Growing Together: A Supportive Adolescent Psychiatric Facility

by

Chelsea Lazar

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Abstract

This practicum is an exploration of theories and design considerations of how an interior environment can support the recovery of psychiatric adolescent patients who suffer from depression, anxiety and suicidal thoughts. The goal of this facility is to provide a safe, supportive and hospitable interior environment in Winnipeg, Manitoba that aids in the treatment and well-being of teens with psychosis. This supportive environment is designed around a patient-centered care model known as the collaborative problem-solving approach. The interior design incorporates strategies drawn from research on: healthcare safety and security, place-identity, supportive design and biophilic design. Unlike other treatment facilities, it also considers the needs of developing adolescents by providing residents the opportunity to attend school, develop life skills and social spaces to build relationships with others in a comfortable and welcoming environment.
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1.0 Introduction

1.1 Project Description

Suicide is the third highest cause of death in Canadian youth today, however only one in five of the early adolescents and teenagers who struggle with psychosis receive mental health services with most untreated cases resulting in death (Fast Facts about Mental Illness, 2016). In 2012 Statistics Canada stated that, 91% of Canadians are prescribed with medication to treat their mental health illness and only 65% admitted to receiving the therapy they felt was needed (Andersen, 2018). These statistics suggest that for youth and adolescents, treatment needs to be attained at the first onset of mental illness symptoms. The potential role for in-patient care facilities is to provide an appropriate diagnosis and develop a treatment plan for an individual with mental illnesses. The role of the interior design in mental health facilities is to veer away from traditional, institutional spaces. Designing elements within the interior that support treatment and healthy outcomes include provision of personalised spaces and supportive environments, as well as the inclusion of invasive security measures. This Master of Interior Design Practicum depicts an adolescent psychiatric inpatient facility intended for teenage children aged 12-17 who have severe depression, anxiety and suicidal thoughts. This project incorporates interior design strategies that assist in supporting psychiatric care and the recovery of adolescent patients suffering from mental illness. The objective of this facility is to provide a safe, supportive and hospitable interior environment that aids in the treatment and well-being of psychotic teens.

The primary care model referenced in this practicum project is patient-centered care (PCC), using the collaborative problem-solving approach (CPS). This care model is successful in managing symptoms of those suffering from psychosis and enables individuals to gain
interpersonal skills, inner controls, and coping mechanisms for their symptoms related to psychosis (Greene, Ablon & Martin, 2006). Design considerations and theories explored in this project are: safety and security, place-identity, the theory of supportive design, and biophilic design. In addition to the primary care model, the inpatient facility aims to provide a normal lifestyle for individuals undergoing treatment. Unlike other facilities, it considers the needs of adolescents and provides spaces for developmental life skills. The design incorporates fun and energetic design solutions and age appropriate activity-based spaces. For example, residents can attend school, and develop life skills such as gardening, cooking, and doing laundry while building relationships with others in a comfortable and welcoming interior space.

The rate of mental illness among Manitoba youth is double the national average, and even higher in Winnipeg’s inner-city neighbourhoods and the province’s north (Lambert, 2016). According to health science researchers at the University of Manitoba, 1 in 7 adolescents between the ages of 6 and 19 were diagnosed with a mental disorder, most commonly due to poverty. Lead researcher Mariette Chartier, an assistant professor in the department of community health science states that “mental health problems are more common than asthma or diabetes in Manitoba youth.” (Lambert, 2016). The actual rates could be higher because these numbers are only counted on youth who were seen by a physician. Currently there are only two facilities in Winnipeg that are inpatient treatment programs for teenage psychological illness: the Child and Adolescent Mental Health Program Centralized Intake Centre, and the Manitoba Adolescent Treatment Centre. Based on these statistics and the knowledge that the population of adolescents is centralized and higher within the city limits than throughout northern communities in Manitoba, the proposed location of this practicum facility is in Winnipeg, Manitoba.
1.2 Questions of Inquiry

To understand such a project, it is important to gain as much knowledge as possible about psychiatric architecture and related theories within the field of design. The ability to employ a level of sensitivity when designing for patients and their families who are enduring these hardships is one of the most essential components of this project. The final design is a result of numerous explorations of three key questions through a literature review, precedent analysis, design programme, and site analysis to inform design decision making:

1. *What are the biological, cognitive, emotional and social needs of developing adolescents who are experiencing mental health issues?*

The developmental needs of adolescents residing in a psychiatric facility must be realized to design a successful space. In section 2.0 *Adolescent Development and the Design of Mental Health Facilities*, I provide an overview taken from literature on normal development, abnormal development and the onset of mental health issues of adolescent patients.

2. *How can the built environment enhance the physical, emotional and psychological well-being of adolescent individuals who have psychosis and mental illness?*

Environmental psychology suggests that design can have a big impact on human behaviour, and wellness. Within section 3.0 *Caring for Adolescents with Mental Illness* and section 4.0 *Environmental Behaviour Literature Review*, I discuss environmental behaviour theories and care models drawn from literature including: the collaborative problem-solving approach, safety and security, place identity, the theory of supportive design and biophilic design. These theories are analyzed to understand how comfort and wellness can be achieved within an unfamiliar environment.
3. **How can a psychiatric facility incorporate design features and strategies to promote safety and security for all, without feeling oppressive or institutional?**

People with mental illness are not criminals, but preventative measures need to be in place to protect individuals from harming themselves and others while undergoing treatment. In section 5.0 *Example of Designs of Mental Health Facilities for Adolescent Youth*, I present the result of a precedent analysis of existing adolescent care facilities. This analysis highlights the success and challenges of these projects to take a non-institutional approach to the design of the built interior. The precedent analysis provides concrete examples that have informed my design process and decisions throughout the project.

1.3 Chapter Overview

This practicum report is divided into nine sections. The purpose of the introduction is to provide a contextual overview of the background for the practicum project, its purpose, objectives, key terms and the need for this type of psychiatric facility in Winnipeg.

Chapter 2.0 *Adolescent Development and Mental Health* compares and contrasts normal versus abnormal development of adolescents. This section goes into detail of biological, cognitive, emotional and social development in adolescents, and how these changes can cause an onset of mental health in this age. Specifically, the mental illnesses are focused on depression, anxiety and suicide.

Chapter 3.0 *Caring for Adolescents with Mental Illness* aims to understand the fundamental needs of supporting mental health in adolescents. A successful model of care known as the collaborative problem-solving approach is the primary care model used within the facility. Safety and security are also contained within this section. Understanding procedural, relational,
and environmental safety measures needed within psychiatric environments is critical for the well-being of patients. Each investigation was directed at conceptually informing an alternative approach to psychiatric design.

Chapter 4.0 Environmental Behaviour Literature Review explains theories on environmental psychology pertaining to psychiatric design. To explore such concepts, perspectives from authors, theorists, and doctors who are specialties in their field are included. The theories included are: place-identity (Harold Proshansky, Yi-Fu Tuan, David Seamon, and Tim Cresswell), supportive design (Roger Ulrich, Claudia Andrade, and Ann Devlin) and biophilic design (Steven Kaplan, and Stephen Kellert).

In chapter 5.0 Example Designs of Mental Health for Adolescent Youth contains a precedent analysis. I discuss three real-world adolescent healthcare projects that highlight lessons learned and information that is relevant to the proposed practicum project. The three environments are: The Trillium Secure Adolescent Psychiatric Inpatient Facility, The Kelowna Adolescent Psychiatric Unit, and The Caring Cabin. Each precedent is an example of a healthcare setting where children and adolescents are the primary users. The review of each precedent discusses specific design principles, programmatic elements and conceptual notions that were used in the creation of the final design project.

Chapter 6.0 supplies the Design Programme. This section contains a human factor analysis as well as functional and aesthetic requirements needed within the space. The purpose of the programme is to provide parameters to ensure the proposed project is successful both functionally and aesthetically for all user needs.
In Chapter 7.0 *Site and Building Analysis*, I provide a site selected for the practicum project: 5501 Roblin Boulevard (located in Charleswood in Winnipeg, Manitoba, Canada). The practicum is an adaptive reuse of the Charleswood Long Term Care Home. Both the site and building analysis describe the geographical, climatic, and community context (transportation and amenities) to the project.

Chapter 8.0 illustrates the design outcome of the practicum project. The design outcome includes the concept behind the proposed design. As well, it contains the building floor plans, elevations, interior details and perspectives to visualize the final design considerations and atmosphere in the adolescent psychiatric facility.

Finally, Chapter 9.0 contains the discussion of the practicum project. This chapter highlights the lessons learned, final outcomes, and future recommendations pertaining to this proposed practicum project.
Adolescent Development and the Design of Mental Health Facilities

2.1 Normal Development

Adolescence can be described as the period in life where children are transitioning into adulthood between the ages of 12-18 (Cobb, 2010, p.5). Developmental psychologist Nancy Cobb defines adolescence as a period in life that begins with biological maturation, where individuals accomplish developmental tasks to achieve a stage of adulthood that is set by society (Cobb, 2010, p.5). These developmental tasks relate to physical, psychological and sociological changes that occur at this stage in life. Achievements such as attaining a first job, having an intimate relationship and obtaining a driver’s license are all reached in these years. As well, new hardships are introduced including: schoolwork, sexuality, drugs, alcohol, and maintaining a social life.

Adolescence is classified into three stages: (1) early adolescence, (2) late adolescence, and (3) emerging adulthood (Cobb, 2010, p.5). Early adolescence is defined as the ages between 12-14, where the most dominant changes are displayed by physical adaptations (Cobb, 2010, p.16). Throughout this stage, teenagers begin to undergo puberty, notice a difference in gender roles and start having autonomous relationships with parents. Late adolescence is focused on the development of teens aged 15-17 (Cobb, 2010, p.17). Identity and sexuality in both the self and relationships with others becomes the primary focus of these ages. Finally, emerging adulthood is the period between adolescence and adulthood between the ages of 18-20, where identity exploration is further discovered (Cobb, 2010, p.18). Each stage is critical for taking the necessary steps into adulthood focusing on the development of physical, cognitive, social and emotional maturation.
Throughout each stage of adolescence, it is crucial to note that gender affects the rate and growth of individuals. Most psychiatric facilities are not currently segregated by gender, but recent developments have shown that violence and threats in psychiatric facilities have made individuals (mostly women) feel vulnerable and unsafe (Seeman, 2007). Therefore, the wings of a psychiatric facility should be divided by gender, where girls are separated into one area, and boys into another. However, with the recent attention on gender identity and transgender adolescents, separating teens into wings based on their gender can cause problems for some adolescents. Individuals who are transgender need to have the ability to choose which wing they identify with best, regardless of the sex they were given to at birth. Being surrounded by the same sex and going through the same developmental issues at this stage in life can allow for comfort, familiarity and identity for all individuals. Overall, as adolescents mature both physically and cognitively, they are searching for an identity of who they are and how they fit in with the rest of the world, while becoming more self-sufficient, autonomous, and independent.

Adolescence is a complicated, multi-system transitional process filled with both disorientation and discovery on the journey toward adulthood (Curtis, 2015, p.1). These moments of confusion and growth can be broken down into: (1) biological, (2) cognitive, (3) emotional and (4) social developments. As early adolescence begins with the onset of puberty, the changes in this stage are primarily related to physical development. Both females and males between the ages of 12-14 experience growth spurts and begin to sexually mature (APA, 2002, p.8). Females achieve fertility and physical changes that support sexual maturation such as breast growth and rapid skeletal growth (APA, 2002, p.7). Males experience changes with their bodies at this stage as well, including the enlargement of testes, the appearance of body hair, and changes in their voice (APA, 2002, p.7). While these physical changes are occurring, the
hormones that are being created within the body during puberty start to affect the cognitive and emotional development of an adolescent. Cognitive development impacts how adolescents think, reason and understand (APA, 2002, p.11). Adolescent brain development allows individuals to think abstractly, hypothetically and logically to set personal goals and think about one’s future. The significant gender difference in cognitive development is that adolescent females are more confident in reading and social skills, whereas males feel more assured with athletic and math skills (APA, 2002, p.11). Puberty primarily influences the physical and cognitive development in adolescents, but also effects the social and emotional development in adolescents.

Physical and cognitive development are both biological changes occurring in the growth of all adolescents regardless of ethnicity, personal life, and economic standing. However, the development of emotional and social skills can be a result of environmental factors and societal standards. The central task of adolescence defined by the American Psychological Society is to develop a sense of identity with others as well as with themselves (APA, 2002, p.15). A person’s identity enables them to be unique by developing an understanding of one's self through personality traits, interests and passions. Two concepts drive the emotional side of humans and respond to the identity of an individual: (1) self-concept and (2) self-esteem. Self-concept is defined as “a set of beliefs one has about oneself through attributes, roles, goals, interests, values, and beliefs” (APA, 2002, p.15). Ultimately, it is the way an individual constructs oneself by their own beliefs and how they respond to other interpretations of them. Self-esteem is the evaluation of how one feels about one’s self-concept, which can be positive or negative (APA, 2002, p.15). The interpretation of one’s self therefore strongly depends on individual experiences, environmental influences and relationships with others.
Communication and exchanges with peers, family members, and individuals at school, at work and in the community, provide adolescents with the opportunity to develop social relationships. As adolescents mature, they begin developing more autonomous relationships with family members. Parents who offer guidelines and have appropriate developmental expectations for their teens are proven to have more significant involvement and influence on their children through these transitional years (APA, 2002, p.23). Peers influence each other’s sense of identity, evolving from family members ideas and values. Therefore, friends become the vital relationship in an adolescent’s life (APA, 2002, p.21). These relationships become essential as popularity, status and acceptance become a primary indicator of a person’s identity in late adolescence and emerging adulthood. Having these bonds with peers and friends within school provides a source of safety and stability within the environment and with the people surrounding them (APA, 2002, p.21). As adolescent’s mature, peer relationships begin to take form with members of the opposite sex. Eventually, these friendships transition into more intimate and sexual relations, introducing new emotions surrounding heartache, love, trust, and stress. Work is another environment where relationships can flourish by meeting new people and forming a connection outside of the familiar school environment. However, working too much may affect school and family relationships, causing issues and levels of stress when trying to balance all aspects of life (APA, 2002, p.25).

The transition from normal to abnormal adolescent development is a result of: (1) biological, (2) cognitive, (3) emotional and (4) social changes. A clear indication of the onset of mental health issues is displayed through behavioural changes. Understanding the difference between normal and abnormal behaviours can be part of early diagnosis of mental health issues. Examples of these behaviours include: refusal to complete tasks or spend time with family and
friends, severe risk taking, changes in eating habits, sadness and anxiety, and sudden changes in energy levels. Mental health issues such as depression, anxiety, eating disorders and suicide begin to surface with the onset of these abnormal behaviours. In the following section (2.2 Abnormal Development), Uri Bronfenbrenner’s ecological systems theory describes these normal to abnormal adolescent developmental changes can be brought on from the direct and indirect environment, connections with others, cultural values and beliefs, and societal changes over time.

2.2 Abnormal Development

Developmental changes can become abnormal by the response that each adolescent has to themselves, the environment and their relationships with others. Culture, ethnicity, and economic standing can also have a substantial impact on the normal or abnormal development throughout adolescence. The environmental impact and influence that society has on the development of a child is described through the ecological systems theory, created by developmental psychologist, Uri Bronfenbrenner (Coleman & Ganong, 2014, p.12). Over the past 40 years, this theory has been adapted to explain not only the development of children, but also adolescents. The theory suggests that as humans engage in activities and develop relationships with others, the influence that these activities have on an individual defines the characteristic of that person (Coleman & Ganong, 2014, p.12). These systems are classified as the microsystem, mesosystem, exosystem, macrosystem, and chronosystem, resulting in a set of five nested structures (see Figure 1)
Coleman & Ganong, 2014, p.12). The microsystem, closest to the individual, is classified as the relationships an individual has with immediate social contexts such as their family, caregivers and school (Coleman & Ganong, 2014, p.12). The mesosystem connects the different parts of the microsystem, linking the relationships of these entities to one another (Coleman & Ganong, 2014, p.12). The exosystem is the level of community, such as the people and places that affect an individual, but not with much meaning (Coleman & Ganong, 2014, p.12). The macrosystem is the most significant and dominant set of people that influence the individual (Coleman & Ganong, 2014, p.13). In other terms, it is related to society. Finally, the chronosystem is the system that is always changing on a large scale, such as cultural and societal impacts over time (Coleman & Ganong, 2014, p.13).

Through Bronfenbrenner’s ecological systems theory, social and emotional development becomes impacted by the way one perceives their environment, surroundings, and self. Therefore, these five nested systems highlight how an individual becomes affected by not only personal changes with their body, brain and direct relationships, but also with environmental factors surrounding them.

Abnormal development happens through the lens of Bronfenbrenner's theory of ecological development when activity, environment, and individuals may not have a positive
influence on an adolescent. The result is low self-esteem, self-confidence, and self-concept. Since the five systems are interrelated, ultimately the physical, cognitive, social and emotional development of an adolescent’s life are related to one other. For example, early maturing adolescent girls and late maturing adolescent boys become obsessed with body image and appearance (APA, 2002, p.16). Therefore, healthy physical development in adolescence can still cause abnormal thought processes about realistic standards as puberty occurs. As physical changes such as weight gain, the presence of acne, facial hair and sexual maturation occur, adolescents become self-conscious and can feel judgment from peers (APA, 2002, p.16). The unfamiliar body changes and social discrimination can lead to depression and disordered eating, which more commonly affects females. Anorexia, bulimia, and starvation can develop from unhealthy eating habits and unrealistic beauty standards put forward by family, friends and the media (APA, 2002, p.16). Overall, these physical changes affect the emotional interpretation of oneself and can result in mental illness such as depression and eating disorders.

During cognitive development, critical decision making about upcoming life events such as attending college, finding a job or handling finances can become overwhelming. With the realization of these forthcoming responsibilities and the approach of adulthood, stress becomes present in the lives of late adolescents. These emotions can affect social and emotional functioning leading to abnormal development and resulting in anxiety and depression. Throughout cognitive development, individuals also begin to understand that there is a grey area between the right and wrong that was taught in childhood (APA, 2002, p.11). Behaviours develop from this realization including: lying to parents, defying rules, experimentation with drugs, alcohol, and violence. These risk-taking actions can be influenced by peers as well as the media presence. The combination of cognitive development through stressful decision making
and risk-taking behaviors can become extremely problematic as substance abuse can result through self-medicating in alleviating feelings of anxiety and depression (APA. 2002, p.31).

Balancing relationships with peers, family, work, school, and dating can be positive in social development, but can also lead to negative influences brought on by the need for approval and inclusion throughout adolescence. Friends and peers are crucial in aiding in the formation of an individual’s identity, but these relationships can also lead to bullying and exclusion. This is particularly harmful to the development of an individual’s status as they contain the feeling that something may be wrong with who they are as they develop into their own person. This social isolation can affect the emotions of an adolescent resulting in delinquent behavior and psychosocial difficulties such as bipolar disorder, personality disorder, depression, and suicide (APA, 2002, p.16). These negative relationships can also affect the ability of an individual to focus on their studies causing decreased grades that affect self-esteem and well-being. Aside from friendships with peers, relationships with family members can create hardships in an adolescent’s life. If parents are detached, uninvolved and cold toward their teen, the level of conflict in the relationship between parent and adolescent increases (APA, 2002, p.23). As adolescents want freedom and choice at this stage in their life, parents who put pressure on their children to reach an unrealistic standard are at risk for developmental issues such as depression and anxiety. Therefore, within psychiatric environments, developing friendships among patients becomes imperative to their treatment and well-being.

Friendships among patients potentially provide important functions such as companionship, stimulation, social support and affection. These relational and emotional functions are crucial in the normal development of adolescents. As adolescent’s struggle with developing identities, they need these biological, cognitive, emotional and social changes to be
accepted, supported and reflected by friends. Group therapy is an activity that allows for these friendships to begin. Three ways group therapy has benefits for patients over individual therapy is: (1) Group therapy focuses on relationships, (2) group therapists get a live demonstration of social problems and (3) group members have a place to learn and practice more effective ways of communicating (Ways Group Therapy is Better Than Individual Therapy, 2018). Within group therapy, healthcare staff provide an opportunity for patients to share feelings and support one another in a safe place. Individuals can then further develop these relationships in other areas of the facility on their own. Unlike individual therapy, group therapy focuses exclusively on relationships. Therapists witness live enactments of difficulties in relationships among patients, giving insight into how their relations with others affect their mental illness (Ways Group Therapy is Better Than Individual Therapy, 2018). As teens are still developing, the formation of cliques or dramatic outbursts can occur. This is not any different within a psychiatric facility and is a healthy process of development.

Adolescent development becomes abnormal when the emotional response to the physical, environmental and social changes begins to negatively impact an individual’s mood, behaviour and overall well-being. If these physical, cognitive and social responses become negative, it can result in low self-esteem, low self-concept, stress, anxiety, isolation, depression and suicidal thoughts. Therefore, it is through emotional development, identity and the interpretation of oneself that the signs of abnormal development and mental illness in adolescence begin. Table 1: Differences between normal and abnormal adolescent development summarizes the key developmental differences between normal and abnormal adolescents highlighted within this chapter.
Table 1: Differences between normal and abnormal adolescent development.

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<tr>
<th></th>
<th>Normal Development</th>
<th>Abnormal Development</th>
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<tr>
<td><strong>Biological</strong></td>
<td>Puberty, sexually mature, growth spurts.</td>
<td>Obsession with appearance and body image.</td>
</tr>
<tr>
<td><strong>Cognitive</strong></td>
<td>Thinking abstractly, hypothetically and logically</td>
<td>Decision making about upcoming life events.</td>
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<td></td>
<td>Setting personal goals and thinking about one’s future.</td>
<td>Ability to take risks,</td>
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<tr>
<td><strong>Social</strong></td>
<td>Autonomous relationships with family members.</td>
<td>Bullying and exclusion.</td>
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<td></td>
<td>Intimate and sexual relations.</td>
<td>Conflict between parent and adolescent relationship.</td>
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<td>External relationships (work, teams).</td>
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</tr>
<tr>
<td><strong>Emotional</strong></td>
<td>Strong self concept and self image.</td>
<td>Low self concept and self esteem.</td>
</tr>
</tbody>
</table>

2.3 Mental Health

There are many mental health illnesses adolescents can experience throughout their growth. These psychiatric disorders include: bipolar disorder, eating disorders, schizophrenia, substance abuse, anxiety, depression, and suicide. The most common mental health disorder diagnosed in adolescence is depression, which can develop into severe mental health concerns such as suicidal thoughts and behaviours. Depression is an affective disorder causing feelings of sadness and loneliness. Left untreated, depression can carry into adulthood (Coleman & Ganong, 2014, p.21). For this practicum I have particularly focused on depression because adolescence is the time when symptoms of depression begin.
Depression is a complex illness and can be brought on by both developmental and environmental factors. The developmental factors that can cause depression include: biological, cognitive, social and emotional changes that were discussed in the previous section, 2.1 Normal Development. The most common contributors resulting in adolescent depression come from puberty and cognitive development (Thapar et al., 2012, p.1057). As adolescence is a developmental period characterized by pronounced biological and social changes, this mental illness often gets mistaken and masked throughout this stage in life (Cobb, 2010, p.394).

