CARING FOR CAREGIVERS:

THE DESIGN OF AN INDEPENDENT HOSPICE FACILITY IN WINNIPEG, MANITOBA

BY
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CARING FOR CAREGIVERS

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ABSTRACT

Within a hospice environment, informal caregiving at the end of life can be a physically, psychologically, psychosocially and spiritually challenging experience, where the health and well-being of informal caregivers directly impacts the quality of end-of-life care of the resident. Inspired by a personal experience within palliative care, this practicum project focuses on how the design of an independent hospice facility can support the needs of informal caregivers in the delivery of palliative care. This holistic approach to palliative design integrates the overarching principles of healthy anticipatory grieving and patient-focused, family-centered end-of-life care, alongside the fundamental strategies of quality built environments and the tenets of biophilic design. Located on Waterfront Drive in the northeast corner of the Winnipeg Exchange District, the design of Exchange Hospice includes the adaptive reuse and partial new construction of an independent hospice facility. Exchange Hospice capitalizes on the healing potential of nature through direct, indirect, and symbolic connections to the natural environment.

DEDICATION

To Helen Janzen, and the memory of Rick Janzen.

ACKNOWLEDGEMENTS

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF COPYRIGHT MATERIALS

F1 | ROLES IN END-OF-LIFE CARE IN A HOSPICE SETTING. Used with permission from Canadian Hospice Palliative Care Association. July 4, 2013. <Canadian Hospice Palliative Care Association, 2004, p. 7> <Ferris, et al., 2002>

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F3 | 19TH CENTURY ALMSHOUSE. Used with permission from The Geffrye Museum of the Home. Photographer Morley von Sternberg. July 8, 2013. <http://www.geffrye-museum.org.uk/period-rooms-and-gardens/virtualtour/almshouses/19thcentury-almshouse/>

F4 | 19TH CENTURY FUNERAL HOME. Used with permission from The National Museum of Funeral History. August 8, 2013. <http://nmfh.org/exhibits/mourning/info.php>

F5 | HOSPITALS OF THE EARLY TO MID 1900s (GIBRALTAR COLONIAL HOSPITAL WARD 1900S). Used with permission from the Public Domain Mark 1.0. July 27, 2013. <http://commons.wikimedia.org/wiki/File:Gibraltar _ Colonial _ Hospital _ ward.jpg> and <http://creativecommons.org/publicdomain/mark/1.0/deed.en>

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F7 | ST CHRISTOPHER'S HOSPICE | THE ANNIVERSARY CENTRE. Used with permission from St Christopher's Hospice. August 5, 2013. <http://www.stchristophers.org.uk/gallery/hospice-photo-tour>

F8 | ST CHRISTOPHER'S HOSPICE | ROTARY GARDEN. Used with permission from St Christopher's Hospice. August 5, 2013. <http://www.stchristophers.org.uk/gallery/hospice-photo-tour>

F39 | SCCA HOUSE. Used with permission from Weinstein A|U Architects + Urban Designers, LLC. Photographer Michael Burns. August 9, 2013. <http://www.weinsteinau.com/>

F40 | SCCA HOUSE | ROOFTOP GARDEN. Used with permission from Weinstein A|U Architects + Urban Designers, LLC. Photographer Michael Burns. August 9, 2013. <http://www.weinsteinau.com/>

F41 | SCCA HOUSE | CORRIDOR. Used with permission from Weinstein A|U Architects + Urban Designers, LLC. Photographer Michael Burns. August 9, 2013. <http://www.weinsteinau.com/>

F42 | SCCA HOUSE | LOUNGE AREA. Used with permission from Weinstein A|U Architects + Urban Designers, LLC. Photographer Michael Burns. August 9, 2013. <http://www.weinsteinau.com/>

F43 | SCCA HOUSE | KITCHEN AREA. Used with permission from Weinstein A|U Architects + Urban Designers, LLC. Photographer Michael Burns. August 9, 2013. <http://www.weinsteinau.com/>

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F46 | MAGGIE'S DUNDEE. Used with permission from Creative Commons Attribution-Share Alike 3.0 Unported. July 27, 2013. <http://en.wikipedia.org/wiki/File:Maggies _ centre _ Dundee.jpg>

F47 | MAGGIE'S HIGHLANDS. Used with permission from Creative Commons Attribution-Non Commercial-No Derivs 2.0 Generic. July 27, 2013. <http://www.flickr.com/photos/tecu _ consulting _ uk/5191922911/>

F48 | MAGGIE'S FIFE. Used with permission from Creative Commons Attribution 2.5 Generic. July 27, 2013. <http://en.wikipedia.org/wiki/File:MaggiesCentreKirkcaldy.JPG>

F49 | MAGGIE'S LONDON. Used with permission from David Hawgood and Creative Commons Attribution-Share Alike 2.0 Generic. July 27, 2013. <http://en.wikipedia.org/wiki/File:Maggie%27s _ Centre, _ Charing _ Cross, _ London.jpg>

F52 | MAGGIE'S NOTTINGHAM. Used with permission from Creative Commons Attribution-Share Alike 3.0 Unported. July 27, 2013. <http://en.wikipedia.org/wiki/File:Maggies _ Cancer _ Care _ Center _ at _ Nottingham _ City _ Hospital.JPG>

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F57 | PAIMIO SANATORIUM | PATIENT ROOM. Used with permission from Leon L and Creative Commons Attribution 2.0 Generic. December 2, 2013. <http://www.flickr.com/photos/28564003@N00/5687573507/in/photolist-9EAisc-9EDjk5-9EDeDs-9EDg2f-9EDd4C-9EDcZG-9EAnyF-9EAmiD-9EAiVK-9EDiem-9EDfLo-9EAiR2-9EDg8N-9EDfX1-9EDiTq-9EDfEj-9EDeob-9EAnip-9EDfym-9EAoET-9EDeTA-9EDdyh-9EDdp5-9EAmDg-9EDhSW-9EDiwb-9EAi3i-9EDeHb-J17Js>

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F59 | PAIMIO SANATORIUM | PAIMIO CHAIR AND PATIENT BED. Used with permission from Leon L and Creative Commons Attribution 2.0 Generic. December 2, 2013. <http://www.flickr.com/photos/28564003@N00/5688146860/in/photolist-9EDeTA-9EDdyh-9EDdp5-9EAmDg-9EDhSW-9EDiwb-9EAi3i-9EDeHb-J17Js-9EDfej>

F68 | PEDESTRIAN WALKWAY. Used with permission from the City of Winnipeg, Planning, Property and Development Department. December 8, 2013. <City of Winnipeg Historical Buildings Committee, 2000>

F69 | RELATIONSHIP TO ADJACENT STRUCTURES. Used with permission from the City of Winnipeg, Planning, Property and Development Department. December 8, 2013. <City of Winnipeg Historical Buildings Committee, 2000>

F70 | BASEMENT 2 | PIPING. Used with permission from the City of Winnipeg, Planning, Property and Development Department. December 8, 2013. <City of Winnipeg Historical Buildings Committee, 2000>

F71 | BASEMENT 2 | STAIRS. Used with permission from the City of Winnipeg, Planning, Property and Development Department. December 8, 2013. <City of Winnipeg Historical Buildings Committee, 2000>

F72 | BASEMENT 1 | PIPING. Used with permission from the City of Winnipeg, Planning, Property and Development Department. December 8, 2013. <City of Winnipeg Historical Buildings Committee, 2000>

F73 | GROUND FLOOR | CEILING. Used with permission from the City of Winnipeg, Planning, Property and Development Department. December 8, 2013. <City of Winnipeg Historical Buildings Committee, 2000>

T5 | THE ABCs OF SPEECH PRIVACY. Adapted with permission from the Copyright Clearance Center's RightsLink® and John Wiley and Sons. December 2, 2013. <Bonda & Sosnowchik, 2007, p. 163>

T6 | SUMMARY OF THE RELATIONSHIPS BETWEEN DESIGN FACTORS AND HEALTHCARE OUTCOMES. Used with permission from The Center for Health Design. August 6, 2013. <Ulrich, et al., 2008, p. 53>

T7 | THE STATE OF EVIDENCE-BASED DESIGN RESEARCH FOR FAMILY OUTCOMES. Used with permission from the Copyright Clearance Center's RightsLink® and Vendome Group. December 6, 2013. <Ulrich, Berry, Quan, & Parish, 2010, p. 106>

