Creating A Home: Enhancing the Quality of Life for Alzheimer's Residents in Manitoba Long-Term Care Facilities

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

MASTER OF INTERIOR DESIGN

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Faculty of Architecture

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Abstract

Alzheimer's disease has had, and continues to have, a vast and significant impact on the aging population in Canada. The disease is one of the most challenging and common neurodegenerative disorders in society. My practicum focuses on addressing several key concerns in long-term care facilities that may be implemented to improve the quality of life for someone living with Alzheimer's disease. The transition into a long-term care facility can be difficult due to the unfamiliar environment. To alleviate this stress, this practicum summarizes key factors that impact an individual's quality of life. It explores how wandering can be viewed as a positive behaviour rather than a negative action. Additionally, it proposes design strategies to encourage socialization among residents, and enhance wayfinding within the interior environment. After reviewing various literature, visiting existing long-term care facilities, and volunteering with the Alzheimer Society of Manitoba, the goal of this practicum is to gather insights, practices, and activities that currently or could better facilitate a sense of safety, belonging, and independence for residents. This practicum aims to provide practical advice for future designers who are designing long-term care facilities in Manitoba for individuals living with Alzheimer's disease.

Project Focus

The Flats Long-Term Care Facility is designed to cater to residents who are living with mild to moderate stages of Alzheimer's disease.

Key Terms

Activities of Daily Living (ADL's): The everyday tasks that an individual performs such as - eating, bathing, grooming, dressing, going to the washroom.

Alzheimer's Disease: (AD): A form of dementia that slowly destroys memory and thinking skills and eventually the ability for an individual to carry out simple tasks.

Caregiver: A caregiver may provide full or part-time assistance to someone with a serious illness. The caregiver is often a spouse, adult child, close friend.

Cognitive Abilities: A wide range of mental skills and processes that encompass various aspects of thinking, learning, reasoning, problem-solving and information processing.

Cognitive Symptoms: When an individual experiences difficulty with learning, understanding, memory, reasoning, and judgment.

Disorientation: Losing a sense of time, direction, and recognition.

Dementia: A term that describes a wide range of symptoms associated with a decline in memory or thinking skills that are severe enough to reduce a person's ability to perform everyday activities.

Dementia: A term that describes a wide range of symptoms associated with a decline in memory or thinking skills that are severe enough to reduce a individual's ability to perform everyday activities.

Early Stage: The beginning stages of Alzheimer's disease, in which symptoms range from mild to moderate.

Key Terms - continued

Health-Related Quality of Life (HRQoL): A concept that encompasses physical and mental autonomy, social interactions, and the relationship between a subject and their environment.

Quality of Life (QOL): QOL is the standard of health, comfort, and happiness experienced by an individual.

Long-Term Care Facility (LTC): Medical, personal, and social services that meet the physical, social and emotional needs of people who are disabled or ill for a long period of time.

Memory Care: A facility that provides specialized care for individuals living with Alzheimer's disease and other forms of dementia.

Repetitive Behvaiour: A behaviour that is common in individuals with AD when stories, or specific activities are continuously repeated.

Sundowning: Increased confusion that people living with Alzheimer's may experience in the late afternoon to early evening. Symptoms may include: difficulty sleeping, anxiety, agitation, hallucinations, pacing and disorientation.

Person-Centered Care (PCC): An approach to healthcare and social services that prioritizes the individual needs, preferences and values of the person receiving care. PCC shifts the focus from soley treating a medical condition to providing a more holistic and human-centered approach.

Key Terms - continued

Wandering: Individuals living with Alzheimer's disease wander aimlessly, which can be disorienting and potentially dangerous for them, as they may get lost or injured.

Resident: An individual who lives in a long-term care facility.

This concludes the end of this source (WebMD n.d.)

Acknowledgments

I am grateful for the support and guidance from many individuals who have contributed to the success of this practicum.

To my advisor - Cynthia, from the moment I was accepted into the Faculty of Architecture, your advice and knowledge have been invaluable to me. You have been an incredible mentor and leader throughout my education, and I will always appreciate your support. I am truly honoured to have had you alongside me on this journey.

To my committee - Shauna Mallory-Hill and Wendy Schettler, thank you for your wisdom, support, and feedback that pushed me to step beyond my comfort zone throughout this project.

To my Mom and Dad - thank you for encouraging me to reach my highest potential and for your unwavering support throughout my education. From you, I have learned to always push forward and to never give up. Your unconditional love, support, and expertise in healthcare have deeply motivated me to explore an important topic close to our family. I love you.

To my siblings - Emily and Ben, and my partner Austin, thank you for your constant support, words of encouragement, and for always believing in me. You have always motivated me, pushed me through the hard times, and have been a constant support team throughout this journey. I love you.

To my friends - academic and personal, thank you for the laughter, compassion, and encouragement over the years.

To the Alzheimer's Society of Manitoba - thank you for graciously allowing me to observe, and volunteer with the Minds in Motion program.

To the Ageless Living Collaborative - thank you for the unique opportunities and financial support you have provided.

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01 project overview

1.1 Introduction

The aging population in Canada has contributed to a significant increase in the diagnosis of Alzheimer's disease (AD), confirming it as the most common cause of dementia in Canada (Government of Canada, 2017). According to the World Health Organization (WHO), an estimated 47.5 million individuals are affected by dementia, with Alzheimer's disease playing a significant role in this statistic (Government of Canada, 2017). The progression of AD can substantially diminish the quality of life for affected individuals and negatively impact their overall health (Monfared et al. 2022, 2). Further, with a rising population contributing to an increase in diagnosed cases of AD, the associated care expenses are expected to increase from $8.3 billion to $16.6 billion by 2031, significantly impacting healthcare demand (Canadian Institute for Health Information n.d.). Scientist Samuel Cohen (2015) emphasizes that Alzheimer's is one of the most significant medical and social challenges of the century. Notably, among the top causes of death, Alzheimer's is the only disease humans cannot currently prevent, cure, or slow down (National Institute on Aging 2023).

For many years, AD was misconceived as a common aspect of aging, with forgetfulness associated with the cognitive decline of old age (Cohen 2015). However, it is crucial to understand that AD causes severe damage to the human brain, significantly reducing life expectancy (Cohen 2015). As AD emerges as a global issue (and will continue to rise with the growing population), it becomes imperative for society to recognize AD as a distinct and daunting disease (Rodríguez-Gómez et al. 2014). Moreover, fostering awareness, conducting research, and developing support systems are essential to address the challenges posed by Alzheimer's and improve the quality of life for individual's affected by the disease and their caregivers (Rodríguez-Gómez et al. 2014).

This practicum explores the experiences of those living with AD in long-term care facilities in Manitoba, with a focus on the emotional challenges faced by individuals with the disease, their families, and the broader community. Its primary objective is to enrich the ongoing conversation surrounding Alzheimer's disease, with the goal of creating a space that caters to the unqiue needs of each individual.

This practicum project proposes a hypothetical solution designed to positively influence the quality of life for people with AD. It emphasizes the importance of encouraging social engagement, and promoting meaningful wandering behaviours through effective wayfinding strategies. The ultimate goal is to take a positive step towards a future where the impact of this devastating disease is mitigated, allowing individuals affected by AD to navigate its complexities with enhanced support and understanding.

1.2 Rationale

In a recent study by the province of Manitoba (Coubrough 2016), 25% of elders in Manitoba aged 85 and older live in long-term care facilities. According to the Alzheimer's Society of Canada (2023), 62% of seniors living in a long-term care facility have a diagnosis of Alzheimer's disease and/or other dementia. At a certain point in an individuals life during the severe stages of Alzheimer's, they may require twenty-four-hour care, which may exceed what a caregiver can provide at home (Alzheimer's Society of Canada 2023). At this stage in their life, the caregiver may face the difficult decision to place their loved one into a LTC, which provides ongoing support for individuals who can no longer be safely cared for in the community. However, an issue within Manitoba is that the care facilities have typically been built as extensions of hospitals, putting more emphasis on organizational procedures, and requirements rather than providing individualized care for residents and their families (Karpan & Granger 2002, 5). This design flaw can intensify the difficulties for many living with Alzheimer's because of the unusual "medical" environment.

Given these challenges, the rationale of my practicum project is to address the issues in long-term care facilities to improve the quality of life for someone living with Alzheimer's disease. After conducting an in-depth literature review, the specific aim of this practicum project is to gather insights, practices, and activities that currently, or could better facilitate a positive quality of life experiences for residents. By identifying strategies that promote positive experiences for residents living with AD, I hope to provide practical recommendations for future generations who are designing long-term care facilities tailored to the needs of individuals living with Alzheimer's disease in Manitoba.

1.3 Project Objectives

Throughout the design process, it is crucial for designers to understand the impact AD has on individuals and how the design influences their experience, and quality of life within the built environment. This can be challenging as the experience varies for everyone, regardless of the stage of the disease. However, there is a growing body of knowledge on designing for people living with AD. Recognizing the growth in research, this practicum research seeks to highlight the importance of social engagement by strategically designing communal spaces and accomodating fewer residents within the facility. By focusing on social connectivity, the goal of this practicum is to foster a sense of community and provide emotional support for individuals coping with Alzheimer's disease, while offering innovative solutions for long-term care facilities in response to the unique needs of this demographic.

1.4 Question's of Inquiry

Three key questions will be further explored to enhance the quality of life for individuals living with AD, encourage meaningful wandering, promote social interactions, and support effective wayfinding. This exploration aims to optimize the living spaces for residents with AD in long-term care facilities.

1) *What design features should be present in a supportive environment that enhances the independence, well-being, and quality of life for individuals living with Alzheimer's disease in long term care facilities?*

2) *With regard to wandering and physical activity, how can the design of long-term care facilities promote both safety and independence for individuals living with Alzheimer's disease?*

3) *How can the design of a long-term care facility promote social interaction and engagement for individuals with mild to moderate Alzheimer's disease?*

1.5 Research Methodology

The project investigates the preceding question's of inquiry utilizing the following research methods.

i. literature review
Through in-depth literature review findings, the primary aim of this study is to gather insights, practices, and activities that currently or could better enhance the quality of life for residents. This literature review provides valuable information that guides the precedent and site analysis, programming and design application.

ii. design programme - Clearly defining the client's objectives and identifying the needs of the expected user groups creates a more meaningful living environment. Understanding the spatial requirements and balancing

functionality with aesthetics ensures the facility's design is both practical and visually appealing for future residents, staff, and caregivers.

ii. site photographs

Documenting the existing conditions through photographs and site visits has provided a clear vision for the future of the long-term care facility. This research method has revealed the possibilities of the space and has identified areas where key design improvements can enhance both functionality and comfort for future residents.

iii. site visits

Visiting existing facilities, speaking with individuals who work closely with residents living with Alzheimer's disease, and receiving tours has provided valuable inspiration from how specific design elements can be implemented into the development of The Flats Long-Term Care Facility.

iv. site analysis

This research method involved mapping exercises of the existing elements and context of 99 Birchdale Avenue to provide a deeper understanding of its physical space, culture, character, and atmosphere. The findings in this section inform the development of the design, program, spatial requirements, and selected materials and furnishings.

v. design precedent analysis

Three selected architectural precedent studies have provided various design approaches based on their programmatic qualities, offering insights into how designers have integrated key conepts into the spatial programming and built forms.

vi. observation

Volunteering with the Alzheimer Society of Manitoba with the Minds in Motion program has provided valuable insights into the different aspects of living with Alzheimer's disease and how the disease uniquely affects each individual.

02 *what is alzheimer's disease?*

2.1 Introduction

In the early 1900s, a German psychiatrist and neuropathologist named Dr. Alois Alzheimer made a significant impact on medical science by identifying, and describing the neurological brain disorder now known as Alzheimer's disease (Alzheimer Society of Canada n.d.). This pivotal moment in the history of neuroscience occured when a patient of Dr. Alzheimer's was exhibiting severe memory loss, confusion, and cognitive difficulties (Cohen 2015). Following the individual's passing, Dr. Alzheimer performed an autopsy and identified distinct abnormalities, including the "presence of abnormal protein deposits that are presently known as amyloid plaques and neurofibrillary tangles" (Cohen 2015). These findings, dating back centuries, marked the initial description of what we now recognize as Alzheimer's disease. Alzheimer's disease is "a progressive neurodegenerative disorder that causes the brain to shrink and brain cells to die, affecting memory, cognition, and human behavior" (Cohen 2015).

AD slowly progresses in three stages- mild, moderate, and severe, and can begin as early as the age of 30 (National Institute on Aging 2023). It is important to understand that symptoms and progression through these stages can vary among individuals. In the mild stage of Alzheimer's, individuals typically maintain a high degree of independence, engaging in activities such as driving, working, and participating in social interactions (Alzheimer's Association n.d.). Common challenges in the mild stages of Alzheimer's include finding the right word, losing/misplacing valuable objects, and having difficulties performing tasks in social or work environments(Alzheimer's Association n.d.).

Progressing to the moderate stage, noticeable changes occur as individuals experience difficulties with communication, unusual behaviors, and require assistance in choosing appropriate clothing (Alzheimer's Association n.d.). At this stage of the disease, the person living with Alzheimer's is still capable of participating in daily activities with assistance.

The final stage of the disease is when the symptoms are the most severe (Alzheimer's Association n.d.). Someone living with Alzheimer's in the severe stage loses their ability to respond to their environment, carry on a conversation, respond to questions, and eventually loses the ability to control movement. Support programs that focus on providing comfort and respect, such as hospice care become increasingly relevant during this advanced stage (Alzheimer's Association n.d.). Dr. Sharon Cohen, a neurologist specializing in human behaviour and cognition, emphasizes the importance of early diagnosis, and the utilization of support resources to effectively address symptoms (Day 2021). Continued research is crucial, highlighting the significance of collaborative efforts to address and manage the rapidly increasing cases of AD. An in-depth review of available research and other evidence or theory-based literature can assist designers in responding to, and supporting individuals facing the daily challenges and complexities associated with AD.

2.2 Who is affected by Alzheimer's Disease

Alzheimer's disease can affect a wide range of individuals across the globe. While it is more common in older adults, particularly those aged 65 and above, it can also affect individuals as young as 30 or 40 years old (National Institute on Aging 2023). According to the Alzheimer Society of Canada, more than 600,000 people in Canada live with dementia, including Alzheimer's disease (Alzheimer Society of Canada 2024). Statistics report that everyday there are more than 350 people in Canada who develop dementia (Alzheimer Society of Canada 2024). By 2030, research indicates this number is expected to increase by 65% (Alzheimer Society of Canada 2024).

2.2.1 Other Facts about Alzheimer's Disease

Statistics report that women are almost twice as likely to develop Alzheimer's disease compared to men as women tend to live longer (Julia, 2024). Women are at a higher risk of developing AD because of their hormonal and genetic factors, which can contribute to the increased possibility of developing Alzheimer's disease (Julia 2024). In addition, the risk of developing AD is influenced by a variety of elements (Julia 2024). While aging is the most common risk factor for AD, a diagnosis is not guaranteed (Julia 2024). Some risk factors related to AD are modifiable, and can be controlled by changing your lifestyle.

Such factors highlighted by the Alzheimer Society of Canada (n.d.) include:

- Cardiovascular disease
- High cholesterol
- High blood pressure
- Diabetes
- Poor diet
- Obesity
- Smoking tobacco
- Alcohol consumption
- Traumatic head injuries

Other medical conditions such as Parkinson's disease, multiple sclerosis, chronic kidney disease, HIV, down syndrome, or any other developmental disabilities can increase the risk of developing AD (Alzheimer Society of Canada n.d.). Further, having a family history of Alzheimer's disease contributes to a 70% risk of inheriting AD (Julia 2024). The remaining 30% is linked to environmental factors such as exposure to hazardous compounds, pollutants, and chronic health issues including smoking, which is associated with a 79% higher risk of Alzheimer's development compared to non-smokers (Julia 2024).

Beyond the individual diagnosed with AD, Alzheimer's disease can profoundly affect family members and caregivers (Julia 2024). Caring for a loved one with AD and assisting with daily activities such as bathing, dressing, eating, and mobility can be physically demanding (Julia 2024). Moreover, the progression of the disease can be emotionally impactful for caregivers as they witness their loved ones experience cognitive decline, personality changes, and sometimes even aggression (Julia 2024).

In terms of care, Alzheimer's disease imposes significant costs on society, making it one of the most expensive diseases (Fisher Center for Alzheimer's Research Foundation 2019). According to the Government of Canada, by 2031, Alzheimer's care costs for Canadians will have doubled from $8.3 billion to $16.6 billion (Government of Canada 2017). This exponential cost of caring for residents with AD can lead to a loss of income, and potential financial strain. Ultimately, the significant and rising expenses for individuals living with AD emphasizes the urgent need for collective efforts in research, and greater public awareness (Government of Canada 2017).

2.3 Alzheimer's Disease and the Human Brain

The human brain is an extraordinary organ that controls our ideas, memories, emotions, and behaviors (Mental Health America n.d.). Dr. Sharon Cohen, emphasized the complexity of Alzheimer's disease, by stating that "the brain is still a mystery" and that Alzheimer's causes a loss of our sense of identity (Day 2021). Those affected by AD may begin to forget the names and faces of their loved ones, basic skills, and even struggle to identify everyday items like a toothbrush (Alzheimer's Association n.d.). Early damage to the human brain affects two parts of the brain that are essential in forming memories: the hippocampus and the entorhinal (National Institute on Aging 2024). As AD progresses, it impacts regions in the cerebral cortex responsible for language,

reasoning, and social behavior (National Institute on Aging 2024). Over time, neurons gradually stop functioning, and lose connections with other neurons and eventually die (National Institute on Aging 2024). In the final stage of AD, the brain tissue shrinks significantly, losing one's ability to live and function, ultimately leading in a fatal outcome (National Institute on Aging 2023). As there is no cure for this disease, the only strategy is to implement preventative measures which are explored later in the chapter.

2.4 How does Brain Damage Affect Human Behavior?

As AD significantly damages brain regions, the following section will dissect the anatomy of the brain and how human behaviour is impacted throughout (Alzheimer Society of Canada n.d.). The limbic system is an essential part of the brain that is responsible for regulating emotions, memory, and basic needs (Alzheimer Society of Canada n.d.). Throughout the progression of Alzheimer's disease, this system is affected early on leading to difficulties in object recognition, memory lapses, heightened irritability, depression, and anxiety (Alzheimer Society of Canada n.d.).

The frontal lobe, located at the front of each cerebral hemisphere plays a crucial role in various cognitive functions, emotional regulation, decision making, problem solving, personality expression, and social behavior (Alzheimer Society of Canada n.d.). As the disease progresses throughout the brain it damages the frontal lobe, and changes an individuals personality resulting in disruptions in planning, decision making, and abrupt human behaviour (Alzheimer Society of Canada n.d.). These individuals may withdraw from conversations or social situations, stop participating in activities, or quickly lose interest in hobbies they once enjoyed (Alzheimer Society of Canada n.d.).

The hippocampus, located on either side of the brain's temporal lobe is vital for memory formation, learning, and spatial navigation (Alzheimer Society of Canada n.d.). Damage to the hippocampus contributes to memory loss, difficulty recognizing familiar faces or places, and challenges in social orientation (Alzheimer Society of Canada n.d.).

The parietal lobe located in the upper back part of each cerebral hemisphere is responsible for processing sensory information, and interpreting visual and spatial cues (Alzheimer Society of Canada n.d.). As the disease progresses, the parietal lobe contributes to spatial disorientation (Alzheimer Society of Canada n.d.). Individuals living with AD may experience difficulty understanding their surroundings, or navigating through spaces (Alzheimer Society of Canada n.d.). Furthermore, they may have difficulty understanding others, expressing their thoughts clearly, managing personal finances, or choosing appropriate clothing (Alzheimer Society of Canada n.d.).

Located at the back of the brain is the occipital lobe which plays a critical role in visual perception, and one's ability to recognize shapes, colors, and accurately interpret images (Alzheimer Society of Canada n.d.). People living with AD may struggle to recognize familiar faces, ultimately affecting their ability to interact with others (Alzheimer Society of Canada n.d.).

Alzheimer's is a complex disease, and its symptoms and behavioural changes can vary significantly from person to person (Alzheimer's Association n.d.). As designers it is important to understand how each of these foundational areas of the human brain influence human behavior. Designers must create spaces that are suitable and enhance the overall well-being of all individuals affected by AD.

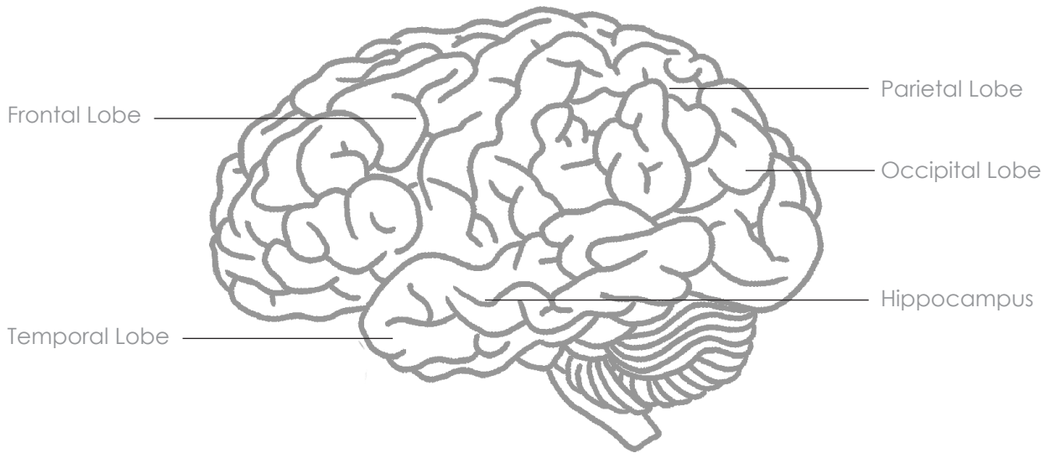


Figure 1. Diagram of the Human Brain

2.5 Recent Advancements in Design for Individuals Living with Alzheimer's Disease

Considering the impact of the interior environment on individuals living with AD, the following section outlines Perkins Eastman (Chmielewski's 2014) design recommendations to support individuals living with AD, along with their families, friends, and staff members in long-term care facilities. Two more recommendations - wayfinding and wandering, are explained in chapter three.

1.Households

When individuals living with AD are in large group settings, they tend to feel overwhelmed, confused, or distracted. In smaller group settings, they can better function, specifically during activities, meals, and living arrangements.

Design Recommendations (Chmielewski 2014, 10)

i. Design spaces for small groups of people that suit the needs of 10-14 residents.

ii. Include a shared kitchen, dining room, living area, a secured outdoor space, and additional amenities such as a spa or activity room.

iii. Provide spaces with visual and acoustic privacy for individuals who get overwhelmed by large crowds and noise.

2. Residential Qualities

It is important for a long-term care facility to feel like a residential home, rather than have an institutional appearance. Factors such as internal layout, spatial design, circulation materials, furnishings, and colour palettes can transform the overall atmosphere from an institutional feel to a more home-like environment.

Design Recommendations (Chmielewski 2014, 12-15)

i. Select a soft colour palette and materials such as carpeting, wood, and upholstered furniture.

ii. Design residential-style layouts with the kitchen, dining, and living areas situated at the central "heart" of the home.

iii. Select products that are easy to clean and maintain while still offering a residential appearance.

iv. Ensure flexibility in the arrangement of furniture in common areas.

v. Maximize natural lighting, and compliment it with residential-style lighting fixtures such overhead lighting, and table and floor lamps.

vi. Encourage individuals to personalize their private bedrooms with photos, artwork or personal items by using a neutral colour palette as a backdrop.

3. Independence, Control and Flexible Rhythms

Provide options and settings that conform to the needs and preferences of different individuals based on their daily routines, and personal preferences.

Design Recommendations (Chmielewski 2014, 19-20)

i. Ensure food is always avaliable in the kitchen.

ii. Use sensory cues such as the smell of food being prepared to encourage residents to eat.

iii. Provide visual cues and clear sightlines to frequently used items and areas such as the toilet, food storage, or access to the walking garden area to encourage use and reduce frustration.

iv. Strategically place residents' bedrooms away from activity areas to allow for restful and uninterrupted relaxation.

v. Include a closet/wardrobe unit in the residents' bedroom with two compartments: one for daily clothing, and the second compartment for additional clothing. This form of organization minimizes distraction and confusion when selecting clothing items.

4. Security and Safety

The physical environment needs to be safe and secure in order for individuals, families, and staff members to feel safe in their own home.

Design Recommendations (Chmielewski 2014, 21)

i. Staff should have the ability to observe residents throughout the interior and exterior common areas. This can be accomplished by incorporating window or wall openings to create visual connections between spaces, reducing hallway lengths, and designing areas that foster staff visibility and presence.

ii. Avoid using strong contrasts between light and dark areas on flooring, as bold variations may be mistaken for holes or steps.

iii. Textiles or wall coverings should feature design patterns that are clear and easily recognizable, avoiding abstract shapes, faces, or animals that might confuse individuals with cognitive impairments.

5. Entry & Egress

Individuals living with AD often feel a strong urge to wander, which can lead to agitation or attempts to leave the facility. Therefore, the consideration of entrances and exists are crucial to ensure safety and security while also addressing potential anxieties.

Design Recommendations (Chmielewski 2014, 24)

i. Orientate the direct entrances toward staff and visitors, not residents.

ii. Disguise egress points in order to minimize anxiety by seamlessly blending the doors into the walls, or painting them with a mural or art work.

6. Spa/Bathing

For individuals living with AD, the toileting/bathing experience can be stressful and challenging for caregivers to manage.

Design Recommendations (Chmielewski 2014, 26-27)

i. Each private bedroom should include a private bathroom, shower, and enough space to assist an individual.

ii. Ensure there is a direct visual connection from the bed to the toilet.

iii. Design bathing spaces to be as calm and peaceful as possible to alleviate anxiety (ex: residential style tubs/showers, soothing lighting, relaxing music).

vi. Provide lockable storage cabinets for personal toiletry items.

7. Secure Outdoor Spaces

It is important to provide access to secure outdoor spaces for all residents as it can reduce agitation, frustration, relieve stress, and improve overall physical fitness.

Design Recommendations (Chmielewski 2014, 28-29)

i. Provide residents with unrestricted access to a secure outdoor space.

ii. Locate outdoor spaces in serene settings and not on a busy street.

iii. Secure outdoor spaces with perimeter fencing and incorporate landscaping to ensure the fencing does not create "prison like" feeling.
iv. Create continuous walking paths that loop back to the entrances of the building.

8. Active Engagement

Meaningful engagement is crucial for people of all ages and abilities. Productive activities such as gardening, cooking, chatting, or playing music can increase happiness, and help reduce the risk of depression and anxiety. For individuals living with AD, they may need cues to begin an activity, and the environment must be designed to minimize any distractions that could cause stress.

Design Recommendations (Chmielewski 2014, 31)

i. Minimize over stimulation or distractions, control noise levels, and provide various options for various group sizes.
ii. Offer various designated activity spaces that can support different-sized groups and residents' varied interests.
iii. Activity zones should support activities that the individuals have once enjoyed in their former life.
iv. Ensure the activities and related materials are easy to find and access.
v. Ensure clear sight lines into an activity zone are avaliable, so residents can see what is happening in the space whether they are sitting in an adjacent room or walking by.
vi. Design the kitchen and dining area with a counter top where residents can sit to assist with meal preparation, participate in cooking programs, or interact with other residents and staff members while they prepare meals in the kitchen.

9. Private, Quiet Spaces

Quiet spaces are essential to allow for focused and appropriate stimulation.

Design Recommendations (Chmielewski 2014, 33)

i. Each resident should have their own private bedroom to store personal belongings, and have a quiet space away from loud noises.
ii. Incorporate Dutch doors into the bedrooms so the upper portion allows staff and residents to look inside, but the lower half remains locked for privacy and safety.

10. Supporting Family Involvement

Incorporate design features in the physical environment that support and encourage visitors, and community engagement. This can enhance the overall well-being of individuals living with Alzheimer's disease.

Design Recommendations (Chmielewski 2014, 36-37)

i. Design spaces where residents can gather with visitors outside of their bedrooms, and ensure the furniture is flexible to accommodate various activities.
ii. Include additional seating in private bedrooms for guests.
iii. Strategically design the dining and living areas to accommodate visitors so they can join residents for meals, or spend time in the living area.
vi. Explore ways to involve the local community into the building to encourage social interaction between residents and community members.

This concludes the end of this source (Chmielewski 2014, 1-66).

2.6 Preventing Alzheimer's Disease

As the world's population continues to grow, and life expectancy increases, the number of individuals living with AD will increase (National Institute on Aging 2023). Current research suggests that there is no sure method of prevention or cure for AD (National Institute on Aging 2023). However, certain lifestyle choices and habits may help reduce the risk of, or delay developing AD (National Institute on Aging 2023).

Physically active individuals are less likely to experience cognitive decline than those who do not regularly exercise (National Institute on Aging 2023). Furthermore, incorporating physical activity into daily routines can ultimately make someone feel better, reduce stress, and maintain a healthier brain function in the long term (Alzheimer Society of Canada n.d.). Consistency is important for physical activity and promotes a regular morning/night routine that could enhance someone's overall mood (Alzheimer Society of Canada n.d.).

