family Centre shows that the local climate influences the building’s shape and orientation.

196 Zumthor, *Atmosphere*, 34 - 40.
197 Zumthor, *Atmosphere*, 23 - 27.
198 Pallasmaa, *The Eye of the Skin*, 60 - 63.
199 Zumthor, *Atmosphere*, 23 - 27.
200 Current Result, “Winnipeg Temperatures: Average by Month,” *Current Result*, accessed November 11, 2019. Retrieved from <https://www.currentresults.com/Weather/Canada/Manitoba/Places/winnipeg-temperatures-by-month-average.php>
201 NumberTEN Architectural Group, *Qualico Family Centre, Site plan*, digital illustration, *ArchDaily*, accessed November, 2019, <https://www.archdaily.com/285818/the-qualico-family-centre-number-ten-architectural/50877a6b28ba0d38c5000036-the-qualico-family-centre-number-ten-architectural-image>.
202 Current Result, “Winnipeg Snowfall Totals and Accumulation,” *Current Result*, accessed November 11, 2019. Retrieved from <https://www.currentresults.com/Weather/Canada/Manitoba/Places/winnipeg-snowfall-totals-snow-accumulation-averages.php>
203 Current Result, “Winnipeg Snowfall Totals and Accumulation.”



Figure 16. Qualico Family Centre is designed to prevent solar heat gain in summer and maximize heat gain in winter.

Atmosphere

Qualico Family Centre situates in Assiniboine Park, accommodating a wide range of customers with different needs and aesthetic requirements. Due to this demographic diversity, the centre is divided into different zones with different types of furniture, materials, and decorations, which in turn creates different atmospheres in each zone. As figure 16 shows, the furniture and decorations in the dining zone (left) are more formally allocated compared to that of the children's area (right). In

the dining area, the furniture arrangement emits a serious vibe with table cloth, folded napkins, and other table displays, suggesting a polite manner in visitors.^{204, 205} Conversely, the furniture and decorations in the children's area are pushed to one side to save space for children's activities, creating a more relaxed atmosphere. These zones show two different sides of the centre, even though they share similarities in architectural structure.

204 Brent Bellamy, *Qualico Family Centre, Fine dining space*, 2011, digital photograph, *ArchDaily*, accessed November, 2019, <https://www.archdaily.com/285818/the-qualico-family-centre-number-ten-architectural/5087790a28ba0d38b200000d-the-qualico-family-centre-number-ten-architectural-photo>.

205 Brent Bellamy, *Qualico Family Centre children area*, 2011, digital photograph, *ArchDaily*, accessed November, 2019, <https://www.archdaily.com/285818/the-qualico-family-centre-number-ten-architectural/5087791e28ba0d38c500002c-the-qualico-family-centre-number-ten-architectural-photo>.

Moreover, the centre is designed to attract park visitors by emitting a friendly and welcoming atmosphere. Being surrounded by green leaves in summer and white snow in winter, the tilted timber ceiling creates and emphasizes the juxtaposition between the indoors and outdoors (refers to figure 17).²⁰⁶ If the ceiling is placed horizontally, the effect would not be as strong. The warm light colour also contributes to the warmth of the ceiling. Such outdoors-indoors tension highlights the safety and coziness of the indoors, especially during the freezing winter months. Through Zumthor's point of view, the design stresses how safe and warm the inside is compared to the outside, thus attracting park visitors. This contrast also contributes to the atmosphere of the interior, making it stands out against the surroundings and become more inviting.

Design implication

The architectural design of the Qualico Family Centre shows that the local climate dictates the shape and material usage of the building. To help *re:intent* withstands the harsh weather of Manitoba, similar roof shape and façade designs are considered. The sloped roof prevents snow piling up while windows are strategically allocated to maximize solar heat gain during winter months and block extra heat gain in summer.

The atmosphere of a space can influence its occupants' actions and behaviours as it triggers their bodily experience and memories. Using furniture arrangement and decoration, *re:intent* can impose appropriate behaviours in PIU patients. The relationship between the indoors and outdoors can also be explored to encourage PIU patients to join in activities. Scenes, scent, sound, to name a few, can be used in this approach.

206 Brent Bellamy, *The juxtaposition between indoors and outdoors*, 2011, digital photograph, *ArchDaily*, accessed November, 2019, <https://www.archdaily.com/285818/the-qualico-family-centre-number-ten-architectural/50877a2228ba0d38a9000017-the-qualico-family-centre-number-ten-architectural-photo>.



Figure 17a. The contrast in furniture arrangement and decoration between fine dining area (up) and children area (down)



Figure 17b. The contrast in furniture arrangement and decoration between fine dining area (up) and children area (down)

4.4.



Figure 18. Inclined translucent roof and glazed facades allow natural light illuminates the interior.

PROJECT DESCRIPTION

Architect	Foster + Partners
Typology	Healthcare
Location	Manchester, the United Kingdom
Area	730 m ²

TOPIC OF INTEREST

Climatic architecture concerning strategy to get daylight into interior space.
Support Design regarding social interaction and social support.

Theoretical relevance

As discussed in Chapter 3, social interaction and support are crucial to the rehabilitation process of patients. The research conducted by Ozcan categorizes the design approaches that can enhance social support and interaction into three groups: spatial arrangement, ambient, and symbolic features.²⁰⁷ Out of the three, symbolic function directly responds to the design approach at Maggie's Cancer Centre as the centre recreates the essence of the home. This design strategy also creates a home-like ambient, which is also another aspect of Supportive Design. This following precedent analysis discusses the application of Supportive Design that enhances social interaction and social support.

Design analysis
Climatic architecture

Manchester has a warm summer and a chilly winter.²⁰⁸ The challenge is that the city receives over 900mm rainwater annually.²⁰⁹ This climate characteristic requires an effective rainwater drainage system and sufficient indoor lighting. The designers' solutions are a long and narrow building shape with a translucent incline roof along with window walls on all four facades (refers to figure 18).²¹⁰ This see-through roof not only prevents the formation of standing water but also allows natural light to come into the indoor from above. The long and narrow structure with a glazed façade also allows light to come in from the sides, illuminating the interior. These techniques

can be employed at *re:intent* as it reduces energy usage and naturally prevents weight gain by snow piling up on the roof.

Supportive Design

Maggie's Cancer Centre in Manchester is designed to create a home-like environment. Scottish writer Maggie Jencks, whom the centre was named after, suggests the resemblances of the home create a secure and comfortable feeling.²¹¹ British geographer Tim Creswell also points out in *Place: an introduction* that home shields us from the outer world, physically and emotionally, hence it is associated with safe feelings and relaxation.²¹³ Exploiting such enormous impacts, the designers at Foster and Partners use the image of home to create a relaxed atmosphere and encourage visitors to seek support and join in conversations.²¹⁴ This design strategy can be seen as an application of Supportive Design theory. The replacement of the reception desk with a kitchen island and the adjacent cabinet, as shown in figure 19, resembles a residential kitchen.²¹⁵ The designers also replace institutional waiting chairs with moveable residential furniture and a fireplace, as shown in figure 20, to recreate a living room.²¹⁶ As the designers strategically chose the image of the living room, kitchen, and dining room to embody the home-like ambience, the social and interactive characteristics of such spaces are also brought to the facility. Therefore, by switching from institutional furniture of the hospital settings to residential furniture that symbolized the image of the home, the designers

207 Ozcan, "Healing Design," 248 – 257.
208 Climate-Data, Climate Manchester, *Climate-Data.org*, accessed April 30, 2019.
209 Ibid.
210 The-Huy Ninh, *Maggie's Cancer Centre Manchester: Translucent roof*, digital illustration (2020).
211 Charles Jencks, *Architecture of Hope* (London: Frances Lincoln Ltd 2015).
212 Maggie's Cancer Centres are organized by Jencks' husband dedicated the organization to her, hence why I quote Jencks.
213 Tim Creswell, *Place: an introduction* (Oxford: WILEY Blackwell, 2015), 144 – 149.
214 Archdaily, "Maggie's Cancer Centre in Manchester | Foster + Partners," *Archdaily*, April, 2016, last accessed February 20, 2020, <https://www.archdaily.com/786370/maggies-cancer-centre-manchester-foster-plus-partners>.
215 The Huy Ninh, *Maggie's Cancer Center Centre: The kitchen island is the heart of the facility*, digital illustration (2020).
216 The Huy Ninh, *Maggie's Cancer Center Centre: The replacement of fixed institutional seating with comfortable and moveable residential chairs*, digital illustration (2020).

replace the institutional vibe with a home-like ambience, and in turn, enhance social interaction and support at Maggie's Cancer Centre.

Spatial arrangement also plays a crucial role in enhancing social support and interaction as it can create and facilitate humans contact.²¹⁷ The centre has one main corridor running from the south end to the north end. This corridor, with the kitchen island placed at the center of it, enhances the visibility and accessibility to the volunteer and supporting staff. Moreover, as the administrative staff working area takes up the mezzanine, they can easily supervise the patient's movements on the ground floor and provide support promptly (refers to figure 21).²¹⁸ The spatial allocation of the centre helps patients to get the immediate supports they need.

Design Implication

Maggie's Cancer Centre situates in the United Kingdom, where there is not much sunlight throughout the year. The long and narrow shape of the building, as well as the transparent material of the roof and façades, allow daylight to illuminate the centre and reduce artificial lighting usage. Similarly, the design at *re:intent* should also be long and narrow with glazed façades to reduce energy usage, enhance indoor lighting, and maximize views to outdoor.

The designs at the centre create and facilitate social support and interaction by emphasizing the image of home and increasing the accessibility to the staff's services. The principles of Supportive Design show through the choice of furniture and space allocation. These design strategies not only start and maintain conversations but also create a relaxed and friendly atmosphere. The designs at *re:intent* thus should apply these strategies to enhance PIU patients' social life inside the facility. First, residential furniture should be dominantly used at *re:intent*. For instance, nursing station counters can resemble kitchen islands, which

appear to be friendlier and more welcoming than the traditional nursing station designs. Moreover, the interior space should be able to accommodate social interaction, either it is planned or unplanned. Corridors should have benches or pocket spaces to hold spontaneous conversations.



Figure 19. The kitchen island is the heart of the facility.



Figure 20. The replacement of fixed institutional seating with comfortable and moveable residential chairs.



Figure 21. Maggie's Cancer Centre vertical zoning allows staff to observe visitors' activities.

217 Ozcan, "Healing Design," 250 – 252.
218 The Huy Ninh, *Maggie's Cancer Center Centre: Vertical zoning*, digital illustration (2020).

CHAPTER SUMMARY

This chapter examines four projects to gain insights and practical applications of Merleau-Ponty’s works in real architectural situations. Firstly, the relationship between location and architectural designs is investigated. These precedents show that climate and geography characteristics have a crucial role in shaping a project, whether it is a building or a group of buildings. These natural factors dictate the project’s master plan, structure, orientation, material, and form. Furthermore, three of four selected projects are located away from the crowded urban environment, implying patients’ health and well-being benefit from such locations, namely the enhancement of nature connectedness.

Secondly, each project is analyzed in relation to an architectural and spatial design theory discussed in Chapter 3. The following table summarizes what architectural theory and design implications to be considered moving forward:

Table 5. Precedent Study Summary and Design Implications

PROJECT	THEORY	DESIGN IMPLICATION
Rise Up Ranch by reSTART	Patholoigical Internet Use Atmospheric Architecture	Provides private bedrooms for patients so they can have personal space for private matters and reflection
Santani Wellness Resort and Spa	Biophilic Design	Promotes nature connectedness by emphasizing the image of nature throughout the facility. Presents nature in different ways to avoid repetition.
Qualico Family Centre	Atmospheric Architecture	Through spatial arrangement, furniture allocation, and decoration set up, predict and direct patients’ behaviours and activities without force. Presents a space in the way that it attracts or repels occupants.
Maggie’s Cancer Centre	Supportive Design	Utilizes symbolic residential furniture to appear friendly and not-intimidating. Provides visible spaces for gathering and interaction.

05.

DESIGN PROGRAM

- 5.1 HUMAN FACTOR ANALYSIS
- 5.2 TREATMENT PROGRAM
- 5.3 SITE ANALYSIS
- 5.4 SPATIAL REQUIREMENTS
- 5.5 ZONING DIAGRAM

CHAPTER FIVE

DESIGN PROGRAM

Introduction

The program outlined in this chapter describes both the project's fictional client and the facility's user groups, who will occupy *re:intent*. A thorough site analysis of the local climate and surrounding environment is also included. This investigation informs the discussed theories' application, programming decisions, material selection, and spatial planning during the design process.

As previously discussed, *re:intent* is developed to be the place that restores PIU patients' connections with the world and with others, refreshes their health, and restarts their life. The program is designed for 24 male patients between the age of 17 to 30 who have been diagnosed with PIU. Each patient will spend from 60 to 90 days in the facility to attend therapeutic and educational programs.

This chapter consists of:

Human Factor Analysis: investigates the needs and objectives of clients toward the facility, as well as the physical and psychological needs of the users, including patients and staff.

Treatments Analysis - Therapeutic Programs and Educational Programs: studies the activities that occur during therapy sessions and educational classes to provide appropriate spatial design.

Site Analysis: studies the local climate as well as the surrounding environment to find constraints

and opportunities in developing the design program and architectural design.

Spatial Requirements: studies the spatial requirements of each area in the facility based on previous studies of PIU, architectural and design theories, and preceded projects. This section focuses on the physical and psychological requirements of each space.

Zoning: investigates the relationship between each space and proposes an effective spatial allocation of the interior based on lessons learned in this chapter and previous chapters.

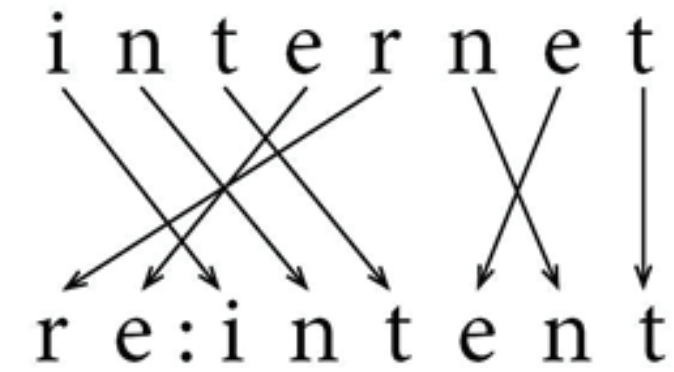


Figure 22. *re:intent* and Internet anagram illustration

5.1 Human Factor Analysis Client Profile

The client of this project is a fictional group of therapists and consultants who focus on treating PIU patients. They cover both therapeutic and educational aspects of the treatment program. They not only work independently but also collaborate with others to deliver the most effective treatment plan to the patients.

They have chosen "*re:intent*," an anagram of the word "internet," to be the name of the facility. The word is divided into two parts: "re" and "intent" (refers to figure 22.)²¹⁹ While "re" stands for retreat, refresh, and restore, "intent" stands for patients' intentions and behaviours. The message here is that PIU patient's intentions and behaviours will be rebuilt into a fresher and healthier one. This message is also the main objective of this project.

Client's current Needs and Future Goals

The treatments plan consists of CBT and NBT, along with physiological and nutritional consultation. Following the treatment model at Rise-Up, with the addition of physiological and nutritional programs, *re:intent* aims to provide a safe and healthy environment that not only helps patients with their pathological behaviour but also prepares them for the upcoming challenges when they re-enter the society. The treatment plan requires the facility to be able to accommodate therapeutic activities indoors and outdoors while remaining secured and safe for both patients and staff.

Furthermore, as an inpatient facility, the goal of *re:intent* is to provide a safe and comfortable

living environment for all 24 patients.²²⁰ Living on the property 24/7, conflicts between patients are inevitable. The role of interior design is to help reduce such hostility atmosphere and provide safe spaces for both patients and staff. Patients are entitled to be safe from themselves and other patients. Specifically, special attention is required in their private room so that they cannot harm themselves. Safe withdrawal spaces are also required to mitigate altercation and aggressive behaviours.

User Profile

As previously discussed in Chapter 2, young adult males between 17 – 30 years of age are most likely diagnosed with PIU.²²¹ They are the generation that not only grew up with technology but also use the Internet for most of their activities. The entertainment, academic, and professional lives of these young men revolve around the Internet. Dr. Hilarie Cash, one of reSTART founders, states that her patients are exclusively male, who are within the age of 18 and 28, since the facility founded in 2009.²²² This exclusion in demography implies that this group of young male tend to reach for clinical support, voluntarily or with the help of their families. Therefore, the facility focuses on providing services to this group of patients.

The PIU patients develop the experience of disembodiment and feeling of isolation due to the negligence of the surroundings.²²³ The development of this retreat intends to support PIU treatment by counteracting these feelings and helping patients rebuilt their self-awareness by connecting them to nature, architectural spaces, and other people. The concentration on the self

219 The Huy Ninh, *re:intent and Internet anagram*, digital illustration, created November, 2019.

220 Dvoskin and Patterson recommended the number of 24-bed ward in a psychiatric hospital environment so that the efficiency of observation, support, and therapeutic are at best quality. Joel Dvoskin and Raymond Patterson, "Administration of Treatment Program for Offenders with mental illness," in *Treatment of the Offenders with Mental Disorders*, Robert Wettstein (ed.) (New York: Guilford Press, 1998).

221 Ainin et al., "Exploring the Role of Demographics and Psychological Variables in Internet Addiction."

222 Blake Hester, "How a Washington-based Clinic Treats Video Game Addiction." Polygon, September 28, 2016, Accessed March 10, 2020. <https://www.polygon.com/features/2016/9/28/12992596/video-game-addiction-clinic>

223 Pontes et al., "Clinical psychology of Internet addiction," 13.

and the exploration of the surroundings will help the recovery process by creating and raising interest within themselves, in the surroundings, and others.

Primary Users: The primary user group is the people spending the most time in the facility. As PIU patients spend their entire treatment time at *re:intent*, they are the only member of this user group, A wide range of spatial types are needed to accommodate their daily and therapeutic needs.

Secondary Users: The secondary user group is made of full-time staff, who are required to be present at the facility at least 8 hours a day, five days a week. They are therapists and consultants, administrative staff, medical supports, maintenance and housekeeping staff, gardener, security, and kitchen staff.

Tertiary Users: The tertiary user group uses the facility the least. They infrequently visit the facility for work or family purposes. Although they do not spend much time here, they still need to access certain services (visitors) and designated working areas (part-time staff) without disrupting the facility's therapeutic and administrative activities. They are patient's families, guest therapists and coaches, and delivery services.

User’s activities and needs

The following part focuses on the occupants of *re:intent*: their activities, physical needs, and psychological requirements for their time staying and working at *re:intent*. The information is presented in card form, which helps the reader to follow easier (refers to figure 23).²²⁴ These cards are colour-coded in three: Primary User, Secondary User, and Tertiary User. The cards can be found in Appendix B.

Primary User		
Pathological Internet Users/ Patients Specialist	24 ppl	
Psychologist	2 ppl	
Nature-Based Therapist	2 ppl	
Nutritional Specialist	1 ppl	
Physiotherapy Specialist	1 ppl	
Medical Staff	8 ppl	
Secondary User		
Administrative Staff	8 ppl	
Environmental Staff	2 ppl	
Housekeepers	2 ppl	
Kitchen Staff	4 ppl	
Gardeners	2 ppl	
Security	2 ppl	
Tertiary User		
Guest Therapist	2 ppl	
Patients’ Family	4 ppl	
Delivery personnel	2 ppl	
TOTAL	66 ppl	

Table 6. Users’ Activities, Psychological and Spatial Needs

USER TYPE	AGE	ACTIVITIES	PSYCHOLOGICAL NEEDS	SPATIAL NEEDS
Primary User				
Pathological Internet Users & Patient	18 - 30	- Daily routine including having meals, entertainment, exercise, personal care, and sleeping. - Interact with others to form meaningful relationships. - Take part in various therapeutic activities, including reading, cooking, exercise, meditation, gardening, and more. - Attend workshops, provided by specialists and guest educators. - Seek help from staff.	- Sense of belonging in a safe and secured environment that foster well-being & recovery process. - Space for coping and self-reflect. - Evoke the perceptual curiosity so they will explore and discover the facility, thus having spontaneous social interactions. - Optimize nature connectedness - Friendly and welcoming therapeutic space.	- Clean & safe private suite enhanced with visual and auditory privacy. - Space for socializing with different privacy levels. - Avoid altercation & other aggressive behaviours. - Safe and easy to receive supports from medical staff or attendants.
24 occupants				
Specialist	25+	- Daily routine including having meals, entertainment, exercise, personal care, and sleeping. - Learning and update professional knowledge + professional meet ups. Break between sessions. - Provide professional consultation to patients and family members. - Work with other specialists to provide the most suitable treatment plan.	- Low stress working environment that foster well-being. - High privacy level that provide spaces for mental break and distraction. - Connection with nature.	- Clean & safe private suite enhanced with visual and auditory privacy. - Space for socializing with different privacy levels. - Private and safe one-on-one and group sessions.
6 occupants				
Medical staff	22+	- Provide medical support & support in general to patients and other staff members. - Observe patients & prevent potential dangerous behaviour or altercation.	- Low stress working environment that foster well-being. - High privacy level that provide spaces for mental break and distraction. - Connection with nature.	- Clean & safe private suite enhanced with visual and auditory privacy. - Space for socializing with different privacy levels.
8 occupants				

224 The Huy Ninh, *User Card legends*, digital illustration, created November, 2019.

USER TYPE	AGE	ACTIVITIES	PSYCHOLOGICAL NEEDS	SPATIAL NEEDS
Secondary User				
Administrative staff 8 occupants	22+	- Manage the human factor of the facility. - Ensure the facility to run efficiently by organizing work schedules, meetings, and other office tasks.	- Low stress working environment that foster well-being. - Focus during working hours. - Connection with nature.	- Clean & efficient working space. - Private spaces for meetings and discussions. - Space for socializing & develop social relationship. - Space for photocopy, fax, and other office tasks.
Environmental Staff 2 occupants	18+	- Ensure the solar power system, water filtration, and waste management to run smoothly and efficiently	- Low-stress environment. - Mental break & distraction during break time. - Focus during working hours. - Connection with nature.	- Clean & efficient working space. - Private spaces for meeting and discussions. - Space for socializing & develop social relationship. - Space for photocopy, fax, and other office tasks
Housekeeper 2 occupants	18+	- Keep the facility clean & well-organized	- Low stress environment. - Mental break and distraction during break time. - Connection with nature.	- Easy to clean & organize. - Storage for equipment. - Lockers for personal belongings. - Easy to contact the Administrative staff.
Kitchenstaff 4 occupants	18+	- Prepare foods for patients & staff. - Clean dishes & cooking tools. - Receiving food and goods from outside delivery as well as the gardener. - Coordinate & work with Maintenance staff for waste dumping.	- Low stress environment. - Mental break and distraction during break time. - Connection with nature.	- Safe, clean, and well-organized environment. - Lockers for personal belongings. - Storage for cooking equipments and products.
Gardener 2 occupants	22+	- Take care of the gardens and the greenhouse. - Support the specialists and their patients when needed. - Transfer fresh fruits and foods.	- Low stress environment. - Mental break and distraction during break time. - Connection with nature.	- Storage for gardening equipment. - Lockers for personal belongings. - Space for relaxation. - Easily supervise the greenhouse & activities that happen there.
Security 2 occupants	18+	- Protect staff & patients from aggressive behaviours. - Make sure the entrance & exit are well maintained and locked when necessary.	- Low stress environment. - Mental break and distraction during break time. - Connection with nature.	- Efficiently supervise facility entrances. - Lockers for personal belongings. - Space for relaxation.

USER TYPE	AGE	ACTIVITIES	PSYCHOLOGICAL NEEDS	SPATIAL NEEDS
Tertiary User				
Guest Therapist 2 occupants	22+	- Educate & discuss with the specialists, medical staff, and patients through seminars & events. - Only visit twice a month.	- Low-stress working environment that foster well-being. - Focus during working hours. - Connection with nature.	- A private suite that is clean and safe with visual and auditory privacy. - Working spaces. - Welcoming and calming space.
Patient's family 4 occupants	4+	- Visit during patient's first two days and last two days. - Have family sessions with specialists when required.	- Low-stress environment. - Mental break & distraction during break time. - Focus during working hours. Connection with nature.	- A private suite that is clean and safe with visual and auditory privacy. - Welcoming and calming space.
Delivery personal 2 occupants	18+	- Deliver local products and other goods from Falcon Lake town twice a week. - Deliver essential goods, medical equipment from Winnipeg twice month.	- Safe and calm. - No distraction.	- Easy to access to delivery dock.

5.2 Treatment Program

The accelerated development of technology has helped the Internet infiltrated into our daily lives more and more in the last decade. According to Breslau et al., the prevalence of PIU in North America was only 0.7% in 2006.²²⁵ Ten years later, this number escalated to 6%, nine times higher than the previous result.²²⁶ If this trend continues, there will be more and more people dependent on the Internet. In North America, not only a handful of clinics provide PIU treatments, but the relapse number is also high due to the necessity of the Internet in our lives.²²⁷ Based on previous research and treatment proposals, Breslau et al. propose a PIU treatment model that has been applied in the US Air Force as well as reSTART. This program requires patients to temporarily quit using the Internet, following with a transition process and prevention measurement. The whole treatment program is divided into two phases. First, PIU patients spend 60 to 90 days off the grid to undergo CBT and NBT. After that, they move to a transition house to start the re-integrate process. This project follows this treatment model with the concentration on the first phase by providing PIU patients with a safe and comfortable environment and effective treatment programs, supported by well-informed architecture and interior design strategies. *re:intent* thus needs to accommodate therapeutic and educational programs in the way that such programs run efficiently. The therapeutic programs include CBT, NBT, nutritional and physiological consultation. Educational classes are provided to support therapeutic programs.

For instance, cooking classes not only act as a life skill class but also play a part in the nutritional program. Each program will be discussed to explain how they support PIU patient’s recovery and transition.

Dr. Kimberly Young proposed a specialized CBT program for PIU treatment called Cognitive-Behavioural Therapy – Internet Addiction (CBT-IA). First, the program examines patients’ online behaviour and offline behaviour to identify if patients have SPIU or GPIU. With this, patients have specialized treatment programs based on their type of PIU and their co-existing psychiatric issues. After that, denial and rationalization, which justify compulsive Internet use, are addressed through therapy sessions. Lastly, the program addresses comorbid issues associated with PIU, from psychiatric issues to physiologic problems.²²⁸ CBT-IA can also be practiced in group form, in which patients share their stories, experiences, and progresses. Consequently, they help and support each other to improve.²²⁹ Such intimate experience may also increase their social bond.

NBT encourages patients to be in nature, build skills and connect with nature through horticultural activities in garden space, consultation in nature settings, and other nature-related activities.²³⁰ Through these activities, patients have the opportunities to not only develop a relationship with nature but also have the chance to understand themselves. At *re:intent*, PIU patients are also asked to plant their own vegetables in the greenhouse. This activity increases the connection of patients with nature and is also a life skill that they can use afterward.

225 Breslau et al, “Prevention and Treatment Strategies,” 7.

226 Simone Rodda, Natalia Booth, Michale vacaru, Brenna Knaebe, and David Hodgins, “Behaviour Change strategies for Internet, Pornographic and Gaming addiction: A taxonomy and content analysis of professional and consumer websites,” *Computers in Human Behaviour* 84 (2018) 467 – 476.

227 Block, “Issues for DSM-V: Internet Addiction.”

228 Kimberly Young, “Treatment outcomes using CBT-IA with Internet-addicted patients,” *Journal of Behavioural Addiction* 2, no. 4, (2013): 209 – 215. DOI: 10.1156/JBA.2.2013.4.3

229 Kunal Chawathey, and Angeliki Ford, “Cognitive Behavioural Therapy,” *InnovAiT* 9, no. 9 (2916): 518 -523. DOI: 10.1177/1755738016647752.

230 Shawna Waever, “Nature-based Therapeutic Service: The power of Love in Helping and Healing,” *Journal of Sustainability Education* 9 (2015), 5.

PIU usually associates with diet problems.²³¹ The poor food choices and the lack of activities tend to lead to health problems. The nutritional consultation thus examines PIU patient’s health to propose a suitable diet program. Cooking class not only helps patients to keep up with their diet but also prepare them with cooking skills. These classes may have better results when integrating with horticultural activities.

Physiology consultation and fitness classes offer examination, consultation, and training programs. PIU links with physiological problems as PIU patients tend to stay in one position or posture in an extended period.²³² Physiology consultation and fitness space are provided to counter such problems. With the help of the physiology consultant, patients can improve their physical health and potentially turn exercises into a hobby. A flexible sports space for group sport such as futsal, table tennis, dodge ball, and more are also provided to improve social connections between patients.

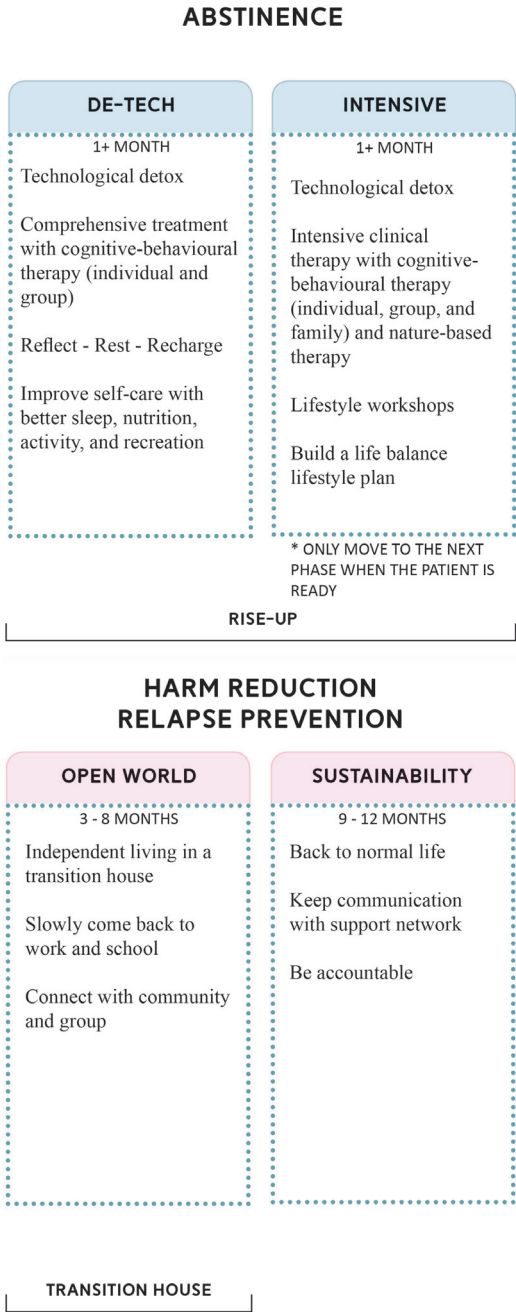
The interior of *re:intent* can further support treatment plans by providing spaces for support activities. For example, dining space offers opportunities to form and maintain conversations and enhance connection with other patients. Besides self-cooked meals, patients are provided with prepared meals by kitchen staff. This area is adjacent to the greenhouse so patients can benefit from both social interaction and Biophilic features. All the furniture is allocated to be in the group of 4, 8 or larger to encourage social interaction. This arrangement encourages patients to sit in groups. *re:intent* provides PIU patients with treatment plans that focus on CBT and NBT. Physiology and nutritional consultation are also offered to support the primary treatment plan. The design for these spaces is thus should be able to accommodate therapeutic activities as well as ensure safety for patients and staff. The non-

231 Chem, and Huang, “Internet addiction: Associated with low health-related quality of life among college students in Taiwan, and in what aspects?”

232 Diomidous et al., “Social and Psychological Effects of the Internet use.”

therapeutic area can also support the patient’s treatments. These spaces are to be designed to enhance the patient’s connection with nature, with each other, and with themselves.

Table 7. Treatment plan proposed by reSTART



Source: Data adapted from reSTART, “Programs for Adults,” NetAddictionRecovery, accessed November, 2019, retrieved from <https://www.netaddictionrecovery.com/services/program-for-adults/>.

5.3 Site Analysis

The following section introduces and analyzes the selected site, which is located within the Falcon Lake area, a part of Whiteshell Provincial Park, in Manitoba, Canada. The isolated location, within reach of Winnipeg and Kenora, makes it an ideal location for *re:intent*. Specifically, the site not only provides easy access to a peaceful natural setting but also can accommodate a wide range of outdoor activities throughout the year. These characteristics offer PIU patients an opportunity to stay away from the fast life of the modern world while accessing PIU treatments. This section includes a brief history of the selected site, an overview of climate and geography characteristics, and an analysis of opportunities and constraints that the site has. This study informs the design of *re:intent*, including architectural design, programming, and spatial planning.

History and Infrastructure

re:intent situates on a hillside of the Falcon Lake’s shore. Located within the boundaries of Whiteshell Provincial Park, Falcon Lake is fourteen square miles in size.²³³ The park’s infrastructure has been developed toward recreational services. However, the area was not always recreational-focused.²³⁴ In the 1880s, with the opening of the transcontinental railway, the infrastructure in the Provincial Park and lake area was built to serve sporadic mining purposes.²³⁵ Whiteshell’s recreational potential was only recognized in the 1920s.²³⁶ Since then, it has become a familiar destination for Winnipeg families, providing facilities for various outdoor sports, including

fishing, swimming, hunting, cross-country skiing, and snowmobiling, to name a few. The town of Falcon Lake, which has a population of 272 people, relies on hospitality services, with 30% of the buildings provide accommodation and restaurant services (refers to figure 24).²³⁷ The small town, with its location, infrastructure, and local business orientation, gives visitors a chance to get off the grid.

233 Barbara Magee, “Toward an appreciation of the environment: a development study for a visitor center at Falcon Lake,” *Practicum Thesis* (Winnipeg: University of Manitoba, 1982), 21.
234 Katherine Pattitias, and Whiteshell Provincial Park staff, “Easter Parks: Whiteshell Provincial Park,” *Manitoba Government*, accessed November 5, 2018, retrieve from http://www.gov.mb.ca/sd/parks/popular_parks/eastern/whiteshell_info.html.
235 Pattitias et al., “Easter Parks: Whiteshell Provincial Park.”
236 Ibid.
237 Statistics Canada, “Census Profile, 2016 Census: Falcon Lake, Manitoba and Saskatchewan,” *Statistics Canada*, accessed November 5, 2019, retrieved from <https://bit.ly/2OoSL3N>
238 Statistics Canada, “Census Profile, 2016 Census: Falcon Lake, Manitoba and Saskatchewan.”
239 The Huy Ninh, *Falcon Lake services and circulation*, digital illustration, created November, 2019.

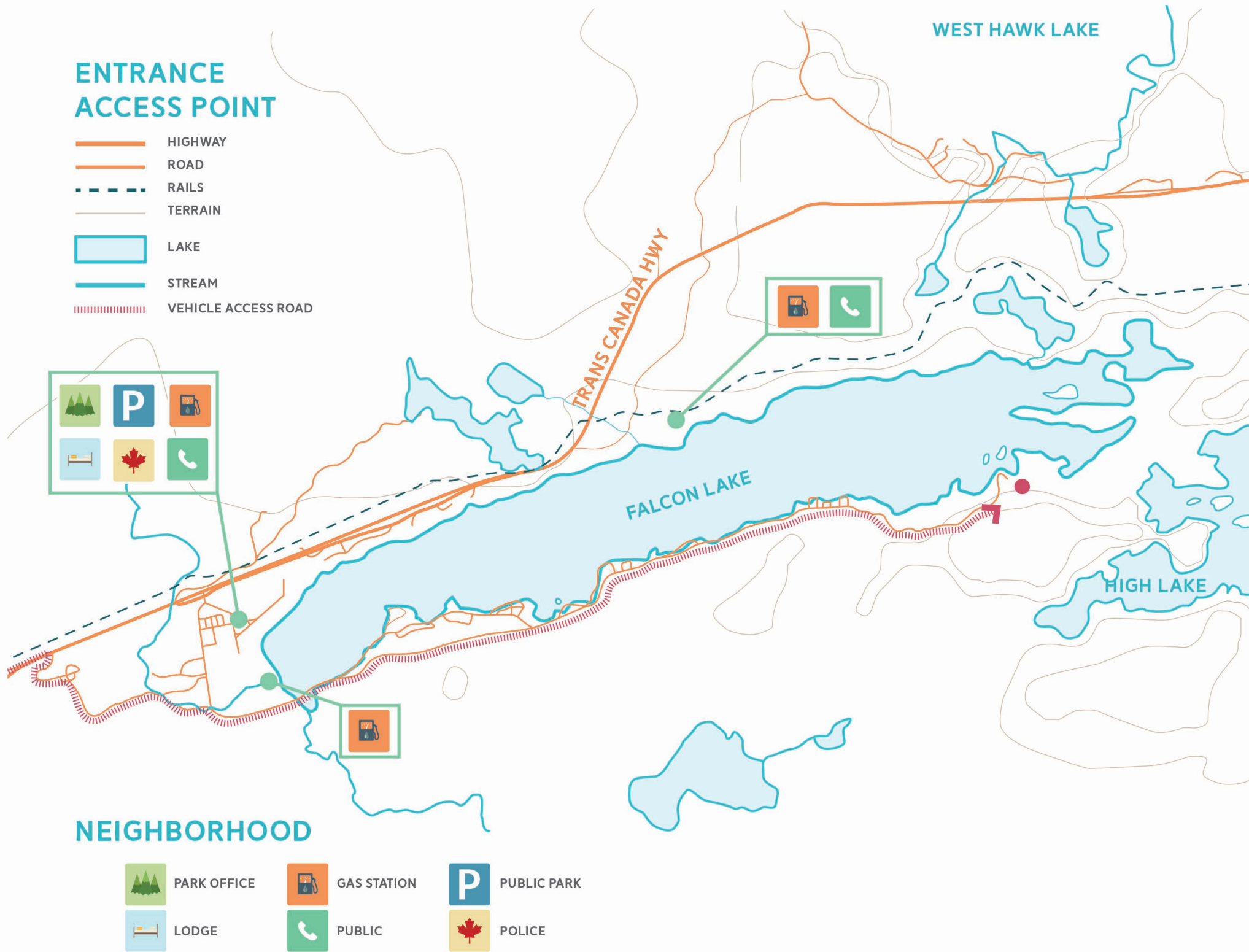


Figure 23. Falcon Lake services and access point.

Access

Located at the southeast end of the Falcon Lake, the-site is off the #1 Highway. It is a 90-minute-drive to the city of Winnipeg (refers to figure 25).^{240, 241} The largest community center within the 80km (50miles) radius is Kenora city. It takes an hour to get to Kenora from Falcon Lake.²⁴² There is no public transport route from the Lake to the cities or within the town.²⁴³

Topographic and Geographical Characteristics

Falcon Lake locates within the Canadian Shield, which is an extensive area of the Precambrian rocks.²⁴⁴ This 2-billion-year-old bedrock forms the geological core of the North American continent.²⁴⁵ Exposed bedrock is common and easily spotted in lakeshores, but the selected site does not have any visible exposed rock area. The site situates on a hillside at the height of 370 metres above sea level (refers to figure 26).²⁴⁶ It is surrounded by a Boreal forest with the north side facing the Falcon Lake and the south side leaning on the hill (refers to figure 27 and 28).^{247, 248} The hill can act as a shield, slowing down the southern wind, while the north side has a breathtaking view that will be the focal point of the whole building. Metaphorically, this view acts as a goal to be “out of the woods”: to be no longer being under the control of PIU. The view of the lake will help patients feel calm, supporting their mental condition during the treatment processes and daily life.

240 Google Maps, “Directions for Driving from Falcon Lake to Winnipeg,” *Google Maps*, accessed November 15, 2019, retrieve from <https://bit.ly/340bbyl>
241 The Huy Ninh, *Distance between the Falcon Lake and Winnipeg and Kenora*, digital illustration, created November, 2019.
242 Google Maps, “Directions for Driving from Falcon Lake to Kenora,” *Google Maps*, accessed November 15, 2019, retrieve from <https://bit.ly/37mtj82>.
243 Statistics Canada, “Census Profile, 2016 Census: Falcon Lake, Manitoba and Saskatchewan.”
244 Magee, “Toward an appreciation of the environment,” 21.
245 Ibid.
246 The Huy Ninh, *Topography and Perspective*, digital illustration, created November, 2019.
247 The Huy Ninh, *Panoramic view to the Northern side: view to the Falcon Lake*, digital photograph, November, 2019.
248 The Huy Ninh, *View to the Southern side: view to the hill*, digital photograph, November, 2019.

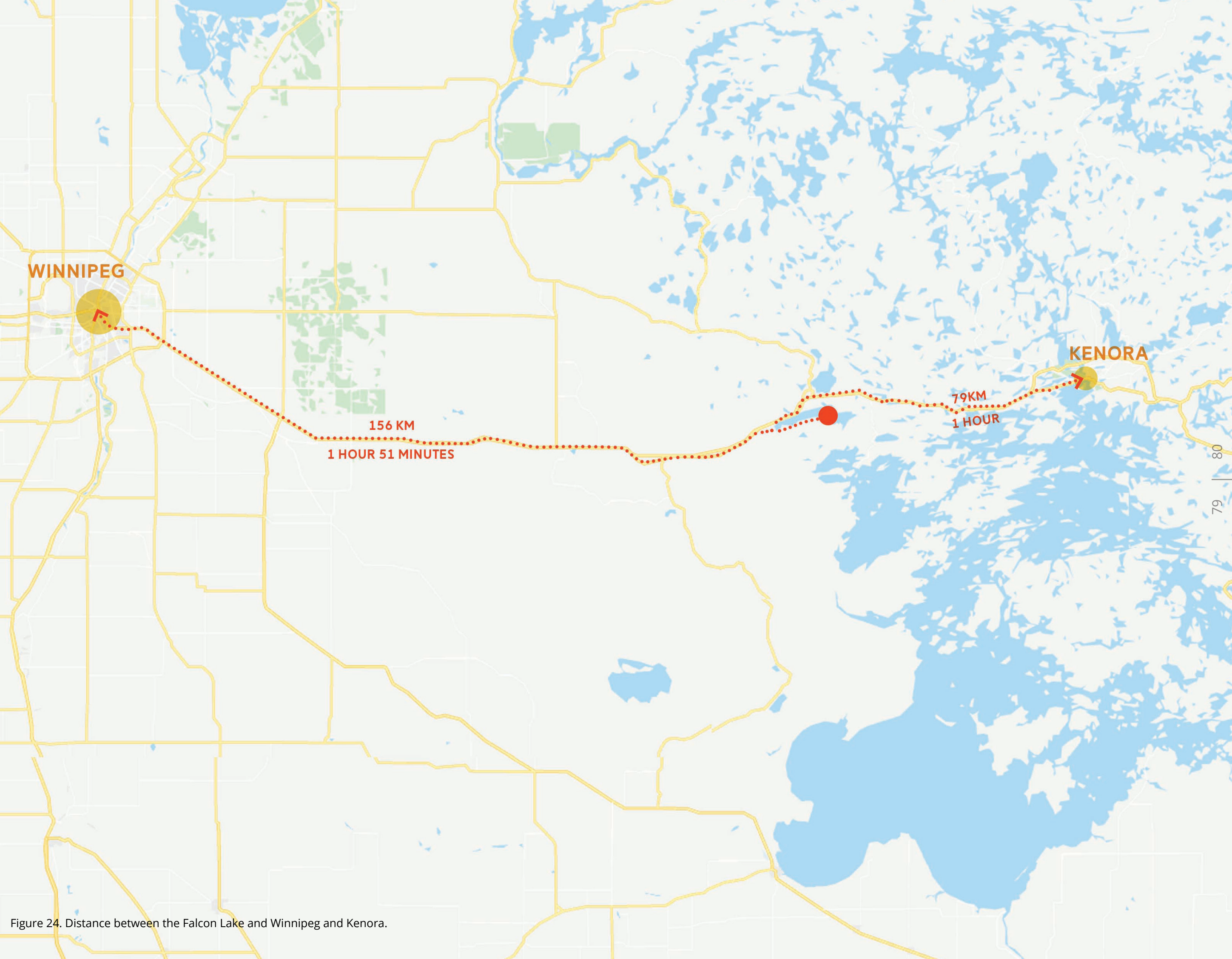


Figure 24. Distance between the Falcon Lake and Winnipeg and Kenora.