Environmental factors have an impact on the development of depression in an adolescent and can come from the surrounding environment, maltreatment, genetics, and trauma such as displacement, orphanhood, negative family relationships and peer bullying (Thapar et al., 2012, p.1059). These environmental factors cause stress, which is a leading influence resulting in depression. Symptoms of adolescent depression can take on physical forms because individuals find difficulty in admitting and communicating their feelings with family and friends (Cobb, 2010, p.394). Physical symptoms can include: eating disorders, anxiety, absence from school, a decline in grades, substance misuse and behaviour problems (Thapar et al., 2012, p.1058). The most common emotional symptoms of depression in adolescence are: low self-esteem, pervasive sadness, hopelessness, and helplessness.

The text titled Depression in Adolescence addresses three core symptoms that must be present when diagnosing an adolescent with depression: (1) a loss of interest or pleasure in activities, (2) decreased energy or fatigue, and (3) a depressed mood for most of the day and the days to follow (Thapar et al., 2012, p.1056). Associated symptoms of the illness specific to adolescence are: (1) sleep disturbances, (2) changes in appetite, (3) loss of confidence, (4) loss of self-esteem, (5) inability to concentrate, and (6) suicidal thoughts (Thapar et al., 2012, p.1056).
Depression is just one mental illness, but it can be linked to the cause of other psychiatric disorders, which is known as *comorbidity*. Thapar et al., state that “two-thirds of adolescents with depression also have a 10-15% chance to have comorbidity” (Thapar et al., 2012, p.1061). The most common types of comorbidities associated with depression are anxiety, behaviour disorders, and substance misuse. Statistically, adolescents with depression are six to twelve times more likely to develop anxiety, four to eleven times more likely to have a behaviour disorder, and three to six times more likely to participate in substance misuse (Thapar et al., 2012, p.1061). If a patient does have comorbidity, depression would be diagnosed and treated separately from the other disorder. If an individual is suffering from comorbidity or is classified as having severe depression, this can require extensive treatment and hospitalization as depression is a significant risk factor for suicidal thoughts, behaviors, and death by suicide. In adolescence, suicide is the most frequent cause of death in this age group (Thapar et al., 2012, p.1061).

In the design of a psychiatric facility where adolescents are receiving treatment for mental illness such as depression, designers need to consider models of care and environmental features that could affect patients. Considerations such as security and surveillance, suicide proofing, and providing a supportive and restorative environment. Chapter 3.0 *Caring for Adolescents with Mental Illness* and Chapter 4.0 *Environmental Behaviour Literature Review* highlights key theories and design approaches intended to promote mental health well-being.
3.0 Caring for Adolescents with Mental Illness

3.1 Collaborative Problem-Solving Approach

A patient-centered care model known as the Collaborative Problem-Solving approach (CPS) has been proven successful in managing symptoms of people who have psychosis (Different types of Psychosis, 2012). The CPS approach is highly individualized where each patient has a specific action plan and treatment program for their mental illness. Established in 2001 by Dr. Ross Greene, this relatively new care model reduces the need for seclusion and restraint, while enabling individuals to gain interpersonal skills, inner controls, and coping mechanisms for their symptoms related to psychosis (Greene, Ablon & Martin, 2006, p.611). The CPS approach is classified as a cognitive behavioural approach for specifically working with children and adolescents and has been used in a variety of settings such as outpatient therapy, schools, residential facilities and secure environments such as psychiatric services.

The primary intent of CPS is to provide children with the help they need to collaboratively resolve issues and difficulties by teaching them specific cognitive skills that may be contributing to their behavioural problems (Greene et al., 2006, p.611). Rather than perceiving aggression and hostility as the main issues relating to the mental illness in the child, healthcare staff use the CPS approach to try and understand (from a therapeutic perspective) an underlying problem causing these emotions and behaviours. With this care model approach, children and adolescents can use the skills and lessons they have acquired throughout their treatment in future years, resulting in this model to be beneficial for lifetime success.

The CPS approach is similar to alternative models of care due to the strong focus on patient centered care, as well as focusing on children and adolescence. An alternative model of
care that has been explored is the Planetree model. The Planetree model was founded in 1978 and is an evidence-based approach, intending to improve the quality of health care for individuals (Planetree, 2018). The goals of this care model are to: (1) improve staff engagement and performance, (2) improve patient and family engagement outcomes and (3) improve the health of the community (Planetree, 2018). Although Planetree has similar intentions for the quality of care for all individuals involved, it lacks the focus of being targeted towards depression as well as the adolescent age group. Therefore, it was not chosen as the primary care model for this practicum project.

The multidisciplinary team who makes up the CPS care model includes a Psychologist, Physician, Psychiatrist, Counsellor and school instructor (Greene et al., 2006, p.611). The goal of this team of specialists is to work collaboratively in sharing and understating the needs of each patient. The group meets daily to update one another on the progress and any issues regarding patients, relating to their specialty. Nurses and administrators work alongside the core care team in assisting them in the treatment of patients. Along with cognitive behavioural therapy, which is the main form of treatment in this care model, pharmacology is also used as mental health illnesses can be caused by an imbalance of chemicals within the brain. It is essential staff are continuously receiving training as this is a relatively new approach to care. One of the benefits of the CPS approach is the relationships and communication built between healthcare professionals and patients. Green et al. state there is a “focus on facilitating adult-child problem solving rather than teaching and motivating children to comply with adults” (Greene et al., 2006, 611). Ultimately, the CPS approach strongly focuses on relational security, which is a critical element of safety that must be included in a psychiatric facility. The aspect of individualized patient-centered care displayed within this approach builds trust and positive relationships among
healthcare professionals and patients. Therefore, the CPS model is seen as a therapeutic means of healing in social skills and communication.

3.1.1 CPS Design Considerations

There are specific design considerations to support collaborative care. Boulder Associates Architects is an architecture firm specializing in healthcare design in the United States and has translated the ten principles of CPS into design requirements (see Table 2: CPS Design Requirements).

Table 2: CPS Design Requirements

<table>
<thead>
<tr>
<th>Principle</th>
<th>Design Consideration</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Encourage and enable team-based care collaboration.</td>
<td>Allows for areas of large or small group discussions among care team.</td>
</tr>
<tr>
<td></td>
<td>Open workspaces promoting face to face discussions between multidisciplinary care team.</td>
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<tr>
<td>2.</td>
<td>Engage the patient as part of the care team by making work visible.</td>
<td>Allows patient to feel included in the care team and trust that they are not hiding medical information or care approach from them.</td>
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<tr>
<td></td>
<td>Design a connected space where the collaborative care team is working, becomes visible to the patient.</td>
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</tr>
<tr>
<td>3.</td>
<td>Engage patients in group visits and sessions.</td>
<td>Provide emotional and informational support to help patients understand their ongoing care with individuals with similar conditions.</td>
</tr>
<tr>
<td></td>
<td>Incorporate group visit spaces, like meeting rooms.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Incorporate flexible design.</td>
<td>Creates larger or smaller group conversations depending on the type of activity occurring in the space.</td>
</tr>
<tr>
<td></td>
<td>Allow flexible furniture and partitions in the space.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Create a sense of place with wayfinding and graphics.</td>
<td>Provide inclusion and a feeling of supportive community, as well as patient engagement and activation.</td>
</tr>
<tr>
<td></td>
<td>Wayfinding, signage, and graphics to address ease of access.</td>
<td></td>
</tr>
<tr>
<td>Principle</td>
<td>Design Consideration</td>
<td>Benefit</td>
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<tr>
<td>6. Create a physical and emotionally safe environment.</td>
<td>Privacy through acoustic control, appropriate adjacencies, direct travel paths, etc.</td>
<td>The patient feels they can share concerns and receive successful treatment if the space is designed safely.</td>
</tr>
<tr>
<td>7. Comfortable and inviting.</td>
<td>Residential and stress reducing design elements. Natural lighting, de-institutional design.</td>
<td>Alleviate stress for patients and visitors and provide levels of comfort.</td>
</tr>
<tr>
<td>8. Flow in floor plan for a positive experience.</td>
<td>Design spaces that are only necessary, convenient and have appropriate adjacencies for patient treatment.</td>
<td>Allows patients and staff to move smoothly and efficiently in a functional and organized facility.</td>
</tr>
<tr>
<td>9. Provide seamless follow-up care.</td>
<td>Integrate space for post-visit services and resources with patient follow up visits if needed.</td>
<td>Allows a safe and separate area for follow up care where the patient feels they are coming back for a check-up and not re-admittance. Essential for patient recovery after discharge.</td>
</tr>
<tr>
<td>10. Provide care coordination to other services.</td>
<td>Discharge space. Incorporate areas of resource for examinations, transportation, aftercare, family support.</td>
<td>Maintains a state of health and well being when care has been completed for the patient.</td>
</tr>
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</table>

Other design approaches that can support the CPS care model are open spaces promoting community and conversation with peers and the multidisciplinary care team. The use of flexible furniture in gathering spaces allows freedom of interaction among individuals. As well, a mix of public and private spaces throughout the floor plan can be included so patients have the freedom to choose open or closed environments to partake in conversations and therapy sessions with the multidisciplinary team. The goal of the CPS model of care is to reduce seclusion and restraint when a patient is acting out. As the CPS approach is proven successful, seclusion rooms can be removed within a floor plan. Instead, therapeutic spaces known as sensory rooms allow
individuals to express their emotions in a safe place by “moving the activated energy of one patient away from others to avoid negative contagion effect” (Trzpuc et al., 2016, p.30). These rooms are composed of entirely soft materials, contain patient controlled lights and music, storage for play activities, and writable services. It is an outlet to enhance mental health treatment in a holistic way. As well, calming environments such as healing gardens, water features, fireplaces and comfortable materials reflecting supportive design are utilized to encompass a therapeutic environment. (see section 4.2 Theory of Supportive Design). Overall, to support the CPS approach, the design needs to provide place-identity, a physical and emotionally safe environment, relational security, a comfortable and inviting setting, and flexibility.
3.2 Safety and Security

Providing an environment that is safe and secure for staff, patients and visitors is a critical and challenging aspect when designing a mental health facility. The challenge is to not only incorporate actual safe design features within the facility, but ensure all users feel a perceived sense of safety within the environment as well (Chrysikou, 2014). According to Psychiatrist Henry Kennedy (2002), the four security principles essential in the development of psychiatric centres are: (1) procedural security, (2) surveillance, (3) relational security, and (4) environmental security. Procedural security refers to the policies and practices needed to control the risk in psychiatric facilities such as risk management and routine patient checkups (Kennedy, 2002). Policies and practices need to be followed as this typology is a government funded facility where legal information and obligations are contained. Surveillance and observation of patients is a primary task for healthcare workers to ensure safety for all users. The need for surveillance within the project is to monitor activities in public spaces of the facility, observing that all users are always safe. Relational security is the ratio of staff to patients, allowing trust, and relationships to be built between both entities (Kennedy, 2002). Relational security is required within the adolescent psychiatric facility as it reinforces the CPS model of patient-centred care. Environmental security is the design and maintenance of the building and fittings that the staff can operate and control (Kennedy, 2002). This notion of security is relevant to the practicum project by ensuring there is respect for patients through the design of a safe interior environment. All measures have been taken to provide a safe and secure environment for all users within the adolescent psychiatric facility. In psychiatric facilities, there is concern over ethics relating to the invasion of privacy, especially in procedural security and surveillance. However, all security requirements and procedures are in place for the best interest, safety, and treatment of the patient.
The notion of “suicide proofing” as stated by suicide prevention experts Dr. Rebecca Cardell, Dr. Paul Quinnett and Kevin Bratcher is crucial when designing a psychiatric facility, as mental health patients are at high risk for harming themselves and attempting suicide. Architectural features known as safeguards must be incorporated into the facility, which reduces suicide incidence and attempts (Cardell, Bratcher & Quinnett, 2009, p.36). The inclusion of these safeguards is critical in the design of a psychiatric facility to reduce patient self-harm. Within this section, safety requirements and design objectives related to procedural, relational and environmental security are highlighted, while allowing dignity, autonomy, and privacy for all users. To ensure a safe and secure environment, designers need to be aware of the types of fixtures and furnishings that should be included within a psychiatric facility that can not cause harm to both patients and staff. Section 3.2.4 Environmental Security and Suicide Prevention includes design decisions to ensure a safe interior is achieved for all users.

3.2.1 Procedural Security

Procedural security refers to the policies and practices needed to control the risk in psychiatric facilities such as risk management and routine patient checkups (Kennedy, 2002, p.434). Policies and practices must be followed as psychiatric hospitals are funded by the government, which means professional governance, risk management, crisis planning, and formalized assessments are occurring. Procedural security at a patient level relates to controlling and checking the movement and communication of patients (Kennedy, 2002, p.434). These processes can include regular room searches, monitoring patient possessions, controlling visits from an identified list of individuals and allowing communication with specific individuals. Cardell, Bratcher & Quinnett, state that “before allowing visitors to see patients, they need to be examined to make sure they aren’t bringing in anything harmful to hand off to the patient”
Therefore, a private space near the entrance of the building must be provided for security personnel to carry out searches on all visitors and their belongings when entering the facility. If a visitor’s belongings are excluded upon entry, a secure area such as a locker or safe should be provided to store the visitor’s belongings over the course of their visit. The visitor’s items will be returned to them once they leave the facility. It is essential to understand the policies and procedures within psychiatric environments, as functional requirements are critical contributors to the design of the facility. Searching patient rooms is also a policy in place to ensure a patient does not have access to items that can be used to self-harm. These items can include matches, lighters, nail clippers, shoelaces, mirrors, tweezers, plastic bags, scissors, knives, and guns. Grouping patient rooms in wings of the building allow for room checks to be completed efficiently and effectively (see Chapter 8.0 Spatial Concept and Design).

Much of the procedural security falls under the responsibility of administration. Administrative duties of procedural security can aid in the design of psychiatric facilities by reporting on procedures that have been successful or not. For example, if any violent incidents occur between patients, set guide lines and procedures must be followed to ensure these types of incidents can be controlled, monitored and the occurrence can be reduced in the future. Therefore, providing private staff work spaces and a security office can aid in the success and legitimacy of controlling and running the facility. Another procedural security responsibility within adolescent facilities is that parental guardian consent must occur at the time of admittance. Ethical issues that relate to invasions of privacy are less prominent in an adolescent psychiatric facility versus an adult psychiatric facility. This is due to teenage individuals being accustomed to following set rules, being monitored, and reporting back to parents or guardians.
within their everyday life. Overall, policies and procedures are to be established by administrators to provide safety for all patients and staff.

3.2.2 Surveillance

The surveillance and observation of patients is a primary task for healthcare workers to ensure safety for all users. Staff need to monitor activities in public spaces of the facility, to ensure all users are always safe. The most common form of surveillance is the use of security cameras, also known as CCTV’s (closed circuit television) (Stolovy, Melamed & Afek, 2015, p.74). The purpose of these cameras is to monitor and prevent suicidal or violent behaviour among patients. It is also used as a tool to review any clinical or security incidents that have occurred between patients, staff or visitors. To ensure these cameras are adequately operating, the lighting within the facility is just as important as the placement of the CCTV’s. There should be no dark corners where patients can hide where cameras are not able to visualize individuals. If there are areas of blinds spots in the floor plan, the use of CCTV’s become an essential tool to monitor these areas constantly. It is recommended that walls be painted with pastel colours to reduce glare and provide therapeutic and calming environments for residing patients (Cardell et al., 2009, p.41).

As CCTV’s have received positive responses, there is an issue that arises with the invasion of patient privacy, especially in bedrooms and washrooms. A potential solution is to create single occupancy washrooms in each patient wing, located outside of patient bedrooms (see chapter 8.0 Spatial Concept and Design). By locating these facilities near nurse’s stations, nurses and security guards can continuously monitor that one person goes to the washroom at one time. Each wing of the facility should be locked in the night hours, so patients can not wander outside of their living quarters if they need to access the washroom. Locating washrooms
outside patient rooms has the added benefit that patients can not stay in their rooms for the entire day, encouraging interaction with others in the wing.

Panopticism is a social theory developed by French philosopher, Michael Foucault (Curtis et al., 2013, p.202). The Panopticon model was originally utilized in circular prison buildings where an observation tower was in the centre of the space, and cells were positioned along the perimeter walls. This design technique is focused on power, control and dominance (Piro, 2008, p.30). Ultimately, the theory highlights that the dominants (healthcare staff) have power over subordinates (adolescent psychiatric patients), which is now known in contemporary architecture as a negative technique. However, it can be noted as a successful way to ensure surveillance and observation are present within spaces that require high levels of security. Foucault defines the panopticon model as having surveillance over an “enclosed, segmented space, observed at every point, in which individuals are inserted in a fixed place, in which the slightest movements are supervised, in which all events are recorded” (Foucault, 1995, p. 197). Incorporating this design technique within a floor plan is needed within the design of a psychiatric facility, as healthcare staff must always monitor patients to ensure users are safe from themselves, as well as others. Nurses stations must be centrally located near patient bedrooms and washrooms. Unobstructed views to these spaces allow nurses to monitor the movement of patients throughout all hours of the day. The design of the floor plan is targeted to enhance direct visual contact for patients and nurses to ensure safety within the interior for all users, without appearing intuitional or oppressive. The design incorporates the panopticon, but uses supportive design techniques, contrasting the notion and spatial layout of this model (see section 8.3 Design Product).
On the surface, this design configuration allows direct observation, which would seem optimal for a psychiatric facility. However, it causes concerns among patients by amplifying the feeling of helplessness and vulnerability. From a patient’s perspective, Berg, Rørtveit & Aase state that “under constant observation, patients struggle to feel safe from themselves and their invasive suicidal impulses” (2017, p.9). Therefore, using a balanced approach of Panopticism and the presence of CCTV’s allows patients to feel safe from their own suicidal impulses while being observed, causing decreased instances of self-harm and suicidal attempts. Overall, safety and security for all users in the facility requires a design that is considered safe from the perspective of both the adolescent patients and staff.

3.2.3 Relational Security

Security includes both physical safety and psychological safety within an environment. Berg, Rørtveit, and Aase outline three themes of relational security, allowing for connections with healthcare professionals in the environment: (1) meeting someone who cares (2) receiving confirmation of feelings and (3) being acknowledged as a human being (Berg et al., 2017, p.2). These themes represent patient perspectives regarding the safety of themselves and their connection with healthcare professionals, as well as fellow patients within the psychiatric environment. First, meeting someone who cares relates to the interpersonal interactions of being physically and emotionally cared by another human being. When another person cares for an individual by providing basic human needs in an unfamiliar environment, this creates a level of trust between both parties. Examples of these human needs are body contact, fresh air, food, hygiene, and sleep (Berg et al., 2017, p.8). This element of relational security is most commonly shared between a healthcare professional and a patient who is new to the environment. The second theme, receiving confirmation of feelings, is having someone to listen, understand and
support a patient’s situation in an unfamiliar setting. Not only is this confirmation of feelings relevant to healthcare professionals, but with other patients as well. When two individuals are going through difficult situations at the same time, confiding in one another can provide a deeper understand and bond between both people. Specifically, in adolescence, peers influence each other’s sense of identity and become a vital relationship in an adolescent’s life. This communication and exchange with peers provides teens with the opportunity to develop social relationships, even in an unfamiliar healthcare setting. Finally, being acknowledged as a human being is something every person wants to feel, regardless of having a mental disorder or not (Berg et al., 2017, p.8). Being acknowledged as a human refers to a patient not feeling judged, known as a number, or as an object. To provide patients with relational security in this theme, providers should acknowledge patients as equals. Relational security is the most important security principle in psychiatric facilities. It results in achieving psychological safety by decreasing the ratio of staff to patients, allowing trust, and relationships to be built between both entities (Kennedy, 2002, p.434). Relational security reinforces the CPS model of patient-centered care and well being of patient communication with others. Face to face communication between staff and patients is essential for mental health treatment. Designing spaces allowing for one-on-one conversation in a comfortable environment help to satisfy relational safety needs of patients and staff.

Figure 2: Nemours Children’s Hospital. https://perkinswill.com/work/nemours-childrens-hospital.html
As levels of sensitivity vary between patients, multiple levels of private and semi-private spaces need to be considered. Visually disconnected spaces within open lounge areas allow for private conversations between patients and can be explored within the design. Smaller sized rooms that are comfortable while using pastel tones, daylighting and relaxed furniture can allow both a physical and psychological safe space for communication and sharing.

There are other spaces within a psychiatric facility that require staff to monitor patients through surveillance. One of these spaces is the outdoor yard where a staff member must always accompany patients. Creating a space that has an unsaid trust between patients and staff would not only improve relational security for patients but their overall well-being. The design of an indoor/outdoor space where patients have access without accompaniment is an opportunity in the design to encourage relational security. Instead of having a health care personnel open a locked door and monitor patients, views can be designed from the nurse's station allowing freedom for patients to access the outdoors on their own. By using a pass card technology system for these types of transitional spaces, patients can be granted freedom while being kept track of through technology that goes back to staff monitoring surveillance. The perimeter security surrounding the facility would need to be securely designed so patients can not easily leave the grounds, or self harm. Overall, building trust between patients, staff and peers and essential psychological safety of all individuals can be implemented (throughout the design) through environmental features, creating therapeutic and trusting environments, in a non-intrusive way.
3.2.4 Environmental Security and Suicide Prevention

Environmental security is the design, maintenance, and fittings of the building that the staff can operate and control (Kennedy, 2002, p.434). This notion of security ensures there is respect for patients through the design of a safe interior environment. Patients feel safer when their environment is safe as well. Therefore, incorporating environmental safeguards within the facility is crucial to the physical and psychological well being of patients and staff. Research has shown that 50-60% of patients who have been admitted into psychiatric facilities is because they have attempted suicide (Cardell et al., 2009, p.37). As defined by Cardell, Bratcher and Quinnett “environmental safeguards are structural features in inpatient facilities that limit the means to which one can commit suicide” (2009, p.37). Safeguards include non-breakable secure windows, breakaway shower rods, the absence of clothes hangers, railings in washrooms and bedrooms, and covering exposed pipes, grills, and screens (Cardell et al., 2009, p.37).