Of course, exercise can be demonstrated in various ways, and the appropriate type of physical activity depends on various factors such as the stage of the disease, individual fitness levels, current activity levels, and overall health status (Alzheimer Society of Canada n.d.). Recommended types of physical activity may include aerobic exercise, strength training or daily walks (Alzheimer Society of Canada n.d.).

Meeting the recommended weekly exercise guidelines of 150 minutes of moderate exercise, or 75 minutes of vigorous exercise per week of aerobic activities such as walking, jogging or cycling can contribute to lowering the risk of being diagnosed with Alzheimer's disease (Alzheimer Society of Canada n.d.).

Additional factors suggested by the Alzheimer Society of Canada (n.d.), that can help individuals manage the disease include:

- Diet
- Maintaining social connections
- Participating in social activities
- Engaging in individualized activities such as:
    - i. Reading
    - ii. Puzzles
    - iii. Playing musical instruments
- Individual activities such as prioritizing a healthy diet that includes:
    - i. Fruits
    - ii. Vegetables
    - iii. Whole grains
    - iv. Healthy fats
- Learning new skills
- Engaging in new hobbies
- Participating in educational courses
- Participating in group activities such as team sports
- Prioritizing 7-8 hours of sleep
- Avoiding smoking and reducing alcohol consumption

These recommendations are not guaranteed to work for everyone. They are simply suggestions aimed to reduce cognitive decline associated with the disease. Each person diagnosed with Alzheimer's disease is affected differently. Therefore, interventions that may work for one person may not be effective for another. As previously discussed, it is important to recognize that there is currently no known cure or treatment for AD. Although continuing research aims to develop remedies that could help prevent cognitive decline associated with AD, additional studies are needed to determine their effectiveness (National Institute on Aging 2024). Furthermore, it is important to comprehend that there are various genetic, and environmental factors that contribute to AD. (Julia 2024). Therefore, there is no way to fully prevent the development of AD.

2.7 Person Centered Care Approach

Developed in the 1940s, psychologist Dr. Carl Rogers' person-centered care approach has had a significant impact on the daily practices of medical professionals (Yao & Kabir 2023). This approach is based on creating a dynamic relationship between individuals, their loved ones, and caregivers (Epstein & Street 2011). The person-centered care approach is a more inclusive, and human-centered practice compared to a medical model of care (Kim & Park 2017).

Research shows that most people living with AD prefer to "live in their homes for as long as possible" (Alzheimer Society of Canada 2014), rather than in long-term care facilities. This preference is because of the fact that long-term care facilities are typically designed to meet the needs of the organization rather than the needs of the residents and their families (Alzheimer Society of Canada 2014). To support individuals transitioning into long-term care facilities when necessary, the Alzheimer Society of Canada provides practical strategies, tools, and tips that can help put the principles of person-centered care into practice, modernizing the overall experience of long-term care facilities.

Working with researchers and healthcare professionals, the following seven key elements highlight useful strategies to enhance the quality of life for residents in long-term care facilities (Alzheimer Society of Canada 2014).

1. Person and Family Engagement

i. Be attentive and understand the world from their perspective.
ii. Offer choices to respect their individuality and dignity.
iii. Recognize the needs, stress, and grief levels of the families. They will withstand various emotions as the disease progresses.
iv. Educate families about dementia to help them understand the changes caused by the disease and teach them effective strategies for managing its impact.

2. Care

i. Develop a relationship with the resident and their family or caregiver.
ii. Curate a personalized and foundational care plan.

3. Processes

i. Incorporate the philosophy and vision of person-centered care into the home's formal strategic and operational planning process.
ii. Encourage and promote extended education and training for staff to enhance their skills and knowledge in providing high-quality care.
iii. Create a team dedicated to addressing all aspects of residents' lives, beyond just medical care.

4. Environment

i. Exclude institutional elements and practices to make residents feel more comfortable.
ii. Create a space allowing residents to participate in various recreational and social activities that meet their individual needs and interests.

5. Activity and Recreation

i. Ensure residents have access to meaningful activities and experiences.
ii. Offer recreational plans that are customized to each resident to meet their unique interests.

6. Leadership

i. Responsible for providing staff with opportunities to contribute to decision-making within the home.
ii. Encourage staff to be creative and take initiative.

7. Staffing

i. Adopt the person-centered philosophy of care.
ii. Provide regular staff training and continued education to deliver professional care to the residents.

Incorporating a person-centered care approach in long-term care facilities has several benefits for both residents and healthcare professionals (Alzheimer Society of Canada n.d.). This approach creates a sense of belonging and independence for residents, enhancing their physical and mental health (Alzheimer Society of Canada n.d.). For healthcare professionals, adopting a person-centered care approach not only creates a positive and enjoyable work environment, it promotes a culture where staff excel and a sense of accomplishment is achieved (Alzheimer Society of Canada n.d.). Additionally, healthcare professionals further gain a sense of fulfillment when this strategy is implemented into long-term care facilities as they can respond better to the needs of the residents rather than the organization (Alzheimer Society of Canada n.d.).

The Alzheimer Society of Canada's philosophy of person-centered care emphasizes that individuals living with AD "have unique values, personal history and personality and that each person has an equal right to dignity, respect and to participate fully in his environment" (Alzheimer Society of Canada 2011). They anticipate this approach "will influence the culture of care homes and encourage care staff to recognize the individuality of people with dementia" (Alzheimer Society of Canada 2011). To recognize noticable changes, the Alzheimer Society of Canada recommends several techniques for staff to implement into their work environment. Staff members are encouraged to maintain respectful relationships with residents, support their independence, involve family members in activities, and provide high quality care regardless of their cultural background (Alzheimer Society of Canada 2011). When these actions are integrated into the person-centered care approach, it creates an environment that enhances comfort and quality of life for individuals living with AD and their families (Alzheimer Society of Canada 2011).

03 *literature review*

Chapter Introduction

The following chapter explores four concepts that have been investigated to better understand how individuals living with AD are impacted in their everyday lives, and how designers can create more meaningful spaces for the residents as they transition into a new living environment. The four concepts include: i. Quality of Life, ii. Meaningful Wandering, iii. Socialization, and, iv. Wayfinding.

3.1 Quality of Life

Understanding and defining the QOL for individuals living with AD can be challenging due to the complex nature of the condition. According to the Alzheimer's Society, various factors must be considered to define the QOL for these individuals (Alzheimer Society n.d., 1). These factors include "the ability to think, make decisions, and have control in one's daily life, physical and mental health, living arrangements, social relationships, religious beliefs and spirituality, cultural values, a sense of community, financial and economic standard" (Alzheimer Society n.d., 1).

Everyone's quality of life is personal, and different from others as each individual has distinct ethical standards and beliefs that contribute to their overall happiness (Alzheimer Society n.d., 1). As Alzheimer's is a chronic disease, designers must create an environment that helps alleviate stress associated with the transition of residents moving into their new living environment throughout the progression of the disease (Zeisel, Hyde & Levkoff 1994, 20). This section of the document on QOL for individuals with AD explains the significance of physical activity, and its connection to improving one's mental well-being and social interaction. Additionally, the section discusses the significance of living arrangements, and highlights design elements that can improve safety and comfort, ultimately enhancing the QOL for individuals transition into a new home environment.

3.1.1 Physical Activity and Alzheimer's Disease

Engaging in physical activity is essential for everyone as movement provides several benefits that can significantly improve the QOL for those affected by AD. The World Health Organization defines physical activity as "any movement of the body", while exercise is a type of "physical activity that is typified by specific and purposeful training" (De la Rosa et al. 2020, 395). Incorporating physical activity into daily routines reduces the risk of developing AD and enhances cognitive function, while also reducing feelings of depression (Erickson, Weinstein & Lopez 2012, 616).

Common physical activities that many individuals enjoy include walking, cycling, participating in sports, and recreational activities (World Health Organization n.d.). These activities can offer a sense of fulfillment by positively affecting an individual's social connections and reducing feelings of isolation (World Health Organization n.d.). In addition maintaining consistency in physical activities can reduce the risk of high blood pressure, heart disease, type 2 diabetes, breast cancer, and colon cancer (Alzheimer Society 2024). Sustaining an active lifestyle improves the ability to perform activities of daily living, cognition, memory, and overall mental well-being (Alzheimer Society 2024). Recognizing the positive outcomes of engaging in physical, exemplifies the significance of incorporating and promoting physical activity into the lives of individuals with AD.

To ensure that individuals living with AD engage in an adequate level of daily physical activity, it is crucial to understand and acknowledge the minimum amount of exercise that leads to positive results. As discussed in chapter two, it is recommended that adults and seniors engage in at least 150 minutes of vigorous physical activity each week (Health Canada 2022), or aerobic physical activity for a minimum of 20 minutes, 3 days a week (De La Rosa et al. 2020, 395). Various exercises recommended by the Alzheimer's Society to promote movement throughout the day will further be examined. Gardening, is identified as a therapeutic physical activity, which provides an opportunity for individuals to be outdoors and engage in movement (Alzheimer Society 2024). Weeding or pruning are less grueling activites, while more demanding activities such as raking or mowing the lawn require more effort (Alzheimer Society 2024). Dancing is another form of exercise that can be enjoyed by many individuals with AD, and encourages social interaction (Alzheimer Society 2024). It can increase strength and flexibility, while promoting stability, agility, and stress reduction (Alzheimer Society 2024). Further, this form of physical movement can be done either standing up or sitting down, making it suitable for individuals who may struggle with balance or standing for extended periods.

Additional seated exercise movements such as marching, raising one's heels and toes, raising one's arms toward the ceiling, raising the opposite arm and leg at the same time, or making small circle movements with the arms offer various options for those looking to engage in seated activities (Alzheimer Society 2024). Lastly, walking can be performed almost anywhere, at any time without the need for special equipment and is catered to all abilities (Alzheimer Society 2024). These are all modifiable forms of exercise that can improve one's QOL, and foster social interactions for individuals living in long-term care facilities to engage in with other residents, family members, visitors and staff memebers.

Overall, to promote human well-being and potentially slow the progression of cognitive decline associated with AD, The Alzheimer Society encourages regular body movement, such as incorporating daily walks, stretching, and engaging in activities that energize the mind and body (Physical Activity & Exercise, 2024). By positively influencing mental and physical health, physical activity becomes a crucial ingredient in coping with and navigating the challenges of AD, which ultimately enhances an individual's quality of life (Physical Activity & Exercise, 2024).

3.1.2 Living Arrangements and Alzheimer's Disease

Living arrangements in the built environment can profoundly impact the QOL of individuals living with AD (Bolina et al. 2021, 2). In this context, living arrangements refer to whether a person lives alone, or together in a physical space ("home") (Bolina et al. 2021, 2). The environment in which individuals with AD dwell is an important component for shaping their daily experiences, and overall well-being. For individuals living alone, there may be an increased risk of social isolation, mental health challenges, and difficulties accessing essential health services (Bolina et al. 2021, 2). Furthermore, receiving support from those around you, fosters meaningful engagement, emotional support, community involvement, minimizes social isolation, and enhances one's quality of life (Bolina et al. 2021, 2).

According to Bolina et al., gerontological literature shows that maintaining QOL is possible, especially in the early stages of the disease when individuals are still independent and self-aware of activities that bring them joy (Bolina et al. 2021, 2). Another study identified that individuals living alone were susceptible to loneliness, with their quality of life and health deteriorating due to a lack of social interaction (Bolina et al. 2021, 2).

In addition to considering the people with whom individuals with AD live with, another important consideration is the scale of the living environment. Over the last several decades, LTC facilities have been transitioning from traditional models to a small-scale living concept (Brennan & Doan 2023, 182). This shift in building size and capacity strengthens the QOL of residents, providing home-like environments tailored to the unique needs of individuals living with AD and encouraging meaningful activities (Brennan & Doan 2023, 182). Furthermore, smaller and more intimate settings of LTC facilities allows for personalization, which creates a sense of familiarity and security among residents (Brennan & Doan 2023, 182). This innovative design approach not only supports the well-being of individuals with AD, but also aligns with the evolving understanding of Alzheimer's disease, emphasizing the importance of creating environments that prioritize an individuals quality of life.

Overall, the quality of life for an individual living with AD is significantly influenced by their physical activity levels and living arrangements. Engaging in regular physical activity has a positive impact on both mental and physical well-being, while also fostering a sense of community within the built environment. Additionally, choosing to live in small-scale communal environments, designed to mimic a home-like atmosphere can provide access to essential support services, reduce social isolation, and enhance overall quality of life.

3.2 Meaningful Wandering

The term "wandering" is frequently used in literature to describe behaviours exhibited by individuals living with AD. Wandering in the context of Alzheimer's disease refers to aimless and disoriented movements within a space, often exhibiting noticeable actions such as lapping, pacing, or random walking (Cipriani et al. 2014, 135). According to the Alzheimer's Association, wandering is a common behavior for people living with AD, and it is estimated that 60% of people living with the disease tend to wander (Alzheimer Association n.d.). Caregivers often find managing wandering to be both physically and emotionally exhausting, which can be a significant consideration of whether to admit a family member or friend into a LTC facility (Cipriani et al. 2014, 135). Recognizing that wandering is a common human behaviour in AD, there are several safety concerns and potential dangers associated with wandering for both residents and their caregivers (Alzheimer Association n.d.). Furthermore, several key elements can trigger wandering in individuals with AD. This section will highlight various interior design strategies that can be integrated into the built environment to effectively manage wandering while maintaining its meaningful aspects.

Wandering can be extremely dangerous, even life-threatening behaviour for individuals living with AD (Alzheimer's Association n.d.). This is in addition to stress the behavior has on caregivers and family members. If a resident decides to wander without assistance, they are putting themselves at risk for "complications, including slips and falls, deterioration of the medical condition, dislodgement of medical devices, intravenous catheters, or oxygen, acquisition or spread of infection, and in extreme cases, death" (Smith 2014). The challenge for caregivers and designers lies in preventing these tragic circumstances.

The exact causes of wandering are difficult to determine due to the complex nature of the behaviour. Events that may lead to wandering include disorientation within a location, causing a person with AD to walk in the wrong

direction, and making it difficult for them to regain their bearings (Alzheimer Society of Canada 2022).

Hunger, pain, boredom, anxiety or the urge to use the washroom can also contribute to wandering (McQuilkin 2016, 6). Exposure to loud noise can frighten or disorient a resident, which may serve as a trigger for wandering behavior (Samuels, 2021). For some individuals, wandering may be performed as they search for an object, or attempt to return to a familiar place, such as a former job, or a specific destination stored in their memory (Samuels, 2021). Wandering can also present itself as a mental illness, as an individual may have difficulty retaining instructions, leading them to disregard cues from caregivers to "wait, stay in the car, or remain indoors" (UPMC n.d.).

Anxiety can also be a significant factor contributing to wandering, as an individual feels compelled to seek and escape out of the environment they are currently in (Samuels, 2021). When individuals are introduced to a new routine or living environment such as LTC facilities, this may cause discomfort, and influence a desire to leave the space (Samuels, 2021). Additionally, residents may respond to something they hear, or see in the distance, which may result in them trying to wander towards the outdoor signal (UMPC n.d.).

Within the interior environment, potential warning signs of wandering may include having difficulty locating familiar places, such as the bathroom, bedroom or dining room (Alzheimer's Association n.d.). Transitioning into a new environment can exacerbate this challenge. Furthermore, feeling anxious or nervous in crowded areas, especially when someone once enjoyed social interactions, this may signal an increased urgency to wander (Alzheimer's Association n.d.).

As wandering can be an extremely dangerous behaviour for individuals with AD, it is crucial to identify strategies and interior modifications that designers can incorporate to ensure that the built environment can effectively control and manage these behaviors. Considering appropriate environmental strategies

involves designing a supportive and secure living environment that minimizes the risk of wandering, thereby enhancing the safety, and security of individuals living with AD.

Environmental modifications may include concealing exits, and using visual cues on corridor walls to help redirect attention and deter wandering (Logsdon et al., 1998, 294). In addition, personalizing the outside of resident rooms with signs and pictures may assist individuals in recognizing and locating their space (Sweeney Law Firm n.d.). Other research suggests that in order to create a safe environment and control wandering, security measures such as locking doors, and concealing exit doors (figure 2) to match the surrounding walls should be implemented (Sweeney Law Firm n.d.). Implementing door or window alarm systems, securing car keys, and having child-proof door knob covers provides an additional layer of security in long-term care facilities and enhances the safety of individuals (Alzheimer Society of Canada 2022, 5).

By implementing these potential design strategies, the interior environment of long-term care facilities can be transformed into a supportive and secure space, while minimizing the risk of wandering and improving the overall well-being of residents (Alzheimer Society of Canada 2022, 5).

Throughout my research of defining wandering, several studies and papers have referred to the act as a negative behaviour. Conflicting opinions exist on the definition of wandering behaviour, as it can have multiple meanings depending on the context in which it is used. Jennifer Carole McQuilkin, a graduate student at the University of Buffalo states in her thesis that as children, we are encouraged to learn and explore the environment around us (McQuilkin 2016, 1). Throughout our lives, and as we develop as individuals, wandering outdoors becomes a form of "socialization, relaxation or meditation" (McQuilkin 2016, 1). When we "slow down our pace, we have a heightened awareness and appreciation for the world around us" (McQuilkin 2016, 1). McQuilkin (2016) asks readers to consider writer and philosopher J.R.R Tolkien's quote "not all who wander are lost" (McQuilkin 2016, 1). This statement is applicable, and further

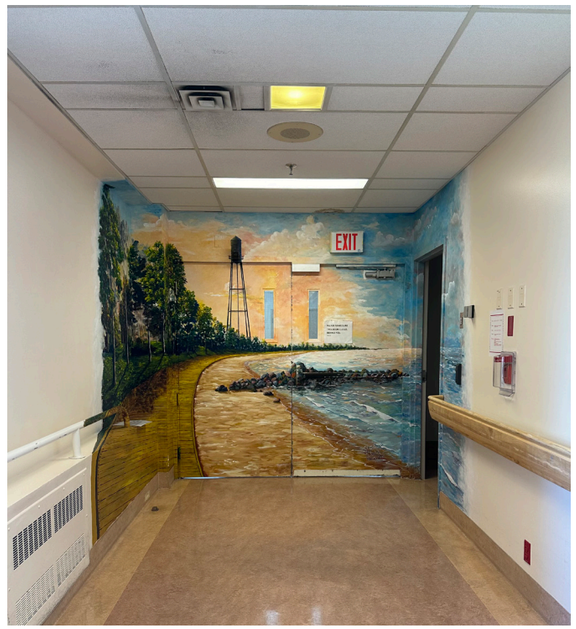


Figure 2. Concealing Exit Doors



Figure 3. Personalization in a Resident's Bedroom

redefines meaningful wandering as not solely a negative human behaviour, but rather the act may also have some positive associations (McQuilkin 2016, 1).

McQuilkin's research further demonstrates that those who wander may engage in the behaviour to release tension resulting from stress (McQuilkin 2016, 1). As previsouly discussed, transitioning into a new home environment can often be overwhelming and difficult for many to adapt (Riley, Burgener, Buckwalter 2014, 226). In addition, living with a substantial number of strangers can increase stress and anxiety, resulting in individuals wandering (Coons 1988, 32). Another significant aspect of wandering is the necessity for physical activity (Fanning et al. 2016). Individuals who do not live with AD often engage in walking as a form of exercise, and to help improve their mental health. Similarly, individuals with AD can walk to fulfill their need for physical activity and mobility (Coons 1988, 33). As wandering often presents significant challenges for individuals with AD and their caregivers, understanding the triggers and potential risks associated with wandering, and implementing effective design strategies to manage the action within the built environment can create a safer and more supportive living space. Perkins Eastman, offers several recommendations for engaged wandering. Along the walking paths, providing seating and areas for residents to socialize presents opportunities for rest and interaction while they exercise, search for a desired destination or simply relax (Chmielewski 2014, 16). Additionally, these walking paths should pass through or alongside other activity zones that can encourage participation (Chmielewski 2014, 16). By strategically designing LTC facilities to prioritize the safety and well-being of individuals living with AD, the built environment can encourage meaningful wandering, rather than "meaningless walking" (Chmielewski 2014, 16).

3.3 Opportunities for Socialization

This section emphasizes the importance of offering organized group activities in LTC facilities and how individuals can seamlessly incorporate social activities into their daily routines, thereby creating meaningful relationships with others. It highlights the benefits of socialization, and explores the relationship

between social interaction and the progression of AD in individuals living in LTC facilities. While pharmaceutical options may slow the progression of AD, this section focuses on the benefit of non-pharmaceutical strategies and the positive impact of social activities in managing AD and its associated behavioral challenges (Hagstrom, Heppner, Kunde 2020, 72).

Social engagement plays a significant role in the lives of individuals affected by Alzheimer's disease. Engaging in social activities during the early and middle stages of life may even reduce the risk of developing AD (Care 2022). Research demonstrates that individuals who experience loneliness over their lifetime face an increased likelihood of developing AD, while also triggering various other health implications (Care 2022). According to Dr. Craig Sawchuck, PH.D, and psychologist, humans are inherently social beings, and we tend to function more effectively in a social environment when surrounded by other people (Senior Lifestyle n.d.). However, as individuals age and become older adults, they tend to isolate themselves or experience loneliness more frequently than the general population (Senior Lifestyle n.d.).

Based on a report from Dolan Memory Care Homes, engaging in social environments and relationships is important for individuals living with AD for three main reasons. First, socialization supports brain health by keeping the mind active and aiding in memory retention (Care 2022). Second, socialization helps maintain focus, which is significant given the concentration challenges faced by those with AD (Care 2022). Lastly, as many with AD experience confusion and disorientation, engaging with others in social settings keeps the brain active, and helps slow the progression of memory loss (Care 2022).

To ensure that individuals with AD receive the benefits of socialization, The Flats Long-Term Care Facility offers various communal spaces in its design. This creates opportunities for social interactions and allows residents to engage with each other as well as the broader community. Further research indicates that participating in social activities and engaging in an exercise routine are two

methods that can significantly improve one's overall well-being and cognitive health (Hagstrom, Heppner, Kunde, 2020, 72).

Involvement in social interaction has been demonstrated to reduce behavioural symptoms, and enhance an individual's independence and quality of life (Hagstrom, Heppner, Kunde, 2020, 72). Creating spaces that encourage social interaction was crucial In the proposed design of The Flats Long-Term Care Facility. The goal was to enhance social engagement, while also creating a sense of belonging for residents in their new home.

Activities such as listening to music, playing games, creating crafts, and shared meal times are effective strategies for implementing socialization activities in the facility (Sagewood 2024). In addition, designing spaces where people can participate in physical activities is another strategy to promote socialization, while also prioritizing the mental and physical well-being of individuals living with AD. To achieve this goal, the design of The Flats Long-Term Care Facility features an accessible and welcoming area for group fitness classes, which could include weight training, walking, and stretching. Furthermore, another design strategy for the facility involves creating warm and inviting common areas where residents can gather comfortably to relax, socialize, or engage in group activities. These spaces will be designed to resemble home-like environments, making social engagements feel intimate and enjoyable.

As humans, we experience socialization throughout our entire lives. We are born into society, and we form social relationships with people as we age (Cohut 2018). Additionally, our social environments help shape our identity (Cohut 2018). As we grow older, feelings of loneliness can have a significant impact on our mental and physical health. Therefore, it is crucial to foster and maintain supportive relationships with family, friends, fellow residents, and the greater community by strategically incorporating social spaces into the built environment of LTC facilities. These social activities relieve the negative effects of loneliness and promote overall wellness for individuals living with AD.

When addressing the profound feeling of isolation, socialization emerges as a powerful tool (Alzheimer Society 2024). Social interactions not only alleviates feelings of depression and isolation, but also stimulates a sense of personal worth or belonging, counteracting the isolating effects of the disease (Anthem Memory Care 2016). Incorporating design strategies that build connections and encourage a supportive social environment for individuals with AD in the proposed design of The Flats Long-Term Care facility can create purpose, and improve one's quality of life amidst the challenges posed by AD (Hagstrom, Heppner, Kunde 2020, 11).

3.4 Wayfinding

Wayfinding, defined as the process of orienting oneself and successfully navigating through an environment (Davis, Ohman, Weisbeck 2017, 1039), is a complex task that relies on various cognitive functions, including "spatial awareness, memory, attention, problem-solving and decision making" (Jamshidi, Ensafi, Pati 2020). According to research studies by Perkins Eastman, wayfinding has three interconnected phases which collectively make up the process of wayfinding: 1. "knowing where you are", 2. "how to get somewhere", 3. "recognizing when you have arrived" (Chmielewski 2014, 16). Wayfinding is crucial in any capacity to enhance the comfort and security of visitors, staff, caregivers, and residents (Chmielewski 2014, 16). Those living with AD often experience difficulties with wayfinding (Jamshidi, Ensafi, Pati 2020), as it becomes challenging for these individuals to orient themselves, and navigate through the built environment. This disorientation can, in turn significantly impact their independence and confidence (Jamshidi, Ensafi, Pati 2020).

Considering these challenges, it is important for designers to understand the complexities associated with navigating through the built environment as the disease progresses. To successfully design interior spaces that are not only only aesthetically appealing, but also funtional, designers must assist individuals living with AD in wayfinding through the built environment.

To address these challenges, designers can incorporate clear and intuitive wayfinding elements such as distinct visual cues, colour coded pathways, recognizable landmarks, and strategically placed signage which will further be explored later in this section (Passini et al., 1998, 147).

Building on this understanding, this section of the chapter delves into the challenges of wayfinding for individuals living with AD. It explores how the decline in cognitive skills affects an individual's ability to orient themselves, and navigate through the built environment. Additionally, this section highlights the importance of collaboration between interior designers, and healthcare professionals who can provide insights into design strategies that can positively influence wayfinding abilities for individuals living with AD.

In addition to practical strategies, sociologist John Zeisel introduces a conceptual perspective by framing wayfinding as "place knowing" for people with dementia (Chmielewski, 2014, 16). They recognize where they are only when they are there, and they understand their destination only when they see it (Chmielewski 2014, 16). The physical environment must therefore support them in transitioning between spaces, providing clear cues for both spatial and temporal orientation (Chmielewski 2014, 16).

According to Davis and Veltkamp (2016,1), individuals with AD often experience challenges with spatial awareness, including confusion over distance, direction, and understanding of spatial relationships. This makes navigating large facilities such as senior living communities particularly challenging when design elements lack clear differentiation (Passini et al., 1998, 135).

Memory impairments associated with AD further affect navigation through space, as both short-term and long-term memory are impacted (Davis and Veltkamp 2016, 1). As a result, individuals may struggle to recognize landmarks,

retrace their steps, or retain information necessary for wayfinding (Davis and Veltkamp 2016, 2). Futhermore, these difficulties can lead to psychological responses such as anxiety, insecurity, and agitation, as well as the physical safety concerns such as the risk of falling and getting lost (Davis and Veltkamp 2020, 1).

To support effective wayfinding for individuals living with AD in LTC facilities, designers must apply thoughtful and inclusive approaches that go beyond ordinary design principles. According to research, there are four essential areas critical to successful wayfinding. These include "[c]ognitive ability to process sensory information", "[p]hysical ability to ambulate the spatial organization" and "[p]hysical ability to perceive sensory information" (Marquardt 2011, 77). Furthermore, the study indicates that effective wayfinding design involves the use of two distinct characteristics: spatial organization and environmental communication (Passini et al. 1998, 146).

Spatial organization refers to the overall circulation of the built environment, and the placement of functions and facilities that allow individuals to orient themselves in a space (Passini et al. 1998, 147). In many senior living facilities, a common issue that often leads to difficulty in wayfinding is long corridors, and poorly differentiated routes (Davis and Veltkamp 2020, 1). According to literature, the spatial organization of The Flats Long-Term Care Facility is crucial for an individual's ability to navigate through space, and is necessary "in reaching destinations when appropriate solutions are not available in memory" (Kleibusch 2018, 26). Therefore, simple layouts and smaller institutional spaces are important for individuals living with AD as their path of travel should be short. Another important aspect of spatial organization is providing views through areas and between destinations (Chmielewski 2014, 18). When residents are disoriented or uncertain about their desired location, having sightlines into different spaces can help redirect the individual, or encourage them to participate in new activities by observing what is happening in those spaces (Chmielewski 2014, 18).

Additional research indicates that communal spaces within 20 feet of a resident's room are used up to five times more frequently than spaces that are 100 feet away (Kleibusch 2018, 29). In addition to the size of the facility, L-shaped floor plans are beneficial for LTC facilities because this allows for reference points to be located throughout the corridor (Kleibusch 2018, 29).

To effectively control access into spaces, Perkins Eastman (2014,18) recommends implementing Dutch doors. These door types allow residents to see into a room to determine if it is theirs, while providing a degree of privacy, and keeping uninteded indviduals out. Furthermore, L-shaped floor plans provide residents with a sense of orientation and cognitive maps to navigate through space (Kleibusch 2018, 29). A well-organized spatial arrangement of the facility enhances the resident's independence, safety, and allows one to navigate through the built environment with ease (Passini et al., 1998, 147).