Figure 25. Topographical characteristics, sun path, and wind directions.

Climatic Characteristics

Similar to most parts of the Prairies, the climate of this area is classified as DfA by the Koppen and Geiger classification.²⁴⁹ As shown in Table 6, the temperature fluctuates from freezing winter months that can go down to -45°C to hot summer periods when the heat can go up to 36°C. This cycle of a long cold winter and a short hot summer challenge the facility to prevent overheating during hot summer and prevent underheating during winter. Snow weight is also a concern when it comes to roof design and structure of the building. These seasonal differences also create a challenge to accommodate PIU patients with horticultural therapies and other outdoor NBT during winter.

Climate characteristics:

Classified as Dfa by Koppen and Geiger

The average temperature is 3.2C

June is the hottest month, at an average temperature of 22.2C

January is the coldest month, at an average temperature of -25.9C

The average rainfall is 556.3mm annually

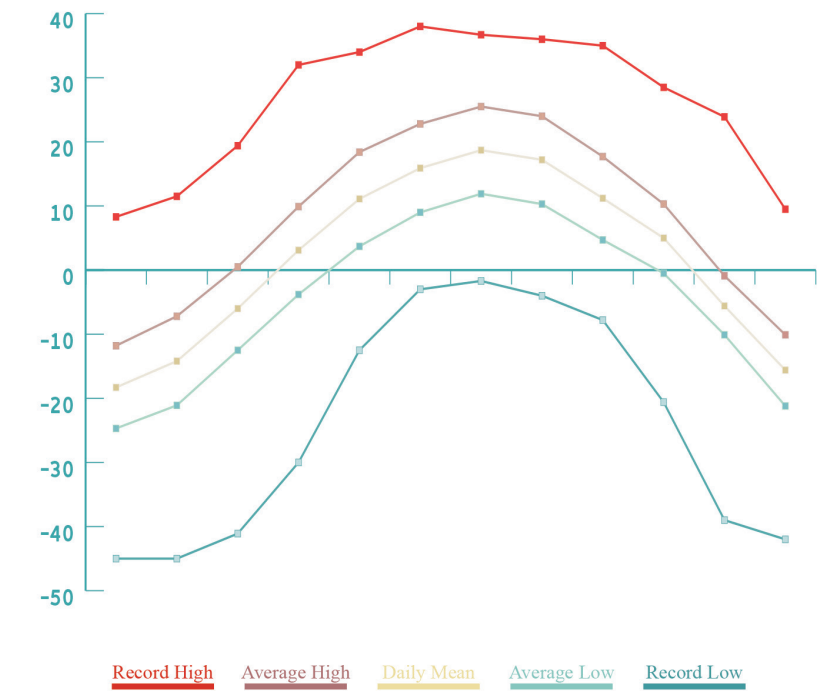
Sun Path and Wind Direction

Because the site is located in the northern hemisphere, sunlight comes from the southern direction. During summer, the altitude is 63°, and the azimuth angle is 170°, during winter, the altitude is 17°, and the azimuth angle is 175° (refer to figure 29).^{250, 251}

Moreover, with the extremely cold temperature and a considerable amount of sunlight that Manitoba receives during winter, a sunspace that acts as a solar heat collector should be considered. The data from the sun path diagram shows that this sunspace should be placed on the southern side of the building.

During summer months, the site receives cold breezes from north-western wind, which flows through the Falcon Lake. With a suitable window placement (the north side of the building) and a well-planned ventilation system, the building can utilize this wind to create a passive ventilation system. During winter months, wind blow from the south and south-west direction. The hill and the surrounding vegetation block these winds. Thus they have little impacts on the building.

Table 8. The average temperature throughout the year in Falcon Lake



Source: Data adapted from Government of Canada, "Temperature and Precipitation Graph for 1981 to 2010 Canadian Climate Normals: INDIAN BAY," Government of Canada, accessed November 5, 2011, retrieved from <https://bit.ly/2KCwb6W>



Figure 26. Topographical characteristic and View points.

249 Weather Stats, "Weather Dashboard for Whiteshell," [weatherstats.ca](https://whiteshell.weatherstats.ca), accessed November 5, 2018, retrieve from <https://whiteshell.weatherstats.ca>.

250 Weather Stats, "Weather Dashboard for Whiteshell," [Weatherstats.ca](https://whiteshell.weatherstats.ca), accessed November 20, retrieved from <https://whiteshell.weatherstats.ca/>.

251 The Huy Ninh, *Sun Path and Wind Direction diagram*, digital illustration, November, 2019.

Flora and Fauna

The local flora allocation depends on soils and drainage conditions. Jackpine is the dominant tree species, followed by aspen, black spruce, tamarack, and birch. On the understory, hazel, high bush cranberry, dogwood, and juniper make up the majority. A wide range of herbs and grasses cover the ground level.²⁵² Bringing nature into the facility is needed for the restoration and rebuilding of the connection between patients and nature. The diversity in the vegetation of the site, as well as the seasonal characteristics of the plants, creates excellent opportunities to maximize nature connectedness (refers to figure 30).²⁵³ For example, tamaracks change colours seasonally while aspen and other pine species do not. Tamaracks can be planted at a focal point of the courtyards so that its seasonal transformation can attract attention. Aspen, black spruce, and other evergreen trees can be used as general plants because they remain green all year round, preventing the courtyard from becoming a dull white space during winter.

Although Whiteshell Provincial Park has a wide range of fauna, it is challenging to find medium-sized animals such as deer, moose, wolf, lynx, and bear. The park is also homes to many smaller mammals, including otters, martens, fisher weasels, red foxes, minks, hares, beavers, raccoons, and red squirrels. There are numerous bird species such as geese, loons, owls, bald eagles, chickadees, blue jays, and more. There are two major concerns related to the local fauna. First, there should be measurements to prevent interior light from disturbing the wildlife's nightlife. Second, with the number of bird species in the area, the glazed façade should be designed to prevent birds from hitting the windows. For example, glass walls can be embellished with patterns or colours to prevent such tragedies.

In summary, the goal of designing with the local flora and fauna in mind should be to

maintain the safety of the animals and keep the environmental impacts to the very least. The selected site for this project is an excellent location to do this within the context of exploring the design solution for *re:intent*.



Figure 27. View to the Southern side: view to the hill.



Figure 28. Panoramic view to the Northern side: view to the Falcon Lake.



Figure 29. Flora at the Falcon Lake



²⁵² Magee, "Toward an appreciation of the environment."

²⁵³ The Huy Ninh, *Fauna at the Falcon Lake*, digital photograph, November, 2019.

Site Opportunities and Constraints
Opportunities:

Location: The site offers great opportunities for PIU patients to disconnect from the busy and fast life on the Internet and rebuild the connections with themselves, with nature, and with other people. Moreover, the Falcon Lake town can provide food, some certain services, and labour-power. The city of Kenora and Winnipeg are also not far from reach in the case of an emergency.

Geographical and climate characteristics: Slope terrace provides opportunities to hide from the southern wind. This terrace also allows the building to extend vertically downward. The sun path and wind direction also create opportunities to optimize passive ventilation as well as passive heating and cooling to reduce energy consumption

Geographical characteristics: The diverse geographical characteristics with hills, lakes, and forests give the facility an ability to hold various types of outdoor activities such as water-related sports, trekking, biking, bird watching, and more. These activities are needed in PIU treatments as they help patients to connect with nature and with other patients.

Vegetation: The diversity of flora species equips the designer with the flexibility to choose and select appropriate native plants for indoors and outdoors strategically.

Constraints:

Climatic characteristics: The 80°C gap in temperature between seasons is a huge challenge. A responsive building façade has the potential to deal with such extreme weather, but it needs precise calculation and investment in time and money. The climate also affects therapeutic activities in the winter months.

5.4 Spatial Requirements

The following section discusses the physical and psychological requirements of each space in space cards. As shown in figure 31, The card form provides an easy way to read and compare data. ²⁵⁴ They identify users and typical activities in each area. The requirements for ambience, lighting needs, public or private spaces are identified and categorized. The cards are coloured-coded based on the function of each group: therapeutic spaces, administrative spaces, resident spaces, public service spaces, staff service spaces, support service spaces, kitchen service spaces, and back-of-house spaces. The cards can be found in Appendix C.

SPACE CARD LEGENDS

THERAPEUTIC SPACE

ADMINISTRATIVE SERVICES

RESIDENT SERVICES

PUBLIC SPACE

STAFF SERVICES

SUPPORT SERVICES

BACK-OF-HOUSE SERVICES

KITCHEN SERVICES

Activities in the space

Name of the space - colour coded

Number of user in a room

Area of a room

Furniture, fixture and equipment

Space user

Number of room

SPACE PHYSIOTHERAPY CONSULTATION											QTY	QTY USER			AREA					
ACTIVITIES											USER									
											FF&E									
AMBIENT											NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented		Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
BIOPHILIC FEATURE											REMARK									
Required Desired Not required																				

Does the space require Biophilic design?

- Required
- Desired
- Not required

An ambient requirement of the space, represent through the choices in 5 pairs of opposite ambient options:

- Lively or Quite
- Active or Passive
- Airy or Intimate
- Visible or Discreet
- Aroma or Unscented

Requirement of natural light:

- Required
- Desired
- Not required

Requirement of artificial light:

- Direct
- Indirect
- Dimmable

Is the space public or private?

- Public
- Semi-public
- Semi-private
- Private

Other notes

Figure 30. Space Card Legends

254 The Huy Ninh, *Spatial Requirement Card legends*, digital illustration, November, 2019.

Therapeutic services		Administrative services	
CBT Consultation	30 m²x 2 = 60 m²	Open Office	193 m²
NBT Consultation	30 m² x 2 = 60 m²	Reception	27.5 m²
Physiotherapy Consultation	30 m²	Shared-private office	12.5 m² x 2 = 25 m²
Nutritional Consultation	30 m²	Documents & Records	8.4 m²
Therapeutic courtyard	3910 m²+ 794 m² = 4704 m²	Resource Center	7 m²
Nutritional Class	45 m²	Meeting Room	24.5 m²
Gymnasium	145.5 m²	Server	5 m²
Swimming Pool	189 m²	Break room	117.5 m²
Lockers	56 m²	Storage	10 m²
Infirmary	54.5 m²	Residential services	
Medication Distribution	20 m²	Resident's Suite	25 m² x 24 = 600 m²
Seclusion FF	8 m² x 3 = 24 m²	Community Area	72 m² x 3 = 216 m²
Seclusion SF	14 m² x 2 = 28 m²	Family/ Visitor Overnight services	45 m² x 2 = 90 m²
Safe-Withdrawal	12 m²	Engineering services	
Nursing Station	19.5 m² x 3 = 58.5 m²	Waste Management	28 m²
Community services		Boilers & Equipments	50 m²
Orientation/ Lounge	127 m²	Mechanical & Electrical	50 m²
Sun room	183 m²	Environmental Services	50 m²
Library	183 m²	Kitchen services	
View & vista	13.5 m²	Kitchen	70 m²
Dining	75 m²	Support services	
Public WC	48 m²	Resident's Laundry	20 m²
WC FF	5.8 m² x 2 = 11.6 m²	Facility Laundry	20 m²
WC SF	7 m² x 4 = 28 m²	Storag	3 m²
Staff services		Phone services	3 m²
Staff Respite FF	70 m²		
Staff Respite SF	7 m² x 2 = 14 m²		
Staff Lockers	87 m²		
Staff Break room	36 m²		
TOTAL		8266 m²	

Table 9. Spatial Requirements

SPACE	QTY	ACTIVITIES	FURNITURE FIXTURE & EQUIPMENTS	ATMOSPHERIC REQUIREMENTS
Therapeutic services				
Cognitive Behaviour Consultation 2 - 4 occupants	2	Providing CBT services, that include individual and group sessions. Office work	Working desk and chair Comfortable seats	Quite, intimate, cozy with natural lighting and indirect lighting Semi-private space
Nature-Based Therapy Consultation 2 - 4 occupants	2	Providing consultation and direction related to the patient's treatment plan Office work	Working desk and chair Comfortable seats	Quite, intimate, cozy with natural lighting and indirect lighting Semi-private space
Physiotherapy Consultation 2 occupants	1	Taking physical examination Educating & proposing exercise program & schedule Office work	Working desk and chair Comfortable seats Examination chair	Quite, intimate, cozy with natural lighting and indirect lighting Semi-private space
Nutritional Consultation 2 occupants	1	Examining patient's nutritional condition Proposing diet program Office work	Working desk and chair Comfortable seats Scale	Quite, intimate, cozy with natural lighting and indirect lighting Semi-private space
Safe Withdrawal & Seclusion 1 occupant	4	Distant the user from stressor and sources of conflict	Built-in seat	Quite, intimate, cozy with indirect lighting Private space
Courtyard 30 occupants	2+	Accommodating therapeutic activities and therapy sessions, self-reflection, and exploration	Visible and discreet seats	Quite, discreet, with natural light Public space with private option
Greenhouse 12 occupants	1	Accommodating horticultural activities and therapy session - Self-reflection	Seats Tool storage	Lively, airy, with natural lighting Public space with private option
Gymnasium 12 occupants	1	Exercising	Weight-lifting and exercising equipments Open shelving and storage	Lively, airy, with natural lighting Public space
Swimming Pool 12 occupants	1	Holding water-related activities Relaxing	Life-guard seats Loungers	Lively, airy, with natural lighting Public space
Culinary Class 9 occupants	1	Cooking instruction Cleaning up dishes & cookware	Cabinet & ware-washing station Kitchen island	Lively, airy, with direct lighting Semi-public space

SPACE	QTY	ACTIVITIES	FURNITURE FIXTURE & EQUIPMENTS	ATMOSPHERIC REQUIREMENTS
Community services				
Orientation <i>12 occupants</i>	1	Welcoming and providing information to visitor & patients Gathering while waiting for therapy sessions	Orientation counter Movable furniture	Quite, intimate, cozy with natural lighting and indirect lighting Public space
Sun room <i>12 occupants</i>	1	Gathering for therapy sessions	Support counter Movable furniture	Intimate, cozy with natural lighting and indirect lighting Public space
Library <i>8 occupants</i>	1	Reading and writing journal for therapy sessions	Book shelves Working surfaces & chairs	Quite, intimate, cozy with natural lighting and indirect lighting Semi-public space
Dining <i>24 occupants</i>	1	Having meals & cleaning dishes Gathering to socialize Relaxing	Food distribution Dish & utensil shelves Communal sinks Compost bins	Lively, active, airy, visible, unscented Public space
Patio <i>8 occupants</i>	1	Having meals outdoor Gathering to socialize Relaxing	Move-able furniture	Lively, active, airy, visible with natural light Public space
Washroom <i>8 occupants</i>	3	Private needs	Toilet Sink and faucet	Quite, intimate, discreet, direct lightning Semi-public space
View & Vista <i>1 occupant</i>	1	Sight seeing Self-reflecting & relaxing	Bench	Quite, intimate, discreet, view to nature Public space

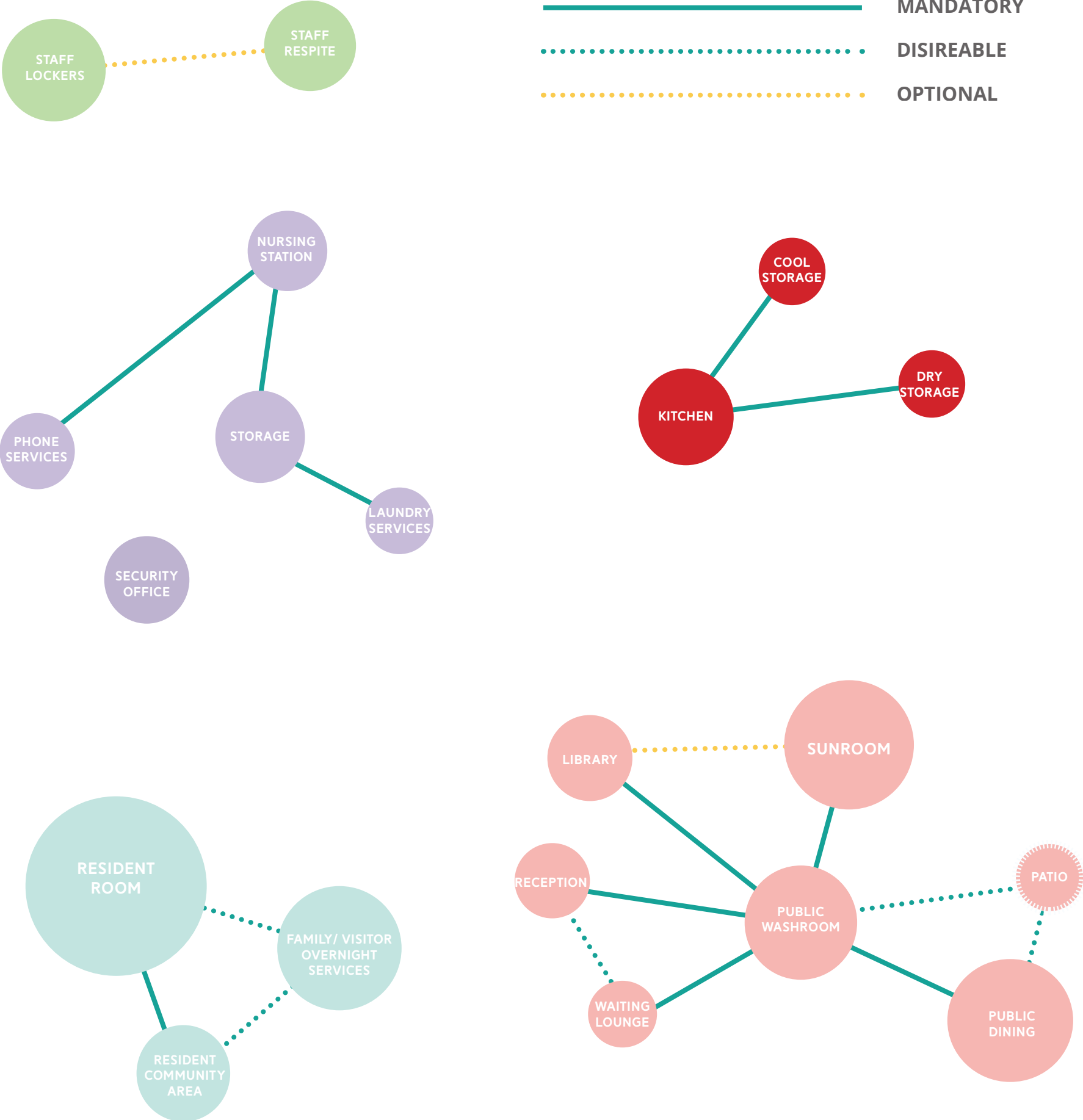
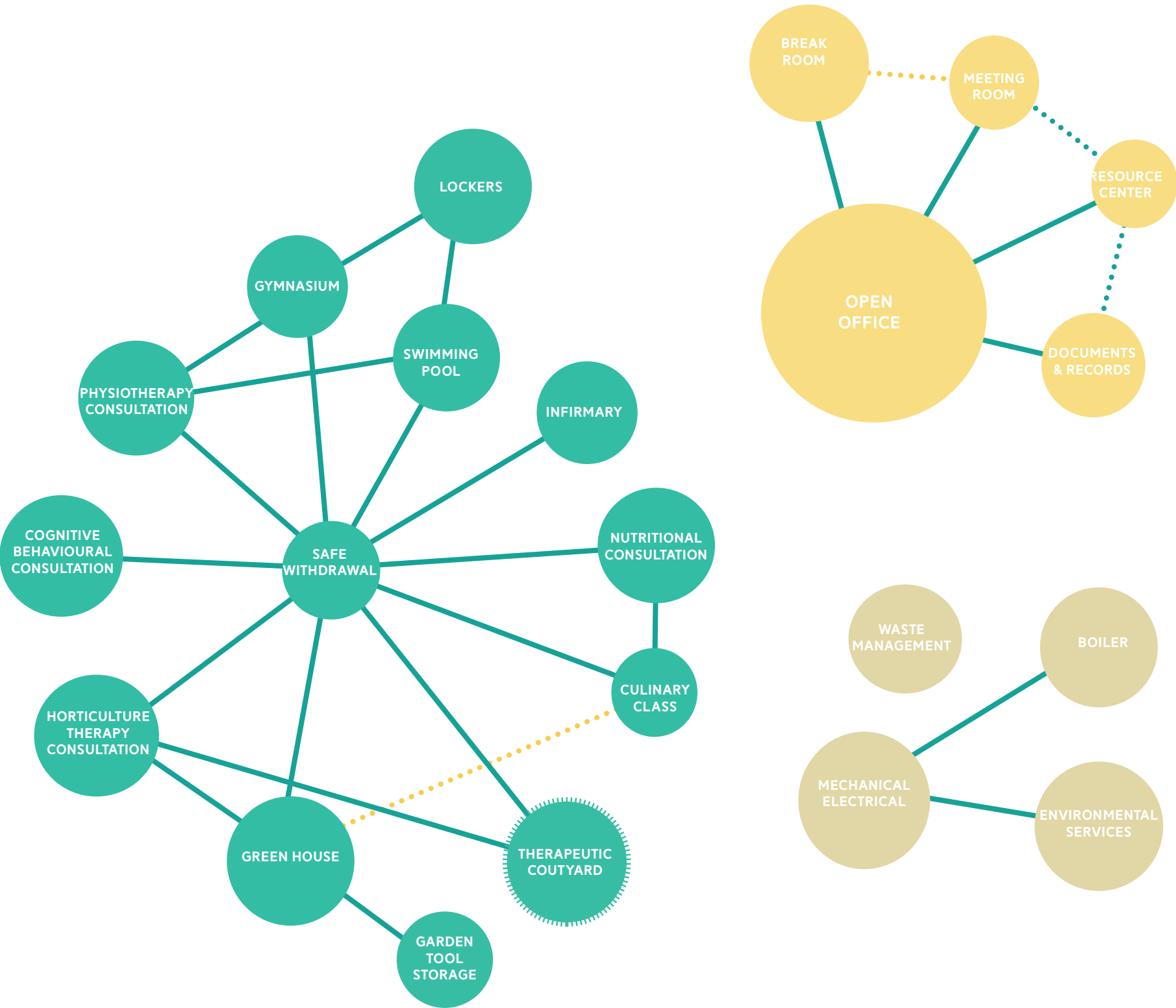
SPACE	QTY	ACTIVITIES	FURNITURE FIXTURE & EQUIPMENTS	ATMOSPHERIC REQUIREMENTS
Administrative Services				
Open Office <i>12 occupants</i>	1	Coordinating and organizing tasks Answering emails & phone	Work station & chairs Open meeting furniture	Lively, active, intimate, discreet from patient's view Semi-public
Conference <i>8 occupants</i>	1	Discussing facility matters Training Holding Online conferences	Meeting table for 8 - 12 Projector Cabinet	Quite, intimate, discreet Semi-public
Meeting Room <i>4 occupants</i>	1	Discussing facility matters Training Holding Online conferences	Meeting table for 4 & chairs Screen monitor	Quite, intimate, discreet Semi-public
Shared-private Office <i>4 occupants</i>	2	Coordinating and organizing tasks Working on confidential tasks or with sensitive information	Work station & chairs Document storage	Quite, intimate, discreet Private
Break room <i>18 occupants</i>	1	Taking break between shifts Socializing Relaxing	Movable dining furniture Fridge & microwave Sink & faucet	Lively, intimate, relaxed aroma, view to nature with daylight Semi-public
Document and Record <i>2 occupant</i>	1	Storing documents and records	File cabinet Shelving	Quite, passive, intimate, discreet with direct lighting Semi-private
Resource Center <i>1 occupant</i>	1	Photocopying, scanning, and printing documents	Photocopier, printer, scanner Work station & chair Desktop	Quite, intimate, discreet with direct lighting Semi-public
Staff Services				
Staff Lockers <i>6 occupants</i>	2	Storing staff belongings Changing & showering	Lockers Shower Sink & faucets	Lively, active, discreet, with direct lighting Semi-private
Staff Respite <i>1 - 4 occupants</i>	4	Allowing staff to take break between shifts Relaxing Sleeping	Comfortable seats Bed	Quite, intimate, discreet with view to nature and indirect lighting Semi-private

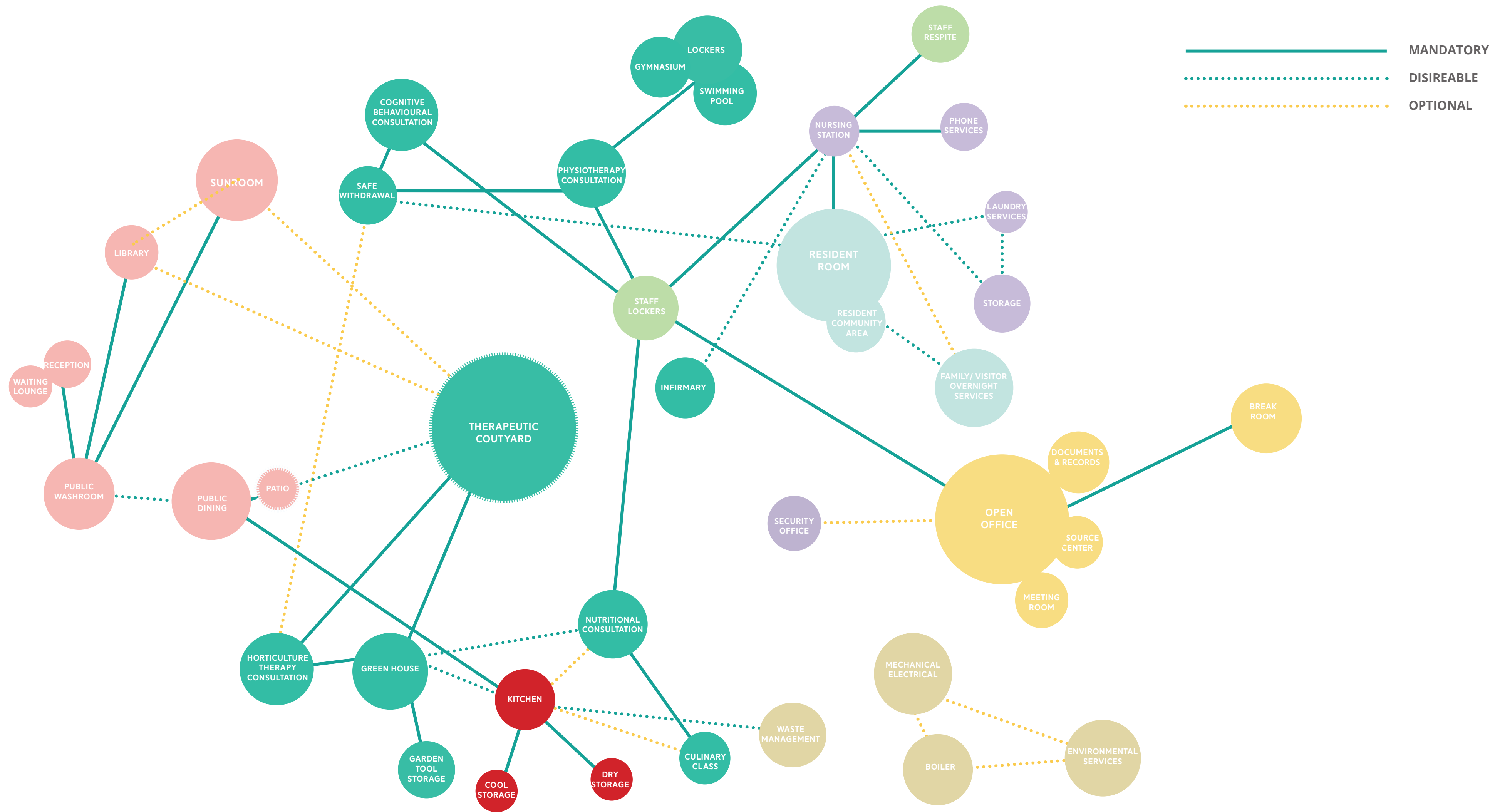
SPACE	QTY	ACTIVITIES	FURNITURE FIXTURE & EQUIPMENTS	ATMOSPHERIC REQUIREMENTS
Residential services				
Resident's Suite <i>1 occupant</i>	24	Self-reflecting relaxing Sleeping Personal care and	Build-in furniture including bed, couch, and wardrobe Move-able seats Bathroom	Quite, passive, intimate, discreet with view to nature Private
Resident Community Area <i>10 occupants</i>	3	Gathering & socializing Relaxing Playing boardgames	Nurse's station Shelves Large table for 8 - 10	Lively, active, intimate, visible with dimm-able lighting Semi-public
Family/ Visitor Overnight services <i>4 occupants</i>	2	Relaxing & sleeping Personal care	Bed & wardrobe Couch & move-able seats Bathroom	Quite, passive, intimate, discreet with view to nature Private
Support services				
Nurse station <i>4 occupants</i>	3	Providing support & observing patients Gathering spot Office work	Counter & bar stool Shelving & cabinet	Lively, active, intimate, visible, with view to patient's gathering space Public
Laundry services <i>2 occupants</i>	1	Washing and drying clothes & beddings	Washer & dryer Storage space Seats Working counter	Quite and passive with direct lighting Public
Phone services <i>1 occupant</i>	2	Communicating with family & friends under supervision	Phone Seats	Quite, passive, intimate with indirect lighting Private
Storage <i>1 occupant</i>	4	Storing equipments and tools	Shelving Sink	Quite, passive, intimate with direct lighting Semi-private
Security <i>2 occupants</i>	1	Checking staff's identification Supervising the facility through camera system Relaxing	TV screen Working surfaces Seats	Quite, passive, intimate with direct lighting Private

SPACE	QTY	ACTIVITIES	FURNITURE FIXTURE & EQUIPMENTS	ATMOSPHERIC REQUIREMENTS
Mechanical services				
Mechanical room <i>2 occupants</i>	1	Producing & distributing energy Storing, heating, & distributing water Waste water treatment	Boiler Water treatment equipment Electrical panels	Quite, passive, discreet with direct lighting Semi-private
Environmental services <i>2 occupants</i>	1	Controlling the environmental efficiency of the facility		Quite, intimate, discreet Semi-private
Waste management <i>2 occupants</i>	1	Waste storing and treating Waste disposing		Quite, intimate, discreet Semi-private
Kitchen services				
Kitchen <i>6 occupants</i>	1	Preparing meals Cleaning cookware	Kitchen counter Shelving Stoves Sink & faucet	Lively, active, airy, visible with direct lighting Semi-public
Storage <i>2 occupants</i>	2	Storing goods and products	Shelving	Quite, passive with direct lighting Semi-private
Delivery dock <i>2 occupants</i>	1	Receiving goods & products	Trolley	Lively, active with direct lighting Semi-public

5.5 Zoning Diagram

The following section identifies the connections between spaces. A room is first examined regarding its function and relationships with other rooms (horizontal allocation). Next, rooms are grouped to form two levels of the building (vertical arrangement). This process helps to figure out the most effective layout option that satisfies users' needs and the project's goals.





06.

DESIGN PROPOSAL

6.1 ARCHITECTURAL DEVELOPMENT AND DESIGN
6.2 INTERIOR DESIGN

CHAPTER SIX

DESIGN PROPOSAL

Introduction

The proposed design presented in this chapter is a summation, understanding, and exploration of the literature investigation, precedent study, site analysis, and program development discussed in previous chapters. The design at *re:intent* emphasizes the self's reconstruction that evolves and revolves around Merleau-Ponty's concept of being-in-the-world: occupants connect with themselves, connect with others, connect with architecture and interior space, and connect with nature. The three main architectural and design theories, including Biophilic Design, Atmospheric Architecture, and Supportive Design, are embraced and applied at *re:intent*.

As the project develops, the design evolves and is expressed through the concept of "overlap." As the term is often used by Merleau-Ponty, overlap represents the idea of connection through sharing similarities but still maintaining one's distinction. For instance, as embodied entities, we overlap with the surroundings. The body extends toward the surrounding space, making it a part of the body schema and vice versa, the space extends into the body, making it a part of the space. Despite such an overlap, the body and the space remain two distinct figures. This concept is shown through design strategies, applying in zone allocation, floor layout, millwork details, and furniture selection, to name a few.

The design proposal includes a schematic design of a new building in Falcon Lake in Whiteshell Provincial Park. As an inpatient retreat facility, the building needs to be able to host therapeutic activities, indoor and outdoor, as well as provide comfortable daily living accommodation to PIU patients. To meet these requirements, it first needs to be designed for all seasons with significant considerations on building shape and the overlap between indoor and outdoors. Moreover, the design of the building must consider the local climate and geography to reduce environmental footprint. The solutions for these issues are explored in the first section of this chapter, in a discussion on the architectural development process.

To enhance the efficiency of the treatment program, *re:intent* is designed around the patient's comfort. This patient-centric design strategy provides PIU patients with a stress-free living environment and comfortable therapeutic space. Furniture selection and millwork design are crucial in creating such an interior environment in support of the design strategies suggested in both Atmospheric Architecture and Supportive Design. Based on the discussion in Chapter 3, furniture at *re:intent* has a residential appearance and can be positioned as needed. As a precaution, furniture items are mostly upholstered and covered with foam and fabric to prevent them from turning into weapons. Millwork pieces are to be designed in

the image of residential equivalents as they are embedded with the essence of the home.

This chapter consists of two sections. Section One is primarily concerned with the approach to the schematic design of the building. Issues such as attributes of the site and the massing of the building are discussed here. Section Two explores, at a deeper level, the design proposal for the interior of *re:intent*. Both sections attempt to inform the reader of the connections made to previous chapters as well as the strategies explored in the development of the design proposal.

6.1 Architectural development and design

Building Mass

As discussed in Chapter 5, *re: intent's* architectural design needs to be suitable for the Manitoban climate, where the six-month-winter comes with an enormous amount of snow. Learning from the design of Qualico Family Centre and Maggie's Cancer Centre, *re:intent* has an inclined roof to handle heavy snow and rain (refers to figure 31).

In order to provide a safe and secure outdoor space for therapeutic activities, a courtyard was provided. Figure 32 shows the relationships between a courtyard and building shapes: linear, L-shape, U-shape, square, and circular. Square-shaped and circular-shaped buildings are the most effective. In these options, the building turns itself into fences, reduces the feeling of confinement and the idea of eluding. Moreover, this placement of the courtyard allows the healthcare staff to supervise and interfere easily from any part of the building.

As discussed in the Biophilic Design section, the nature provided by the facility should be versatile and blend well between natural elements and artificial designs. The introverted building mass not only provides a secure nature

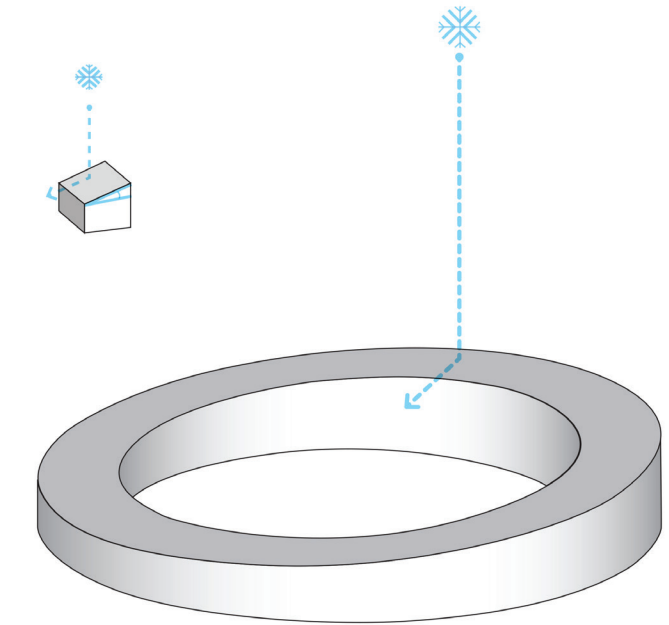


Figure 31. Inclined roof based on Qualico Family Center design to handle heavy snow and rain.

setting as mentioned, but also prevents unfiltered, dangerous, and overwhelming nature elements from coming in. The location of *re:intent* emphasizes the immensity of the surrounding space and nature. Such a vast space can overwhelm these mentally fragile PIU patients, especially during their first few weeks of treatment. The courtyard created by the introverted building mass meets the patient's needs regarding Biophilia. In a way, the design protects the patients against the infinite nature and the limitlessness of space, fulfilling its tasks as Pallasmaa suggested in *The Task of Architecture*.²⁵⁵

Figure 32 shows two interpretations of the circular-shaped building. One has the main corridor clamped between two rows of room, while the other has the main corridor overlapped by the interior and the outdoors (courtyard). As highlighted in the Biophilic Design section, natural light and view to nature should play a crucial role at *re:intent*. Such Biophilic attributes are emphasized and embraced in the second

²⁵⁵ Juhani Pallasmaa, "Body, Mind, and Imagination: The Mental Essence of Architecture," in *Mind in Architecture: Neuroscience, embodiment, and the future of design*, ed. Sarah Robinson, and Juhani Pallasmaa (Cambridge: The MIT Press, 2015), 52.

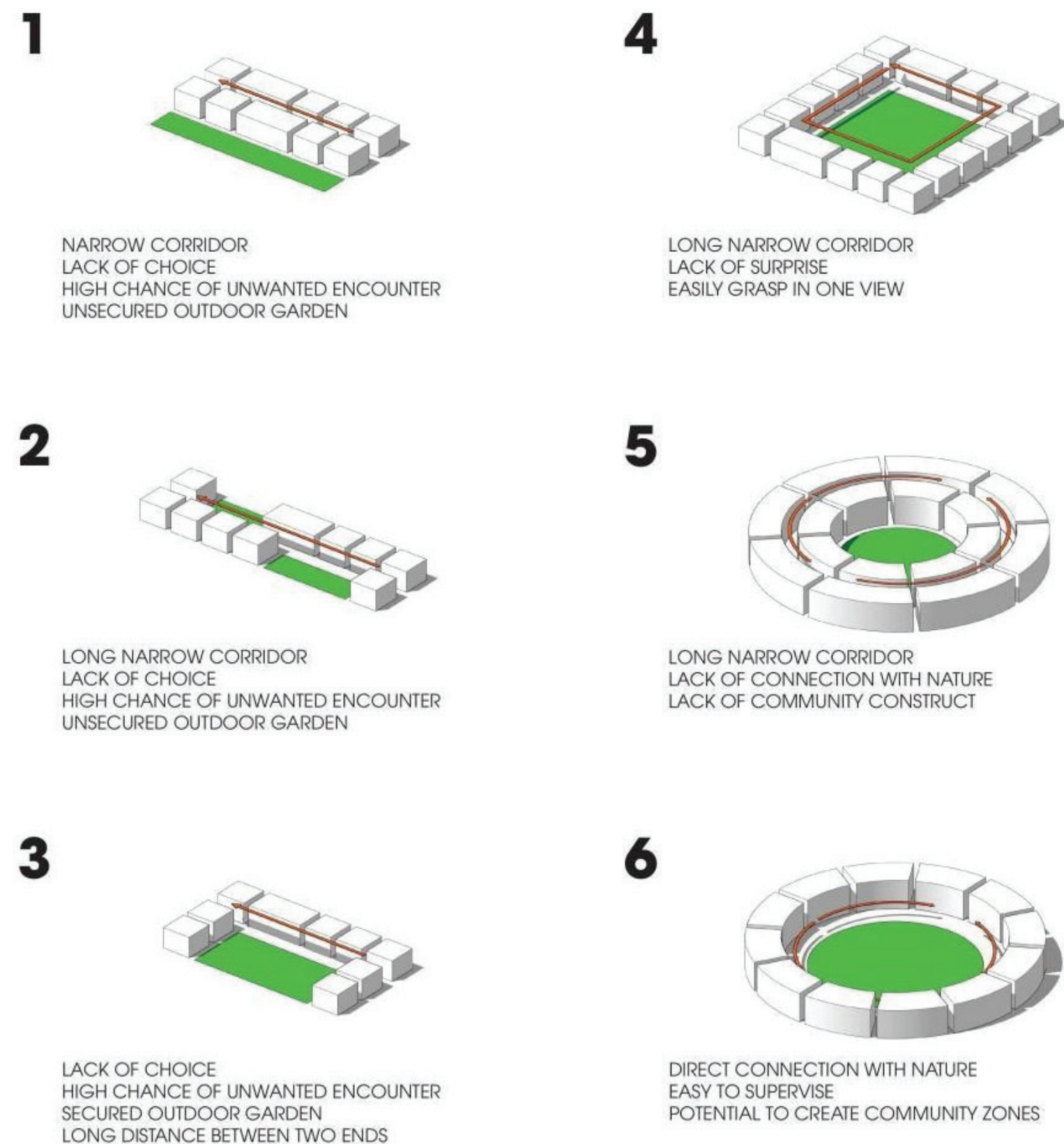


Figure 32. Different types of building shapes and courtyard combinations.

corridor design approach. Therefore, *re:intent* is a circular-shaped building with rooms allocated on the outer ring and corridor on the inner ring, adjoining the therapeutic courtyard in the center (refers to figure 32). This layout not only satisfies Biophilic Design requirements but also makes the courtyard more physically and visually accessible.