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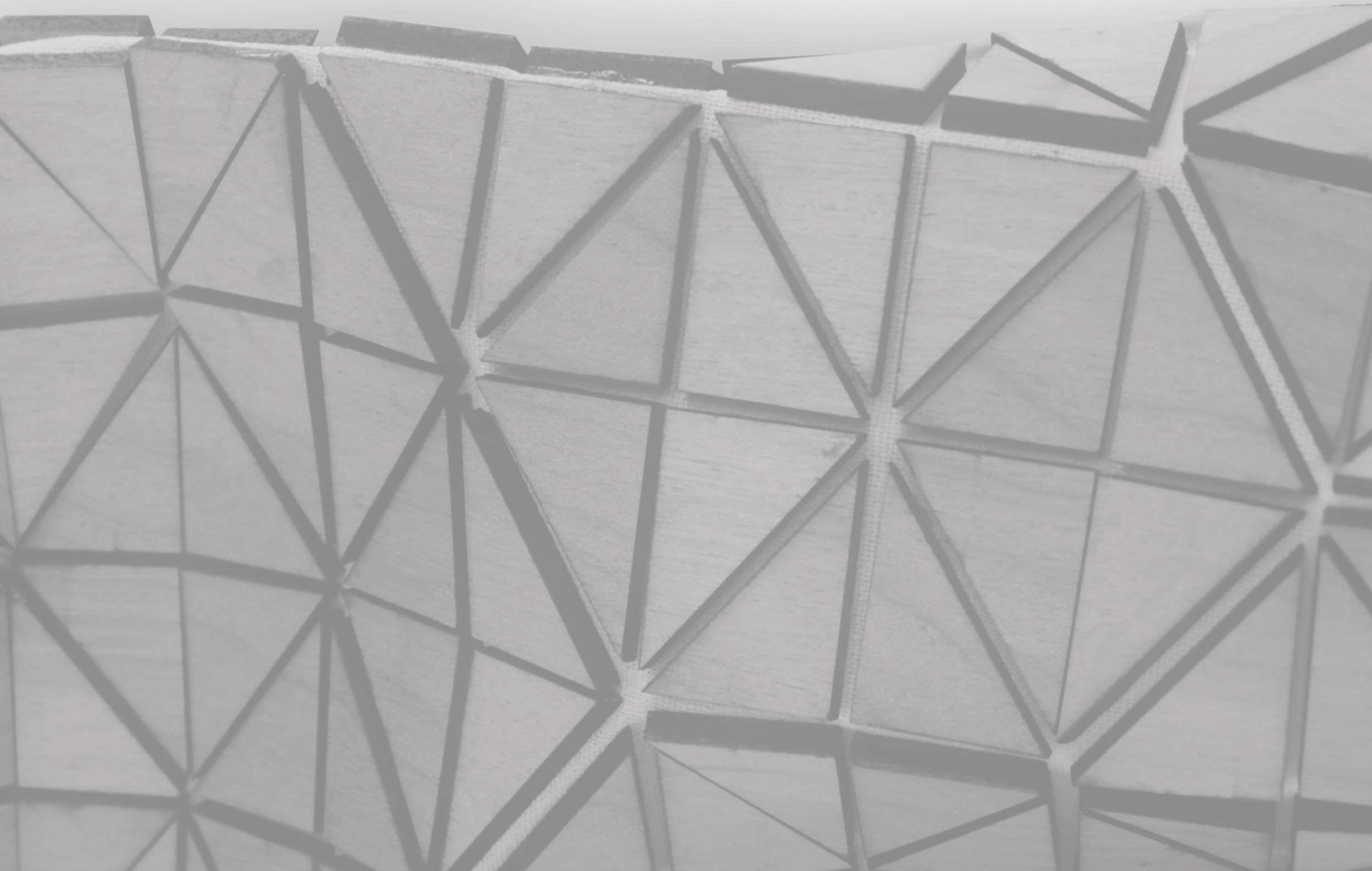


CHAPTER 1.0

PROJECT INTRODUCTION

When an individual is diagnosed with a terminal illness, the impact of this life-altering experience affects not only themselves, but extends throughout their family members and friends. Unreservedly accepting physically, emotionally, and financially demanding responsibilities, caregivers represent an integral part of this challenging experience. For the purposes of this practicum project, the term ***caregiver***[1] *refers to a family member or friend – often one primary person – who provides unpaid physical, emotional, spiritual, and financial support for an individual suffering from a terminal illness within a hospice environment.*

Inspired by a personal experience within palliative care, this practicum project focuses on how the design of an independent hospice facility can support the needs of informal caregivers in the delivery of palliative care. The facility strives towards inclusivity, where caregivers and residents are considered equal in their importance within quality palliative care and hospice design. This holistic approach to palliation has been explored through a detailed literary and design investigation of the physical, psychological, psychosocial, and spiritual challenges of caregiving within hospice environments; the experience of anticipatory grief; the integration of patient-focused, family-centered care principles; two case studies of existing independent hospice facilities in Winnipeg; as well as three precedent analysis.

1.1 | RATIONALE

This practicum topic is a twofold response to the growing number of Canadians who provide informal care at the end of life to a family member or friend each year. It is both a response to caregivers themselves, as well as independent hospices as an emerging building typology. Firstly, it is a response to the adverse effects of informal caregiving at the end of life and the need for additional support; and secondly, it suggests the independent hospice facility as an alternative to dying in the home or dying in hospital.

1.1.1 WHY CAREGIVERS?

According to the Canadian Caregiver Coalition, it is currently estimated that there are between 4 and 5 million informal caregivers in Canada (as cited in Canadian Caregiver Coalition, 2013). This unpaid provision of care offers many social and economic benefits to the patient, healthcare providers, the healthcare system, and society as a whole. In addition to personal compassionate care for the patient, the annual contribution of unpaid caregivers to the Canadian economy is estimated at 25-26 billion dollars (Hollander, Liu, & Chappell, 2009).

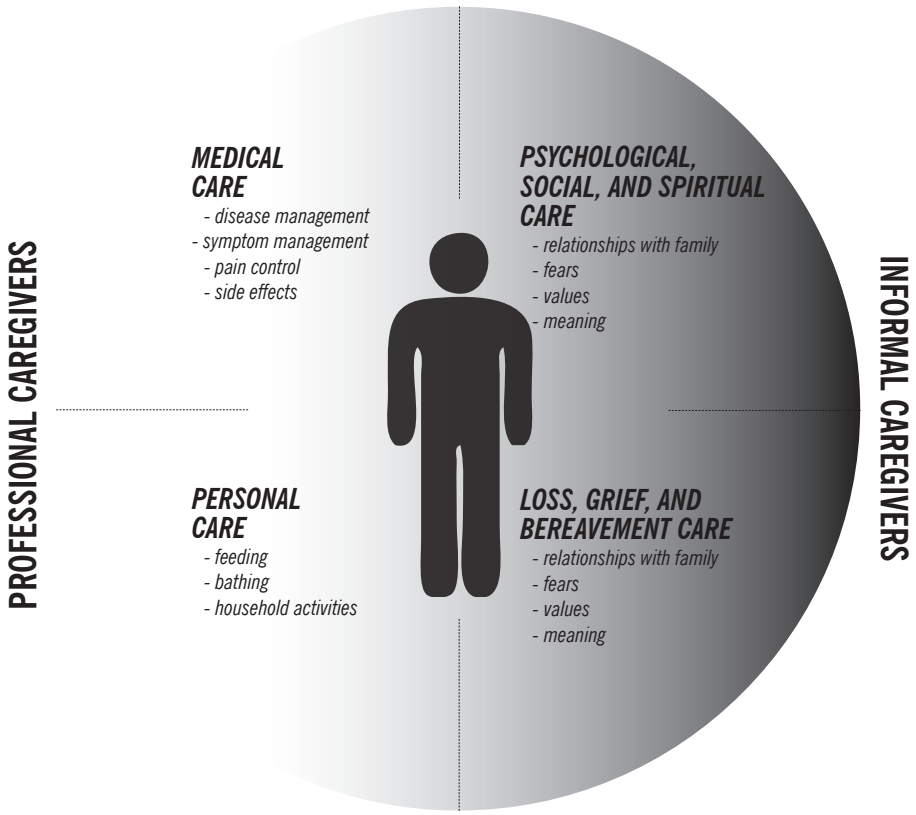
Despite the associated social and economic benefits of informal caregiving, there are many adverse effects experienced by caregivers during end-of-life care. These adverse effects can influence all facets of life, and often include absenteeism from work, using personal savings to make ends meet, and negative effects on their physical and mental health (Health Care in Canada partnership, 2006). Although caregiving for a loved one can often be a rewarding experience, the physical, emotional, and financial demands suggest an alternative approach to independent personal palliative care by informal caregivers.