Environmental communication, another essential element of wayfinding, refers to the use of infographics and architectural elements to visually cue information that helps people solve wayfinding difficulties (Passini et al., 1998, 147). Simply identifying spaces with numbers, names, or pairing words with images can effectively designate a space, as people with AD typically retain recognition of words and numbers for a greater duration than most memory types (Chmielewski 2014, 18). As graphical indication is an effective form of wayfinding, it is important for designers not to overpopulate the space with graphic wayfinding information, as over clustering can lead to increased stress and anxiety for residents (Passini et al., 1998, 147). Similarly, visual cues can encourage residents to participate in important activities such as "eating or toileting" (Chmielewski 2014, 18). With upper cabinets in the kitchen having glass-doors, or having the ability to see the toilet from the residents bed, or near an activity space, individuals are more likely to engage and take action in essential activities more independently (Chmielewski 2014, 18).

Landmark navigation is a common form of wayfinding that involves "individuals to travel from one landmark to another while learning directions and turns based on the route created sequentially between landmarks" (Kleibusch 2018, 33). Landmarks play a crucial role in facilitating wayfinding for individuals with AD by offering relevant cues, and meaningful reference points to enhance navigation in the built environment (Davis, Ohman & Weisbeck 2017, 1041).

As memory and spatial awareness declines throughout the progression of AD, landmarks act as memory triggers and sensory cues that evoke familiar surroundings (Davis, Ohman & Weisbeck 2017, 1041). For visual landmarks to be effective, they must be clearly visible, "bold, varied and distinctive" (Kleibusch 2018, 36). In addition, research suggests unintentional cues are more effective in aiding memory than intentional ones (Kleibusch 2018, 36). Examples of unintentional cues may include using distinct indications such as changes in colour, recognizable objects, artwork or sight lines (Chmielewski 2014, 16). Another design element for integrating landmarks is to incorporate personalization at each bedroom door, such as through memory boxes. This type of personalized landmark has been shown to assist in wayfinding, while fostering conversation, and engagement. (Chmielewski 2014, 16). Based on the literature I have analyzed, it is evident that landmarks are helpful in wayfinding, but their effectiveness varies significantly among residents depending on their stage of AD, and how the disease has impacted their cognitive abilities and spatial orientation skills.

Signage is another common visual cue for wayfinding in the built environment, playing a crucial role in aiding navigation for individuals with AD (Kleibusch 2018, 36). In LTC facilities it is essential to incorporate appropriate signage throughout the space to ensure effective wayfinding. Such signage may include "typography, pictograms, photographic labels, individual portraits or resident name cards on a residential suite" (Kleibusch 2018, 36). Research suggests that the effectiveness of wayfinding depends on the use of "pictorial elements, legibility, lettering, and location of the signs" (Kleibusch 2018, 36).

Dr. Davis conducted a recent study which concluded that individuals with AD often fixate their gaze at the handrail located throughout the corridors (Kleibusch 2018, 38). In light of this study, the height of signage becomes an important design element for effective wayfinding, and overall ease of navigation (Kleibusch 2018, 37). Furthermore, evidence from this study suggests that placing signage just above the handrails at the end of the corridor improves wayfinding, orientation, and minimizes any feelings of "agitation", "confusion" or "fear" linked to navigation and "mobility" (Kleibusch 2018, 38). Research further advocates for designers to combine graphic elements and simplistic terminology (Kleibusch 2018, 36). As an example, a sign for a bathroom would include the word toilet, and a simple image of a toilet so residents can identify the restroom in an efficient manner (figure 4) (Kleibusch 2018, 36). The lettering on the signage is another effective strategy that benefits wayfinding when thoughtfully designed. It is recommended that the first letter of the word is a capital letter, followed by lower case lettering on a high contrasted background (Kleibusch 2018, 36). Maintaining clear and concise signage, while minimizing unnecessary words or additional phrases is important for clear communication (Kleibusch 2018, 37). Similar to landmarks, the incorporation of signage in LTC facilities to promote meaningful wayfinding and spatial orientation among residents living with AD is not well understood (Kleibusch 2018, 36). Existing research suggests that individuals with AD require various forms of "environmental support to achieve independent wayfinding and enhance mobility" (Kleibusch 2018, 36). When considered and deliberately implemented, signage presents a positive step towards promoting effective wayfinding, assisting individuals in navigating their surroundings within the built environment (Kleibusch 2018, 36). Thoughtful design, including clear signage, and intuitive floor plan layouts can improve wayfinding and better accommodate the unique needs of individuals living with AD, creating a safer and more accessible environment for all. This collaborative effort is crucial for future long-term care facilities as it may ease the transition of residents entering their new home environment.

To conclude, wayfinding is an effective strategy for navigating through the interior environment. However, individuals living with AD face significant challenges due to the cognitive impairments that affect spatial awareness, memory and orientation. The decline in cognitive skills among AD residents can lead to feelings of insecurity, anxiety, and physical safety concerns impairing independence and quality of life. To address these challenges, it is necessary for interior designers and healthcare professionals to work together to develop effective design strategies tailored to support individuals living with AD. By implementing two inclusive design approaches: spatial organization and environmental communication, designers can create LTC facilities that allow individuals with AD to navigate the built environment safely and independently.



Figure 4. Wayfinding Signage

Table 1. Summary of Literature Review

Concept	Author(s)	Design Implications
Quality of Life	•Adrian De la Rosa et al. •Alisson Bolina et al. •Alzheimer's Society •John Ziesel •Sumiyo Brennan & Theresea Doan	•design living spaces that resemble home-like environments such as small-scale households, with private bedrooms •maximize natural light in common areas and resident rooms •secure access to the outdoors •incorporate flex spaces that can accommodate different activities and programs •promote social interaction throughout communal dining areas, activity zones and lounge areas •encourage physical activity (group classes, walking path)
Socialization	•Caitlyn Hagstrom, Ashley Heppner & Katelyn Kunde, •Maria Cohut •Robert Wrublousky	•design spaces that encourage opportunities for people living in the facility to socialize with one another (listening to music, playing games, crafts, etc.) •implement a space that is flexible for group fitness classes •maintain a balance between private and public social spaces for residents to have the option to socialize with family members, or other residents within the facility

Table 2. Summary of Literature Review - continued

Concept	Author(s)	Design Implications
Meaningful Wandering	•Jennifer McQuilkin, Claire Samuels, Gabriele Cipriani et al, •Jason Fanning et al. •Dorothy Coons	•disguise exits and visual cues in hallways to help redirect attention and deter wandering •personalize the outside of resident rooms with signs and pictures •implement door or window alarm systems • design safe spaces to secure personal belongings such as car keys
Wayfinding	•Romedi Passini et al, •John Ziesel, Saman Jamshidi, Ensafi Mahnaz & Pati Debajyoti, •Rebecca Davis, Jennifer Ohman and Catherine Weisbeck	• emphasize different floor patterns to highlight certain areas • incorporate the use of infographics and architectural elements to visually cue information • incorporate landmark navigation and signage • incorporate different colour corridors, doors, etc. to highlight different zones and enhance wayfinding abilities • noise and smell can enhance wayfinding • personalization at bedroom entrances (memory boxes) • design spaces with simple layouts and avoid long corridors

04 *precedent analysis*

Chapter Introduction

Three different senior living communities for individuals living with AD were chosen to review as precedent studies. These precedents were selected based on their effectiveness in providing comprehensive care, integration of support systems for both residents and their families, and their innovative approaches to improving both the mental and physical well-being of residents.

4.1 Precedent Study Analysis - Havenwood of Richfield

Name: *Havenwood Richfield*
Location: *Richfield Minnesota, United States of America*
Designer: *Brunton Architects*
Date *Completed: 2018*

General Description

Located in Minnesota, Havenwood Senior Living is a welcoming and comforting environment for Richfield, Minnesota residents and staff. Designed to make residents feel comfortable in their new home while maintaining a safe and monitored facility, Havenwood provides a combination of modern amenities and personalized care.



Figure 5. Exterior View of Havenwood of Richfield

A warm and inviting community, Havenwood of Richfield is dedicated to providing exceptional care for individuals transitioning to a new living environment. The community focuses on creating a home-like environment where residents can enjoy independence while having access to necessary support services (Havenwood of Richfield n.d.).

To ensure comfort and convenience for its residents, the community offers various amenities such as communal dining areas, fitness centers, and a landscaped garden for the residents to wander and enjoy (Havenwood of Richfield n.d.). Integrating these facilities into the design of The Flats Long-Term Care Facility is crucial to enhancing the quality of life by encouraging social interaction, physical activity and mental well-being. In addition, the emphasis on social engagement and activities offered at Havenwood keeps residents active, engaged, and well-connected to their community (Havenwood of Richfield n.d.). The offered activities include exercise classes, cultural events, educational workshops, and community outings to foster a sense of belonging for residents while reinforcing overall well-being.

Havenwood of Richfield is conveniently located near local amenities and services, making it easily accessible for families to visit and allowing residents to engage with the broader community (Havenwood of Richfield n.d.). Its close proximity to healthcare facilities, shopping centers, and parks strengthens the accessibility of the facility in the case of an emergency.

The single resident bedroom layout (figure 6) will be used as a template for the design of The Flats Long-Term Care Facility. This spacious room, with plentiful storage for personal belongings, also includes direct sight lines to the toilet from the bed, and is thoughtfully designed to provide safety and independence for the residents.

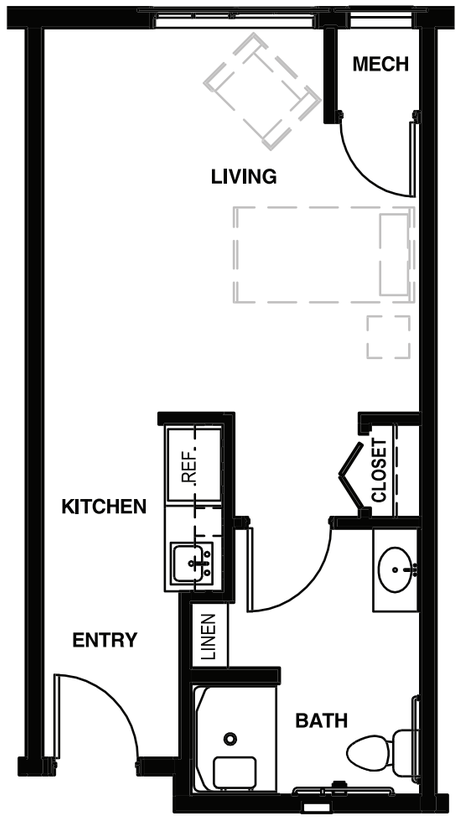


Figure 6. Havenwood of Richfield Single Resident Bedroom Layout



Figure 7. Dining Room Layout at Havenwood of Richfield



Figure 8. Cozy Common Area with Stone Fireplace

The overall design of the memory care facility illustrates a cozy and modern aesthetic, featuring dark wooden furniture and neutral coloured upholstery on the chairs. Selecting chairs with armrests is essential for elderly individuals as it assists them in rising from the chair independently. The ceiling is used to define spaces with distinct bulkheads. A combination of task lighting and soft accent lighting creates a home-like atmosphere by varying the lighting levels throughout the space. The spatial arrangement of the dining and living areas offers flexibility in seating options. The layout is spacious allowing for easy maneuverability while accommodating walkers and wheelchairs.

A warm home-like atmosphere is created through the stone fireplace and large windows to maximize the natural light enhancing the overall feel and openness of the space. The incorporation of drapery and framed artwork bring a sense of personalization to the environment, reflecting elements that one would typically find in their home. The piano player located adjacent to the living room enables residents to participate in activities that bring them joy, reminisce about cherished moments or even encourage sing-along's and musical performances. The carpeted flooring throughout the facility provides a warm and inviting environment. In addition to its aesthetic appeal, the carpet serves as an acoustic material, helping to reduce noise levels, and foster an environment that encourages relaxation and social interaction.

This precedent was selected for its strong connection to the surrounding community. Havenwood of Richfield prioritizes the well-being of its residents by actively engaging with the local community. Involving the community in the daily care of residents ultimately fosters a sense of connection, reduces social isolation, and improves the overall quality of life and well-being for all. The emphasis on reducing social isolation through community involvement aligns with the objectives of this practicum and highlights the importance of creating a welcoming and inviting environment where residents feel safe and included.



Figure 9. Common Living Area with Adequate Seating and Tables



Figure 10. Spacious Activity Room for Various Events

Furthermore, allowing residents to remain engaged with their local community is significant, as transitioning into a long-term care facility often disconnects individuals from their neighbourhoods. The connection and neighbourhood location of Havenwood will influence the design choice of The Flats Long-Term Care Facility. Similar to the Havenwood location, The Flats Long-Term Care Facility is centrally located in a middle-class neighbourhood, and is surrounded by residential homes near local amenities and services. The integration of the facility within the local neighbourhood fosters a strong sense of community for those living with AD, and residents of Norwood.



Figure 11. Piano and Tall Cabinet in Living Area

4.2 Precedent Study Analysis -Vineyard Residence

Name: *Vineyard Residence*
Location: *Kelowna, British Columbia, Canada*
Designer: *Viali Designs*
Date Completed: *2020*

General Description

The Vineyard Residence, located in Kelowna, British Columbia, is a senior living community that offers memory care, long-term care, and assisted living in a vibrant environment. The facility is committed to addressing the unique needs of residents, and tailoring care to support the well-being of those living with AD on their personal journey. The Vineyard Residence is dedicated to improving the mental and physical health of its residents, while enhancing their quality of life and enabling them to live their lives to the fullest potential (The Vineyard Residence, 2023).



Figure 12. Exterior View of Vineyard Residence

Located in the heart of British Columbia's Okanagan Valley, The Vineyard Residence is tailored to support joyful living, and enhanced well-being for seniors and individuals living with Alzheimer's disease (The Vineyard Residence, 2023). The Memory Care facility recognizes the crucial role of family members in the lives of its residents, and the design encourages social gatherings and communication between residents and their loved ones (The Vineyard Residence, 2023). Further, the facility offers guidance and reassurance to residents and their family members, acknowledging the challenges involved with the disease (The Vineyard Residence, 2023). The care team at The Vineyards Residence embraces a holistic and person-centered care approach for residents, recognizing and honoring the unique journey of each individual (The Vineyard Residence, 2023). The facility is committed to staying at the forefront of care practices by employing innovative techniques, programs, and advanced technology (The Vineyard Residence, 2023). In addition, various activities such as group fitness classes, card games, painting sessions, gardening and cooking enable residents to engage in everyday activities that enhance their daily lives (The Vineyard Residence, 2023).

Through the use of natural wood tones, and incorporating biophilia into the built environment, the facility achieves a warm and welcoming atmosphere that seamlessly blends the indoors with the outdoor environment. Further, the intentional integration of biophilic elements such as the living green walls is not only visually appealing, but also promotes a sense of tranquility and connection to nature. This thoughtful design approach aims to create a therapeutic and calming ambiance for residents, fostering a holistic and healing environment within the facility. The corridor with the skylight brings in an abundance of natural light to the space, promoting a connection to the outdoors while creating a sense of well-being for individuals walking down the corridor.



Figure 13. Communal Seating Area with Views to the Outdoors

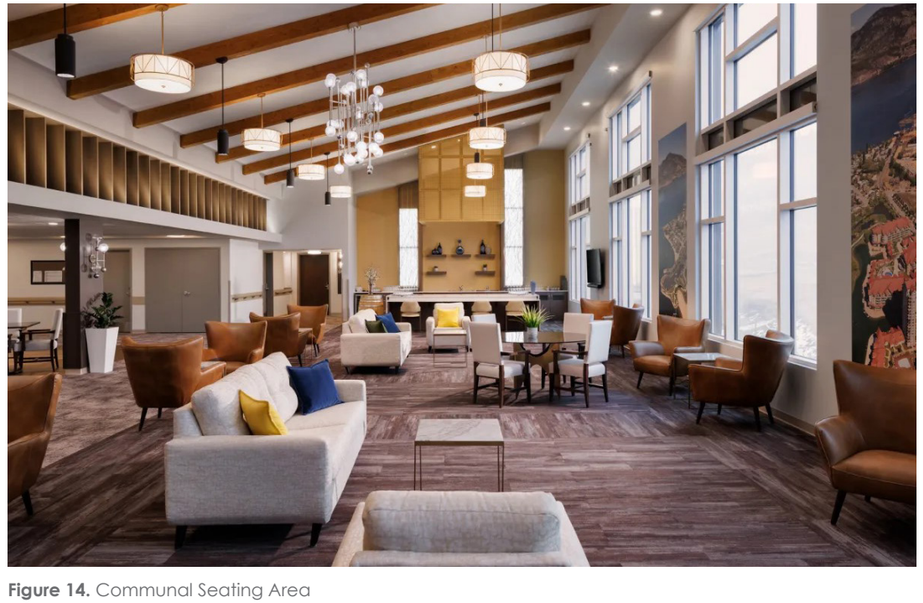


Figure 14. Communal Seating Area



Figure 15. Reception and Waiting Area

The soft and moveable furnishings bring a sense of comfort from the home-like environment, creating a space for the residents that is warm, inviting and encourages relaxation and socialization. The strategic placement of the furniture and the dining tables play a pivotal role in enhancing the overall home-like atmosphere and comforting ambiance of the environment, which promotes a sense of comfort and well-being for the residents living in the facility to socialize with their loved ones.

The open shelving in the bathroom (figure 16) is thoughtfully designed as residents are able to easily identify where their personal items are. This encourages independence in maintaining their activities of daily living, and helps reduce confusion. The sliding door for the washroom allows nursing staff to easily access the space if assistance is needed, while also maximizing the use of the room and providing a seamless design for both residents and caregivers.

In the residents bedrooms, a wardrobe cabinet with adjacent shelving allows individuals to store their clothes and personal belongings in a way that is easily accessible and organized. The visibility of residents' clothing helps to reduce confusion, and allows them to independently make their own choice about what to wear.

The corridor in The Vineyard Residence Facility (figure 20) is unlike others in traditional long-term care facilities. Instead of a typical corridor lined with handrails and doors, the design in the Vineyard Residence strategically opens the space to the corridor, allowing residents to see into various rooms and engage in activities if they choose. This design strategy creates a sense of openness and assists in wayfinding, allowing residents see into spaces and navigate the facility with ease. Furthermore, the use of a skylight maximizes the natural light, creating a more inviting and engaging atmosphere.



Figure 16. Resident Washroom - Open Shelving Unit



Figure 17. Single Resident Bedroom



Figure 18. Common Gathering Area with Mixed Seating



Figure 19. Casual Seating with Library Nook

The Vineyard Residence was chosen because of its dedication to fostering social engagement for seniors and individuals with AD, while also utilizing home-like characteristics. As socialization is a core value of The Flats Long-Term Care Facility, The Vineyard Residence serves as a precedent due to its consideration of social gatherings, and innovative social activities designed to promote the mental and physical well-being of its residents. The design of the corridor transcends the institutional feel of traditional long-term care facilities, and visually connects residents to activity spaces, encouraging social interaction and participation. Additionally, by incorporating natural wood tones, soft and flexible furnishings, and creating a sense of openness throughout the space, the facility creates a warm and inviting atmosphere that minimizes agitation and encourages social interaction among residents.



Figure 20. Open Corridor with Skylight

4.3 Precedent Study Analysis - Bergen Gardens

Name: *Bergen Gardens*
Location: *Winnipeg, Manitoba, Canada*
Designer: *MMP Architects Inc.*
Date Completed: *2022*

General Description

Bergen Garden, located in Winnipeg, Manitoba, was designed by experts to create a heightened quality of life for Manitoba's elderly population. Bergen Gardens stands as Manitoba's first modern multi-story mass timber building, showcasing the sustainable use of this environmentally friendly material. The incorporation of mass timber reflects a biophilic response to the built environment, contributing to resident's well-being by reducing heart rates, alleviating stress, enhancing mood, and fostering an increased sense of peace as they transition into a new living environment (Bergen Gardens, n.d.).



Figure 21. Exterior View of Bergen Gardens

Over an extensive eight-year duration, Bergen Gardens showcases comprehensive research in collaboration with 178 researchers and dedicated design partners, focusing on evidence-based design (Bergen Gardens, n.d.). Each design element was thoughtfully chosen and was seamlessly integrated with intentional thought and rationale (Bergen Gardens, n.d.). Prioritizing the well-being and independence of residents, Bergen Gardens creates a unique space for those living with Alzheimer's disease to embrace a home-like environment. In addition, the facility is a person-centered care environment, as staff listen to residents that live there and let them decide how they want to live, the choices they make, and the programs they want to participate in (Bergen Gardens, n.d.). Bergen Gardens aims to be a pioneer in the future of care facilities as they want residents to live a fulfilling life. (Bergen Gardens, n.d.).

Designed and constructed in the 21st century, Bergen Gardens was built with sustainability in mind as energy efficient lighting systems were implemented. The building was designed in a way that aimed to maximize natural lighting, while providing a comfortable environment for the occupants in the space (Bergen Gardens, n.d.). The facility also features heat recovery ventilators that not only reduce greenhouse emissions, but also efficiently reheat the space with warm, fresh air during the winter months (Bergen Gardens, n.d.) The stale indoor air is constantly refreshed with outdoor air that passes through corrugated plates (Bergen Gardens, n.d.). This sustainable design process allows the incoming fresh air to warm up in the winter, and cool down in the summer, thereby providing fresh air in the building year round (Bergen Gardens, n.d.). Additionally, the facility showcases an abundance of biophilic design, fostering a direct connection between residents and nature, thereby enhancing their health and well-being. The trees within the space were thoughtfully sourced from sustainable Canadian farms, aligning with their commitment to environmentally conscious practices (Bergen Gardens, n.d.). Utilizing natural materials such as the wood tones, light concrete flooring, and soft finishes creates a home like atmosphere. This environment is particularly beneficial for residents with AD, as the calming and familiar surroundings can contribute to a sense of comfort and improved well-being, promoting a positive impact on their daily lives.



Figure 22. Waiting Area with Views to the Outdoors



Figure 23. Bergen Gardens Activity Zone

The waiting and lounge area (figure 22) incorporates natural greenery, and the floor to ceiling windows maximizes natural light while creating a warm and inviting environment from the moment staff, visitors, and residents walk into the building. The natural wood ceiling with the subtle texture and organic feel enhances the feeling of warmth, and seamlessly connects with the greenery to offer a natural transition between the indoor and outdoor environments. The light flooring reflects the natural sunlight, making the space feel more open, while the dark upholstered furniture grounds the room and creates a contrast between the floor and furniture.

A subtle contrast between the floor tile and the carpet allows the residents to seamlessly transition from one space to another without thinking they have to step over the threshold, as harsh contrasts can often cause this confusion for individuals living with AD (Chmielewski 2014, 23). Incorporating a pool table near the main entrance adds a playful element to the space, allowing residents and visitors to socialize, and engage in a friendly competition, which ultimately creates a lively community.

Incorporating seating throughout thresholds, (figure 24) encourages individuals to sit and relax while transitioning from one space to another. The suspended lighting creates a focal point into the space, drawing individuals attention to move from one room to another. The corridor to the residents room is unlike a traditional institutional corridor. With cove lighting and various openings to different spaces, the corridor creates a welcoming and dynamic pathway rather than a sterile hallway. Furthermore, the seating in the dining area offers a variety of options for residents, including a small group seating and a family-style dining table for larger groups.

The resident bedrooms are designed to resemble a typical household bedroom. Each room is furnished with a bed, side table with lamps, artwork, and a window that maximizes the natural light. This setup allows residents to truly make the space their own and feel at home.



Figure 24. Threshold Rest Zone



Figure 25. Hair Salon

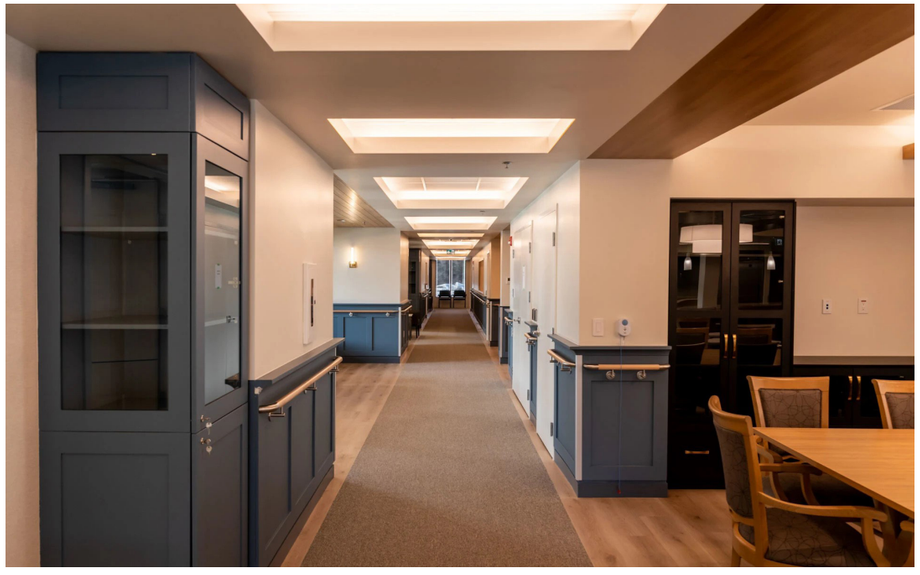


Figure 26. Corridor with Memory Boxes Outside of Resident Rooms



Figure 27. Communal Dining Area

As a local example Bergen Gardens was chosen due to its nature-based qualities, and evidence-based design research. The facility offers a home-like environment that prioritizes resident independence, well-being, and quality of life. The seamless connection between the indoor and outdoor environments, through natural wood tones, nature-inspired coloured palettes, and biophilia further enhances the health and well-being of the residents, fostering a sense of tranquility and a direct connection to nature. The incorporation of large windows and open spaces invites natural light into the facility, promoting a warm and inviting atmosphere. Thoughtful landscaping and a walking garden in the courtyard provides residents with safe and accessible outdoor areas for relaxation and socialization, encouraging engagement with the natural environment. Together, these design elements create a supportive community that nourishes the physical and emotional needs of individuals, which will be integrated into the design of The Flats Long-Term Care Facility.



Figure 28. Spacious Resident Suite

05 design programme

Chapter Introduction

Building on previous sections of this document, this chapter will outline key considerations that influence the interior design, and programming of The Flats Long-Term Care Facility. It will introduce the client, and provide a summary of the project and selected site. The second section will provide an overview of the expected user groups, highlighting their needs and spatial requirements. Lastly, the third section will present drawings and diagrams of the functional and spatial requirements that will guide the design of the facility.

5.1 Client

This project's hypothetical client is the Winnipeg Regional Health Authority (WRHA). As the primary health authority in Winnipeg, the WRHA plays a crucial role in ensuring that AD residents have access to high-quality medical care and specialized services. By supporting and coordinating resident "quality" and "safety" (WRHA, n.d.), the WRHA aims to make The Flats Long-Term Care Facility a leading example of compassionate and effective long-term care for individuals with AD.

5.2 Project Summary

Long-term care facilities for individuals living with AD contribute to providing essential specialized care tailored to the unique needs of many individuals. These facilities are designed to support residents with cognitive impairments, ensuring they receive the necessary personal, emotional, social and medical care to maintain their well-being. However, the transition into a LTC can be challenging for many living with AD due to the unfamiliar environment. Given these challenges, The Flats Long-Term Care Facility is dedicated to creating a supportive and accommodating environment that enhances the quality of life for residents with AD. Restricted by the original floor plan of the building, The Flats Long-Term Care Facility strives to follow the small-home concept model creating an environment that feels like home. With the exception of private resident rooms, the facility offers ample areas for communal activities. These spaces are intended to promote social interaction among residents and create a warm environment for visiting family members, reflecting the concept of gathering at home.

5.3 Site Overview

The Flats Long-Term Care Facility is situated in Norwood Flats, Winnipeg Manitoba, at an existing single-story elementart school. This site was selected due to its central location, ease of accessibility, vibrant community, and welcoming local residents. Its close proximity to essential amenities such as grocery stores, restaurants, and St. Boniface Hospital ensures that residents have convenient access to daily necessities and medical care. Additionally, the neighbourhood's strong sense of safety and community further supports the facility's mission of creating a caring and supportive environment.

5.4 Human Factor Analysis

The human factor analysis will provide an overview of the primary, secondary, and tertiary users of The Flats Long-Term Care Facility. Each user will be categorized by age, gender, and an overview of their needs and anticipated activities. This information will be valuable in guiding the design of the space, ensuring that the needs and activities of all users are met and supported effectively.