This corridor structure also helps prevent patients from getting lost and increases the chances of interacting with others. As the corridor goes along with the ring-shaped building mass, it becomes a circle that one can reach their destination no matter which direction they choose. It also has a metaphorical meaning, implying that the patients will eventually graduate from the retreat, as long as they start moving. Further, the building has one main corridor on each floor. These main corridors and their various corridor pockets accommodate spontaneous interactions between occupants, increasing social interaction and support within the facility.

Manitoba Climate and Biomimetic Shading System

As discussed in Chapter 5, Manitoban weather fluctuates significantly throughout a year: severely cold in winter and scorching hot in summer. The study of Qualico Family Centre in Chapter 4 shows that glazing walls with a suitable shading system can help to regulate the interior temperature. This project applies a similar method to control the indoor temperature: double glazing walls with a responsive shading system. While the glazing walls allow sunlight to come in and heat the interior up in winter, the responsive shading system prevents sunlight from overheating the interior in summer.

As shown in figure 33, the biomimetic responsive shading system used in this project is made of two main parts: a skeleton made of a shape-memory material (SMM) and a blinder made of low translucent fabric. The mechanism of this system is based on how SMM responds to

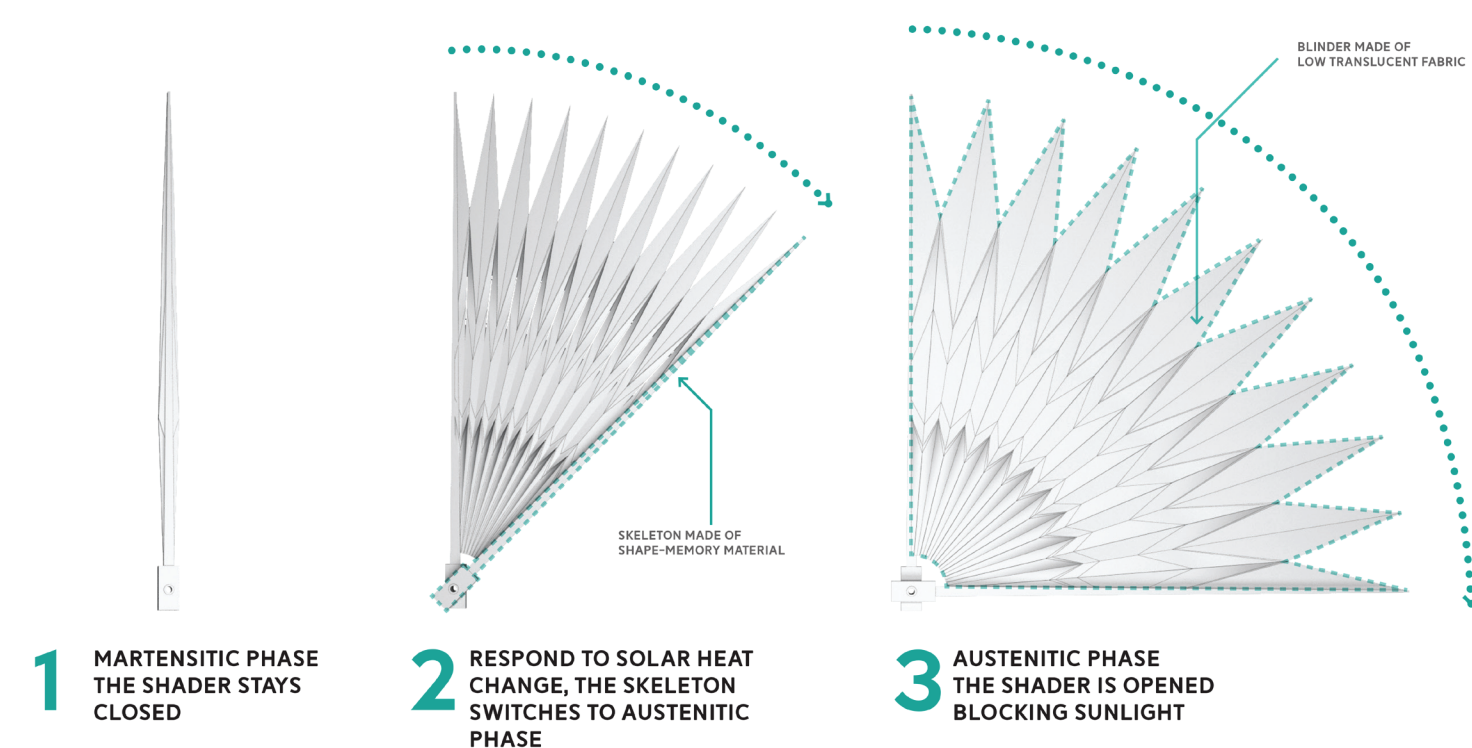


Figure 33. Responsive Shading System.

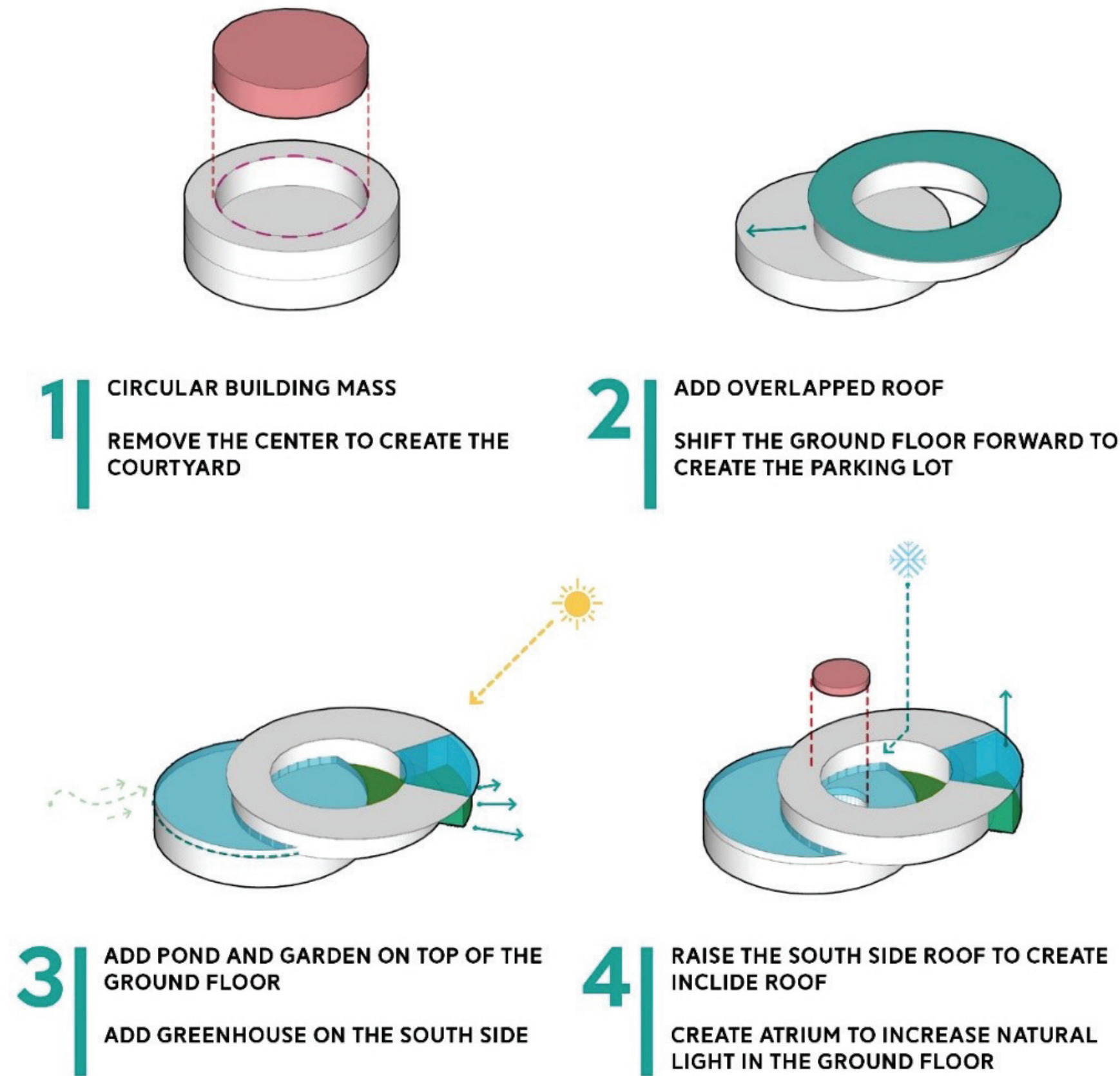


Figure 34. Architectural Development process.

heat change.²⁵⁶ By utilizing this unique property of SMM, the shading system responds to the outdoor climate to regulate the indoor temperature. In cold winter months, the shading system stays closed, SMM is at the martensitic phase, allowing sunlight to come in. Conversely, in hot summer months, the shading system opens, SMM is at an austenitic phase, blocking sunlight from coming in. The shading system used at *re:intent* employs a natural process of SMM reacting to heat to adjust the indoor temperature. This biomimetic solution not only reduces energy and material usage but also is responsive and accurate.

Geography characteristic and space allocation

re:intent is situated on the hillside of the Falcon Lake, allowing the proposed building to expand downwardly to form a lower floor. This lower floor (first floor) accommodates the facility's administrative work and patient's private activities.²⁵⁷ As shown in figure 34 and 35, the lower level floor is pushed forward to the north side to assure compliance with the National Building Code required means of egress. This allocation also provides excellent views of nature and daylight.

As informed in Chapter 5, sunlight enters the building from the south side of the site. This means rooms located on the south elevation receive more natural light and passive solar heat during the day. The ring shape of *re:intent* doubles such a space. Because the goal is to maximize sunlight in the indoor, these south-facing spaces are to be most used during the day. Community areas such as the Dining area and the Sunroom meet this requirement. As the Greenhouse requires more natural light than any other room, it should also be located on the south side of the building (refers to figure 34). Furthermore, to regulate the temperature and airflow of the

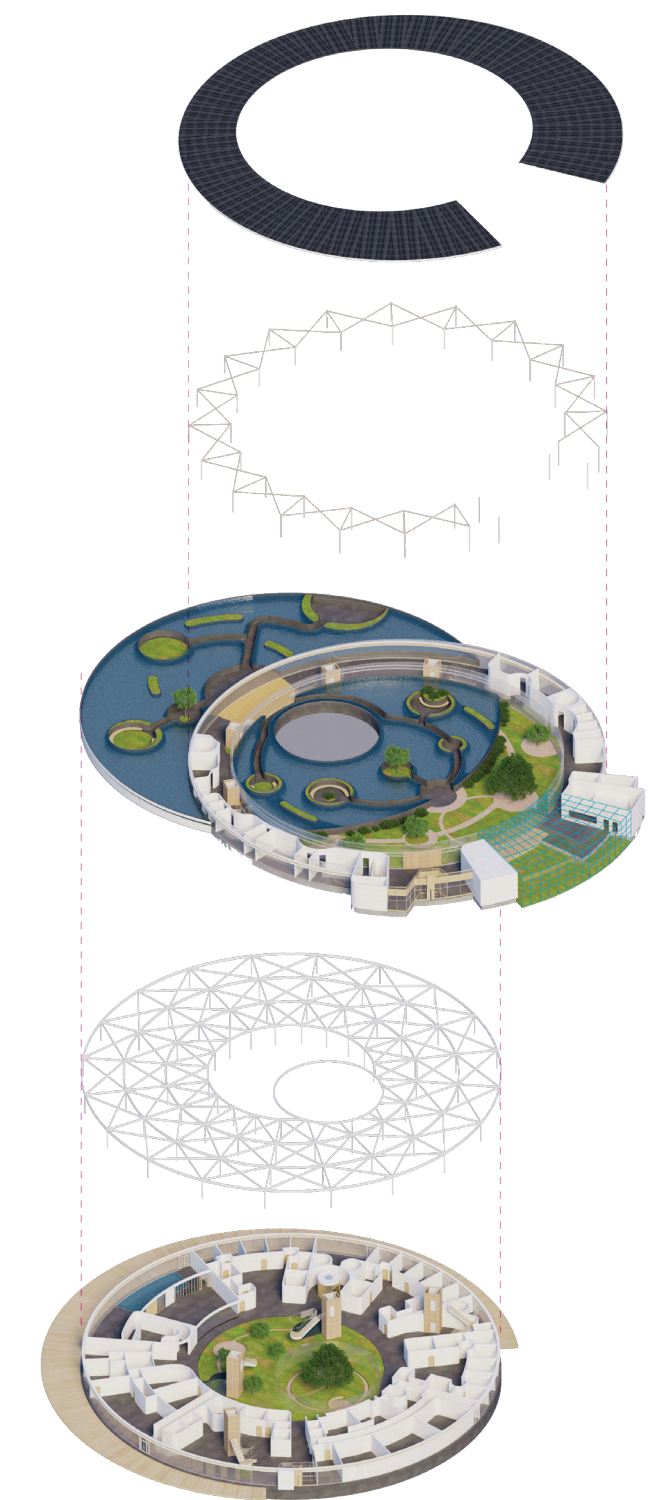


Figure 35. Vertical relationship between the two floors.

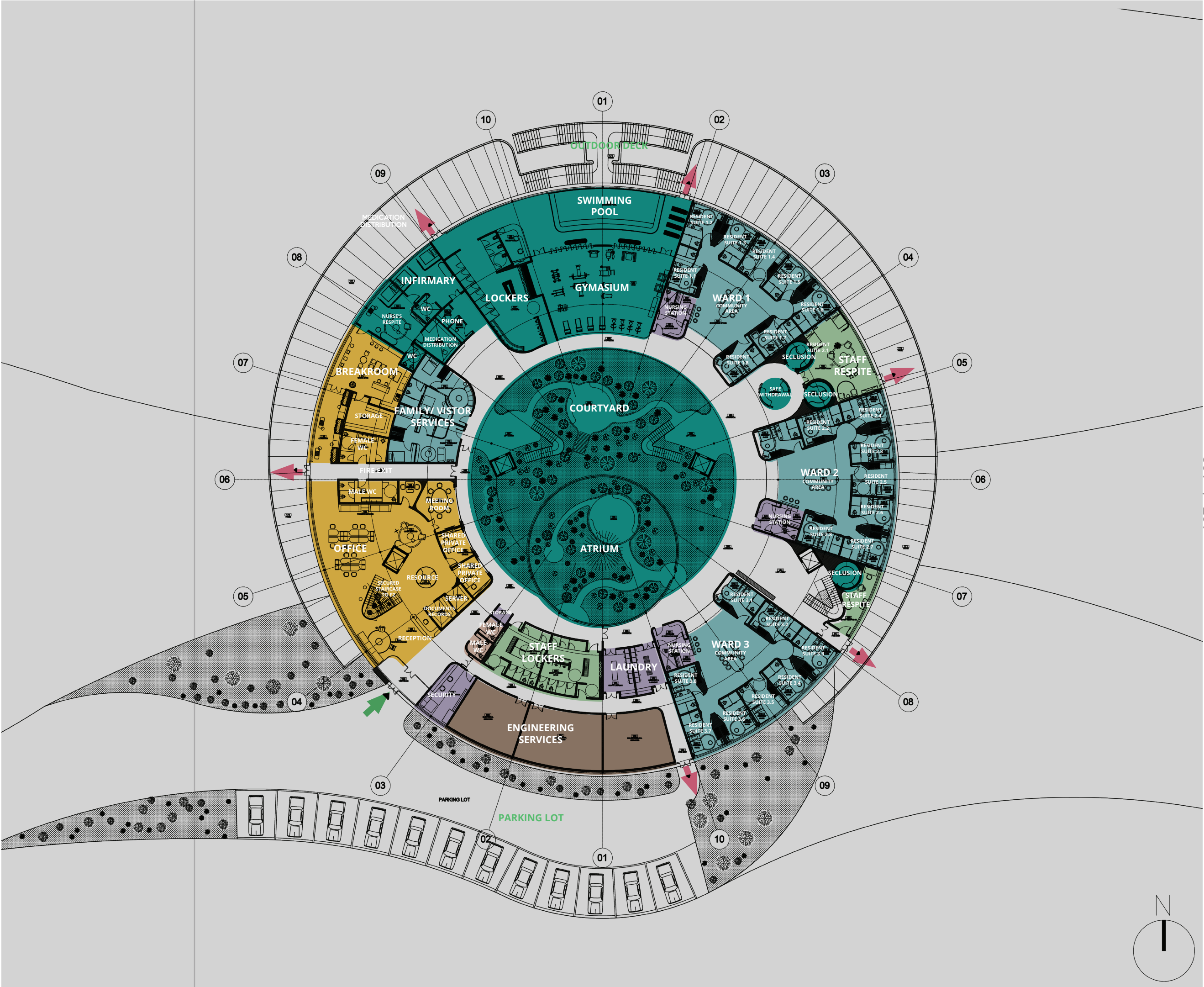
²⁵⁶ SMM stays at one shape when the temperature is below a certain point (i.e. martensitic phase) and changes into a predetermined shape when it gets heated up (austenitic phase). The cycle repeats when the temperature is cooled down as the SMM goes back to martensitic shape.

²⁵⁷ From now on, the original floor is called Second floor and the downwardly expanded floor is called First floor.

ZONING DIAGRAM | FIRST FLOOR

THERAPEUTIC SERVICES	LOCKERS	56 m ²
	SWIMMING POOL	189 m ²
	GYMNASIUM	145.5 m ²
	INFIRMARY	54.5 m ²
	MEDICATION DISTRIBUTION & STORAGE	20 m ²
	THERAPEUTIC COURTYARD	794 m ²
	SECLUSION	8 m ² x 3 = 24 m ²
	SAFE-WITHDRAWAL	12 m ²
	NURSING STATION	19.5 m ² x 3 = 58.5 m ²
COMMUNITY SERVICES	PUBLIC WC	5.8 m ² x 2 = 11.6 m ²
ADMINISTRATIVE SERVICES	OPEN OFFICE	193 m ²
	RECEPTION	27.5 m ²
	SHARED-PRIVATE OFFICE	12.5 m ² x 2 = 25 m ²
	DOCUMENTS AND RECORDS	8.4 m ²
	RESOURCE CENTRE	7 m ²
	MEETING ROOM	24.5 m ²
	SERVER	5 m ²
	BREAK ROOM	117.5 m ²
	STORAGE	10 m ²
RESIDENTIAL SERVICES	RESIDENT SUITE	25 m ² x 24 = 600 m ²
	COMMUNITY AREA	72 m ² x 3 = 216 m ²
	FAMILY/ VISITOR OVERNIGHT SERVICES	45 m ² x 2 = 90 m ²
STAFF SERVICES	STAFF RESPITE #1	59 m ²
	STAFF RESPITE #2	18.5 m ²
	STAFF LOCKERS	87 m ²
ENGINEERING SERVICES	BOILERS & EQUIPMENT	50 m ²
	MECHANICAL & ELECTRICAL	50 m ²
	ENVIRONMENT SERVICES	50 m ²
SUPPORT SERVICES	RESIDENT LAUNDRY	9 m ²
	FACILITY LAUNDRY	29 m ²
	STORAGE	3 m ²

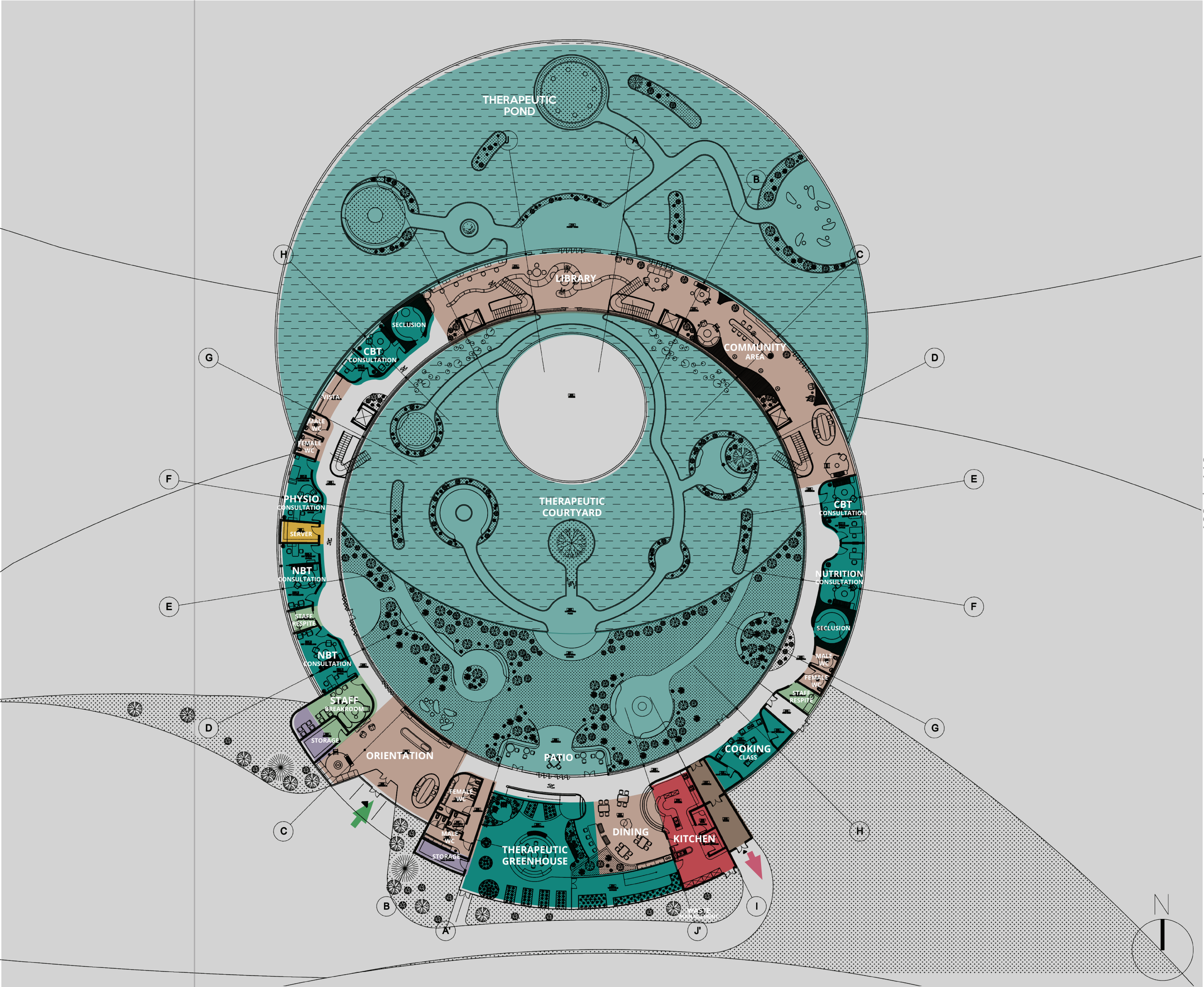
TOTAL 3044.5 m²
(with CORRIDOR) 3846.5 m²

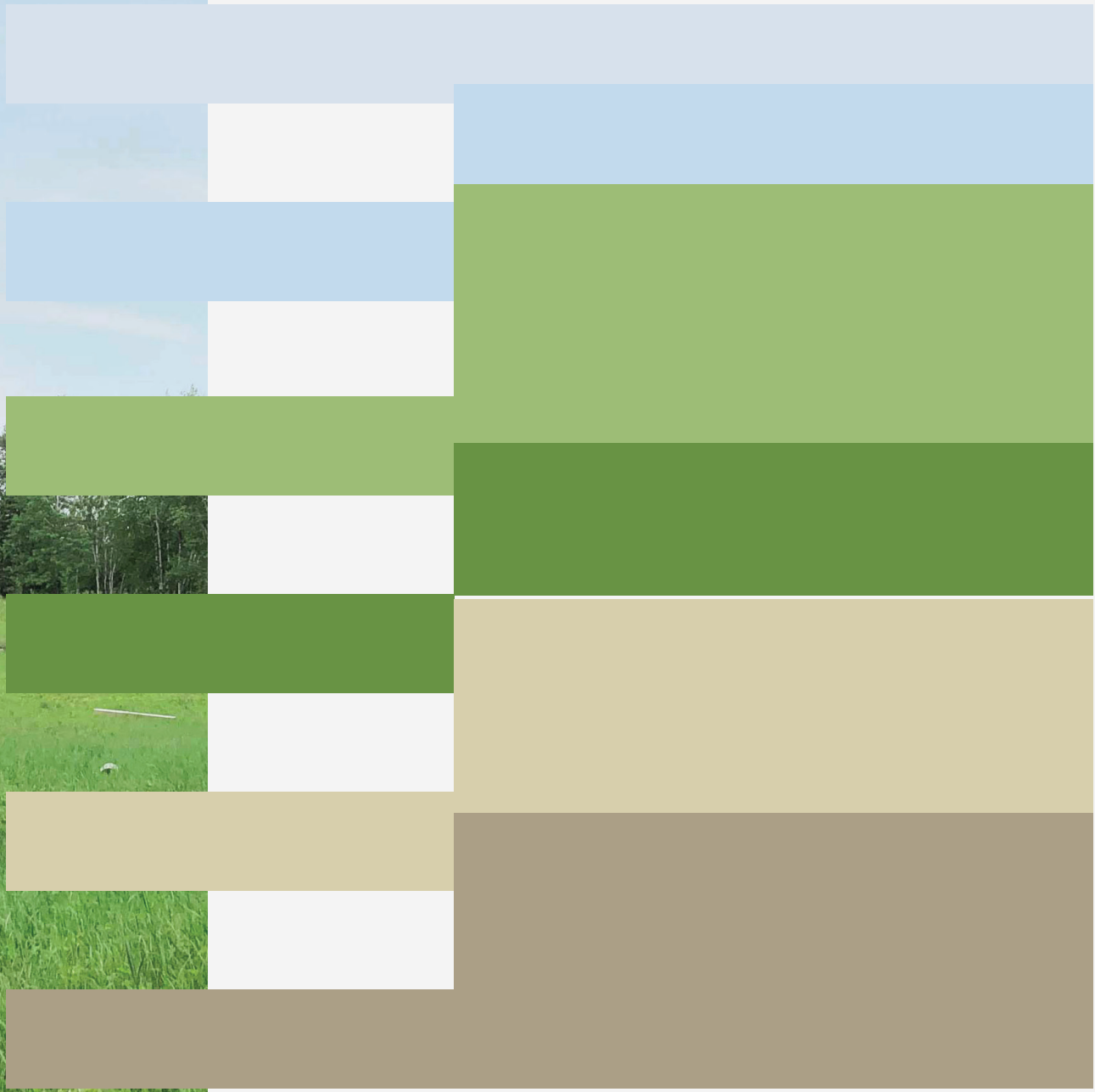


ZONING DIAGRAM | SECOND FLOOR

THERAPEUTIC SERVICES	COGNITIVE-BEHAVIOURAL THERAPY CONSULTATION	30 m ² x 2 = 60 m ²
	NATURE-BASED THERAPY CONSULTATION	30 m ² x 2 = 60 m ²
	PHYSIOTHERAPY CONSULTATION	30 m ²
	NUTRITIONAL CONSULTATION	30 m ²
	THERAPEUTIC COURTYARD	3910 m ²
	THERAPEUTIC GREENHOUSE	218 m ²
	SECLUSION	14 m ² x 2 = 28 m ²
	RESIDENTIAL KITCHEN/ NUTRITIONAL CLASS	45 m ²
COMMUNITY SERVICES	SUN ROOM	183 m ²
	LIBRARY	183 m ²
	ORIENTATION/ LOUNGE	127 m ²
	VISTA	13.5 m ²
	DINING	75 m ²
	PUBLIC WC	48 m ²
	WC	7 m ² x 4 = 28 m ²
ADMINISTRATIVE SERVICES	SERVER	7 m ²
KITCHEN SERVICES	KITCHEN	70 m ²
STAFF SERVICES	STAFF RESPITE	7 m ² x 2 = 14 m ²
	STAFF BREAK ROOM	36 m ²
ENGINEERING SERVICES	WASTE MANAGEMENT	28 m ²
SUPPORT SERVICES	STORAGE	14 m ² x 2 = 28 m ²

TOTAL
(with CORRIDOR) 5221.5 m²
5343.5 m²





RE: --- INTENT



indoor, natural ventilation is also considered. Windows and openings are placed on the north side of the building to receive summer breezes. The design of areas located on the north side follows an open-plan and semi-open-plan concept allowing fresh air to reach the other spaces. Based on sun path and wind direction, Community areas and shared spaces are the most suitable spaces to be located on the south side of the building. The ring shape of the Second floor allows these areas to be also located on the north side. To maximize natural ventilation, these spaces also need to be open-planned or semi-open-planned.

6.2 Interior Design Introduction

The interior design proposal of *re:intent* features a semi-open plan concept of spatial

arrangement. Each floor has a main corridor that connects all the spaces. The First floor has two main zones, namely the patient-centric zone and the staff-centric zone. Although these zones are divided, they are still linked through the mentioned corridor. The Second floor has no physical boundaries between areas because it focuses on patient's accommodation. This semi-open floor plan concept allows unique spatial sensorial qualities of each zone to combine and create a multi-sensorial environment. The overlap between these sensorial qualities also provides contextual clues for occupants, enhancing their navigational senses as a result. The following sections propose the interior design strategies applying in *re:intent* in more detail. It first follows the staff's perspective to present the design of the First floor and staff-centric areas on the Second

floor. It then follows the patient's perspective from the moment they enter the retreat to their treatment zones and ends at their private suite.

From the Staff's Perspective – the Staff-centric areas

re:intent's staff enter the facility through a designated entrance located on the First floor. The parking lot is adjacent to the entrance, situated in the gap created by the overlapped structure of the First floor, the Second floor, and the hill (refers to figure 35). This allocation not only hides the parking lot away from the patient's view but also reduces the walking distance from the parking lot to the designated staff entrance.

As mentioned above, the First floor has two zones, staff-centric zone and patient-centric zone. The interior of the staff-centric zone is further divided into three smaller areas: mechanical and environment area, and staff lockers are located on the right side of the entrance while the administrative office is on the left side. The right side of the entrance faces the hill and underneath the First floor, preventing it from receiving natural light. The mechanical and environment area, as well as the staff lockers, do not need such a feature; thus, this location is the most suitable for them. Conversely, the office requires not only natural lighting for energy efficiency but also view to nature for stress reduction, thus the left side suits it perfectly.

The administrative office complex can accommodate *re:intent* staff with an opened-plan concept. Workstations are scattered around the office space, with easy access to the Resource Centre and the Conference room. The office also offers two shared-private offices for confidential and private works. From the office area, staff can access the Second floor through a staircase that linked the two levels. The Document and Record room is located near this stair to increase accessibility.

Adjacent to the office area is the Breakroom, where staff can work in a relaxed atmosphere or



Figure 36. Staff Entrance.



Figure 37. The First floor receives daylight through the ponds structure of the Second floor.



Figure 38. Staff Respite



Figure 39. The ponds in the front yard has clear circulation paths, increasing staff's access.

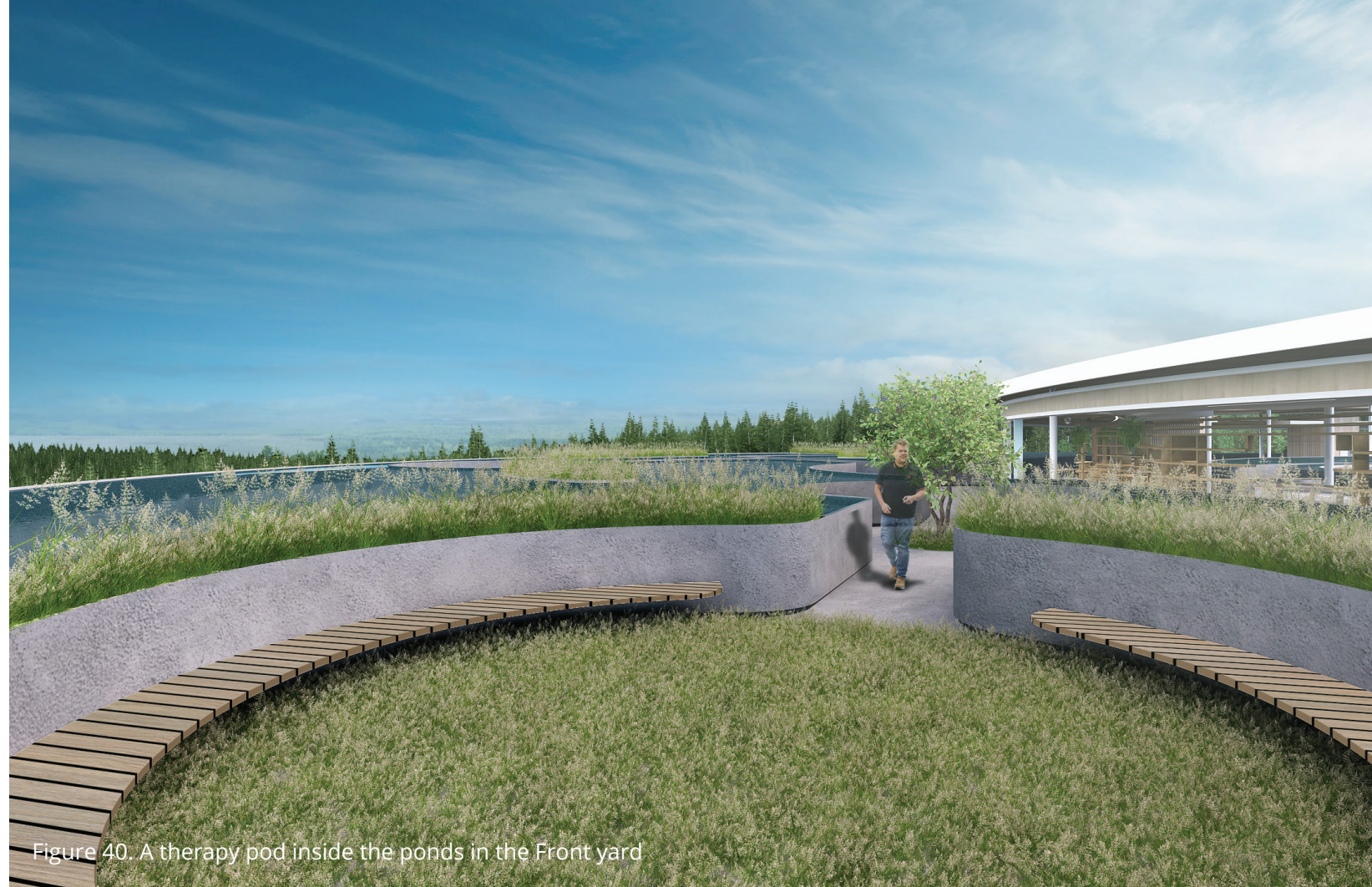


Figure 40. A therapy pod inside the ponds in the Front yard



Figure 41. Glazed facade helps staff to easily supervise the patients

spend their lunch break. This Breakroom is not only space designated recess. Scattered around the First floor are staff's Respite rooms (refers to figure 38). These rooms are linked with the patient's ward, allowing the staff to spend recess in proximity to patients.

The Second floor is more therapeutic, and community concentrated. Treatment rooms are scattered across this floor, with related therapeutic spaces allocated in a close distance. For instance, both the NBT Treatment rooms have direct access to the courtyard, while the Nutritional Treatment room is not too far from the Communal Cooking space and the Greenhouse. The only exception is the Physiotherapy Treatment room, which is located on the Second floor while its related therapeutic space, the Sports Complex, is on the First floor. The adjacent staircase closes this gap between the two as it leads straight to the Sports Complex entrance.

These Treatment rooms are made of two smaller rooms, a Specialist's office and a Counselling room. As learned from Maggie's Cancer Centre, removing the presence of the staff and their workspace can help patients feel more comfortable. The Treatment rooms at *re:intent*, thus, dedicated to two user groups in their designated spaces. This approach not only helps to keep medical records and confidential paperwork secured but also give the specialists to have the option to retreat and protect themselves from violent situations. The offices have a glazing wall, providing a view to nature and access to natural light.

The overlapping structure creates an opportunity to utilize the First floor roof as a therapeutic space. The Front yard turns into a pond structure with designated spaces for therapy sessions (refers to figure 39 and 40).²⁵⁸ The height of the pond not only complies with

258 The reason of using water in these areas is that the abilities of water to temperate the climate around it, as well as its ability to trans-

the National Building Code regarding occupants' safety but also prevents absconding and suicide attempts. The Courtyard continues this pond structure in the front half (north side), leaving the other half a garden (Southside) (refers to figure 47). This Courtyard garden, which is linked with the Greenhouse, provides spaces for therapy sessions and horticultural activities. The designs and placements of the two yards offer both patients and staff therapeutic spaces where they can access the restorative benefits of nature safely.

To enhance treatments for patients, one of the approaches that *re:intent* takes is optimizing its services through designing a supportive, professional, and friendly workplace for its staff and specialists. Through the applications of Biophilic Design and Supportive Design, such as

views to nature, access to daylight, and diverse natural elements, *re:intent* effectively removes stressors and provides a comfortable working environment. Staff performance is also boosted through strategically allocating spaces. The increase of ability to access and observe spaces helps staff to perform their tasks faster and more efficiently (refers to figure 41). From the staff's perspective, *re:intent* provides a safe, secure, and professional working environment.

form between seasons. During summer, the North wind will pick up the fresh and moisturized air and supply the Second floor with fresh and cool air, effectively reducing indoor heat. During winter, it changes form and becomes ice. The transformation fits the requirements of seasonal change suggested in Chapter 3. Regarding the potential of glare, curtain can help reduce such effect. Water plants are also considered to scale down the reflective area. By keeping these plants closer to the building, reflection into the indoor will be significantly reduced.



Figure 42. Patient's Entrance

From the Patient's Perspective – the Patient-centric areas

re:intent applies two design strategies learned from Biophilic Design and Atmospheric Architecture to set the tone of the interior space, offering the patients a warm and friendly welcome when they arrive. First, the entrance gets narrower and lower, mimicking the spatial characteristic of a cave to present itself as a safe space. The ceiling keeps lowering as the patients enter the Orientation area, directing their eyes to a kitchen-like counter, which locates at the center of the space. An eight-people dining set occupies the right side, while a fireplace, which is surrounded

by a sectional sofa and armchairs, resides on the left side (refers to figure 43). This furniture choice and layout recreate a home-like atmosphere by mimicking the kitchen, dining room, and living room, respectively. Moreover, to enhance such an ambience, earth-tone garment and teak panel are used to warm up the space visually. From this Orientation area, the patients may notice the cooking smell from the Kitchen area and have a peek at the therapeutic Courtyard. The design of the space and the mixture of sensorial qualities promise an excited and intimate therapeutic experience.

The Second floor is dedicated to PIU

treatments and therapeutic activities. The patient starts their treatment at six Treatment rooms that provide CBT and NBT sessions, nutritional and physiotherapy consultation. As mentioned above, these Treatment rooms are divided into two smaller rooms, one is the Specialist's Office, and the other is the Counselling room. To make the room visually smaller and more intimate, an earth-tone colour scheme and wooden panels are utilized. The selected furniture enhances the patient's comfort: they can lay down (couch), sit (armchair), or casually sit (bean bag) (refers to figure 45). Such a space would help the patients feel more natural to open up. The rooms are also equipped with spare furniture to be able to accommodate group sessions.

re:intent offers several secured and controlled gardens on both floors. The First floor has a courtyard that consists of a garden and an atrium. While the open courtyard on this level offers seats and a gathering space, it also accommodates two elevator lobbies, thus preferred to hold light therapeutic sessions. The atrium, however, provides a more private space that is filled with seats and trees suitable for challenging and heavy sessions (refers to figure 64).

The Second floor has three separate gardens, including a front yard, a courtyard, and a greenhouse. The Front yard consists of three gathering spaces that are surrounded by an infinity pond and planters. The calmness of the water, the natural sound of the surrounding forest, and the scent of plants and trees paint a perfect tranquil scene. This infinity pond, which has no visible boundary, expands the space further to visually reach out to the Falcon lake, extending the garden and planting the hope of being "out of the woods" in the patients (refers to figure 39 and 40). The pond extends further inward, taking the northern half of the Courtyard, which accommodate three more gathering spaces. This extension brings the tranquility of water into the Courtyard (refers to figure 47). Water plants such as water lilies are



Figure 43. Orientation area mimic a living room



Figure 44. Corridor becomes a mediator between inside and outside



Figure 45. The Counselling room is cozy with an earth-toned colour scheme to create an intimate ambience.



Figure 46. The Atrium in the Courtyard of the First floor accommodates intense therapy sessions



Figure 47. The pond extends further inward to create three gathering spaces in the Courtyard.



Figure 48. The Greenhouse to host horticultural activities

utilized to reduce glares and reflection into the indoor. The other half of the Courtyard offers seats and gathering spaces that are surrounded by plants and trees (refers to figure 47). Such a green space extends to the indoor, presented in the Greenhouse. The Greenhouse accommodates horticultural activities. It is divided into two main parts. The open garden, which overlaps with the Dining area and connects to the main corridor, is used for planting flowers using unscented. In the center of this open garden situates a round table used for gardening works such as repotting or cutting branches. This table is also where the Specialist hosts light therapy sessions that are related to horticultural activities fertilizers (refers to figure 48). There is another two-person spot surrounded by vines, dedicated to individual therapy sessions. The separated garden connects directly to the kitchen and is dedicated to plants and vegetables requiring strongly scented fertilizers.

The gardens at *re:intent* not only accommodate therapeutic sessions and horticultural activities but also provide the patients with relaxed and tranquil spaces. The requirements mentioned in the Biophilic Design discussion regarding the overlap between artificial and natural elements are fulfilled adequately.

The therapeutic zones also consist of the Communal Kitchen area, which is located in the proximity of the Greenhouse. This close distance allows the patients to bring vegetables that they grow to cook classes or to prepare their meals. The area is equipped with kitchen appliances and working counters. These working spaces surround the main kitchen counter, where the Nutritional specialist introduces and demonstrates cooking techniques, recipes, and nutritional information. This centralized layout not only allows the instructor to supervise the patients closely but also enable them to approach and build up a friendly relationship with the patients. To create a welcoming and calm atmosphere, the space is decorated with teak walls, wooden counters, and

warm white marble surfaces. In precautions of violent behaviours, cookware and other sharp tools are made of wood and plastic and are locked away when they are not in use.