75% of suicides in an inpatient psychiatric facility occur in washrooms, bedrooms or closets (Cardell et al., 2009, p.37). Therefore, particular attention must be brought into the design details within these spaces. The most common form of suicide is from hanging by tying bedsheets, clothes or towels to protruding elements in patient bedrooms or washrooms (Cardell et al., 2009, p.39). Due to this, fixtures and structural elements must be designed that cannot support the weight of a human body, or they must be flush with the wall. Such items that can be included in a washroom design are breakaway shower rods, clothes hooks, curtain rods, and railings. Smaller details such as recessed soap dispensers, tissue holders and outlets flush along the wall should also be included. Bathtubs are typically not permitted, as small amounts of water are enough to drown in. Instead, showers containing flat or slanted shower heads should be installed. It is essential that washrooms are designed with the utmost attention to detail as CCTV
security cameras are not permitted to be in these private spaces. The design and detailing of the space must provide suicide prevention.

   Bedrooms are a space where patients desire a private environment to call their own. Within this private setting, environmental safeguards must be incorporated, especially when CCTV’s are not included in these areas. Procedures such as patient bedroom checks can fulfill the requirements to ensure patients are safe and secure within their own space. Appropriate fixtures and furnishings that can not cause harm to the patient should be incorporated into the design of all patient bedrooms. Bedrails should be avoided in the design of these spaces, as patients could hang themselves from this interior element. Fixtures and equipment must be recessed within the application of patient bedrooms just as in the washrooms and include outlets, door hinges, doorknobs, light fixtures, vents, ducts, pipes and sprinkler heads (Cardell et al., 2009, p.40). As well, specific personal items can not be permitted into patient bedrooms such as suspenders, belts, shoestrings, bathrobes, ties, cords, wires and stockings as patients can asphyxiate themselves with these products. As adolescents are so dependant on technology, such as their telephones and portable music devices, these cords and wires cause an added danger to the patient. Wires and cords of any type must not be left with patients. This means patients can not charge their devices in their own space. Alternatively, charging stations can be included in a closed off staff area where patients can not access. This room would house all USB cords, wires and charging mechanisms for telephones, mp3 players, etc.

   Although the need for environmental safeguards in bedrooms and washrooms are more important due to the lack of CCTV’s in these spaces, the interior public areas such as the lounges, dining spaces and activity rooms also need to be suicide-proof (Cardell et al., 2009, p.41). The application of non-breakable glass is essential for the safety of patients and staff
within all areas of the facility. If a patient becomes violent and tries to break an interior curtain wall or windows, non-breakable glass provides safety for all individuals involved in the incident (Cardell et al., 2009, p.41). All doors should open outwards or in both directions to prevent patients from barricading themselves within a room. These doors should not just be included in patient bedrooms, but all spaces in the facility. As jumping from vast heights is another common way of suicide, the building choice for the adolescent psychiatric facility should be a single-story so that stairwells and elevator shafts are not included in the building. Ingestible chemicals such as cleaning equipment in janitor closets and prescription drugs in medical closets must be locked away and out of reach for patients as they could become poisoned or overdose on these solvents and medicines. Ideally, the location for janitor closets would be in the basement, and medical cabinets kept private behind locked doors of a nurse’s station. Finally, when semi-private closed off rooms such as visitor areas, shared therapy spaces, and classrooms are not being used, they must always be locked (Cardell et al., 2009, p.41). This is to ensure patients do not hide in rooms that are not entirely suicide proofed without a healthcare staff present. When considering design fixtures and equipment such as safeguards, some manufacturers contain suicide resistant building products such as Securing Hospitals, Cape Cod Systems, Norva Plastics and Securing Cosmos. These companies carry products that are designated as environmental safeguards and include furniture, drapes, curtains, bedding, plumbing accessories, doors, hardware, mirrors, grab bars, outlets, and hooks. Products from these manufacturers should be considered in the design of the adolescent psychiatric facility to ensure the facility is environmentally safe and secure for all users. Safety and security are a primary focus and challenge in the design of a psychiatric facility. Kennedy’s four principles of procedural security, surveillance, relational security and environmental security are essential to follow when considering a design of the proposed
adolescent psychiatric facility in Winnipeg. Not only are these security guidelines necessary for the safety of residing patients, but also for the overall well-being of visitors and staff.
4.0 Environmental Behaviour Literature Review

4.1 Place-Identity

Space and place are two distinct concepts but require each other for their own definition. Space is an abstract term that has no significant meaning; it is the objective and physical setting humans occupy. Place is subjective and can be described as a meaningful environment, which combines the physical location, social locale, and conceptual sense an individual has with an environment (Cresswell, 2013, p.2). Place can be associated with ownership, geography, activities, rituals, and experiences to understand the world in spatial terms (Cresswell, 2013, p.2).

As an architectural space is experienced, perceived and appreciated by an individual, place becomes an intimate environment, which exhibits human identity (Noormohammadi, 2012, p.22). The theory of Place-identity is how humans, both consciously and unconsciously, accept and acknowledge lived space as part of their own personal and communal identity (Seamon, 2012, p.13). People feel they belong to a place by recognizing part of themselves within a space. Proshansky states that “the subjective sense of self is defined and expressed by relationships with others, but also by relationships to physical settings” (1983, p.58). Therefore, place-identity affects architectural space and place considerably as it is a physical extension of an individual’s self-identity. Particular sites have a single uniformity of identity, which can be noted within the typology of psychiatric facilities (Cresswell, 2013, p.72). Using personalization and identity-driven solutions, this uniformity can be broken within the physical interior environment of a space, allowing individuals to have separate identities and a place they can call their own. Ultimately, once an individual can accept and distinguish their own self, their character is brought forward through the architecture and design of the interior. Place-identity can be
achieved within the physical environment by how individuals engage, experience and interpret space, forming attachments and connections within the environment.

Unfortunately, mental illness is likely to affect the thoughts, feelings, and actions of an individual and can often lead to a distortion of the afflicted person’s self-identity. In adolescent patients, defining one’s self-identity is an important step in the process of healthy development (see section 2.1 Normal Development). In the context of an adolescent psychiatric facility, individuals are faced with the task of sorting through issues pertaining to the notion of self. It is imperative that consideration is given to the environmental psychology behind the design of the interior spaces of such facilities. The conception of the design should be targeted at providing a space that is supportive to the development of a healthy self-identity. Identity is influenced through the external interactions a patient has with personalized objects within the design of a lived space. The notions of home and dwelling are highlighted in relation to the concept of place-identity, as they are critical to understanding the connection between self-identity and an unfamiliar environment. Human geographer Tim Cresswell addresses three environmental characteristics allow the notion of place-identity to be created and considered significant. He discusses that the production of places must include places of memory, places for identity and places to live that incorporate the notion of home (Cresswell, 2013, p.82). It can be noted that the emotional connection to a place is dependant on the inhabitant and use of the physical space. Places only genuinely exist and become intensified when humans become involved in the experience of space. Therefore, through phenomenological individualization, physical spaces are transformed into meaningful places through actions, activities, and experiences.
4.1.1 Designing to Support Mental Health

In the context of a psychiatric inpatient facility, individuals are faced with the task of sorting through issues pertaining to the notion of self. It is imperative that consideration is given to the environmental psychology behind the design of interior spaces of such facilities. The notions of home and dwelling are highlighted in relation to the concept of place-identity, as they are critical to understand the connection between self-identity and an unfamiliar environment. As well, incorporating personalization and choice within the interior is focused on patient psychosocial and psychological well-being, where options of control are associated with comfort and identity (Chrysikou, 2014, p.53). Increasing the comfort of a lived space can increase an adolescent patient’s feelings of self-control while also weakening the association between the physical space and thoughts of illness and dysfunction.

The more a space feels familiar, the stronger an identity can be associated with that place. Humans tend to be repetitive in nature, and identify strongest with known, designated areas (Seamon, 2012, p.17). One of the most significant places regarding issues of self-identity is the home (Proshansky et al., 1983, p.60). A dwelling is a self-contained unit of accommodation where the inhabitant has total control over the design and activities that occur in that space. The notion of dwelling and the associated notion of home are at the center of all human activity (Cresswell, 2013, p.110). A dwelling is the place in which we exist and psychologically develop our world view and individuality. The home influences a person’s behaviours, emotions and mental health, which can trigger self-reflection and identity. It provides a sense of comfort and familiarity, allowing one to express themselves freely as every day builds upon memories of the days prior. Dak Kopec is an environmental psychologist who argues that “design should serve to
minimize the institutional feel of healthcare environments and maximize feelings of hominess” (2006, p.223).

For the purposes of a psychiatric facility, it is important the design incorporates the comfort of home, yet minimizes the familiarity associated with all aspects of the home. As many individuals are coming to the psychiatric facility from previous homes where dysfunction, discord, and illness were prevalent, it is crucial the interior design does not evoke certain feelings of that home. If so, this might serve to trigger negative thoughts and emotions stemming from past trauma. The goal of the design is to ensure that comfort is reminiscent of a home setting, while also remaining unfamiliar to prior dwellings. The design must be psychologically significant in its ability to evoke feelings of comfort, safety and care while not imparting upon the adolescent patient’s familiar feelings associated with the places they have come from.

The interior design of a patient’s bedroom can facilitate a sense of personalization and choice; both important aspects when attempting to achieve place-identity and individual representation. By incorporating personalization and choice into the design for personal living spaces, a patient’s psychosocial and psychological well-being are given consideration as options of control are associated with comfort (Chrysikou, 2014, p.53). Personal objects brought into the space such as posters, colours, photographs, trophies, etc., can aid in the transition of a patient and their notion of identity as these objects reflect personal choice, ultimately transforming the space into a meaningful place. Inclusion of a store within the floor plan of the psychiatric facility is a unique addition to consider in embracing personalization and choice for patients. Offering various products to adolescent patients would allow them the opportunity to personalize their living space to suit their taste and preferences. This may lead to an increase in comfort within the living space as it becomes specifically tailored to represent the individual who dwells within it.
Objects available for purchase in the store would need to be selected carefully, with consideration given to safety and appropriateness. By allowing the patients opportunities to personalize their living quarters via the choices provided to them, an environment fostering the development of place-identity may naturally follow. Overall, these notions of personalization and choice can ultimately smooth the often-difficult transitional process into the adolescent psychiatric facility, creating an environment where each patient feels a sense of place-identity and comfort.
4.2 Theory of Supportive Design

Research has shown conventional healthcare design can lead to anxiety, delirium, and elevated blood pressure (Ulrich, 1991, p.97). As traditional healthcare facilities are functionally effective, they pose stressors and adverse psychological effects on patients. Ultimately, these traditional healthcare designs do not suit the well-being and needs of all users including patients, staff, and visitors (Ulrich, 1991, p.97). Behavioural scientist Roger Ulrich has generated a theory of Supportive Design, which responds to factors that can decrease high-stress levels that are present in patients residing in healthcare facilities. Supportive Design explores how healthcare facilities can be designed to promote wellness and reduce physical, psychological and behavioural stress for all users (Ulrich, 1991, p.98).

The term “supportive” in relation to environmental design refers to characteristics that support or facilitate coping and restoration to stress, which accompanies illness (Ulrich, 2014, p.53). Specifically, the illness in context for this project falls under mental health and is classified as depression, anxiety, and suicide. By including restorative and buffering effects that inhibit stress, supportively designed environments can foster gains in patient health. (Ulrich, 2014, p.54). Supportive design, in general, is to be implemented within healthcare facilities to promote well being by calming patients, reducing stress, strengthen coping resources and healthy processes. Both direct and indirect indoor environmental factors can influence wellness and stress levels within psychiatric facilities by eliminating healthcare characteristics that cause negative stressors to patients. Ulrich defines three distinct categories within healthcare settings that promote well-being to individuals, while reducing stress within the built environment: (1) Providing a sense of control for patients within the space, (2) allowing patients to experience social support from staff, fellow patients, family and friends, and (3) having patients exposed to
positive distractions within their physical environment (Ulrich, 2014, p.54). Overall, to achieve supportive design within a psychiatric environment, designers must promote wellness by creating physical surroundings that are psychologically supportive for all users.

4.2.1 Stress

Stress is the starting point when understanding the theory of supportive design. Most patients residing in healthcare-related settings experience high levels of stress in these unfamiliar and uncomfortable environments (Ulrich, 1991, p.98). As stated by Andrade and Devlin “stress is conceptualized as a relationship between a person and the environment that is appraised by the person as taxing or exceeding his or her resources or endangering well-being” (2015, p.125). In general, uncertainty, hopelessness, and pain can cause certain stress on an individual suffering from an illness (Andrade, 2015, p.125). Stress can become evident within patients as worries build up relating to the family at home, and disruption of everyday life (Andrade, 2015, p.126). Finally, physical and social environments of healthcare facilities can be unsupportive of patient well-being if they contain features that are themselves, stressors.

Two significant causes of stress within healthcare environments are: (1) a patient having reduced physical capabilities and (2) environments that are noisy, invade privacy, or provide little social support (Ulrich 1991, p.98). In the context of a psychiatric facility, these two stressors can be seen in patients that have a mental illness such as depression, anxiety, and suicidal thoughts. Although these psychiatric patients are not suffering from physical health problems, the lack of motivation or desire to move from their private space into social areas with others can be classified as a type of physical inability caused by mental illness. These inabilitys relate to the physical functioning, mobility and stamina that affects daily living such as the inability to move, sleep, eat or socialize due to depression, anxiety, and fatigue. As well, when
living in a facility with many other patients for an extended and sometimes unknown period, the physical environment can become noisy and public with group activities, group therapy, and meal times. Some individuals who prefer more private spaces and alone time can perceive this social interaction as uncomfortable and stressful. Although private individuals prefer time to themselves, isolation within a psychiatric facility can also cause heightened levels of stress. Overall, a patient having reduced physical capabilities and environments that are noisy, invade privacy, or provide little social support are brought on by the physical environment, producing negative psychological, physiological and behavioural factors that impact wellness and inhibit healing in a psychiatric facility.

Within psychiatric facilities where many patients are suffering from depression and anxiety, additional mental stress could cause psychological and physiological symptoms to be elevated and prolonged. Physiological symptoms of stress include increased blood pressure, muscle tension, and high levels of stress hormones, which are treated using medications (Ulrich, 1991, p.98.) As patients are already consuming many medications for their prescribed illness, additional medications to alleviate these physical stressors would be an added hassle for any patient, especially one that is underage. Psychological symptoms of stress can be displayed through verbal outbursts, social withdrawal, passivity, sleeplessness, and not complying with medication (Ulrich, 1991, p.98). As the targeted age group for the proposed psychiatric facility is adolescence, this developing time in these individuals lives already inhibits behaviour problems. Therefore, it is imperative that behavioural stressors are prevented by incorporating supportive design techniques including: (1) a sense of control, (2) access to social support, and (3) providing positive distractions within the environment (Ulrich, 1991, p.99). As Ulrich suggests in his theory, supportive design must be created for all users of the space. Therefore, it is significant to
note that stress does not only affect patients but also for healthcare professionals, support staff and visitors. Stress for these users is associated with low levels of job satisfaction and high turnover rates (Ulrich, 1991, p.98). When considering the design of the space, staff rooms and private family areas must incorporate supportive design techniques as well. Ulrich’s theory of supportive design can be implemented to find a balance between these personal and physical stressors for all users within psychiatric environments,

4.2.2 Sense of Control

Providing patients with a sense of control within their physical environment is the first notion included in Ulrich’s theory of supportive design. The term control is defined as the power to influence or direct people’s behaviour or course of events (“Definition of Control,” 2018). Individuals have a strong need for control and self-efficacy. Therefore, loss of control becomes a major problem for medical patients as they are residing and being treated in an unfamiliar environment (Ulrich, 2014, p.54). Environmental situations that were once controllable for patients in their own home are now uncontrollable. This produces stressful and negative outcomes on these individuals. Personal attributes that cause loss of control within a healthcare setting include unavoidable medical procedures such as therapy sessions, lack of information provided to the patient, and loss of control over eating and sleeping schedules (Ulrich, 2014, p.54). Lack of control can also affect an individual’s physical environment through noise, privacy and wayfinding difficulties. Adolescent individuals are admitted to psychiatric institutions through the decisions and care of their parents, guardians and healthcare professionals. This means that not all teens are willing to reside and participate in treatment for their mental health disorder. It is proven that people who have more control over their situations and experiences deal better with stress than those who lack control (Ulrich, 2014, 54). Therefore,
Ulrich states that “if an individual has a sense of control with respect to a potential stressor, the negative effects of the stressor are reduced or eliminated” (1991, p.100). If elements within the design of a psychiatric facility can allow patients to have personal control over physical attributes, this ultimately provides positive outcomes and wellness to these individuals.

Allowing individuals to control some aspects within their physical environment ultimately reduce stress levels and improve wellness. However, this is a challenge in psychiatric environments due to patient safety. As patients are mentally unstable and are at risk of self-harm and suicide, controllable characteristics in the environment need to be safe and secure, posing no dangers that would injure patients, staff or visitors. Personal control is related to individual preference and choice. Therefore, most design features within the interior that foster a sense of control for patients are in patient rooms. Four types of control can be achieved: (1) lighting, (2) music, (3) temperature and (4) privacy. First, the control of lighting within patient bedrooms can enhance patient control over their environment (Ulrich, 2014, p.54) This can be designed within a facility through dimmer switches in each patient room, as well as task lighting at bedside tables. Secondly, personal choice of music within patient rooms also allows individuality to be brought into the facility (Ulrich, 2014, p.54). Incorporating a built-in sound system tailored to each room would encourage personal control, without the need for headphones with wires. The system must be accessible through blue tooth command via personal electronic devices such as cell phones or mp3 players. Eliminating headphones and earbuds is crucial to the safety of patients and staff as wires from these electronics can be used as a choking device when wrapped around one’s neck. With the inclusion of music within the space, the ability to control sound becomes vital through acoustic qualities. Introducing acoustic solutions throughout the design of the facility is essential to the well-being of residing patients. Thirdly, temperature control within
a patient room can foster wellness and personal control (Ulrich, 2014, p.54). Allowing each patient to control the heat or air conditioning within their room can provide comfort for all users. As well, controlling the amount of daylight and heat entering a room should be considered by including window films and window coverings into each patient room. This can allow for controllable shading to avoid hot spots caused by direct sunlight within the space. Motorized window coverings that use a control can be incorporated to ensure no strings or curtain rods are visible to cause self harm. In more public areas of the facility, this can also be included to foster personal control over thermal comfort such as in the dining area, library, lounge, and individual therapy rooms.

Finally, one of the main ways to ensure personal control within any environment is to enable privacy. Too much privacy can lead to isolation, and too little privacy causes crowding. Crowding is the perception that there are too many people in a situation, where isolation is being alone and isolated from others. Both crowding, and isolation can lead to psychological distress such as withdrawal and stress (Stewart-Pollack & Menconi, 2005). Therefore, establishing various levels of privacy within a healthcare environment is crucial to limit the development of both crowding and isolation. Privacy enables physical and psychological restoration for multiple reasons: it is an indication of choice and control, can encourage recovery from stress, and provide positive social interaction with others.

Within healthcare environments, patient control over privacy is often absent. Control over privacy within a psychiatric environment is difficult to achieve as staff need to monitor patients on a 24-hour basis for safety reasons. The physical environment plays a fundamental role in whether the desired levels of privacy for patients can be achieved. This is mainly achieved through visual privacy. This is where staff can see patients, but patients can not see
staff. Designing appropriate sight lines from a central nurse’s station to patient areas in the facility should be considered to allow patients the ability to sense they are not constantly overwatched. Patients can feel they are controlling their own privacy when their bedroom door is closed, or they want time to themselves. Patient bedroom doors can be closed, but not locked. Each door in the facility that a patient has access to should consist of a full swing door. These doors are essential in the privacy and safety for patients and staff as individuals can not barricade themselves within closed spaces. As well, installing a non-intrusive surveillance system can aid in visual privacy.

4.2.3 Social Support

Social support is the second notion part of Ulrich’s theory of supportive design and is proven to reduce stress and improve wellness. Research has shown that individuals who receive high social support from family and friends who are helpful and caring, experience fewer levels of stress and higher levels of wellness (Ulrich, 1991, p.101). Therefore, ways to improve and foster social support must be designed within healthcare environments. An interior designer’s role within this factor of supportive design could be focused on: (1) furniture arrangements to foster conversation, (2) floor plan layouts affecting levels of social interaction with other patients, and (3) including areas for visitation for family and friends. These three elements that fostering social support can be found within the proposed design of the adolescent psychiatric facility.

Firstly, furniture arrangements such as chairs arranged side by side along walls or a room encourage individuals to partake in conversation. However, people become sensitive when other individuals intrude their personal space. Therefore, flexible furniture arrangements allow people to control where they can sit and enables personal control, freedom and social interaction within
the environment (Ulrich, Borgen & Lundin, 2012, p.5). Next, the floor plan and layout of the facility can affect levels of social interaction among patients (Ulrich, 1991, p.101). Public gathering spaces such as shared spaces, the dining area, classrooms, outdoor spaces, and group therapy areas provide opportunities for patients to interact with one another and develop relationships. Adolescents feel exposed when trying to take a step to make friends as they are already in a vulnerable situation, being in an unfamiliar environment (Ulrich, 1991, p.101).