1.1.2 WHY INDEPENDENT HOSPICE FACILITIES?

Most Canadians prefer to die at home (as cited in Canadian Institute for Health Information, 2007), yet over 65% of all deaths in Canada occur in hospital (Statistics Canada, 2009). There are many factors that influence this reality, including, but not limited to, the inability of end-of-life care treatments to be performed within the home, the shortage or unavailability of personal care home services in rural settings, and/or the physical, emotional, social, spiritual and financial strain on informal caregivers. These factors support the demand for alternative approaches to end-of-life care, and ultimately the need

[1] *The terms caregiver, informal caregiver, primary caregiver, and family caregiver are utilized interchangeably.*

for novel building typologies, particularly, the independent hospice facility. Independent hospice facilities provide 24-hour medical and personal end-of-life care, where the relief of suffering, reduction of pain, maintenance of symptoms, and improved "quality of living and dying" is paramount (Carstairs, 2010). As 70% of informal caregivers indicate that they require frequent or occasional breaks from their caregiving duties (Decima Research Inc, 2002), independent hospice facilities offer a balance between caregiver involvement and the relief of physically and financially demanding responsibilities. These facilities allow caregivers to focus on providing psychological, social, and spiritual support, as well as little or as much personal care as they desire. Figure 1 is a visual representation of the role of the informal caregiver within a residential hospice setting. As shown, the role of the informal caregiver typically focuses on the emotional care of the resident. Informal caregivers may also choose to participate in personal care; however, the personal and medical care of the resident is predominantly performed by professional caregivers (healthcare professionals).



▲ F1 | ROLES IN END-OF-LIFE CARE IN A HOSPICE SETTING

1.1.3 CAREGIVERS, INDEPENDENT HOSPICE FACILITIES, AND INTERIOR DESIGN

Although many independent hospice facilities have implemented programmatic solutions for the support and integration of caregivers in the delivery of palliative care, there exists a gap in terms of interior and facility design. Often a result of financial constraints – as at least 50% of hospice palliative care programs are funded by charitable donations (Quality End-of-Life Care Coalition of Canada, 2010) – many facilities are incapable of spatially supporting the physical needs of caregivers. These physical needs can include access to short and long-term overnight accommodations, hygiene and nutritional amenities, as well as spaces of pause, reflection, and relaxation. Such amenities and spatial considerations are critical to the support of caregivers for many reasons. These reasons may include the travel distances caregivers must make from within or outside of the city, and/or the unpredictable duration of stay of the resident. Interior design can, therefore, be distinguished as an environmental reflection of the programmatic support offered by current independent hospice facilities.

1.2 | METHODOLOGY AND ASSUMPTIONS

1.2.1 METHODOLOGY

An extensive literature review, two case studies, three precedent analyses, and the development of a comprehensive facility programme have all provided a foundation for the resulting design of an independent hospice facility that supports the needs of informal caregivers. As an overview of the critical role caregivers play within hospice and palliative care, Chapter 2 outlines their place historically within end-of-life care, their physical and emotional responsibilities, and the current resources and organizations in place for caregiver advocacy. Chapter 3 focuses on the process of grief and bereavement – more specifically anticipatory grief – in order to emphasize the physical, psychological, psychosocial, and spiritual needs of caregivers and the patient-focused, family-centered model of end-of-life care. Case

studies of two independent hospices in Winnipeg were analyzed in Chapter 4 in order to assess the ability of local facilities to support the needs of caregivers during end-of-life care. Chapter 5 explores indoor environmental quality, evidence-based healthcare design, and biophilic design principles. This chapter suggests the integration of fundamental and evidence-based healthcare design strategies, as well as biophilic design principles as a method of alleviating many of the adverse effects of caregiving at the end of life, identified in Chapters 2 and 3. Three precedent studies were investigated in Chapter 6, where projects were selected based on their programme, scale, and/or relationship between design and occupant health. The proposed hospice's programme is provided in Chapter 7 and includes client and user profiles, the facility's spatial, functional and aesthetic requirements, as well as an adjacency matrix. As an extension of Chapter 7, Chapter 8 offers a site and building analysis of the proposed location of the facility. Lastly, Chapter 9 reveals the spatial concept and final design of the proposed independent hospice facility.

1.2.2 ASSUMPTIONS

Despite the growing number of informal caregivers in palliative settings, research into their roles and challenges during end-of-life care is still in its adolescence. Predominantly focused on identifying the physical and psychological effects of informal caregiving, solutions for alleviating caregiver burdens remain largely programmatic (Bialon & Coke, 2012; Clayton, Butow, Arnold, & Tattersall, 2005; Johansson & Grimby, 2012; Waldrop, 2007; Waldrop, Kramer, Skretny, Milch, & Finn, 2005). As a result, assumptions regarding the environmental support of informal caregivers in palliative settings were made in order to create informed design decisions for this practicum project. As informal caregivers both receive and provide care during palliation, it was assumed that a comparable collection of design considerations for patient and staff support could be transferrable to that of the caregiver. The body of research surrounding the design of healthier, safer and more productive healthcare environments for patients and staff is extensive (Ulrich, 1984; Ulrich, Berry, Quan, & Parish, 2010; Ulrich, et al., 2008; Ulrich, Zimring, Quan, Joseph, & Choudhary, 2004). Therefore, appropriate design considerations for those receiving and providing care were implemented as supports for the physical and psychological needs of informal caregivers within the proposed independent hospice facility.

1.3 | PROJECT GOALS AND DESIGN OBJECTIVES

The goals of this literary and design investigation are to address the delivery of quality palliative care through two principal themes:

1. To acknowledge caregivers as partners in the end-of-life care of an individual suffering from a terminal illness; and

2. To support the physical, psychological, psychosocial, and spiritual challenges of caregivers within the design of an independent hospice facility.

Similarly, the design objectives of this practicum project are intended to facilitate and promote the active incorporation of caregivers during end-of-life care in order to acknowledge and reinforce their importance within hospice design. The following four research questions have been developed as guidelines for achieving the identified project goals:

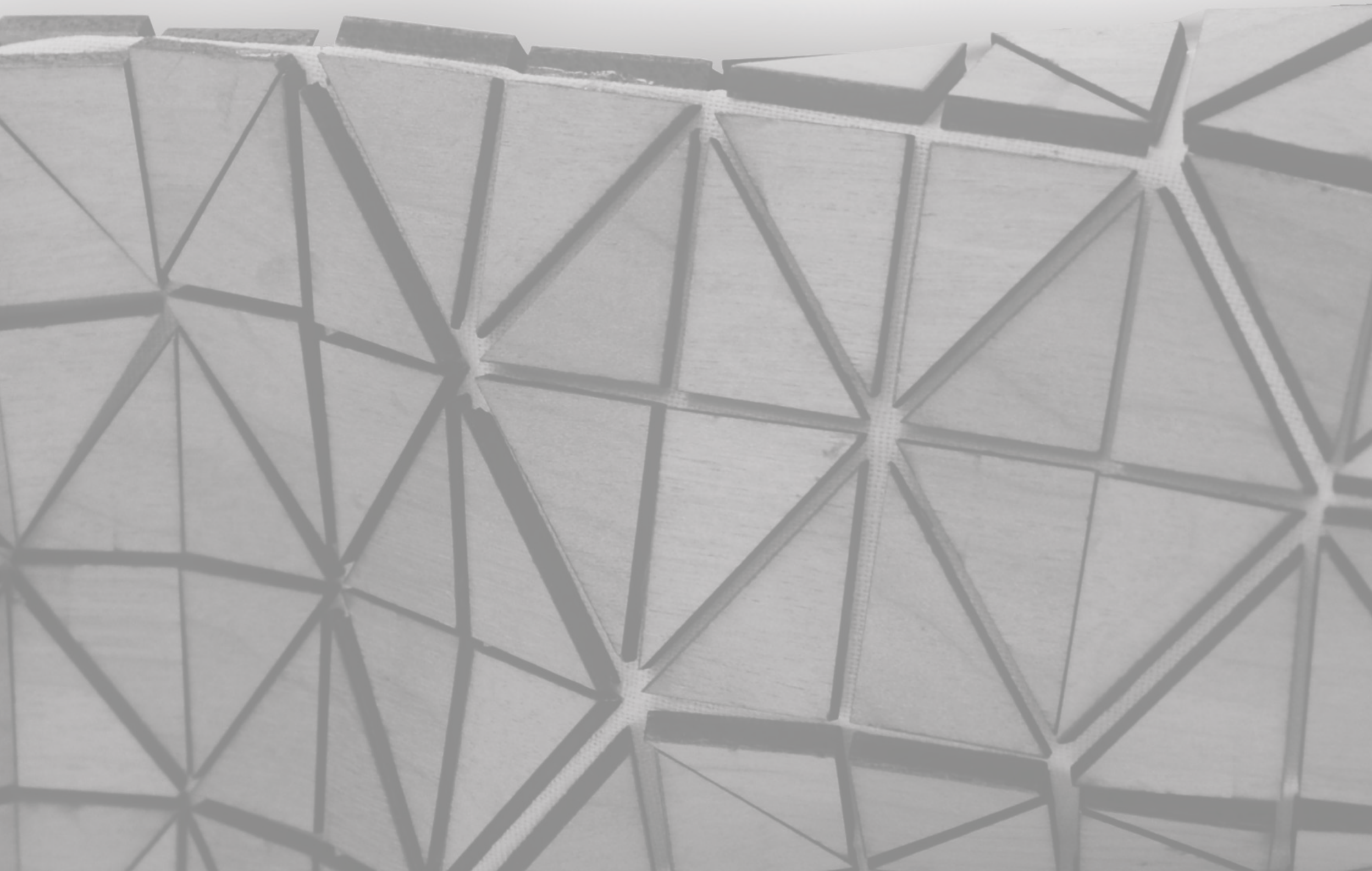
1. What are the physical, psychological, psychosocial, and spiritual needs of caregivers, and how can they be addressed through the design of an independent hospice facility?;