Therapeutic activities not only take place on the First floor but also extend further to the First floor. The Sports Complex, which is located on the north side of the First floor, can be easily accessed from the Treatment rooms via an adjacent staircase. This Sports complex is made of four areas: a locker room, a reception, a swimming pool, and a gymnasium. The colour scheme is slightly different compared to the other areas, as the patients need a more active and exciting space. The dynamic combination of green and yellow brightens up the gymnasium. The warmth from the cork wall tiles, the liveliness and energy-filled in the yellow-coloured equipment, as well as the freshness from the green-coloured equipment energizes the space and makes it more vigorous and energetic (refers to figure 49).



Figure 49. Gymnasium



Figure 50. Swimming Pool

In the swimming pool area, the contrast between outside and inside makes it more stimulating. If the outdoors is filled with boreal trees, the indoor has artificial tropical plants growing upside-down from the ceiling (refers to figure 50). The contrast between indoors and outdoors is driven to its highest here. Between the two, one barely changes, while the other changes daily, seasonally, and annually. The intension between the two becomes even more dramatic when the outdoors puts on its snow-covered cloak in the winter. As the pool opens to infinity, the artificial plants send the patients on vacation, while the outdoors anchors them and brings them back to reality. Here, the atmosphere is defined by the differences between the two Biophilic features. As the space receives direct breezes from the Northern wind, it is equipped with openings and windows to facilitate and enhance indoor airflow. These openings allow fresh air to reach other areas of the building, especially the Courtyard.

Situated between the Greenhouse and the Communal Kitchen is the Dining area and the adjacent Kitchen. The space functions as a self-serve buffet, where the patients pick up their food of choice at the open kitchen area and clean up the dishes by themselves in a designated space. Dining is an intimate activity, where relationships are built, therefore, this area is designed to create a warm, friendly, and relaxed atmosphere using a multi-sensorial approach. Visually, the area is

warm and fun with earth-toned colour schemes: orange upholstery and wooden furniture (refers to figure 51). Auditory and olfactory, the space is filled with a home-like atmosphere presented through the sound and smell of cooking coming from the open kitchen. Gustatory, the presence of the home is shown stronger as the patients are served with popular Canadian dishes. The design of this area also embraces the connection with nature as it resembles a tree with huge foliage. As it is overlapped with the Greenhouse, the design switches from real trees and plants to an artificial tree, reminding the patients of their connection with nature whether it is real or just artificial replica. The dense foliage made of timber, which acts as a lowered ceiling, creates a protective shield against sunlight, partially strengthening such a relationship. The furniture is divided into groups of four with the potential of combining into three groups, presenting the three wards. This flexibility gives the patients opportunities to develop more intimate relationships with their peers. By utilizing and optimizing the effects of multiple spatial sensorial qualities, the Dining area creates an intimate dining experience that improves the patient's social relationships.

The patient's daily activities not only consist of therapeutic activities and dining experiences but also include gathering to socialize, writing journals to address their experience, or reading for personal growth. These activities can be held in the Sunroom and Library area, which are located on the north side of the Second floor. To create a cozy atmosphere, furniture and materials are carefully selected. For instance, residential furniture items are selected, and millwork pieces are designed with residential and casual looks to emphasize the home-like ambience. Inspired by the design of Maggie's Cancer Centre in Manchester, these items are allocated around a central kitchen, consisting of a kitchen counter and a cabinet (refers to figure 52). As the focal point, this kitchen emits a cozy, friendly, and casual atmosphere. Across the room is an elevated platform that allows the patients to



Figure 51. Lay under a tree, the Dining area is cozy and friendly, enhancing not only the relationship between the patients but also their relationship with nature



Figure 52. The Kitchen is the focal point of the Sun room.



Figure 53. The shelving system separates circulation and library activities.



Figure 54. The warm and cozy atmosphere of the Community area in the patient's ward.

sit on and lay down freely. There are more casual sitting situations, which resemble residential living rooms and dining rooms, scattered throughout the area. Furthermore, the allocations of these gathering settings are allocated so that the potential noise increases from Westside to Eastside, corresponding with the adjacent Library area.

The Library area follows the open plan concept, consisting of individual and group working areas. The shelving system, which is the most prominent design feature, divides the space into two to accommodate circulation and working separately (refers to figure 53). This separation helps the patients to be better focused on their tasks. The material used in this area, consisting of a white concrete wall and wooden shelving system, is neutral to help the patients concentrate. Applying the principles of Atmosphere Architecture and Restorative Design, the design of the two areas focuses on accommodating the patient's activities: The Sunroom helps the patients to socialize while the Library enhances their concentration.

After a day full of therapeutic sessions and activities, the patients gather in their designated



Figure 55. The residential suite provides the patients with personal space.

ward for socializing or retreat to their own suite for self-reflection and relaxation. Each ward consists of eight suites and a nursing station. The nursing station is designed in the shape of a kitchen to be more approachable. Bar stools are also provided to encourage the patients to ask for help. The shared space in each ward is equipped with a circular shelf and an eight-person table to promote socializing through game boards and group activities (refers to figure 54). To strengthen the intimate and inviting atmosphere of the space, the material usage focused on a warm colour scheme: wooden furniture coupled with earth rammed brick walls, reinforced with a low wooden ceiling. This concept extends to the patient's personal suite.

A comfortable private bedroom is what a patient need after a long day of therapeutic activities and socializing. *re:intent* provides such a space so that the patients have a personal time to reflect and recharge. For safety precautions, furniture is either built-in or made of soft materials. Similar to the Community area, the room atmosphere is intimate and personal with a low teak ceiling, earth-tone furniture and garments (refers to figure 55). Next to the bed, there is a recessed shelf for memento items that remind the patients of their family and friends. Because *re:intent* encourages the patients to enhance their socializing skills, strengthen their relationship with others, and adapt to life outside of the bedroom, there is no desk provided. When such a need occurs, the patients require to move to more public areas such as the Community area or the Library.

CHAPTER SUMMARY

The architecture and interior design of *re:intent* focus on creating a comfortable and therapeutic place for PIU patients. Architecturally, the building follows the climate and geography characteristic of the site make the indoor comfortable, safe, and suitable for PIU treatments. The interior spaces are designed following the three discussed design theories, Biophilic Design, Atmosphere Architecture, and Supportive Design, to enhance the patient's treatment and their experience at *re:intent*. This goal is approached from two directions. First, staff are provided with a well-functioned workplace to optimize their performances and stress-free environment to improve their mental health. Second, PIU patients are accommodated with cozy, warm, and comfortable space to help them feel relaxed. Opportunities to socialize and create connections with others are also arranged in multiple areas under multiple forms. The connection with nature is also emphasized throughout the facility, especially in the gardens and Dining space. In short, *re:intent* allows the patients to receive their treatment and enhance their connections through architectural and spatial design solutions taken from the discussed design theories, precedent study, site analysis, and user research.

07.

CONCLUSION

- 7.1 RESEARCH QUESTIONS REVISITED
- 7.2 AREA FOR FUTURE STUDY

CONCLUSION

Introduction

As we move into the third decade of the 21st century, our personal and professional lives remain closely connected to the Internet and digital technologies. Both have changed how we work, behave, and even express emotions and feelings. The benefits that such inventions have brought to us are undeniable. Many activities have switched from in-person to remote operation. This includes education, entertainment, leisure, and overall career opportunities. The unintended consequences, including disembodiment experience, emotional, mental, psychological, and physiological discomfort, to name a few, are just recently recognized and, thus, required much more effort to resolve. Although the PIU experience is varied, multiple studies have indicated that such an experience is not merely bound to a personal level but is also an interpersonal issue. Treatments such as the combination of abstinence and harm reduction, or CBT-focused programs, have been proposed. However, as Breslau et al suggested, these treatments concentrate too much on treating symptoms rather than dealing with the origin of PIU, thus, more efficient treatment programs, further studies and experiments are

required. As of now, architecture and interior space play the support role, becoming a factor that accommodates the treatments and enhances its efficiency. The proposed design of *re:intent* and the research throughout this Practicum project has remained focused on such objectives. Specifically, *re:intent* enhances PIU treatments by reconnecting patients with themselves, others, and the world, while sheltering them physically, emotionally, and mentally in a safe, comfortable, positive environment. The following address the questions of inquiry as a conclusion to this Interior Design Practicum.

7.1 Research questions revisited A - What is the role of architecture and interior design in supporting PIU patient's treatment programs?

When discussing the task of architecture, Pallasmaa suggests buildings should not only shelter physical properties but also house "our minds, memories, desires, and dreams."²⁵⁹ Merleau Ponty, although not explicitly discussing architecture, would agree with such a suggestion. The overlapping between an individual and their surroundings is not only bound to their physicality but also extends to the psychology, mentality

domains and so much more. The research, developments, and designs of *re:intent*, therefore, revolve and evolve around PIU patient's physical comfort and mental needs.

PIU patients may experience intense functional and emotional discomfort to the point that Young and Griffith are mistaken for an addiction. As a result, the first and foremost role of architecture and interior space at *re:intent* is to ensure the occupant's safety and comfort. Plenty of approaches and strategies are applied at *re:intent* to not only provide a secure living and therapeutic environment to patients but also provide a safe working condition to staff. For PIU patients, spaces dedicated to differing levels of mental strength are provided: from vibrant zones, such as the sunroom or the dining zone, to restful spaces, such as the therapeutic gardens or the library. Private suites and seclusion rooms also act as safe places for the patients to safely withdraw from others. For staff, the clear and well-defined boundary between staff-focused zones and patient-focused zones, as well as alternative circulation routes, help maintain safe distances from the patients. The accessibility and visibility of the therapeutic spaces also enhance the staff's efficiency and improve their services. Each of these spaces is carefully designed so the occupants can spend their time at *re:intent* dedicated to their treatments and development.

To strengthen PIU treatment, in which patients learn to reconnect with themselves, the architecture and interior space of *re:intent* extend this reconstruction process to rebuild the patient's interest in nature, the surroundings, and in other people. As discussed throughout the Theoretical Framework, PIU patients prioritize online relationships over what they have had in the physical world. These virtual attachments often come with the price of other relationships in the offline world. Reigniting the interest and reconstructing these relationships can help the

patients find a footing in the physical world, working their ways to balance the virtual and physical life. The architectural design of *re:intent* presents opportunities to achieve such feats.

The psychological and physical effects that nature has on us have been discussed throughout the *Biophilic Design* section, which eventually suggests designing partial nature, partially artificial gardens. With diverse species and different choices in settings, the gardens at *re:intent* satisfy the need of connecting with nature in a safe and secure environment. The front yard reaches the surrounded forest, placing its guest in an inside-outside disposition. The other courtyard on the second floor repeats the same disposition but in a more controlled setting. The interior, which is visually connected with the gardens, echoes the same messages in an even more secure condition. The secure level of each space changes as the occupants move inward. The connection with nature remains. This long passive exposure to nature enhances the invisible connection between occupants and nature.

As nature plays a significant role at *re:intent*, especially when it is the essential setting of NBT, the natural attributes are carefully chosen. Water gives off a calming atmosphere, suitable for therapy sessions. Plants and trees possess a fresh and vigorous vibe, fulfilling their role as positive distractions. These attributes also change their forms, scents, colours, to name a few throughout the year, allowing these Biophilic attributes to play as the background elements and the focal points at *re:intent*. Such versatility brings forth the unique characteristics of nature, potentially sparking interest in the patients.

Architecture and interior space should touch various, not just the eyes. As Merleau-Ponty wrote about how we experience the world through a combination of various senses in *Phenomenology of Perception*, Pallasmaa specifically criticized the ocular-centric design

259 Pallasmaa, "Body, Mind, and Imagination: The Mental Essence of Architecture," 52.

industry, suggesting a broader approach to occupant’s senses.^{260, 261} This notion is even more important in the situation of PIU patients. The more engaged with the virtual world PIU patient gets, the further the distance they have with the surroundings. Designing a multi-sensorial facility becomes a critical approach to rebuild the patient’s interest in this side of the screen. Architecture and interior space, therefore, can be designed to be a positive distraction, drawing the patient’s concentration from the virtual world to the physical world. At *re:intent*, the lack of a clearly defined boundary between indoors and outdoors creates opportunities for the patients to merge into nature, which is filled with sensorial qualities and retreat to a less overwhelmed indoor space. The interconnected and overlapped zones of the indoor also easily touch the occupants through sound, scent, taste, to name a few. The material usage and its treatments strengthen the impacts that the indoor environment has on the occupant’s senses. There are also spaces that lack sensorial qualities to appease and shelter occupants from stress and pressure. The diversity in spatial quality that *re:intent* has can alleviate the patient’s suffering. A multi-sensorial building can rebuild and reinforce the PIU patient’s interest in the physical world, or at least plant the seed of such an interest.

Enhancing the PIU treatment efficiency is not only about the physicality of the building but also about the relationships between the occupants. PIU patients tend to abandon their real-life relationships in favour of that of the virtual space. As already discussed in the *Supportive Design* section, such relationships require much more effort and time, leading to an imbalanced lifestyle. Real-life relationships, on the other hand, have their own advantages. In this case, the role of *re:intent* is to show such benefits through creating and facilitating interactions between patients

and patients, patients and staff, and between the staff. The circulation at *re:intent* is condensed into two main corridors, one on each floor, directing all circulations into one stream, and thus increase the chance of spontaneous interactions between occupants. As Bachelard describes the role of the house as “our corner of the world” in *The Poetics of Space*, the image of the home plays a crucial role in supporting interactions between occupants.²⁶² The friendly, intimate atmosphere emphasizes the protective ability of the indoor. Such an ambience also helps the patients feel more relaxed and sociable. Furniture and millwork pieces, material usage, and colour scheme are the elements contributed to creating this home-like atmosphere. These items, along with the facility layout, push the patients to learn and practice social skills, interact with others, and slowly integrate back to society.

The architecture and interior space of *re:intent* revolves around the physical and mental issues that PIU patient’s face entering the treatment programs. On the one hand, *re:intent* accommodates the treatment activities including all therapeutic activities and the patient’s daily chores. The facility also ensures the patient’s safety and comfort during their time living here. One the other hand, *re:intent* support the patients on their journey of balancing their life through aiding them to reconnect with the physical world. The role of the facility expands from sheltering their physical body to protecting their mental and emotional selves. The designed space becomes the patient’s anchor in this physical world.

B - What design strategy could be employed to accommodate PIU treatment, especially nature-based therapy, in the Manitoba climate?

The PIU treatments at *re:intent* involved nature and revolved around it. While nature acts as a positive distraction in the patient’s daily lives, it is the primary setting of NBT. This pivotal element, however, comes with various challenges. As stated in various parts of the Practicum, *re:intent* is located in the Whiteshell Provincial Park in the Province of Manitoba, Canada. The prairie weather is, unfortunately, freezing cold during the 6-month-winter and burning hot in the short 3-month-summer. This climate characteristic is the main obstacle in building the retreat because the temperature gap between the two seasons is over 80C. Various approaches and design strategies are applied to accommodate PIU treatments under this condition.

Vernacular architecture and previous buildings, which face similar issues, inspire some of the strategies. As learned from Qualico Family Center, South-facing windows and the inclined roof are suitable to temperate the indoor climate. Sunlight comes mainly from the South, heating up the indoors during winter. The narrow building shape with the facade, as inspired by Maggie’s Cancer Center in Manchester, coupled with the ring shape of *re:intent* increase the number of indoor spaces receiving the benefits from the sun. Being surrounded by a forest also aids in the attempt to moderate the indoor temperature during summer. *re:intent*, however, does not only rely on this solution but also learns from nature to come up with resolutions for the summer heat.

Learning from nature is also one of the approaches to combat climate disadvantages. The local fauna and flora have their own ways to live with such a harsh climate. Janine Benyus writes “after 3.8 billion years of research and development, failures are fossils, and what

surrounds us is the secret to our survival.”²⁶³ Indeed there are lessons worth learning. The passive ventilation system inspired by termite mount helps moderate the indoor temperature in summer. The reaction metal has towards heat change allows the biomimetic shading system to work, preventing indoor heat from rising when needed. Taking notes from the local nature and applying it at *re:intent* ensures suitable and comfortable accommodations for the patients.

The relationship with the local nature can be further pursued by simply embracing the characteristics it has. Bringing nature into the indoor, as seen in the courtyard on the first floor, is one way. Blurring the boundary between indoor and outdoor, as seen at the Greenhouse and various spots around the facility, is another. Through including the unique traits of the local climate, the patient’s accommodation not only becomes more pleasant but also more memorable and unique to such a location. If Manitoban winter is six-month-long, bring forth the beauty of snow and ice to the facility. If the summer is scorching hot, remove the indoor-outdoor barrier and let the wind in. Living harmoniously with nature is a simple yet effective approach to shelter and accommodate nature-reliant PIU patients.

The harsh weather of Manitoba may pose challenges but also come with solutions. There are different approaches to solve these issues. Learning from the predecessors, taking notes from nature are two ways of controlling nature. Living with nature also means embracing its characteristics. The strategies may vary but the main attitude is to lean on nature and come up with suitable solutions. Since *re:intent* relies on nature in various ways, these strategies are needed to accommodate the treatment activities and improve its efficiency as well as the patient’s comfort.

260 Merleau-Ponty, *Phenomenology of Perception*.
261 Juhani Pallasmaa, “Preface,” in Sarah Robinson, *Nesting: Body, Dwelling, Mind* (San Francisco: William Stout Publishers, 2011).
262 Bachelard, *The Poetics of Space*.

263 Janine Benyus, *Biomimicry*, (New York: William Morrow, 2002).

7.2 Area for Future Study

Due to the time constraint and scope of works of a Master of Interior Design Practicum, there are several limitations that the author faced while researching and designing *re:intent*. These limitations are presented below with suggestions for the potential to overcome as well as recommendations for future studies.

The first and foremost limitation is the lack of deep understanding and time for exploring further the philosophical works of Merleau-Ponty. Particularly, some philosophical concepts could have been further explored on a greater level of study. Merleau-Ponty's philosophical works and related architectural theories could be analyzed and discussed in more detail to gain a better understanding regarding the virtual world and PIU. For instance, the connection between Merleau-Ponty's Flesh, Ethic, and Biophilia could serve as a catalyst for studies on environmental issues as related solutions during the design process.

In addition, architecture and the temporal properties of the physical world and virtual world could be examined in studies on the concept of time. On the task of architecture, Pallasmaa writes "Architecture ... scales endless time down to the limits of human experience."²⁶⁴ The virtual world escapes the physical bounding of architecture, and therefore, is timeless. Not only the spatial properties, but the temporal properties of this dimension is different from our physical dimension. Emphasizing the connection between an individual, time, and architecture, therefore, could be explored in future research .

Another potential topic for future research is the concept of *threshold*. As the Practicum revolves around the connections of the self with its surrounding elements, including nature, building, and other people, *threshold* can be studied as a mediator, a connector, or a separator. The concept is also linked with the juxtaposition between the indoor and outdoor. *Threshold* is the

element between such two spaces and can either emphasize or minimize the tension between them. Furthermore, the concept could also be discussed when designing two indoor spaces. The open plan concept of the indoor is a perfect playground for openings, screens, passages, among other *threshold* devices. *Thresholds* might accentuate the concept of multi-sensorial space. There are many opportunities to apply thresholds in the design of the Practicum.

Projects with this scope of work can benefit from collaborating with architects and landscape designers as it is beyond the normal expertise of an interior designer. The architectural design of *re:intent* can be further designed to be more environmental friendly and the building mass should be approached from the point of view of an architect. For instance, the introverted building shape can be adjusted to optimize the use of the outdoors without having any significant impacts on the current design. The role of landscape designers in this case is even more important. The potential of the exterior of the site can be fully utilized and optimized to support the therapeutic treatments in an appropriate way. The insights and approaches of a landscape designer can add greater depth of understanding the full potential of the site to further support the goals of the project. Expanding the programming of treatments at *re:intent* to include activities that make full use of the site is a logical next step in the project.

Given the current state of the world, the Practicum is more critical and has more potential than it first intended to be. The on-going COVID-19 pandemic has turned the world upside down, caused major global socio-economic disruption, and completely changed the way we live, work, study, and entertain. Our reliance on the Internet and digital technologies has grown exponentially as we navigate through the "new normal". As social distancing has increased our dependency on the virtual world, the impact brought on by this

change and the role of interior design space should be explored to ensure people can work from home efficiently and safely. In other words, there are lots of opportunities to create a residential version of *re:intent*. As we are home-bound, it makes more sense to bring the therapeutic values of *re:intent* to everybody.

While interior design cannot provide a treatment for PIU, a specialized retreat can accommodate the activities and facilitate the well-being and safety of the patients through spatial experiences. The experience creates an opportunity to rediscover the link with nature, reconstruct the connection with space, and refresh the relationship with others. Architecture and interior space have the power to create these unique experiences for individuals on an intimate level, allowing them to develop a stronger connection with nature, space, others, and in turn, a stronger connection with the self.

264. Pallasmaa, "Preface."



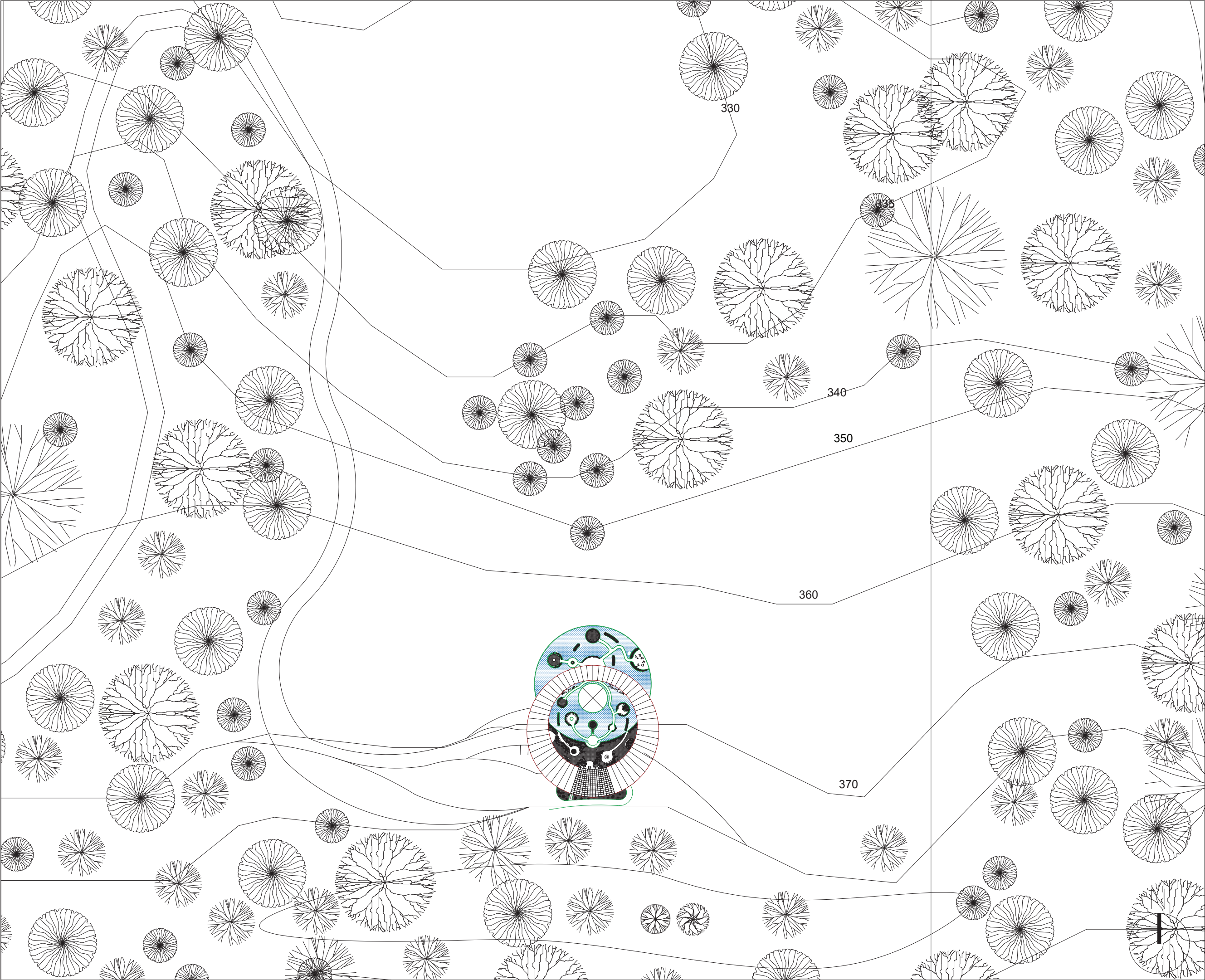
APPENDIX

APPENDIX A	TECHNICAL DRAWINGS
APPENDIX B	USER ANALYSIS
APPENDIX C	SPATIAL REQUIREMENTS
APPENDIX D	THEORETICAL APPLICTIONS
APPENDIX E	CIRCULATION
APPENDIX F	BUILDING CODE ANALYSIS
APPENDIX G	POSTERS

A.

APPENDIX

MASTER PLAN
FLOOR PLAN - FIRST FLOOR
FLOOR PLAN - SECOND FLOOR
RCP - FIRST FLOOR
RCP - SECOND FLOOR
SECTION
MILLWORK DETAILS



REVISIONS

No.	Contents	Date

Any discrepancy shall be reported to designer for clarification prior to the commencement of work.
All dimension to be checked at site before proceeding.
Co-ordinate architectural, interior, structural, and M&E drawings.

REMARKS

Project

RE:INTENT RETREAT

Retreat for Pathological Internet Users
100 Ridge Rd, Falcon Beach
Falcon Lake - Whiteshell Provincial Park
Manitoba - Canada - R0E 0N0

Architectural and Interior Design

UNIVERSITY OF MANITOBA

Department of Interior Design
Faculty of Architecture
201 John A. Russell Building
University of Manitoba, Winnipeg
MB R3T 2M6 Canada
Email: ninhth@myumanitoba.ca
Phone: (204) 510 2456

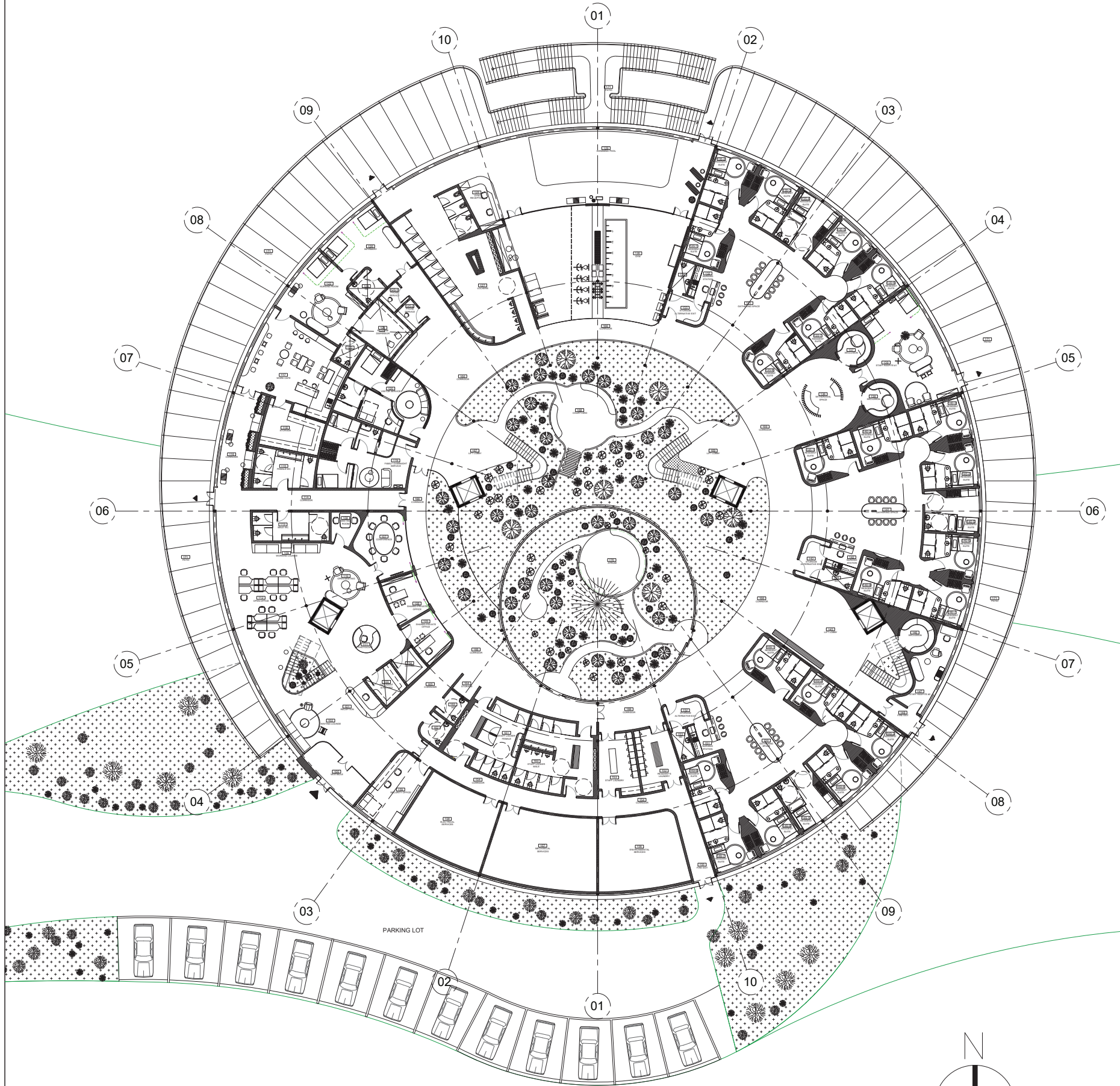
Checked by		
Designed by		
The-Huy Ninh		
Developed by		
The-Huy Ninh		

Drawing title

RE:INTENT - RETREAT FOR PIU PATIENTS

MASTER PLAN

Design stage		Sheet No.
PRELIMINARY DESIGN		
Project No.	RE.01.2020	
Issue Date	July 13 2020	A0.0
Scale	1 : 1000	



WALL TYPE

- STANDARD WALL TYPE S4**
31mm X 92mm STEEL STUDS SPACED 406mm O.C.
COVERED WITH 1 LAYER OF 15.9mm LAYER OF GWB ON EACH SIDE OF STUD.
PARTITION TO EXTEND FROM FLOOR TO SPECIFIED HEIGHTS
INSULATE WITH 92mm ABSORPTIVE MATERIAL TO BE CONTINUOUS IN WALL CAVITY.
MUD,TAPE, + SAND; PREPARE FOR NEW SPECIFIED FINISH
REFER TO REFLECTED CEILING PLAN FOR WALL HEIGHTS
- WALL TYPE S7 - PLUMBING WALL**
31 mm X 152mm (6") STEEL STUDS SPACED 406mm (16") O.C.
WITH 1 LAYERS 13mm (1/2") LAYER GWB ON EACH SIDE OF STUD.
PARTITION TO EXTEND FROM FLOOR TO U/S OF DECK 16'-6"
INSTALL 152 mm (6")OF ABSORPTIVE MATERIAL TO BE CONTINUOUS IN WALL CAVITY.
MUD,TAPE, + SAND; PREPARE FOR NEW SPECIFIED FINISH
- ACOUSTICAL GLASS WALL SYSTEM**
BY BRIDGEWALL-CLARUS
• 30 mm ALUMINIUM PROFILE WIDTH
• 12.5mm GLASS THICKNESS
MAX DOOR HEIGHT 120"
- DOUBLE GLAZING GLASS FACADE**
BY BRIDGEWALL-CLARUS
• 30 mm ALUMINIUM PROFILE WIDTH
• 12.5mm GLASS THICKNESS
MAX DOOR HEIGHT 120"

ROOM LEGENDS

- | | |
|------------------------------|--------------------------------|
| 100 VESTIBULE | 141 GATHERING SPACE |
| 101 RECEPTION | 142 NURSING STATION |
| 102 WAITING LOUNGE | 143 STORAGE & ALTERNATIVE EXIT |
| 103 DOCUMENT & RECORD | 144 WC |
| 104 SERVER | 145 LIFT LOBBY |
| 105 SHARED-PRIVATE OFFICE | 146 SECLUSION |
| 106 SHARED-PRIVATE OFFICE | 145 STAFF RESPITE |
| 107 CONFERENCE | 146 FIRE EXIT |
| 108 MEETING ROOM | 147-1 RESIDENT SUITE |
| 109 WORKING LOUNGE | 147-2 RESIDENT SUITE |
| 110 OPEN MEETING | 147-3 RESIDENT SUITE |
| 111 PHOTOCOPY | 147-4 RESIDENT SUITE |
| 112 OPEN OFFICE | 147-5 RESIDENT SUITE |
| 113 MALE WC | 147-6 RESIDENT SUITE |
| 114 CORRIDOR | 147-7 RESIDENT SUITE |
| 115 FEMALE WC | 147-8 RESIDENT SUITE |
| 116 CORRIDOR | 148 GATHERING SPACE |
| 117 WORK CAFE | 149 NURSING STATION |
| 118 STORAGE | 150 STORAGE & ALTERNATIVE EXIT |
| 119 FAMILY OVERNIGHT SERVICE | 151 WC |
| 120 VISITOR SERVICE | 152 RESIDENT LAUNDRY |
| 121 MEDICATION DISTRIBUTION | 153 STAFF LAUNDRY |
| 122 NURSING ROOM | 154 CORRIDOR |
| 123 WC | 155 FIRE EXIT |
| 124 WC | 156 ENVIRONMENTAL SERVICES |
| 125-1 PHONE SERVICE | 157 MECHANICAL SERVICES |
| 125-2 PHONE SERVICE | 158 ELECTRICAL SERVICES |
| 126 INFIRMARY | 159 SECURITY OFFICE |
| 127 LOCKERS | 160 STAFF LOCKERS - MALE |
| 128 GYM RECEPTION | 161 STAFF LOCKERS - FEMALE |
| 129 SWIMMING POOL | 162 UTR |
| 130 GYMNASIUM | 163 UTR |
| 131 GATHERING SPACE | 164 STORAGE |
| 132 NURSING STATION | 165 CORRIDOR |
| 133 STORAGE & ALTERNATE EXIT | 166 CORRIDOR |
| 134 WC | 167 LIFT LOBBY |
| 135-1 RESIDENT SUITE | 168 COURTYARD |
| 135-2 RESIDENT SUITE | 169 LIFT LOBBY |
| 135-3 RESIDENT SUITE | 170 ATRIUM |
| 135-4 RESIDENT SUITE | 171 PATIO |
| 135-5 RESIDENT SUITE | |
| 135-6 RESIDENT SUITE | |
| 135-7 RESIDENT SUITE | |
| 135-8 RESIDENT SUITE | |
| 136 WITHDRAWAL SPACE | |
| 137 SECLUSION | |
| 138 SECLUSION | |
| 139 STAFF RESPITE | |
| 140-1 RESIDENT SUITE | |
| 140-2 RESIDENT SUITE | |
| 140-3 RESIDENT SUITE | |
| 140-4 RESIDENT SUITE | |
| 140-5 RESIDENT SUITE | |
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Department of Interior Design
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University of Manitoba, Winnipeg
MB R3T 2M6 Canada
Email: ninhth@myumanitoba.ca
Phone: (204) 510 2456

Checked by

Designed by

The-Huy Ninh

Developed by

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Drawing title

RE:INTENT - RETREAT FOR PIU PATIENTS

GROUND FLOOR PLAN

Design stage

PRELIMINARY DESIGN

Project No.

RE-01.2020

Sheet No.

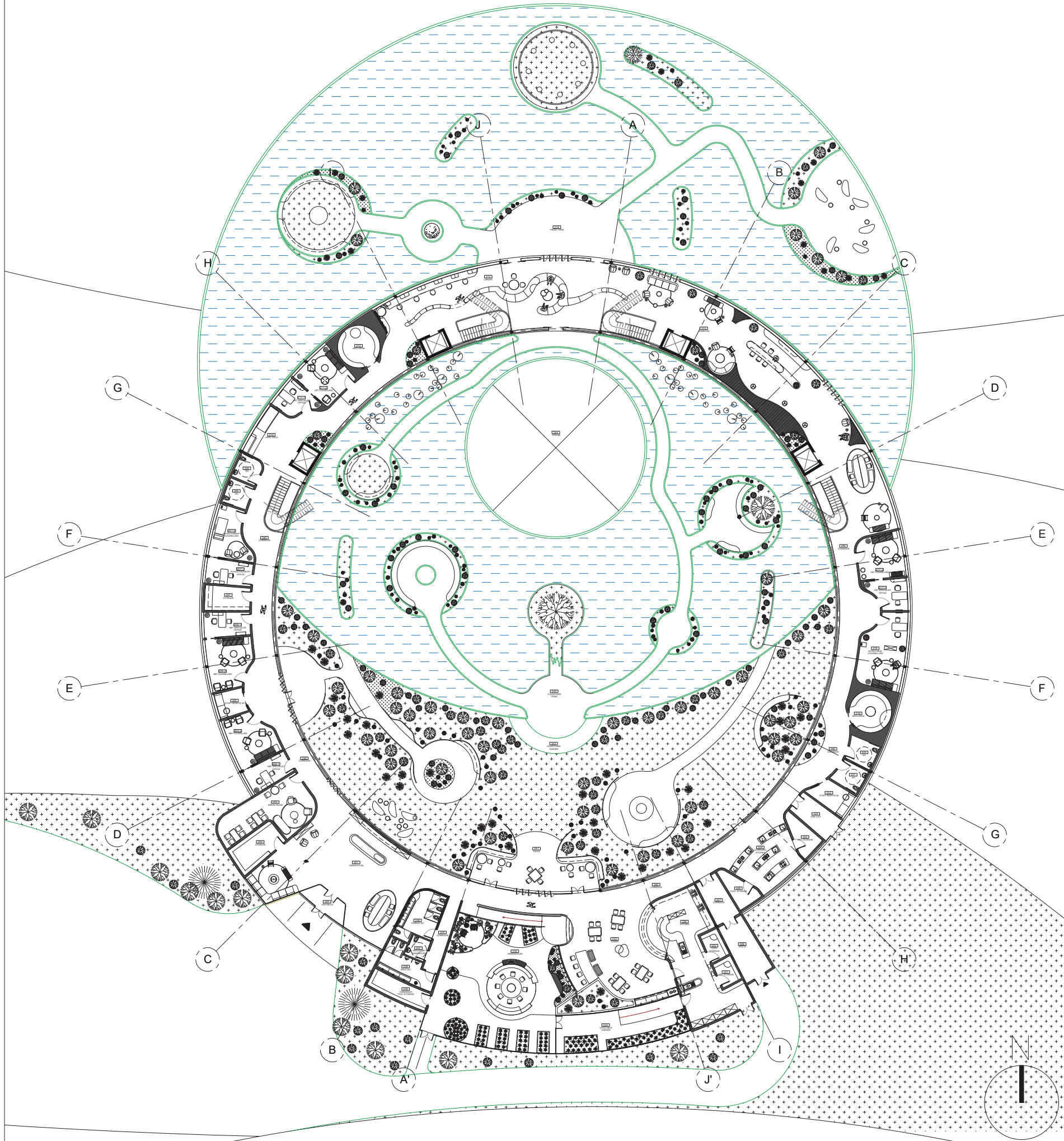
Issue Date

July 13 2020

Scale

1 : 200

A1.0



WALL TYPE

- STANDARD WALL TYPE S4**
31mm X 92mm STEEL STUDS SPACED 406mm O.C.
COVERED WITH 1 LAYER OF 15.9mm LAYER OF GWB ON EACH SIDE OF STUD.
PARTITION TO EXTEND FROM FLOOR TO SPECIFIED HEIGHTS
INSULATE WITH 92mm ABSORPTIVE MATERIAL TO BE CONTINUOUS IN WALL CAVITY.
MUD,TAPE, + SAND; PREPARE FOR NEW SPECIFIED FINISH
REFER TO REFLECTED CEILING PLAN FOR WALL HEIGHTS
- WALL TYPE S7 - PLUMBING WALL**
31 mm X 152mm (6") STEEL STUDS SPACED 406mm (16") O.C.
WITH 1 LAYERS 13mm (1/2") LAYER GWB ON EACH SIDE OF STUD.
PARTITION TO EXTEND FROM FLOOR TO U/S OF DECK 16'-6"
INSTALL 152 mm (6")OF ABSORPTIVE MATERIAL TO BE CONTINUOUS IN WALL CAVITY.
MUD,TAPE, + SAND; PREPARE FOR NEW SPECIFIED FINISH
- ACOUSTICAL GLASS WALL SYSTEM**
BY BRIDGEWALL-CLARUS
• 30 mm ALUMINIUM PROFILE WIDTH
• 12.5mm GLASS THICKNESS
MAX DOOR HEIGHT 120"
- DOUBLE GLAZING GLASS FACADE**
BY BRIDGEWALL-CLARUS
• 30 mm ALUMINIUM PROFILE WIDTH
• 12.5mm GLASS THICKNESS
MAX DOOR HEIGHT 120"

ROOM LEGENDS

- 200 VESTIBULE
201 ORIENTATION
202 STORAGE
203 BREAK ROOM
204-1 NBT SPECIALIST OFFICE
204-2 NBT COUNSELING
205 STAFF RESPITE
206-1 NBT SPECIALIST OFFICE
206-2 NBT COUNSELING
207 STORAGE
208-1 PHYSIOTHERAPIST OFFICE
208-2 PHYSIOTHERAPIST COUNSELING
209 UTR
210 UTR
211 VIEW/ VISTA
212-1 CBT SPECIALIST OFFICE
212-2 CBT COUNSELING
213 SECLUSION
214 LIBRARY
215 FRONT YARD
216 SUN ROOM
217-1 CBT SPECIALIST OFFICE
217-2 CBT COUNSELING
218 NUTRITIONAL COUNSELING
219 SECLUSION
220 UTR
221 UTR
222 STAFF RESPITE
223 FIRE EXIT
224 COMMUNAL KITCHEN
225 DRY STORAGE
226 COLD STORAGE
227 CORRIDOR
228 WASTE
229 KITCHEN
230 COOL STORAGE
231 DRY STORAGE
232 DINING
233 GREEN HOUSE
234
235 CORRIDOR
236 FEMALE WC
237 UTR
238 MALE WC
239 GARDENING STORAGE
240 MAIN CORRIDOR
241 PATIO
242 COURTYARD
243 COURTYARD POND
244 ATRIUM