Designing the floor plan to ensure that these areas have elements of private spaces, yet still feel open, encourage safe and confident social interaction. Positioning staff stations near patient public areas with large windows for observation also help staff to participate in communicating with patients and forming supportive relationships. Visitation from family and friends is crucial in the treatment and recovery of patients. Therefore, appropriate areas need to be designed to ensure positive visits for both patients and visitors. Flexibility and comfort are key in providing prosperous visiting areas in healthcare environments (Ulrich, 1991, p.101). Thus, movable and upholstered furniture is imperative to include within visitation spaces. Providing convenient overnight accommodation for families visiting from locations outside the city can also offer social support. Families are more likely to come into the city to visit if they have a place they can stay (Ulrich, 1991, p.101). A family wing can be incorporated within the design, where multiple families can support one another, and retreat when not visiting with their youth. This housing area can also double as a visitation area where patients can meet with their families in a private and comfortable setting.
4.2.4 Positive Distractions within the Environment

Providing positive distractions for patients within the physical environment is the final concept that completes the theory of supportive design. These positive distractions focus on environmental psychology where a balance of both high and low stimulation of interior elements must be reached (Ulrich, 1991, p.102). If stimulation becomes too high from intense sounds, bright lights, and bright colours, this can lead to stress within the interior environment. When stimulation reaches severely low levels, boredom begins to develop. With this boredom, patients begin to focus on their own worries as they have nothing to distract them from their negative thoughts. Therefore, to reduce stress and promote wellness, positive stimulation and distractions must be at a moderate level. Elements brought in to encourage positive distractions must hold patient’s attention and interest, thus bringing forward positive feelings. Design considerations that can be applied to the adolescent psychiatric facility focus on happy laughing and caring faces, animals, and nature (Ulrich, 1991, p.102). When people are happy, others become happy; happiness is contagious. Therefore, joy should be brought into the interior through both artistic elements and happy people. The inclusion of elements of nature within the physical environment is known to be the most effective stress reduction strategy as it elicits positive feelings, reduces negative emotions such as fear, anger, sadness and stressful thoughts (Ulrich, 1991, p.102).

4.2.5 Attention Restoration Theory

Out of the three positive distractions that were previously mentioned, nature is the most crucial element that can be incorporated into a design to promote wellness. Environmental psychologist Steven Kaplan states that “experiences in natural environments can not only help mitigate stress; it can also prevent it through aiding in the recovery of this natural resource” (1995, p.180). This notion is referred to as Attention Restoration Theory (ART), where Kaplan
believes that nature not only relieves stress, but also heals it. ART provides an analysis of the kinds of environments that lead to improvements in directed attention abilities. As nature is filled with intriguing stimuli that grabs attention, elements of nature can be brought into the design of an interior space through involuntary and directed attention (Berman, Jonides & Kaplan, 2008, p. 1207). ART places importance on nature, specifically trees, water, and other natural elements to promote restoration based on evolutionary assumptions.

4.2.6 Biophilic Design

Biophilic design is the notion of incorporating nature, or representations of nature in the design of an interior space and can play a key role in creating environments that not only support their intended purpose but promote the mental and physical well being of their occupants. Mental benefits of biophilic design are increased satisfaction and motivation, less stress and anxiety, improved problem solving and creativity (Kellert & Calabreses, 2015, p.8). Theorist and research scholar, Stephen Kellert, translated biophilia and ART into a framework of biophilic design. The integration of biophilic design with architectural solutions allows for repeated and sustained engagement with nature, providing benefits for all users within the facility. Biophilic design consists of three characteristics that incorporate nature within an interior environment: (1) natural elements (2) natural attributes and (3) spatial relationships. These biophilic design qualities are experienced through a variety of human senses such as sight, sound, touch, smell, taste and movement. By incorporating multiple forms of nature within the design from the three categories of biophilic design, an increased sense of well being and mental health should be evident in patients and staff residing and working in this psychiatric environment.

First, natural elements are the literal objects and direct experiences of nature. This characteristic of biophilic design consists of incorporating water, animals, daylight, air, and
vegetation within the design of an interior (Kellert & Calabreses, 2015, p.10). Water is essential to life and can provide positive experiences by relieving stress, promoting satisfaction and enhancing health performance. Fountains, aquariums, and constructed indoor wetlands can be introduced into an interior to provide these benefits of biophilic design. Natural light is fundamental to human health and well being. By utilizing clerestory windows, glass walls, skylights and reflecting colours and materials, the health benefits of this natural element should come into the space. As humans spend 90% of their time indoors, proper air ventilation is crucial to human comfort and productivity. Natural ventilation, air flow, temperature and humidity can be controlled through operable windows and technologies to ensure successful air ventilation is provided within the interior. Finally, incorporating vegetation is the most successful strategy for bringing the direct experience of nature into the built environment (Kellert & Calabreses, 2015, p.13). Plants in rooms and rooftop gardens in hospitals has been proven to improve patients’ psychological response to treatment, with lower levels of pain, anxiety and fatigue (Totafori, 2018, p.5).

Second, natural attributes relate to symbolic and indirect experiences of nature. Representations of nature should be brought into the interior of a healthcare environment to aid in sustained attention and improve wellness. Examples of these symbolic attributes of nature include images of nature, natural materials, natural colours, and naturalistic shapes, forms and geometries (Kellert & Calabreses, 2015, p.10). Images of nature can be included within an interior through artwork that represents plants, landscapes, and water in photographs, paintings, sculpture and computer simulations. These images should be repeated and abundant throughout the space. Viewing nature can be incorporated by including multiple windows and skylights to let in ample daylight. This is especially important for psychiatric facilities, as studies have shown
that lack of windows results in sensory deprivation and can result in elevated levels of psychosis for mental health patients residing in inpatient care (Ulrich, 1991, p.101). It is not just about having a window to look out into the sky, but to incorporate and design views that reach out to trees, water, and the open air as these are the main elements that aid in the reduction of stress in nature. Several studies have also demonstrated using natural materials improves the patients’ perception of environmental quality and their recovery from illness. This is because natural materials enhance visual comfort (as they absorb more light than they reflect), and have positive effects on olfactory comfort, creativity, overall health and the immune system (Totaforti, 2018, p.6). Examples of natural materials that provide biophilic characteristics and should be included within the interior are wood, stone, wool, cotton, and leather used in products, finishes, furnishing, and fabrics. Along with natural materials, natural colours should also be included within the built environment. Muted earth tones representing soil, rock, and plants as well as bright colours referencing flowers, sun, and plants should be utilized within the design. Effectively using these colours can be a challenge to ensure aesthetics and balance are also achieved. Finally, naturalistic shapes, forms and geometries should be commonly found within the built environment. For example, fractals are a geometric form often encountered in the natural world and instigate a reduction of stress levels due to the stimulation of opioid receptors, which are responsible for pleasure (Totaforti, 2018, p.6). Using this pattern in an interior encompasses biophilic design qualities of sinuous rather than rigid artificial geometries. *Figure 3* shows a wall designed at a women’s prison that combines the aesthetics of fractal patterns as
well as ensuring safety for inmates. Research suggests that both direct and indirect experiences with nature have greater protentional for stress reduction (Kahn, et al., 2008).

Finally, spatial relationships describe features and experiences of the natural environment that are incorporated within an interior. It is the way humans respond psychologically and physiologically to different spatial configurations. Aesthetic reactions to architecture are inborn within humans, so we can not stray too far from nature (Söderlund & Newman, 2017, p.761). Therefore, humans must recreate primitive connections with nature to experience and maintain personal well being. Geographer Jay Appleton designed the prospect and refugee theory. This theory suggests that individuals feel good when they are safe in a place of refuge and enhanced when they have a window overlooking life and happenings around them. An example of this theory that can be found in nature is a cave. A cave is a place of safety, having four solid walls built up around an individual, protecting them from any predators, yet able to look out onto the savannah through openings to the natural environment. In the built environment, an example of

Figure 3: Fractal Fence https://journals.sagepub.com/doi/abs/10.1177/0032885517734516
this can be found at Paley Park, a downtown park in New York City (see Figure 4). It provides a sense of refuge while allowing a view of the street. By including trees overhead, vegetation along the walls, and a water wall, the space is transformed into a pleasant environment and biophilic experience. Spaces such as this can be introduced within an interior of a healthcare environment, specifically psychiatric facilities. Prospect and refugee are more appealing and successful when combined, however can still be beneficial on their own (Söderlund & Newman, 2017, p.761).

Overall, Ulrich’s theory of supportive design along with Kellert’s characteristics of biophilic design can be incorporated into an adolescent psychiatric facility to promote wellness and reduce stress for all parties involved including patients, staff, and visitors. Ultimately designers should encourage all elements of supportive design and biophilic design be combined to provide patients with the ability to choose, interact and be positively stimulated by incorporating nature within their physical environment throughout their treatment and recovery. Nature provides a moderate level of stimulation as it is a sensory experience involving sight, smell, and hearing. As both direct and indirect biophilic design elements are included within an
interior, each element contains sensory experiences. For example, hearing water, touching plants, smelling flowers and sensing movement of air moves us emotionally and intellectually, thus supporting our well-being within the built environment.

Table 3: Theories and their spatial implications

<table>
<thead>
<tr>
<th>Theory</th>
<th>Theorist</th>
<th>Idea</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety and security</td>
<td>Harry Kennedy, Sarah Curtis, Dr. Rebecca Cardell, Dr. Paul Quinnnett</td>
<td>Procedural security, surveillance, relational security, environmental security, suicide prevention.</td>
<td>Incorporate CCTV’s throughout the space and ensure they blend into the surrounding design. Ensure environmental safeguards are present throughout the design.</td>
</tr>
<tr>
<td>Place-Identity</td>
<td>Yi-Fu Tuan, Harold Proshansky, David Seamon, Tim Creswell, Evangela Chrysikou</td>
<td>Personalization and choice, dwelling, self-identity.</td>
<td>Create an environment allowing individuals to feel comfortable and welcome by providing areas of choice and personalization in their own spaces, such as patient bedrooms.</td>
</tr>
<tr>
<td>Supportive Design</td>
<td>Roger Ulrich, Claudia Andrade and Ann Devlin</td>
<td>Using sense of control, social support and positive distractions in a healthcare environment, stress can be reduced, and well-being can be improved.</td>
<td>Provide areas of flexibility within the floor plan for opportunities of personal control and social interactions.</td>
</tr>
<tr>
<td>Biophilic Design</td>
<td>Stephen Kellert, Simona Totafori, Jana Soderlund and Peter Newman</td>
<td>Humans have a love for nature and life. Extend this physical nature through plants and views of nature.</td>
<td>Blur the lines between inside and outside. Feature physical nature and spatial notions of nature in the built environment.</td>
</tr>
</tbody>
</table>
Figure 3: Graphic of Uri Bronfenbrenner’s Ecological Systems Theory

Figure 5: Theoretical Framework. The theoretical framework is a visual representation of the connection between ideas and theories that have been highlighted throughout this practicum project.
5.0 Example Designs of Mental Health Facilities for Adolescent Youth

A precedent analysis refers to a representation of the knowledge about a past design in a form that makes it applicable in new and similar design situations. The goal of analyzing the following precedents is to inform the design of the current adolescent care facility. Each case is an example of a healthcare or psychiatric inpatient facility for adolescents that embody concepts discussed in the previous section 4.0 Environmental Behaviour Literature Review. There are three precedents highlighted here: (1) The Trillium Secure Adolescent Inpatient Facility, (2) Kelowna Adolescent Psychiatric Unit and (3) The Caring Cabin. The Trillium is focused on patient-centered care, helping teens transition back into the community and home life. It is a hybrid of a residential and mental health facility. The Kelowna Adolescent Psychiatric Unit is an example of a facility designed to supportive collaborative problem solving with interior details related to operation and procedures. This facility is located within a hospital. The Caring Cabin incorporates residential design, views to nature, place-identity and material selection.

5.1 The Trillium Secure Adolescent Inpatient Facility

The Trillium Secure Adolescent Inpatient Facility is a rural adolescent psychiatric centre located just outside of Corvallis, Oregon in the United States. Located at the Children’s Farm Home, which initially functioned as an orphanage, the centre is intended to provide treatment for adolescents who suffer from severe emotional and behavioural mental health issues ("Trillium Secure Adolescent Inpatient Facility / TVA Architects," 2017). The project was designed by a local architecture firm in Oregon known as TVA Architects along with mechanical, structural and civil engineering companies such as Interface Engineering, Catena, and WDY Inc ("Trillium Secure Adolescent Inpatient Facility / TVA Architects," 2017). The client of this 12,000-square
foot facility is Trillium Family Services which is a Portland-based non-profit organization that is a provider of mental health services for children and teens in Oregon (Hall, 2015).

One wing of the single-story inpatient clinic was completed in 2015 and includes private residence bedrooms, therapy spaces, classrooms and both interior and exterior recreational activity spaces ("Trillium Secure Adolescent Inpatient Facility / TVA Architects," 2017). As seen in Figure 6, the plan is organized into bedrooms, treatment spaces, play areas, learning environments and staff areas. It can be seen in Figure 7 and Figure 8 that the design of the facility is intended to respect patients and provide safety for all users and make it appealing to a teenage audience. The use of bright, bold colours applied to furniture and accent walls provides a

Figure 6: Trillium Secure Adolescent Inpatient Facility Plan
youthful atmosphere within the space. The materiality of wood in the majority of the space provides a comfortable environment. Safety and security are seen in the courtyard, as tall fences provide safety for patients to remain inside the grounds. Both the interior and exterior use these pops of colour to draw the eye into public common spaces to promote conversation and support among all individuals. However, the decorative features of yellow paint and concrete allow it to be non-oppressive.

The purpose of the Trillium Secure Adolescent Inpatient Facility is to provide mental and behavioural health stabilization to ensure children and adolescents are receiving the most effective treatment possible ("Secure Inpatient | Keep Oregon Well," 2018). The objective of this project was to create a state-of-the-art facility focused on individualized patient-centered care ("Trillium Secure Adolescent Inpatient Facility / TVA Architects," 2017). This approach is intended to successfully transition patients back into their community and home life once they
have completed treatment within the centre. The care model is displayed in the design of the building by veering away from institutional aesthetics and embracing a bold design style. The design team also understood security and surveillance features must be incorporated to make the project successful but did not want to make it look oppressive ("Trillium Secure Adolescent Inpatient Facility / TVA Architects," 2017). As the typology of the centre is a hybrid of a mental health facility and residential building targeted at a specific age group, the programmatic elements within the inpatient facility are unique. The activities that take place are individual and family therapy sessions, therapeutic skill groups, school lessons, living spaces and recreational play areas ("Trillium Secure Adolescent Inpatient Facility / TVA Architects," 2017). The program of the facility is separated and organized into staff and patient areas. Staff spaces include access to locked cabinets for safety measures, office spaces, nurses’ stations, a staff break area, private washrooms, a control room and common areas (Hall, 2018). The next spaces listed are intended for use by patients and include bedrooms, classrooms, common areas, therapy rooms, and breakout rooms. As surveillance is not permitted in washrooms, one shared toilet is integrated for every four beds within the facility. Along with the interiors of the centre, the exterior spaces are just as important for recovery and play. These spaces include a fenced courtyard, seating areas, sports field and enclosed gym. All designated spaces and elements are essential for the success of the program by providing patients with the ability to live as normal a teenage life as possible while seeking treatment.

Normalization is the process of bringing something to a normal condition, in this case, it refers to providing a space for teens that reflects a lifestyle within the interior environment of a healthcare facility. Integrating normalization within the Trillium Secure Adolescent Inpatient Facility is the primary design element that can be seen throughout the project. As the building is
a transitional environment where individuals stay for a limited amount of time, the design of the interior needs to be welcoming and inviting, but not so comfortable that these patients do not want to leave. Furthermore, the space aims not to appear institutional but provide a warm atmosphere and remind teens of home. The design depicts the notion of normalization and transition that can be seen on both the exterior and interior features of the building. The buildings are placed around a central courtyard so that minimal fences need to be used to reduce the appearance of a prison or institution. This design also provides patients with views towards many existing trees that remain on the campus ("Trillium Secure Adolescent Inpatient Facility / TVA Architects," 2017). Along with these natural views, skylights became essential in the project to bring in natural daylight from above and down into the space ("Trillium Secure Adolescent Inpatient Facility / TVA Architects," 2017). This design element reduces the number of windows that could be accessible, which may result in broken glass or where patients can escape. Individuals who have mental illnesses need spaces to move and walk around, rather than static areas. Therefore, the need for open spaces and movements of pacing becomes a critical design element integrated within all psychiatric centres. Wayfinding for all users is an active design principle evident in the Trillium Secure Adolescent Inpatient Facility. The layout of the floor plan is symmetrical and mirrored in all aspects, therefore provides easy wayfinding and comfort to all users. The circulation of the project is focused on patient movement, as the care model within the facility is directed towards patient-centered care. The facility is flexible and adaptable, where the use of operable partitions allows for the bedrooms to be scaled up or down anywhere from four to sixteen beds in a space at one time (Hall, 2018). The zones and spatial arrangements of the facility encourage staff to be out with patients and interact with them.
The significance of this case study in relation to the proposed practicum project is undoubtedly noticed within the theoretical framework and intent of these two projects. Along with the theories and purpose, both projects are inpatient psychiatric facilities for adolescents. This precedent is an excellent resource to study and learn from, as the program classification is similar. The single-story layout of the facility is a positive element that can be taken away from this precedent. Separating staff and patient areas allows for privacy, as well as organized operation of the facility. The inclusion of universal toilet rooms in each patient wing is crucial in maintaining safety and security for patients, as they can be monitored just by going in and out of the space, compared to if the washroom was in their own room.

The precedent demonstrates that the interior of the facility not only aids in treatment but allows patients to feel welcome in a fun and deinstitutionalized environment. The materiality of the building includes carpet, glass, white walls, soft seating and wood beams. The use of bright colours contrasted with the materiality of wood provides both a comforting space and fun environment for teens. Including windows in each patient room, as well as in public spaces, natural views and daylighting support biophilic design elements in this precedent and is a positive characteristic. Some design elements in this precedent are less successful. For example, the only area intended for exercising and play is in a courtyard outdoors. An interior space should also be provided where patients can partake in physical activity. The boundaries of the facility are abrupt and harsh. Providing an alternative solution that is flexible and transparent, yet safe and secure when transitioning from indoors to outdoors would be better.

Trillium is a successful example of a psychiatric facility that can be studied to address design questions and to learn objectives for the development of the proposed practicum project and the future development of psychiatric interior design. Therefore, interior design considerations can
be taken from this case study and applied within the practicum project, which include safety features such as universal patient washrooms, flexibility and movement within the floor plan and materials that provide a comfortable, welcoming and fun aesthetic. Overall, the Trillium Secure Adolescent Inpatient Facility is a modern example of a psychiatric facility that provides relevant design information and proper design execution to create a successful adolescent psychiatric facility in Winnipeg, Manitoba.

5.2 Kelowna Adolescent Psychiatric Facility

The Kelowna Adolescent Psychiatric Unit (APU) is a specialized inpatient program intended for youth aged 12-17 who experience psychiatric symptoms such as psychosis, mood disorders, anxiety and depression (KGH Adolescent Psychiatric Unit, 2005). The unit is a Canadian precedent located in Kelowna, British Columbia. It is part of a larger institutional setting, as it is in the Kelowna General Hospital. The APU is designed in a way where every aspect of the interior is intended to support the recovery and health of patients (Interior Health Authority, 2017). Completed in 2005, the facility contains eight patient beds where individuals stay on average for 21 to 28 days. The unit was designed by notable Vancouver architecture firm, DGBK Architects. With 46 years of experience in healthcare, education, recreation and public safety design projects, a high level of quality and functionality are reflected in DGBK’s interior design of the APU. The overall goal for the APU is to provide a space that is both youth and family friendly through the support of the healthcare staff, as well as the design of the unit. As
well, a strong focus of this facility is providing as normal a life as possible for teens when they are residing and receiving treatment within the Kelowna APU.

The APU floor plan is divided into patient rooms, patient lounges, nurses’ stations, classrooms, family spaces and outdoor spaces (see Figure 9). Highlighting the programmatic elements within the floor plan aid in understanding the ratio of patient, staff and family spaces.
within this precedent. The APU is composed of twelve single patient rooms and eight shared patient rooms. Each room contains a large window overlooking the Okanagan valley. Only two rooms include cameras and are only used as necessary (The Adolescent Psychiatric Unit: A Guide for Youth and Families, n.d.). Half of the patient rooms include washrooms, and the others have shared washrooms located outside of patient rooms. Patients are only allowed to go into the washroom one person at a time due to safety concerns (The Adolescent Psychiatric Unit: A Guide for Youth and Families, n.d.). Along with patient rooms, spaces within the facility include a multi-purpose room, outdoor courtyard, and laundry facilities. There is also a kitchen where adolescents have access to practice cooking and baking (The Adolescent Psychiatric Unit: A Guide for Youth and Families, n.d.). Recreational spaces include a TV lounge, sports lounge, computer lounge and family room. These social activity areas are appropriately designed to have bright and inviting décor with the intention that teens do not
spend time on their own, or each other’s bedrooms. As seen in Figure 10 and Figure 11, the use of fun colours, natural materials and curvilinear forms on the ceilings and floors grants a non-institutional look. Within these social areas, activities that take place include crafts, video games, books, foosball, and basketball. The program also provides group outings to get off the grounds of the hospital. A crucial programmatic element within the design of this program is the inclusion of a classroom in the unit. This allows patients to continue their studies as they are taken out of school for a prolonged period. As well, there are family meeting rooms, a secure, quiet room, and enclosed outdoor patio. The APU unit is designed to look like a college dorm, and veer away from the dreary hospital and institutional facility (Jeffery, 2015). This is achieved by using colour, material, and furniture choices incorporated into the unit. As an example of non-institutional design, this precedent reveals the design elements and details that can be included in psychiatric hospitals.

A key point about this precedent is it clearly responds to, and reflects, the CPS care model. The client that envisioned this centre is Interior Health of Kelowna, a publicly funded healthcare provider in the Southern Interior of British Columbia. Admission to the APU is by referral only and can come from the Ministry of Children and Family Development, Psychiatrists or Interior Health (Adolescent Psych Brochure, n.d.). Teens are assessed upon their admission from a team of healthcare professionals who are on this journey of treatment and recovery during their stay. The healthcare model utilized within the Kelowna APU is the collaborative problem-solving approach. The interdisciplinary team of healthcare professionals includes a Psychiatrist, Psychologist, Occupational Therapist, Social Workers, Registered Nurses, Registered Psychiatric Nurses and Youth Care Councillors (Sthankiya, 2015). The goal of the healthcare team is to discuss, observe and test adolescent’s behaviour and emotional responses, as well as provide a
supportive and trusting relationship with the adolescent patient (The Adolescent Psychiatric Unit: A Guide for Youth and Families, n.d.). The functional qualities of a psychiatric unit provide guidelines for understanding the daily life of both patients and staff in the facility. During the week, wake up calls begin at 7:30 and adolescents are expected to be in the classroom by 9:00. On weekends, wake up calls start at 10:00. All meals are supposed to be eaten in the dining room and are accompanied by staff members to build trust and positive relationships with one another. Lunch is served at noon and dinner at 5:00. School commences in the morning, and the afternoon is reserved for individual and group therapy sessions as well as skill building with peers. Finally, in the evening hours, there is free time to enjoy leisure activities within the lounge and shared spaces. As this facility is a health care setting and in a controlled environment, curfews are at 10:00 on weekdays and 11:00 on weekends. Having this strict routine provides stability and consistency for these troubled individuals throughout their stay.