2. How can the fundamental characteristics of the grieving process inform the design of a hospice facility that supports the physical, psychological, psychosocial, and spiritual needs of caregivers?;

3. How can the case studies of two existing independent hospice facilities in Winnipeg, Manitoba, and the analysis of three precedents address the physical, psychological, psychosocial, and spiritual needs of caregivers?; and

4. What design considerations and strategies can be derived from evidence-based healthcare design and the principles of biophilic design?

Ultimately, the intention of this practicum document is to be used as a tool to raise awareness for the critical role of informal caregivers in the delivery of palliative care and hospice design. Furthermore, this document is also intended to positively influence both healthcare professionals and designers of palliative care environments who wish to consider the needs of caregivers in future facility designs.



CHAPTER 2.0

INFORMAL CAREGIVING WITHIN A HOSPICE ENVIRONMENT

A caregiver's role within a hospice environment is complex and often involves both the provision and reception of care (Monroe & Oliviere, 2009). This characterization of caregivers as both members of 'staff' and 'patients' suggests the importance of the identification of a caregiver's specialized needs, and subsequently, an increase in caregiver support. In order to successfully support these complex caregiver roles through design, this chapter explores their role historically throughout palliative care, the diverse services and support they provide for the patient, and the current provincial and national resources and organizations available for caregiver advocacy.

2.1 | THE EVOLUTION OF HOSPICE AND PALLIATIVE CARE

From the home care of the terminally ill to the earliest hospice facilities, the role of the caregiver within palliation has changed and evolved throughout history. Their incorporation within the design of such facilities extends from an intimate relationship, to non-existence. This dichotomy between intense familial support throughout the dying process versus the segregation of the terminally ill, has provided the foundation for a historical analysis of the multifaceted relationship between caregivers and the design of palliative care environments.

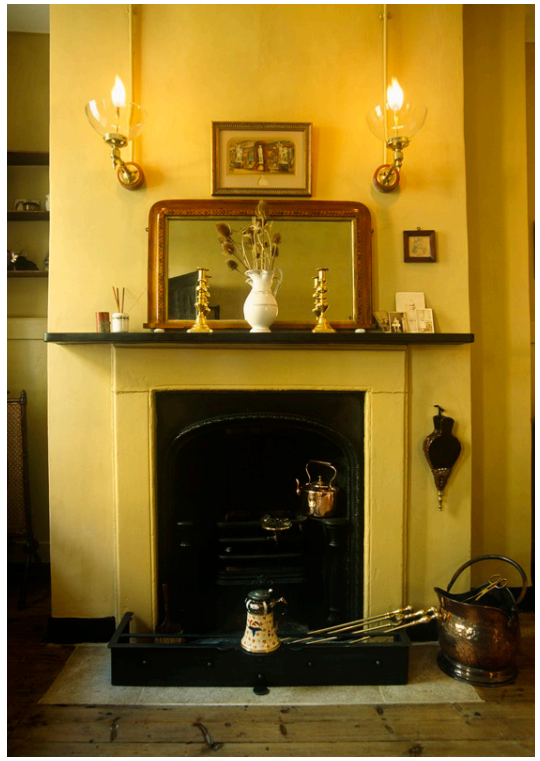
2.1.1 A CAREGIVER-DRIVEN PROCESS: EARLY PALLIATION

End-of-life care has been documented for an estimated 50,000 years, dating back to the earliest Neolithic settlements in Mesopotamia (Verderber & Refuerzo, 2006). For the majority of its evolution, palliative care has historically been a caregiver-driven process, where the home or home-like environments have served as its backdrop. Prior to the eighteenth century, Christian traditions acknowledged the primary care of the terminally ill as the responsibility of immediate family members. Care was performed within the personal residence, where caregivers provided both the physical and emotional support for the dying (Verderber & Refuerzo, 2006). The industrialization of the nineteenth century also brought about many novel building typologies with strong familial linkages – including the first almshouses, funeral homes, and hospices. Early almshouses (Figure 2 and 3) and funeral homes (Figure 4) became alternative spaces for families without means to accommodate the long-term care of the aging, as well as the death, dying, grieving, and reconciliation of the terminally ill. Both typologies were designed as a literal representation of the family residence and often made an attempt to recreate its intended atmosphere and incorporate similar communal spaces (Verderber & Refuerzo, 2006). The first hospices – from the Latin word 'hospitum' meaning guesthouse – were erected in Lyon, France in 1842 and Dublin, Ireland in 1879 as an alternative to the end-of-life care traditionally performed within the home. These spaces were also founded in residential design, where their strong connection to the natural environment was in opposition to the sterile, institutional, and convoluted design of twentieth-century hospitals and personal care homes erected shortly thereafter (Verderber & Refuerzo, 2006).

2.1.2 REMOVAL OF FAMILIAL LINKAGES: EARLY HOSPITALS, MEGAHOSPITALS, AND PERSONAL CARE HOMES

Despite the attempts of early hospice environments to support both residents and caregivers throughout end-of-life care, the hospitals, megahospitals and personal care homes of the early to mid 1900s were in stark contrast. Principled in isolation, these institutions provided few amenities and minimal personal space for the terminally ill, who were segregated and concealed in their wards (Figure 5). Ultimately, these facilities served as basic units of space for the aged and terminally ill prior to their imminent death (Verderber & Refuerzo, 2006). It was not until the modern hospice movement in the late 1900s that the fundamentals of family-centered end-of-life care were reevaluated and reborn.

▲ F2 | 19TH CENTURY ALMSHOUSE



▲ F3 | 19TH CENTURY ALMSHOUSE

▲ F4 | 19TH CENTURY FUNERAL HOME

▲ F5 | HOSPITALS OF THE EARLY TO MID 1900s (GIBRALTAR COLONIAL HOSPITAL WARD 1900S)

2.1.3 REVISITING FAMILY-CENTERED CARE: THE MODERN HOSPICE MOVEMENT

Today, the modern hospice movement has revolutionized palliative care and current hospice environments. Brought about in 1967 with the inauguration of St Christopher's Hospice in Sydenham, London (Figure 6, 7, & 8), these facilities are comprehensive in the management of symptoms and pain of the individual, as well as the support of their psychological health and well-being (Worpole, 2009). In addition to providing specialized end-of-life care for the terminally ill, modern hospices have returned to a traditional model of palliation where family members have been reintegrated throughout the dying process. Short-term sleeping accommodations within resident rooms, social spaces, communal exterior gardens, spiritual and religious care, and bereavement counseling are a number of the common services currently offered by hospice environments to primary caregivers and their families (Jocelyn House Hospice, n.d.; St Christopher's Hospice, 2013; Victoria Hospice, 2013).

The historical significance of familial relationships within end-of-life care offers specific design implications for a modern-day independent hospice facility that supports the needs of primary caregivers. The creation of a home-like environment that incorporates spaces of socialization, the provision of basic residential amenities, connections to the natural environment, and the introduction of mental health and spiritual guidance programs are all design and programmatic strategies that should be considered in the final hospice intervention.