REVISIONS

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SECOND FLOOR PLAN

Design stage
PRELIMINARY DESIGN

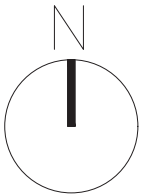
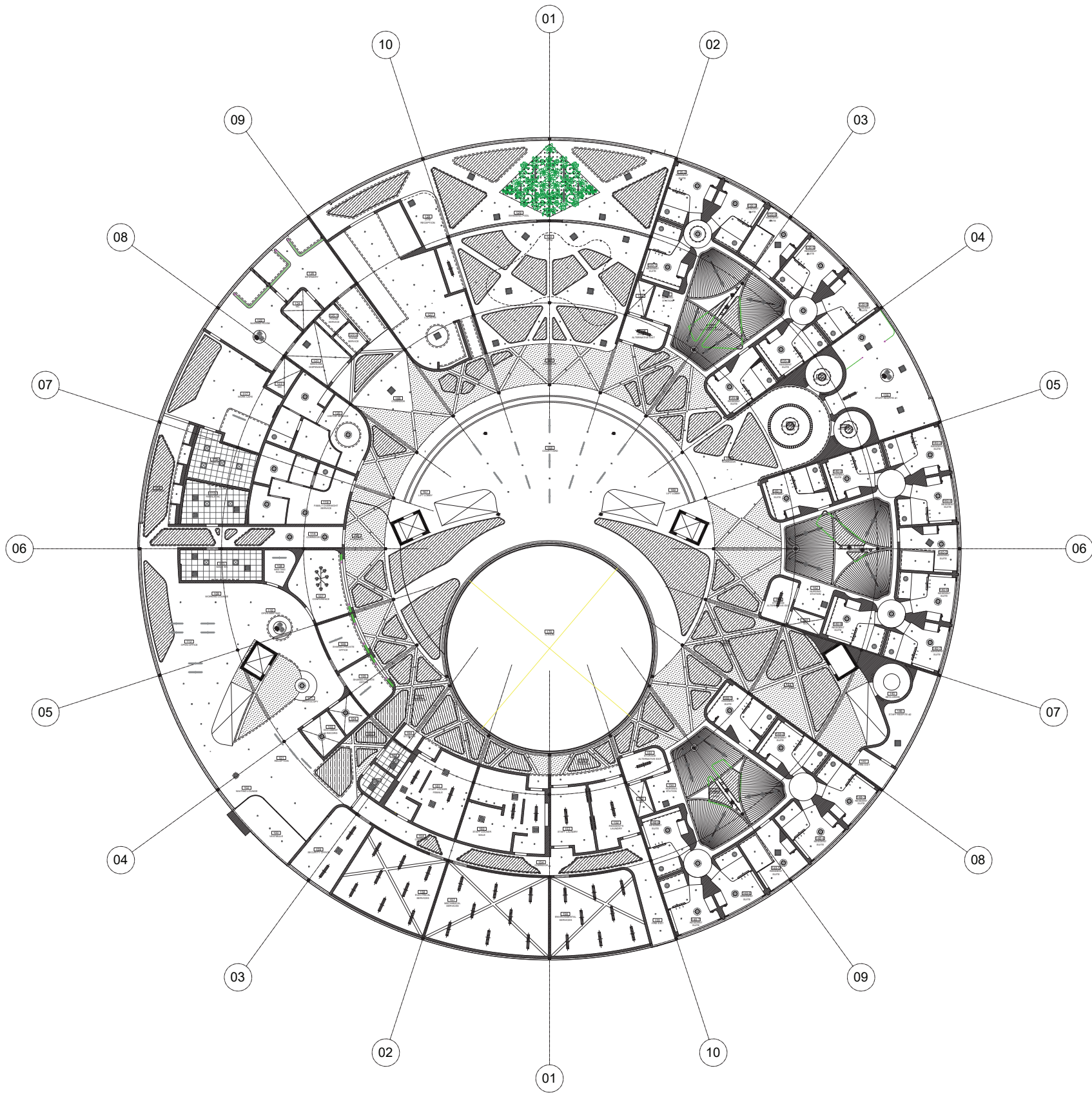
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Issue Date July 13 2020

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A3.0



CEILING LEGEND

- TEMPERED GLSS CEILING
19 mm THICKNESS DOUBLE LAYERS
PRODUCED by AGM GLASS FABRICATOR
HEIGHT: + 4000 mm
- WOODWORKS GRILL SLAT CEILING
50 mm W x 3400 mm L (MAX) PER SLAT
25 mm SPACING BETWEEN SLATS
PRODUCED by ARMSTRONG CEILING
HEIGHT: + 3200 mm
- EXPOSED CONCRETE CEILING
EXPOSED CONCRETE CEILING
WHITE PAINTED
- DROPPED DRYWALL CEILING
30 mm THICKNESS
150 mm (TYP.) FROM CEILING
PRODUCED by ARMSTRONG CEILING
HEIGHT: +3350 mm

ELECTRICAL LEGENDS

- TYPE A1**
TRIM-EYEBALL RECESSED LIGHT
FINISH: MATTE WHITE
SIZE: 80 mm DIA x 60 mm H
LAMPING: DL3000 HOUSING 25WF5
SUPPLIER: ROBINSON LIGHTING
- TYPE A2**
INDIRECT LIGHT CEILING LIGHT
FINISH: WHITE FROSTED GLASS
SIZE: 340 mm DIA x 130 mm H
MANUFACTURER:FLOS
SUPPLIER: MATTEO
- TYPE A3**
CHANDELIER W/ PLANTER VIBIA 3724
FINISH: WHITE FROSTED & MATTE WHITE
SIZE: 20 mm DIA x 500 mm H
MANUFACTURER:VIBIA
SUPPLIER: MATTEO
- TYPE B**
DIRECTIONAL LIGHT
FINISH: MATTE BLACK
SIZE: 2000 mm L x 100 MM w x 50 mm H
MANUFACTURER:designPLUS
SUPPLIER: MATTEO
- TYPE C1**
GENERAL TUBE LED LIGHT DOUBLE
FINISH: MATTE WHITE
SIZE: 1200 mm L x 100 MM w x 50 mm H
MANUFACTURER:PHILLIPS
SUPPLIER: HOMEDEPOT
- TYPE C2**
GENERAL TUBE LED LIGHT SINGLE
FINISH: MATTE WHITE
SIZE: 1200 mm L x 100 MM w x 50 mm H
MANUFACTURER:PHILLIPS
SUPPLIER: HOMEDEPOT
- TYPE D**
GENERAL LED STRIPES
SIZE: 10 mm W
MANUFACTURER:PHILLIPS
SUPPLIER: HOMEDEPOT
- TYPE E**
GENERAL SQUARE LIGHT
EVOKIT 2 x 2 P23L
SIZE: 600 mm x 600 mm
MANUFACTURER:PHILLIPS
SUPPLIER: HOMEDEPOT
- TYPE C3**
GENERAL WALL LIGHT SINGLE
FINISH: MATTE WHITE
SIZE: 1200 mm L x 100 MM w x 50 mm H
MANUFACTURER:PHILLIPS
SUPPLIER: HOMEDEPOT
- TYPE F**
CHANDELIER W/ PLANTER VIBIA PALMA 3734
FINISH: GRAPHITE ADAPTA RF 9913 WX
SIZE: 1500 mm L x 500 mm W x 750 mm H (MAX)
MANUFACTURER:VIBIA
SUPPLIER: MATTEO
- TYPE G**
CHANDELIER BRANCHES STYLE C83016AGOP
FINISH: BRASS & FROSTED WHITE
SIZE: 1000 mm L x 500 mm W x 400 MM h
SUPPLIER: MATTEO

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RE:INTENT - RETREAT FOR PIU PATIENTS

GROUND FLOOR PLAN

Design stage

PRELIMINARY DESIGN

Project No.

RE.01.2020

Sheet No.

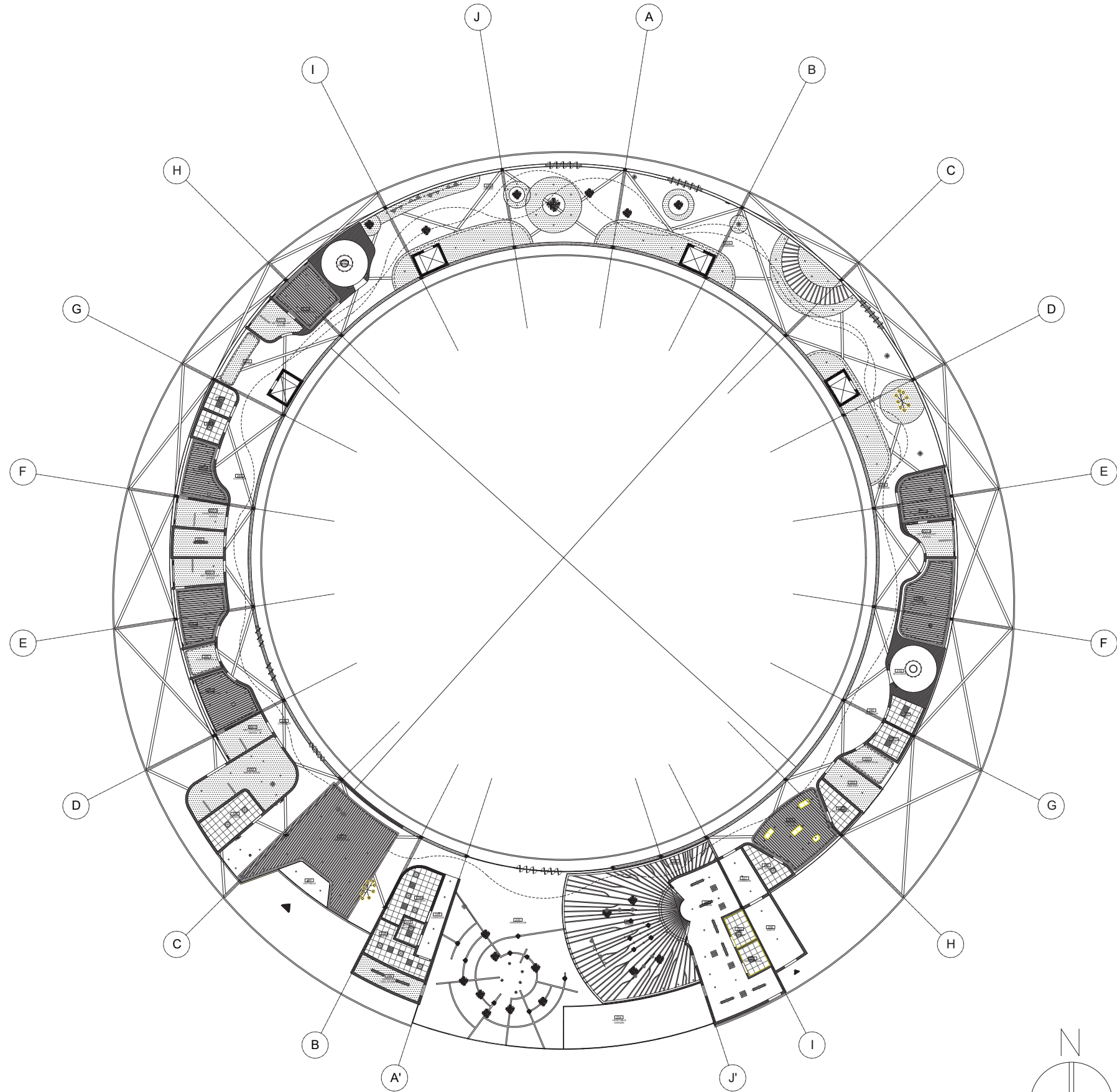
Issue Date

July 13 2020

Scale

1 : 200

A2.0



CEILING LEGEND

WOODWORKS GRILL SLAT CEILING
50 mm W x 3400 mm L (MAX) PER SLAT
25 mm SPACING BETWEEN SLATS
PRODUCED by ARMSTRONG CEILING
HEIGHT: + 7300 mm

WOODWORKS GRILL SLAT CEILING (TYP.)
150 mm W x 3400 mm L (MAX) PER SLAT
NO SPACING
PRODUCED by ARMSTRONG CEILING

DROPPED DRYWALL CEILING
30 mm THICKNESS
150 mm (TYP.) FROM CEILING
PRODUCED by ARMSTRONG CEILING
HEIGHT: +2800 mm

LIGHTING LEGENDS & SPECIFICATION

TYPE A1
TRIM-EYEBALL RECESSED LIGHT
FINISH: MATTE WHITE
SIZE: 80 mm DIA x 60 mm H
LAMPING: DL3000 HOUSING 25WF5
SUPPLIER: ROBINSON LIGHTING

TYPE X
PUCK WALL ART SCONE
FINISH: GREY L2 NCS S 2500-N
GREY D1 NCS S 7000-N
BROWN M1 NCS S 4020-Y60R
SIZE: 300 mm DIA x 50 mm H
MANUFACTURER: VIBIA
SUPPLIER: MATTEO

TYPE A3
CHANDELIER W/ PLANTER VIBIA 3724
FINISH: WHITE FROSTED & MATTE WHITE
SIZE: 20 mm DIA x 500 mm H
MANUFACTURER: VIBIA
SUPPLIER: MATTEO

TYPE E
GENERAL SQUARE LIGHT
EVOKIT 2 x 2 P23L
SIZE: 600 mm x 600 mm
MANUFACTURER: PHILLIPS
SUPPLIER: HOMEDEPOT

TYPE C1
GENERAL TUBE LED LIGHT DOUBLE
FINISH: MATTE WHITE
SIZE: 1200 mm L x 100 MM w x 50 mm H
MANUFACTURER: PHILLIPS
SUPPLIER: HOMEDEPOT

TYPE V1
FLAMINGO PENDANT 1510
FINISH: WHITE FLAMINGO RAL 9016
SIZE: 700 mm DIA x 800 mm H (MAX)
MANUFACTURER: VIBA
SUPPLIER: MATTEO

TYPE R1
CUSTOMADE LINEAR LIGHT
FINISH: WOOD COVER TEAK 1345 ARMSTRONG
SIZE: 50 mm W x 50 mm H
PRODUCED: MATTEO

TYPE D
GENERAL LED STRIPES
SIZE: 10 mm W
MANUFACTURER: PHILLIPS
SUPPLIER: HOMEDEPOT

TYPE V2
CHANDELIER W/ PLANTER VIBIA PALMA 3736
FINISH: GRAPHITE ADAPTA RF 9913 WX
SIZE: 1500 mm L x 500 mm W x 750 mm H (MAX)
MANUFACTURER: VIBIA
SUPPLIER: MATTEO

TYPE FF
SWORD FERN PLANTER
FINISH: TERRACOTTA
SIZE: 200 mm DIA x 200 mm H
MANUFACTURER: VIBIA
SUPPLIER: MATTEO

TYPE G
CHANDELIER BRANCHES STYLE C83016AGOP
FINISH: BRASS & FROSTED WHITE
SIZE: 1000 mm L x 500 mm W x 400 MM h
SUPPLIER: MATTEO

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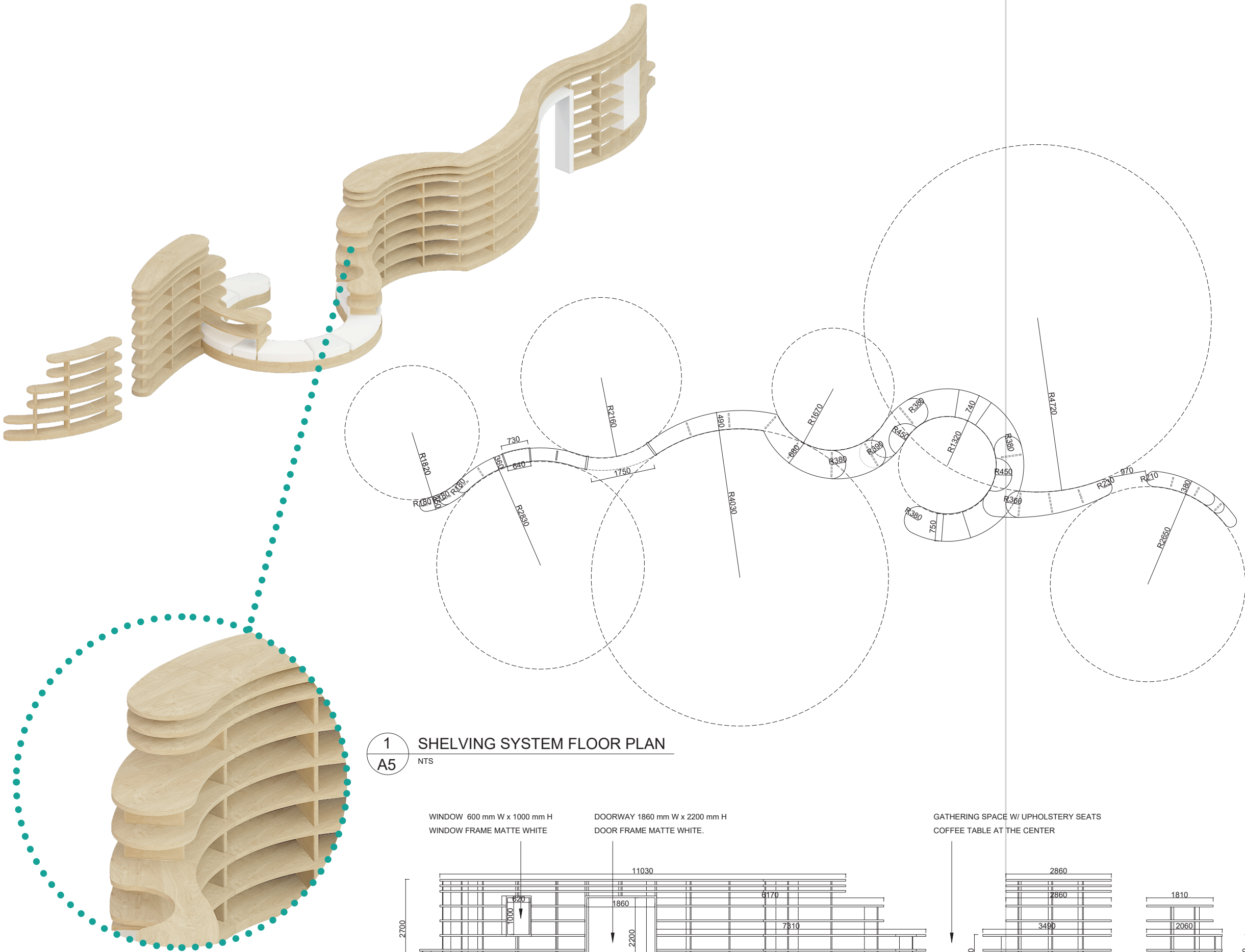
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RE:INTENT - RETREAT FOR PIU PATIENTS

SECOND FLOOR PLAN

Design stage
PRELIMINARY DESIGN

Project No.	RE.01.2020	Sheet No.
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1 SHELVING SYSTEM FLOOR PLAN
NTS

2 SHELVING SYSTEM ELEVATION
NTS

REVISIONS		
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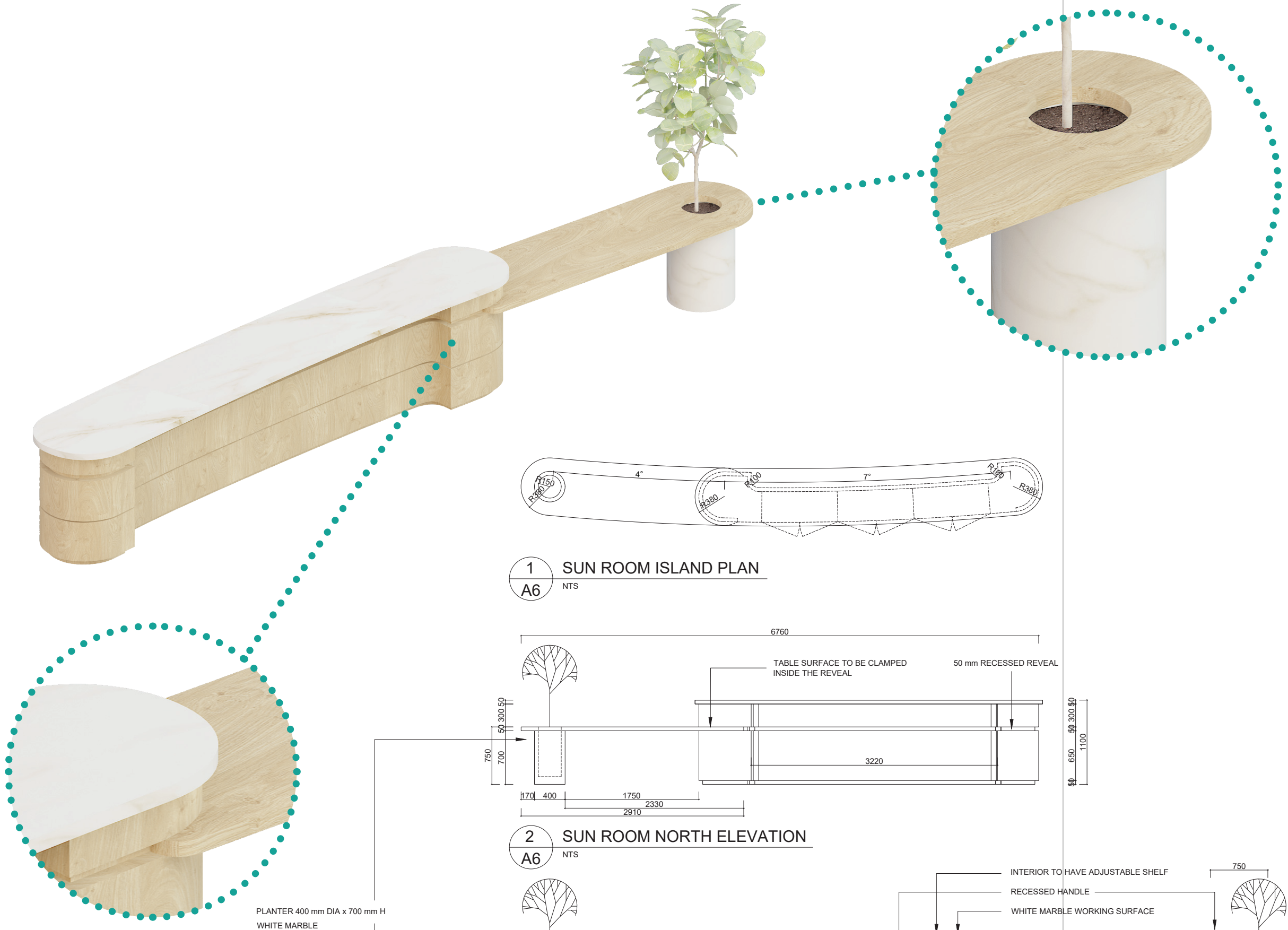
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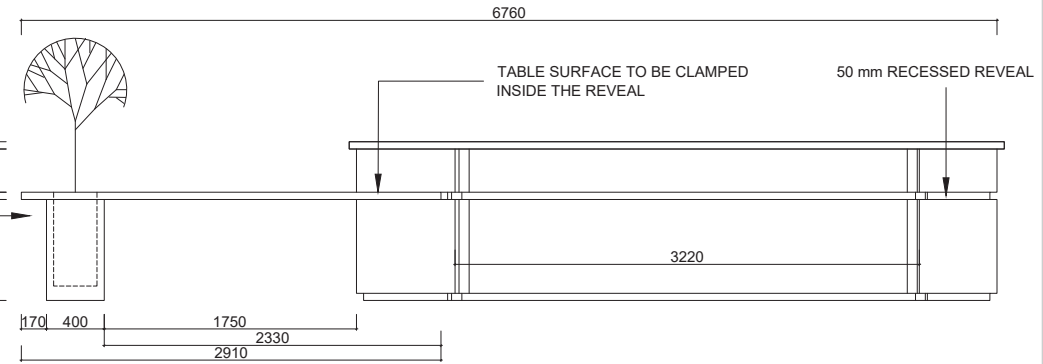
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RE:INTENT - RETREAT FOR PIU PATIENTS
**MILLWORK DETAIL
SHELVING SYSTEM**

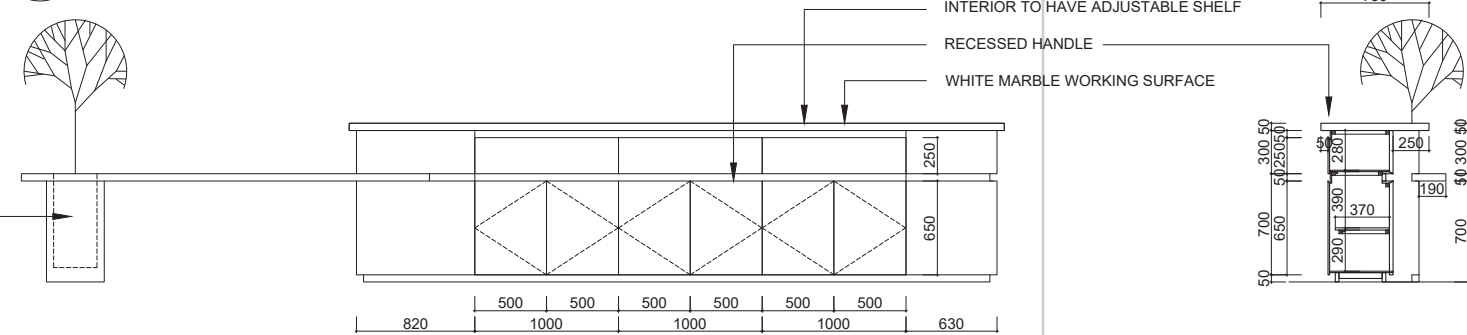
Design stage PRELIMINARY DESIGN		
Project No.	RE.01.2020	Sheet No.
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1 SUN ROOM ISLAND PLAN
A6 NTS



2 SUN ROOM NORTH ELEVATION
A6 NTS



3 SUN ROOM SOUTH ELEVATION
A6 NTS

4 SECTION
A6 NTS

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MILLWORK DETAIL
SUN ROOM ISLAND

Design stage

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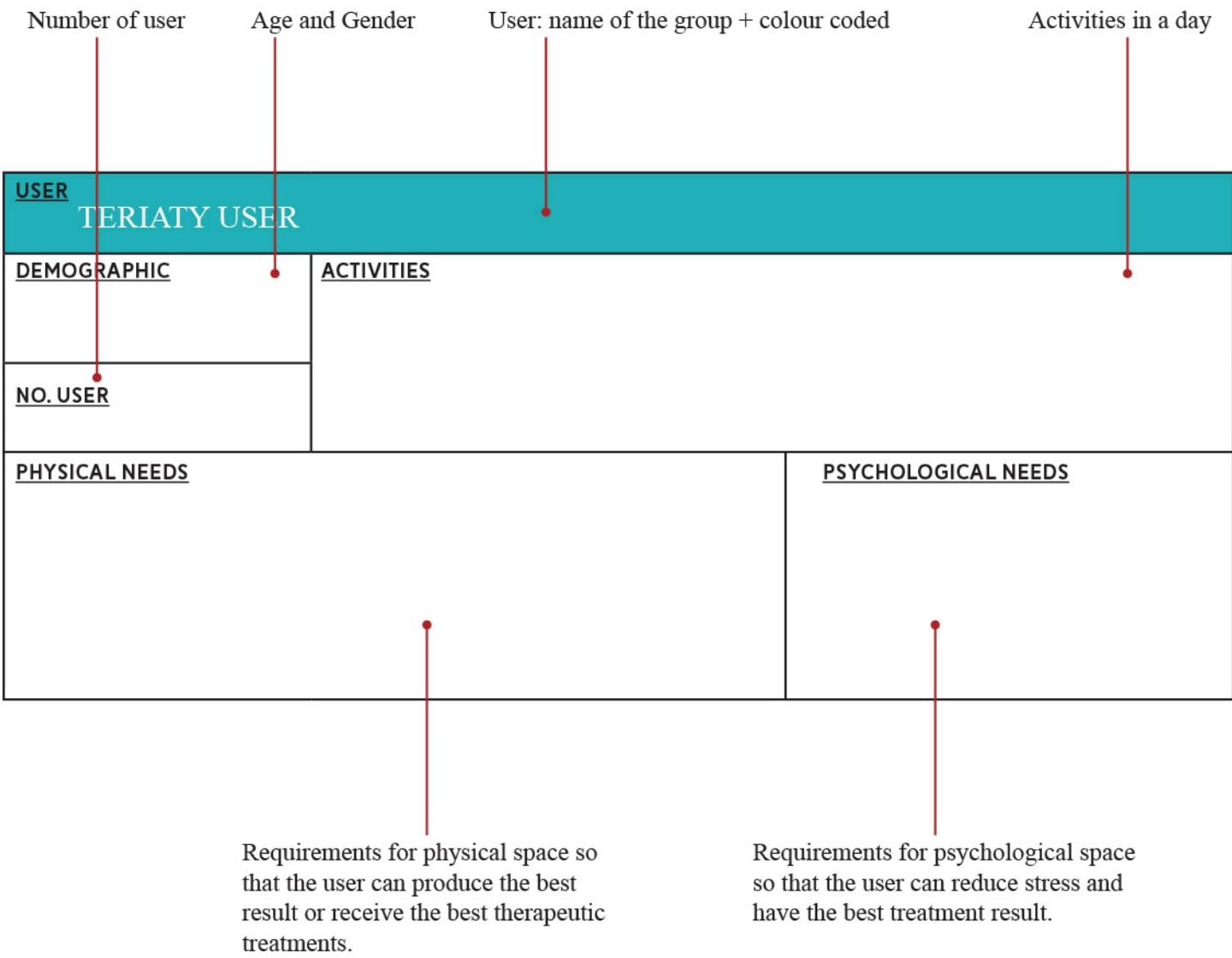
A5.0

B.

USER ANALYSIS

PRIMARY USERS
SECONDARY USERS
TERTIARY USERS

USER CARD LEGENDS



USER PATHOLOGICAL INTERNET USERS/ PATIENTS		
<u>DEMOGRAPHIC</u> 18 - 30 Male	<u>ACTIVITIES</u> Personal: - Daily routine, including having meals, entertainment, exercise, personal hygiene care, and sleeping. Community: - Interaction with other patients and supporting others. Therapeutic: - Take part in various therapeutic activities, including reading, cooking, exercise, meditation, gardening, and more. - Attend workshops, provided by coaches, therapists, and guest educators - Seek for supports from the medical staff.	
<u>NO. USER</u> 1 person per space 24 persons in total		
<u>PHYSICAL NEEDS</u> <u>Personal:</u> - Clean and safe private suite. - Visual and auditory privacy. - Under observation of medical staff and securities. <u>Community:</u> - Space for socializing with different privacy levels. - Avoid altercation and other aggressive behaviour. <u>Therapeutic:</u> - Safe and easy to get supports from medical staff or attendant.		<u>PSYCHOLOGICAL NEEDS</u> <u>Personal:</u> - Sense of belonging. - Safe environment. - Space for coping and self-reflect. - Foster well-being and recovery process <u>Community:</u> - Evoke the perceptual curiosity so they will explore and discover the facility, thus having spontaneous social interaction. <u>Therapeutic:</u> - Optimize nature connectedness. - Friendly and welcoming
USER PSYCHOLOGIST		
<u>DEMOGRAPHIC</u> 25+ All genders	<u>ACTIVITIES</u> Personal: - Daily routine, including having meals, entertainment, exercise, personal hygiene care and sleeping. Community: - Learning and update professional knowledge + professional meet-ups and discussions + break between sessions. Therapeutic: - Provide professional consultation to patients and their family members + work with other therapists to provide best treatment plans.	
<u>NO. USER</u> 1 person per space 2 persons in total		
<u>PHYSICAL NEEDS</u> <u>Personal:</u> - Clean and safe private suite. - Visual and auditory privacy. <u>Community:</u> - Space for socializing with different privacy levels. - Space for break between sessions. - Space for professional meet ups and discussions. <u>Therapeutic:</u> - Private and safe one-on-one and group sessions.		<u>PSYCHOLOGICAL NEEDS</u> <u>Personal:</u> - Foster well-being. - Sense of belonging. - Relaxation and calm. <u>Community:</u> - Low-stress environment. - Mental break and distraction. - High privacy level. <u>Therapeutic:</u> - Connection with nature. - Friendly and welcoming.

USER HORTICULTURE THERAPIST		
DEMOGRAPHIC	ACTIVITIES	
25+ All genders	Personal:	- Daily routine, including having meals, entertainment, exercise, personal hygiene care, and sleeping.
NO. USER 1 person per space 2 persons in total	Community:	- Interaction with other patients and supporting others.
	Therapeutic:	- Provide professional consultation to patients - Horticultural and agricultural demonstration - Outdoor private and group activities - Work with other therapists to have joined sessions and wilderness activities.
PHYSICAL NEEDS		PSYCHOLOGICAL NEEDS
<u>Personal:</u> - Clean and safe private suite. - Visual and auditory privacy.		Personal: - Foster well-being. - Sense of belonging. - Relaxation and calm.
<u>Community:</u> - Space for socializing with different privacy levels. - Space for break between sessions. - Space for professional meet ups and discussions.		Community: - Low-stress environment. - Mental break and distraction. - High privacy level.
<u>Therapeutic:</u> - Private and safe one-on-one and group sessions.		Therapeutic: - Connection with nature. - Friendly and welcoming.

USER NUTRITIONIST		
DEMOGRAPHIC	ACTIVITIES	
25+ All genders	Personal:	- Daily routine, including having meals, entertainment, exercise, personal hygiene care, and sleeping.
NO. USER 1 person per space 1 person in total	Community:	- Learning and update professional knowledge + professional meet-ups and discussions + break between sessions.
	Therapeutic:	- Provide consultation on patients’ nutrition intake and diet - Provide cooking classes - Work with Horticultural therapists to coordinate horticultural activities.
PHYSICAL NEEDS		PSYCHOLOGICAL NEEDS
<u>Personal:</u> - Clean and safe private suite. - Visually and auditory privacy.		Personal: - Foster well-being. - Sense of belonging. - Relaxation and calm.
<u>Community:</u> - Space for socializing with different privacy levels. - Space for break between sessions. - Space for professional meet ups and discussions.		Community: - Low-stress environment. - Mental break and distraction. - High privacy level.
<u>Therapeutic:</u> - Space for cooking class and preparation for teaching.		Therapeutic: - Connection with nature. - Friendly and welcoming.

USER PHYSIOTHERAPIST		
DEMOGRAPHIC	ACTIVITIES	
25+ All genders	Personal:	- Daily routine, including having meals, entertainment, exercise, personal hygiene care, and sleeping.
NO. USER 1 person per space 1 person in total	Community:	- Interaction with other patients and supporting others.
	Therapeutic:	- Provide consultation on patients’ physical condition - Provide exercise program that suitable to each patients - Work with other therapists to prepare the patients for wilderness training.
PHYSICAL NEEDS		PSYCHOLOGICAL NEEDS
<u>Personal:</u> - Clean and safe private suite. - Visually and auditory privacy.		<u>Personal:</u> - Foster well-being. - Sense of belonging. - Relaxation and calm.
<u>Community:</u> - Socializing spaces with different privacy levels. - Space for break between sessions. - Space for professional meet ups and discussion.		<u>Community:</u> - Low-stress environment. - Mental break and distraction. - High privacy level.
<u>Therapeutic:</u> - Space for equipment storage.		<u>Therapeutic:</u> - Connection with nature. - Friendly and welcoming.

USER ADMINISTRATIVE STAFF		
DEMOGRAPHIC	ACTIVITIES - Manage the human factor of the facility. - Make sure the facility runs efficiently by organizing work schedules meetings and other office works.	
22+ All genders		
NO. USER	5 persons in total	
PHYSICAL NEEDS - Clean and efficient working space. - Private spaces for meetings and discussions. - Space for socializing and develop social relationships. - Space for breaks during working hours. - Space for photocopy, fax, and other office tasks.		PSYCHOLOGICAL NEEDS - Low-stress environment - Mental break and distraction during break time. - Focus during working hours. - Connection with nature.

USER MEDICAL STAFF		
DEMOGRAPHIC	ACTIVITIES - Provide medical support and supports in general to patients and other staff members. - Observe patients and prevent potentially dangerous behaviour or altercation.	
22+ All genders		
NO. USER	4 persons in total	
PHYSICAL NEEDS - Clean and efficient working space. - Allow the patient to approach but still safe and secure, especially with aggressive patients. - Space for breaks during working hours.		PSYCHOLOGICAL NEEDS - Low-stress environment - Mental break and distraction during break time. - Focus during working hours. - Connection with nature.

USER MAINTENANCE STAFF		
DEMOGRAPHIC	ACTIVITIES - Make sure the solar power system, water filtration, and waste management to run smoothly and efficiently.	
18+ All genders		
NO. USER	2 persons in total	
PHYSICAL NEEDS - Clean and efficient working space. - Private spaces for meetings and discussions. - Space for socializing and develop social relationships. - Space for breaks during working hours. - Space for photocopy, fax, and other office tasks.		PSYCHOLOGICAL NEEDS - Low-stress environment - Mental break and distraction during break time. - Focus during working hours. - Connection with nature.

USER HOUSEKEEPER		
DEMOGRAPHIC	ACTIVITIES - Keep the facility clean and well-organized.	
18+ All genders		
NO. USER	2 persons in total	
PHYSICAL NEEDS - Easy to clean and organize. - Storage for equipment. - Lockers for personal belongings. - Easy to contact the Administrative staff.		PSYCHOLOGICAL NEEDS - Low-stress environment - Mental break and distraction during break time. - Connection with nature.

USER KITCHEN STAFF		
DEMOGRAPHIC	ACTIVITIES - Prepare foods for patients and staff. - Clean dishes and cooking tools. - Receive food and goods from outside delivery as well as the gardeners. - Coordinate and work with Mechanical and maintenance staff for waste dumping.	
18+ All genders		
NO. USER	4 persons in total	
PHYSICAL NEEDS - Safe, clean, and well-organized environment. - Lockers for personal belongings. - Storage for cooking equipment and products (dry and cold storage).		PSYCHOLOGICAL NEEDS - Low-stress environment - Mental break and distraction during break time. - Connection with nature.

USER GARDENER		
DEMOGRAPHIC	ACTIVITIES - Take care of the garden and the greenhouse. - Support the horticulture therapists, nutritional therapist and their patients when needed. - Transfer fresh fruits and foods produced from the garden and the greenhouse to the kitchen.	
22+ All genders		
NO. USER	2 persons in total	
PHYSICAL NEEDS - Storage for gardening equipment. - Lockers for personal belongings. - Spaces for relaxation. - Easily supervise the greenhouse and activities that happen there.		PSYCHOLOGICAL NEEDS - Low-stress environment - Mental break and distraction during break time. - Connection with nature.

USER SECURITY		
<u>DEMOGRAPHIC</u> 18+ All genders		<u>ACTIVITIES</u> - Protect staff and patients from aggressive behaviours. - Make sure the entrance and exits are well maintained and locked when necessary.
<u>NO. USER</u> 2 persons in total		
<u>PHYSICAL NEEDS</u> - Efficiently supervise patients’ ward and access it fast. - Lockers for personal belongings. - Space for relaxation.		<u>PSYCHOLOGICAL NEEDS</u> - Low-stress environment - Mental break and distraction during break time. - Connection with nature.

<u>USER</u> GUEST THERAPIST/ EDUCATOR		
<u>DEMOGRAPHIC</u> 22+ All genders		<u>ACTIVITIES</u> - Educate and discuss with the therapists and consultants, medical staff, and patients through seminars and events. - Only visit twice a month.
<u>NO. USER</u> 2 persons in total		
<u>PHYSICAL NEEDS</u> - A private suite that is clean, safe with visual and auditory privacy. - Working areas. - Welcoming and calm environment.		<u>PSYCHOLOGICAL NEEDS</u> - Low-stress environment - Mental break and distraction during break time. - Connection with nature.

<u>USER</u> PATIENT'S FAMILY		
<u>DEMOGRAPHIC</u> 4+ All genders	<u>ACTIVITIES</u> - Visit during patients' first two days and last two days. - Have family sessions with therapists when required.	
<u>NO. USER</u> 4 persons in total		
<u>PHYSICAL NEEDS</u> - A private suite that is clean, safe with visual and auditory privacy. - Welcoming and calm environment.		<u>PSYCHOLOGICAL NEEDS</u> - Low-stress environment - Mental break and distraction during break time. - Connection with nature.

<u>USER</u> DELIVER		
<u>DEMOGRAPHIC</u> 18+ All genders	<u>ACTIVITIES</u> - Deliver local products and other goods from Falcon Lake town twice a week. - Deliver essential goods, medical equipment from Winnipeg twice a month.	
<u>NO. USER</u> 2 persons in total		
<u>PHYSICAL NEEDS</u> - Easy to access to delivery dock.		<u>PSYCHOLOGICAL NEEDS</u> - Safe and calm. - No distraction.

C.

SPATIAL REQUIREMENT

- THERAPEUTIC SERVICES
- PUBLIC SERVICES
- BCK-OF-HOUSE SERVICES
- ADMINISTRATIVE SERVICES
- STAFF SERVICES
- KITCHEN SERVICES
- RESIDENT SERVICES
- SUPPORT SERVICES

SPACE CARD LEGENDS

	THERAPEUTIC SPACE		ADMINISTRATIVE SERVICES		RESIDENT SERVICES
	PUBLIC SPACE		STAFF SERVICES		SUPPORT SERVICES
	BACK-OF-HOUSE SERVICES		KITCHEN SERVICES		

SPACE PHYSIOTHERAPY CONSULTATION										QTY	QTY USER	AREA
ACTIVITIES										USER		
										FF&E		
AMBIENT										NEEDS OF NATURAL LIGHT		
										ARTIFICIAL LIGHTING		
										PUBLIC/ PRIVATE		
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required
Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private						
BIOPHILIC FEATURE										REMARK		

Activities in the space

Name of the space - colour coded

Furniture, fixture and equipment

Space user

Number of room

Number of user in a room

Area of a room

Does the space require Biophilic design?

An ambient requirement of the space, represent through the choices in 5 pairs of opposite ambient options:

Requirement of natural light:

Requirement of artificial light:

Is the space public or private?