Table 3. Primary Users

User Type	Age/Gender	Description	Needs	Activities
Primary Users				
Person with Mild-Moderate Alzheimer's Disease QTY: 14	50+ all gender identities	May require assistance for certain ADL's Experiences lapses in memory Aggression, agitation, and anxiety occur differently in individuals depending on their coping abilities	Universal barrier free design Adequate indoor environmental quality (acoustic, visual, temperature etc). Privacy Comfort Dignity Trust Secure Familiar / Home Environment Support Food	Socializing Leisure Activities Physical and recreational Activities ADL's (ie: shopping, cooking, laundry, personal hygiene, toileting, dressing) Sleeping Relaxing
Health Care Staff QTY: 4	25+ all gender identities	Provide daily medical care Maintain resident mental and physical well-being Assist with personal Hygiene Maintain detailed records and documentation	Productive Adequate space to assist residents Ability to quickly and effectively address any issues or emergencies that arise Nursing Station	Engage with residents Assist residents with basic ADL's Administer medication Measuring and recording vitals

Table 4. Secondary Users

User Type	Age/Gender	Description	Needs	Activities
Secondary Users				
Admin Staff QTY: 2	25+ all gender identities	Responsible for administrative duties within the facility such as patient records Organize staff schedules Arrange transportation for residents if needed Coordinate appointments for residents	A comfortable space to work, manage resident admissions and other paperwork Exposure to natural light Connection to the outdoors Personal storage Quiet space to work	Clerical work Organizational Work Facilitating activities with the activities coordinator Answering phone calls for residents
Maintenance QTY: 2	25+ all gender identities	Responsible for ensuring that the interior of the building is well maintained and a safe space for everyone to work in and visit	Interaction with external trade workers Awareness of facility programming Physical separation from residents Custodial Rooms	Cleaning Ordering Products Laundry Disposing Garbage/ Recycling
Volunteers QTY: 6	25+ all gender identities	Assist the healthcare staff in organizing workshops and programs where residents can develop basic skills	Appropriate sensory stimulation Secure personal storage Washroom	Socializing with residents Engaging in various activities with residents

Table 5. Tertiary Users

User Type	Age/Gender	Description	Needs	Activities
Tertiary Users				
Care Partners QTY: Varies	18+ all gender identities	Loved ones of residents living with Alzheimer's Disease	A space that is comfortable for interacting with the residents	Socialize and interact with the residents Spend quality time with their loved ones
Community Members QTY: Varies	12+ all gender identities	Community members will be on site for a short amount of time and have various needs	Social interactions Universal barrier free design Safety and Security	Visiting with the residents or participating in workshops
Activities Coordinator QTY: 1	25+ all gender identities	Organize and plan the activities for residents at the facility or elsewhere	A productive work environment with adequate sensory stimulation	Plan and organize activities that encourage residents to engage and socialize with other residents, community members and care providers
Delivery Services	18+ all gender identities	Delivers orders and mail to facility Loading and unloading products in a safe manner	Respect from staff members	Clear and unobstructed pathways Accessible to loading zones and nearby storage

5.5 Functional and Spatial Requirements

The functional aesthetics and spatial requirements of The Flats Long-Term Care Facility draws inspiration from a balance of private and communal spaces. Each resident is provided with a private bedroom, while the communal and activity areas encourage the residents to socialize with one another, their families, and other visitors. The overall facility is designed to create a home-like environment with warm accents, comfortable furniture, and personalized touches. Natural light, connections to the outdoors, and calming colour schemes are used to enhance the overall well-being of the residents.

Table 6. Functional and Aesthetic Requirements

Space	Description	Furniture Fixtures & Equipment	Atmosphere & Lighting	Material Considerations
Reception (200 sq. ft)	A space for both visitors to orient themselves or ask questions	Ergonomic chair Work desk File storage Lounge seating Coffee tables Side tables Computer Telephone Surveillance system	Task Lighting Accent Lighting Warm Inviting Home-Like	Soft seating Durable flooring Warm accents Nature inspired hues Anti-Glare Cleanable surfaces
Waiting Area	A space for residents or visitors to sit, socialize or wait for	Accent chair Lounge seating Coffee tables Side tables Fireplace Shelving unit	Warm accents Welcoming Home-like	Durable flooring Neutral colour palette Nature inspired hues Easily cleanable surfaces Low VOC's Carpet Subtle patterns Effective colour contrast

Table 7. Functional and Aesthetic Requirements - continued

Space	Description	Furniture Fixtures & Equipment	Atmosphere & Lighting	Material Considerations
Private Resident Rooms (200 x 14 = 2,200 sq. ft)	To provide residents with a private space to sleep, dress, bathe and relax. Each suite has a private bathroom that is fully accessible, a closet and workstation	Bed Wardrobe Storage Shelving Side table Lounge chair Sink Toilet Accessible shower Personal items Emergency call button Blinds Lighting control	Warm Relaxing Private Cozy Home-like	Warm contrasting tones Durable Flooring Neutral colour palette Nature inspired-hues Cleanable surfaces Low VOC's
Visitor Room (400 sq. ft)	To provide visitors from out of town with a private space to sleep, dress, bathe, relax and prepare meals while visiting their loved ones	Bed Wardrobe Storage Table Soft seating Dining table Work station Sink Toilet Accessible shower	Warm Inviting Home-Like Spacious	Warm contrasting tones Durable flooring Neutral colour palette Nature inspired-hues Cleanable surfaces Low VOC's

Table 8. Functional and Aesthetic Requirements - continued

Space	Description	Furniture Fixtures & Equipment	Atmosphere & Lighting	Material Considerations
Dining Area (750 sq. ft)	A place for residents to sit and dine with fellow residents, care partners and visitors	Dining Table Chairs	Welcoming Safe Functional Accessible Task lighting Accent lighting	Warm natural wood tones Warm accents Soft upholstery seating Hard table surfaces Cleanable surfaces Low VOC's
Kitchen (600 sq. ft)	To prepare meals in a group setting for residents and caregivers	Horizontal prep surface Dry food storage Sink Stove Microwave Dishwasher Coffee Machine Fridge/Freezer	Welcoming Functional Safe Comfortable Accent lighting Task lighting	Cleanable surfaces Durable Anti-microbial Sound absorbing materials Effective colour contrast
Living Room (800sq. ft)	A space for residents to socialize and visit with fellow residents, visitors and care providers	Arm Chairs Sofas Shelving Storage Fireplace Floor lamps	Welcoming Accessible Functional Home-like Accent lighting Task lighting	Warm natural wood tones Warm accents Neutral colours Nature inspired elements Subtle pattern

Table 9. Functional and Aesthetic Requirements - continued

Space	Description	Furniture Fixtures & Equipment	Atmosphere & Lighting	Material Considerations
Tavern Room (650 sq. ft)	A place for residents to socialize, play games and watching television	Soft seating Hard seating Flexible furniture Millwork Beverage bar Billiards table Side tables	Welcoming Functional Safe Comfortable Accent lighting Task lighting	Warm natural wood tones Warm accents Soft upholstery seating Hard Tables Pops of Colour Durable Flooring Cleanable Surfaces
Nursing Station (450sq. ft)	Work area for nurses and healthcare staff to coordinate care, administer medications and monitor residents health	Horizontal work surface Storage for resident files Storage for personal items Task seating Lounge seating Desk top computer Surveillance System Telephone Medical supplies	Welcoming Functional Comfortable Approachable Clears sight lines Task lighting	Warm natural wood tones Warm accents Soft upholstery seating Hard Tables Pops of Colour Durable Flooring Cleanable Surfaces Sound absorbing materials Low VOC's

Table 10. Functional and Aesthetic Requirements - continued

Space	Description	Furniture Fixtures & Equipment	Atmosphere & Lighting	Material Considerations
Consultation Room (300 sq. ft)	A safe and comfortable space for staff to discuss care plans with residents and care givers	Horizontal work surface Storage for resident files Task chairs Guest chair Computer Telephone Coffee Machine	Welcoming Safe Functional Accessible Focused Private Task lighting Accent lighting	Warm natural wood tones Warm accents Soft upholstery seating Hard table surfaces Cleanable surfaces Low VOC's Durable Carpet
Washroom (100 sq. ft)	Universal toilet rooms will replace traditional male/female washrooms	Sink Toilet Hand dryer Toilet paper holder Soap dispenser Grab bars Garbage bin	Functional Private Secure Non-institutional Accessible Task lighting Accent lighting	Slip resistant flooring Easily cleanable surfaces Resistant to mold and residue
Admin and Support Offices (400sq. ft ea.)	A space for staff involved in administrative tasks, including medical records, billing and facility management	Horizontal work surface Storage Desktop Computer Printer Scanner Office supplies	Welcoming Accessible Functional Efficient Accent lighting Task lighting	Soft seating Pops of colour Nature inspired hues

Table 11. Functional and Aesthetic Requirements - continued

Space	Description	Furniture Fixtures & Equipment	Atmosphere & Lighting	Material Considerations
Staff Room (500 sq. ft)	Area designated for staff to take breaks, relax, or hold meetings	Soft seating Tables Chairs Sink Refrigerator Microwave Lockers Recycling/ garbage bin	Functional Calming Private Flexible arrangements Task lighting	Warm natural wood tones Warm accents Soft upholstery seating Hard table surfaces Cleanable surfaces Low VOC's
Staff Locker/ Change Room (350 sq. ft)	A space designated for staff to change into their work attire and store their personal belongings	Lockers Bench seating Mirrors Lavatory sink Shower	Functional Private Secure Accessible Task lighting Accent lighting	Slip resistant flooring Easily cleanable surfaces Resistant to mold and residue Neutral colours
Meeting Room (400 sq. ft)	A space for staff to hold group meetings, meet with stakeholders from outside of the facility, meet with residents and their caregivers or hold small communal group sessions for the residents	Conference table Task chairs Television Credenza Projector Smart Board Coffee Machine	Welcoming Engaging Collaborative Private Functional Efficient Task lighting	Soft seating Neutral colours with accent wall Nature inspired hues Durable carpet flooring

Table 12. Functional and Aesthetic Requirements - continued

Space	Description	Furniture Fixtures & Equipment	Atmosphere & Lighting	Material Considerations
Game Room (500 sq. ft)	A designated area for residents to play board games or card games	Tables Soft seating Built in millwork Television	Welcoming Comfortable Task lighting Accent lighting	Warm natural wood tones Warm accents Soft upholstery seating Hard table surfaces Sound absorbing acoustics Low VOC's Durable Carpet
Salon (100 sq. ft)	A space designated for residents to relax, enjoy a massage and receive hair/nail treatments	Sink Toilet Hand dryer Toilet paper holder Soap dispenser Grab bars Garbage bin	Functional Private Secure Non-institutional Accessible Task lighting Accent lighting	Slip resistant flooring Easily cleanable surfaces Resistant to mold and residue
Admin and Support Offices (400sq. ft ea.)	A space for staff involved in administrative tasks, including medical records, billing and facility management	Soft Seating Massage bed Nail/Hair equipment Hair cutting station	Clean Soft neutral tones Functional Organized Accent lighting Task lighting	Soft seating Pops of colour Nature inspired hues Wood accents

Table 13. Functional and Aesthetic Requirements - continued

Space	Description	Furniture Fixtures & Equipment	Atmosphere & Lighting	Material Considerations
Cafe (750 sq. ft)	A space for residents to enjoy a beverage, pastries or hand held menu items	Fridge/freezer Sink Coffee machine Horizontal prep surface Dry food storage Cafe tables Cafe chairs Soft seating	Warm Welcoming Safe Functional Accessible Efficent Task lighting Accent lighting	Warm natural wood tones Effective colour contrast Soft upholstery seating Hard table surfaces Cleanable surfaces Low VOC's Subtle patterns
Library (600 sq. ft)	A space for residents to read in a quiet room	Bookshelves Lounge seating Coffee table Side table Table lamp Floor lamp Fireplace	Calm Quiet Cozy Relaxing Warm Task lighting Accent lighting	Soft wood tones Neutral colour palette Carpet Nature inspired hues Warm accents Tyndall stone
Gathering Area (1200sq. ft)	A space to host large events with the residents and community or a space that can be divided into different areas for various activities	Tables Chairs Task lighting Whiteboards Moveable partitions General storage Workout equipment	Welcoming Accessible Functional Efficient Flexible Task lighting	Durable flooring Wood accents Cleanable surfaces Sound absorbing materials

Table 14. Functional and Aesthetic Requirements

Space	Description	Furniture Fixtures & Equipment	Atmosphere & Lighting	Material Considerations
Dentist (200 sq. ft)	Where patients receive dental treatment by the dentist or dental hygienist comfortably and efficiently	Storage Dental chair Guest chair Television Sink Dental equipment	Welcoming Comfortable Calming colours Quiet Organized Task lighting Accent lighting	Durable flooring White walls Wood accents Cleanable surfaces Anti-glare Anti-microbial Sound absorbing materials
Brainstorming Room (125 sq. ft)	A collaborative space to facilitate ideas, creative thinking and problem solving	Tables Chairs Whiteboard Modern technology Television screen	Flexible Comfortable Quiet Organized Task lighting Accent lighting	Hard writing surfaces Soft furnishing Neutral tones Wood accents
Art Therapy Room (500sq. ft)	A creative space designed for the residents to support therapeutic practices through creative expression.	Art supplies Hard surfaces Built in millwork Comfortable seating Sink Storage Shelving Easel	Calming Relaxing Neutral colour tones Wood accents Bright Clean Welcoming Task lighting	Durable flooring Easy to clean surfaces Anti-microbial Low VOC's Comfortable seating Neutral colour palette

Table 15. Functional and Aesthetic Requirements - continued

Space	Description	Furniture Fixtures & Equipment	Atmosphere & Lighting	Material Considerations
Clean Storage (250 sq. ft)	To provide staff with an area to store clean linen and equipment	Shelving Horizontal work surface Clean linen cart Utility sink Millwork Soap/Napkin dispenser	Functional Utilitarian Sanitary Task lighting	Neutral colour palette Durable flooring Easy to clean surfaces Anti-microbial Low VOC's Slip resistant flooring
Soiled Utility (250 sq. ft)	To provide staff with an area to dispose soiled products	Shelving Horizontal work surface Soiled linen cart Utility sink Millwork Soap/Napkin dispenser Medical disposal	Functional Utilitarian Sanitary Task lighting	Neutral colour palette Durable flooring Easy to clean surfaces Anti-microbial Low VOC's Slip resistant flooring
Laundry Room (400sq. ft ea.)	A space for residents to clean and fold their laundry	Shelving Horizontal work surface Drying rack Utility sink Soap/Napkin dispenser Storage for cleaning supplies Laundry basket Washer/Dryer	Functional Utilitarian Sanitary Clean Organized Task lighting	Neutral colour palette Durable flooring Easy to clean surfaces Anti-microbial Adequate lighting

Table 16. Functional and Aesthetic Requirements - continued

Space	Description	Furniture Fixtures & Equipment	Atmosphere & Lighting	Material Considerations
Commercial Laundry (500 sq. ft)	To provide a space for staff to clean laundry within the facility	Shelving Horizontal work surface Drying rack Utility sink Soap/Napkin dispenser Storage for cleaning supplies Laundry basket Washer/Dryer	Functional Utilitarian Sanitary Clean Organized Task lighting	Neutral colour palette Durable flooring Easy to clean surfaces Anti-microbial Adequate lighting
Storage (75 sq. ft)	To provide a space for storage	Shelving	Organized Functional	Neutral colour palette Durable flooring

Table 17. Functional and Aesthetic Requirements - continued

Space	Description	Furniture Fixtures & Equipment	Atmosphere & Lighting	Material Considerations
Family Room (450 sq. ft)	A space for residents to bake together, cook a meal together or can be utilized by the residents and family members to celebrate an event.	Table Chairs Oven Stove Microwave Fridge/Freezer Built in millwork Shelving	Flexible Accommodating Inclusive Inviting Neutral colour palette Task lighting Accent lighting	Warm natural wood tones Warm accents Subtle pattern Durable flooring Wipeable upholstery Anti-microbial Low VOC's
Pet Wash Station (75 sq. ft)	A space for residents to wash and bathe their pets	Storage Shelving Wash basin Faucet Cleaning supplies	Organized Clean Pops of colour Pet friendly Task lighting Accent lighting	Slip resistant flooring Easily cleanable surfaces Resistant to mold and residue Low VOCs Anti-microbial
Nap Room (100sq. ft ea.)	A room designated for out-of-town visitors to relax if their loved one is being attended to	Lounge Chaise Sofa Floor Lamp Pillow Blanket	Calming Private Quiet Relaxing Inviting Safe	Soft seating Pops of colour Nature inspired hues Wood accents Natural Lighting

5.6 Spatial Adjacencies

The following diagram illustrates various spaces within the facility and their primary and secondary adjacencies to one another. It provides a clear visual representation of how different areas are connected, outlining an understanding of the flow and accessibility within the environment. By highlighting these relationships, the diagram emphasizes the thoughtful design choices that enhance quality of life, encourage meaningful wandering, promote socialization, and improve wayfinding, which all contribute to a sense of belonging throughout the facility.

	reception	waiting area	private resident rooms	dining area	tavern room	living area	nursing station	meeting room	washrooms	walking garden	offices	staff room	staff change room	meeting room	clean storage	soiled utility	laundry	storage	cinema	salon	cafe	library	art therapy	gathering area	commercial laundry	games room	visitor room	dentist	family room	nap room	pet wash
reception		●						●	○		●													●			●	●			○
waiting area	●							●	○		●													●				●			
private resident rooms				●		●															●								●	●	●
dining area			●		●	●			●	●																					
tavern room				●		●			●	○																					
living area				●	●				●	●																					
nursing station								○			●																				
meeting room	●	●					○				●																				
washrooms	○	○		●	●	●					●																				
walking garden				●	●	●																									
offices	○						●	●	●			●	●	○																	
staff room											●		●																		
staff change room											●	●																			
meeting room											○																				
clean storage															●	●	●							●							
soiled utility															●		●	●						●							
laundry															●	●		●													
storage															●	●	●														
cinema																															
salon																															
cafe				○																		○		○							
library																					●										
art therapy																															
gathering area	●	●																													
commercial laundry															●	●															
games room																															
visitor room	●																											●			
dentist	●	●																													
family room			●																										●		
nap room			●																											●	
pet wash	○		●																												

Figure 29. Spatial Adjacency Matrix

● primary adjacency ○ secondary adjacency

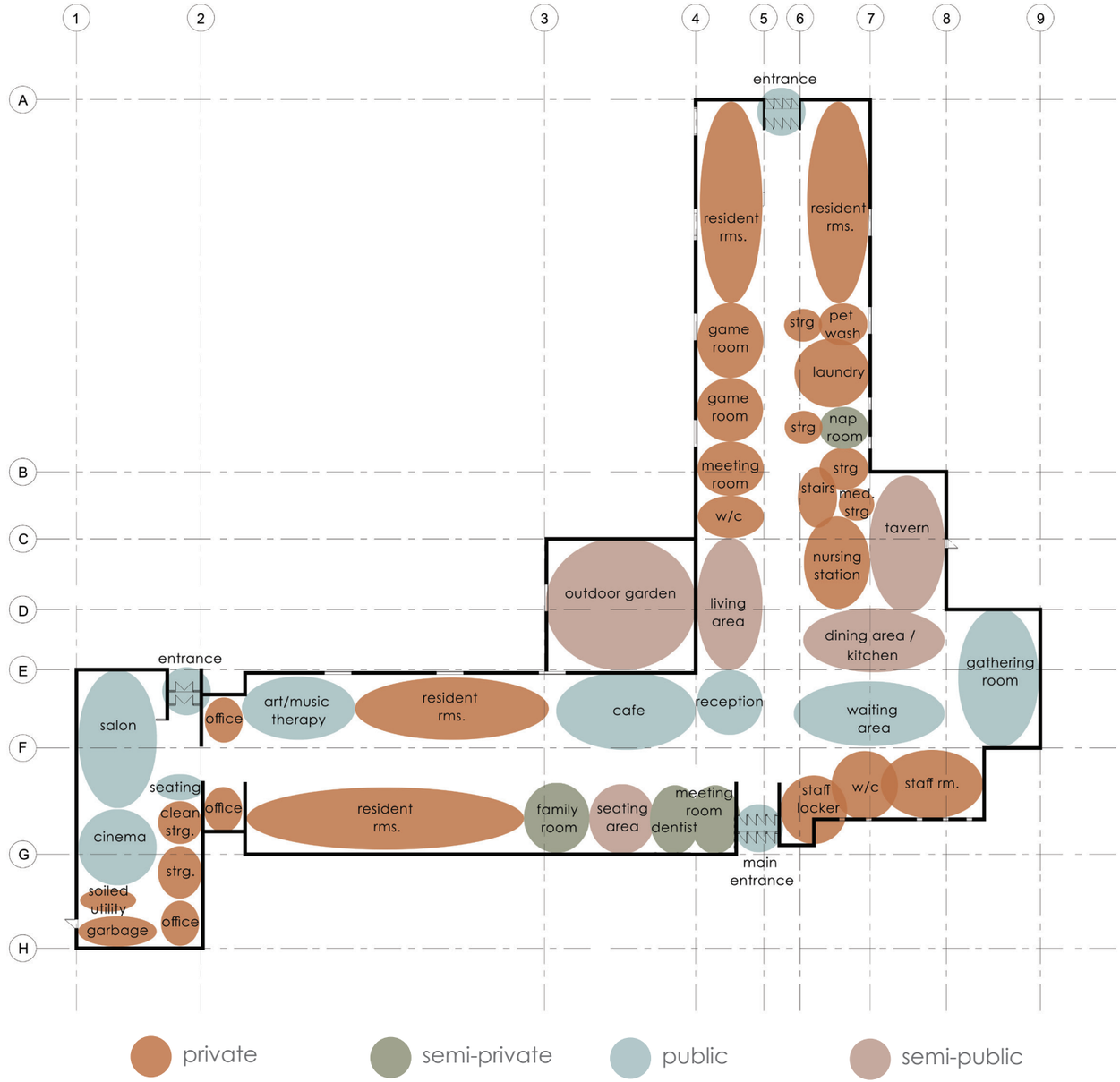


Figure 30. Main Floor Zoning Diagram

5.7 Building Geometry, Patterns and Shapes

Nordale School features distinctive architectural elements based on simple geometry. Figure 31 illustrates the basic forms that construct the existing structure. The rectangular shapes highlight the profile of the existing windows, doors, and architectural motifs. To mimic the existing structure and architectural features, the rectilinear shapes will be strategically integrated into various design elements of The Flats Long-Term Care Facility.

This study of the building's shapes and patterns is valuable as using linear and rectilinear configurations is crucial for creating clear pathways and spatial layouts, allowing residents to navigate the space with ease. This design technique promotes a sense of independence and reduces anxiety among residents, while enhancing spatial continuity and wayfinding. Furthermore, the repetition of design elements throughout the building provides a familiar and structured environment that improves residents' comfort and orientation. This is accomplished by using consistent shapes, colours, and materials to help residents quickly recognize different spaces.

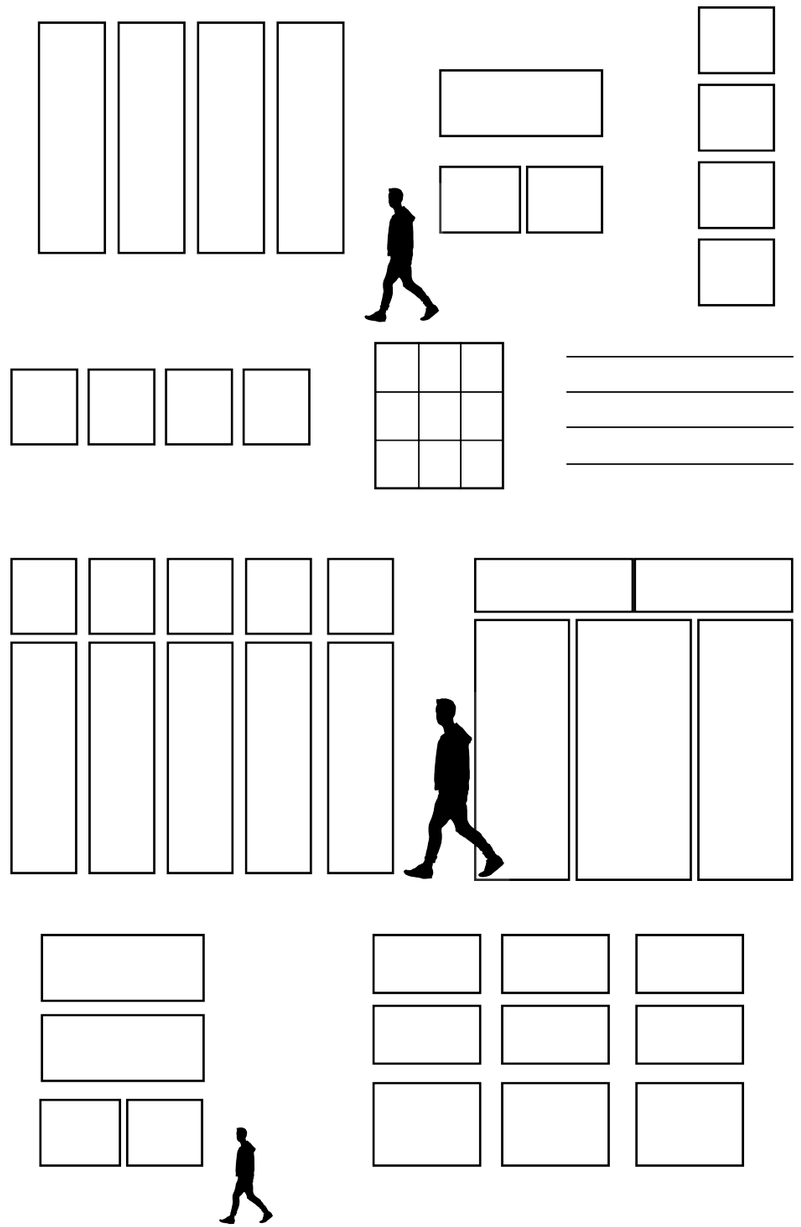


Figure 31. Study of Architectural Motifs

06 *site & building analysis*

Chapter Introduction

Building on the precedent analysis previously explored, the following chapter will provide insight into the location, and surrounding area of the proposed development. The site and building were selected because of the central urban location, expansive green spaces, architectural design layout, and the diverse community. Situated in a middle-class neighbourhood in the heart of Winnipeg, the site is near walking paths, and surrounded by residential homes. This chapter provides a detailed overview of the neighbourhood and an analysis of the building, highlighting the key constraints and opportunities related to both the site and the proposed development of The Flats Long-Term Care Facility.

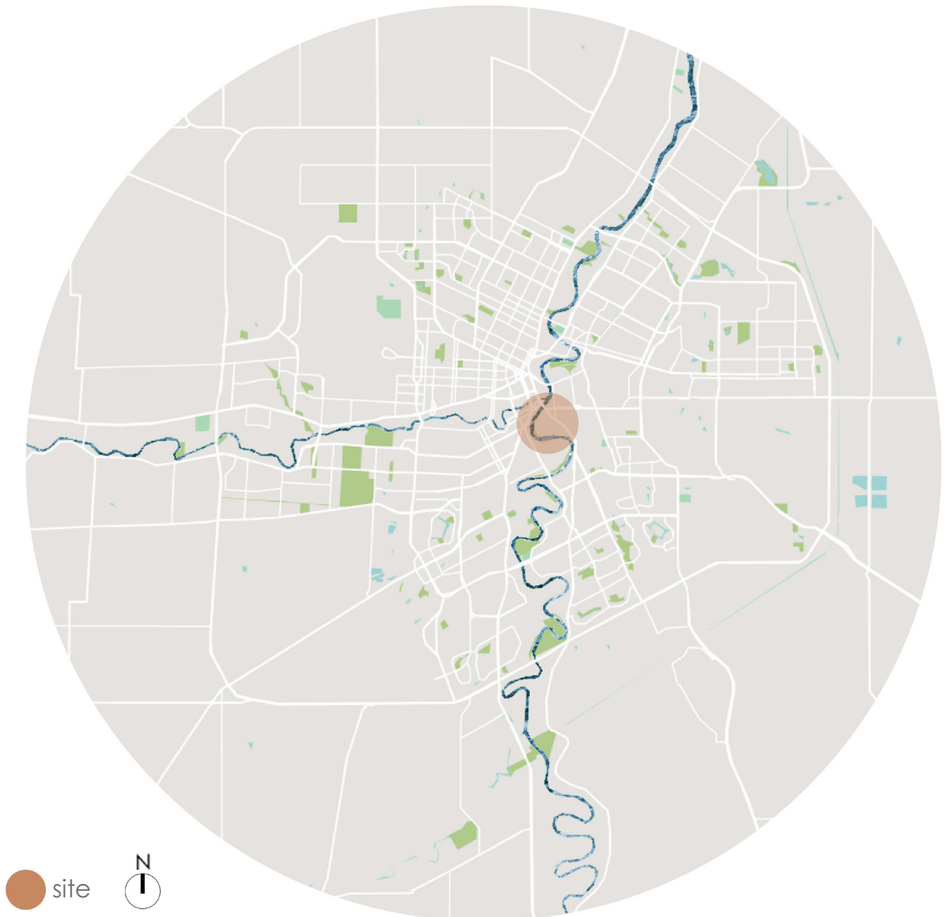


Figure 32. Map of Winnipeg, Manitoba, Canada

6.1 Neighbourhood: Norwood Flats

Norwood Flats, one of the city's oldest neighbourhoods is conveniently located just south of the downtown area in the heart of Winnipeg. A historic and charming residential neighborhood that is a part of St. Boniface, Norwood Flats is nestled between the Red River, St. Mary's road, and tucked away from the busyness of downtown Winnipeg. Established in the late 19th century, the neighborhood features a diverse range of architectural styles, including historic, and modern homes. With accessible amenities across St. Mary's Road, green space along the riverbank, and walking paths, residents can maintain an active lifestyle while enjoying the outdoors. In addition, accessible public transportation options ensure residents of Norwood Flats are well connected to the rest of Winnipeg, making it convenient to commute to various parts of the city. In fact, many residents choose to walk or bike to work due to the close proximity to downtown, enjoying the scenic views of the river.