▼ F7 | ST CHRISTOPHER'S HOSPICE | THE ANNIVERSARY CENTRE

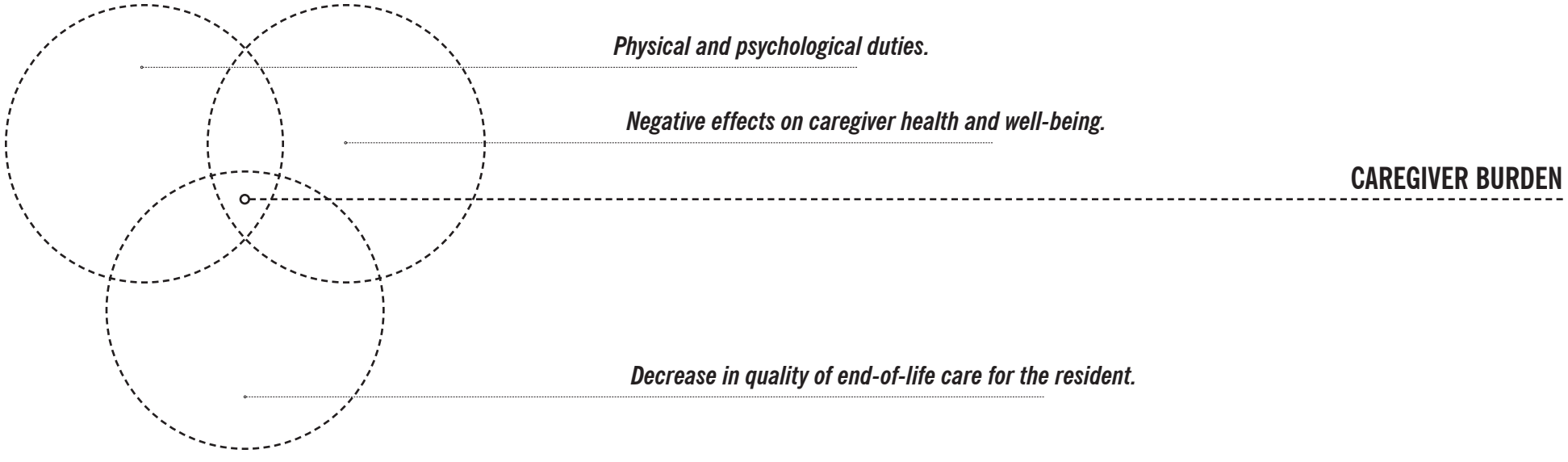
▲ F6 | ST CHRISTOPHER'S HOSPICE

▲ F8 | ST CHRISTOPHER'S HOSPICE | ROTARY GARDEN

2.2 | THE ROLE OF THE CAREGIVER WITHIN HOSPICE ENVIRONMENTS

Within hospice environments, caregivers provide extensive support for the resident during end-of-life care. The implications of these physically and psychologically demanding duties can often result in negative effects on the health and well-being of the caregiver. In order to circumvent such negative implications through design, it is critical to understand the types of services caregivers provide on a daily basis. The unpaid services provided by caregivers within a hospice facility are numerous and multifaceted. These types of support often include, but are not limited to, personal hygiene, nutrition, the communication of critical information, the provision of resident historical data, spiritual guidance, and an intimate knowledge of the resident's preferences (Ferrell, Borneman, & Thai, 2009). Both individually and collectively, these tasks are often time consuming and physically demanding. When caregivers are not adequately supported while providing these services, caregiver burden is often the result. Caregiver burden refers to the physical, psychological, psychosocial, and financial issues that can arise when caregiving for the terminally ill (George & Gwyther, 1986). A study on caregiver burden conducted by Bialon and Coke (2012) found a decline in the overall physical and mental health of caregivers while performing end-of-life care duties. Physical and mental health issues observed during the study included heightened stress levels, chronic lack of sleep, exacerbation of preexisting health conditions, significant weight gain or loss, and feelings of guilt, anger and sadness (Bialon & Coke, 2012). The negative implications associated with a decrease in the overall health and well-being of the caregiver can affect both their social and financial needs, and ultimately, the end-of-life care of the resident (Figure 9).

In order to support the overall health and well-being of caregivers within a hospice environment, the final design must spatially respond to the activities and outcomes associated with the physical and emotional challenges of caregiving. These include spaces for accessible communication with healthcare providers, the constructive release of anger, obtaining a good night's sleep, personal hygiene, personal nutrition, and exercise and outdoor activities. Ultimately, this practicum project suggests that providing programmatic and atmospheric support for caregivers ensures the quality end-of-life care of the resident.



▲ F9 | CAREGIVER BURDEN

2.3 | CAREGIVER ADVOCACY: RESOURCES AND ORGANIZATIONS

The recognition of caregivers as an integral aspect of palliative care has lead to the rise of many resources and organizations directly associated with caregiver support and advocacy. These resources and organizations offer programmatic support and initiatives for the physical, psychological, psychosocial, spiritual, and financial challenges of caregiving at the end of life. The continued support offered by such resources and organizations to caregivers is analyzed as a method of translation from programmatic goals to design strategies.

2.3.1 CAREGIVER RESOURCES

A number of local and national resources exist for the assistance through the process of caregiving for the terminally ill. Hospice and Palliative Care Manitoba (HPCM), the Canadian Hospice Palliative Care Association (CHPCA), and the Canadian Virtual Hospice offer caregivers a number of resources related to the many facets of end-of-life care. In 1998, a partnership between The GlaxoSmithKline Foundation and the CHPCA initiated the Living Lessons® (2012) program. This program offers many educational resources for caregivers, including A Guide for Caregivers – a handbook created to provide caregivers with the tools necessary for quality care at the end of life (Living Lessons®, 2012). Further resources provided by these associations include extensive information regarding the provision of care, caregiver to healthcare provider and caregiver to patient communication, financial assistance, and bereavement counseling (Canadian Hospice Palliative Care Association [CHPCA], 2013; Canadian Virtual Hospice, 2013; Hospice and Palliative Care Manitoba [HPCM], n.d.). Together, they supply Canadian caregivers with a substantial amount of information to assist them with the physical and psychological challenges of the end-of-life care of a family member or friend.

2.3.2 CAREGIVER ORGANIZATIONS

In addition to a growing body of resources and information, caregiver advocacy initiatives have also been gaining awareness through emerging organizations and policy making. The founding of the Canadian Caregiver Coalition (CCC) in November 2000 and the Manitoba Caregiver Coalition (MCC) in the fall of 2010, as well as the recent passing of Bill 42: The Caregiver Recognition Act of Manitoba in June 2011, have all played an integral role in acknowledging Canadian caregiver's valuable social and economic contribution to society (Canadian Caregiver Coalition [CCC], 2013; The Legislative Assembly of Manitoba, 2011). The CCC and MCC are national and provincial organizations who represent and promote "the voice, needs, and interests of family caregivers with all levels of government, and the community through: advocacy and leadership, research and education, and information, communication, and resource development" (CCC, 2013). The establishment of both organizations has brought vital awareness to the emotional, physical, and financial responsibilities accepted by Canadian caregivers each year. Recent triumphs for both organizations have come within the realm of provincial legislation in Manitoba, where a 25% increase to the annual primary caregiver tax credit was given in the 2011 Budget (Government of Manitoba, 2011), as well as the successful passing of Bill 42: The Caregiver Recognition Act on June 16, 2011 (The Legislative Assembly of Manitoba, 2011). The purpose of the Caregiver Recognition Act is to "increase recognition and awareness of caregivers; to acknowledge the valuable contribution they make to society; and to help guide the development of a framework for caregiver recognition and caregiver supports" (The Legislative Assembly of Manitoba, 2011). The following Eight General Principles Relating to Caregivers were also established:

> 1. The relationship between caregivers and the persons for whom they care should be recognized and respected;
> 2. The valuable social and economic contribution that caregivers make to society should be recognized and supported;
> 3. Caregivers should be acknowledged as individuals with their own needs within and beyond the caring role;
> 4. Caregivers should be supported to enjoy optimum health and social well-being and to participate in family, social and community life;
> 5. Caregivers should be considered as important contributors with other care providers in the provision of care, support or assistance, acknowledging the unique knowledge and experience of caregivers;
> 6. Caregivers should be treated with dignity and respect;
> 7. Caregivers should be supported to achieve greater economic well-being and sustainability and, where appropriate, should have opportunities to participate in employment and education; and
> 8. Support for caregivers should be timely, responsive, appropriate and accessible.
> (The Legislative Assembly of Manitoba, 2011)