Other notes

Figure 21. Space Card Legends

SPACE COGNITIVE BEHAVIOUR CONSULTATION										QTY	QTY USER	AREA
ACTIVITIES										USER		
										FF&E		
AMBIENT										NEEDS OF NATURAL LIGHT		
										ARTIFICIAL LIGHTING		
										PUBLIC/ PRIVATE		
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required
Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private						
BIOPHILIC FEATURE										REMARK		

SPACE NATURE-BASED THERAPY CONSULTATION										QTY	QTY USER	AREA
ACTIVITIES										USER		
										FF&E		
AMBIENT										NEEDS OF NATURAL LIGHT		
										ARTIFICIAL LIGHTING		
										PUBLIC/ PRIVATE		
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required
Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private						
BIOPHILIC FEATURE										REMARK		

SPACE PHYSIOTHERAPY CONSULTATION										QTY	QTY USER	AREA
ACTIVITIES										USER		
										FF&E		
AMBIENT										NEEDS OF NATURAL LIGHT		
										ARTIFICIAL LIGHTING		
										PUBLIC/ PRIVATE		
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required
Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private						
BIOPHILIC FEATURE										REMARK		

SPACE NUTRITIONAL CONSULTATION											QTY	1	QTY USER	2	AREA	20m ²			
ACTIVITIES - Examine patient's nutritional condition - Propose diet programs - Office work											USER - Therapist - PIU patients								
											FF&E - Working desk and chair - Comfortable seatings - Scale								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
BIOPHILIC FEATURE  Required  Desired  Not required										REMARK									

SPACE SAFE WITHDRAWAL & SECLUSION											QTY	4	QTY USER	1	AREA	12m ²			
<u>ACTIVITIES</u> - Distant the user (patient) from the stressor and/ or conflict sources											<u>USER</u> - PIU patient								
											<u>FF&E</u> - Build-in seat								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quiet	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
<u>BIOPHILIC FEATURE</u>  Required  Desired  Not required										<u>REMARK</u>									

SPACE COURTYARD											QTY 2		QTY USER 30		AREA				
<u>ACTIVITIES</u> - Therapy sessions - Self-reflect - Exploration											<u>USER</u> - Therapist - PIU patients								
											<u>FF&E</u> - Visible and discreet seatings								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
<u>BIOPHILIC FEATURE</u>  Required  Desired  Not required										<u>REMARK</u>									

SPACE GREEN HOUSE											QTY 1			QTY USER 12			AREA		
<u>ACTIVITIES</u> - Horticulture activities - Therapy session - Self-reflect											<u>USER</u> - Specialist - PIU patients - Staff								
											<u>FF&E</u> - Hidden seats - Vertical garden - Tool storage								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
<u>BIOPHILIC FEATURE</u>  Required  Desired  Not required										<u>REMARK</u>									

SPACE GYMNASIUM										QTY		1	QTY USER			20	AREA		186m ²
<u>ACTIVITIES</u> - Exercise										<u>USER</u> - Staff - PIU patients									
										<u>FF&E</u> - Weight rack - Gym equipments - Open shelves - Seats - Storage									
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
<u>BIOPHILIC FEATURE</u>  Required  Desired  Not required										<u>REMARK</u>									

SPACE SWIMMING POOL										QTY			1			QTY USER			20			AREA			40m ²		
<u>ACTIVITIES</u> - Water-related activities - Relaxation										<u>USER</u> - PIU patients - Staff																	
										<u>FF&E</u> - Life-guard seat - Loungers - Storage																	
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE											
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private								
																											
<u>BIOPHILIC FEATURE</u>  Required  Desired  Not required										<u>REMARK</u>																	

SPACE CULINARY CLASS											QTY 1		QTY USER 9			AREA 45m ²			
ACTIVITIES - Cooking instruction - Eating - Clean up dishes and cook-ware											USER - PIU patients - Nutritional consultant								
											FF&E - Cabinet & ware-washing station - Kitchen islands - Moveable furniture								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
BIOPHILIC FEATURE  Required  Desired  Not required										REMARK									

SPACE SPECIALIST'S OFFICE											QTY		6	QTY USER		2	AREA		20m ²
ACTIVITIES - Working - Preparing for therapy sessions - Meeting with staff and patients											USER Specialists - Staff								
											FF&E - Working station - Shelving								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
BIOPHILIC FEATURE  Required  Desired  Not required										REMARK									

SPACE INFIRMARY										QTY	1	QTY USER	6	AREA	80m ²				
ACTIVITIES - Patients recover from injuries or medical reasons										USER Medical Staff - Patients									
										FF&E - Bed - Side Table - Couch									
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
BIOPHILIC FEATURE										REMARK									
 Required  Desired  Not required																			

SPACE ORIENTATION											QTY		1	QTY USER			30	AREA				> 36m ²
ACTIVITIES - Welcoming and giving the patients information when they first arrived. - Gathering while waiting for therapy sessions											USER - PIU patients - Staff											
											FF&E - Orientation Counter - Sectional Sofa - Fire place - Table and chairs for 8											
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE						
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private			
																						
BIOPHILIC FEATURE  Required  Desired  Not required										REMARK												

SPACE SUNROOM										QTY			1	QTY USER			26	AREA			> 52m ²
ACTIVITIES - Waiting for therapy sessions - Gathering - Socialize										USER - PIU patients - Staff											
										FF&E - Shelves - Seats and working surfaces - Movable furniture											
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE					
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private		
																					
BIOPHILIC FEATURE  Required  Desired  Not required										REMARK											

SPACE LIBRARY										QTY	1	QTY USER	3	AREA	40m ²				
<u>ACTIVITIES</u> - Read and craft work - Writing journal										<u>USER</u> - PIU patients					- Staff				
										<u>FF&E</u> - Bench									
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
<u>BIOPHILIC FEATURE</u>  Required  Desired  Not required										<u>REMARK</u>									

SPACE DINING											QTY 1			QTY USER 30			AREA > 36m ²		
ACTIVITIES - Have meals - Clean dishes - Gathering and socialize - Relax											USER - PIU patients - Staff								
											FF&E - Modular dining furniture - Food shelf - Communal sink - Dish and utensils shelf								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
BIOPHILIC FEATURE  Required  Desired  Not required										REMARK									

SPACE PATIO											QTY 1		QTY USER 12		AREA > 24m ²				
ACTIVITIES - Have meals outdoor - Gathering and socializing - Relax											USER - PIU patients - Staff								
											FF&E - Moveable dining sets								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
BIOPHILIC FEATURE  Required  Desired  Not required										REMARK									

SPACE VIEW/ VISTA											QTY 1			QTY USER 3			AREA 40m ²		
<u>ACTIVITIES</u> - Sightseeing - Self-reflect - Relax											<u>USER</u> - PIU patients - Staff								
											<u>FF&E</u> - Bench								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
<u>BIOPHILIC FEATURE</u>  Required  Desired  Not required										<u>REMARK</u>									

SPACE WASHROOM											QTY	6	QTY USER	3	AREA					
ACTIVITIES - Private needs											USER - PIU patients					- Staff				
											FF&E - Toilet					- Sink				
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE				
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private	
																				
BIOPHILIC FEATURE										REMARK										
 Required  Desired  Not required																				

SPACE OPEN OFFICE											QTY 1			QTY USER 12			AREA 112m ²		
ACTIVITIES - Coordinate and organize tasks - Answer emails and phone - Administrative tasks											USER - Administrative staff - Visitors								
											FF&E - Work station - Desktop - Free seatings								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
BIOPHILIC FEATURE  Required  Desired  Not required										REMARK									

SPACE MEETING ROOM											QTY	1	QTY USER	12	AREA	15m ²			
ACTIVITIES - Discuss facility matters - Meeting - Online conference											USER - Administrative staff - Therapist - Staff								
											FF&E - Modular meeting furniture - Cabinet - Projector								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
BIOPHILIC FEATURE  Required  Desired  Not required										REMARK									

SPACE BREAK ROOM											QTY 1			QTY USER 12			AREA > 15m ²		
ACTIVITIES - Have meals - Socialize - Relax											USER - PIU patients - Staff								
											FF&E - Move-able dining furniture - Fridge - Microwave - Sink								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
BIOPHILIC FEATURE  Required  Desired  Not required										REMARK									

SPACE DOCUMENTS AND RECORDS											QTY	1	QTY USER	2	AREA	5m ²			
ACTIVITIES - Patients' document storing											USER - Administrative staff - Therapist - Nurse								
											FF&E - File cabinet - Shelves								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
BIOPHILIC FEATURE										REMARK									
 Required  Desired  Not required																			

SPACE RESOURCE CENTER											QTY	1	QTY USER	2	AREA	12m ²			
ACTIVITIES - Photocopy - Scan - Print											USER - Administrative staff - Therapist - Nurse								
											FF&E - Photocopier - Desktop - Printer - Work station - Scanner								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
BIOPHILIC FEATURE  Required  Desired  Not required										REMARK									

SPACE WASHROOM											QTY	4	QTY USER	4	AREA				
ACTIVITIES - Private needs											USER - Administrative staff								
											FF&E - Toilet - Sink - Faucet								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
BIOPHILIC FEATURE										REMARK									
 Required  Desired  Not required																			

SPACE STAFF RESPITE											QTY 4			QTY USER 1			AREA >20m ²		
ACTIVITIES - Sleep - Relax - Personal hygiene care											USER - Staff								
											FF&E - Seats - Table - Bed (Optional) - Indirect Light								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
BIOPHILIC FEATURE Required Desired Not required										REMARK									

SPACE STAFF LOUNGE											QTY 1		QTY USER 12		AREA 70m ²				
<u>ACTIVITIES</u> - Socialize - Games and TV - Gathering - Relax											<u>USER</u> - Therapist								
											<u>FF&E</u> - Self-serve beverage bar - Shelves - Group games - TV								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
<u>BIOPHILIC FEATURE</u> Required Desired Not required										<u>REMARK</u>									

SPACE STAFF LOCKERS											QTY	1	QTY USER	30	AREA	20m ²			
ACTIVITIES - Store belonging - Staff check-in											USER - Staff - Nurse - Part-time staff - Administrative staff								
											FF&E - Lockers - Seatings								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
BIOPHILIC FEATURE  Required  Desired  Not required										REMARK									

SPACE RESIDENT SUITE											QTY 24		QTY USER 1		AREA 15m ²				
ACTIVITIES - Sleep - Self-reflect - Relax - Personal hygiene care											USER - PIU patients								
											FF&E - Build-in bed - Build-in wardrobe - Build-in couch - Moveable seatings - Bathroom								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
BIOPHILIC FEATURE Required Desired Not required										REMARK - 24 patients, divided into 3 wards with 8 patients in each ward.									

SPACE RESIDENT COMMUNITY AREA											QTY 3			QTY USER 10			AREA 30m ²		
ACTIVITIES - Gathering - Socialize - Relax - Games											USER - PIU patients - Nurse								
											FF&E - Nurse station c/w seatings - Shelves - Moveable seatings								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
BIOPHILIC FEATURE Required Desired Not required										REMARK									

SPACE FAMILY/ VISITOR OVERNIGHT SERVICES											QTY 2			QTY USER 2			AREA 30m ²		
<u>ACTIVITIES</u> - Sleep - Relax - Personal hygiene care											<u>USER</u> - Visitors								
											<u>FF&E</u> - Bed - Wardrobe - Bathroom - Couch and moveable seatings								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
<u>BIOPHILIC FEATURE</u> Required Desired Not required										<u>REMARK</u>									

SPACE NURSE STATION											QTY	4	QTY USER	4	AREA	12m ²			
ACTIVITIES - Provide supports and observe patients - Gathering space - Office work											USER - Nurse - Security - PIU patients								
											FF&E - Counter - Barstool - Shelves & cabinet - Desktop								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
BIOPHILIC FEATURE  Required  Desired  Not required										REMARK - Patients have the tendency to gather around or near nurse station to socialize ³									

SPACE LAUNDRY SERVICE											QTY 2		QTY USER 8		AREA 20m ²				
ACTIVITIES - Laundry											USER - PIU patients				- Staff				
											FF&E - Washer & Dryer x 8pcs/ room				- Storage				- Seatings
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
BIOPHILIC FEATURE										REMARK - 2 different laundry services: one for patients and the other for staff									
 Required  Desired  Not required																			

SPACE PHONE SERVICE											QTY 2		QTY USER 1		AREA 7m ²				
ACTIVITIES - Communicate with family and friends under observation											USER - PIU patients								
											FF&E - Phone - Working surface - Seatings								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
BIOPHILIC FEATURE  Required  Desired  Not required										REMARK									

SPACE STORAGE											QTY 4		QTY USER 2		AREA 10m ²				
<u>ACTIVITIES</u> - Store equipemnts and products - Clean tools and equipments											<u>USER</u> - Part-time staff								
											<u>FF&E</u> - Shelves - Sink								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
<u>BIOPHILIC FEATURE</u>  Required  Desired  Not required										<u>REMARK</u>									

SPACE SECURITY											QTY 1		QTY USER 2		AREA 15m ²				
ACTIVITIES - Supervise the facility through camera system - Relax											USER - Security								
											FF&E - TV screen - Seatings - Working surface								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
BIOPHILIC FEATURE  Required  Desired  Not required										REMARK									

SPACE MECHANICAL ROOM										QTY	1	QTY USER	3	AREA	80m ²					
ACTIVITIES - Produce and distribute energy - Store, heat, and distribute water - Wastewater treatment - Water distribution										USER - Mechanical staff										
										FF&E										
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE				
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private	
																				
BIOPHILIC FEATURE  Required  Desired  Not required										REMARK										

SPACE MECHANICAL OFFICE											QTY 1		QTY USER 2		AREA 30m ²				
<u>ACTIVITIES</u> - Office work - Control mechanical and engineering works											<u>USER</u> - Mechanical staff								
											<u>FF&E</u> - Work station								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
<u>BIOPHILIC FEATURE</u>  Required  Desired  Not required										<u>REMARK</u>									

SPACE WASTE MANAGEMENT											QTY		1	QTY USER		1	AREA		20m ²	
<u>ACTIVITIES</u> - Waste storage & treatment - Waste disposal											<u>USER</u> - Staff									
											<u>FF&E</u>									
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE				
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private	
																				
<u>BIOPHILIC FEATURE</u>  Required  Desired  Not required										<u>REMARK</u>										

SPACE KITCHEN										QTY	1	QTY USER	4	AREA	70m ²				
ACTIVITIES - Prepare meals - Wash cook-ware - Store goods and products										USER - Kitchen staff									
										FF&E - Kitchen counter - Fridge - Working surface- Stove - Shelves - Storage									
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
BIOPHILIC FEATURE  Required  Desired  Not required										REMARK									

SPACE DELIVERY DOCK											QTY 1		QTY USER 2		AREA 10m²				
ACTIVITIES - Receive products and goods											USER - Kitchen staff - Delivery service								
											FF&E - Trolley								
AMBIENT										NEEDS OF NATURAL LIGHT			ARTIFICIAL LIGHTING			PUBLIC/ PRIVATE			
Lively	Quite	Active	Passive	Airy	Intimate	Visible	Discreet	Aroma	Unscented	Required	Desired	Not required	Direct	Indirect	Dimmable	Public	Semi-public	Semi-private	Private
																			
BIOPHILIC FEATURE										REMARK									
 Required  Desired  Not required																			

D.

THEORETICAL APPLICATIONS

BIOPHILIC DESIGN
ATMOSPHERIC ARCHITECTURE
SUPPORTIVE DESIGN

BIOPHILIC DESIGN | FIRST FLOOR

Ceiling height decrease as privacy level increase, mimicking the characteristics of a cave, expressing the sheltering and protective component of the spaces.

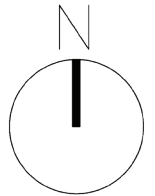
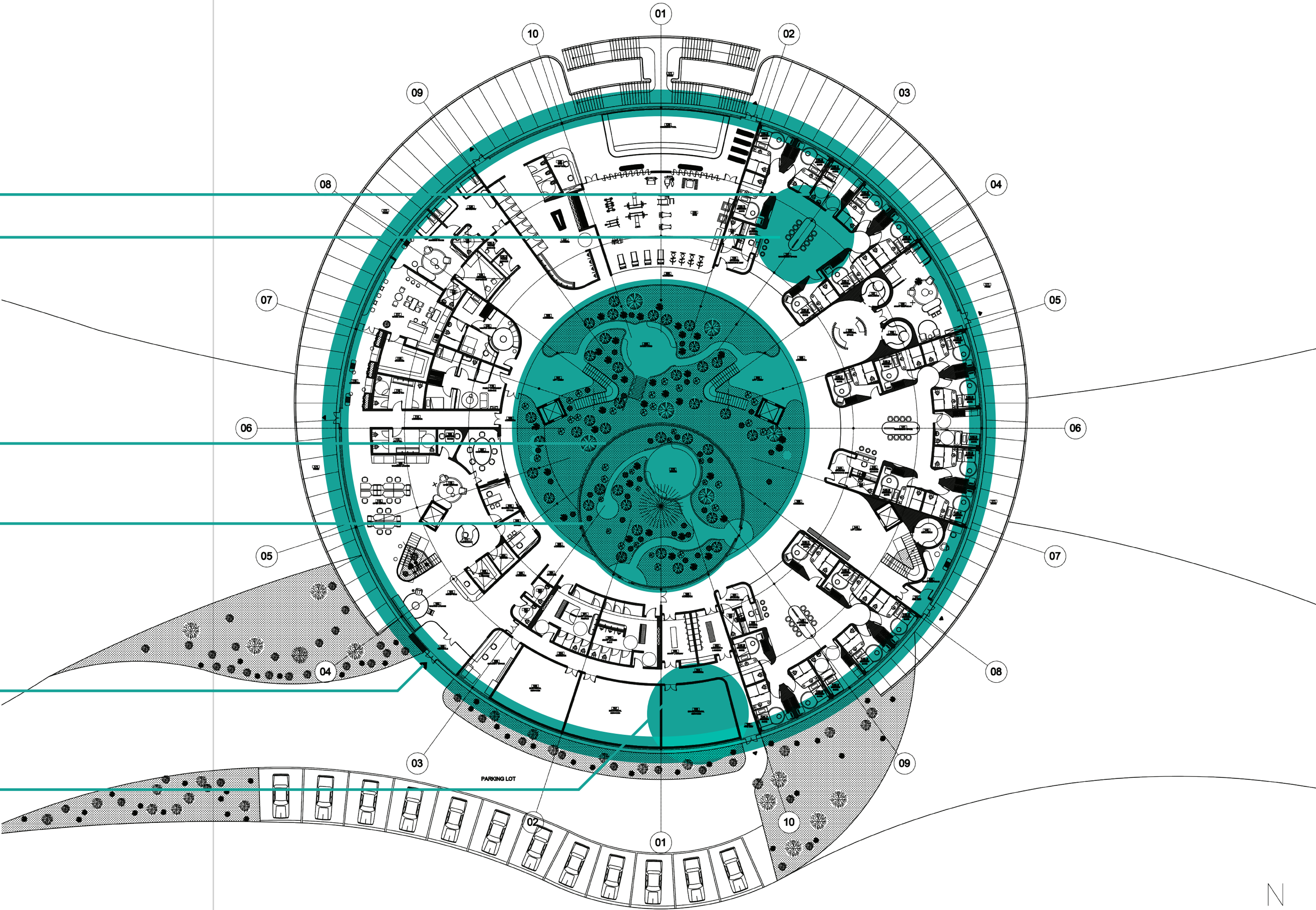
To provide natural lighting to the First floor, the bottom of the ponds are made of tempered glass.

Courtyard in the center of the floor provides not only visual but also olfactory, vestibular, and tactile. The courtyard also accommodates therapeutic activities.

Floor-to-ceiling-windows are placed throughout the facility to optimize passive ventilation. The atrium create a low pressure zone sucking the cool air toward it, enabling and utilizing passive ventilation.

re:intent is surrounded by a Borealis forest, making it easy to access natural visually. The facility has glazed facade almost everywhere to accommodate such a privilege

Environmental office provides services to ensure the facility staying green and having the least environmental footprint.
The building is made of local environmental-friendly materials.



BIOPHILIC DESIGN | SECOND FLOOR

Front pond and courtyard pond temperate surrounding temperature. Provide tranquil atmosphere and seasonal changes.

Circular building mass increase the natural light receiving during the day.

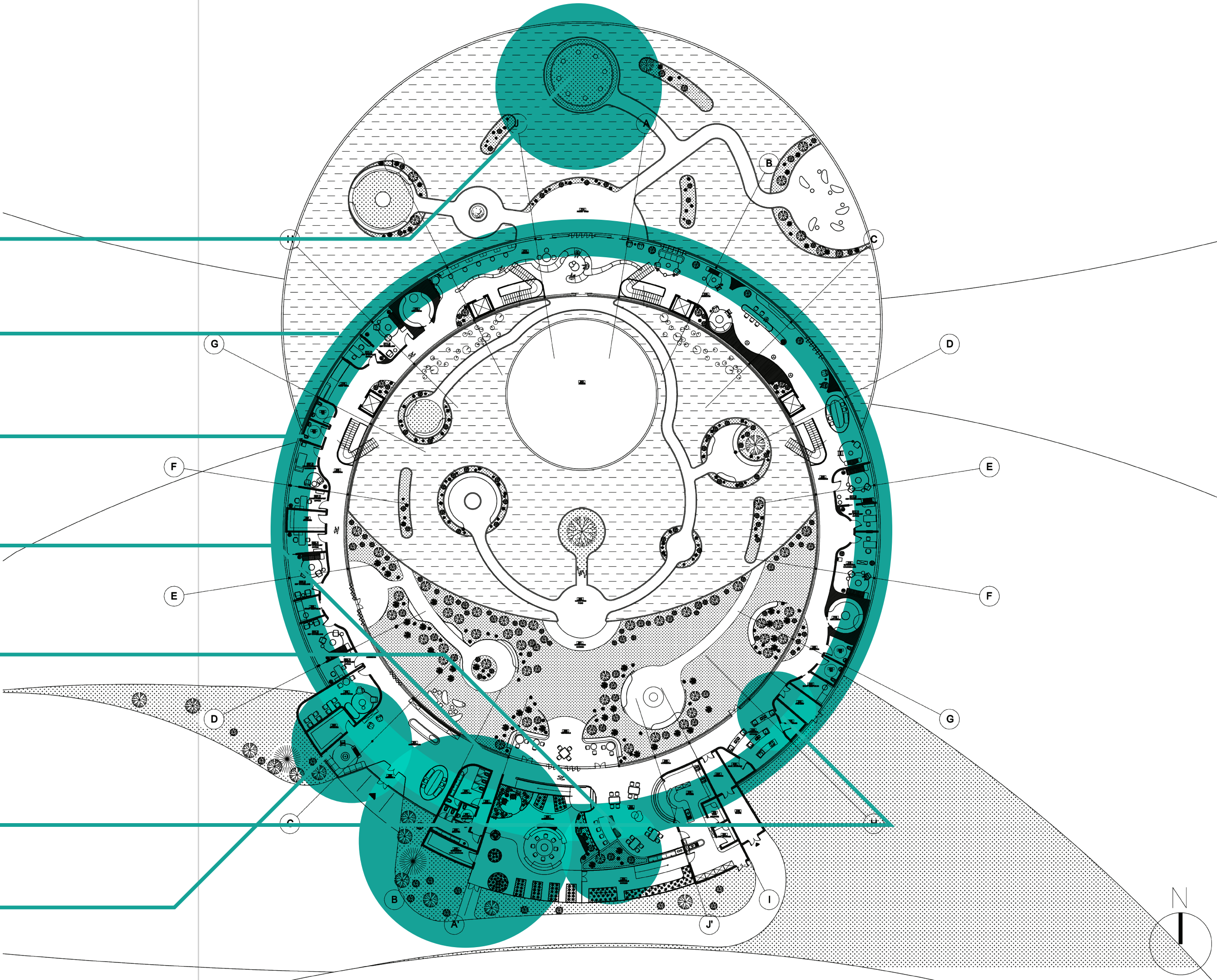
View to nature as well as to courtyard are provided as glazed facade cover most of of the building elevation.

Greenhouse accommodates horticultural activities and provide spaces for connecting with nature in challenging weather conditions.

Dropped ceiling in form of tree foliage, emphasizing the juxtaposition and intension between indoor and outdoor, indoor and the green house, as well as artificial and natural components.

Staff respite spaces provide opportunities to avoid stress and unwanted interactions. The space only have indirect artificial lighting and natural light.

Orientation space is designed in a way that it mimics the cave by slowly lowering the ceiling, providing a safe and supportive atmosphere.



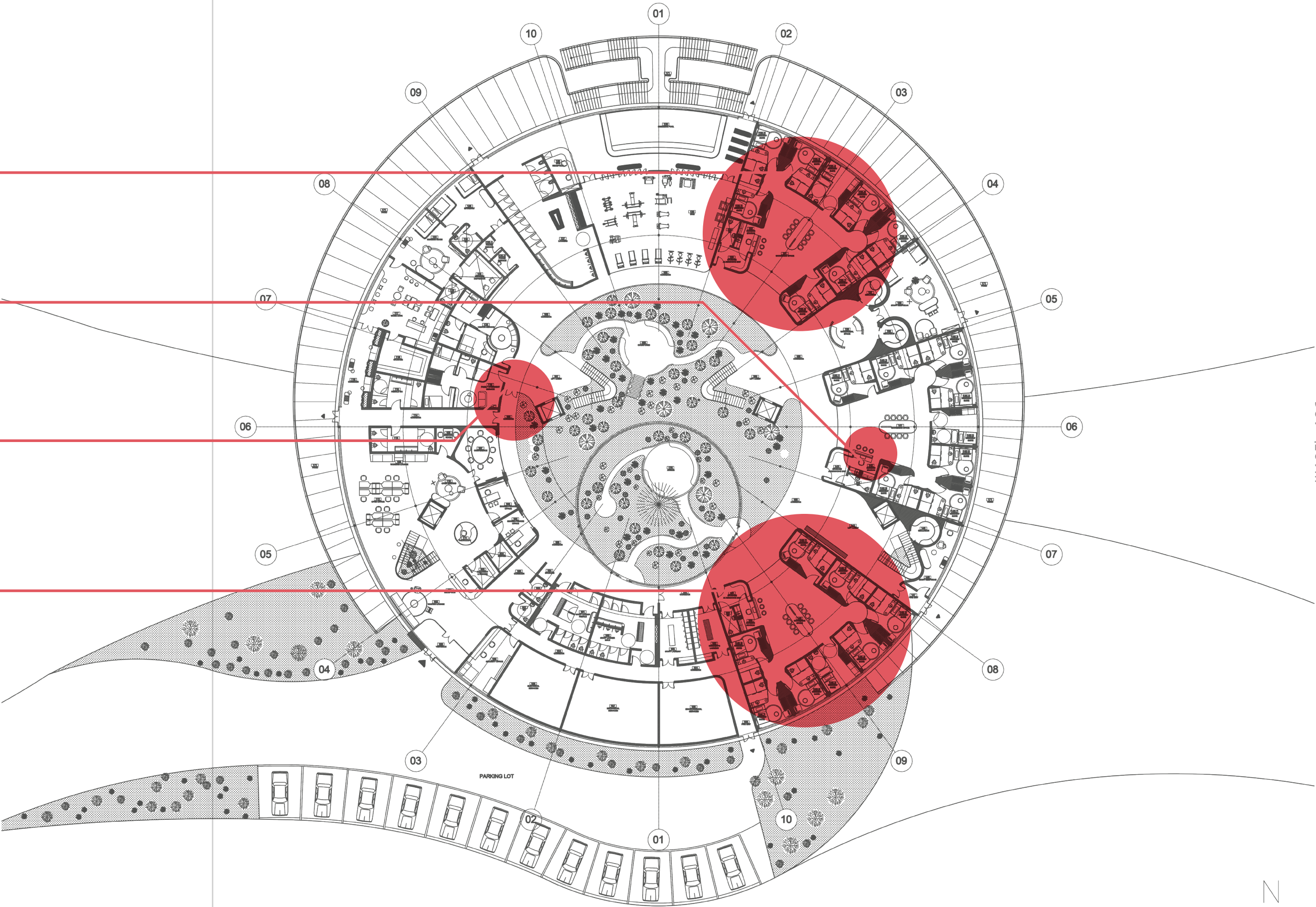
ATMOSPHERIC ARCHITECTURE | FIRST FLOOR

Earth-toned material and color scheme create a warm, friendly, and non-threatening atmosphere in the ward area.

Wooden mill work pieces become more approachable with the design that looks like beverage bar.

Material treatments are varied, give the occupants opportunity to explore the tactile characteristics of the facility.

The openness and privacy level of a space is proportionate. The more private a space is, the less opened it is. The corridor is fluid, the gathering space is more closed, and the resident's suite is even more enclosed and isolated. This characteristic dictates activities and behaviour in the spaces.



ATMOSPHERIC ARCHITECTURE | SECOND FLOOR

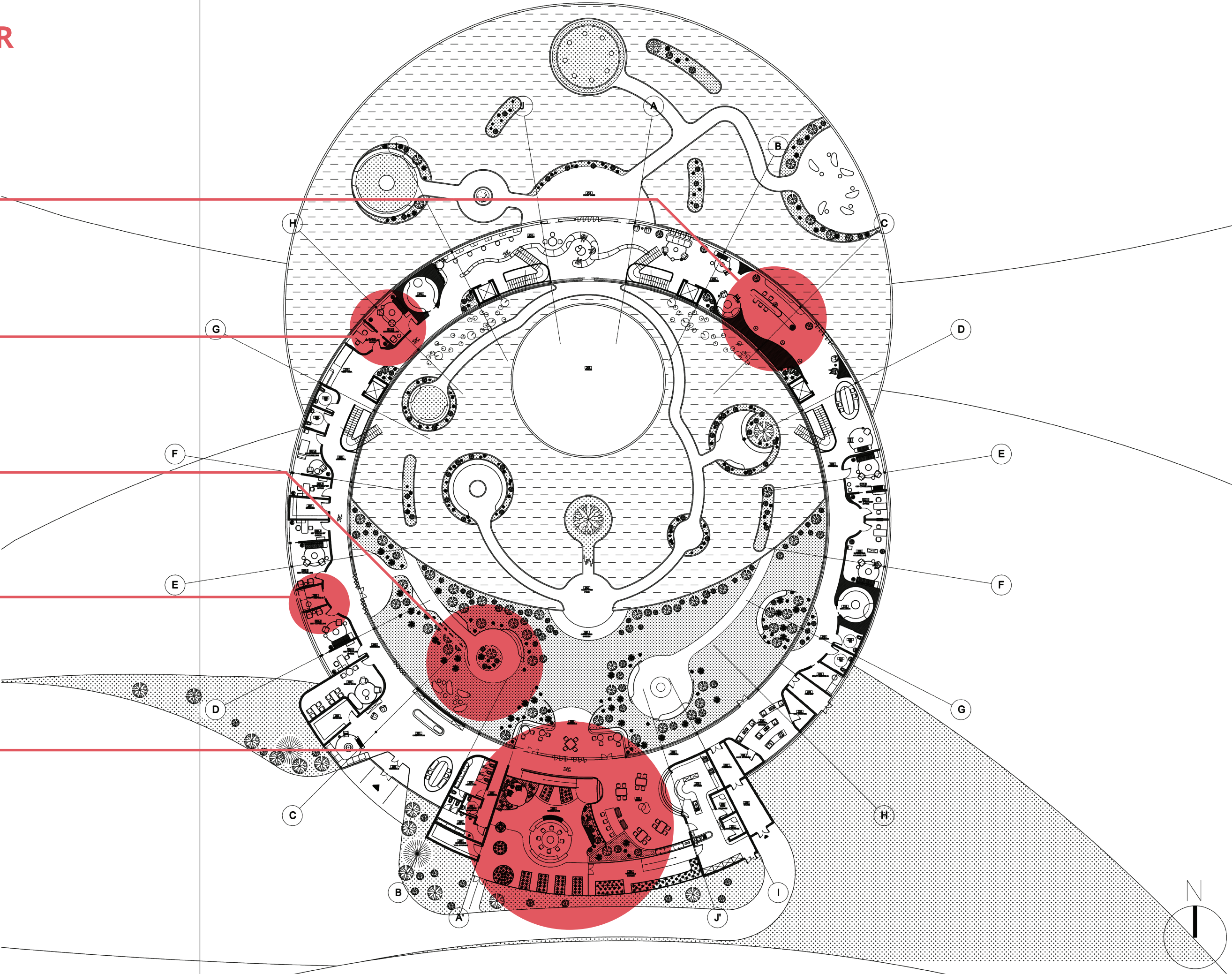
Earth-toned materials, warm color scheme, and warm light color (2500 - 3500K) create a warm and cozy atmosphere.

Low wooden ceiling create a cozy and intimate atmosphere in the treatment rooms, making it feel easier to open up.

Various architectural components including water, plants, light, wind, etc ... change daily, seasonally, and annually, creating different and interesting visual, tactile, olfactorial, etc ... situation everyday.

Indirect artificial light and natural light, couple with monotoned material ease stressed mind.

Open plan concept increase the chances for the spatial sensorial qualities to overlap and thus, create directional quality for the space. The facility accommodates visual, tactile, gustatory, olfactory, proprioception, and vestibular.



SUPPORTIVE DESIGN | FIRST FLOOR

Nursing station is allocated at every ward to make the staff responses faster and more efficient.

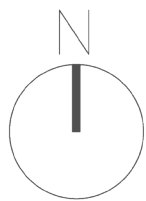
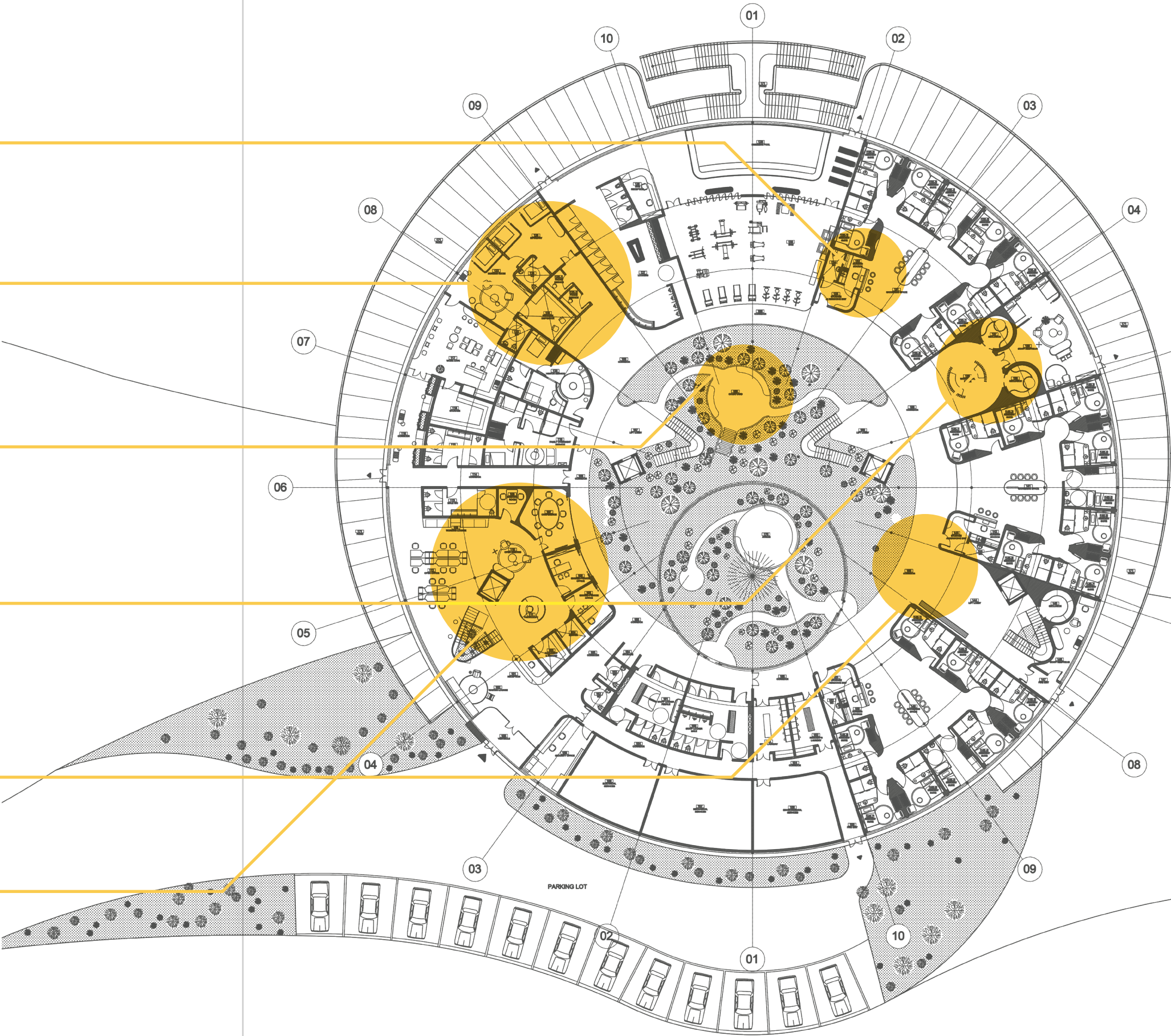
Infirmery is spacious, medication distribution, phone services, and other support services are within reach.

Seats and gathering spaces are installed in various places in the facility.

Three levels of seclusion: opened for voluntary seclusion, enclosed for voluntary seclusion, and enclosed for mandatory seclusion. These levels give patient’s opportunities so avoid and mitigate conflicts as well as give them time and space to calm down.

Pocket spaces across the main corridor increases the chance for spontaneous social interaction to happen.

Gives the staff options to have planned and spontaneous social interactions by providing different meeting settings.



SUPPORTIVE DESIGN | SECOND FLOOR

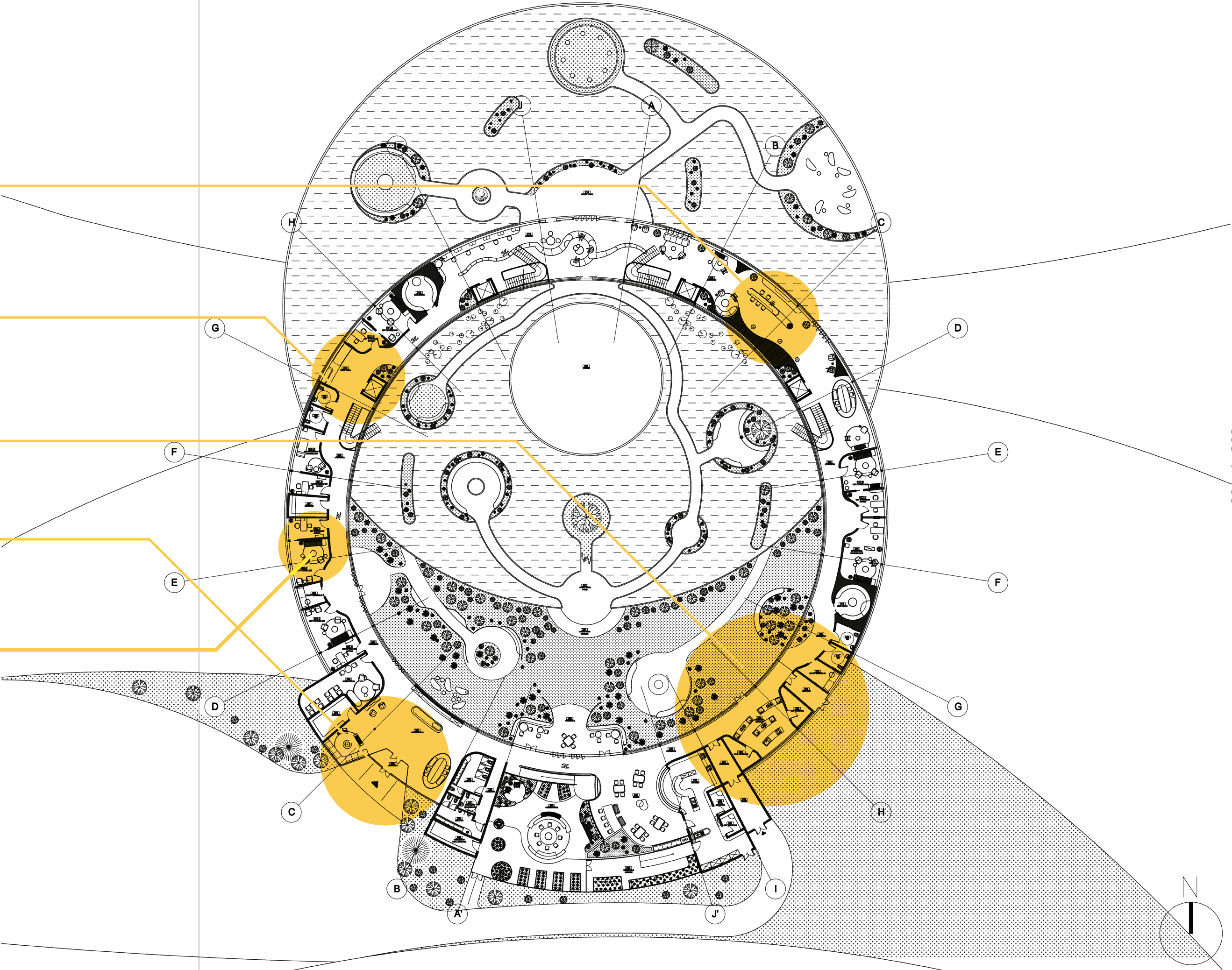
Support areas are equipped with residential furniture and home-like mill work pieces to appear friendly and approachable.

Corridor pockets and various seat settings increase the chance of planned and spontaneous interactions and supports/

Open plan concept with clear visual and straight forward circulation cues enhance staff's performances.

Move-able furniture items that are upholstered or fabirc covered increase chances to form group gathering.

Separation between specialist's working space and treatment rooms help create a more familiar, intimate, and cozy treatment space.



E.