The Kelowna APU encourages personalization to occur in the facility. As discussed in section Place-Identity, bringing familiar and personal images into the space provides an identity within this unfamiliar environment. Patient bedrooms are designated as the teens own personal space containing their bed and personal storage (The Adolescent Psychiatric Unit: A Guide for Youth and Families, n.d.). Magnetic walls can be decorated with photos and posters brought from home, which allow individuals to define their own identity within this space. The use of the magnetic application is critical as tacks or pins could be presented as dangerous objects and arise concerns for patient safety and self-harm. These objects could include stuffed animals, trophies, and books but might include things such as photos, posters, jewelry boxes and calendars. These objects must be cleared with admissions and security staff to ensure they can not threaten the harm of all users in the facility.
The location of the Kelowna APU on an upper floor within a hospital has both safety and aesthetic concerns. While the design of the unit is intended to provide a non-institutional setting, having it apart of a large hospital forces patients to move through the hospital to get to the ground floor and out. It is moving throughout the institutional environment that can remind patients that although their living space is not oppressive and dreary, they are still apart of a treatment centre. Though the height levels are dangerous, the views overlooking the Okanagan valley are spectacular. The choice to locate the unit on a higher-level aids in the notion of supportive design by having positive distractions and connections with nature present through the views from the facility. Each patient has access to these views within their bedrooms, as well as through multiple windows positioned along the perimeter of the unit. Within the design of the adolescent psychiatric facility, each patient room includes a window to look out to views of nature. These design decisions aid in choosing an appropriate site and building that is a single story, a free-standing structure surrounded by forests and nature to incorporate elements of non-institutional aesthetics, safety, and supportive design.

Providing support through staff and peer relationships, non-institutional aesthetics and how the role of the interior environment can improve the treatment and recovery of patients is the overall goal of the Kelowna Adolescent Psychiatric Unit. This precedent is beneficial to study the design strategies and principles incorporated into the facility. The precedent is the same typology, uses the CPS approach, and is focused on design details related therapeutic environments, safety, and security. The main elements taken from this case study and brought into the proposed practicum project are the functional and programmatic aspects found at the Kelowna APU. As well, the theoretical relevance of incorporating the CPS model of care, safety, security, place-identity and supportive design is addressed throughout this precedent. One
example taken away from this precedent is the safety of the magnetic feature incorporated into patient bedrooms. This is a successful design solution providing personalization and choice for patients yet is also safe and secure. These intentions can be brought forward in executing a successful design for the proposed adolescent psychiatric facility in Winnipeg.

The Kelowna APU is a successful example of a psychiatric facility that can be studied to address design questions and to learn objectives for the development of the proposed practicum project and the future development of psychiatric interior design. Therefore, interior design considerations can be taken from this case study and applied within the practicum project include the inclusion of classrooms for continued education and life skills, a college dorm aesthetic to appeal to adolescent individuals and the reflection of the CPS care model in the programmatic elements of the centre.
The Alexandra Ellis Caring Cabin located in Pacific City, Oregon, is a 3,900-square foot facility, which provides a retreat for families with children who are diagnosed with cancer ("Caring Cabin / TVA Architects, Inc.," 2012). Designed by TVA Architects in 2006, the series of pavilions focus on residential design, views to nature, and eliminating the use of toxic building materials ("Caring Cabin / TVA Architects, Inc.," 2012). The client for this project was the Children’s Cancer Association of Portland, and the project was designed pro-bono as businesses, foundations and friends donated over one million dollars to aid in building this retreat ("Caring Cabin / TVA Architects, Inc.," 2012). Nestled in 24 acres of surrounding nature, this structurally modern facility provides an environment where families can focus on healing and creating lasting memories outside of a sterile hospital environment. Families come and stay for four days at a time, removing themselves and their worries from the urban institutional hospital setting. The layout of the project is a series of small pavilions, which are defined by the main residence, small meditation pavilions, storage space and a two-car garage, which doubles as a game room ("Caring Cabin / TVA Architects, Inc.," 2012). As seen in Figure 12, the site plan displays the spatial layout of the pavilions in proximity to the abundance of nature, the lake, and outdoor activities. Essential elements taken from this project and incorporated into the design of the proposed adolescent

Figure 12: The Caring Cabin Site Plan.
psychiatric facility is the connection to nature through supportive design elements, as well as residential design attributes. Although the typology differs in the Caring Cabin precedent and the proposed adolescent psychiatric facility, there are many design elements and similarities relating to the theoretic relevance that can be taken from this case study and be considered within the practicum project.

The layout of the central facility contains two private bedrooms, a family gathering area, kitchen, dining room, gathering space and fireplace, which can be seen in the floor plan in Figure 13. The design of these spaces reflects a residential feel to incorporate the notion of home within this rural environment. Fun elements included in the design are a pool and air hockey table, recreation room stocked with toys, a media room with a widescreen TV and a meditation room (Peck, 2009). Interior Designer, Anna Kimmel addresses that “the goal of the facility is to create a comfortable, sophisticated environment where kids can be themselves and parents can kick back” (Eastman, 2017). This is displayed using natural materials and colour providing a

*Figure 13: The Caring Cabin Floor Plan*
relaxed yet cheerful setting. As seen in Figure 14, natural stone, hardwood covers vaulted to floors and ceilings, durable fabrics and furniture are included in the interior design of the Caring Cabin. Introducing an abundance of natural daylight, colour patterns and art pieces contrasts the natural elements with bright, upbeat tones (Eastman, 2017). The design and concept of The Caring Cabin has been referred to as a camp-like setting for all members of the family as this space truly is a retreat away from the city. The design style taken from this precedent is the concept of a camp or dorm that is a fun, safe and sophisticated home away from home. Rather than having an institutional environment, providing spaces where positive memories and relationships can form becomes the primary goal of the project.

As families and cancer patients are constantly in medical settings, this space is a vacation away from remembering that their child is sick. The main design element taken from this precedent is incorporating areas for family members within the floor plan. As this is a difficult time in a family’s life, negative emotions are not only present in patients, but also parents. As highlighted in Chapter 2.0 Adolescent Development and the Design of Mental Health Facilities positive relationships with parents are essential in adolescent development. However, not all youth have good relationships with all family members. In the context of an adolescent
psychiatric facility, providing areas that provide the opportunity for family to show support to their children can be influential for these relationships to grow. Including overnight family rooms within the same building encourages family members to support their children, get an insight on their treatment program and understand how they live in the facility day-to-day. As family accommodations are essential, areas for therapy and spaces for various families to support one another are also needed throughout this emotional journey. The design of these spaces must be comfortable and hospitable to ensure family members feel welcome during this sensitive time. Therefore, within the adolescent psychiatric facility in Winnipeg, these design characteristics focused on family inclusion are considered.

As previously stated in section 4.2 Theory of Supportive Design is vital to creating a healing environment in a healthcare setting. The inclusion of indoor/outdoor spaces allows for positive effects of nature to restore energy to individuals battling a disease. Not only is access to nature healing for cancer patients, but for mental health patients as well. The Caring Cabin is an important precedent to research into the successful application of biophilic design elements that allow healing effects of nature to be included within the interior. First, floor to ceiling windows are located on the corners of the facility of the pavilions. These glass pieces wrap around the edges of the building to allow a definite connection with nature and views to the outdoors, in more than one perspective. Elements of these design characteristics within The Caring Cabin can
be incorporated to provide access to nature for adolescent patients in the proposed psychiatric facility in Winnipeg. The full height glass not only offers more view range but permits more natural daylight into the interior. As well, blurring the line between inside and outside elements through full glazing on the exterior and providing safe spaces where patients can enter and exit at their own time allows this connection with nature to flourish, thus improving the well-being of not only patients but staff too. As seen in Figure 15, the full height glazing, exterior landscaping and use of natural materiality in the outdoor walkway and building treatment provide a raw connection with the earth. Therefore, these elements are not only essential for the interior spaces to be designed with nature in mind, but also to develop exterior environments.

Although the Caring Cabin is not a psychiatric facility, it is a health care facility intended to provide a nurturing environment for the same target age group as this practicum project. The Caring Cabin incorporates supportive design elements, such as a camp-like aesthetic and areas for family to be accommodated. The interior environment is neither oppressive nor institutional. These design features of the Caring Cabin are, therefore, useful to consider in the design of an adolescent psychiatric facility.

*Figure 15: Exterior view of The Caring Cabin*
5.4 Conclusion

There are many ways to approach the treatment of mental health. By looking at a variety of views and design strategies, more informed design decisions can be made. The Trillium Adolescent Psychiatric Facility and Kelowna Adolescent Psychiatric Unit strive to provide excellent care for psychiatric patients. The Caring Cabin aims to support children and families. Each interior provides elements that can be used along with the theoretical framework to create meaningful spaces that support families and patients as the studied healthcare environments do. Specific applications can be seen in Table 4: Precedents and their spatial implications found below:

Table 4: Precedents and their spatial implications

<table>
<thead>
<tr>
<th>Precedent</th>
<th>Architect/Firm</th>
<th>Idea/Example</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trillium Secure Adolescent Inpatient Facility</td>
<td>TVA Architects</td>
<td>Bold, fun and youthful design style for an adolescent age group.</td>
<td>Provide youthful atmosphere with fun furniture choices.</td>
</tr>
<tr>
<td>Kelowna APU</td>
<td>DGBK Architects</td>
<td>Extensive programming to include life skills and patient personalization throughout the space.</td>
<td>Include spaces where adolescents can develop as normally as possible. Include areas of education such as classrooms, cooking rooms, gardening. Provide areas of personalization in furniture choices, thermal comfort, patient rooms, etc.</td>
</tr>
<tr>
<td>The Caring Cabin</td>
<td>TVA Architects</td>
<td>Emphasis on family involvement in treatment and supportive design</td>
<td>Create spaces for families to reside in as well as creating family therapy areas.</td>
</tr>
</tbody>
</table>
6.0 Design Programme

This section of the practicum project addresses client and user profiles of individuals operating and using the proposed adolescent psychiatric facility. The purpose of the design programme is to design an interior environment, which responds to the needs and goals of the client and users. As well, the atmospheric elements and requirement equipment needed within this typology is addressed. Within each space, different interior qualities are needed. Therefore, breaking down the facility into individual rooms aids in successfully designing each space and the overall building interior.

6.1 Human Factors Analysis

6.1.1 Client Profile

The Winnipeg Regional Health Authority (WRHA) is the hypothetical and proposed client for the adolescent psychiatric facility. Within Winnipeg, the WRHA is responsible for providing health care to people living within Winnipeg, as well as in rural municipalities throughout Manitoba. The WRHA currently operates and funds over 200 health service facilities and programs, which employ approximately 28,000 people working within the health region ("About Us | Winnipeg Health Region", 2018). The organization commits to delivering high quality treatment in community settings. Specifically, the Child and Adolescent Mental Health Program is responsible for an integrated range of child and adolescent mental health services in community settings. Therefore, the proposed adolescent psychiatric facility falls under the jurisdiction of the Winnipeg Regional Health Authority: Child and Adolescent Mental Health Program ("WRHA | Child and Adolescent Mental Health Program", 2018).
6.1.2 User Profile

The user profiles of the projected occupants of the adolescent psychiatric facility fall into three categories: primary users, secondary users and tertiary users. Each profile exhibits the hypothetical needs of the users and are contained in the design of the project.

It is essential to highlight that adolescent patients are the primary users of the space. There are specific characteristics pertaining to these developing individuals and must be noted within the programme to create a successful design. Adolescent patients residing in the facility come from across Manitoba, most commonly from northern Manitoba on reserves. Specifically, mental illness and suicide rates are 5-7 times higher for first nations youth overall than for non-Aboriginal youth ("Statistics on Suicide | Everyone Matters Manitoba", 2018). To tailor the project further to adolescents in Manitoba, it was important to address the abundance of multiculturalism within the province. The design of the interior aims to integrate the needs of all cultural and spiritual views, ensuring all patients and staff feel comfortable and accepted within the space. As highlighted in Chapter 2.0 Adolescent Development and the Design of Mental Health Facilities, is essential to design the facility to be gender fluid, as teens are identifying who they are not only in society, but with themselves and their sexuality. Transgender individuals are accepted and embraced within the space.

Primary Users: All genders aged 18+ (excluding patients).

- Adolescent Patients (all gender, races and religious views aged 12-17)
- CPS Health care staff: Psychologist, Physician, Psychiatrist, Counsellor and School Instructor
- Psychiatric Nurses
- Security on staff
Secondary Users: All genders and mixed ages.

- Visitors
- Administrative Staff
- Cleaning Staff
- Kitchen Staff

Tertiary Users: All genders aged 18+.

- Delivery Workers
- Grounds Workers/Maintenance

6.1.3 User Activity and Needs

Table 5: Behavioural Needs

<table>
<thead>
<tr>
<th>Activities</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients</td>
<td>- Participate in treatment, classes, social activities within the facility. - Live in the facility in their own room until they can be discharged from treatment.</td>
</tr>
<tr>
<td>Healthcare Staff (Psychiatrist, Psychologist, Psychiatric Nurses, Social Workers, Occupational Therapist, Treatment workers, mental health clinicians)</td>
<td>- help the young person understand their mental health issues, build coping skills, through a range of therapeutic interventions - help the patient recover from the mental health issues to go back to their life - Meet daily all together to discuss the progress of individual patients. - Lead group/individual sessions of therapy</td>
</tr>
<tr>
<td>School Instructor</td>
<td>- maintain the young person's connection to their mainstream</td>
</tr>
</tbody>
</table>
schooling and educational attainment by teaching school classes.

| Security Staff | -protects and ensures the safety of all individuals within the facility.  
-patrol the property  
-monitor surveillance equipment  
-permit entry to visiting individuals | -24/7 |

<table>
<thead>
<tr>
<th>Values</th>
<th>Aesthetic Preferences</th>
<th>Privacy Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Sensitive</td>
<td>-Ample views to the exterior</td>
<td>-Privacy with healthcare staff</td>
</tr>
<tr>
<td>-Dedicated</td>
<td>-Personalization within living conditions</td>
<td>-A semi-private living environment where healthcare staff can see into their space for security purposes.</td>
</tr>
<tr>
<td>-Feel respected</td>
<td>-Non-institutional setting</td>
<td></td>
</tr>
<tr>
<td>-Honest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthcare Staff</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| (Psychiatrist, Psychologist, Psychiatric Nurses, Social Workers, Occupational Therapist, Treatment workers, mental health clinicians) | -Accepting of all individuals  
-Patient  
-Respect patients  
-Available  
-Honest  
-Good Communication skills | -Sightlines to patients at all times  
-Non-institutional setting  
-Focused environment | -Personal belonging storage  
-Private areas for therapy with individuals  
-Public space for group activities |
| School Instructor           |                                                            |                                                                               |
| -Sensitive                  | -Sightlines to patients at all times  
-Focused environment  
-Centrally located  
-No distractions      | -Personal belonging storage  
-Semi-private to allow for focused environment |
| -Patient                   |                                                            |                                                                               |
| -Accepting of all individuals |                                                            |                                                                               |
| -Supports education         |                                                            |                                                                               |
| Security Staff              |                                                            |                                                                               |
| -Honest                     | -Sightlines to patients at all times  
-Moves around monitoring the facility most of the day, therefore need will consistently | -Access to all spaces in the facility  
-Personal belonging storage |
| -Alert                      |                                                            |                                                                               |
| -Physically Fit             |                                                            |                                                                               |
| -Good communication skills  |                                                            |                                                                               |
- Serve the client’s needs.  
change depending what room they are in.  
- Private area to monitor security footage

<table>
<thead>
<tr>
<th></th>
<th>Visual</th>
<th>Cognitive</th>
<th>Mobility</th>
</tr>
</thead>
</table>
| Patients | - Ample views to the exterior  
- Views to other patients  
- Non-isolated | - Stimulated space  
- Inspirational space  
- Balance of quiet and loud areas for activities | - Freedom to move around the facility during the day  
- Stationary in the night hours  
- Non-obstructed mobility |
| Healthcare Staff (Psychiatrist, Psychologist, Psychiatric Nurses, Counsellor) | - Sightlines to patients at all times  
- Needs to be in view for patients | - Organized  
- Neat  
- Efficient work environment | - Space to move from patient to patient throughout the day  
- Non-Obstructive mobility  
- Adaptability  
- Flexibility |
| School Instructor | - Sightlines to patients  
- Stimulated environment  
- Bright workspace | - Organized  
- Neat  
- Efficient work environment  
- Situated in a space that provides an excellent learning environment  
- Inspirational | - Area to move at desk  
- Space to move in a chair to perform desk jobs  
- Area to walk around while teaching  
- Flexible movement of students |
| Security Staff | - Access to viewing the building and activities at all time through surveillance and access to all spaces | - Bright  
- Organized  
- Logical  
- Efficient | - Non-obstructed mobility  
- Adaptability  
- Access to indoor and outdoor spaces |

Table 7: Spatial Needs:
6.2 Functional and Aesthetic Requirements

Overview of spaces offered within the Adolescent Psychiatric Facility:

Public Spaces:
- Lobby/Front Desk Kitchen
- Communal Space
- Kitchen
- Classroom (x2)
- Lounge
- Outdoor Space
- Library
- Store
- Cooking Classes
- Exercise Room
- Music Room
- Spiritual Room
- Public Washroom (x4)

Patient Centered Spaces:
- Patient Room (x9)
- Patient Washroom (x4)
- Patient Common space within neighbourhood (x4)
- Family Rooms (x8)
- Family Common Space
- Family Therapy Room
- Visitor Rooms
- Private Visitor Room
- Shared Therapy Space
- Individual Therapy room (x7)
- Sensory Room (x7)

Staff Spaces:
- Nurses Station
- Interdisciplinary Room
- Charting/Electronic Room
- Staff Room
- Meeting Room
- Staff Washroom (x2)
- Safety Room

Storage and Maintenance:
- Medical Rooms
- Laundry Room
- Janitorial Closet (x2)
- Storage Room (x2)
- Maintenance Room
- Circulation Space

6.2.1 Programme

Table 8: Function / Furniture, Fixtures and Equipment / Atmospheric Qualities

<table>
<thead>
<tr>
<th>Space</th>
<th>Function</th>
<th>Fixture, Furniture and Equipment</th>
<th>Atmospheric Qualities</th>
<th>Square Footage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lobby/Front Desk</td>
<td>Serves as the entrance point to the facility where visitors check in and be directed by an administrative receptionist</td>
<td>Large counter space, computer, telephones, storage for administrative staff.</td>
<td>Organized, bright, closed, quiet and private.</td>
<td>350 sqft</td>
</tr>
<tr>
<td>Communal Space</td>
<td>Space where all patients are served meals and eat in one area altogether.</td>
<td>Individual or group seating, tables and chats, adaptable furniture to allow for reconfiguration.</td>
<td>Relaxing, open views, clean, durable materials and bright.</td>
<td>3000 sqft</td>
</tr>
<tr>
<td>Kitchen</td>
<td>Staff to cook and prepare food for patients.</td>
<td>Refrigerator, freezer, sink, large counter space, dishwasher and storage space.</td>
<td>Clean, bright, organized, secure, open, durable.</td>
<td>700 sqft</td>
</tr>
<tr>
<td>Classroom (2)</td>
<td>Designated spaces where patients can attend class and stay on track so when they return to school, they are not behind.</td>
<td>Layout of room should be hierarchical with tables and chairs in rows. Projector at front of room. Stackable chairs and movable tables.</td>
<td>Clear view to front of room, quiet, focused and motivated, flexible, clean, and well lit.</td>
<td>625 sqft</td>
</tr>
<tr>
<td>Lounge</td>
<td>Open concept lounge where patients can casually gather with one another.</td>
<td>Lounge chairs, couches, tables, chairs.</td>
<td>Relaxing, social, natural light, clean, flexible, community inclusion.</td>
<td>600 sqft</td>
</tr>
<tr>
<td>Space</td>
<td>Function</td>
<td>Fixture, Furniture and Equipment</td>
<td>Atmospheric Qualities</td>
<td>Square Footage</td>
</tr>
<tr>
<td>-----------------</td>
<td>--------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Public Washrooms (4)</td>
<td>Gender inclusive accessible washrooms</td>
<td>Toilet, sink, shower, garbage, accessible grab bars, and electric hand dryer.</td>
<td>Clean, bright, durable and natural qualities.</td>
<td>60 sqft.</td>
</tr>
<tr>
<td>Outdoor Space</td>
<td>A space outdoors containing activities and rest spaces outside the facility.</td>
<td>Basketball course, lounge chairs, and other outdoor activities/equipment for free time outside</td>
<td>Fun, bright, well maintained grounds.</td>
<td>1000 sqft (not included in overall interior square footage needed)</td>
</tr>
<tr>
<td>Library</td>
<td>Quiet space that is semi private where patients can study and read for classes or leisure.</td>
<td>Lounge chairs, couches, book cases, fire places.</td>
<td>Warm, quiet, relaxed, views to nature, well lit.</td>
<td>700 sqft</td>
</tr>
<tr>
<td>Store</td>
<td>Closed space allowing patients to pick and choose what objects they would like to include in their room such as magazines, posters, blankets, etc.</td>
<td>Cashiers desk, storage, shelving.</td>
<td>Closed, well lit, clean, durable, organized, secure.</td>
<td>250 sqft</td>
</tr>
<tr>
<td>Cooking Classroom</td>
<td>Closed space where patients can take classes on how to cook from an instructor.</td>
<td>Stove, oven, fridge, storage, sink, counter space.</td>
<td>Closed, well lit, organized, clean, durable, organized, bright, focused.</td>
<td>700 sqft</td>
</tr>
<tr>
<td>Exercise Room</td>
<td>A space for patients to have physical exercise.</td>
<td>Treadmills, ellipticals, yoga mats, weights, bikes, inclusion of washrooms/shower rooms within space.</td>
<td>Bright, well lit, clean, fun.</td>
<td>600 sqft</td>
</tr>
<tr>
<td>Music Room</td>
<td>A space for patients to play musical instruments</td>
<td>Piano, drum set, guitars, microphones.</td>
<td>Bright, well lit, clean, acoustic.</td>
<td>350 sqft</td>
</tr>
<tr>
<td>Space</td>
<td>Function</td>
<td>Fixture, Furniture and Equipment</td>
<td>Atmospheric Qualities</td>
<td>Square Footage</td>
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</tr>
<tr>
<td>Spiritual Room</td>
<td>A space where individuals from different cultures and religions have a place to worship.</td>
<td>Soft materials, daylight, chairs, pillows.</td>
<td>Private, enclosed, safe, patient control over lighting.</td>
<td>400 sqft</td>
</tr>
<tr>
<td>Patient Room (9)</td>
<td>Space where the patients reside and sleep during their treatment and time at the facility.</td>
<td>Suicide proofed fixtures. Bed, dresser, closet, bedside storage, garbage, and desk.</td>
<td>Personal to patient, clean, comfortable, durable, natural daylight, and views to outdoors.</td>
<td>250 sqft</td>
</tr>
<tr>
<td>Patient Washrooms (4)</td>
<td>Individual gender inclusive washrooms included in each patient wing. Includes toilet, sink and shower.</td>
<td>Suicide proofed fixtures. Toilet, sink, shower, garbage, accessible grab bars, and electric hand dryer.</td>
<td>Clean, bright, durable and natural qualities.</td>
<td>75 sqft</td>
</tr>
<tr>
<td>Patient Common space within neighbourhood (x4)</td>
<td>A common area within each wing providing activity space, lounge space, and opportunity for life skills such as cooking, baking, chores, laundry.</td>
<td>Lounge chairs, couches, tables, chairs. Gaming, a kitchen, living area.</td>
<td>Youthful, durable, clean, natural daylight,</td>
<td>2500 sqft</td>
</tr>
<tr>
<td>Family Rooms (8)</td>
<td>Overnight accommodations for family members who are visiting from out of town. One washroom should be placed within each family room.</td>
<td>Bed, dresser, closet, bedside storage, garbage and desk. Also includes washroom.</td>
<td>Clean, comfortable, durable, natural daylight, and views to outdoors.</td>
<td>200 sqft</td>
</tr>
<tr>
<td>Space</td>
<td>Function</td>
<td>Fixture, Furniture and Equipment</td>
<td>Atmospheric Qualities</td>
<td>Square Footage</td>
</tr>
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<td>------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Family Common Space</td>
<td>Included in a separate wing with family rooms, a kitchen and living space should be provided for families to come together as a community and support one another.</td>
<td>Kitchenette, table, chairs, couches, reading chairs, TV, computers.</td>
<td>Relaxed, secure, warm, comfortable, residential feel.</td>
<td>1100 sqft</td>
</tr>
<tr>
<td>Family Therapy Room</td>
<td>Closed space where families that are staying over night can receive therapy, with their adolescents or without.</td>
<td>Desk, couches, chairs, storage.</td>
<td>Comfortable, relaxed, safe, clean, and organized.</td>
<td>200 sqft</td>
</tr>
<tr>
<td>Visitor Room</td>
<td>Where family members can visit patients; encourages family-focused mental health care.</td>
<td>Table, lounge chairs, couch, stackable chairs, cafe.</td>
<td>Comfortable, relaxed, safe, natural daylight, clean, and organized.</td>
<td>800 sqft</td>
</tr>
<tr>
<td>Private Visitor Room</td>
<td>Closed off area that can be used for individual and private visiting space for families and patients. Can also double as a meeting space for staff.</td>
<td>Table, lounge chairs, couch, stackable chairs.</td>
<td>Comfortable, relaxed, safe, natural daylight, clean, and organized.</td>
<td>200 sqft</td>
</tr>
<tr>
<td>Shared Therapy Space</td>
<td>A large space where all patients can come together to receive group therapy such as art therapy.</td>
<td>Flexible furniture, tables, storage, lounge chairs, couches, and stackable chairs.</td>
<td>Comfortable, relaxed, safe, natural daylight, clean, and organized.</td>
<td>550 sqft</td>
</tr>
<tr>
<td>Individual Therapy Room (7)</td>
<td>Open meeting space where healthcare professionals meet with patients to conduct therapy sessions. The room contains a door on</td>
<td>Table, desk, storage, couches, and stackable chairs.</td>
<td>Comfortable, relaxed, safe, natural daylight, clean, and organized.</td>
<td>150 sqft</td>
</tr>
</tbody>
</table>
either side for easy patient access and staff access in case of an emergency. Acts as a visible meeting space.