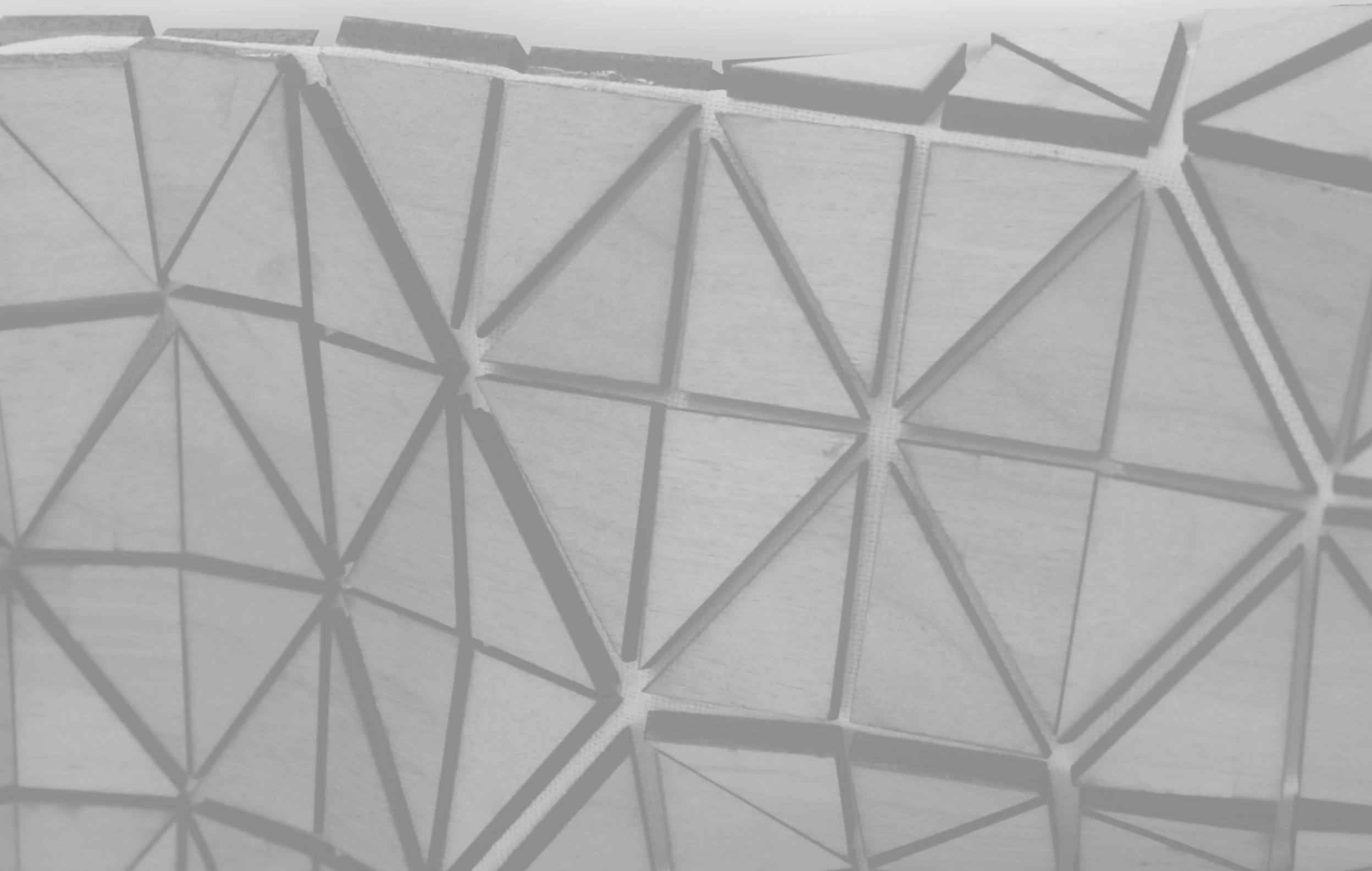
The intentions of this practicum project are a direct reflection of the resources and organizations established in Manitoba, and in Canada, for caregiver advocacy. Through the active incorporation of a caregiver's physical and psychological needs in the design of an independent hospice facility in Winnipeg, the fundamental values, goals, and principles of these caregiver initiatives are reinforced.

2.4 | SUMMARY: PROJECT DESIGN GUIDELINES

Palliative care is defined by Hospice and Palliative Care Manitoba (2001) as the "active, compassionate care of a person whose disease is no longer responsive to treatment aimed at a cure", where "the relief of suffering – physical, emotional, and spiritual – is the primary goal" (HPCM, 2001). As these acts of compassionate care and the relief of suffering are often supported and facilitated by caregivers, it is essential that they are recognized and respected as an integral partner in palliation. Throughout this practicum project, this recognition and respect for caregivers extends beyond traditional programmatic solutions, where interior design is introduced as a method of improving caregiver support during end-of-life care. A summary of the key design considerations that foster a supportive relationship between caregiver and built environment established in this chapter is as follows (Table 1):

▼ T1 | PROJECT DESIGN GUIDELINES DERIVED FROM THE ROLES OF INFORMAL CAREGIVERS IN HOSPICE ENVIRONMENTS

SECTION	CONCEPTS FROM LITERATURE	KEY DESIGN CONSIDERATIONS
HISTORICAL CAREGIVER ROLES	*End-of-life care performed within home or home-like environments;* *Connections to the natural environment; and* *Physical amenities and programmatic services for caregivers during end-of-life care.*	*Create a home-like environment;* *Offer spaces for socialization;* *Provide basic residential amenities;* *Provide visual and physical connections to the natural environment; and* *Introduce mental health and spiritual guidance programs.*
CAREGIVER ROLES WITHIN HOSPICE ENVIRONMENTS	*The provision of personal hygiene, nutrition, the communication of critical information, the provision of patient historical data, spiritual guidance, and an intimate knowledge of the patient's preferences by informal caregivers; and* *Caregiver burden.*	*Provide spaces for accessible communication with healthcare providers, the constructive release of anger, obtaining a good night's sleep, personal hygiene, personal nutrition, and exercise and outdoor activities.*
CAREGIVER RESOURCES AND ORGANIZATIONS	*Resources offered by Hospice Palliative Care Manitoba (HPCM), the Canadian Hospice and Palliative Care Association (CHPCA), and the Canadian Virtual Hospice; and* *Emerging organizations, policymakers, and caregiver advocates including the Canadian Caregiver Coalition (CCC), the Manitoba Caregiver Coalition (MCC), and Bill 42: The Caregiver Recognition Act of Manitoba.*	*Reinforce the fundamental values, goals, and principles of Canadian caregiver resources and organizations by supporting the needs of caregivers through environmental design.*



CHAPTER 3.0

THE EXPERIENCE OF GRIEF AND BEREAVEMENT

The death of a family member or close friend as a result of a terminal illness can be an extremely challenging emotional and physical experience, where the primary experience is that of grief. As each person manages the grieving process in a unique and individual manor, we as designers must be fully aware of the physical, psychological, psychosocial, and spiritual needs of grieving caregivers when designing hospice environments. Viewed as a natural human response and defined as an individual's personal reaction to loss (Archer, 1999), the progression of grief and bereavement is not easily defined. This chapter provides an overview of the ideas and themes concerning the evolution of grief and bereavement, with particular emphasis on two fundamental themes of inclusive palliation – anticipatory grief and patient-focused, family-centered end-of-life care.

3.1 | THE EVOLUTION OF GRIEF AND BEREAVEMENT

3.1.1 WHAT IS GRIEF AND BEREAVEMENT?

Often used interchangeably, *grief* refers to the personal, multifaceted reaction to loss (Archer, 1999), while *bereavement* is defined as the state of loss (Living Lessons®, 2012). As a "universal feature of human existence" (Archer, 1999), the effects of grief and bereavement do not discriminate. They can affect anyone of any age, gender, culture, race, or religion. Thus, when focusing on the hospice environment, caregivers are no exception.

3.1.2 THE EVOLUTION OF GRIEF AND BEREAVEMENT

The evolution of grief and bereavement research has been analyzed and defined in a multitude of ways. Published in 1917, Sigmund Freud's seminal text, *Mourning and Melancholia*, was the first thorough study of grief, bereavement, and loss. He categorized the psychological characteristics of mourning to include a painful dejection, cessation of interest in one's surrounding environment, the inability to form the same emotional connection of love with another, and the rejection of any activity that does not involve thoughts of the deceased (Freud, 1917). In order to overcome these psychological effects of mourning and subsequent melancholia, Freud argued that one must first analyze and absorb the emotional energy, thoughts, and memories of the late – *cathexis* and *hypercathexis* – followed by the emotional detachment between the bereaved and the deceased – *decathexis* (Freud, 1917). This preliminary analysis of the physical and psychological processes of mourning provided the foundation for further discussions regarding the stages of loss, grief, and bereavement. In 1970, psychoanalyst John Bowlby and psychiatrist Colin Murray Parkes expanded on Freud's early characterizations of mourning (1917) through the distinction of four main phases of grief. These four phases included:

1. Phase of numbness that usually lasts from a few hours to a week and may be interrupted by outbursts of extremely intense distress and/or anger;
2. Phase of yearning and searching for the lost figure, lasting some months and often for years;
3. Phase of disorganization and despair; and
4. Phase of greater or less degree of reorganization.