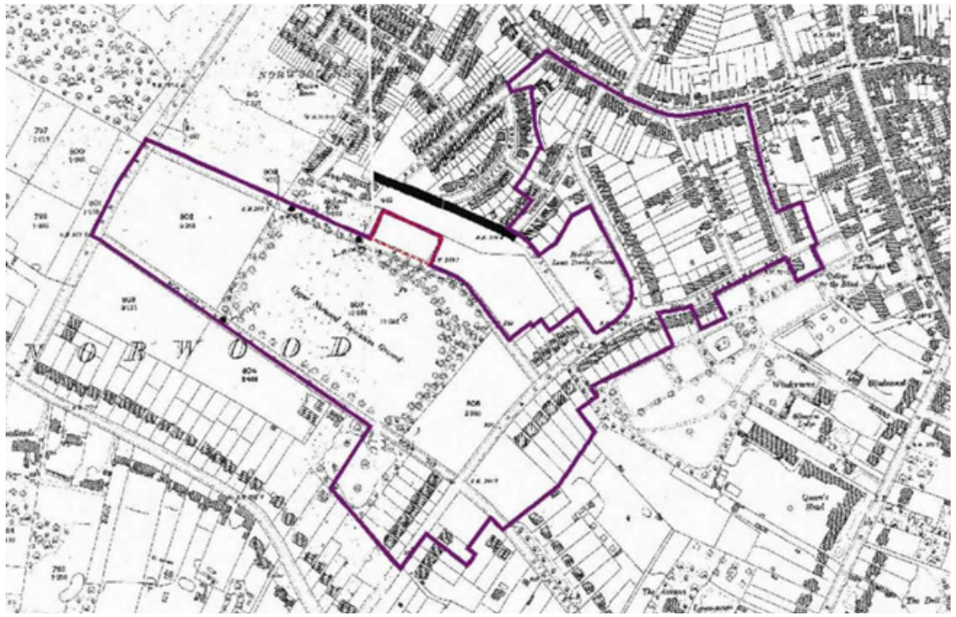


Figure 33. Historical Neighbourhood Map of Norwood Flats



Figure 34. Neighbourhood Map



Figure 35. Map of Surrounding Districts

6.2 Building Analysis

Located at 99 Birchdale Avenue and established in 1949, Nordale School is a single-story building designed by the architectural firm Green Blankstein Russell and Associate (Winnipeg Architecture Foundation n.d.). Nordale School primarily serves as a public elementary school for kindergarten to Grade 8 students, and the local community uses the gymnasium for various events in the evenings (Goldsborough n.d.). Since 1949, the school has undergone several significant additions, with an updated total floor plan of 34,885 square feet. In 2019, the local community held a fundraiser to assist in the development of a nature-inspired playground. The outdoor space features natural elements such as trees, indigenous plants, tree stumps, and boulders to help reconnect children to the natural environment, and provide them with various options for how they want to play (Winnipeg Architecture Foundation n.d.).

The classroom windows have been partially filled in due to the privacy and security of the students. However, at the main entrance, five heavy-duty wooden oak doors with glass allow natural light to radiate into the space (Winnipeg Architecture Foundation n.d.). On the rear side of the building is a spacious schoolyard framed by the L-Shaped plan of the building. Other on-site amenities include a basketball court and two soccer fields, which draw in the local community to enjoy the space (Winnipeg Architecture Foundation n.d.). The interior of the building features terrazzo flooring and painted concrete, with the school's colours - yellow and blue predominately displayed throughout the space. The building's original facade is covered in painted brick, with the addition showcasing a mix of local Tyndall stone on the north side of the school.

The existing building has several key features that aid in the transition of the school into the proposed long-term care facility. Its proximity to essential services, and the existing floor plan provide a prime opportunity to convert the space into a comfortable, and functional environment, making the site an appropriate selection for the objectives of this project.



Figure 36. Map Illustrating Site Context

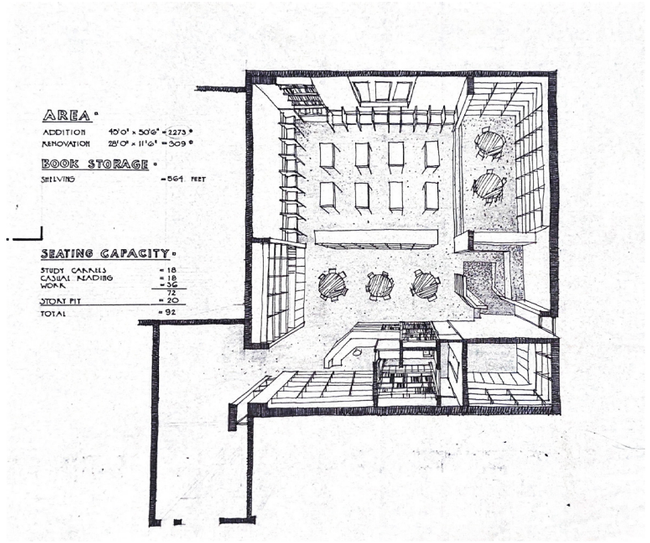


Figure 37. Original 3D Sketch of Nordale School

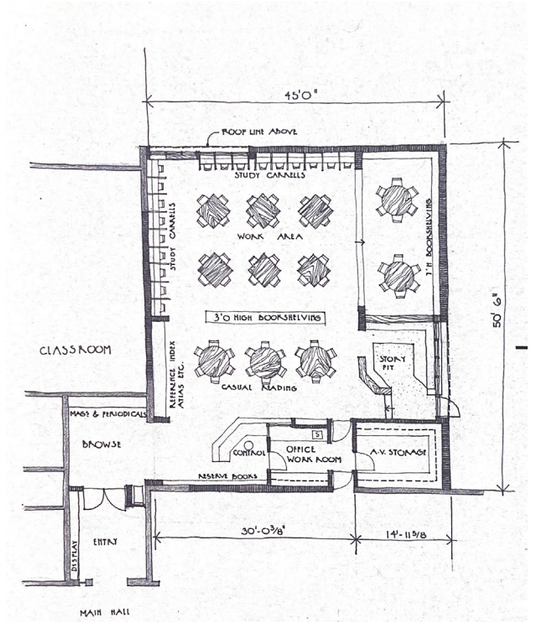


Figure 38. Original Drawing of Nordale School Furniture Layout

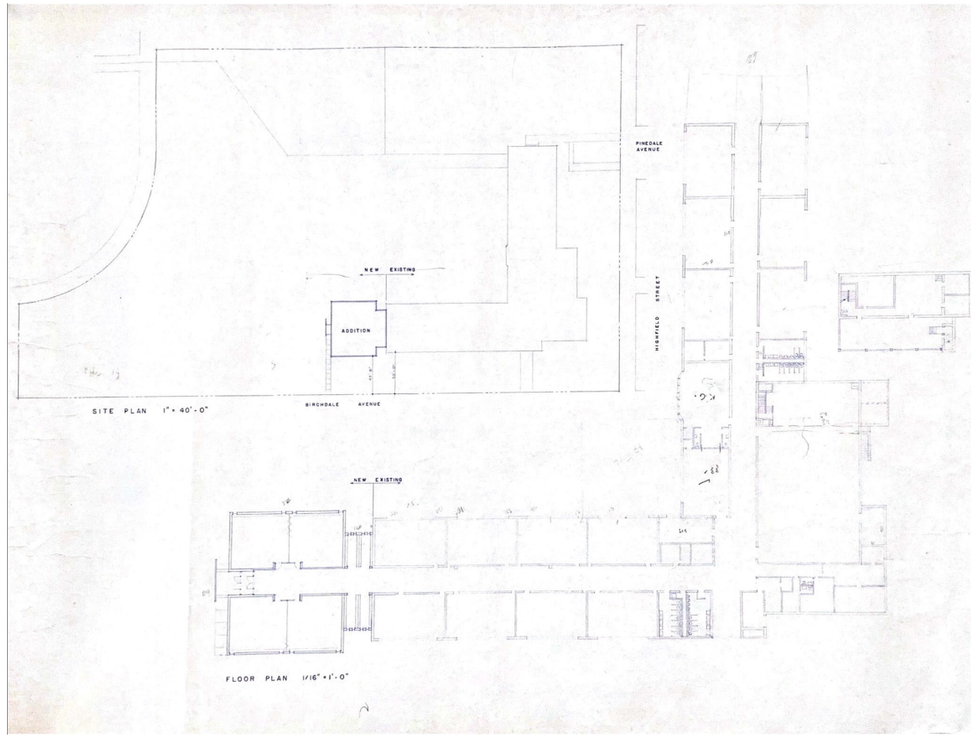


Figure 39. Nordale School Original Floor Plan -1938

Interior Building Photographs



Figure 40. Photograph of Main Entrance

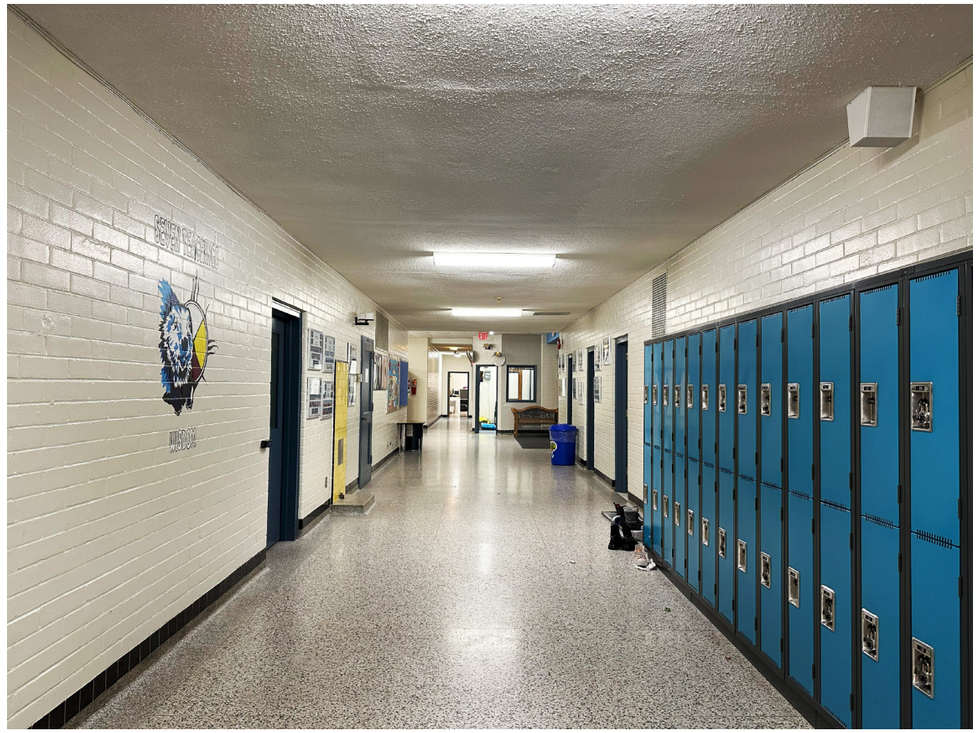


Figure 41. Photograph of Corridor

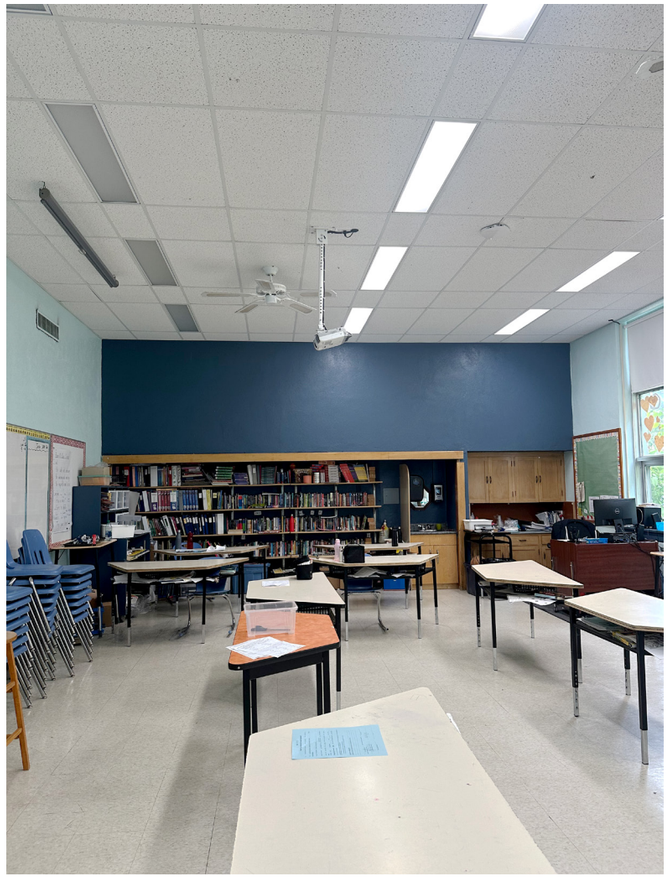


Figure 42. Photograph of Existing Classroom



Figure 43. Photograph Towards Existing Library



Figure 44. Photograph of Existing Science Room



Figure 45. Photograph Highlighting Paint Colour on Wall



Figure 46. Photograph of Existing Washroom Door



Figure 47. Photograph of Gymnasium



Figure 48. Photograph of West Entrance

6.3 Surrounding Buildings & Sites

Norwood School is directly surrounded by residential homes, a soccer field, a Lutheran school, and a Korean-based church. The school is conveniently accessible on Birchdale Avenue, and is within walking distance for local residents. Norwood Flats is a family-friendly community near two schools, a church, the local community center, baseball and soccer fields, and one of Winnipeg's major healthcare facilities, St. Boniface Hospital. The site is tucked away from the hustle and bustle of services located on St. Mary's Road, Marion Street, and Goulet Street, which consists of grocery stores, banks, restaurants, gas stations, and commercial businesses.

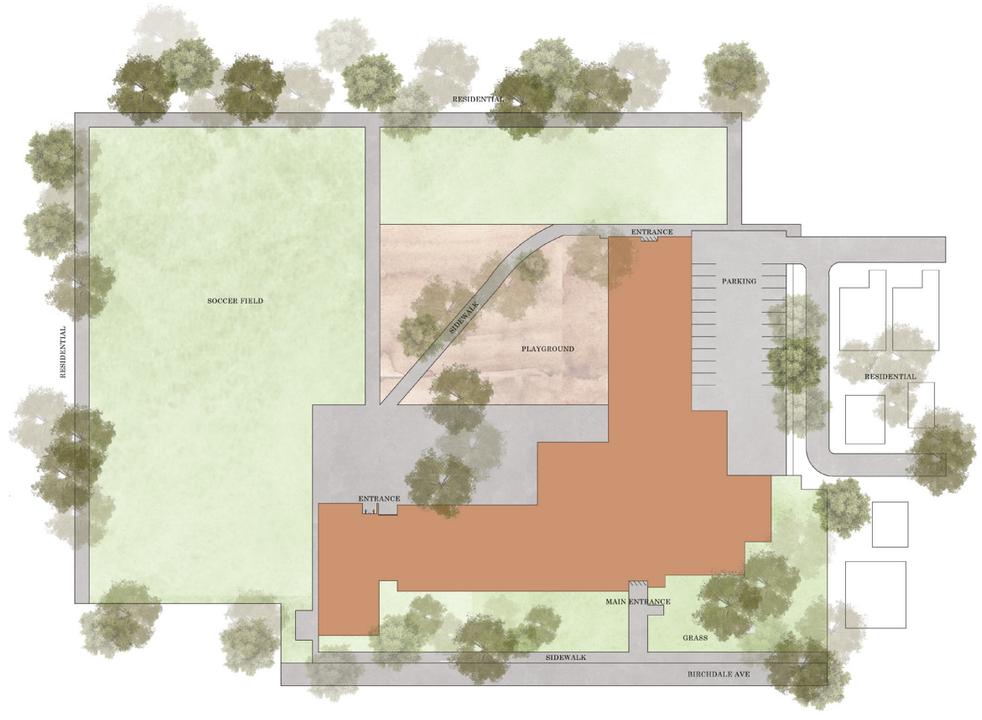


Figure 49. Site Map - 99 Birchdale Avenue

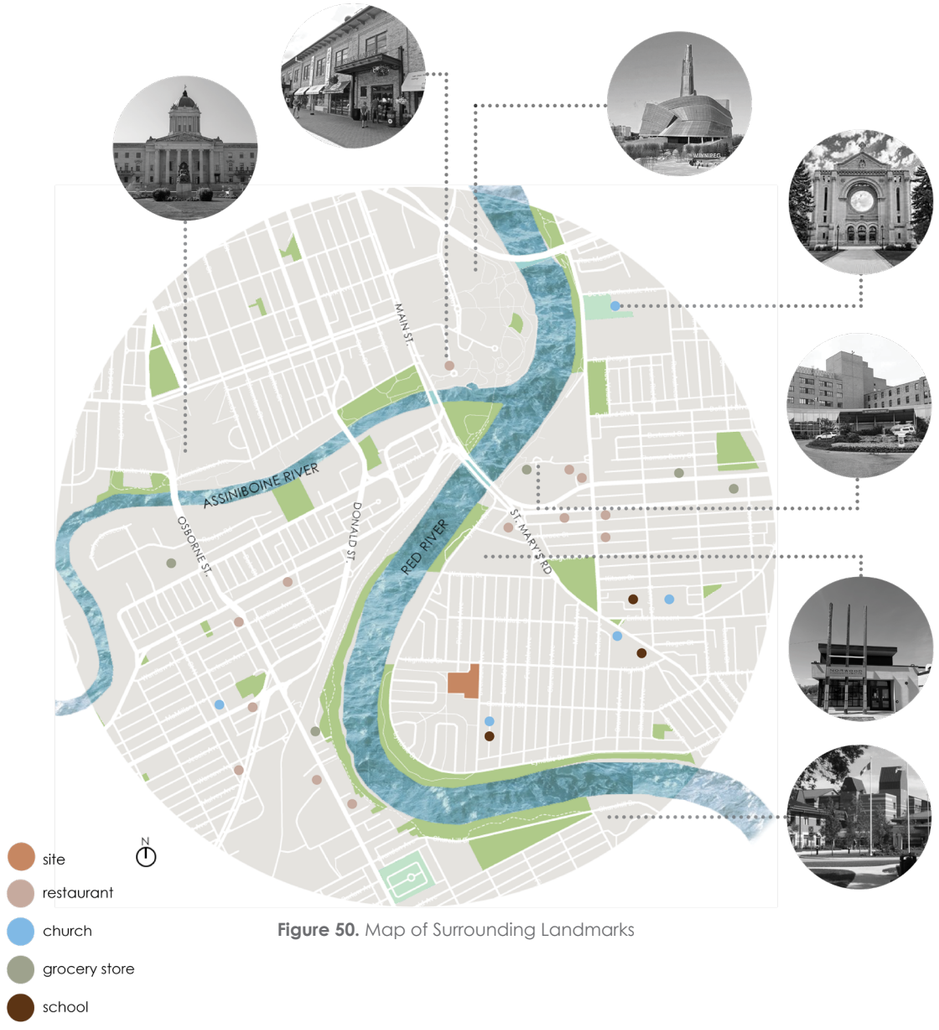


Figure 50. Map of Surrounding Landmarks



Figure 51. Collage of Context Surrounding the Site

6.4.1 Building Opportunities

• L-shape building (benefits: maximize natural light, clear wayfinding, opportunity to create both private and communal spaces.
• Ample free parking spaces.
• Opportunity to include a courtyard.
• Single story building (no vertical circulation required).

6.4.2 Building Constraints

• Older building (may have issues with mold, rot, or other matters).
• Minimal windows restricting the amount of natural daylight.
• HVAC systems are dated and would need to be updated.

6.5.1 Site Opportunities

• Located in the center of the city, providing ease of access to all users.
• Proximity to residential homes.
• Proximity to a public high school, private elementary school, and church (there is a strong sense of community surrounding the building where residents can interact).
• Opportunity to connect to the natural environment.
• Proximity to essential services, but far enough from the busyness of the amenities where the residents can wander in a peaceful environment.
• Family-friendly neighbourhood.
• A neighbourhood that promotes outdoor physical activity.

6.5.2 Site Constraints

• The existing play structures on-site encourage children to gather outside, which may cause noise and disrupt the residents and staff members.
• Located near the Red River, which may be a safety concern for residents who have a tendency to wander.



Figure 52. Aerial View of Norwood Flats - 1928

Exterior Photographs



Figure 53. View of Nordale School Main Entrance



Figure 54. Photograph of East Facade



Figure 55. Photograph of Walking Next to the Building



Figure 56:.Photograph of West Facade and Basketball Court

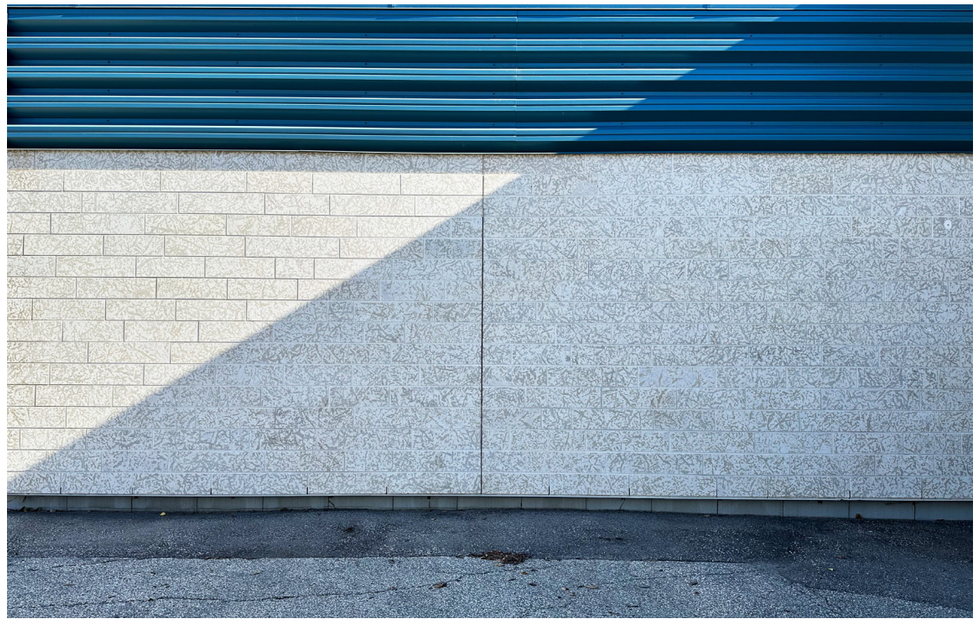


Figure 57. Photograph of Building Material - Local Tyndall Stone



Figure 58. Photograph of Parking Lot



Figure 59. Photograph of Outdoor Seating Area



Figure 60. Photograph of Playground



Figure 61. Photograph of Walking Path Through the Playground



Figure 62. Photograph of Landscape Surrounding the Playground

07 *design proposal*

Chapter Introduction

Based on research findings explained in previous chapters, a final design proposal was developed to address the site, program, and user needs of The Flats Long-Term Care Facility. As discussed at the beginning of this document, one of the main design objectives for this practicum was to explore how interior design could impact an individual's experience and quality of life in a long-term care environment. This practicum also aimed to emphasize the importance of social engagement by including communal spaces, and promote meaningful wandering and wayfinding by providing a wide range of activity options along the wandering path. In the following chapter, I highlight how the design of The Flats Long-Term Care Facility integrates theoretical, and person-centered care literature to support the practicums design objectives.

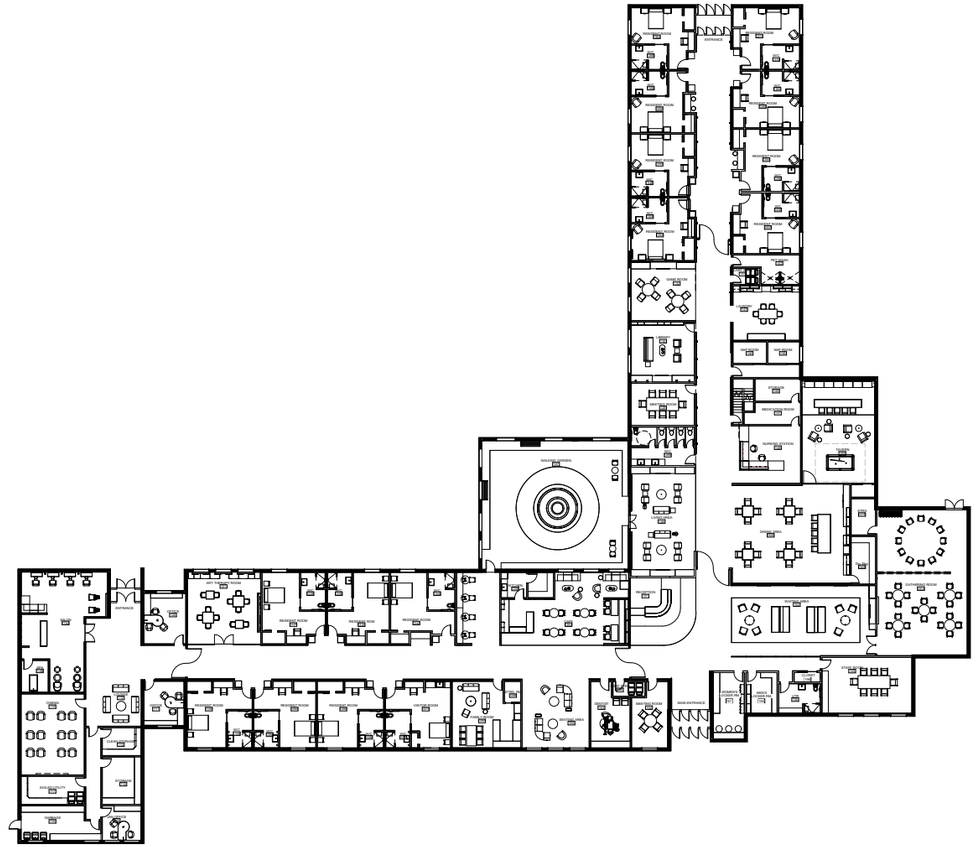
7.1 Design Concept

The Flats Long-Term Care Facility accommodates fourteen residents with mild to moderate Alzheimer's disease. The facility offers a safe and supportive environment that allows residents to maintain their independence, establish a sense of belonging, and experience meaningful engagements in thoughtfully designed spaces.

The overall design features a neutral colour palette, with subtle shades of green and blue complemented by soft furnishings, natural materials such as wood, and local Tyndall stone. These colour, material, and furniture choices create a comforting, home-like environment that is intended to enhance the overall well-being and quality of life for the residents, staff, and caregivers. Additionally, biophilic elements and maximizing direct views of the surrounding landscape and children's play area is intended to alleviate the stress and anxiety often associated with the transition into a new home.

The existing L-shaped floor plan allows for two wings and a central courtyard. To create a less institutional feel, communal spaces and seating areas for moments of pause are located near the resident rooms. These shared open spaces are thoughtfully positioned to encourage social interaction, create a sense of community and home-like atmosphere. In addition, transition spaces between activity areas create opportunities for connection as residents make their way to their intended destination.

Throughout The Flats Long-Term Care Facility, various wayfinding strategies were implemented to help residents navigate the space with ease, confidence, and independence. The two wings feature distinct design elements that contribute to a sense of familiarity, and minimize confusion, supporting residents with mild to moderate Alzheimer's disease and their daily routines.



N **Figure 63.** Overall Main Floor Plan Floor Plan - NTS

7.2 Central Core

Upon entering The Flats Long-Term Care Facility off Birchdale Avenue, residents, family members, and visitors are greeted by a receptionist. To the right of the main entrance are staff areas with a designated men's and women's locker room, a universal toilet room with storage, and a staff room. Across the corridor from reception is the waiting area, providing visitors a comfortable place to sit. The gathering area located on the north end of the building is a multi purpose room for group fitness classes, larger community events, family gatherings, or religious activities. Also located in this central core are the dining and living rooms, with storage off the dining area for more hazardous equipment. Adjacent to the dining area is a tavern room for residents to congregate and watch sporting events or play pool. The nursing station is centrally located between the two corridors, allowing nurses immediate visual and physical access to both wings. Conveniently connected to the nursing station, is the medication room, ensuring quick and efficent access for healthcare staff. Public washrooms are located near the main entrance for all users within the facility. A meeting room is functionally located across from the nursing station providing staff with a space to host internal team discussions. There is also a dental clinic next to a smaller meeting area near the main entrance. Finally, a café provides the local community, residents, staff, and caregivers with opportunities to socialize and enjoy each other's company.