| Sensory Room (7) | Serves as a space for crisis de-escalation. A safe area to let out anger and de-stress. | Full of soft materials and furniture. Foam mats, bean bag chairs, pillows. | Private, enclosed, safe, patient control over lighting. | 150 sqft. |

Staff Spaces:

<table>
<thead>
<tr>
<th>Space</th>
<th>Function</th>
<th>Fixture, Furniture and Equipment</th>
<th>Atmospheric Qualities</th>
<th>Square Footage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurses Station (x2)</td>
<td>A central meeting/working space where nurses can perform tasks that do not directly work with patients.</td>
<td>Desk, task chairs, ample counter space, locked storage, telephone, PA system and computer.</td>
<td>Views to patients, centrally located, focused, mix of open and closed spaces, and bright.</td>
<td>300 sqft</td>
</tr>
<tr>
<td>Interdisciplinary Room</td>
<td>A shared working office where all healthcare professionals work privately and meet once a week to review patient progress and alter healthcare plans.</td>
<td>Group table, computers, executive chairs, built in projector, A/V equipment, and storage.</td>
<td>Closed, private, organized, focused, formal, and acoustic elements.</td>
<td>350 sqft</td>
</tr>
<tr>
<td>Charting/electronic Room</td>
<td>A private space that only staff can access where nurses can do charting, work on paper or at a computer. Also, contains all electronics in the</td>
<td>Includes water jugs and ice machine. Desks, storage, tables and task chairs.</td>
<td>Focused, secure, clean, closed and quiet.</td>
<td>400 sqft</td>
</tr>
</tbody>
</table>
Building as charging cords are a safety hazard for self-harm among patients. Acts as an extra workspace/storage area.

<table>
<thead>
<tr>
<th>Space</th>
<th>Function</th>
<th>Fixture, Furniture and Equipment</th>
<th>Atmospheric Qualities</th>
<th>Square Footage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff Room</td>
<td>A room where all staff can take a break throughout the day for meals or downtime.</td>
<td>Kitchenette, tables, chairs and couch.</td>
<td>Relaxing, clean, closed and quiet.</td>
<td>500 sqft</td>
</tr>
<tr>
<td>Meeting Room</td>
<td>Closed space for staff to come together and have meetings.</td>
<td>Table, chairs, couches.</td>
<td>Closed, quiet, relaxed, focused.</td>
<td>300 sqft</td>
</tr>
<tr>
<td>Security Room</td>
<td>Space where visitors go to get screened to ensure they are not carrying harmful objects into the facility. Also used for viewing surveillance of CCTV’s.</td>
<td>Table, chairs, computer, CCTV’s, storage lockers.</td>
<td>Closed, quiet, focused, secure.</td>
<td>150 sqft</td>
</tr>
<tr>
<td>Staff Washroom (x2)</td>
<td>Private gender inclusive and accessible washroom that only staff can occupy.</td>
<td>Toilet, sink, shower, garbage, accessible grab bars, and electric hand dryer.</td>
<td>Clean, bright, durable and natural qualities.</td>
<td>75 sqft</td>
</tr>
</tbody>
</table>

Storage and Maintenance:

<table>
<thead>
<tr>
<th>Space</th>
<th>Function</th>
<th>Fixture, Furniture and Equipment</th>
<th>Atmospheric Qualities</th>
<th>Square Footage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Room</td>
<td>Private locked room where staff store drugs and medication for each patient</td>
<td>Locked storage for medical supplies and drugs.</td>
<td>Well lit, organized, private, secure, and clean.</td>
<td>150 sqft</td>
</tr>
<tr>
<td>Laundry Room</td>
<td>Room to do patient laundry and facility laundry</td>
<td>Washing and drying machines, storage for soap</td>
<td>Well lit, organized, private, secure, and clean.</td>
<td>100 sqft</td>
</tr>
<tr>
<td>Room Type</td>
<td>Description</td>
<td>Features</td>
<td>Area</td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>Janitorial Closet (X2)</td>
<td>Contains cleaning equipment and products for janitorial staff usage.</td>
<td>Mop sink, shelving for equipment.</td>
<td>100 sqft</td>
<td></td>
</tr>
<tr>
<td>Storage (x2)</td>
<td>Stores deliveries and other items in the facility.</td>
<td>Open storage space, movable cart for wheeling out, and shelving for items.</td>
<td>200 sqft</td>
<td></td>
</tr>
<tr>
<td>Maintenance Room</td>
<td>Contains industrial mechanical equipment that operates the entire building.</td>
<td>Industrial mechanical equipment.</td>
<td>200 sqft</td>
<td></td>
</tr>
<tr>
<td>Circulation Space</td>
<td>Horizontal circulation. Corridors and hallways between closed rooms or designated spaces.</td>
<td>Unobstructed, exit lighting signage, clean signage and wayfinding.</td>
<td>15% of total square footage</td>
<td></td>
</tr>
</tbody>
</table>

Total square footage: ~31,630 + circulation = 41,200 sqft.
6.2.2 Adjacency Matrix
6.2.3 Zoning
7.0 Site and Building Analysis

This section of the practicum project provides a detailed description and analysis of the Charleswood Long Term Care Home, its surrounding areas, and the specific site selected for the proposed adolescent psychiatric facility. Throughout this section, both significant constraints and opportunities are highlighted in relation to the site and the building that was chosen to be developed. Photographs and maps are included to further explain and visualize the building in the context of the selected site.

7.1 Site Selection and Analysis

The proposed site has been chosen to be located in Winnipeg, Manitoba. Winnipeg is centrally located from both the east and west of Canada. It is the eighth largest city in Canada and known for its urban cultural core and family-friendly suburban communities. The project site selected is 5501 Roblin Boulevard, which is home to the Charleswood Long Term Care Home. This one-story personal care home is in the south-west part of the city on a 4.5-acre land, specifically in the neighbourhood known as Charleswood. Charleswood is a residential community bordered by the Assiniboine River to the north, Wilkes Avenue to the south, the rural community of Headingley to the west and the Assiniboine forest and park to the east (see Figure 16). The Charleswood area is under the federal electoral district of Charleswood, St. James, Assiniboia, and Headingley. This district is home to 81,854 individuals and 50% of these individuals reside in a private household (Statistics Canada, 2017). Most of this district speaks English only, and 95% are Canadian citizens (Statistics Canada, 2017). This semi-rural community is known for its nature enthusiasts, forest trails, active neighbourhoods and family-friendly community. Charleswood was rated Winnipeg’s number one neighbourhood in
Figure 16: Arial map of Winnipeg, Manitoba, Canada.
Figure 17: Sun Path Diagram
McLean’s “Winnipeg’s Top Neighbourhoods” in 2017 (Brown & King, 2018). It is well-known in the city to be very safe due to the small town feel it portrays.

An attraction to Charleswood is the amount of mixed land use that is prominent in this area. Amenities that are found along the main strip of Roblin Boulevard include restaurants, personal care homes, a hair salon, banks, a fitness centre, churches and community centres. Significant landmarks that are near the site include the Charleswood library, park west shopping centre, the Royal Canadian Legion, Charleswood Historical Society, Charleswood Centre and the Grace Hospital. The remaining land use is made up of parks and residential houses. These amenities and landmarks are accessible to The Charleswood Long Term Care Home because it is located on one of the major streets in Winnipeg. Roblin Boulevard provides individuals access to the facility by public transit, taxi services, walking and cycling (see Figure 18). There is a bus stop directly outside of the care home, and multiple bus routes that travel past the building. As well, school charters from Oak Park and Shaftesbury high school stop at this location. As the site is within city limits, family vehicles and taxi services can efficiently commute to the facility. An appealing feature of Charleswood is the abundance of vegetation. All streets are lined with large trees. The strong presence of the natural landscape allows for this site to have views of nature in many directions. This incorporation of nature is essential in the healing and treatment of psychiatric patients and was a major design feature outlined in Ulrich’s theory of supportive design. The parks and green spaces surrounding the site include Bannatyne Grove, Beauchemin Park, Daniel Flood Green Park, Moug Park, Beaverdam Creek Park and Roblin Park Community Centre and Rink (see Figure 19). As well, there are many green spaces, trails, and wildlife that can be found within the Charleswood community and along the Assiniboine River.
Figure 18: Transportation Map
Figure 19: Land Use Map
Figure 20: Site Map
Site Plan Legend

1. Roblin Boulevard.
2. Visitor parking.
3. Public and patient entry.
4. Exterior patios corresponding to each patient wing, total of four. Each patio is fenced in for safety measures.
5. Adjacent public trail, fenced off from facility for safety measures.
6. Private staff entry and loading entry.
7. Staff parking.
8. Patient and staff access to recreational outdoor activities.
9. Storage shed used for outdoor storage supplies (balls, rackets, garden supplies, etc).
   Garden is adjacent to storage shed.
10. Recreational court. Flexibility to adjust to a basketball, volleyball, ball hockey or tennis court.
11. Field. Flexibility to adjust to soccer, flag football, or ultimate field. Designated open space for play outdoors.
12. Adjacent public road, fenced off from facility for safety measures.
As the proposed Adolescent Psychiatric Facility falls under the healthcare typology, it is essential to address existing institutional settings that can be found in the area. Within Winnipeg, there is an existing mental health facility that targets adolescence, located near the hospital known as the Health Sciences Centre. As this psychiatric facility is in an urban environment, it is surrounded by concrete, noise, and light pollution. The adjacent buildings that border this existing municipal mental health facility are owned and operated by the Health Sciences Centre causing this area of the city to feel very institutional. From this, it was decided to choose a site that was in a suburban residential neighbourhood, has surrounding vegetation and open views to nature. These site characteristics are achieved at the proposed site of 5501 Roblin Boulevard. However, the proximity to a hospital or emergent healthcare facility would be crucial. Five hospitals within Winnipeg have mental health inpatient services, and the Grace Hospital is one of them. The Grace Hospital is located near the proposed site and only 5.6 kilometers (7-minute drive) away (see Figure 21). Consequently, if there is an emergent issue with a patient at the adolescent psychiatric facility, they can be rerouted to a secure and safe hospital environment in a timely fashion.

The accessibility of the centre within the city limits of Winnipeg is crucial to reduce stigma associations and encourage use. A significant constraint became present when choosing a site for the proposed practicum project. This is the phenomenon known as NIMBY (Not in my Back Yard). Nimbyism is defined as a person who objects to the siting of something perceived as unpleasant or potentially dangerous in their own neighbourhood but does not raise these concerns when it is placed elsewhere (“NIMBY,” 2018). The phrase first appeared in the mid-1970’s when it was used in the context of the construction of a nuclear-powered generating station in New Hampshire and Michigan (Kinder, 2018). Examples of projects that individuals
Figure 21: Map showing distance of site to The Grace Hospital.
are opposed to that are built near their neighbourhood include homeless shelters, adult
entertainment clubs, landfill sites, airports, prisons, and treatment centres. Ultimately, it is
facilities where individuals seek help and receive treatment that is not welcomed by
neighbouring individuals. NIMBY has two distinct usages; individuals worry these facilities may
affect their quality of life, and individuals worry these facilities imply an absence of their social
conscience (Kinder, 2018). The balance of finding a space that has access to transportation,
commercial amenities, and nature was a challenge with the site (Kinder, 2018). Due to the
care of NIMBY within the development of the proposed psychiatric facility, the chosen site
was to be outside of a populated urban environment, but still within city limits for ease of
accessibility. Although the site is in a residential environment, the 4.5 acres the building sits on
allows for exterior spaces to be safely secured for patients inside the building and away from
residents within the neighbourhood. The east, south and west adjacencies to the building are
open spaces that face parks, fields or streets, The north side of the site backs onto condominiums.
It is the hope that the ample space surrounding the site should be enough distance for individuals
in the neighbourhood to look past NIMBY and see the facility as a positive space for teens
seeking help for their mental health disorder.
7.2 Site Opportunities and Constraints

Site Opportunities:

- Located in an appealing and safe residential neighbourhood
- Located in a walkable neighbourhood
- Located along Bannatyne Grove Park
- Proximity to multiple parks and the Assiniboine River
- Proximity to commercial amenities
- Proximity to Grace hospital
- Proximity to public transportation and bus stops
- Abundant visitor and staff parking on site
- Views to nature from building

Site Constraints:

- Neighbouring housing that backs onto the site obstructs views of nature from the north side of the building.
- As Roblin Boulevard is a major street, this location may be problematic and noisy for patients and staff.
- Street lights may cause light disruption within the building
- This site is located close to the perimeter of the city of Winnipeg, causing it not to be as centrally located and urban for all to access easily.
Figure 22: Exterior view of the main entrance of Charleswood Long Term Care Home

Figure 23: Bannatyne Grove Park surrounding the Charleswood Long Term Care Home.
The proposed adolescent psychiatric facility is placed in an adaptive re-use building, rather than a new building for sustainability purposes and to embrace the history and culture of Winnipeg’s architecture. The Charleswood Long Term Care Home is designed in the brutalist style and is a single-level open concept design. Psychiatric centres that have multiple levels are considered unsafe and challenging for healthcare providers to monitor patients. Therefore a single-level building was crucial in the building selection criteria. The existing building has always operated as a personal care home. It was built in 1971 by Winnipeg architecture firm, MMP Architects and was originally called the Holiday Haven Nursing Home ("Winnipeg Architecture Foundation," 2018). The building received a major renovation in 1998 and then changed its title to the Charleswood Long Term Care Home. The facility is currently owned and funded by the Winnipeg Regional Health Authority ("Charleswood Care Centre Winnipeg Health Region," 2018). The floor plan of the Charleswood Long Term Care Home is unique, as it is designed in the shape of a star (see Figure 24). The materiality on the exterior of the building contains a brown siding on top of the entire perimeter of the building. The remainder of the building exterior is finished in white stucco. There is currently only one main entrance, although the building has a total of 13 exits. This is for the safety and security of patients, as well as monitoring visitors that come and go through only one entrance. Although the building is large and dated in style, it has a welcoming and comfortable exterior, which is ideal for the proposed adolescent psychiatric facility.

The interior layout of the Charleswood Long Term Care Home is functionally appropriate for the programming of the space. The interior area is 43,280 square feet. The plan is segmented into a public core that has six wings protruding from the central space. 155 patient rooms are
Figure 24: Charleswood Long Term Care Home, Existing Floor Plan.
located within the arms of the facility, and the public heart is used for spaces such as a lounge, dining area, activity space and surrounding offices. Currently, the patient rooms are in the wings of the facility, allowing each patient to have a window facing an outward direction to nature surrounding the site. The public spaces allow for an abundance of natural light from the clerestory windows in the central core as well as floor to ceiling windows in the existing dining spaces. The facility is sufficient with interior natural light due to the size and quantity of the current fenestration. The ceiling heights within the facility range from 9’-0” in the residence wings, 10’-0” in the dining, activity and lounge spaces, and 15’-0” in the central core of the facility. The ceiling heights become critical in the design of the proposed psychiatric facility as these changes in elevations can hierarchically define privacy and noise levels. Figure 25 and Figure 26 show building elevations, highlighting these ceiling height changes. The high ceilings in the public spaces have an exposed ceiling where sprinklers and beams are visible in a triangular pattern (see Figure 29). There is a basement in the Charleswood Long Term Care Home providing space for laundry, staff areas, janitorial closets, storage, medical rooms, and mechanical rooms. The square footage of the first floor of the Charleswood Long Term Care Home is adequate to incorporate all programmatic elements into the proposed psychiatric facility. Therefore, the basement is not going to be used as part of the square footage for the project. However, the mechanical spaces and maintenance rooms remain in the basement for functional purposes of the building.
Figure 25: North Building Elevation

Figure 26: East Building Elevation
Figure 27: Exterior photo of existing patient rooms.

Figure 28: Interior photo of existing dining room and floor to ceiling windows

Figure 29: Interior photo of existing exposed beams and clerestory windows in public core
7.3 Building Opportunities and Constraints

Building Opportunities:

- Windows in public spaces offer an abundance of light
- Windows in each private room offer views of residence
- Exterior grounds grant opportunity for the development of the garden
- The single story of the building offers safety for psychiatric patients
- The position of all six wings offers views to the outdoors
- The design of the building allows for public spaces to be central, patient rooms to be private and view the outdoors
- Heights of ceilings provide hierarchy levels of public versus private spaces
- The square footage is large enough for this project goal
- Angled walls to accommodate more copious amounts of fenestration

Building Constraints:

- The architecture of the building is a unique star shape plan, causing limitations to what can be located in existing wings.
8.0 Spatial Concept and Design

The following chapter contains the detailed design proposal of an adolescent psychiatric facility for a total of 36 residing patients and approximately 30 staff. The spatial organization follows the geometry of the existing architecture of the building. The facility is organized into wings that house therapy, family spaces, and patient rooms. A central nurses/staff area is at the core of the facility with semi-public spaces adjacent to this central area. As well, the facility incorporates spaces for education and life skills development such as classrooms, cooking classes, an exercise room, a music room and gardening area. The scope of the project includes the interior design of the existing structure, as well as an introduction of exterior patio spaces and an addition of a transitional indoor/outdoor space on the north façade of the building. The design is informed by the literature and precedent review, presented in sections 4.0 Environmental Behaviour Literature Review and 5.0 Example Designs of Mental Health Facilities for Adolescent Youth. The most essential concepts are: safety and security, place-identity, supportive design, and biophilic design. To establish a cohesive design expression, the design concepts were intended to overlap, which can be primarily seen in the theory of supportive design.

8.1 Major Concept

Wabi sabi is an aesthetic ideal and philosophy that is representative of Zen Buddhism. Originated in Japan, wabi sabi is a world view centered on the acceptance of transience and imperfection (Juniper, 2011). It embodies the ideas of simplicity, humility, and living in tune with nature. It is often used to describe someone who is content with little or who makes the most of whatever they have. Additionally, wabi sabi refers to what happens with the passage of time. It is about transience, beauty and authenticity of age. To practice wabi sabi is to learn to accept
the natural cycle of growth and death, and the imperfections that accompany this progression. This is achieved by acknowledging the three simple realities: nothing lasts, nothing is finished and nothing is perfect (Juniper, 2011). It recognizes that all life is in a constant state of change and deterioration is as much a part of life as growth. Ultimately, wabi sabi demonstrates the ability to accept beauty and growth as it is presented, without needing to fix it or perfect it. The three core design principles found in the wabi sabi ideology are simplicity, tranquility and naturalness. This can be achieved in an interior space with the use of natural textures, weathered materials and muted tones of colour. An example of this design concept can be found in Japanese tea ceremony spaces. Objects found in these spaces are often rustic and plain in appearance. When broken, the objects are not discarded, but instead the cracks are filled with gold leaf to highlight the imperfections as a beautiful addition to the object.