APPENDIX

CIRCULATION - FIRST FLOOR
CIRCULATION - SECOND FLOOR

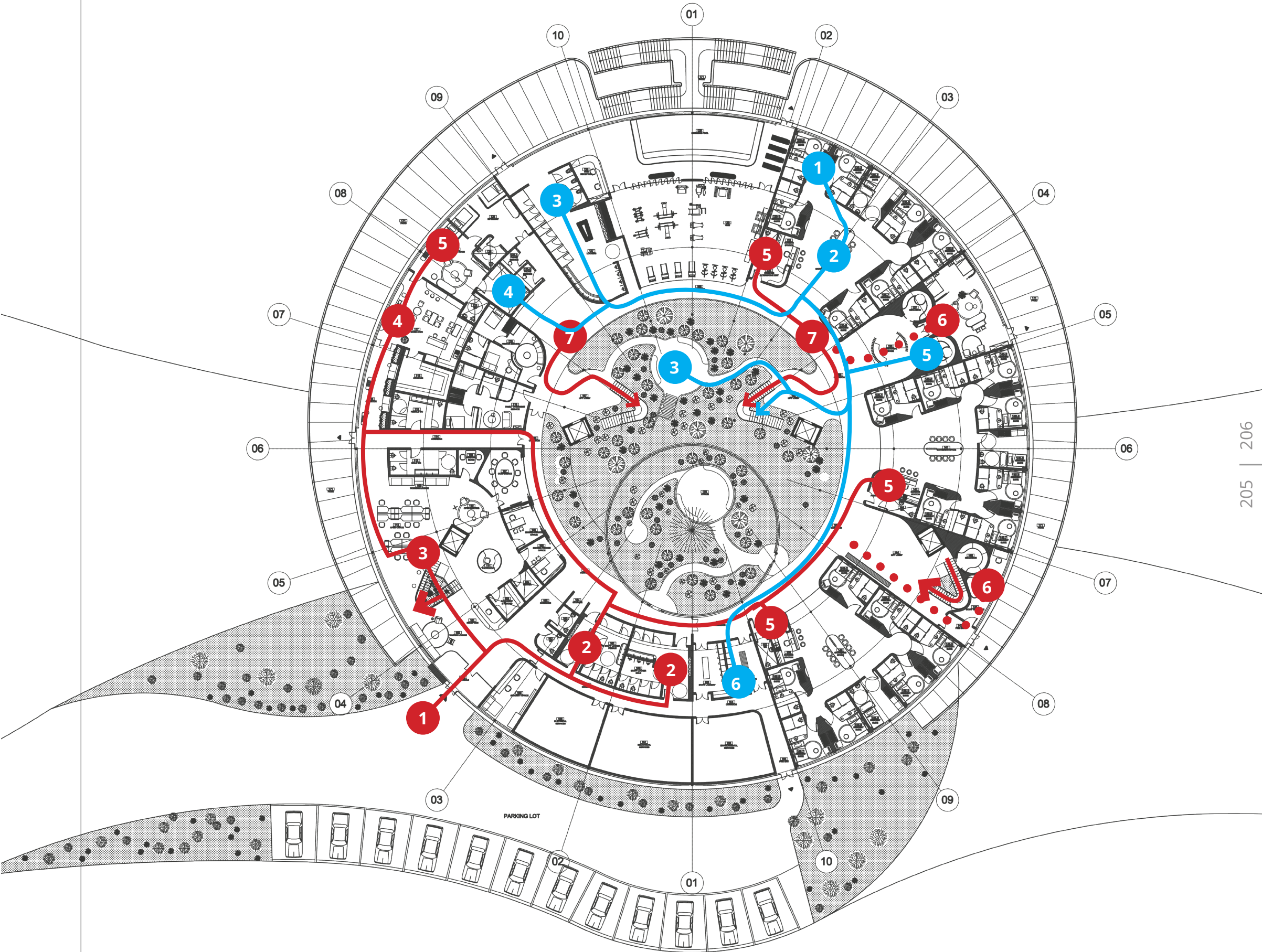
CIRCULATION | FIRST FLOOR

LEGEND: STAFF CIRCULATION

- 01. Staff Entrance // Arrive + Go through security check
- 02. Staff Lockers // Store personal items + Changing + Showering
- 03. Office // Administrative works
- 04. Breakroom // Relaxation + Lunch break
- 05. Nurse's Room // Nurse's relaxation + Sleep over
- 06. Staff Respite // Relaxation + Sleep over
- 07. Corridor // Move around + Go to the upper floor

LEGEND: PATIENT CIRCULATION

- 01. Resident's Suite // Morning start with personal hygiene routine
- 02. Gathering Space // Receive daily schedule
- 03. Therapeutic Spaces // Depends on the schedule, patients attend therapeutic activities at Courtyard or Gym
- 04. Medication Distribution & Infirmary // Depends on treatment types, patients come for daily medication and other health needs. The space also have phone booths.
- 05. Seclusion // Involuntary seclusion in case of conflict or altercation
- 06. Laundry Service // Laundry



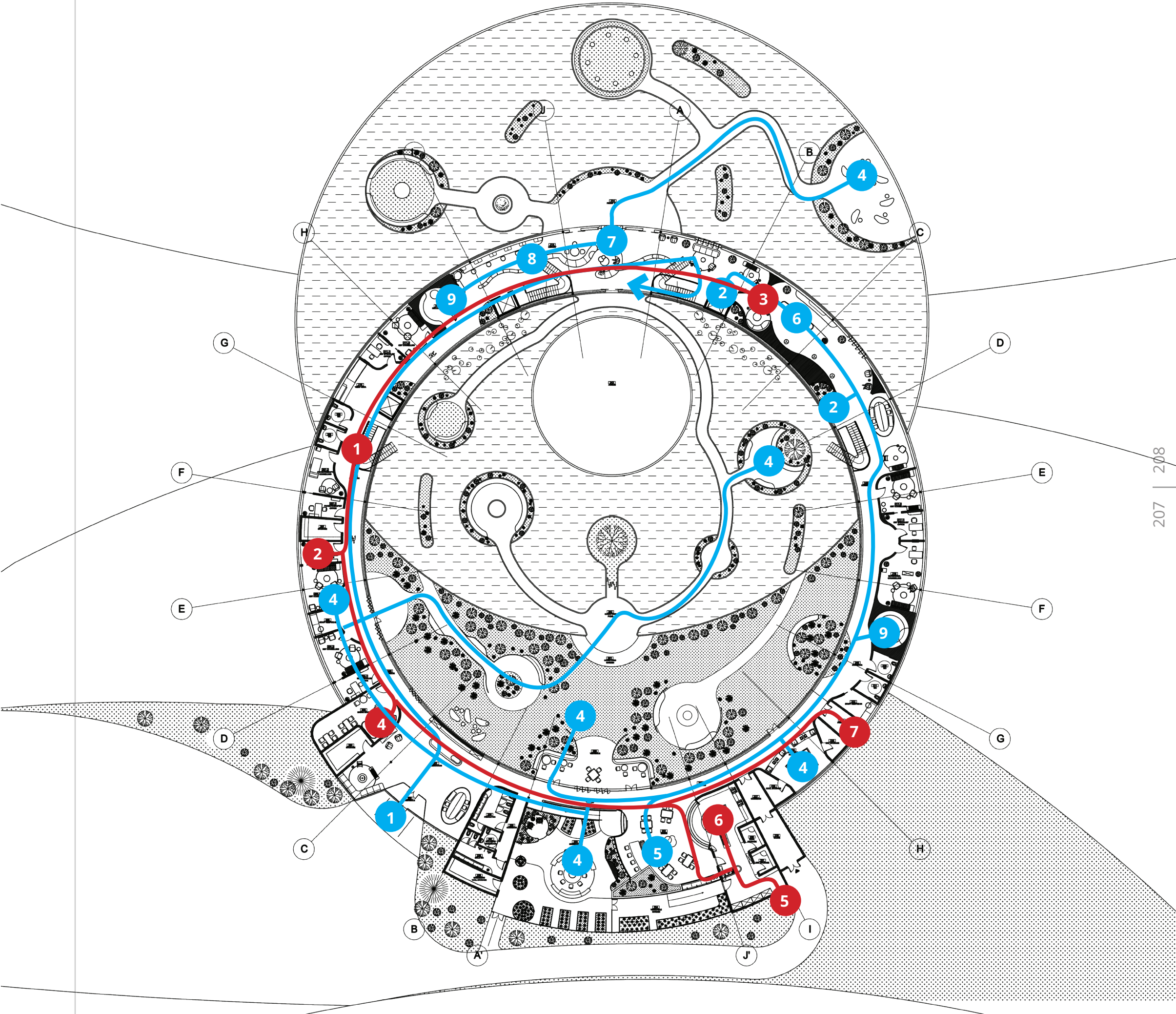
CIRCULATION | SECOND FLOOR

LEGEND: STAFF CIRCULATION

- 01. Staircase // Staff access from First Floor
- 02. Specialist Office // Working
- 03. Working station // Orientation and Support patients
- 04. Breakroom // Relaxation + Lunch break
- 05. Delivery Dock // Receive groceries and supplies
- 06. Kitchen // Preparing lunch and dinner
- 07. Staff Respite // Relaxation & avoid stress

LEGEND: PATIENT CIRCULATION

- 01. Patient Entrance // Entering the facility
- 02. Staircase // Access to First Floor
- 03. Staircase // Access from First Floor
- 04. Therapeutic Spaces // Attend treatment session and therapeutic activities
- 05. Dining // Have lunch and dinner
- 06. Sun room // Gathering for social activities or hanging out
- 07. Entrance to Gardens // Access to gardens and ponds
- 08. Library // Writing journal & reading
- 09. Seclusion // Involuntary seclusion in case of conflict or altercation



F.

APPENDIX

BUILDING CODE ANALYSIS

3.1.2.1 Major Occupancy Classification
Group B, Division 2 – Treatment occupancies

3.1.17.1 Occupant Load
According to Table 3.1.17.1 – Occupant Load, the occupant load of the facility is 10 m² per person.

c) the number of persons for which the area is designed, but not less than that determined from Table 3/1/17/1 for occupancies other than those described in Clauses (a) and (b), unless it can be shown that the area will be occupied by fewer persons.

3.2.2.39 Group B, Division 2, up to 3 Storeys, Sprinklered
2) Except as permitted by Article 3.2.2.16, the building referred to in Sentence (1) shall be of noncombustible construction, and

a) floor assemblies shall be fire separation with a fire-resistance rating not less than 1h,
b) mezzanines shall have a fire-resistance rating not less than 1h, and
c) loadbearing walls, columns and arches shall have a fire-resistance rating not less than that required for the supported assembly.

3.3.1.3 Means of Egress
1) Access to exit within floor areas shall conform to Subsections 3.3.2 to 3.3.5 in addition to the requirements of this Subsection.

2) If a podium, terrace, platform or contained open space is provided, egress requirements shall conform to the appropriate requirements of Sentence 3.3.1.5 (1) for rooms and suites.

3) Means of egress shall be provided from every roof which is intended for occupancy, and from every podium, terrace, platform or contained open space.

4) At least two separate means of egress shall be provided from a roof, used or intended for an occupant load more than 60, to stairs designed in conformance with the requirements regarding exit stairs stated in Section 3.4

5) A rooftop enclosure shall be provided with an access to exit that leads to an exit

a) at the roof level

6) A rooftop enclosure which is more than 200 m² in area shall be provided with at least 2 means of egress.

7) Two points of egress shall be provided for a service space referred to in Sentence 3.2.1.1.(8) if

a) the area is more than 200 m², or
b) the travel distance measured from any point in the service space to a point of egress is more than 25 m

8) Except as permitted by Sentences 3.3.4.4.(5) and (6), each suite in a floor area that contains more than one suite shall have

a) an exterior exit doorway, or
b) a doorway

i) into a public corridor, or
ii) to an exterior passageway.

9) Except as permitted by this Section and by Sentence 3.4.2.1.(2), at the point where a doorway

referred to in Sentence (8) opens onto a public corridor or exterior passageway, it shall be possible to go into opposite directions to each of 2 separate exits.

3.3.1.4 Public Corridor Separation
1) Except as otherwise required by this Part or permitted by Sentence (4), a public corridor shall be separated from the remainder of the storey by a fire separation.

2) Except as permitted by Sentence (3) and Clauses (4) (a) and (b), the fire separation between a public corridor and the remainder of the storey shall have a fire-resistance not less than 45 min.

4) No fire separation is required in a sprinklered floor area between a public corridor and

a) except as required by Sentences 3.3.3.5.(8) and 3.3.4.2.(1), and notwithstanding Sentence 3.1.2.4.(2), the remainder of a storey, provided the travel distance from any part of the floor area to an exit is not more than 45 m.

b) a room or a suite, provided the public corridor complies with Sentence 3.3.1.9.(6) and Clauses 3.4.2.5.(1)(d), or

c) a space containing plumbing fixtures required by Subsection 3.7.2, provided the space and the public corridor are separated from the remainder of the storey by a fire separation having a fire-resistance rating not less than that required between the public corridor and the remainder of the storey.

Table 3.3.1.5.-B – Egress in Floor Area Sprinklered Throughout

Group B, Division 2	
Sleeping rooms	maximum 100 m²
Other than sleep rooms	maximum 200 m²

3.3.3.3 Corridors
1) Except as provided by Sentence 2, a corridor used by the public or serving patient's/ resident's sleeping room shall have no dead end portion.

2) Corridors are permitted to have a dead-portion where

a) The area served by the dead end portion has a second and separate means of egress
b) The corridor serves a suite of care occupancy and the dead-end portion does not exceed 6 m.

3) Corridors shall be not less than

a) 2400 mm wide in building of treatment occupancy where the corridors may be used in move patients or residents in bed.

3.3.3.5 Compartments and Fire Separations
1) Floor areas containing patients' or residents' sleeping rooms in care or treatment occupancy where overnight sleeping accommodations are being provided for more than a total of 10 patients or resident's shall conform to sentences 2/ 14.

2) Except as permitted by sentence 3, a floor area described in sentence 1 shall be divided into not than 2 fire compartments, each not more than 1000m²

4) Except a permitted by sentence 5, fire separations separating compartments in sentence 2 shall have a fire-resistance rating of not less than 1 hour.

6) A closure in a fire separation between fire compartments referred to in Sentence 2 shall be

weather-stripped or otherwise designed and installed to retard the passage of smoke.

7) The travelling distance from any point within each fire compartment referred to in sentence 2 to door to an adjoining fire compartment hall be not more than 45m.

8) Each fire compartment referred to in sentence 2 shall be capable of accommodating, in addition to its own occupants, the occupants of the largest adjacent fire compartment based on a clear floor space of 2.5 m² per patient in the adjacent fire compartment.

9) Except as provided in sentence 10-14, walls between patients’ or residents’ sleeping rooms and the remainder of the floor area shall be constructed as fire separations but are not required to have a fire-resistance rating unless one is required by other provisions in this part.

3.4.2.1 Minimum Number of Exits

1) Except as permitted by sentences (2) to (4), every floor area intended for occupancy shall be served by at least 2 exits.

3.4.2.5. Location of Exits

1) Except as permitted by Sentence (2) and 3.3.2.5 (6), if more than one exit is required from a floor area, the exits shall be located so that the travel distance to at least one exit shall be not more than

c) 45 m in floor area that contains an occupancy other than a high-hazard industrial occupancy, provided it is sprinklered throughout.

2) Except for high hazard industrial occupancy, Sentence 1 need not apply if exits are placed along the perimeter of the floor area and are not more than 60 m apart, measure along the perimeter, provided each main aisle in the floor area leads directly to an exit.

3) Exits shall be located and arranged so that they are clearly visible or their locations are clearly indicated and they are accessible at all times.

3.4.2.3. Distance Between Exits

1) Except as provided in Sentence 2, the least distance between to exits from one floor area shall be

a) One half of the maximum diagonal dimension of the floor area, but need not be more than 9m for a floor area having a public corridor.

3.7.2.2 Water Closets

9) The number of water closets required for a treatment or detention occupancy shall be determined on the basis of the special needs of the occupancy.

3.8.1.3 Barrie- Free Path of Travel

1) Except as required elsewhere in this part or as permitted by Article 3.8.3.3. pertaining to doorways, the unobstructed with of a barrier-free path of travel shall

- a) Have no openings that will permit the passage of a sphere more than 13 mm diameter.
- b) Have no elongated opening oriented approximately perpendicular to the direction of travel.
- c) Be stable, firm, and slip resistant.
- d) Be beveled at a maximum slope of 1 – 2 at changed in level not more than 13 mm and.
- e) Be provided with sloped floors or ramps at changes in level more than 13 mm.

2) A barrier-free path of travel is permitted to include ramps, passenger elevators, or other platform-equipped passenger elevating devices to overcome differences in level.

3) The width or the barrier-free path of travel that is more than 30 m long shall be increased to not less than 1500 mm for a length of 1500 mm at intervals not exceeding 30 m.

3.8.2.1 Areas Requiring a Barrier-Free Path of Travel

1) Except as permitted by Sentence 2, a barrier-free path of travel from the entrances required by Sentences 3.8.1.2 (1) and (2) to be barrier-free shall be provided throughout the entrance storey and within all other normally occupied floor areas served by a passenger elevator, escalator, inclined moving walk, or other platform-equipped passenger elevating device.

2) A barrier-free path of travel for persons in wheelchairs is not required

- a) to service rooms.
- b) to elevator machines.
- c) to janitors room.
- d) to services spaces.
- e) to crawl space.
- f) to attic or roof spaces.

g) to floor levels not served by a passenger elevator, a platform-equipped passenger elevating devices, an escalator, or an inclined moving walk.

3.8.3.1 Accessibility Signs

1) Signs incorporating the international symbol of accessibility for persons with physical disabilities shall be installed to indicate the location of a barrier-free entrance.

2) a washroom, shower, elevator, or parking space designed to be barrier-free shall be identified by a sign consisting of the international symbol of accessibility for persons with physical disabilities and by appropriate graphic or written directions to indicate clearly the type of facility available.

3) If a washroom is not designed to accommodate persons with physical disabilities in a storey to which a barrier-free path of travel is required, signs shall be provided to indicate the location of barrier-free facilities.

4) Signs incorporating the symbol of accessibilities for person with hearing disabilities shall be installed to indicate the location of facilities for person with hearing disabilities.

3.8.3.6. Doorways and Doors

1) Except where stated otherwise, this Article applies to swinging and sliding doors.

2) Every doorway that is located in a barrier-free path of travel shall have a clear width not less than 800 mm when the door is in the open position.

3) Doorways in a path of travel to at least one bathroom within a suite of residential occupancy shall have a clear width not less than 800 mm when the doors are open.

4) Door-operating devices shall.

- a) comply with Clause 3.8.3.8. (1) (b), and
- b) be operable at a height between 900 mm and 1100 mm above the floor.

5) A threshold for a doorway referred to in Sentence (2) and (3) shall be not more than 13 mm higher than the finished floor surface and shall be beveled to facilitate the passage of wheelchairs.

12) A vestibule located in a barrier-free path of travel shall be arranged to allow the movement of wheelchairs between doors and shall provide a distance between 2 doors in series of not less than 1200 mm plus the width of any door that swings into the space in the path of travel from one door to another.

3.8.3.12. Universal Washrooms

- 1) A universal toilet room shall
- a) Be served by a barrier-free path of travel.
 - b) Have a door capable of being locked from the inside and released from the outside in case of emergency and having
 - i) A latch operating mechanism that is operable with a closed fist, located not less than 900 mm and not more than 1000 mm above the floor.
 - ii) If it is an outward swinging door, a door pulls not less than 140 mm long located on the inside so that its midpoint is not less than 200 mm and not more than 300 mm from the hinged side of the door and not less than 900 mm and not more than 1000 mm above the floor (see A-3.8.3.8.).
 - iii) If it is an outward swinging door, door closer, spring hinges or gravity hinges, so that the door closes automatically.
 - c) Have a lavatory conforming to Article 3.8.3.9.
 - d) Have on water closet conforming to the requirements of Article 3.8.3.9. that has a clearance to the walls of
 - i) Not less than 285 mm and not more than 305 mm on one side and
 - ii) Not less than 875 mm on the other side.
 - e) Have grab bars conforming to Clause 3.8.3.8 (1) (d).
 - f) Have not internal dimension between the walls that is less than 1700 mm.
 - g) Have a coat hook conforming to Clause 3.8.3.8. (1) (e) and a shelf located not more than 1200 mm above the floor.
 - h) Be designed to permit a wheelchair to back in alongside the water closet in the space referred to in sub Clause (d, i and ii) be designed to permit wheelchair to turn in an open space not less than 1500 mm in diameter.

G.

APPENDIX

POSTERS

DISCONNECT TO CONNECT

Designing a retreat for Pathological Internet Users

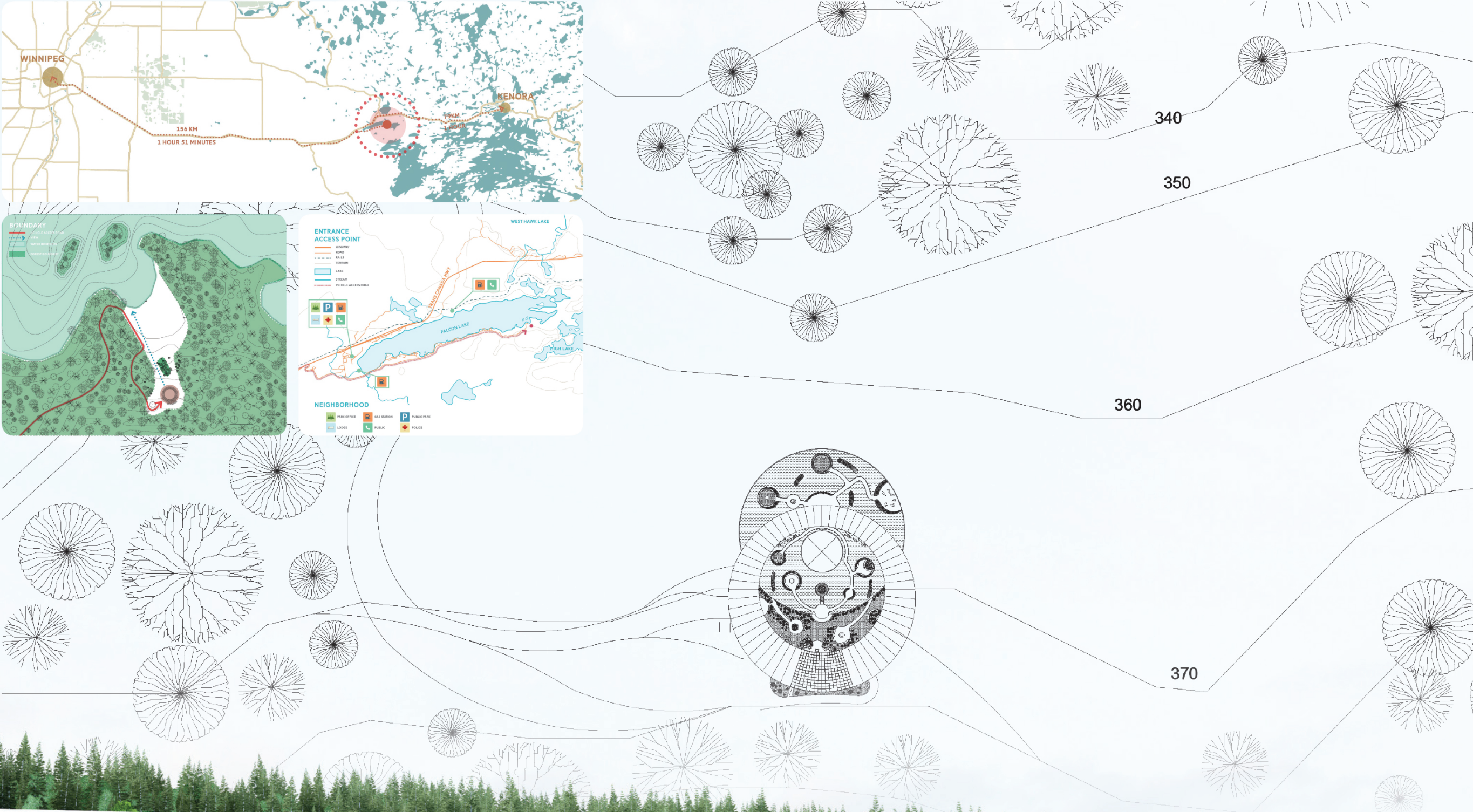
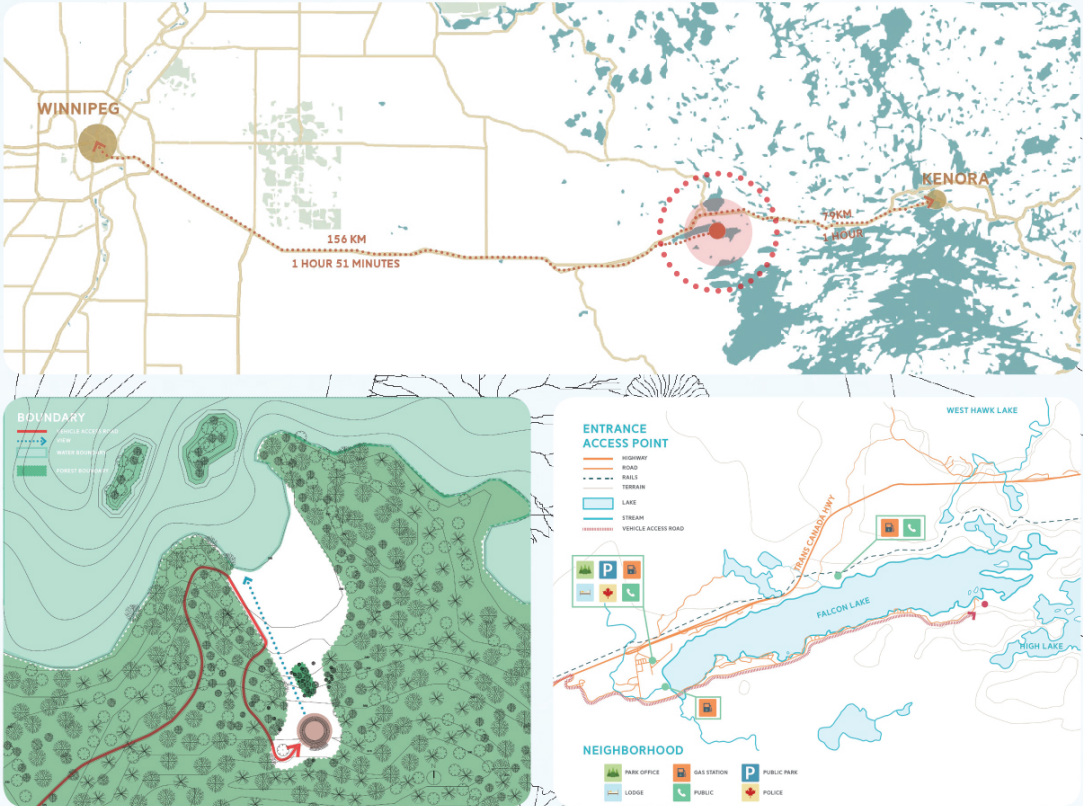
DESIGN STATEMENT

The designs of *re:intent* emphasize the self's reconstruction that evolves and revolve around Merleau-Ponty's concept of being-in-the-world: occupants connect with themselves, connect with others, connect with architecture and interior space, and connect with nature. The designs are expressed through the concept of "overlap" as the term is often used to describe the characteristic of connection in Merleau-Ponty's perspective. *re:intent* is designed with attention on the local climate and environment. The facility also focuses on the physical and psychological needs of the PIU patients, to ultimately promote the PIU treatment and preparation for their reemergence back to the society. This patient-centric point of views are delivered through the application of Biophilic Design, Atmospheric Architecture, and Supportive Design.

THEORETICAL FRAMEWORK

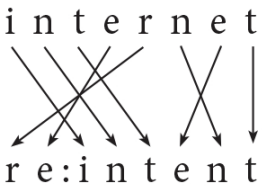
LITERATURE INVESTIGATION

1. What is the role of architecture and interior design in supporting the treatment process for Pathological Internet Users?
2. What design strategies could be employed to accommodate treatments for Pathological Internet Users, particularly nature-based therapy in Manitoba's climate?



ARCHITECTURE DEVELOPMENT

The architecture development of *re:intent* revolves around the patient's safety and comfort. As they leave the city for PIU treatment, nature and wilderness can become dangerous and overwhelming. The ring shape of the building create secured courtyard, protecting the patients from limitless space and endless nature. Such a structure also increase the accessibility, visibility, and security. The "overlap" gesture, shown through the positions of the two floors, create opportunities to utilize spaces to accommodate therapeutic purposes.



ZONING DIAGRAM

- 1

CIRCULAR BUILDING MASS

REMOVE THE CENTER TO CREATE THE COURTYARD
- 2

ADD OVERLAPPED ROOF

SHIFT THE LOWER FLOOR FORWARD TO CREATE A PARKING LOT
- 3

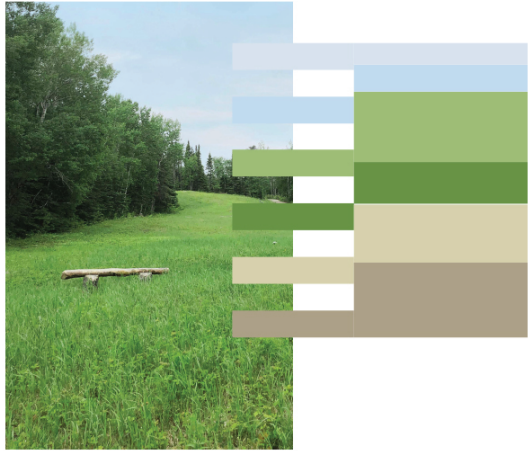
ADD POND & GARDEN ON TOP OF THE LOWER FLOOR

ADD GREENHOUSE ON THE SOUTH SIDE OF THE BUILDING
- 4

RAISE THE SOUTH SIDE ROOF TO UTILIZE INCLINE EFFECTS

CREATE ATRIUM TO INCREASE DAYLIGHT IN THE LOWER FLOOR

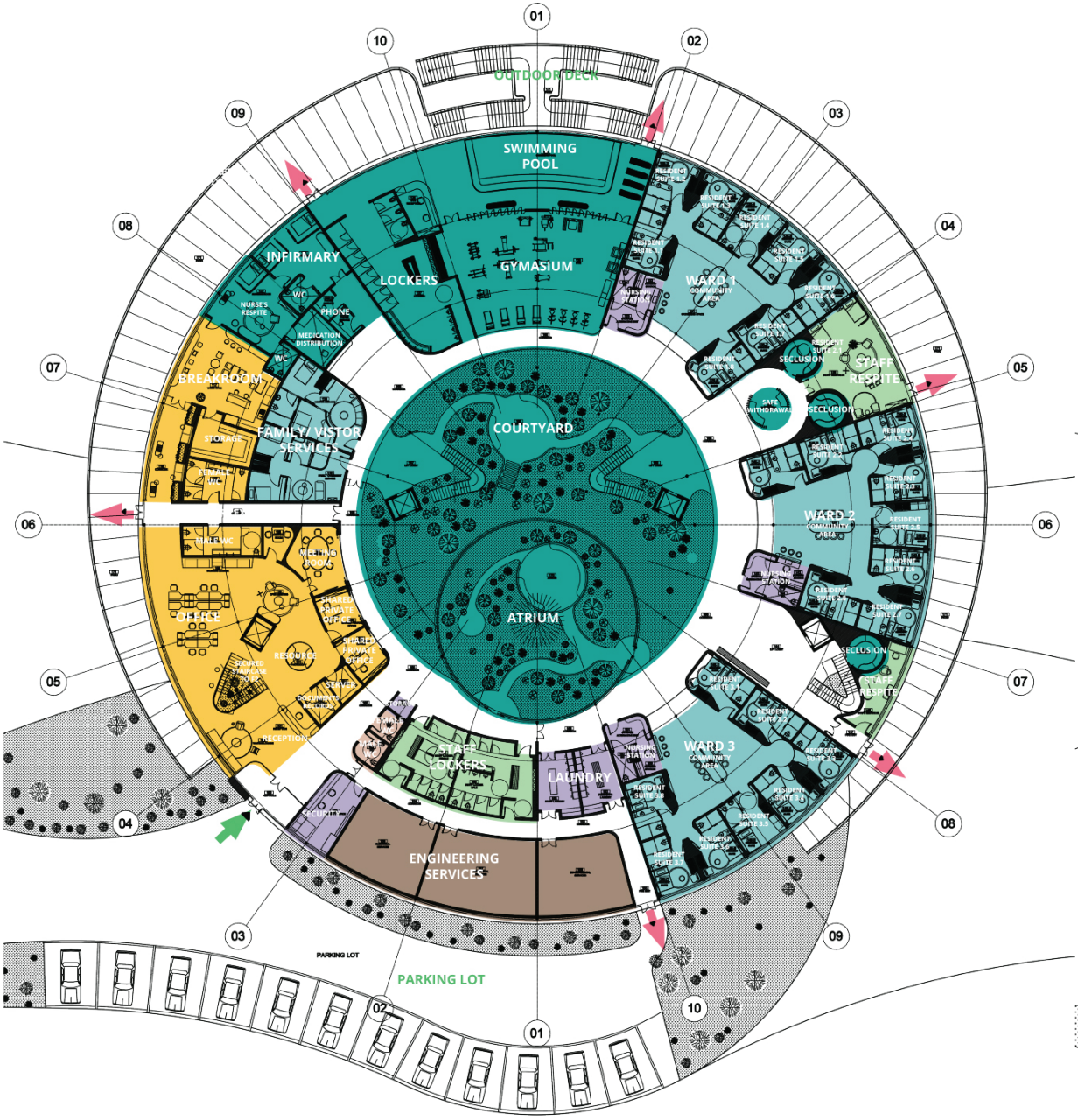
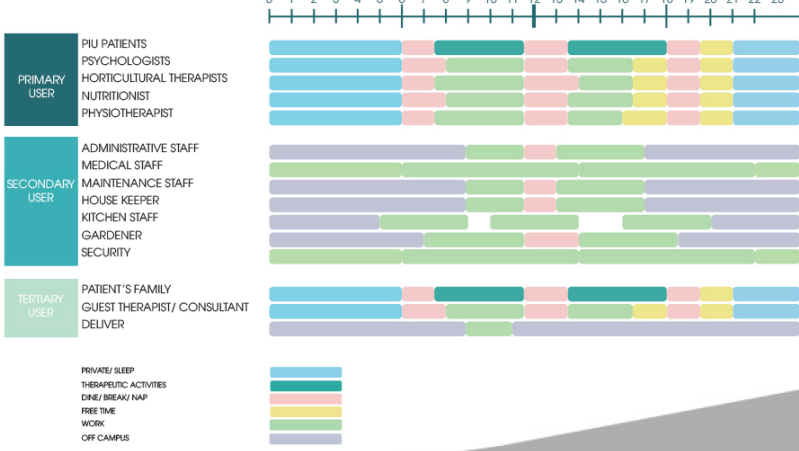
COLOUR SCHEME



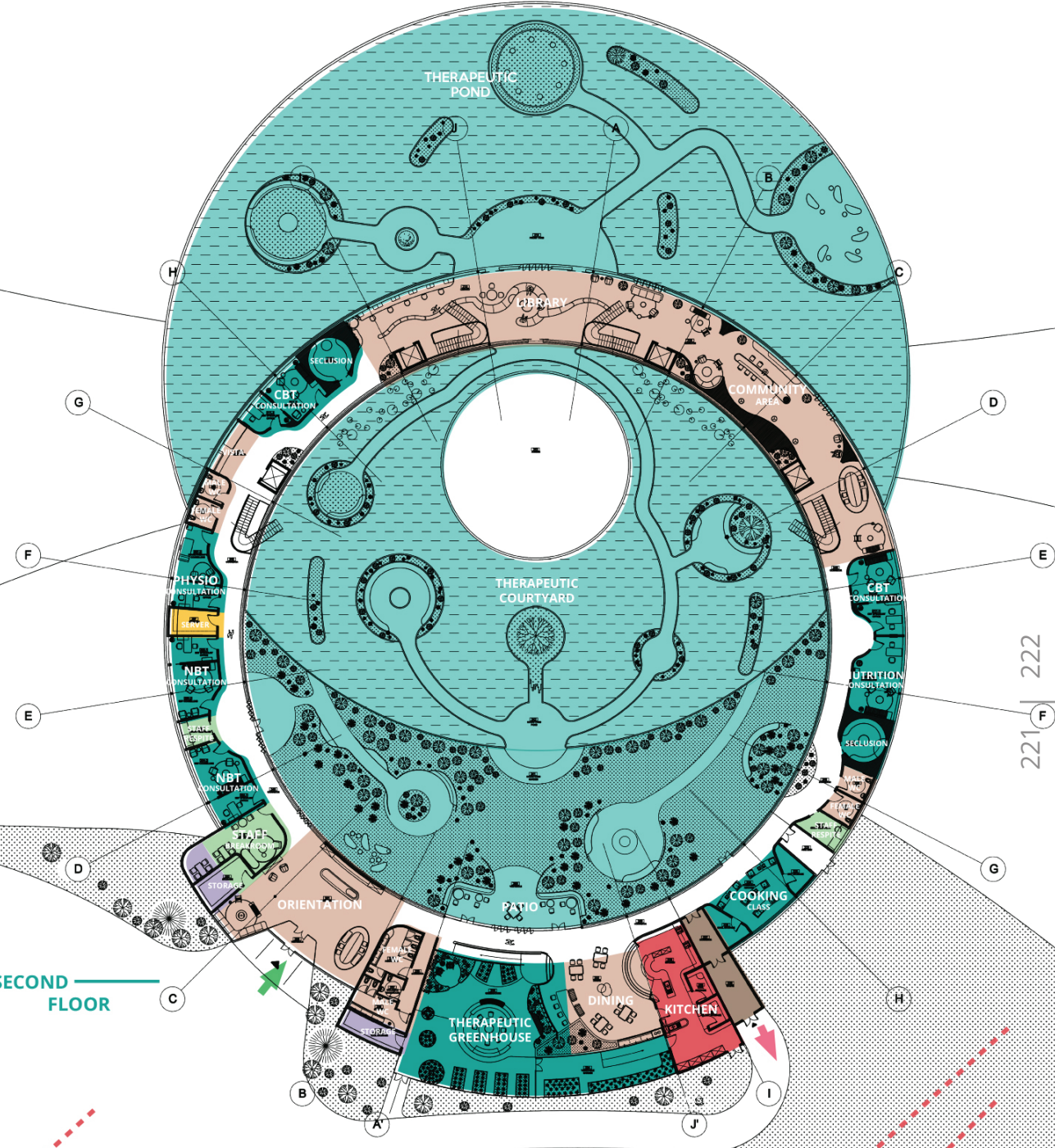
MATERIAL SELECTION



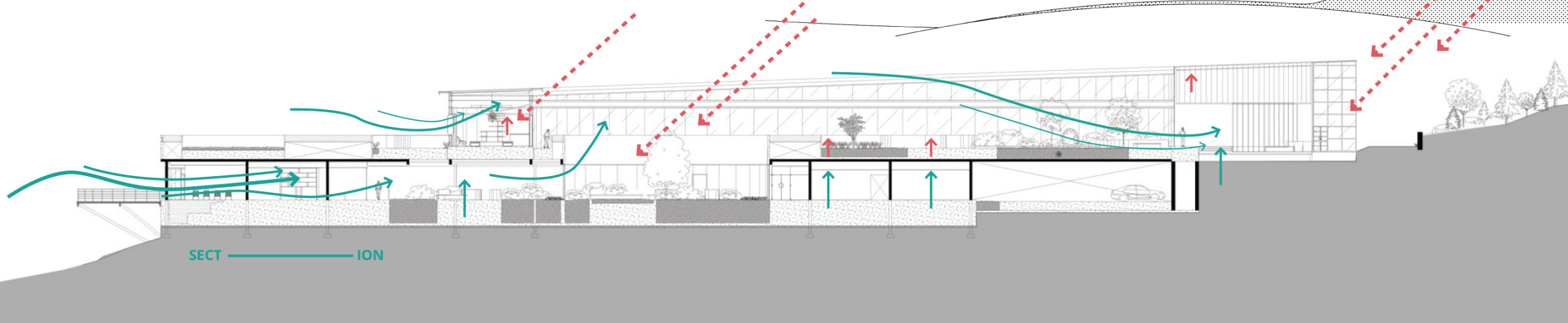
USER SCHEDULES



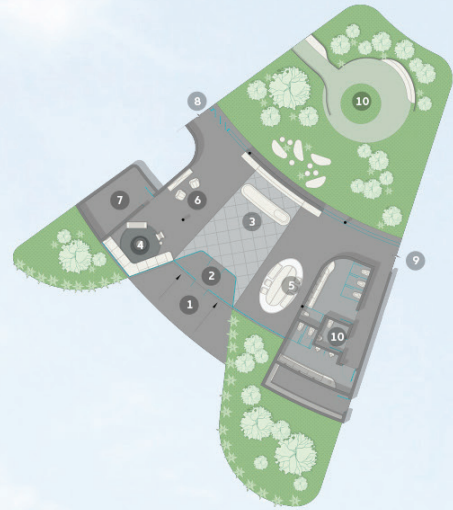
FIRST FLOOR



SECOND FLOOR



SECTION



ORIENTATION

The design of the Orientation area focuses on creating the first impression of the patients when the first entering the facility.

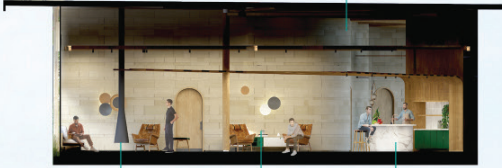
- Applied theories:
* Atmospheric Architecture
* Biophilic Design

The area emphasizes essence of the home through the warmth of the earth-toned material, as well as the symbolic meaning behind the mill work pieces. The low ceiling mimics the characteristic of a cave, creating a protective atmosphere.

- | | |
|-------------------------|--|
| 01. Entrance | 07. Storage |
| 02. Vestibule | 08. Corridor to Therapeutic Spaces |
| 03. Orientation Counter | 09. Corridor to Greenhouse & Dining Area |
| 04. Fireplace | 10. Courtyard |
| 05. Table for 8 | 11. Washroom |
| 06. Armchairs | |



Two dropped ceiling with the lower one included, mimicking characteristic of a cave, creating a protective atmosphere.

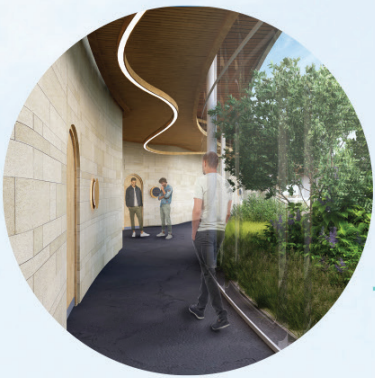


Living room setting with sectional sofa, armchair, and a fireplace. Orientation station masks itself as a beverage kitchen with a kitchen island and cabinet.

Wall decorations repeat the overlapping structure of the building.