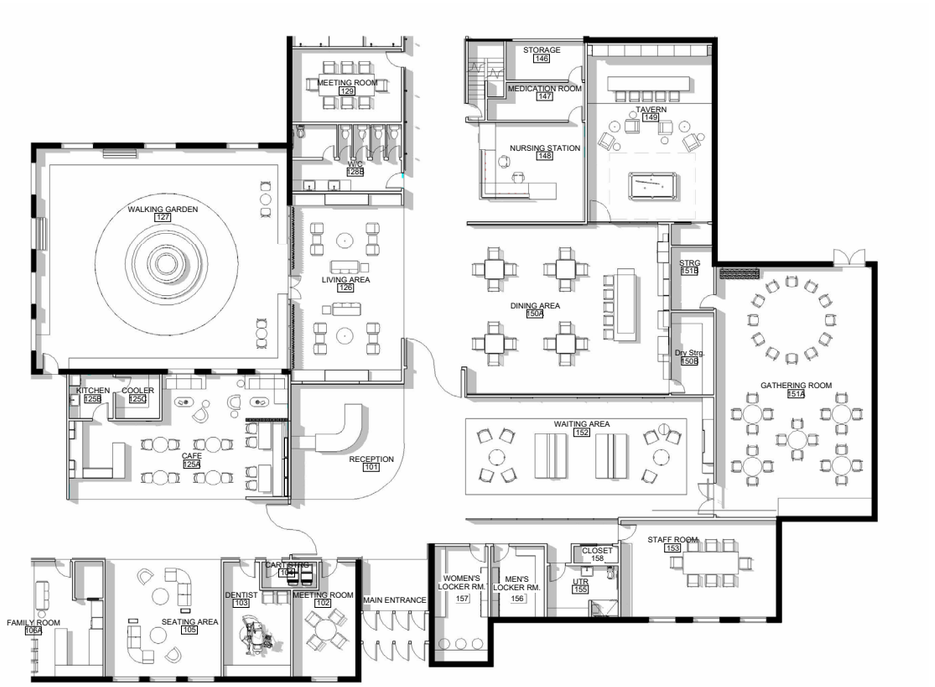


Figure 64. Main Floor Plan - Central Core - NTS

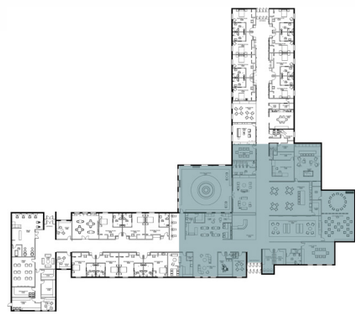




Figure 65. The Flats Long-Term Care Facility Main Entrance

Main Entrance

When arriving at The Flats Long-Term Care Facility, residents, visitors, and staff are greeted by a receptionist at the reception desk. This area is defined by distinct flooring and wall paneling, that reflects the architectural motifs mentioned in chapter five. A combination of wood elements and natural greenery creates an inviting atmosphere, and brings a sense of comfort and warmth to the space, contrasting the often sterile healthcare environments. The soft, gentle curve of the reception desk, mirroring the dropped ceiling, and accent flooring, contrast the linear patterns that are predominant throughout the facility. Task lighting above the desk and recessed cove lighting add to the welcoming ambiance, offering an inviting first impression to all that enter.



Figure 66. Perspective of Waiting Area

Waiting Area

The design of the waiting area features soft furnishings and is distinguished from the main circulation path by carpeted flooring. The incorporation of biophilic design with three green walls reflects the repetition that was initially explored during the building geometry, shapes and patterns study. Incorporating local Tyndall stone and the use of natural wood elements brings a sense of comfort into the space. Task lighting above the seating areas provides ample illumination, while the glass partition opens the space and brings in natural light from the adjacent windows.

Living Area

The living area is a carpeted space that seamlessly transitions from the wood flooring in the corridor, ensuring accessibility for all residents. The furniture, a mix of single seats and two-seaters, is arranged to encourage social interaction. Millwork framing the fireplace offers storage for familiar objects such as books, cards, or table games. The fireplace designed with local Tyndall stone serves as a positive distraction and creates a focal point that enhances social interaction.

Large windows looking out towards the walking garden bring natural light into the living area, creating an inviting atmosphere and a connection to nature. Residents can easily access the walking garden from the living room, providing them with a space to engage in light exercise, or simply relax in a peaceful and natural environment.



Figure 67. Perspective of Living Area

Dining Area

The dining area offers residents a welcoming space to gather and enjoy meals together, just as they would with family at home. The kitchen is designed for accessibility, and features numerous storage cabinets above and below the countertops for typical kitchen items. Taking into consideration occupational therapy principles, this practice allows residents to engage in familiar, meaningful activites that support their independence and encourage daily living skills. The upper cabinets in the kitchen are designed with transparent glass allowing residents to easily identify the items in each cabinet. Strategically located across from the living room, the dining area is a flexible space that can be formal or informal and can accommodate all residents.



Figure 68. Perspective of Dining Area



Figure 69. Elevation of Dining Area



Figure 70. Perspective of Cafe

Café

The café is a welcoming place where residents can gather with their family and friends. It serves as a social hub for local community members providing them with the option to connect with their friends or residents. The café offers a variety of food and beverage options, including snacks, juice, coffee, and tea throughout the day. As the space is open to the corridor, the suspended acoustic ceiling baffles help reduce noise levels. The banquette features greenery growing from behind, seamlessly incorporating nature into the space.

A recessed mirror in the wood panelling reflects the natural light throughout the space, and the wood partition between the banquette and cozy seating area along the windows allows light to pass through while dividing the space. Conveniently located near the main entrance and the reception desk, the café is positioned so local community members can easily access it, while residents can enjoy watching visitors come and go.

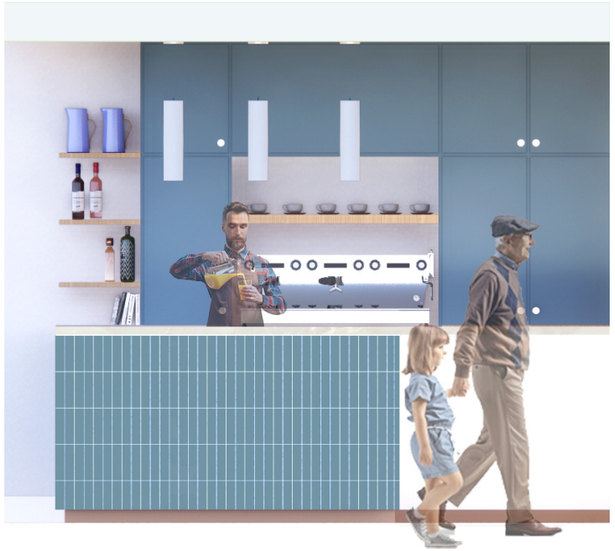


Figure 71. Elevation of Cafe Food & Beverage Counter



Figure 72. Elevation of Cafe Banquette Seating

Walking Garden

The walking garden, centrally located at the intersection of the L-shaped floor plan near the cafe and living area offers residents a landscaped space filled with vibrant, blooming plants. A walking path encircles a tranquil fountain where residents can enjoy the soothing sound of flowing water. The space features various vegetation and raised garden beds allowing residents to assist with growing fresh vegetables and watering the plants. The skylights provide an abundance of natural light, illuminating the space and creating a bright and open environment, that connects individuals to the outdoors throughtout all seasons of the year. A bistro table and chairs provide a comfortable area for residents to socialize in a protected outdoor environment. For those who enjoyed gardening at their previous homes, this space offers a welcoming opportunity to continue that beloved hobby.



Figure 73. Walking Garden

Tavern Room

The tavern room is a lively gathering space where residents can enjoy a social environment. The space is designed with options that allow residents to play pool, sit and relax in comfortable lounge chairs, watch sporting events on television, or interact with the resident bartender. This versatile space encourages conversation, connection, and activity, making it a social hub where residents and visitors can engage with others and share common interests.



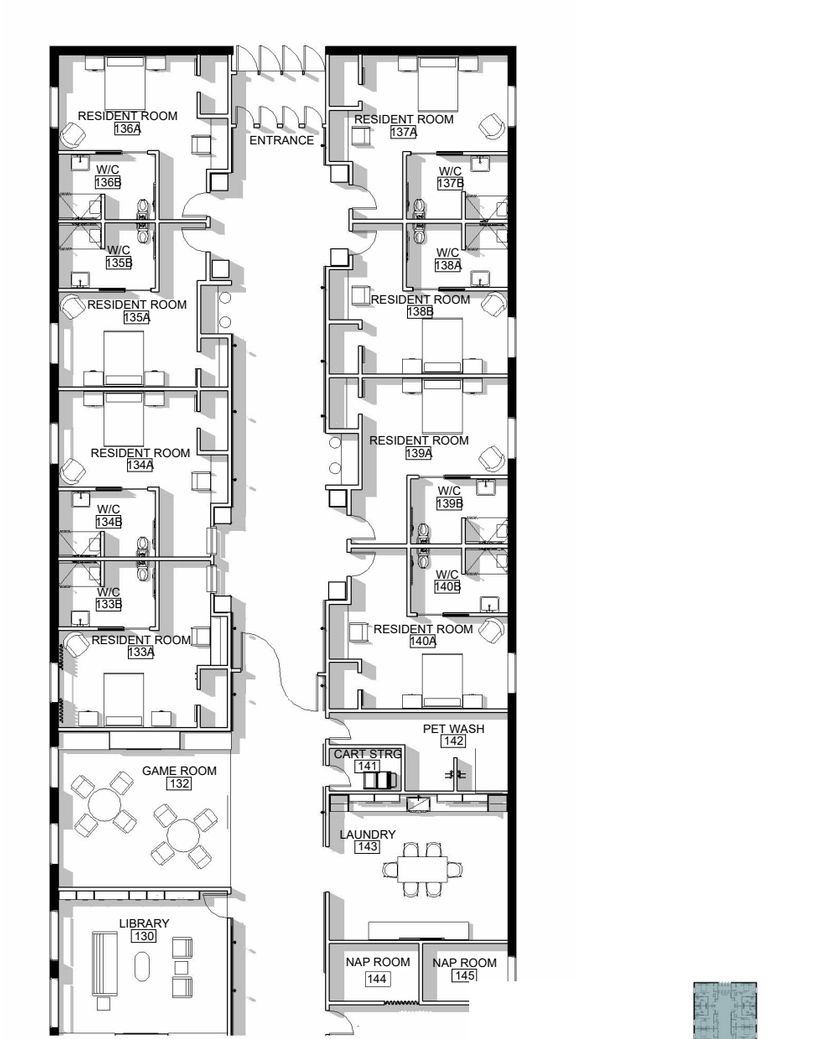
Figure 74. Tavern Room Bar Elevation



Figure 75. Perspective of Tavern Room

7.3 West Wing

The west wing houses eight resident rooms furnished with typical residential style bedroom furniture. Additional amenities along this corridor wing include a room where residents can play board games, cards, or solve puzzles, a library room for quiet reading, and a laundry area where residents can do their own laundry. The west wing also includes a storage room, a cart storage station for nursing staff to manage soiled garments, a pet wash station for residents' furry friends, and a nap room for visitors to relax while their loved ones receives care. Thoughtfully designed rest areas are positioned along the west and south corridors to allow residents who wander a safe space to sit, relax, solve puzzles, chat with fellow residents, or simply observe those passing by.



N **Figure 76.** Main Floor Plan - West Wing - NTS



Library

The library is a cozy space where residents can sit and relax in front of the fireplace while enjoying a novel. A mix of accent chairs and a sofa offers a variety of seating options for residents to choose their preferred spot to unwind. The soft carpet brings a sense of comfort, creating a warm and inviting atmosphere. South facing windows allow natural light to fill the room during the day, while soft, ambient wall sconces and suspended task lighting illuminate the space in the evening. The bookshelves are filled with a wide selection of novels generously donated by the local community, providing learning and leisure reading options for everyone. Together, these design elements make the library a place where residents can immerse themselves in a room full of books, finding comfort and relaxation in a quiet environment.



Figure 77. Perspective of Library

Resident Bedroom

All resident rooms are single bedrooms furnished with a bed, closet, guest chair, work desk, and a universal toilet room. Each bedroom has a window that opens to the outdoors, allowing residents to connect with the natural environment. Here, residents can watch children run around the playground, or wave to local community members passing by. The bedrooms are intentionally designed with only a single bed to encourage residents to socialize with their fellow residents in the communal living and dining areas. If residents had all the necessary amenities in their bedrooms, it could lead to social isolation, negatively impacting their overall mental health and well-being.

It is important for residents to have a direct sightline to the washroom from their bedroom (Chmielewski 2014, 18). This encourages independence and ensures residents can easily access the washroom when needed thereby, enhancing their overall comfort and safety. The washroom has a sliding door, which takes up less space and benefits nurses and caregivers as they assist residents. The universal toilet room is designed for accessibility. It features fold down grab bars on either side of the toilet, non-slip resistant flooring, and an open shower with a bench, enabling residents to bathe independently if they are able to do so.

To assist with wayfinding and meaningful wandering, there is a shelving unit located above the bed which allows residents to personalize their space with cherished knick-knacks, and photographs of friends and family. Memory boxes are another strategy used to assist residents with locating their rooms. Each memory box, placed in the corridor outside of the bedrooms, contains personal and meaningful objects encased in glass that can trigger an individual's memory and helps them identify their bedroom. The bottom half of the memory box allows staff members to store any additional items. Further, each bedroom door is painted a different colour and marked with a number to help residents easily identify their room. This colour-coding system enhances wayfinding, and adds a personal touch to the space.



Figure 78. Elevation of West Wing Corridor



Figure 79. Perspective Resident Bedroom



Figure 80. Perspective of Laundry Room

Laundry Room

The resident laundry room provides an opportunity for residents to do their own laundry or simply fold and sort laundry as a relaxing and therapeutic activity. Like other communal spaces, the laundry area is designed to encourage residents to socialize and build connections with one another. Furthermore, the laundry room can serve as a space where occupational therapists work with residents to enhance their environment and sense of accomplishment, making it safer and more conducive to independent living. Engaging in tasks such folding and sorting laundry can be beneficial for residents' cognitive skills and function, and promotes purpose and contribution. The upper glass cabinets, blue tile, and playful wall covering creates an inviting environment that enhances the overall appeal of the space. This welcoming area opens to the corridor and invites residents in as they are passing by, which encourages individuals to spend time together, and share stories while waiting for their laundry. Implementing a table, seating area, and television helps slow down the often rushed task of doing laundry. This creates a space where connections flourish while residents engage in their daily activities.



Figure 81. Laundry Room Elevation

Corridor

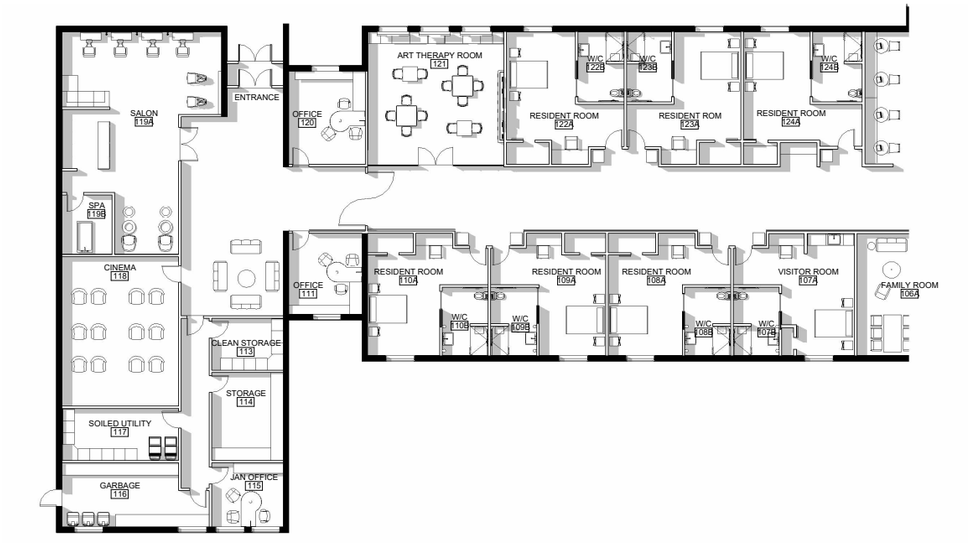
The perspective of the west wing corridor is unlike that of a traditional hallway in a typical senior living community. The corridor opens to different rooms encouraging residents to participate in different activities. This layout aids with wayfinding by helping residents recognize where they are within the building. The repetitive skylights along the corridor floods the space with abundant natural light, and mimics the repetition of the existing architectural building shapes discussed in chapter five. In the evening, wall sconces and ceiling lights illuminate the space, guiding residents to their destination. Art along the walls of the corridor serves as landmark cues, helping residents identify where they are in the building, and fostering conversation (Chmielewski 2014, 16). The south wing differs from the west wing through the use of different coloured wall panels, a form of wayfinding that helps residents identify which corridor their bedroom is located in. Panels are further utilized to help residents differentiate between areas. As an example, each corridor and the associated activity zones contain a different colour wall panel than the other wing.



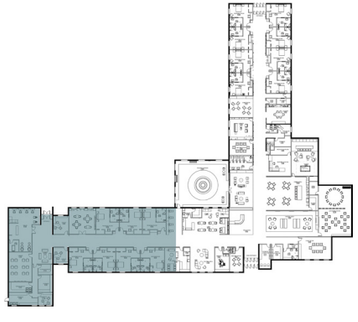
Figure 82. Perspective of West Wing Corridor

7.4 South Wing

The south wing contains a private family room with a small kitchenette and living space for residents to gather with their families. There are six resident rooms in this wing with one visitor room located near the family area. The visitor room is designed as a place for loved ones to stay while they are visiting from out of town. The corridor wing further contains an art therapy room, two offices for staff, and a seating area located near the southwest entrance. In addition, a hair and nail salon with a bathing and spa room is located adjacent to the cinema. This provides residents the opportunity to get their hair or nails done at the salon, and then go and watch a movie at the cinema shortly after with friends and family. Located on the east end of the corridor are private staff areas, a clean storage room, a space for soiled utility, a garbage room, and the janitorial office.



N **Figure 83.** Main Floor Plan - South Wing - NTS



Hair Salon

The hair salon located within the facility allows residents to conveniently access professional grooming and styling services. This helps these individuals maintain their preferred look, and feel confident without needing to leave the building. The salon offers a variety of amenities. Residents can come to the salon for all their hair needs, which may include a cut, styling, or colour. In the same space is the spa area, where individuals can receive a relaxing massage. Finally, there is also an area available for nail services as individuals may choose to get a manicure or pedicure, creating a full service experience. Having the salon located within the facility relieves caregivers from the stress of transporting loved ones to appointments, as this can often become time-consuming and challenging to coordinate. With services readily accessible on-site, caregivers can feel reassured that their loved ones are receiving the care that they need.



Figure 84. Perspective of Hair Salon

Art Therapy

The art therapy room provides residents with a space to express their creativity, socialize, and relax. The tables are arranged so residents can collaborate in smaller groups, or they can be joined together for large group events. The flooring is a resilient rubber that is easy to clean, making it suitable for any paint spills. Shelving units on the wall display the residents' artwork and serve as conversation starters, encouraging others to engage and applaud their peers' creativity. Open shelving units, and storage cabinets below the windows provide ample space for collecting art supplies, tools, and personal belongings, keeping the room clean and organized. The shelving units allow residents to easily access supplies as they need. The neutral paint colour in the room creates a calming backdrop, allowing the residents' artwork to fill the space with vibrant hues.
The dropped ceiling defines the activity area within the space, with downlights illuminating the work surface and task lights directed towards the residents' artwork enhancing its beauty and detail.



Figure 85. Perspective of Art Therapy Room

08 final thoughts

Throughout the process of completing this practicum, many of the design solutions were derived by translating literature, and exploring the person-centered care approach. Additional inspiration was drawn from my volunteer experience with the Alzheimer Society of Manitoba, visiting existing long-term care facilities, and having in-depth conversations with knowledgeable professionals who specialize in designing senior living communities worldwide. Being the daughter of two nurses has provided me a unique understanding of the needs and challenges faced by healthcare providers in such environments, adding a valuable layer of personal insight to this project. Grateful for these unique opportunities and guided by my literature review and precedent analysis, I was able to identify how certain aspects need to be enhanced and implemented in long-term care facilities for those living with mild to moderate Alzheimer's disease.

The literature review explored four key elements that I believe should be integrated into the future design of long-term care facilities. As designers working alongside healthcare professionals, our role is to strategically enhance one's quality of life by introducing effective wandering strategies, encouraging social interaction, and improving wayfinding within the interior environment. These elements are crucial throughout the design process because they address common challenges that many face in long-term care facilities. By focusing on these factors, designers can create spaces that support the cognitive and emotional well-being of residents, promote independence, and reduce confusion, allowing residents to navigate through the built environment with ease.

At the beginning of the document, I introduced three questions of inquiry that were based on the chosen topic. The first question proposed was: *What design features should be present in a supportive environment that enhances the independence, well-being, and quality of life for individuals living with Alzheimer's disease in long-term care facilities?*

Research indicates that implementing intentional design elements such as smaller, non-institutional units can help reduce behavioral issues among residents living with AD (Wrublowsky 2018, 22). In the design of The Flats Long-Term Care Facility, this was achieved by housing only fourteen residents, creating a home-like environment that allows individuals to maintain a greater sense of independence and mental well-being.

Studies also show that residents with AD experience lower levels of cognitive stress, sadness, and social isolation when provided with fewer multipurpose rooms, increased environment variety, and less crowding (Hsaio, Chang & Gean, 2018). In the proposed facility, housing fewer residents helps alleviate crowding, while dedicated spaces for specific activities allow individuals to anticipate their purpose, enhancing one's independence, well-being, and quality of life. Additionally, designing single rooms offers opportunities for personalization and home-like characteristics which promotes individuality and a sense of home.

The second question proposed was: *With regard to wandering and physical activity, how can the design of the long-term care facility promote both safety and independence for individuals living with Alzheimer's disease?*

As discussed in chapter three, wandering is one of the most common, but least understood behaviors associated with AD and is often viewed in a negative way (McQuilkin 2016, 1). Individuals living with AD often tend to wander, posing significant safety concerns, including the risk of injury or disorientation (Alzheimer Society of Canada 2022). To address these concerns, long-term care facilities may implement restrictions such as locking doors and windows, or child proofing doorknob covers to restrict access to certain areas (UMPC n.d.) However, constraining their ability to explore the interior environment can impact residents' sense of independence and mobility, which is essential for well-being and quality of life (Agrawal et al. 2021, 55). This question explores strategies to enable safe exploration within the interior environment, and seeks to understand how

long-term care facilities can support the safety and independence of residents, while still allowing them the freedom to engage in physical activity. In the proposed design of The Flats Long-Term Care Facility, this question was addressed by designing spaces where residents can pause as they wander. These strategically placed opportunities for stoppage allow individuals to rest in corridor seating nooks, enjoy the artwork on the walls, or engage with areas that open up to the corridor such as a games room, all while creating a safe yet enriching environment. Additionally, to allow residents to wander safely and independently in a natural environment, the facility features a four-season walking garden that enables residents to enjoy the beauty of nature year-round, even during the harsh winters in Manitoba. Many people, whether diagnosed with AD or not enjoy walking in nature simply for exercise or stress relief. Therefore, it was important for the proposed design of the facility to provide residents the opportunity to enjoy these benefits as well. This approach allows residents to experience the calming effects of nature instead of being limited to the interior environment.

The third proposed question was: *How can the design of a long-term care facility promote social interaction and engagement for individuals with mild to moderate Alzheimer's disease?*

In chapter three, I explained how social interaction plays a vital role in human health and overall well-being. For individuals living with AD who often experience cognitive decline and emotional challenges, meaningful social engagement can significantly impact their emotional and psychological well-being, enhancing their overall quality of life (MercyCare n.d.). Furthermore, the physical layout of long-term care facilities plays a critical role in facilitating social activities among residents. The L-shaped floor plan of The Flats Long-Term Care Facility provides communal spaces that are centrally located, with resident rooms situated along the corridor wings. This creates opportunities to mimic a home-like environment where the communal spaces are located adjacent to one another, encouraging residents to socialize in spaces outside of their rooms, minimizing social isolation. Another design technique that encourages socialization at The Flats Long-Term Care Facility is the community café. A welcoming space where residents and members of the surrounding community can gather to enjoy a conversation over delicious food and beverages. Additionally, the gathering room located in the facility provides a space where family and friends can participate in various events with the residents. It is essential to understand that certain factors influencing social engagement may vary for residents, based on their stage of AD and their pre-existing preferences before living in a long-term care facility. To ensure that someone living with AD engages in social activities, designers should consider offering a wide variety of areas where numerous activities can take place. Ultimately, the research that stems from this question can inform care practices prioritizing social engagement, leading to enhanced outcomes and an elevated quality of life for those living with AD in long-term care facilities.

While this practicum project is complete and has provided valuable insights for long term-care facilities in Manitoba, there remain opportunities for additional research and design for those interested in investigating the topic further.

For instance, additional research could include primary data collection such as interviews with individuals living with mild to moderate Alzheimer's disease, and their loved ones or caregivers to understand their unique needs and wants. In a similar manner, conversations with healthcare staff who work directly with individuals living with AD would likely contribute to the design of future long-term care facilities for this demographic. Having insights from my parents who are nurses, and having a conversation with a registered nurse at one of the facilities that I had the opportunity to visit was helpful for various aspects of the design. However, gathering qualitative data could have been beneficial in designing a long-term care facility that better suits the needs of the proposed users.

Future research could also explore emerging technologies aimed at improving the experiences of the next generation of individuals entering long-term care facilities. As technology continues to shape our world, it has the potential to enhance the daily lives of those living with AD, as well as improve and advance the quality of medical care they receive.

If this project were to advance, another potential design element could involve collaborating with a landscape architect to further develop the site's grounds. Currently, there is an abundance of greenspace, and newly planted native vegetation around the children's playground. However, I would like to further explore the surrounding landscape to include an outdoor walking path, and a patio where residents can sit and eat with each other and their families or caregivers throughout the warmer months.

As I conclude this chapter of my education, I hope to carry these ideas into my professional career as a junior interior designer, building on the successful ideas presented in my practicum while also learning from my mistakes. I am confident that the next generation of designers can use my practicum as both a resource, and a starting point to fuel their passion for enhancing and designing senior living communities, particularly for residents living with Alzheimer's disease.