(Bowlby & Parkes, 1970)

During the same time period, Swiss psychiatrist Elizabeth Kübler-Ross (1969) published *On Death and Dying*, where she outlined the Five Stages of Grief – known as the Kübler-Ross Model. These Five Stages of Grief included:

1. Denial and Isolation;
2. Anger;
3. Bargaining;
4. Depression; and
5. Acceptance.

(Kübler-Ross, 1969)

Analogous to Freud's study of mourning (1917) and the phases presented by Bowlby and Parkes (1970), the Kübler-Ross Model is an expression of the defense and coping mechanisms individuals employ when faced with a tragic loss. These defense and coping mechanisms occur in a non-linear, transformative path, where each experience of grief and bereavement varies in duration and intensity. Despite the inconsistencies between individual

experiences of grief, this practicum project suggests that it is possible to create spaces that respond to the Five Stages of Grief identified by Kübler-Ross (1969) in order to physically and psychologically support caregiver needs within hospice environments. More specifically – **Denial and Isolation:** create spaces that promote the active communication of critical information regarding the trajectory of a life-limiting illness, as well as the personal support from healthcare providers, volunteers, family members, friends, and fellow caregivers; **Anger:** create spaces that allow for the healthy expression and release of anger; **Bargaining:** create spaces that facilitate open conversations between healthcare provider, resident, and caregiver regarding the progression of a terminal illness and end-of-life care; **Depression:** create spaces that offer confidentiality and privacy for those seeking additional support and guidance through grief and bereavement; and **Acceptance:** create spaces that foster a sense of closure through the celebration of life.

More recently, empirical studies have been conducted that directly analyze the experience and impact of grief and bereavement on caregivers in palliative care settings (Bialon & Coke, 2012; Clayton, Butow, Arnold, & Tattersall, 2005; Johansson & Grimby, 2012; Waldrop, 2007; Waldrop, Kramer, Skretny, Milch, & Finn, 2005). Multiple independent studies have highlighted the effects of the grieving process on caregivers in two separate stages: prior to the death of the patient – defined as anticipatory grief, and following the death of the patient – termed bereavement. Each study also emphasized the importance of caregiver support throughout the process of palliation, where anticipatory grief and patient-focused, family-centered end-of-life care emerged as two critical and noteworthy themes.

3.2 | ANTICIPATORY GRIEF

3.2.1 WHAT IS ANTICIPATORY GRIEF?

Caregiver losses extend beyond the conventional experience of grief and bereavement, where the grieving process begins prior to the death of the patient. This form of grief is known as *anticipatory grief*. Frequently experienced within palliative care environments, anticipatory grief is defined as the premature physical and psychological reactions of grief that occur prior to the imminent loss of a terminally ill family member or friend (Aldrich, 1974). As the experience of anticipatory grief can affect the bereavement process, emphasizing healthy anticipatory grief within hospice environments is critical (Ziberfein, 1999). In order to facilitate healthy anticipatory grieving, its characteristics must first be understood.

3.2.2 DIFFERENTIATION BETWEEN ANTICIPATORY GRIEF AND CONVENTIONAL GRIEF

Despite parallels between the dynamics and symptoms of anticipatory grief and conventional grief, there are distinct differences between the two processes. *Anticipatory Grief*, an anthology edited by Bernard Schoenberg et al. in 1974, was the first comprehensive collection of literature written specifically with regards to anticipatory grief (Aldrich, 1974). Detailed in Part 1, Section 1 of this anthology, C. Knight Aldrich (1974) outlined four critical differences that help to define conventional grief from anticipatory grief – endpoints, acceleration, ambivalence, and hope.

1. **Endpoints.** Anticipatory grief ceases immediately following the anticipated loss (Aldrich, 1974), where for caregivers, this anticipated loss is represented by the physical death of their loved one. Conventional grief, however, can potentially continue for an indefinite period of time after the passing (Aldrich, 1974).

2. **Acceleration.** The progression of anticipatory grief will typically accelerate as the anticipated loss becomes evident (Aldrich, 1974). Within a palliative environment this can perhaps be seen as a heightened dependency on the caregiver, the visible progression of symptoms, or a rapid decline in the patient's health (Waldrop, 2007). Conversely, conventional grief typically decelerates over time (Aldrich, 1974).

3. **Ambivalent or Contradictory Feelings.** As the patient is still alive throughout the experience of anticipatory grief, conflicting caregiver emotions or thoughts are perhaps more easily avoided, denied, and repressed (Aldrich, 1974). This ambivalence by caregivers within palliation can be represented by the wish that their loved one would pass. Similar feelings of hostility towards the deceased are often intensified throughout bereavement and have the ability to delay or disguise the conventional grieving process (Aldrich, 1974).

4. **Hope.** Hope is unique to anticipatory grief. Unlike conventional grief, the notion of hope that the caregiver could feasibly delay or prevent the loss altogether will often accompany the process of anticipatory grieving during end-of-life care (Aldrich, 1974). Alternatively, caregivers can also represent hope in their desire for patient to have a 'good death'. This representation of hope can be characterized by the control of physical symptoms, emotional support, quality end-of-life care practices, and maintaining dignity (Clayton et al., 2005).

The anticipatory grief experienced by caregivers during the end-of-life care of a terminally ill loved one has been defined as a "trauma that is often overlooked" (Ziberfein, 1999). By analyzing these four distinct differences between conventional grief and anticipatory grief, it is possible to further understand the complex emotional responses of grieving caregivers, and ultimately, the establishment of informed design decisions for the proposed hospice facility.

3.2.3 THE CHARACTERISTICS OF ANTICIPATORY GRIEF

In addition to the differentiation between anticipatory grief and conventional grief, the specific responses and symptoms associated with anticipatory grief are important to examine within the context of end-of-life care. These caregiver responses and symptoms have been analyzed and detailed within a multitude of current empirical studies (Bialon & Coke, 2012; Cagle & Kovacs, 2010; Clayton et al., 2005; Johansson & Grimby, 2012; Waldrop, 2007; Waldrop et al., 2005). A comparison of several independent studies, which specifically focused on caregiver anticipatory grief and its associated symptoms, yielded four common themes. These four common themes included: the physical, psychological, psychosocial, and spiritual responses of caregivers.

3.2.3.1 Physical Responses.

During the end-of-life care of a family member or friend with a life-limiting illness, the physical health of caregivers is often compromised. An independent study of caregiver burden, conducted by Bailon and Coke in 2012, described a "decline in overall health of the caregiver" which directly corresponded with the decline in overall health of the patient (Bialon & Coke, 2012). Waldrop (2007) discovered similar outcomes following her mixed-methods study on caregiver grief, where "the features of caregiver grief are directly linked to the nature of an advancing illness…" (Waldrop, 2007). Both studies also reported comparable symptoms affecting a caregiver's physical health. These symptoms included: sleep interruptions, exacerbation of existing health conditions, fatigue, physical strain, and significant weight gain or loss (Bialon & Coke, 2012; Waldrop, 2007). Other research recorded a decrease in outdoor physical activities and the neglect of prior healthy habits (Johansson & Grimby, 2012). The implications that healthy grieving within a hospice environment has on the physical health of caregivers can be manifested into specific design criteria for the proposed facility. These design criteria include: a facility that accommodates for the uninterrupted sleep of caregivers; a facility that is accessible for caregivers with physical challenges; a facility that offers healthy nutritional choices for caregivers; and lastly, a facility that promotes indoor and outdoor physical activity for caregivers.