The concepts and philosophies of wabi sabi are applied to the design of the adolescent psychiatric facility, focusing on characteristics of an open, appreciative and non-judgmental approach to mindfulness. Adolescent patients who come to the facility may be damaged, broken or imperfect because of their mental illness. However, the principles of wabi sabi reflect an acceptance and compassion for people and things as they are, in their natural imperfection (Lomas et al., 2017, p.56). Including elements of wabi sabi design within the facility creates an aesthetic mood allowing individuals to be mindful of the beauty in all forms, even finding value in moments of sadness, rather than pre-judging it as negative (Lomas et al., 2017, p.56). Wabi sabi encourages us to accept our own flaws through this imperfect, impermanent and incomplete phase, acknowledging that even though patients are going through hardships, there is beauty to be brought out from all experiences.
8.2 Spatial Organization

The spatial organization of the Adolescent Psychiatric Facility is based upon the existing architecture and the panopticon model. The case study analysis of the Trillium Secure Adolescent Inpatient Facility, examined in Chapter 5.0 Example Designs of Mental Health Facilities for Adolescent Youth, revealed the benefits of having a floor plan with an organized layout that includes a central core for staff areas, surrounded by public activity and therapy spaces and finally patient wings branching off these central rooms. One of the goals of this practicum project was to reduce the number of beds per wing in the original building design to provide more family size resident groups. This is a much more patient-centered approach rather than accommodating a higher number of patients per wing. These smaller groupings allow for community, relationships and support to flourish for all individuals. The positioning of the patient rooms are oriented so every room has views to nature. The proposed design focuses on creating interior spaces allowing for varying levels of social interaction, supportive interior environments, a natural aesthetic and easy organization. The angles of the existing architecture allowed for the floor plan to be designed symmetrically, enabling easy wayfinding for both patients, staff and visitors in every space within the building.
8.3 Design Product

Figure 30: Floor Plan
Floor Plan Legend.

1. South Side – Entry, lounge, nurse’s station A, classrooms, library, visitors’ room, store

2. South East Wing – Patient wing: primrose neighbourhood (males aged 15-17)

3. East Wing – Family accommodation wing

4. North East Wing – Patient wing: prairie crocus neighbourhood (males aged 12-14)

5. North Side – Exercise, music, spiritual, common space, sunroom, access to outdoors, private staff entrance, kitchen, cooking classroom.

6. North West Wing – Patient wing: wood lily neighbourhood (females aged 12-14)

7. West Wing – Therapy wing.

8. South West Wing – Patient wing: mondara neighbourhood (females aged 15-17)

9. Central Core – Private staff spaces
Figure 31: South Side Floor Plan

1. Entry
2. Security Room
3. Lounge
4. Nurse’s Station A
5. Study Space
6. Classroom’s
7. Private Study Space
8. Janitor/Storage Room
9. Library
10. Store
11. Visitor Room
12. Coffee Bar
13. Private Visitor Room
14. Janitor/Storage Room
15. Corridor to Primrose Patient Wing
Entrance

A calm and intimate entrance lobby is the first experience visitors have of the proposed adolescent psychiatric facility. The lobby is a separate entity from the nurse’s stations to allow the space to become more personalized when being greeted by one individual who is giving their undivided attention to visitors. The receptionist at the front desk can ensure all visitors sign in and out when they come and go, for security policies and procedures. After checking in at the front desk, visitors must pass through security and a set of locked doors to enter the facility. The space behind the reception desk is an office and storage room for security personnel. It is essential this room be located in the entrance space for security to monitor what individuals are bringing into the facility. As this is a critical element that relates to the policies and procedures of the building, all visitors must undergo a mandatory check for contraband items.

Materials used in this space are warm and include a natural colour palette, two tones of wood, quartz stone, and real plants. A biophilic design element seen in this space is the inclusion of a water wall. The sound and views that come from this feature allow a comfortable and calming interior space upon first impression. It is not only essential for patients and staff to feel comfortable within the space, but for visitors as well. The lower ceiling in the entrance provides an intimate welcoming into the space. Once the visitor passes through the security doors, the central space of the building opens up into 15’ height ceilings with ample daylight and activity of the facility.
Figure 32: Entrance/Lobby Perspective
Figure 33: Elevation A: North Entrance/Lobby Elevation

Figure 34: Elevation A: West Water Wall Entrance/Lobby Elevation
Living Room/Library

The library is a public lounge environment with a comfortable and welcoming aesthetic. Using lounge furniture, wood and the inclusion of a fireplace, the space becomes an inviting area to relax. Incorporating carpet in this area defines the space from the field of linoleum flooring used for the remaining areas of the facility. The inclusion of a green wall, organic forms in the carpet, plants and indirect, natural daylight from the clerestory windows allows for supportive and biophilic design to promote wellness into the space. The concept of wabi sabi is displayed within this space through the simplistic design elements, muted tones and the application of natural materials such as weathered stone, concrete and wood. The fireplace breaks up the space and is utilized as a partition to separate private seating from public. Along the south wall, a custom feature is designed that has seating inset into the wall. This is an exciting option intended to encourage adolescents to come and use this space, while also providing a private environment for an individual. The lowered bulkhead over this unique wall seating aids in defining this area as a private environment. One challenge of the library was to ensure it is age appropriate and a place where teens would want to be. This youthful setting is achieved by using tablets as reading and study devices, instead of stack of books in a traditional library. Charging stations are included in tables and storage spaces to allow the library to be age appropriate for the digital generation.

The existing columns and beams mimic the look of a tree trunk and branches. This reflects biophilic design elements of spatial arrangements in the space. The social seating layout of couches and chairs are placed under the 15’-0” ceiling height, and the inset wall seating are underneath a 10’-0” ceiling height behind the fireplace. The change in ceiling heights in this area provides added privacy levels. Using chairs and couches that are not very heavy permits easy
reconfiguration of this space to allow for different levels of privacy, conversation and social interaction among patients and staff. The nurses’ station is located to the north west of the space allowing for surveillance from the nurses to the patients at all times. Spaces separated by the fireplace are monitored through CCTV’s by staff for security and safety of the library area.
Figure 35: Living Room/Library Perspective

Figure 36: Elevation B: South Living Room/Library Elevation
Patient Wing

Each patient wing aims to provide place-identity, a comfortable aesthetic, safety and security features and a supportive environment for all users. There are four wings within the building that house patient wings, also known as “neighbourhoods”. Labeling each neighbourhood with a name provides place-identity and ownership to the group of adolescents residing in that space. The four neighbourhoods are: (1) Primrose, (2) Wood Lily, (3) Prairie Crocus and (4) Mondara, named after local Manitoba flowers and grasses that can be planted on the building grounds. Accent colours are included within each neighbourhood, providing each group with their own identity through both a name and colour. For example, in the Primrose Neighbourhood, tones of blues and yellows have been chosen as accents to be incorporated within the design of only this wing. Blue and yellow are colours found in nature and are aesthetic pleasing when paired together. Bold colours were selected to be used in patient wings to provide a youthful and fun environment for teens. Muted tones of grey, white and black as well as an abundance of wood contrasts these colours to provide a fun, yet therapeutic space. These contrasting colours and materials were chosen to provide a moderate level of stimulation for patients within this space (see section 4.2.4 Positive Distractions in the Environment).

Biophilic elements within each patient wing include a skylight, wood materiality, plants, organic forms found in upholstery and carpet, and windows along the perimeter of the space to provide daylighting and views to the outdoors. The living space is designed as an open environment to provide maximum daylight to all areas of the space, as well as for flexibility purposes. This flexible space is imperative for personalization and choice, a sense of control and relational security within the patient wing as furniture can be rearranged depending on the activity being done. A technology board is located upon entry in each neighbourhood. On this
digital notice board, posts can include a calendar of events coming up for both the entire facility and specific neighbourhoods, photos that have been taken during activities and events, milestones and birthdays of patients and staff, etc. This design feature is to act as community board for each neighbourhood and is safe to be placed in the public space as it is a touch screen board rather than a bulletin using sharp tacks that could cause patients to self harm.

Past the living space there is a corridor where the patient bedrooms are introduced. Along this corridor, each patient room has a personalized door front. A shelf and room number are associated at the door front of each patient room. This shelf is intended to provide a personalized addition of who is residing in what room. For example, a picture of the patient, name of the patient or both could be placed within this shelf to define this area as their own, before even entering their space. This corridor also contains seating underneath a lowered ceiling to provide for a semi-private one-on-one conversation space. It is essential to note that all doors in the facility contain a safety door knob, which is recessed into the door, securing that patients can not cause self harm by hanging from the door knob. A view of this knob can be seen in Figure 42.

A security feature included in each neighbourhood and ensures the safety of all users is a swipe card access. The neighbourhood an individual resides in for the duration of their stay is the only neighbourhood they are allowed in. If they want to visit with others they must do so in public spaces of the facility. This safety measure is to ensure males and females are not sneaking into each others’ bedrooms throughout the day or night, as well as to encourage a strong social bond between the adolescents in their specific neighbourhood. The neighbourhoods are separated by gender where two have only females and two have only males. Individuals who identify as transgender have the freedom to associate what gender they feel they belong to. Based on that decision, they can reside in the according patient wing. The space is a safe and comfortable
environment for transgender adolescents, providing acceptance and welcoming to all individuals. The neighbourhoods contain nine patient bedrooms, a sensory room, four patient washrooms, a nurse’s station, laundry room, and have common spaces designed as an apartment.

Each neighbourhood’s common spaces include a kitchen, living space, laundry room and washrooms. This design decision was made to allow patients to practice and learn life skills as they are attaining treatment, aiming to keep their life as normal as possible throughout their stay. Each living space in all neighbourhoods are designed in a similar layout, however, as each patient wing is targeted towards a different sex and age group, activities in each neighbourhood vary. For example, the primrose neighbourhood is for males aged 15-17 and includes a large area for video games, ping pong, foosball, TV, cooking, baking and computers. The wood lily neighbourhood is reserved for females aged 13-15 and contains spaces for making crafts, board games, computers, creative movement, baking, cooking and open space for conversation. As noted in section 2.0 Adolescent Development and the Design of Mental Health Facilities, the development period between these ages is vast. Therefore, activity spaces need to be designed accordingly for the appropriate age group. Washrooms are separated from individual patient bedrooms for security purposes. Each washroom has suicide proof fixtures and fittings within it. Showers rather than baths are included in each bathroom and contain fixtures do not support the weight of a human (e.g. hanging). A nurse’s station is located at the front of the neighbourhood for security and surveillance, so they can monitor everyone that comes and goes in both the day and night. CCTV’s are placed throughout the patient wing so that behind any hidden nooks, patients can still be seen. A sensory room is also incorporated into each wing if there is an emergent issue with a patient throughout the night.
Figure 37: South East Primrose Neighbourhood Enlarged Floor Plan (15-17-year-old males)

1. Nurse’s Station
2. Medical Room
3. Living Space
4. Kitchen
5. Typical Patient Bedroom
6. Accessible Patient Bedroom
7. Laundry
8. Sensory Room
9. Typical Patient Washroom
10. Typical Accessible Washroom
Figure 38: Primrose Entrance Perspective

Figure 39: Elevation A: East primrose gaming wall elevation
Figure 40: Primrose living space perspective

Figure 41: Elevation B: West primrose living space elevation
Figure 42: Primrose corridor along patient rooms perspective

Figure 43: Elevation B: West primrose corridor elevation
Patient Bedroom

Within each patient bedroom place-identity, sense of control and security were the driving forces behind the design decision in this space. Personalization begins before even entering a patient’s bedroom. Room tags that contain the patient’s name are on the exterior wall of the space. When entering the room, personalization and sense of place is continued throughout by incorporating open shelving to display personal items. A Velcro board is running on two walls of the room for posters, photos, calendars, etc. is also included. Velcro was chosen so sharp tacks would not be accessible to patients as these objects could cause self harm. As well, including a Velcro board within the design can ensure there is no damage done to the walls when there is patient turnover. There is a desk provided in each room to encourage studying and privacy within each adolescent’s own personal space. The study desk has a chaise designed beside it so if patients want to socialize with friends within their neighbourhood in a more private setting, they have that option to. Each bedroom contains its own thermostat and an underfloor radiant heating system to allow patients to control their indoor air quality and thermal comfort. Dimming lights are also included within the space to allow patients to control the amount of brightness in their bedroom.

All patient rooms are designed with appropriate safety and security measures in mind. Environmental safeguards designed into patient bedrooms are double swing doors, non-locking doors, break away rods in closets, and polycarbonate (unbreakable) glass used in the windows. An automatic window covering is also included in the space, which does not have any rope or string, so patients can not cause self harm.
Figure 44: Elevation C: Typical patient bedroom elevation – Velcro wall

Figure 45: Elevation C: Typical patient bedroom elevation – shelving wall
Figure 46: Typical patient bedroom perspective
Family Wing

As highlighted in the literature review, social support from family is essential in the journey and recovery of patients residing in the adolescent psychiatric facility. As the facility is open to all Manitoba residents, individuals may be coming into the city from locations outside of Winnipeg such as Gimli, Brandon or Churchill to receive treatment. Due to the length of time it would take to drive from these cities, providing an area for family members is essential to include within the floor plan. A family wing is located on the east side of the building and provides overnight accommodations for family members of adolescent patients. Figure 47 displays the rooms located in this wing. Along with six overnight rooms, there are two accessible overnight rooms for larger families or families needing accessible design in their space. A laundry room is also provided in this wing. A family style kitchen and open living area is intended to be a space where different families can come together and gain support from one another on this journey.
Figure 47: East Family Wing

1. Outside patio per patient wing
2. Public Accessible Washroom
3. Administration Office
4. Sensory Room
5. Family Living Space
6. Family Kitchen
7. Typical family overnight room including washroom
8. Typical family overnight accessible room including accessible washroom
9. Laundry Room
Common Space

The common space is a large multi-purpose room located at the back of the building on the north side. The space is primarily used for dining for patients and staff, however there are certain design elements introduced in the space that allow for flexibility and other events to take place. Bi-folding acoustic doors are found at the entrance of the space, adjacent to the nurses’ station. These doors can be opened to provide a more exposed interior environment of the common space or can be closed if a private event is occurring, providing acoustic control throughout the facility. Events and themed nights that can occur in this space include (but are not limited to): holiday parties, Halloween parties, dances, move nights, casino nights, make your own pizza night, board game night, karaoke night and trivia night. For the space to be flexible, furniture options such as stackable chairs and foldable tables are used in the space. Figure 49 shows one configuration of the space during dining hours, and Figure 50 shows another configuration of the space during a movie night event. A storage area adjacent to this area contains event decorations and additional furniture that might be needed during these themed nights.

One aspect of this area that makes it unique is the addition of a sun room. This indoor/outdoor environment is at the back of the common space and provides a strong connection to the outdoors. A curtain wall wraps around the north façade of the space, providing ample daylight and views to the garden on the north east corner of the building grounds. Bi-folding doors are also incorporated on the north east corner of this curtain wall, which allows the space to be opened to the outdoors, providing an indoor/outdoor experience for all users. Figure 54 shows this area being closed with lounge furniture. The ceiling overhead of this sun room is glass, which allows this area to be visually perceived as an outdoor environment that is separated, yet still apart of the rest of the indoor common space. Benefits of this design element
include natural air flow into the space, access to nature, and freedom for patients to move in and out of the facility as they wish. It is secure as the grounds of the facility have a fence that runs on the perimeter providing a boundary for patients, so they can not wander off site. As the furniture is flexible and the outdoors is accessible through the bi-folding doors, patient’s have the option to extend the space outside. *Figure 55* shows this space when the doors are open, extending the interior to the outdoors.

As the space is one large room, design decisions were needed to define the space and break up the vast open area. Using a floor pattern of grey and green linear patterns in the common space and grey square carpet in the sun room, the floor is more defined. As well, the ceiling in the center of the common space features a wood slat canopy to provide a fun, youthful intrigue into this space. These design decisions kept with the views of biophilic design and wabi sabi in terms of materially, colour and texture.
Figure 48: North Enlarged Floor Plan

1. Exercise Room
2. Washroom
3. Music Room
4. Spiritual Room
5. Stair to basement level
6. Common Room Storage
7. Nurse’s Station B
8. Common Space
9. Sunroom
10. Staff Entrance
11. Kitchen
12. Stair to basement level
13. Dry Storage
14. Cold Storage
15. Freezer
16. Storage
17. Cooking Class
Figure 49: Common space floor plan - dining

Figure 50: Common space floor plan – movie night

Figure 51: Elevation A: East common space elevation
Figure 52: Common space day time dining configuration perspective
Figure 53: Common space movie night configuration perspective
Figure 54: Sun room perspective
Figure 55: Sun room open doors perspective
Therapy Wing

The therapy wing was chosen to be situated on the west side of the building due to the views towards the park located beside the building site. In this wing of the building, spaces for therapy include individual therapy, group therapy, sensory rooms, washrooms, a janitor room and storage room.

Individual therapy rooms are intimate and private for patients to feel safe and comfortable when attending one-on-one therapy sessions. There is a window in each individual therapy room to provide daylight into the space and views to the surrounding park. A couch is provided for patients to feel comfortable to sit or lay down when attending therapy sessions, as well as an option to sit at a table with the therapist. These furniture choices provide personal control for the patient to choose where they would feel most comfortable in the space. The lights in this space are on dimmers so patients can choose if they would like to have a bright or dark space. Art pieces, wall covering and carpet that depict natural elements such as flowers and grasses are included in this space to support biophilic design and Ulrich’s theory of supportive design. On the north wall of each individual therapy room, a space on the wall has idea paint applied to it. Idea paint is a dry erase paint applied to surfaces, transforming any wall into a creative space. Including idea paint into therapy rooms, as well as other spaces throughout the facility, provides freedom of expressing their words through writing or drawings in a unique way that utilizes the built environment.

The doors are double swing, so patients can not barricade themselves and their therapist within the room. As patient should not be left alone in these areas, environmental safeguards are not as highly needed in therapy rooms, however two sensory rooms are included within this wing in case of emergent purposes.
Figure 56: West Therapy Wing Enlarged Plan

1. Public Accessible Washroom
2. Sensory Room
3. Administration Office
4. Typical Individual Therapy Room
5. Storage Room
6. Washroom
7. Accessible Washroom
8. Janitor Room
9. Group Therapy Room
10. Outside patio per patient wing
Figure 57: Typical individual therapy room perspective
Figure 58: Elevation A: North typical individual therapy room elevation

Figure 59: Elevation A: East typical individual therapy room elevation
Central Core Staff Areas

The central area of the facility is designated for staff areas that are private. Grouping these areas in the center of the facility follow the panopticon style of design highlighted in section 3.2.2 Surveillance. It is essential these spaces are private due to the confidentiality of information on patients. However, this space is underneath the 15’- 0” ceiling height with only 10’- 0” walls. Therefore, the ceilings on top of the partitions in this area are transparent to provide acoustical privacy but allow for daylighting. This allows staff spaces to receive natural light into their space throughout their work day. Along the perimeter of these core spaces, there are chairs and benches against the walls that face the public corridors. These walls are green walls, to provide plants into the space and incorporate notions of biophilic design within the corridors. Figure 61 and Figure 62 are longitudinal and latitudinal sections showing the change in ceiling heights between this clerestory central core and the lower height spaces adjacent to this area.
Figure 60: Central Core Staff Areas Enlarged Plan

1. Staff Room
2. Interdisciplinary
3. Nurse’s Station B
4. Charting
5. Medical Storage
6. Medicine Room
7. Nurse’s Station A
8. Electric/Work Room
9. Accessible Staff Washroom’s
10. Family Therapy Room
11. Meeting Room
Figure 61: Section A: East-West building section

Figure 62: Section B: North-South building section
9.0 Conclusion

9.1 Overview

This practicum project utilized multiple approaches to understand the needs of adolescent psychiatric patients, their caregivers and their families. The resulting design considerations put forward in this practicum project represent the beginning of a theoretical framework that aims to identify and highlight concepts known to influence psychiatric environments for adolescents. The design proposals are not meant to provide design solutions but provide opportunities and examples of how the well-being and needs of the users can be supported within the design of the built environment.

9.2 Research Questions Revised

At the beginning of this practicum project, I asked a series of guiding questions that would influence and direct my research and design principles. The three questions I asked had to do with the physical interior environment and the mental, physical, and therapeutic needs of an adolescent psychiatric patient. The theories I chose to examine for the answers to these questions were the theories of safety and security, place-identity, supportive design and biophilic design. In the course of my investigation, I have drawn the following conclusions:

1. **What are the biological, cognitive, emotional and social needs of developing Adolescents who are experiencing mental health issues?**

The needs of adolescents can be categorized as physical, psychological and sociological. Throughout early and late adolescence, as well as emerging adulthood, abnormal development and mental health issues cause personal changes to an adolescent’s body, brain, and their relationships with others. This was discussed throughout section 2.2 Abnormal Development.
throughout Bronfenbrenner’s ecological systems theory. The primary needs for adolescents throughout all stages of their development were to explore and find their own identity, create supportive relationships with others, reduce levels of stress and anxiety through interior design elements and supportive environments, and to feel safe and secure. By understanding and analyzing the needs of developing adolescent patients, a therapeutic design and details within the interior can be achieved.

2. How can the built environment enhance the physical, emotional and psychological well-being of adolescent individuals who have psychosis and mental illness?

By addressing the needs of adolescents who experience mental health issues, research that can support and strengthen the care and well-being of these patients is brought forward through four environmental theories: (1) safety and security, (2) place-identity, (3) supportive design and (4) biophilic design. Based on analysis and design guideline have been drawn from them for the design of an adolescent psychiatric facility (see 8.3 Design Product).

Design strategies can be developed from these four theories that provide positive effects on the environmental psychology and well-being of all users. As identity is a key component in the development of adolescents, the ability to choose and control elements within your own environment is essential to feel comfortable, within an unfamiliar space. In section Place-Identity, I investigate the notions of place-identity to understand how personalization, choice and the notion of individual dwelling can achieve a comfortable environment and an identity for the patient within an unfamiliar space. Section 4.2 Theory of Supportive Design contains ways to reduce stress within the built environment by responding to the needs of adolescent patients through the theory of supportive design. The main elements taken from this theory are to provide a sense of control within one’s environment, ensure social support from family, friends and
peers, and have appropriate stimulation within the interior environment. This stimulation is introduced by incorporating biophilic design elements within the interior to promote both mental and physical well being to occupants. In section 3.2 Safety and Security, I discuss four principles to ensure a safe and secure psychiatric environment: procedural security, surveillance, relational security and environmental security (suicide proofing).