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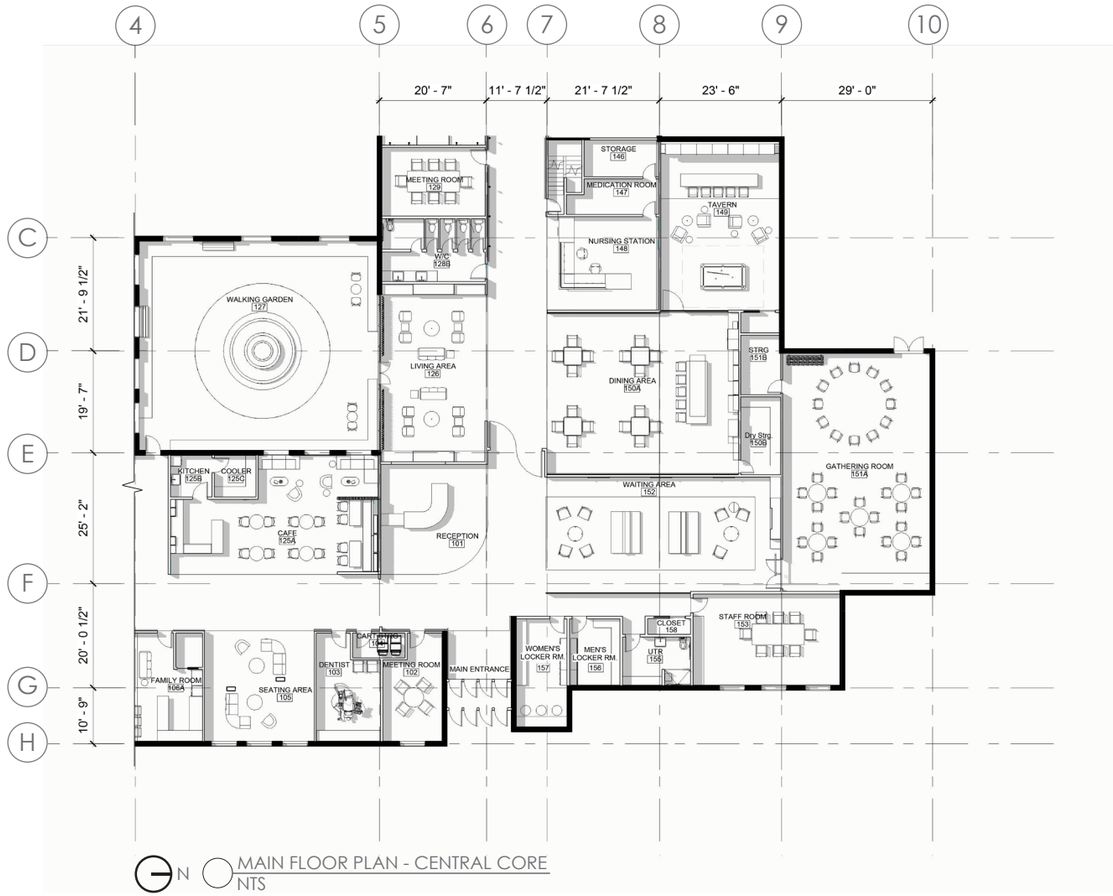
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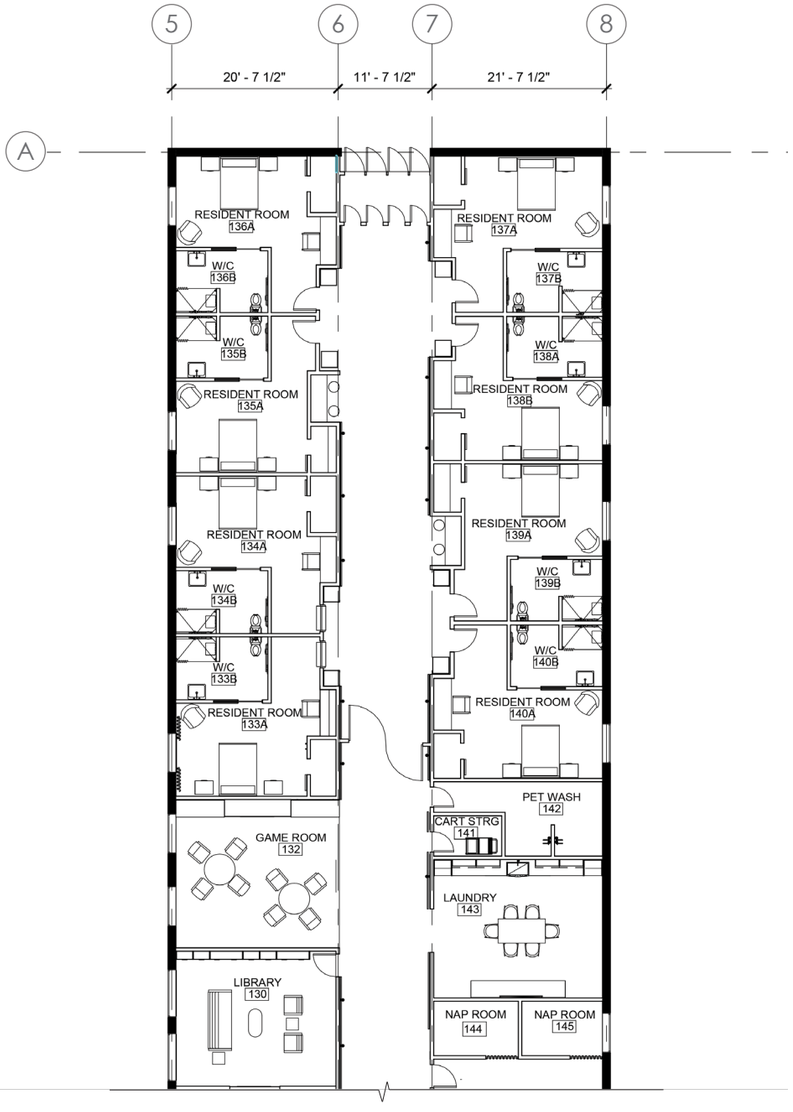
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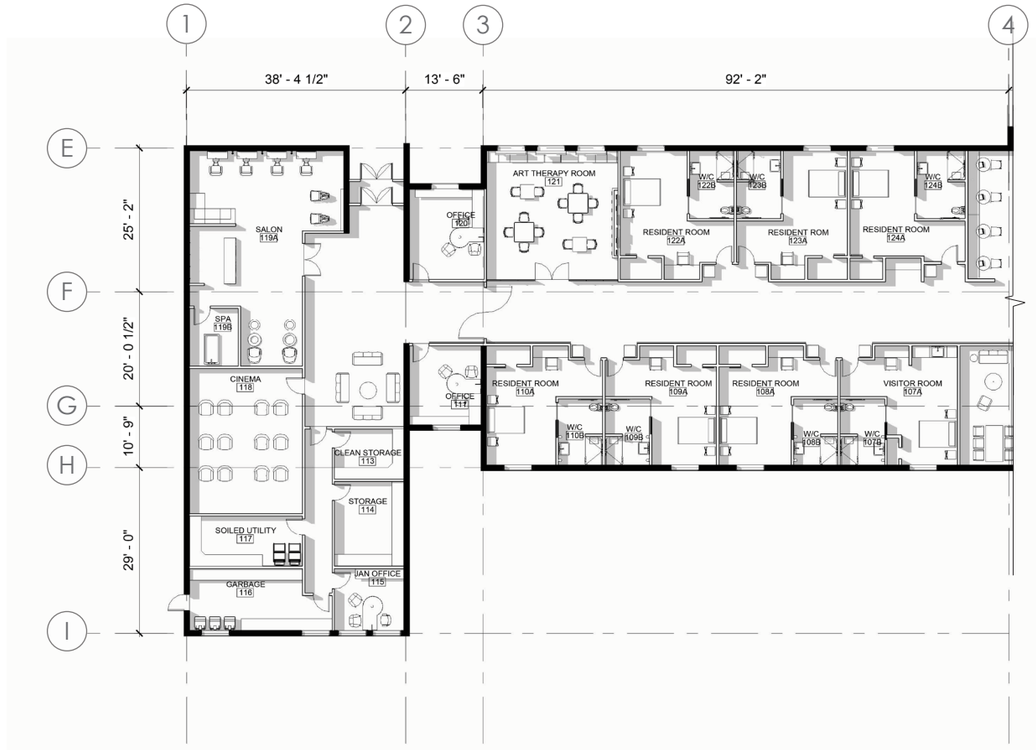
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appendix A

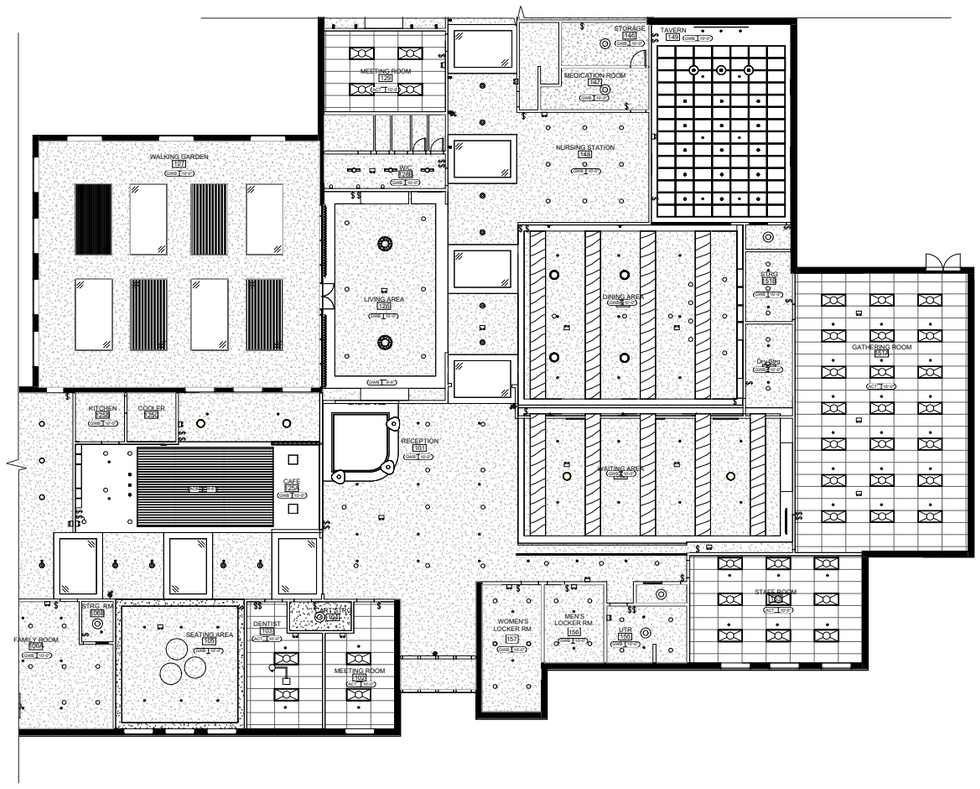

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20' - 7"
11' - 7 1/2"
21' - 7 1/2"
23' - 6"
29' - 0"
21' - 9 1/2"
19' - 7"
25' - 2"
20' - 0 1/2"
10' - 9"
MEETING ROOM 129
WALKING GARDEN 127
VOID 128B
LIVING AREA 126
KITCHEN 125B
COOLER 125C
CAFE 125A
RECEPTION 101
STORAGE 146
MEDICATION ROOM 147
NURSING STATION 148
TAVERN 149
DINING AREA 150A
STRG 151B
Dry Strg 150B
GATHERING ROOM 151A
WAITING AREA 152
FAMILY ROOM 106A
SEATING AREA 105
DENTIST 103
PART. ROOM 104
MEETING ROOM 102
MAIN ENTRANCE
WOMEN'S LOCKER RM. 157
MEN'S LOCKER RM. 156
CLOSET 158
UTR 155
STAFF ROOM 153
N
MAIN FLOOR PLAN - CENTRAL CORE
NTS



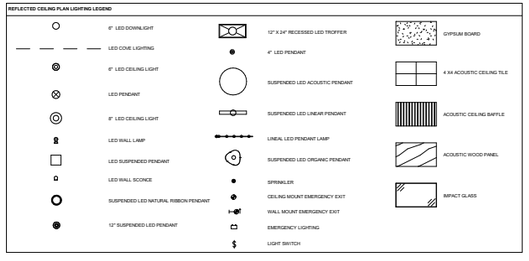
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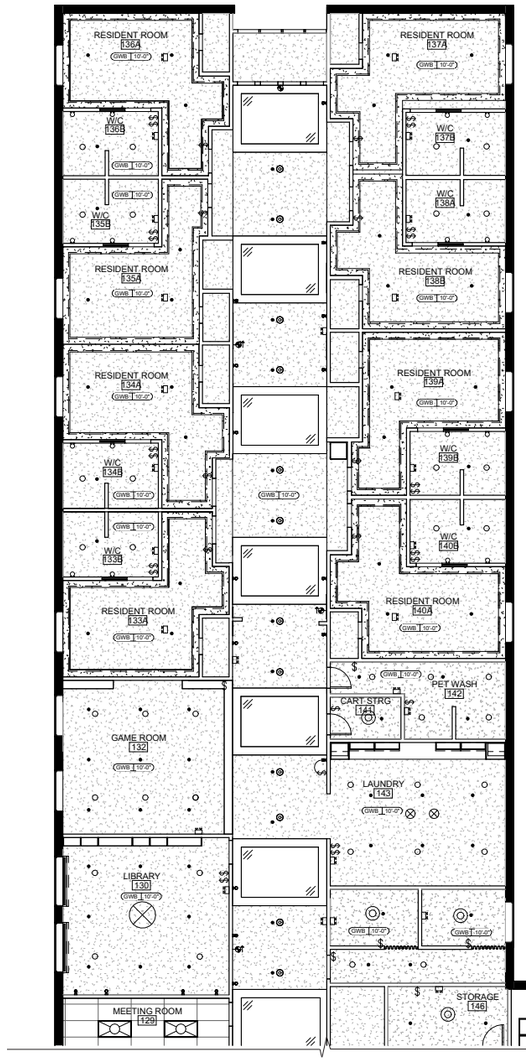


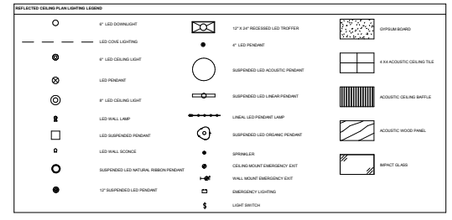
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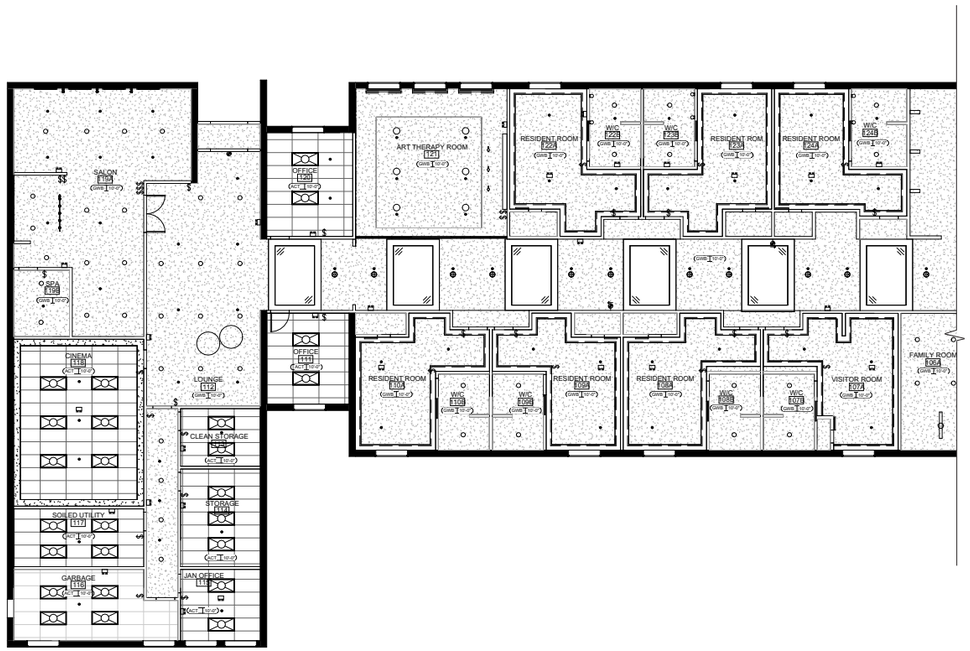
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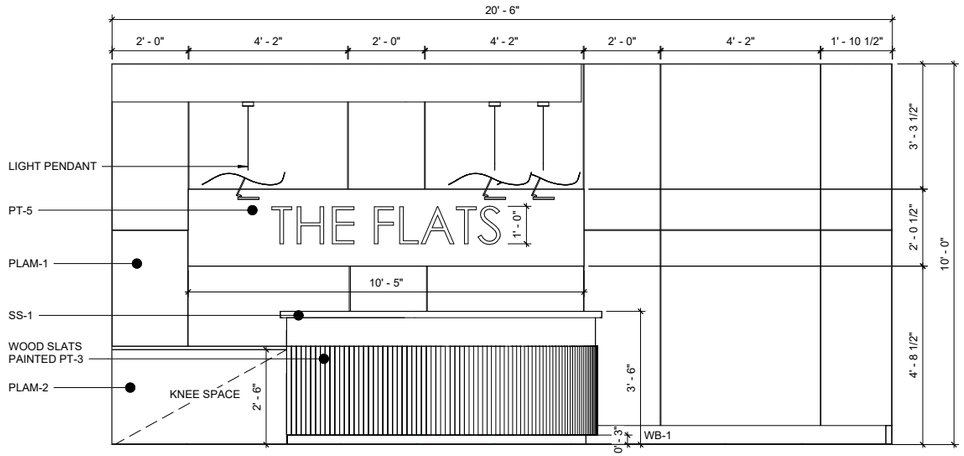
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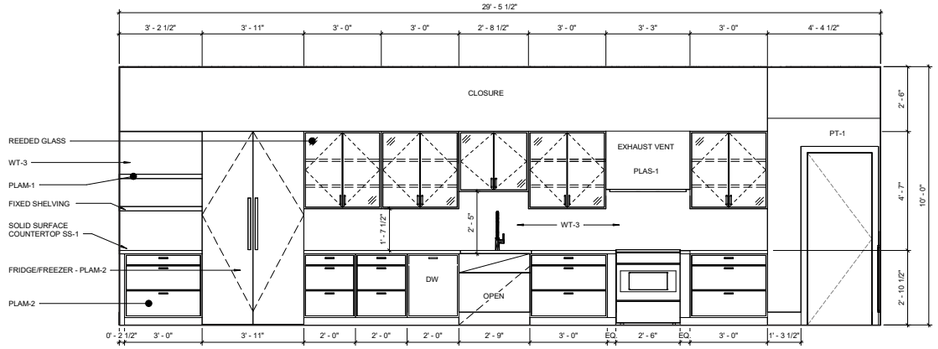
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REFLECTED CEILING PLAN LIGHTING LEGEND

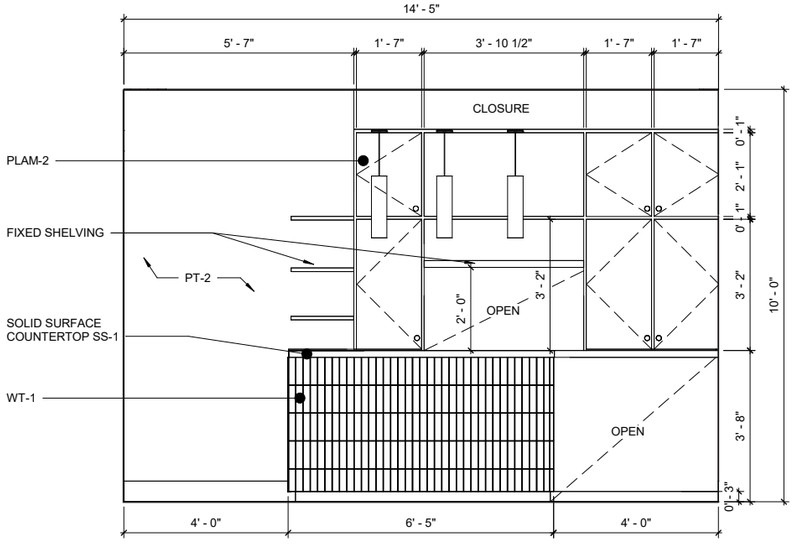
- 6" LED DOWNLIGHT
- LED COVE LIGHTING
- 6" LED CEILING LIGHT
- LED PENDANT
- 8" LED CEILING LIGHT
- LED WALL LAMP
- LED SUSPENDED PENDANT
- LED WALL SCONCE
- SUSPENDED LED NATURAL RIBBON PENDANT
- 12" SUSPENDED LED PENDANT
- 12" X 24" RECESSED LED TROFFER
- 4" LED PENDANT
- SUSPENDED LED ACOUSTIC PENDANT
- SUSPENDED LED LINEAR PENDANT
- LINEAL LED PENDANT LAMP
- SUSPENDED LED ORGANIC PENDANT
- SPRINKLER
- CEILING MOUNT EMERGENCY EXIT
- WALL MOUNT EMERGENCY EXIT
- EMERGENCY LIGHTING
- LIGHT SWITCH
- GYPSUM BOARD
- 4 X4 ACOUSTIC CEILING TILE
- ACOUSTIC CEILING BAFFLE
- ACOUSTIC WOOD PANEL
- IMPACT GLASS



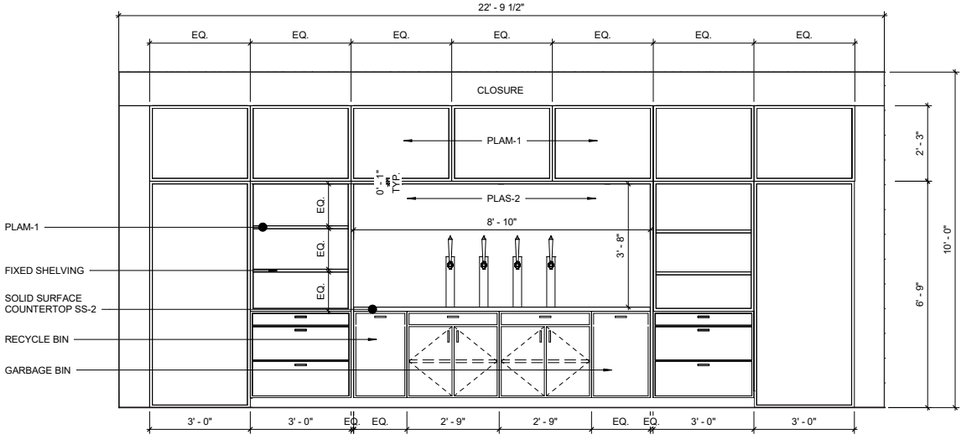
RECEPTION DESK
NTS



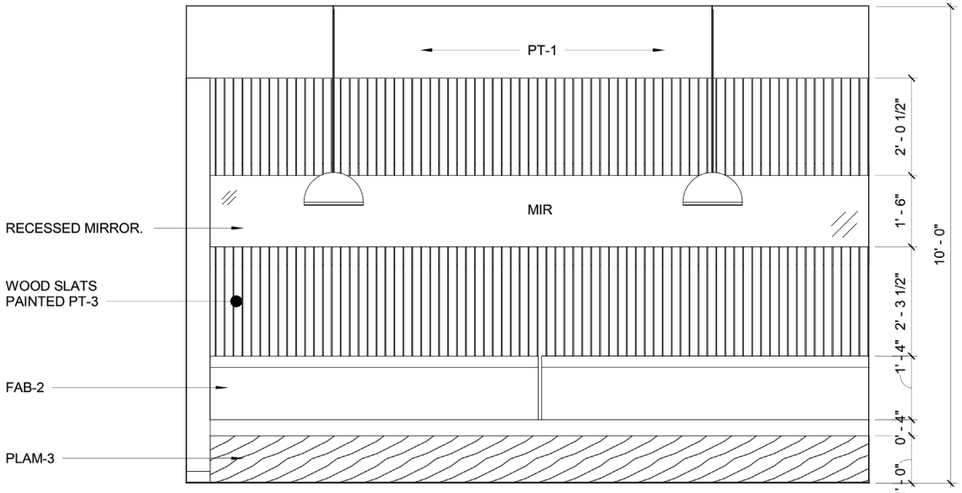
DINING ROOM
NTS



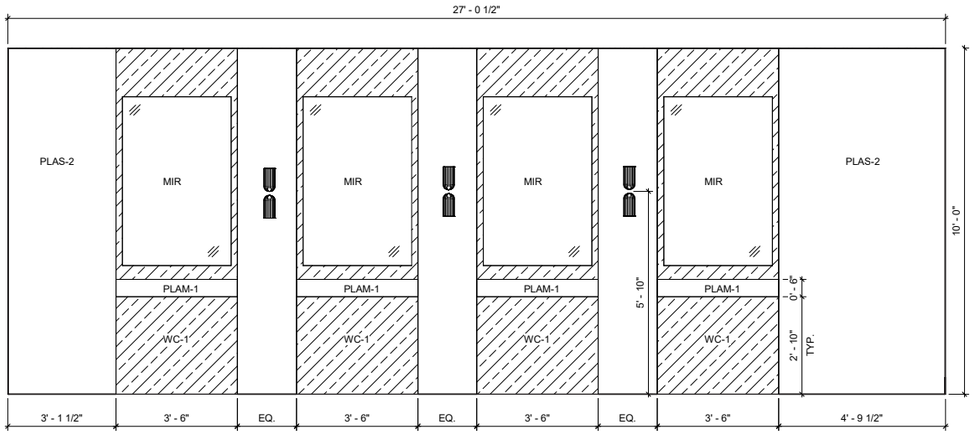
CAFE SERVING COUNTER
NTS



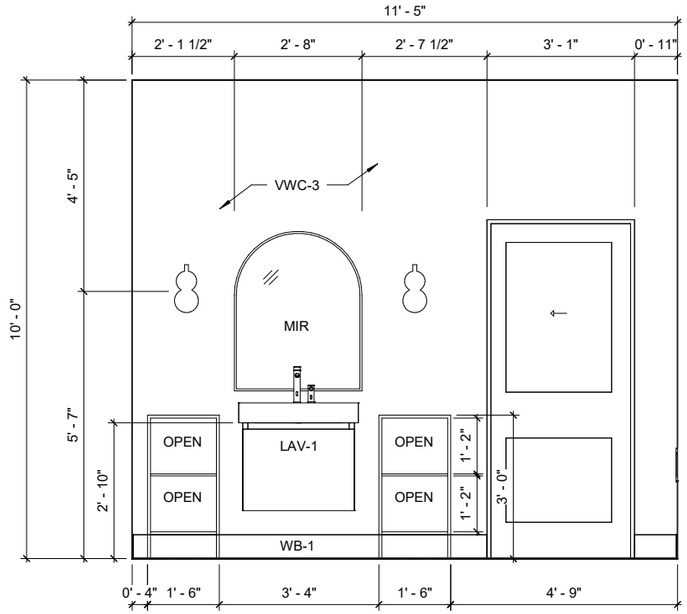
TAVERN ROOM
NTS



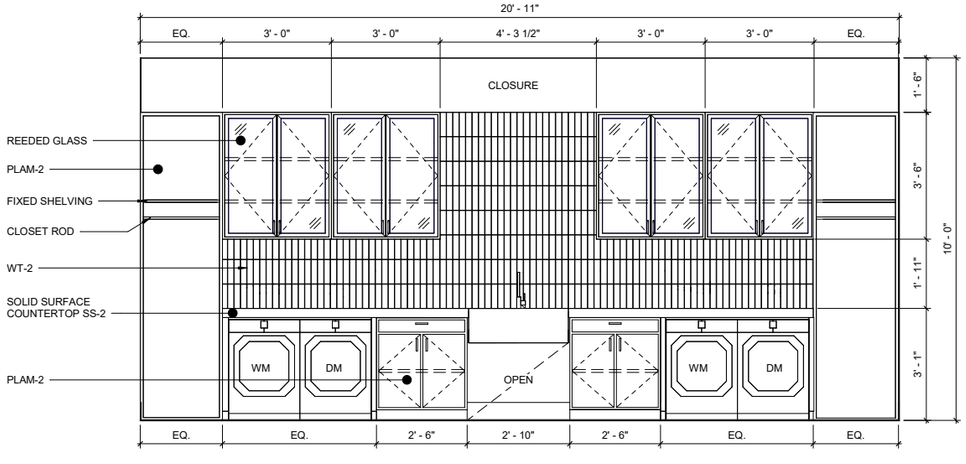
CAFE ACCENT WALL
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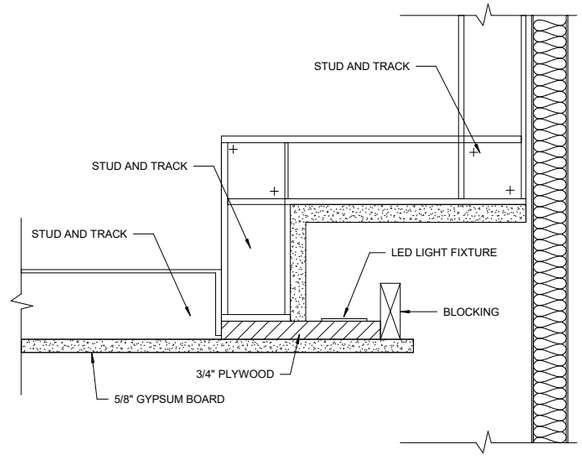
HAIR SALON
NTS



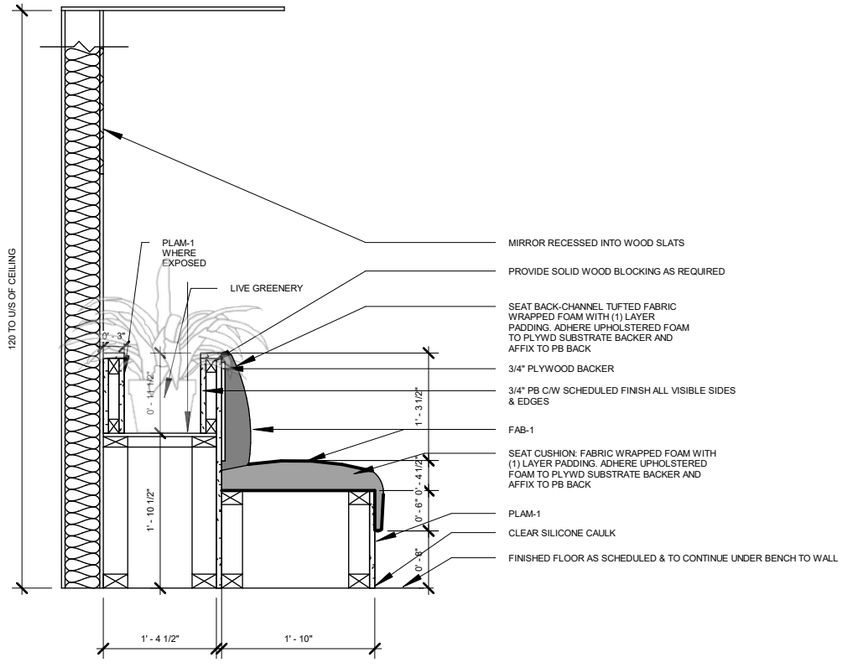
RESIDENT WASHROOM
NTS



LAUNDRY ROOM
NTS



DETAIL - COVE LIGHTING
NTS



DETAIL - CAFE BANQUETTE SEATING
NTS

appendix B

NATIONAL BUILDING CODE 2015 DATA MATRIX

ITEM	DESCRIPTION	BUILDING CODE REFERENCE	
		Part 3	Part 9
1	**Project Description** ☐ New ☐ Addition ■ Change of Use ☐ Alteration	1.1.2. [A]	1.1.2.[A] & 9.10.1.3.
2	**Major Occupancy(s)** Group B Division 3 - Care Occupancies	3.1.2.1.1(1)	9.10.2.
3	**Building Area (m^2)** Existing: 3240 New: 3240 Total: 3240 sq m	1.4.1.2. [A]	1.4.1.2. [A]
4	**Gross Area** Existing: 3241 New: 3241 Total: 3241 sq m	1.4.1.2. [A]	1.4.1.2. [A]
5	**Number of Storey's** Above Grade 1 Below Grade 1	1.4.1.2. [A] & 3.2.1.1.	1.4.1.2. [A] & 9.10.4.
6	**Number of Streets/Fire Fighter Access** 1	3.2.2.10. & 3.2.5.	9.10.20.
7	**Building Classification** Group B. Division 2	3.2.2.20. -.83	9.10.2.
8	**Sprinkler System Proposed** ■ entire building ☐ selected compartments ☐ selected floor areas ☐ basement in lieu of roof rating ☐ not required	3.2.2.20-.83 3.2.1.5. 3.2.2.2.17. INDEX	9.10.8.2. INDEX
9	**Standpipe required** ■ yes ☐ no	3.2.9.	N/A
10	**Fire Alarm required** ■ yes ☐ no	3.2.4.	9.10.18.
11	**Water Service/Supply is Adequate** ■ yes ☐ no	3.2.5.7.	N/A
12	**High Building** ☐ yes ■ no	3.2.6.	N/A
13	**Construction Restrictions** ☐ combustible permitted ■ non-combustible required ☐ Both **Actual Construction** ☐ combustible ■ non-combustible ☐ Both	3.2.2.20.-.83	9.10.6.
14	**Mezzanine(s) Area m2** -	3.2.1.1.(3)-(8)	9.10.4.1