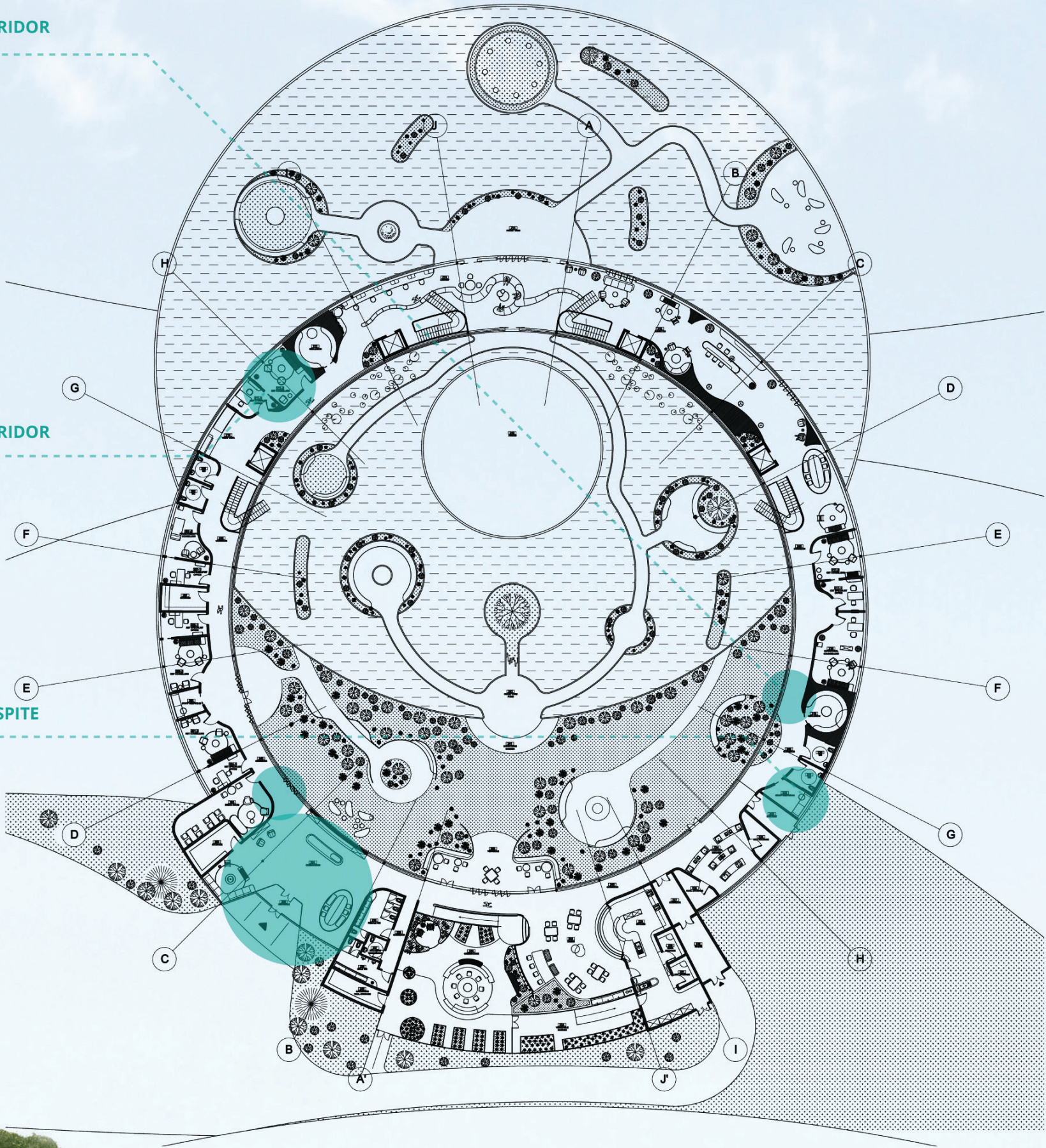
MAIN CORRIDOR



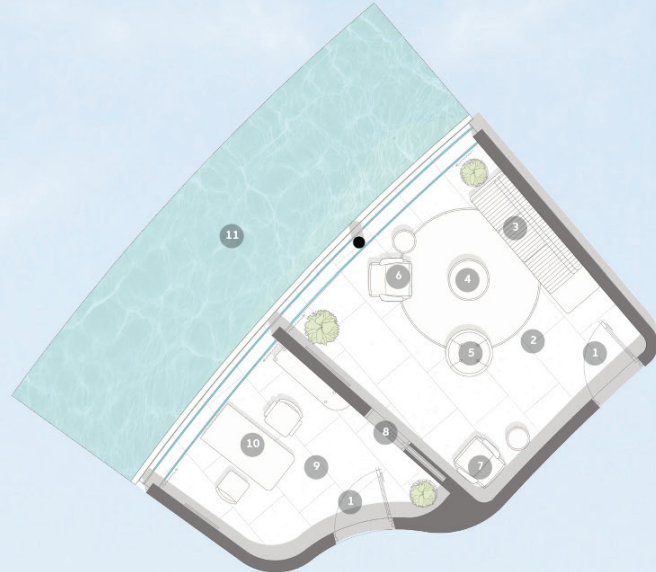
MAIN CORRIDOR



STAFF RESPITE



SECOND FLOOR PLAN



TREATMENT ROOMS

To make the room visually smaller and more intimate, an earth-tone colour scheme and wood panels are utilized. The furniture pieces enhance the patient's comfort: they can lay down (couch), sit (armchair), or casually sit (bean bag). Such a space would help the patients feel more natural and easier to open up.

- | | |
|--------------------|-------------------|
| 01. Entrance | 07. Spare Chair |
| 02. Treatment Room | 08. Sliding Door |
| 03. Couch | 09. Office |
| 04. Coffee Table | 10. Work Station |
| 05. Beanbag | 11. Exterior Pond |
| 06. Armchair | |

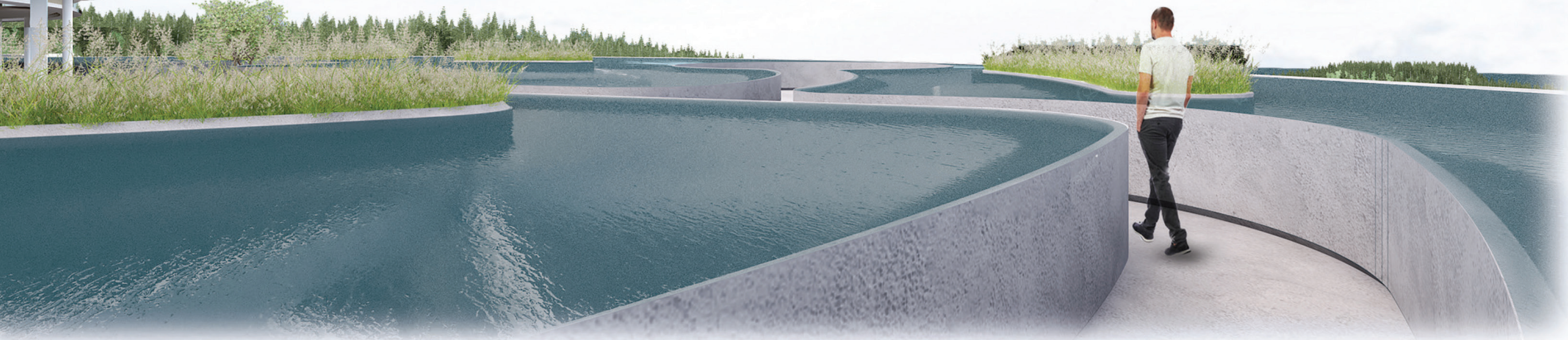


Frosted light bulb and indirect lights keep the room dark and cozy



Three types of seats provide patients with more choices

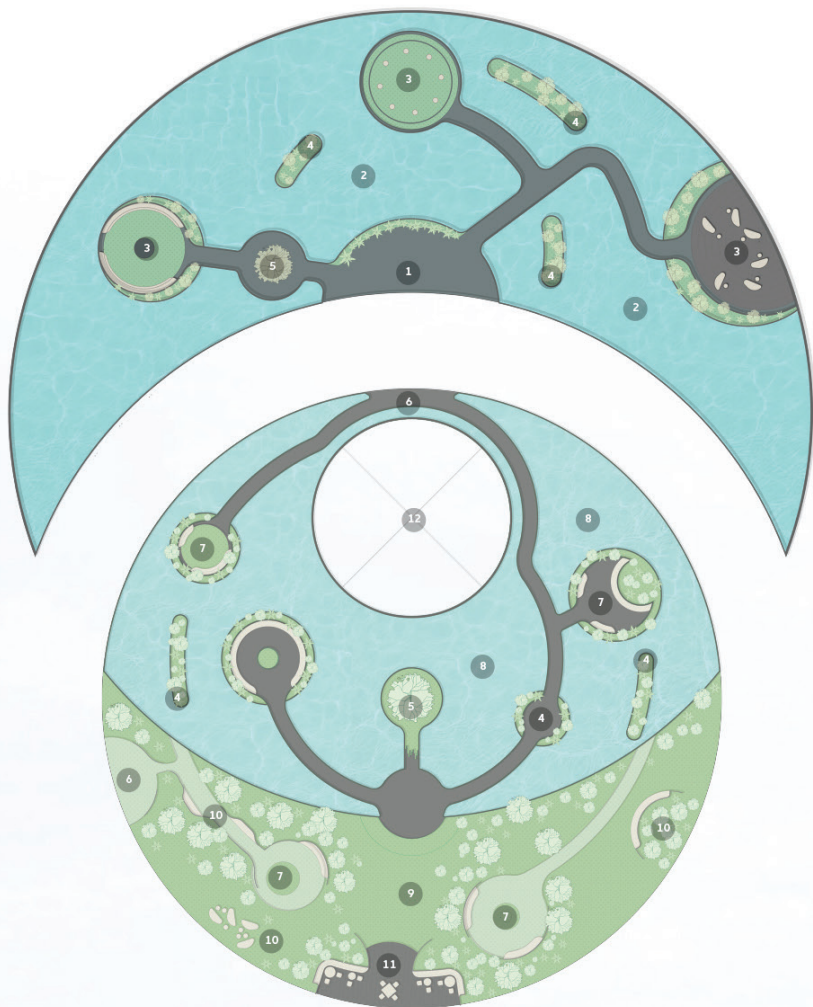




The Second Floor Gardens are located on top of the First Floor. The Frontyard and part of the Courtyard are covered with ponds, which water temperate the surroundings. Therapeutic Pods are scattered around to accommodate therapeutic activities including Cognitive-Behavioural therapy sessions and Natube-based therapy sessions.

- Applied theories:
* Biophilia
- LEGENDS
- 01. Entrance to Front Yard
 - 02. Front Yard ponds
 - 03. Therapeutic Pods of Front Yard
 - 04. Floating Planters
 - 05. Planters
 - 06. Entrance to Courtyard
 - 07. Therapeutic Pods of Courtyard
 - 08. Courtyard ponds
 - 09. Courtyard garden
 - 10. Seats
 - 11. Patio
 - 12. Atrium

FIRST FLOOR GARDENS

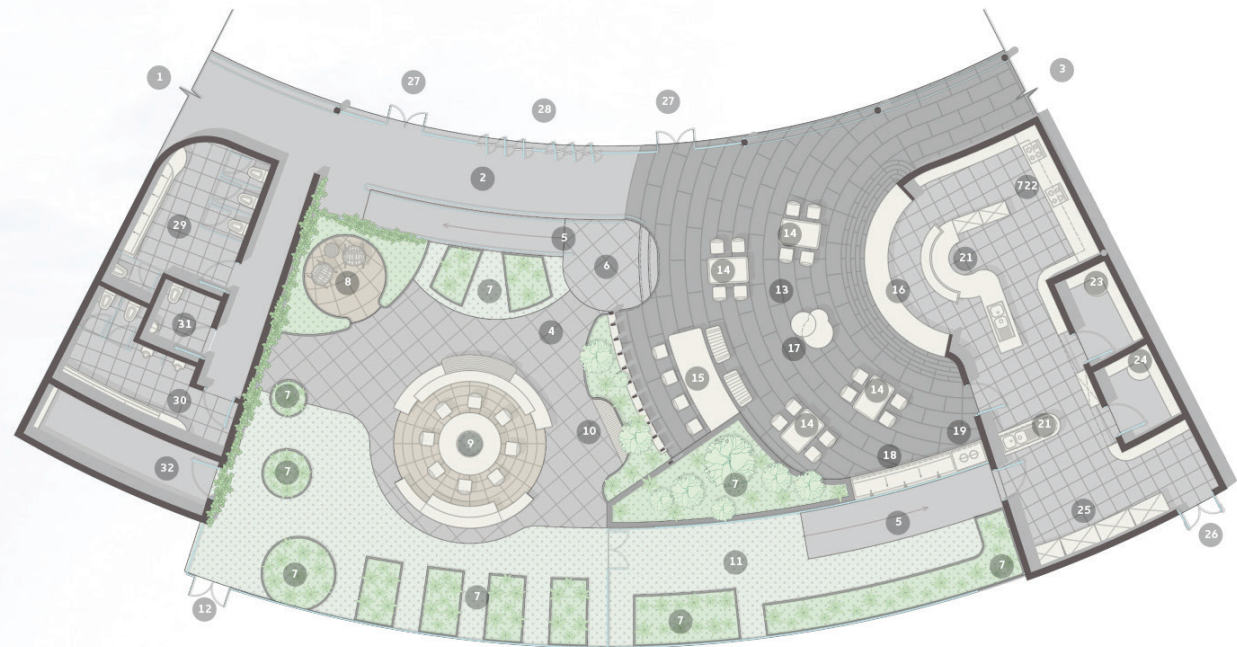
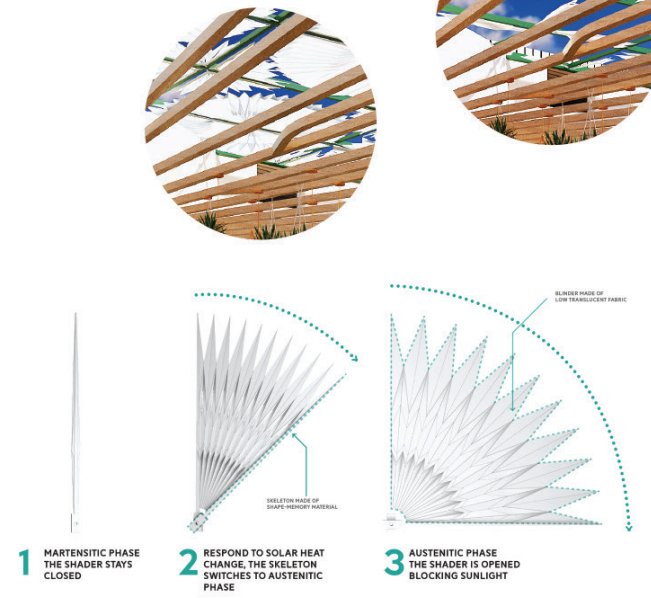


Designed as an alternative option and an extension of nature into the indoor, the Greenhouse accommodates horticulture activities as well as therapy sessions. This space is also where most Nature-based therapy sessions take place during winter.

Overlapping with the Greenhouse is the Dining area. The intersection between the two spaces with one centered around a real tree and the other laid underneath an artificial foliage, makes the space more lively and excited. The lowered ceiling/ foliage in the Dining area also makes the space more intimate and warm.

To prevent overheating during summer, the two areas are equipped with a Biomimetic Shading System, which reacts to outdoor temperature. As sunlight heats the system up, the core structure, made of Shap-Memory Material, transforms and blocks sunlight from coming in.

- LEGENDS
- | | |
|---------------------------------------|--------------------------|
| 01. Entrance from Orientation | 17. Drink Counter |
| 02. Corridor | 18. Sink |
| 03. Entrance from Residential Kitchen | 19. Trash & Compost Bins |
| 04. Opened Greenhouse | 20. Kitchen |
| 05. Slope | 21. Food Prep |
| 06. Steps | 22. Stove |
| 07. Planter | 23. Dry Storage |
| 08. 2-person-therapeutic pod | 24. Cool Storage |
| 09. Center Table | 25. Storage |
| 10. Seats | 26. Delivery Dock |
| 11. Closed Greenhouse | 27. Exit to Patio |
| 12. Fire Exit | 28. Window |
| 13. Dining | 29. Female WC |
| 14. Table for 4 | 30. Male WC |
| 15. Table for 8 | 31. UTR |
| 16. Food Counter | 32. Greenhouse Storage |





LIBRARY



COMMUNITY SERVICES

The sunroom offer options for patients to gather, reading, have coffee, and more during the day. There are various sitting situations, enhancing the versatility of the space in hosting activities.

The library is designed to accommodate focused-works that patients have such as writing journal or reading self-improvement books. The area is divided by the shelving system, into two spaces: the focus space and the corridor. This separation allow the patients to focus and still support indoor circulation.

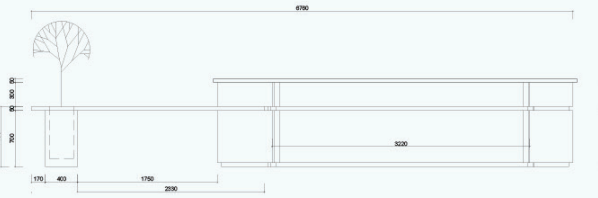
Applied theories:
* Atmospheric Architecture
* Biophilic Design

LEGENDS

- | | |
|-----------------------------------|----------------------|
| 01. Entrance from Treatment Rooms | 09. Front Yard Ponds |
| 02. Elevator Lobby | 10. Courtyard Ponds |
| 03. Staircase | 11. Therapeutic Pods |
| 04. Library | 12. Sun Room |
| 05. Focused Area | 13. Sun Room Island |
| 06. Group Work | 14. Gathering Space |
| 07. Entrance to Courtyard | 15. Table for 8 |
| 08. Entrance to Front Yard | 16. Corridor |



SUN ROOM



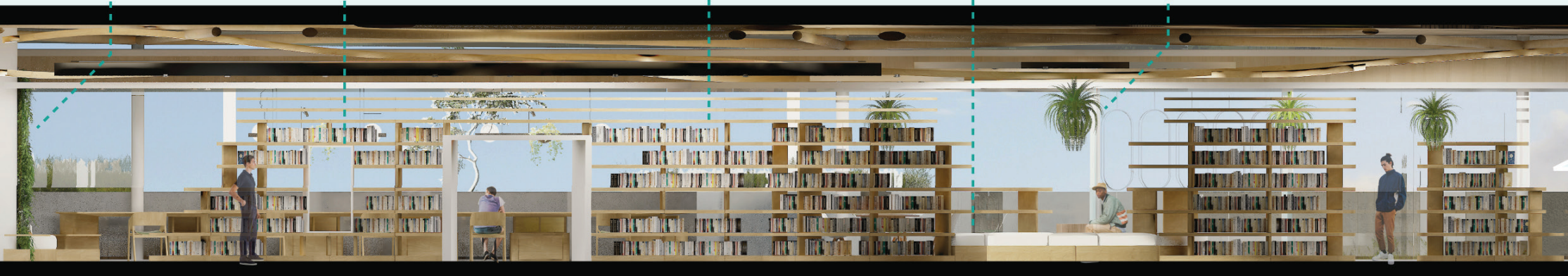
Vertical Garden with relaxed seating

"Window" penetrates the book shelf to create visual connection between the two spaces

Shelving system

Group work station

Hanging plant (fern)



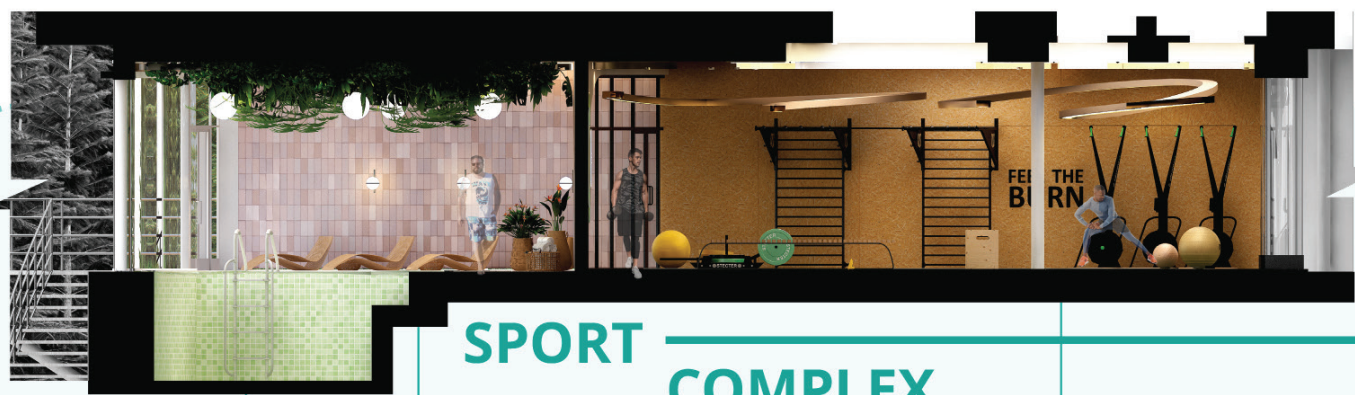
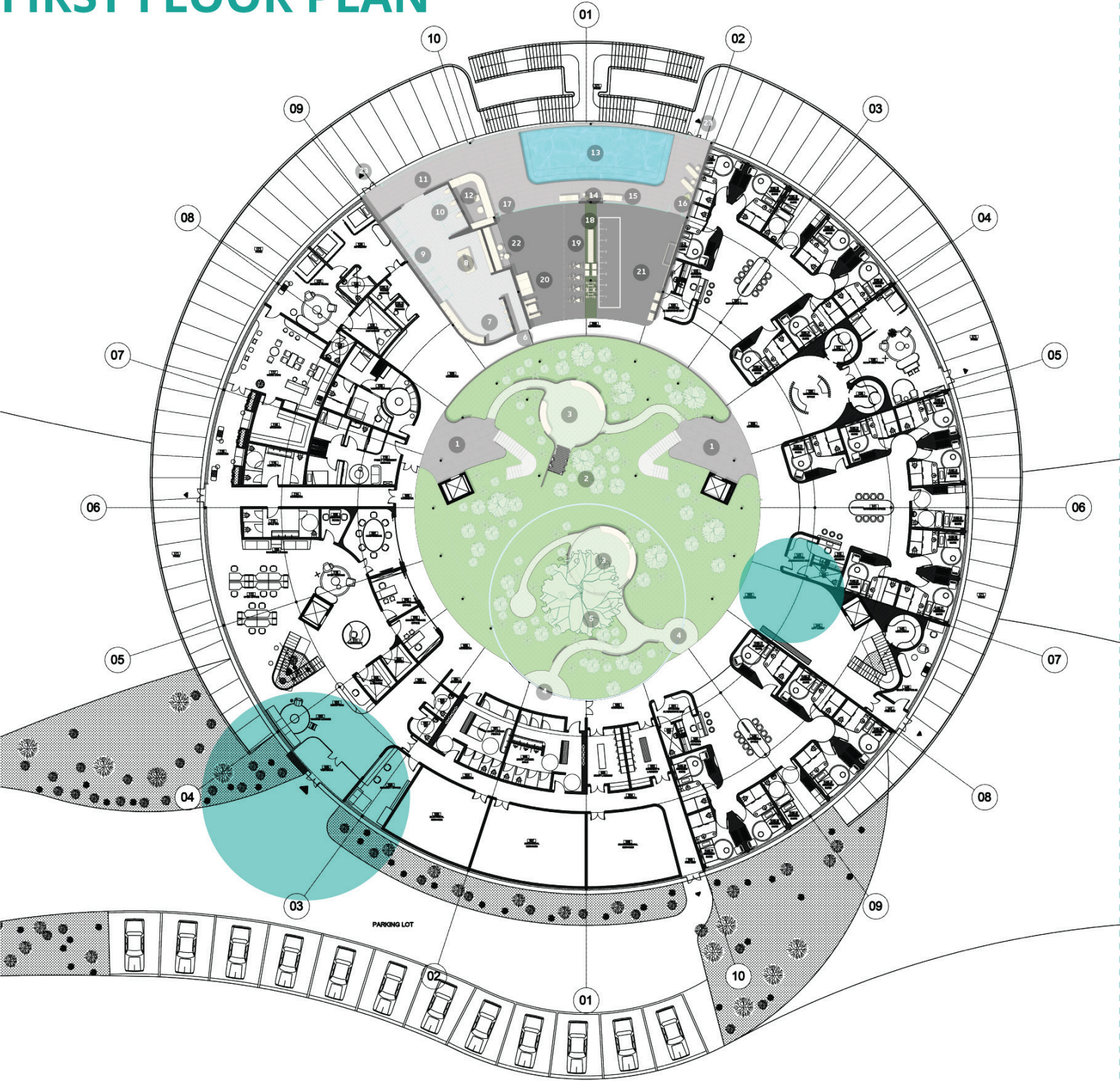
Various gathering spots with comfortable and relaxed furniture

Support Station/ Kitchen portrays non-threatening & approachable characteristics

Windows enable passive ventilation



FIRST FLOOR PLAN



SPORT COMPLEX

Swimming pool can be accessed via ladders

In the swimming pool area, the contrast between outside and inside makes it more stimulating. If the outdoors is filled with boreal trees, the indoor has artificial tropical plants growing upside-down from the ceiling.

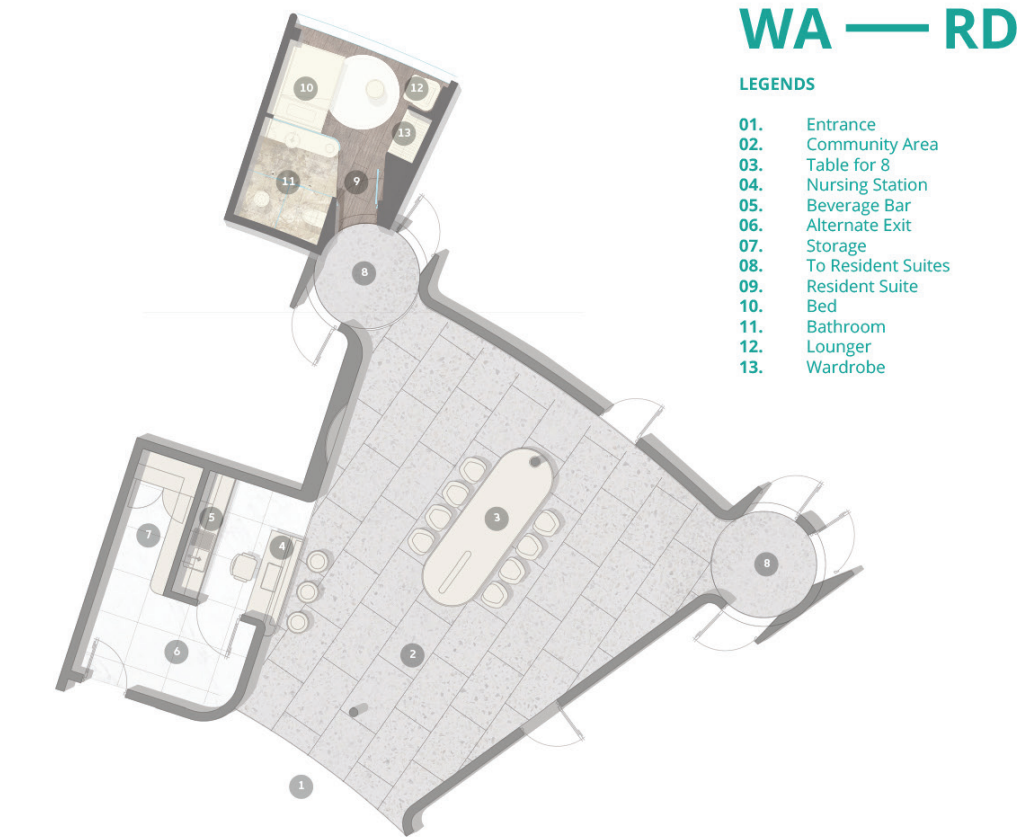
- LEGENDS
- | | | | |
|-----|---------------------------|-----|-----------------------|
| 01. | Elevator Lobby | 13. | Swimming Pool |
| 02. | Courtyard | 14. | Towels |
| 03. | Therapeutic Pods | 15. | Bench |
| 04. | Entrance to Atrium | 16. | Lounger |
| 05. | Atrium | 17. | Entrance to Gymnasium |
| 06. | Entrance to Sport Complex | 18. | Gymnasium |
| 07. | Sink & Urinate | 19. | Cardio |
| 08. | Lockers | 20. | Weight Lifting |
| 09. | Bathroom | 21. | Free Weight |
| 10. | Washroom | 22. | Storage |
| 11. | Corridor | 23. | Fire Exit |
| 12. | Reception | | |

SPORT COMPLEX

The Sports Complex, which is located on the north side of the First floor, can be easily accessed from the Treatment rooms via an adjacent staircase. This Sports complex is made of four areas: a locker rooms, a reception, a swimming pool, and a gymnasium. The colour scheme is slightly different compared to the other areas, as the patients need a more active and exciting space.

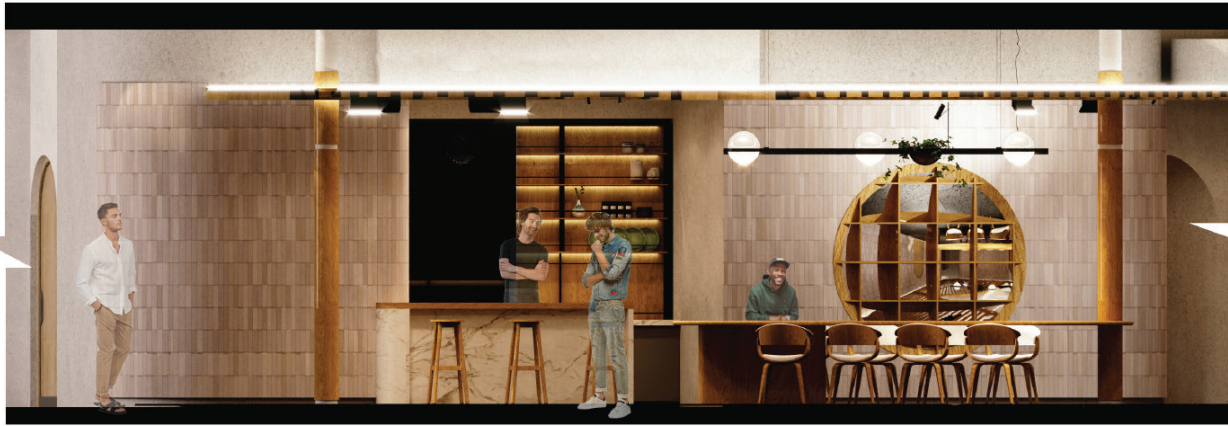
Applied Theories:
* Biophilic Design
* Atmospheric Architecture



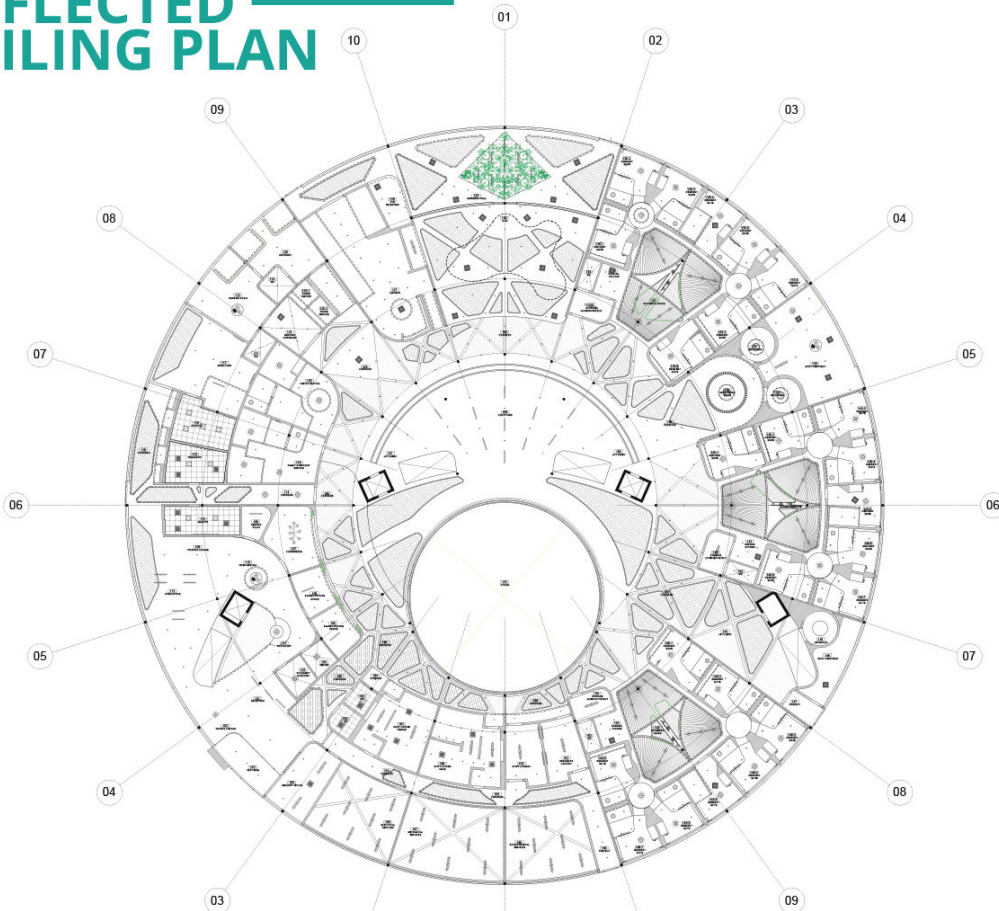


WARD & RESIDENT SUITE

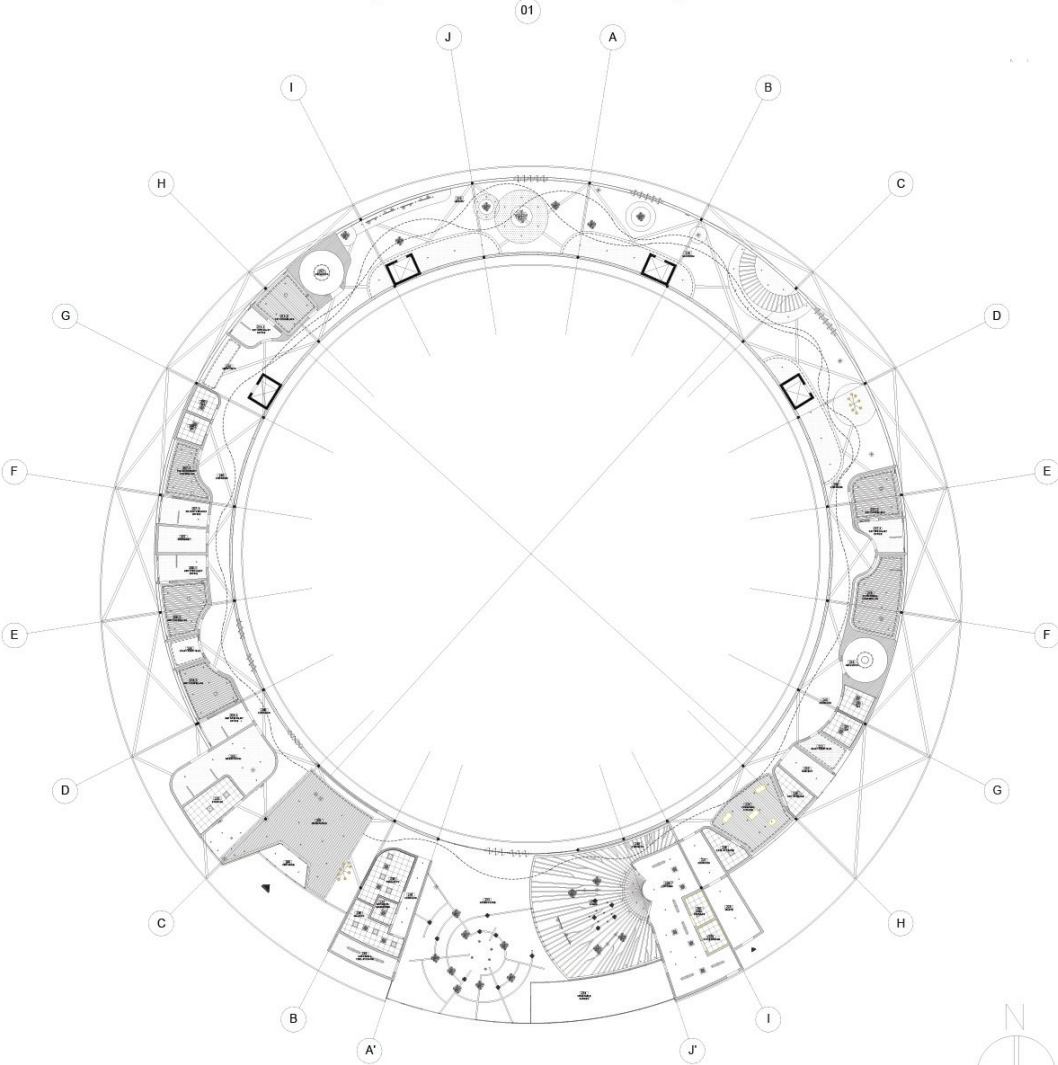
Each ward consists of eight suites and a nursing station. The nursing station is designed in the shape of a kitchen to be more approachable. Bar stools are also provided to encourage the patients to ask for help. The shared space in each ward is equipped with a circular shelf and an eight-person table to promote socializing through game boards and group activities (refers to figure 54). To strengthen the intimate and inviting atmosphere of the space, the material usage focused on a warm colour scheme: wooden furniture coupled with earth rammed brick walls, reinforced with a low wooden ceiling. This concept extends to the patient's personal suite.



REFLECTED CEILING PLAN



RCP FIRST FLOOR



RCP SECOND FLOOR

LIGHT — ING SELECTION

- TYPE A1**
TRIM-EYEBALL RECESSED LIGHT
FINISH: MATTE WHITE
SIZE: 80 mm DIA x 80 mm H
LAMPING: D3000 HOUSING 25WFS
SUPPLIER: ROBINSON LIGHTING
- TYPE A2**
POURCECT LIGHT CEILING LIGHT
FINISH: WHITE FROSTED GLASS
SIZE: 340 mm DIA x 130 mm H
MANUFACTURER: PHILIPS
SUPPLIER: MATTEO
- TYPE A3**
CHANDLER W/ PLANTER VIBIA 3724
FINISH: WHITE FROSTED & MATTE WHITE
SIZE: 20 mm DIA x 500 mm H
MANUFACTURER: VIBIA
SUPPLIER: MATTEO
- TYPE B**
DIRECTIONAL LIGHT
FINISH: MATTE BLACK
SIZE: 2000 mm L x 100 mm W x 50 mm H
MANUFACTURER: designFLUX
SUPPLIER: MATTEO
- TYPE C1**
GENERAL TUBE LED LIGHT DOUBLE
FINISH: MATTE WHITE
SIZE: 1200 mm L x 100 mm W x 50 mm H
MANUFACTURER: PHILIPS
SUPPLIER: HOMEDEPOT
- TYPE C2**
GENERAL TUBE LED LIGHT SINGLE
FINISH: MATTE WHITE
SIZE: 1200 mm L x 100 mm W x 50 mm H
MANUFACTURER: PHILIPS
SUPPLIER: HOMEDEPOT
- TYPE D**
GENERAL LED STRIPES
SIZE: 10 mm W
MANUFACTURER: PHILIPS
SUPPLIER: HOMEDEPOT
- TYPE E**
GENERAL SQUARE LIGHT
EVOKIT 2 x 2 P23L
SIZE: 800 mm x 800 mm
MANUFACTURER: PHILIPS
SUPPLIER: HOMEDEPOT
- TYPE G3**
GENERAL WALL LIGHT SINGLE
FINISH: MATTE WHITE
SIZE: 1200 mm L x 100 mm W x 50 mm H
MANUFACTURER: PHILIPS
SUPPLIER: HOMEDEPOT
- TYPE F**
CHANDLER W/ PLANTER VIBIA PALMA 3734
FINISH: GRAPHITE ADAPTA RF 9913 WX
SIZE: 1500 mm L x 500 mm W x 750 mm H (MAX)
MANUFACTURER: VIBIA
SUPPLIER: MATTEO
- TYPE G**
CHANDLER BRANCHES STYLE C83016A00P
FINISH: BRASS & FROSTED WHITE
SIZE: 1000 mm L x 500 mm W x 400 mm H
SUPPLIER: MATTEO
- TYPE A1**
TRIM-EYEBALL RECESSED LIGHT
FINISH: MATTE WHITE
SIZE: 80 mm DIA x 80 mm H
LAMPING: D3000 HOUSING 25WFS
SUPPLIER: ROBINSON LIGHTING
- TYPE X**
FLICK WALL ART SCENE
FINISH: GREY L2 NCS S 2500-N
GREY D1 NCS S 7000-N
BROWN M NCS S 4020-Y00R
SIZE: 100 mm DIA x 50 mm H
MANUFACTURER: VIBIA
SUPPLIER: MATTEO
- TYPE A3**
CHANDLER W/ PLANTER VIBIA 3724
FINISH: WHITE FROSTED & MATTE WHITE
SIZE: 20 mm DIA x 500 mm H
MANUFACTURER: VIBIA
SUPPLIER: MATTEO
- TYPE E**
GENERAL SQUARE LIGHT
EVOKIT 2 x 2 P23L
SIZE: 800 mm x 800 mm
MANUFACTURER: PHILIPS
SUPPLIER: HOMEDEPOT
- TYPE C1**
GENERAL TUBE LED LIGHT DOUBLE
FINISH: MATTE WHITE
SIZE: 1200 mm L x 100 mm W x 50 mm H
MANUFACTURER: PHILIPS
SUPPLIER: HOMEDEPOT
- TYPE V1**
FLAMINGO PENDANT 1510
FINISH: WHITE FLAMINGO RAL 9016
SIZE: 100 mm DIA x 800 mm H (MAX)
MANUFACTURER: VIBIA
SUPPLIER: MATTEO
- TYPE R1**
CUSTOMADE LINEAR LIGHT
FINISH: WOOD COVER TEAK 1345 ARMSTRONG
SIZE: 10 mm W x 50 mm H
PRODUCED: MATTEO
- TYPE D**
GENERAL LED STRIPES
SIZE: 10 mm W
MANUFACTURER: PHILIPS
SUPPLIER: HOMEDEPOT
- TYPE V2**
CHANDLER W/ PLANTER VIBIA PALMA 3736
FINISH: GRAPHITE ADAPTA RF 9913 WX
SIZE: 1500 mm L x 500 mm W x 750 mm H (MAX)
MANUFACTURER: VIBIA
SUPPLIER: MATTEO
- TYPE FF**
SWORD FERN PLANTER
FINISH: TERRACOTTA
SIZE: 200 mm DIA x 200 mm H
MANUFACTURER: VIBIA
SUPPLIER: MATTEO
- TYPE G**
CHANDLER BRANCHES STYLE C83016A00P
FINISH: BRASS & FROSTED WHITE
SIZE: 1000 mm L x 500 mm W x 400 mm H
SUPPLIER: MATTEO



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