3. **How can a psychiatric facility incorporate design features and strategies to promote safety and security for all, without feeling oppressive or institutional?**

People with mental illness are not criminals, but preventative measures need to be in place to protect individuals from harming themselves and others while undergoing treatment. Therefore, part of the practicum investigation focused on finding non-oppressive ways of incorporating safety and security within the design of a psychiatric facility. It was determined that providing an environment that is safe and secure for staff, patients and visitors, while also allowing dignity, autonomy and privacy for all users can be achieved through specific design details. By incorporating surveillance CCTV’s in secreted spaces, the presence of security personnel upon entry enables a sense of calmness in relation to the safety of all users of the space. For example, including open social spaces such as the library, lounge and patient wing, residents can look out for one another or notice if something is off with a peer. This form of surveillance is included in the design of the floor plan.

One challenging aspect within the design is to create a space that is safe, yet comfortable, inviting and promoting well-being for all users. Throughout my research, I found designing views of surveillance, flexibility in furniture arrangements within the floor plan, as well as suicide proofing are the most important elements incorporated to ensure safety. These interior elements can also be designed into the facility in a beautiful way and follow supportive design
principles. Therefore, a design should aim to include all elements of security, yet through designed safeguards that are non-oppressive, as well as exploring options within the floor plan allowing for flexibility, choice and non-oppressive surveillance from staff to patients.

9.3 Future Recommendations

As the theories examined each presented extensive research, not all could be central to the design process. Therefore, opportunities for future research lie in the investigation and expansion of the main theories explored in this practicum project such as sense of place. The information presented in this practicum cannot be considered static and may become outdated over time. The design recommendations can be updated and elaborated on as new research comes forward regarding adolescent mental health.

The CPS model of care is a relatively new care model implemented within psychiatric healthcare. As this patient centered care model is implemented over time, research will be needed in quantifying the effectiveness of this model.

The impact of future technologies is another area of potential research for the design of psychiatric inpatient facilities. As technology is adapting over time, the security features and safety measures in place for a psychiatric facility may be able to be improved. Advances in technology could provoke more non-institutional aesthetics in the future, to the point where security features could be installed almost invisibly.
10.0 Bibliography


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Appendix A: Building Regulation Analysis – Access and Life Safety (MBC/NBCC2015)

The National Building Code of Canada 2015 (NBCC 2015) was reviewed and analyzed to ensure occupant safety for all users of the proposed adolescent psychiatric facility, and to ensure that the facility’s design is compliant with Canada’s building bylaws and accessibility standards (National Research Council of Canada, 2015).

Part 3: Fire Protection, Occupant Safety and Accessibility

Section 3.1 General

3.1.2 Classification of Buildings or Parts of Buildings by Major Occupancy

3.1.2.1 Classification of Buildings

Classification is B3 – Care occupancy

3.1.17.1 Occupant Load

Occupant Load Area per person required is 10 sqm per person (107 square feet). Maximum Occupancy of the Adolescent Psychiatric Facility is maximum 400 people.

Section 3.2 Building Fire Safety

3.2.1. General

The proposed independent Adolescent Psychiatric Facility occupies one story and faces one street.

3.2.2. Building Size and Construction Relative to Occupancy

3.2.2.10. Streets
As the proposed adolescent psychiatric facility’s South façade faces Roblin Boulevard, it is considered to face one street.

3.2.2.44 Group B, Division 3, up to 3 Storeys (Non-combustible), Sprinklered

The adolescent psychiatric facility is non-combustible construction, with floor assemblies separated with minimum 1 hr fire-resistance rating, and sprinklered throughout. All glass within fire separations is to be wired.

3.2.4 Fire Alarm and Detection Systems

3.2.4.1. Determination of Requirement for a Fire Alarm System

As the proposed adolescent psychiatric facility has an automatic sprinkler system, the building requires the installation of a fire alarm system.

3.2.4.3 Types of Fire Alarm Systems

The fire alarm system at the proposed adolescent psychiatric facility shall be a single or 2-stage system.

3.2.4.10 Fire Detectors

Fire detectors are not required within the proposed adolescent psychiatric facility since it is sprinklered throughout.

3.2.4.11 Smoke Detectors

Smoke Detectors Smoke detectors need not be installed in sleeping rooms and corridors serving the sleeping rooms within the proposed adolescent psychiatric facility where smoke alarms are installed in accordance with Article 3.2.4.21.
3.2.4.21. Smoke Alarms

The proposed adolescent psychiatric facility requires smoke alarms to be installed within each sleeping room and in a location between the sleeping rooms and the remainder of the suite.

3.2.7 Lighting and Emergency Power System

3.2.7.3 Emergency Lighting

In accordance with 3.2.7.3.(1) the adolescent psychiatric facility provides an average level of emergency illumination not less than 10 lx at floor/treat level throughout the facility.

3.2.7.4. Emergency Power for Lighting

The proposed adolescent psychiatric facility requires an emergency power supply that is designed and installed, that upon failure of the regular power, it will assume the electrical load automatically for a period of 1hr.

3.2.7.8. Emergency Power for Fire Alarm Systems

Fire alarm systems of the proposed adolescent psychiatric facility require an emergency power supply that is capable of providing supervisory power for not less than 24hr, and immediately following that period, emergency power under full load for not less than 1hr.
Section 3.3 Safety Within Floor Areas

3.3.1. All Floor Areas

3.3.1.1. Separation of Suites

Each suite in the proposed adolescent psychiatric facility shall be separated from adjoining suites by a fire separation having a fire-resistance rating not less than 1hr.

3.3.1.3. Means of Egress

Access to exits within floor areas within the proposed adolescent psychiatric facility shall conform to Subsections 3.3.2. to 3.3.5., as well as each suite that contains more than one suite shall have an exterior exit doorway, or a doorway into a public corridor.

3.3.1.4. Public Corridor Separations

Public corridors of the proposed adolescent psychiatric facility shall be separated from the remainder of the storey by a fire separation.

3.3.1.5. Egress Doorways

The proposed independent adolescent psychiatric facility requires a minimum of 2 egress doorways in all floor areas that are sprinklered throughout and the travel distance to an egress doorway is more than 25m (82ft), or the area of the room or suite is more than 150m2 (492ft2) for individual suites and 200m2 (656 ft2) for suites other than sleeping rooms. In suites where two exit doors are required the
minimum distances between those doors comply with those listed in Table 3.3.1.5.B, for buildings that are sprinkled throughout.

3.3.1.9. Corridors

The minimum width of a public corridor is 1100 mm (3.5ft). All the corridors within the proposed adolescent psychiatric facility are 1800mm (6ft) wide or greater.

3.3.1.13. Doors and Door Hardware

All doors within the proposed adolescent psychiatric facility that open into or is located within a public corridor or other facility that provides access to exit from a suite provides a clear opening or not less than 800mm (32in), and do not open onto a step. Additionally, all doors at the proposed adolescent psychiatric facility are operable by one hand, are openable with not more than one releasing operation, and are installed no more than 1200mm (4ft) above the finished floor.

3.3.1.17. Capacity to Access to Exits

The proposed adolescent psychiatric facility has a Group B, Division 3 occupancy and therefore the corridors servicing the facility have a minimum required width, which shall not be less than 18.4 mm per person. The occupant load calculation results in required widths well below those outlined in sentence 3.3.1.9.

3.3.1.19 Transparent Doors and Panels

A glass or transparent door shall be designed and constructed so that the existence and position of the door is readily apparent, by attaching visually contrasting
hardware, bars or other permanent fixtures to it. The visibility of fully glazed transparent doors, sidelights and panels shall be enhanced through the inclusion of mullions, markings or other elements that:

a) Are visually contrasting,

b) Are at least 50 mm (2 in) high,

c) Extend the full width of the door, sidelight or panel, and
d) Are located between 1350 mm (53 in) and 1500 mm (59 in) above the floor.

A glass door shall be constructed of tempered or laminated safety glass or wired safety glass.

3.3.2 Assembly Occupancy

3.3.2.3 Fixed Seats

Non-fixed seats at the proposed adolescent psychiatric facility conform to the National Fire Code (NFC).

3.3.3 Care, Treatment or Detention Occupancies

3.3.3.3 Corridors

The proposed independent adolescent psychiatric facility does not have any dead end corridors that serve patient sleeping rooms. Additionally, the corridors at the proposed facility exceed the 1650mm (5.4ft) minimum width for care occupancies that do not require the movement of patients or residents in beds.
3.3.3.4. Doorway Width

The clear width of a doorway that opens onto a public corridor shall be 850mm (2.8ft) for individual suites at the proposed adolescent psychiatric facility.

3.3.3.5. Compartment and Fire Separations

Walls between individual suites at the proposed adolescent psychiatric facility are constructed as fire separations with a fire-resistance rating not less than 1hr. Additionally, floor assemblies within individual suites need not be constructed as fire separations.

Section 3.4 Exits

3.4.1.2. Separation of Exits

Each floor area in the proposed adolescent psychiatric facility has access to two means of egress, which are separate from one another.

3.4.2. Number and Location of Exits from Floor Areas

3.4.2.1. Minimum Number of Exits

Every floor area of the proposed adolescent psychiatric facility is served by at least two exits.

3.4.2.3. Distance between Exits

The least distance between 2 exits from a floor area shall be one half the maximum diagonal dimension of the floor area but need not be more than 9 m (30
ft) for a floor area having a public corridor or one half the maximum diagonal dimension of the floor area, but not less than 9 m (30 ft) for all other floor areas.

3.4.2.5. Location of Exits

Exits within the proposed adolescent psychiatric facility are located so that the travel distance to at least one exit is not more than 45m (148ft), as the facility is sprinklered throughout.

3.4.3. Width and Height of Exits

3.4.3.2. Exit Width

The minimum aggregate required width of exits serving floor areas intended for care, treatment, or detention occupancies shall be determined by multiplying the occupant load of the area served by 18.4 mm per person. In the case of the proposed adolescent psychiatric facility, this results in 18.4 mm multiplied by 400 (max floor area occupancy) = 7630 mm (290 in) aggregate exit width. If more than one exit is required, every exit shall be considered as contributing no more than one half of the required exit width, with a minimum exit width of 1100 mm (44 in).

3.4.3.4. Headroom Clearance

Except as permitted by Sentences (4) and (5), every exit shall have a clear height over the clear width of the exit of not less than 2050mm (6.7 ft) and the headroom clearance for doorways shall be not less than 2030mm (6.6 ft).
3.4.4 Fire Separation Exits

3.4.4.1 Fire-Resistance Rating of Exit Separations

The fire-resistance rating of exit separations at the proposed adolescent psychiatric facility is 2hr for each exit. 3.4.5.

3.4.5 Exist Signs

3.4.5.1 Exit Signs

All exit doors will have exits signs conforming to sentences 3.4.5.1 (1-5).

Section 3.7 Health Requirements

1. Room and Space Height

“The height of every room and space shall be sufficient so that the ceiling fixtures do not obstruct movement or activities below.” (NBC 2010, Division B3-145)

3.7.2.2 Water Closets

Unisex water closets are provided in accordance with Table 3.7.2.2.A and Table 4.7.2.2.B

3.8. Accessibility

3.8.2. Application

3.8.2.8. Plumbing Facilities

A barrier-free washroom shall be provided with a lavatory that complies with Subsection 3.8.3.
Where mirrors are provided in a barrier-free washroom, at least one mirror shall comply with Subsection 3.8.3.

Where showers are provided in a building, at least one shower stall in each group of showers shall comply with Subsection 3.8.3

3.8.3. Design

3.8.3.2. Barrier-Free Path of Travel

All interior and exterior paths of travel are to be barrier-free.

3.8.3.6. Doorways and Doors

In accordance with 3.8.3.3. (1), every doorway in a barrier free path of travel is required to have a minimum width of 800mm when the door is fully opened. In accordance with 3.8.3.3. (5) each door with a barrier-free path of travel is equipped with a power door operator, allowing a person to open the door from either side of it.

3.8.3.12. Universal Washrooms

Every regularly occupied storey that is accessed by a barrier-free path of travel shall:

a) Have a universal washroom that is served by a barrier-free path of travel,

b) Have a door complying with Article 3.8.3.6.

c) Have one lavatory conforming to Article 3.8.3.15.
d) Have one water closet conforming to Article 3.8.3.13. and clause 3.8.3.11. (1)(d), with a clear floor space at least 900 mm wide that is parallel and adjacent to the open side of the water closet,

e) Have grab bars conforming to Clauses 3.8.3.11. (1) (e) and (f),

f) Have a coat hook conforming to Clause 3.8.3.11. (1)(g),

g) Have a toilet paper dispenser conforming to Clause 3.8.3.11. (1)(b),

h) Unless a counter is provided, have a shelf located not more than 1200 mm (47 in) above the floor, and

i) Be designed to permit a wheelchair to turn in an open space not less than 150 mm (6 in) in diameter.

3.8.3.13. Water Closets

A water closet for a person with physical disabilities shall:

a) Be equipped with a seat located 430 mm (17 in) to 460 mm (18 in) above the floor,

b) Flush automatically or be equipped with a flushing control that complies with clause 3.8.3.8. (1)(b),

c) Be equipped with a seat lid or other back support, and

d) Where it has a tank, have a security attached tank top
3.8.3.15. Lavatories and Mirrors

A barrier-free washroom shall be provided with a lavatory that shall be equipped with faucets complying with Sentence 3.7.2.3. (4) and have a soap dispenser that is automatic and complies with clause 3.8.3.8. (1)(b). Where mirrors are provided in a barrier-free washroom, at least one mirror shall be:

a) Mounted with their bottom edge not more than 1000 mm (39 in) above the floor, or

b) Fixed in an inclined position so as to be usable by a person in a wheelchair.

3.8.3.16. Showers

Where showers are provided in a building, at least one shower stall in each group of showers shall:

a) Be not less than 1500 mm (59 in) wide and 900 mm (35 in) deep,

b) Have a clear floor space at the entrance to the shower that is not less than 900 mm (35 in) deep and the same width as the shower, except that fixtures are permitted to project into that space provided they do not restrict access to the shower,

c) Have no doors or curtains that obstruct the controls or the clear floor space at the entrance to the shower,

d) Have a slip-resistant floor surface
e) Have a threshold not more than 13 mm (1/2 in) higher than the finished floor, and where it is higher than 6 mm (1/4 in), beveled to a slope no steeper than 1 in 2.

f) Have 2 grab bars that conform to sentence 3.7.2.8. (1)

g) Have a hinged seat that is not spring-loaded or a fixed seat with a smooth, slip-resistant surface and no rough edges.

h) Have a pressure-equalizing or thermostatic-mixing valve and other controls that comply with clause 3.8.3.8. (1)(b)

j) Have recessed soap holders that can be reached from the seated position

3.8.3.21. Spaces in Seating Area

Spaces designated for wheelchair use shall be:

a) Clear and level, or level with removable seats,

b) Not less than 900 mm (35 in) wide and 1525 mm (60 in) long to permit a wheelchair to enter from a side approach and 1220 mm (48 in) long where the wheelchair enters from the front or rear of the space,

c) Arranged so that at least 2 designated spaces are side by side,

d) Located adjoining a barrier-free path of travel without infringing on egress from any row of seating or any aisle requirements,

e) Situated as part of the designated seating plan, to provide a choice of viewing location and a clear view of the event taking place
South Side Floor Plan

NTS
South East Primrose Neighbourhood Enlarged Floor Plan (15-17-year-old males)

NTS
Section A – East-West Building Section

NTS

Section B: North-South Building Section

NTS
South Side Reflected Ceiling Plan

NTS
South East Primrose Neighbourhood Reflected Ceiling Plan
(15-17-year-old males)

NTS
East Family Wing Reflected Ceiling Plan

NTS
North Reflected Ceiling Plan

NTS
Central Core Reflected Ceiling Plan
NTS
Appendix C: Detail Drawings

WASHROOM ACCESSORIES LEGEND
NOTE: ALL FIXTURE, EQUIPMENT AND ACCESSORIES ARE LIGATURE RESISTANT SPEC'D FROM SUICIDE PROOF MANUFACTURER'S BEHAVIOURAL SAFETY PRODUCTS U.D.N.

A. SUICIDE RESISTANT SAFETY GRAB BAG
WFULL CLOSURE PLATE 912 X 42 #060389

B. SUICIDE RESISTANT SAFETY GRAB BAR
WFULL CLOSURE PLATE 912 X 39 #060389

C. LIGATURE RESISTANT SENSOR FAUCET #SF390

D. 0552 SURFACE MOUNTED SOAP DISPENSER

E. LIGATURE RESISTANT WOOD FRAMED STAINLESS STEEL MIRROR #FM 130

F. SUICIDE RESISTANT RECESSED TOILET ROLL HOLDER - FRONT MOUNT #TH120

G. SUICIDE RESISTANT TOWEL HOOK - FRONT MOUNT #TH170

H. 2352 RECESSED PAPER TOWEL DISPENSER

I. 4722-15 SURFACE MOUNTED SANITARY NAPKIN DISPOSAL (BELOW GRAB BAR)

118 W/C Enlarged Plan - Typical Patient Washroom
WASHROOM ACCESSORIES LEGEND

NOTE: ALL FIXTURE, EQUIPMENT AND
ACCESSORIES ARE SUICIDE RESISTANT SPEC'D
FROM SUICIDE PROOF MANUFACTURER
BEHAVIOURAL SAFETY PRODUCTS U.O.N.

A SUICIDE RESISTANT SAFETY GRAB BAR
W/FULL CLOSURE PLATE 812 X 42 #GB350

B SUICIDE RESISTANT SAFETY GRAB BAR
W/FULL CLOSURE PLATE 812 X 36 #GB350

C LIGATURE RESISTANT SENSOR FAUCET #SF390

D 6582 SURFACE MOUNTED SOAP DISPENSER

E LIGATURE RESISTANT WOOD FRAMED
STAINLESS STEEL MIRROR #FM160

F SUICIDE RESISTANT RECESSED TOILET
ROLL HOLDER - FRONT MOUNT #RH700

G SUICIDE RESISTANT TOWEL HOOK - FRONT
MOUNT #TH870

H 2232 RECESSED PAPER TOWEL DISPENSER

I 4722.15 SURFACE MOUNTED SANITARY NAPKIN
DISPOSAL (BELOW GRAB BAR)

4 South 118 Typical Patient W/C Elevation

NTS

5 West 118 Typical Patient W/C Elevation

NTS
Typ. Section – W/C Lavatory Counter

NTS
Typ. Section – West W/C Vanity Wall

NTS

Typ. Section – Cove Light Detail at West W/C Vanity Wall

NTS
10" GROMMET IN COUNTER FOR DIRTY TOWEL DROP OFF

BASE CABINETS

DASHED LINE DENOTES CABINET OVERHEAD
Elevation – W/C Storage Millwork

NTS
Section – W/C Clean Laundry Storage Millwork

NTS
1/4" PLYWOOD

LINE OF WALL

1/2" PLAM-1 CABINET

LINE OF CEILING

ADJ. SHELVES

1/2" PLAM-1 DOOR

1/2" PLAM-1 CABINET

UIC LIGHT SEE ELEC.

12" GROMMET FOR TOWEL DISPOSAL

QZ-1 COUNTERTOP

CONCEALED PUSH LATCH. LOCKED AT ALL TIMES

DIRTY TOWEL BIN. SIZE TO BE CONFIRMED WITH OWNER

SLIDING TRACK IN CABINET

BASE FRONT, PLAM-1

SECTION – W/C DIRTY LAUNDRY STORAGE MILLWORK

NTS
Appendix D: FF+E Selections
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Room Finish Schedules

General Note: Refer to elevations and ceiling

### Room Finish Schedule – South Side

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### Room Finish Schedule – Typical Patient Wing

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**Room Finish Schedule – Central Core**

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**Room Finish Schedule – North Side**

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<td>RB-2</td>
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Furniture Selections:

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<td>Teknion</td>
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<td>Teknion</td>
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Figure 2: Nemours Children’s Hospital. Retrieved from https://www.archdaily.mx/mx/02-304466/hospital-de-ninos-nemours-stanley-beaman-and-sears?ad_medium=gallery. Copyright permission could not be obtained.

Figure 3: Fractal Fence. Retrieved from Söderlund & Newman, 2017, p. 762. Copyright permission could not be obtained.

Figure 4: Paley Park – Prospect and Refuge. Retrieved from Söderlund & Newman, 2017, p. 763. Copyright permission could not be obtained.


Figure 7: Trillium Secure Adolescent Inpatient Facility Interior. Retrieved from https://www.archdaily.com/803705/trillium-secure-adolescent-inpatient-facility-tva-architects. Copyright permission obtained from Sabina Poole TVA Architects on November 27, 2018.


Figure 14: The Caring Cabin Dining Area. Retrieved from https://www.archdaily.com/278398/caring-cabin-tva-architects?ad_medium=gallery. Copyright permission obtained from Sabina Poole TVA Architects on November 27, 2018.


Figure 24: Charleswood Long Term Care Home, Existing Floor Plan. Copyright permission obtained from Malcolm Holbrow, Environmental Services Manager, Riviera Living on January 14, 2018.
Glossary

Adolescence: Defined by Psychologist Nancy Cobb, adolescence is a period in life between the ages of 12-18. It begins with biological maturation, where individuals accomplish developmental tasks to achieve a stage of adulthood set by society. (Cobb, 2010, p.5).

Collaborative Problem-Solving Approach (CPS): established in 2001 by Dr. Ross Green, this highly individualized care model is a cognitive behavioural approach where each patient has a specific action plan and treatment program for their mental illness carried out by a team of healthcare professionals. (Greene, Ablon & Martin, 2006).

Patient-Centered Care (PCC): model of care that is tailored to an individual’s specific health needs and desired health outcomes. Patients are partners with their healthcare providers, not only through a clinical perspective, but an emotional, social and mental perspective.

Place: a term that defines a meaningful environment that combines the physical location, social locale, and conceptual sense an individual has with an environment. Place can be associated with ownership, geography, activities, rituals, and experiences to understand the world in spatial terms (Cresswell, 2013, p.2).

Psychosis: refers to people who suffer from a severe mental disorder in which emotions are so impaired that contact is lost with external reality including Schizophrenia, Bipolar Disorder, Delirium, and Major Depressive Disorder (English Oxford Dictionary, 2018).

Supportive: characteristics that support or facilitate coping and restoration to stress that accompanies illness (Ulrich, 2014, p.53).