Table 18. Building Code Matrix

ITEM	DESCRIPTION	BUILDING CODE REFERENCE	
		Part 3	Part 9
15	**Occupant Load Based On** ☐ m²/person ☐ design of building **Basement:** Occupancy_____ Load_____persons **1st Floor** Occupancy 10 m² Load 324 persons **2nd Floor** Occupancy_____ Load_____persons **3rd Floor** Occupancy_____ Load_____persons	3.1.17.	9.9.1.3
16	**Barrier-Free Design** ■ yes ☐ no	3.8.	9.5.2
17	**Hazardous Substance** ☐ yes ■ no	3.3.1.2.& 3.3.1.19.	9.10.1.3.(4)
18	**Required Fire Resistance Rating (FRR)** Horizontal Assemblies FRR (Hours): Floors MIN 1 HRS; Roof MIN 1 HRS; Mezzanine MIN 1 HRS FRR of Supporting Members: Floors MIN 1 HRS; Roof MIN 1 HRS; Mezzanine MIN 1 HRS	3.2.2.20.-.83& 3.2.1.4.	9.10.8. 9.10.9.
19	**Plumbing Fixture Requirements** Male/Female Count @ 50% / 50% except as noted otherwise 1st Floor: Occupancy 10 m² Occupancy 10 m²	3.2.2.49.28	

Occupant Load	BC Table Number	Fixtures Required
162	6	6
162	11	11

20	**Provisions for Fire Fighting**			3.2.5
	Access to Above Grade Storey	■ yes	☐ no ☐ n/a	3.2.5.1
	Access to Basement	☐ yes	☐ no ■ n/a	3.2.5.2
	Access to Roof	■ yes	☐ no ☐ n/a	3.2.5.3
	Access to Routes	■ yes	☐ no ☐ n/a	3.2.5.4 & 3.2.5.5
	Hydrant within 45m of Fire Dept. Connection	■ yes	☐ no ☐ n/a	3.2.5.15
	Fire Extinguisher Location Indicated	■ yes	☐ no ☐ n/a	3.2.5.16

Table 19. Building Code Matrix - continued

The Building Regulation Analysis detailed below is referenced from the 2015 National Building Code of Canada (NBCC). This analysis ensures that the design presented in this document abides by the regulations outlined by the NBCC

Part 3: Fire Protection, Occupant Safety and Accessibility

Section 3.1 General
3.1.2.1 Major Occupancy Classification
Group B Division 3 - Care Occupancies

3.1.17.1. Occupant Load
As per table 3.1.17.1, the area per person for care, treatment and sleeping room is 10 sq m per person. As The Flats Long-Term Care Facility is 3240.00 sq m, the occupant load for the facility is 324 persons.

3.2.4. Fire Alarm and Detection Systems
3.2.4.1 Determination of Requirement for a Fire Alarm System
As The Flats Long-Term Care Facility will have an automatic Sprinkler System, a fire alarm system conforming to 3.2.4.1 must also be installed

3.2.4.11. Smoke Detectors
As per sentence 3.2.4.11(3) Smoke detectors required in the sleeping rooms of a care, treatment or detention occupancy shall, upon actuation, provide an audible and visible signal to staff serving those rooms so that the room or location containing the actuated smoke detector can be easily identified.

3.2.4.20. Smoke Alarms
As per sentence 3.2.4.20, smoke alarms are required where a care occupancy has individual suites for residents in each sleeping room, and in a location between the sleeping rooms and the remainder of the suite, and if the sleeping rooms served by a corridor within the suite, the smoke alarm shall be located in the corridor.

3.2.5.15. Fire Department Connections
The fire department connection for an automatic sprinkler system shall be located so that the distance from the fire department connection to a hydrant is not more than 45 m and is unobstructed.

3.2.7.3. Emergency Lighting
Emergency lighting shall be provided to an average level of illumination not less than 10 lx at floor or tread level in exits, principal routes providing access to exit in open floor areas, and in service rooms, corridors used by the public, corridors serving sleep rooms in a treatment occupancy, corridors serving sleeping rooms in a care occupancy, floor areas where people may congregate.

3.2.7.4. Emergency Power for Lighting
An emergency power supply shall be provided to maintain the emergency lighting required by this subsection from a power source such as batteries or generators that will continue to supply power in the event that the regular supply of the building is interrupted and designed and installed that upon failure of the regular power it will assume the electrical load automatically for 1 hour.

<u>Section 3.3.1. All Floor Areas</u>

3.3.1.1. Separation of Suites
The fire resistance rating for fire separations are to be no less than 1 hour.
*See Article 3.3.3 for specific requirements related to care, treatment and detention occupancies.

3.3.1.3. Means of Egress
Access to exist within floor areas must conform to subsections 3.3.2 to 3.3.5 and will conform to 3.3.1.3(8), providing each suite in a floor area that contains more than one suite shall have a doorway into a public corridor.

3.1.1.4. Public Corridor Separations
The fire separation between a public corridor and the remainder of the storey shall have a fire resistance rating no less than 45 minutes.

3.3.1.5. Egress Doorways
As The Flats Long-Term Care Facility is sprinklered throughout and according to section 3.3.1.5.(1), a minimum of two egress doorways in a floor area is required. If the other doorway becomes inaccessible to the occupants due to a fire which originates in the room or suite shall be provided for every room and every suite.

3.3.1.8. Headroom Clearance
The minimum headroom clearance in every access to exit must conform to the requirements of Article 3.4.3.4 for exits.

3.3.1.9. Corridors
The minimum width of a corridor must be 1 100mm. The minimum width of a corridor used by the public or a corridor serving patient's sleeping rooms shall be 1 100 mm.

3.3.1.13. Door and Door hardware
A door that opens into or is located within a public corridor or other facility that provides access to exit from a suite shall provide a clear opening of not less than 800mm if there is only one door leaf. In a doorway with multiple leaves, have the active lead providing a clear opening of not less than 800mm.

3.3.1.19. Transparent Doors and Panels
As per 3.1.19(1)(2), 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 are visually contrasting, are at least 50mm high, extend the full width of the door, sidelight or panel, and are located between 1 3500mm and 1 500mm above the floor. As per 3.1.1.19(3) a glass door shall be constructed of laminated or tempered safety glass conforming to CAN/CGSB-12.1-M, Tempered or Laminated Safety Glass, or wired glass conforming to CAN/CGSB-12.11-M, Wired Safety Glass.

3.3.3. Care, Treatment and Detention Occupancies

3.3.3.3. Corridors
Corridors should not be less than 2400mm wide in buildings of treatment occupancies where corridors may be used to move patients or residents in beds.

3.3.3.4. Doorway Width
The minimum clear width of doorways as per sentence 3.3.3.4(2) is 1050mm through which it is necessary to move patients in bed.

3.3.3.5. Compartments and Fire Separations
Floor areas containing patients' or residents' sleeping rooms in a care or treatment occupancy where overnight sleeping accommodation is provided for more than a total of 10 patients or residents shall be divided into not less than 2 fire compartments, each not more than 1 000 meters square in an area and on either side of a horizontal exit conforming to Article 3.4.6.10. is considered to be as a fire compartment in applying the requirements of this Article.

3.4.3. Width and Height of Exits

3.4.3.2. Exit Width
The minimum aggregate width of exits serving floor areas intended for care, treatment or detention occupancies shall be determined by multiplying the occupant load of the are by 18.4mm per person.

3.4.3.4. Headroom Clearance
Every exit shall have a clear height above the clear width of the exit not less than 2050mm. The headroom clearance for doorways shall not be less than 2030mm.

3.4.4.1. Fire Separation of Exits
Every exit shall be separated from the remainder of the building by a fire separation having a fire-resistance rating not less than that required by Subsection 3.2.2., but not less than 45 min.

3.4.5. Exit Signs
Every exit door shall have an exit sign placed over or adjacent to it if the exit serves a building having an occupant load of more than 150, be visible on approach to the exit and consist a green and white or lightly tinted graphical symbol meeting the colour specifications referred to in ISO 3864-1, "Graphical symbols Safety colours and safety signs–Part1:Design principles for safety signs and safety markings," and conform to ISO 7010, "Graphical symbols– Safety colours and safety signs– Registered safety signs," Internal illumination requirements conform to 3.4.5.1(3) and circuitry conforms to (3.4.5.1(5).

<u>Section 3.7. Health Requirements</u>

3.7.1. Height of Rooms

3.7.1.1. Room and Space Height
The height of every room and space shall be sufficient so that the ceiling or ceiling fixtures do not obstruct movement or activities below.

3.7.2.2. Water Closet
Water closets shall be provided for each sex assuming the occupant load is divided between males and females. Urinals are permitted to be substituted for two thirds of the number of water closets required by this Article for males, except that if only 2 water closets are required for males, one urinal is permitted to be substituted for one of the water closets.

3.7.2.3 Lavatories
A least one lavatory is provided for every two water closets or urinal and operate automatically

Section 3.8 Accessibility

3.8.2.2. Entrances
All entrances of the facility are barrier free at ground level, therefore a ramp is not require to enter the building.

3.8.2.3. Areas Requiring a Barrier-Free Path of Travel
As some occupants in the facility may use a wheelchair, a barrier free path of travel is supported throughout all corridors.

3.8.2.8. Plumbing Facilities
All water closets in the facility will be barrier free as some occupants use a wheelchair.

3.8.3. Design

3.8.3.2. Barrier-Free Path of Travel
All unobstructed width of a barrier-free path of travel shall be not less than 920 mm. The facility has 1200mm corridor widths. Therefore exceeds the minimum width of a barrier-free path of travel. Interior and exterior walking services that support a barrier-free path of travel shall have no opening that will permit the passage of a sphere more than 13mm in diameter, have any elongated openings oriented approximately perpendicular to the direction of travel.

3.8.3.6. Doorways and Doors
The doorways in the facility have a clear width of 1220mm which exceeds the minimum 800mm requirement that is located in a barrier-free path of travel. The thresholds for the doorways shall not be more than 13mm higher than the finished floor surface and shall be beveled to facilitate the passage of wheelchairs.

3.8.3.12. Universal Washrooms
A universal washroom shall be served by a barrier free path of travel, and have a door that has a latch operating mechanism located 900-1000mm above the floor and is capable of being closed from the inside, and released from the outside in case of an emergency.

The door must be outward swinging that is not self-closing and has a door pull not less than 140mm long located on the inside so that its midpoint is not less than 200mm and not more than 300mm from the hinged side of the door and not less than 900mm and not more than 1000mm above the floor.

All grab bars conforming to clauses 3.8.3.11.(1)(e) and (f). Clause 3.8.3.11.(1)(e) requires one L-shaped grab bar that is mounted to the wall closest to the water closest, has horizontal and vertical components 750-850mm above the floor with a vertical component in front of the water closest 150 mm above the floor and complies with Article 3.7.2.8. Clause 3.8.3.11.(10(f) requires one grab bar at least 600mm long and centered over the water closet or two grab bars at least 300 mm located along either side of the flush valve.

All universal washrooms has a coat hook conforming to clauses 3.8.3.11.(1)(g) mounted 1200mm above the floor and does not project more than 50mm from the wall.

All toilet dispensers conform to Clause 3.8.3.11.(1)(h), mounted on the wall closest to the water closet and is 600 to 800mm above the ground measured from the bottom of the dispenser and the closest edge of the dispenser is 300mm from the water closet.

A turning radius of not less than 1 500mm in all universal washrooms permits a wheelchair to turn in an open space.

3.8.3.15. Lavatories and Mirrors

All lavatories must conform with Article 3.8.3.15. and are ADA compliant. The faucets comply with sentence 3.7.2.3(4). The lavatories must be located so that the distance between the center line of the lavatory and any side wall is not less than 460mm, have a rim height not more than 865mm above the floor, and have a clearance beneath the lavatory that is not less than 760mm wide, 735mm high at the front edge, 685mm high at a point 200mm back from the front edge and 230mm high over the distance from, a point 280mm to a 430mm back from the front edge.

Soap dispensers must be automatic or complies with Clause 3.8.3.8(1)(b) and is located no more than 1 100mm above the floor, within 500mm from the front of the lavatory. A towel dispenser or other hand-drying equipment located close to the lavatory, not more than 1 200mm above the floor in an area that is accessible to someone in a wheelchair.

3.8.3.16. Showers

Showers shall not be less than 1 500mm wide and 900mm deep, have a clear floor space at the entrance to the shower that is not less than 900 mm 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. The flooring in the shower must be slip-resistant and have a threshold that is not more than 13 mm higher than the finished floor, and where it is higher than 6 mm, beveled to a slope no steeper than 1 in 2 (50%)

The shower stalls must have two grab bars one of which is not less than 1 000mm long and located vertically on the side wall 50 mm to 80 mm from the adjacent clear floor space, with its lower end 600 mm to 650 mm above the floor. One of which is L-shaped and located on the wall opposite of the shower wall entrance with a to the shower, with a horizontal member not less than 1 000 mm long mounted 750 mm to 870 mm above the floor and a vertical member not less than 750 mm long mounted 400 mm to 500mm from the side wall on which the other vertical grab bar is mounted.

The shower must have hinged seat that is not spring-loaded or a fixed seat with a smooth, slip-resistant surface and no rough edges, the seat being not less than 450 mm wide and 400 mm deep, mounted on the same side wall as the vertical grab bar, at 460 mm to 480 mm above the floor, and designed to carry a minimum load of 1.3kN.

The shower must have a pressure-equalizing or thermostatic-mixing valve and other controls that are mounted on the wall opposite the entrance to the shower at not more than 1 200mm above the floor and within reach of the seat. The shower must have hand-held shower head with not less than 1 800mm of flexible hose located so that it can be reached from a seated position, can be used in a fixed position at a height of 1 200mm and 2 030mm.

appendix C

Table 20. Room Finish Schedule

ROOM NUMBER	ROOM NAME	FLOORING	WALLS				CEILING
			North	East	South	West	
101	Reception	HSF-1	-	-	WP-1	WP-1	PT-2
102	Meeting Rm.	CPT-2	PT-2	PT-2	PT-2	PT-2	PT-2,WD-1
103	Dentist	RSF-1	PT-1	PT-1	PT-1	PT-1	ACT-1
104	Cart Strg.	RSF-2	PT-1	PT-1	PT-1	PT-1	PT-2
105	Seating Area	HSF-1	PT-2	PT-2	PT-2	-	PT-2
106A	Family Room	HSF-1	PT-1	PT-1	PT-2	PT-1	PT-2
106B	Strg. Room	RSF-2	PT-1	PT-1	PT-1	PT-1	ACT-1
107A	Visitor Room	HSF-1	PT-4	PT-2	PT-2	PT-2	PT-2
107B	Washroom	RSF-1	PT-1	PT-1	PT-1	PT-1	PT-2
108A	Resident Rm.	HSF-1	PT-2	PT-2	PT-4	PT-2	PT-2
108B	Washroom	RSF-1	PT-1	PT-1	PT-1	PT-1	PT-2
109A	Resident Rm.	HSF-1	PT-2	PT-2	PT-4	PT-2	PT-2
109B	Washroom	RSF-1	PT-1	PT-1	PT-1	PT-1	PT-2
110A	Resident Rm.	HSF-1	PT-2	PT-2	PT-4	PT-2	PT-2
110B	Washroom	RSF-1	PT-1	PT-1	PT-1	PT-1	PT-2
111	Office	CPT-2	PT-2	PT-2	PT-2	PT-2	ACT-2
112	Lounge	HSF-1	PT-2	PT-2	-	-	PT-2
113	Clean Strg.	RSF-2	PT-1	PT-1	PT-1	PT-1	ACT-1
114	Storage	RSF-2	PT-1	PT-1	PT-1	PT-1	ACT-1
115	Jan. Office	RSF-2	PT-1	PT-1	PT-1	PT-1	ACT-2
116	Garbage	RSF-2	PT-1	PT-1	PT-1	PT-1	ACT-1

Table 21. Room Finish Schedule - continued

ROOM NUMBER	ROOM NAME	FLOORING	WALLS				CEILING
			North	East	South	West	
117	Soiled Utility	RSF-2	PT-1	PT-1	PT-1	PT-1	ACT-1
118	Cinema	CPT-2	PT-2	PT-2	PT-2	PT-2	ACT-2
119A	Salon	FT-1	PT-1	PT-1	PT-3	PT-1	PT-2
119B	Spa	FT-1	PT-1	PT-1	PT-1	PT-1	PT-2
120	Office	CPT-2	PT-2	PT-2	PT-2	PT-2	ACT-2
121	Art Therapy	HSF-1	PT-1	PT-1	PT-1	PT-3	PT-2
122A	Resident Rm.	HSF-1	PT-2	PT-2	PT-4	PT-2	PT-2
122B	Washroom	RSF-1	PT-1	PT-1	PT-1	PT-1	PT-2
123A	Resident Rm.	RSF-1	PT-4	PT-2	PT-2	PT-2	PT-2
123B	Washroom	HSF-1	PT-1	PT-1	PT-1	PT-1	PT-2
124A	Resident Rm.	RSF-1	PT-2	PT-2	PT-4	PT-2	PT-2
124B	Washroom	HSF-1	PT-1	PT-1	PT-1	PT-1	PT-2
125A	Cafe	FT-2	PT-3	-	PT-2	PT-2	PT-2,AB-1
125B	Kitchen	SF-1	PT-1	PT-1	PT-1	PT-1	ACT-1
126	Living Area	CPT-1	-	PT-2	-	PT-2	PT-2
127	Walking Garden	-	PT-2	PT-2	PT-2	PT-2	PT-2
128	Washroom	RSF-1	PT-1	PT-5	PT-1	PT-1	PT-2
129	Meeting Rm.	CPT-2	PT-2	PT-2	PT-2	PT-2	ACT-2
130	Library	CPT-2	PT-2	VWC-1	PT-2	PT-2	PT-2
132	Games Rm.	HSF-1	PT-2	PT-2	PT-2	PT-2	PT-2
133A	Resident Rm.	HSF-1	PT-2	PT-4	PT-2	PT-2	PT-2

Table 22. Room Finish Schedule - continued

ROOM NUMBER	ROOM NAME	FLOORING	WALLS				CEILING
			North	East	South	West	
133B	Washroom	RSF-1	PT-1	PT-1	PT-1	PT-1	PT-2
134A	Resident Rm.	HSF-1	PT-2	PT-2	PT-2	PT-4	PT-2
134B	Washroom	RSF-1	PT-1	PT-1	PT-1	PT-1	PT-2
135A	Resident Rm.	HSF-1	PT-2	PT-4	PT-2	PT-2	PT-2
135B	Washroom	RSF-1	PT-1	PT-1	PT-1	PT-1	PT-2
136A	Resident Rm.	HSF-1	PT-2	PT-2	PT-2	PT-4	PT-2
136B	Washroom	RSF-1	PT-1	PT-1	PT-1	PT-1	PT-2
137A	Resident Rm.	HSF-1	PT-2	PT-2	PT-2	PT-4	PT-2
137B	Washroom	RSF-1	PT-2	PT-2	PT-2	PT-4	PT-2
138A	Resident Rm.	HSF-1	PT-2	PT-4	PT-2	PT-2	PT-2
138B	Washroom	RSF-1	PT-1	PT-1	PT-1	PT-1	PT-2
139A	Resident Rm.	HSF-1	PT-2	PT-2	PT-2	PT-4	PT-2
139B	Washroom	RSF-1	PT-1	PT-1	PT-1	PT-1	PT-2
140A	Resident Rm.	HSF-1	PT-2	PT-4	PT-2	PT-2	PT-2
140B	Washroom	RSF-1	PT-1	PT-1	PT-1	PT-1	PT-2
141	Strg. Rm	SF-2	PT-1	PT-1	PT-1	PT-1	ACT-1
142	Pet Wash Station	SF-2	PT-1	PT-1	PT-1	PT-1	PT-2
143	Laundry Rm.	HSF-1	VWC-3	PT-3	PT-1	PT-1	PT-2
144	Nap Room	CPT-2	PT-2	PT-2	PT-2	PT-2	PT-2
145	Nap Room	CPT-2	PT-2	PT-2	PT-2	PT-2	PT-2
146	Storage	RSF-2	PT-1	PT-1	PT-1	PT-1	ACT-1

Table 23. Room Finish Schedule - continued

ROOM NUMBER	ROOM NAME	FLOORING	WALLS				CEILING
			North	East	South	West	
147	Medication Room	RSF-2	PT-1	PT-1	PT-1	PT-1	ACT-1
148	Nursing Station	HSF-1	PT-1	PT-1	PT-1	PT-1	ACT-2
150A	Dining Area	HSF-1	PT-1	WP-1	PT-1	WP-1	PT-2,WD-1
150B	Dry Strg.	RSF-2	PT-1	PT-1	PT-1	PT-1	PT-2
151A	Gathering Area	RSF-2	PT-1	PT-1	PT-1	PT-1	ACT-2
151B	Strg. Rm	RSF-1	PT-1	PT-1	PT-1	PT-1	ACT-1
152	Waiting Area	HSF1,CPT-1	PT-3	PT-2	-	-	PT-2,WD-1
153	Staff Room	HSF-1	PT-1	PT-1	PT-5	PT-1	ACT-1
154	Closet	HSF-1	PT-1	PT-1	PT-1	PT-1	PT-2
155	Washroom	RSF-1	PT-1	PT-1	PT-1	PT-1	PT-2
156	Men's Change Rm.	RSF-1	PT-1	PT-1	PT-1	PT-1	PT-2
157	Women's Change Rm.	RSF-1	PT-1	PT-1	PT-1	PT-1	PT-2
158	Closet	RSF-1	PT-1	PT-1	PT-1	PT-1	PT-2

Table 24. Materials and Finishes Schedule

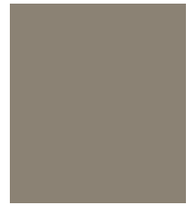
Code	Description	Manufacture	Collection	Product Code	Colour/ Style
PT-1	Field Paint	Benjamin Moore	Regal Select	OC-17	White Dove
PT-2	Field Paint	Benjamin Moore	Regal Select	1545	Iron Gate
PT-3	Accent Paint	Benjamin Moore	Regal Select	692	Jack Pine
PT-4	Accent Paint	Benjamin Moore	Regal Select	HC-159	Philipsburg Blue
PT-5	Accent Paint	Benjamin Moore	Regal Select	2089-20	Rosey Peach
PT-6	Door Trim	Benjamin Moore	Regal Select	2130-10	Black Bean Soup
PT-7	Ceiling Paint	Benjamin Moore	Regal Select	OC-57	White Heron
PLAM-1	Plastic Laminate	Formica	-	8906	Danish Maple
PLAM-2	Plastic Laminate	Formica	Fenix NTM	J0754	BLU Fes
PLAM-3	Plastic Laminate	Formica	Fenix NTM	0791	Giallo Evora
VWC-1	Vinyl Wall Covering	York Wallcovering	Floral Wallpaper	-	Taupe
VWC-2	Vinyl Wall Covering	Botanical Whisper	SS	-	Wheat
VWC-3	Vinyl Wall Covering	Botany Wallpaper	-	-	Dawn
WP-1	Wall Protection	Altro	Teguils	0995	White Mineral
WP-2	Wall Protection	Altro	Teguils	6634	Distant Thunder
WCG-1	Wall Corner Guard	Inpro	Corner Guard	150 Mount MCG	Designer White 0101
SS-1	Solid Surface	Corian	Corian Solid Surface	F0004-127-01	Antartica
SS-2	Quartz	Corian	Corian Quartz	-	Night Soapstone
SS-3	Solid Surface	Formica	Formica Solid Surface	742	Blanco Terrazzo
HSF-1	Heterogeneous Sheet Flooring	Tarkett	Acczent	S03-022-03	Cabreuva Red
CPT-1	Carpet Tile	Tarkett	Painted Desert	S03-022-03	Veiled Grove

Table 25. Materials and Finishes Schedule

Code	Description	Manufacture	Collection	Product Code	Colour/ Style
CPT-2	Carpet Tile	Tarkett	Painted Desert	65405	Ice Formation
SF-1	Safety Flooring	Altro	Aquarius	AQI2027	Trumpetfish
SF-2	Safety Flooring	Altro	Aquarius	AQI2008	Tern
WB-1	Wall Base	Armstrong	Cove Roll Wall Base	R4823	Cove Roll Wall Base
HR-1	Handrail	Inpro	Handrail	2000 Handrail	2000 Handrail
ACT-1	Acoustic Ceiling Tile	Armstrong	Lyra Plant Based (PB)	8732PB	Lyra Plant Based (PB)
AB-2	Acoustic Baffle	Armstrong	Woodworks Grille	-	Golden Maple
U-1	Upholstery	Designtex	Silicone Reveal	3076-401	Sky
U-2	Upholstery	Designtex	Silicone Reveal	3076-403	Lakeside
U-3	Upholstery	Designtex	Silicone Reveal	3076-502	Topiary
U-4	Upholstery	Designtex	Polyurethane	9415-101	Barley
U-5	Upholstery	Designtex	Polyester	3935-502	Pond
U-6	Upholstery	Designtex	Polyester	3056-802	Overtone
U-7	Upholstery	Momentum	Polyester	3056-802	Overtone
U-8	Upholstery	Momentum	Silica Flick	09191873	Jute
RSF-1	Resilient Sheet Flooring	Tarkett	IQ Eminent	0960	White Grey
RSF-2	Resilient Sheet Flooring	Tarkett	IQ Eminent	0887	Clay
FT-1	Floor Tile	Ames Tile & Stone	Trustone	TSWHM14	White
FT-2	Floor Tile	Stone Tile	Medley	-	Medley Blue

Material Palette

pt-1


pt-2


pt-3


pt-4

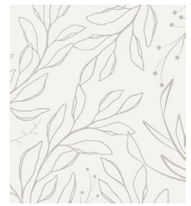

pt-5


pt-6


plam-1


plam-2


plam-3

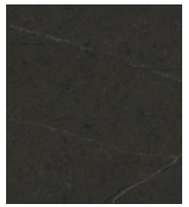

vwc-1


vwc-2


wp-1


wp-2

ss-1


ss-2

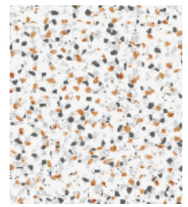

ss-3

Table 26. Material Palette



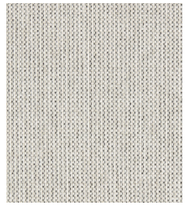
hsf-1



cpt-1



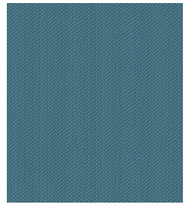
cpt-2



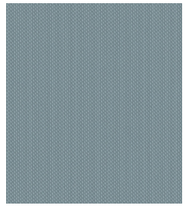
u-1



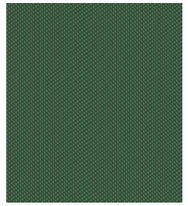
u-2



u-3



u-4



u-5



u-6



u-7



u-8

ft-1



ft-2



sf-1



st-1



ab-2

Table 27. Material Palette - continued

"Those with dementia are still people and they still have stories, they still have character, they are all individuals, and they are all unique. They just need to be interacted with on a human level"

-Carey Mulligan