3.2.3.2 Psychological Responses.

The psychological effects of anticipatory grief on caregivers within a hospice environment can be both unpredictable and intense. Dispersed throughout four separate empirical studies, when over 100 caregivers were interviewed, many common emotional reactions to the end-of-life care of a family member or friend were established. Found in each of the four studies, the two most common of these emotional reactions were of sadness and anger (Bialon & Coke, 2012; Johansson & Grimby, 2012; Waldrop, 2007; Waldrop et al., 2005). Feelings of stress, guilt, inadequacy, anxiety, irritability, depression, and frustration were also noted throughout the studies (Bialon & Coke, 2012; Johansson & Grimby, 2012; Waldrop, 2007; Waldrop et al., 2005). This research has also informed the design of the proposed hospice through the identification of specific design guidelines that support the psychological needs of grieving caregivers. These design guidelines include: a facility that provides caregivers with spaces for the productive release of anger and frustration; a facility that reduces caregiver stress, guilt, inadequacy, anxiety, irritability, depression, and frustration; a facility with spaces of confidentiality and privacy for a caregiver's personal emotional and spiritual counseling; and a facility with accessible, effective communication between caregiver, healthcare provider, and resident.

3.2.3.3 Psychosocial Responses.

Social changes in the lives of caregivers while caring for the terminally ill are also a common experience. These psychosocial caregiver responses can have an affect on the personal dynamics between themselves and other family members, friends, and coworkers (Bialon & Coke, 2012). These personal dynamics have

been investigated through multiple caregiver interviews, over four separate studies. Despite the observation of negative social side effects of caregiving – including increased interpersonal conflicts, difficulty maintaining personal commitments, and even the loss of employment (Bialon & Coke, 2012) – positive outcomes were also apparent (Waldrop, 2007; Waldrop et al., 2005). Within all four caregiver analyses, a strength and cohesiveness between caregiver support networks was observed as a coping mechanism for stress management (Bialon & Coke, 2012; Johansson & Grimby, 2012; Waldrop, 2007; Waldrop et al., 2005). Both the negative and positive psychosocial outcomes of caregiving have been considered in the proposed hospice through key programmatic and design considerations. These programmatic and design considerations include: a facility that offers 24-hour personal end-of-life care; a facility that promotes, yet does not impose, caregiver participation in the physical aspects of end-of-life care – including, but not limited to, cooking, feeding, and personal hygiene; and a facility that initiates caregiver support networks.

3.2.3.4 Spiritual Responses.

An individual's spirituality can be defined as "a deep sense of meaning and purpose in life…" (Mallon, 2008). Often used interchangeably with the terms faith and religion, a strong sense of spirituality can have a positive affect on the coping mechanisms exhibited by caregivers, both during and following the end-of life care of a loved one. Two independent empirical studies related to caregiver support in palliative settings observed "spiritual and religious beliefs as a strong source of personal support" (Cagle & Kovacs, 2010), and identified faith and religious practices as an "alleviating factor" of the emotional and physical demands of caregiving (Bialon & Coke, 2012; Cagle & Kovacs, 2010). Both studies also noted the benefits of faith and spirituality during bereavement (Bialon & Coke, 2012; Cagle & Kovacs, 2010). In addition to the physical, psychological and psychosocial caregiver responses, the spiritual needs of caregivers have also influenced the final programmatic and design decisions of the proposed hospice facility. The following key design guidelines have been identified: a facility that provides nondenominational spaces for faith based practices; and a facility that offers spiritual and religious guidance both prior to and following the resident's death.

The multifaceted responses of caregivers during the delivery of end-of-life care within a hospice environment can both promote and inhibit the process of healthy grieving. Thus, hospice design must provide the appropriate programme and facilities aimed at supporting caregivers in the experience of the physical, psychological, psychosocial, and spiritual aspects of grief and bereavement. The specific design considerations outlined in this section have been incorporated into both the programmatic and atmospheric design strategies for the proposed independent hospice, in order to actively support the physical, psychological, psychosocial, and spiritual needs of caregivers.

3.3 | PATIENT-FOCUSED, FAMILY-CENTERED END-OF-LIFE CARE

3.3.1 QUALITY END-OF-LIFE CARE

In order for caregivers to provide quality end-of-life care for their loved one, the values of both caregiver and patient must be viewed as one, singular unit (Waldrop et al., 2005). Defined by Teno, Casey, Welch, and Edgman-Levitan (2001), quality end-of-life care must "consider both the patient and family perspectives on what constitutes good care" (Teno et al., 2001). Following their qualitative analysis of information provided by six focus groups of family caregivers, Teno et al.'s (2001) study yielded five major themes related to quality end-of-life care. These five major themes stated that quality end-of-life care:

> 1. Provides dying persons with desired physical comfort;
> 2. Helps the dying person take control of decisions about medical treatment and daily routines;
> 3. Relieves family members of the burden of feeling that they must be present at all times to advocate for the best care of their loved ones;
> 4. Educates the family members so they feel confident in caring for their loved ones at home; and
> 5. Provides family members with emotional support both prior to and after the patient's death.
> (Teno et al., 2001)

Dr. Harvey M. Chochinov's (2006) research on dying with dignity also outlines a framework for what signifies a "good death". He defines a "meaningful dying process" as one in which "the patient is physically, psychologically, spiritually, and emotionally supported by his or her family, friends, and caregivers" (Chochinov, 2006). The translation of these themes into a tangible means of caregiver involvement in quality end-of-life care has been emphasized by additional literature related to an increase in educational, physical, and emotional support for caregivers in palliative care settings (Bialon & Coke, 2012). Additionally, a variety of strategies for caregiver support has also been encouraged. These strategies include: best practices for end-of-life care; the provision of

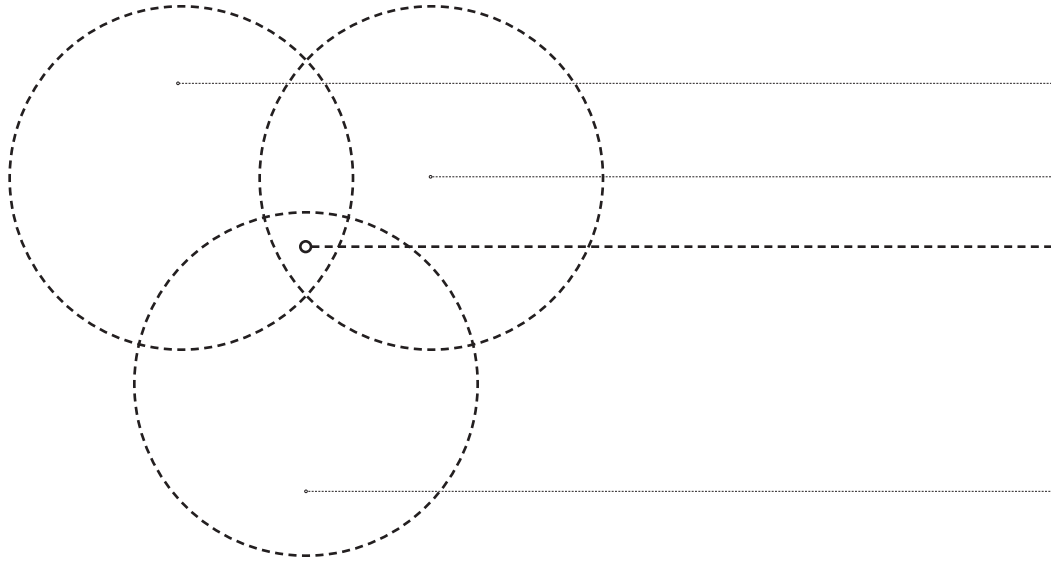
additional information regarding the trajectory of a life-limiting illness; active communication between healthcare provider, caregiver and patient; and the appropriate guidance through bereavement (Waldrop, Milch, & Skretny, 2005).

3.3.2 PATENT-FOCUSED, FAMILY-CENTERED CARE

Each of the above strategies related to the delivery of quality end-of-life care is exemplified by the patent-focused, family-centered model of palliative care. This model proposes that palliative care must focus and acknowledge both the needs of the patient and the role of the caregiver (Teno et al., 2001). The five central elements of patient-focused, family-centered care state that end-of-life healthcare:

> 1. Provides patients with desired physical comfort and emotional support;
> 2. Promotes shared medical decision-making;
> 3. Provides health care and related services that are focused on the needs and values of the dying person;
> 4. Attends to the needs and values of those who care for and love the dying person; and
> 5. Coordinates health care and related services to smooth patient and family transitions among sites and types of service.
> (Teno et al., 2001)

Patient-focused, family-centered palliative care is physically and emotionally beneficial to both the patient, as well as the caregiver. By actively supporting caregivers throughout the end-of-life care of their terminally ill loved one, the optimization of their own personal health and well-being will positively influence the provision of better care for the patient (Figure 10) (Bialon & Coke, 2012).



▲ F10 | THE PATIENT-FOCUSED, FAMILY-CENTERED MODEL OF PALLIATIVE CARE

Increase in caregiver support.

Increase in caregiver health and well-being.

PATIENT-FOCUSED

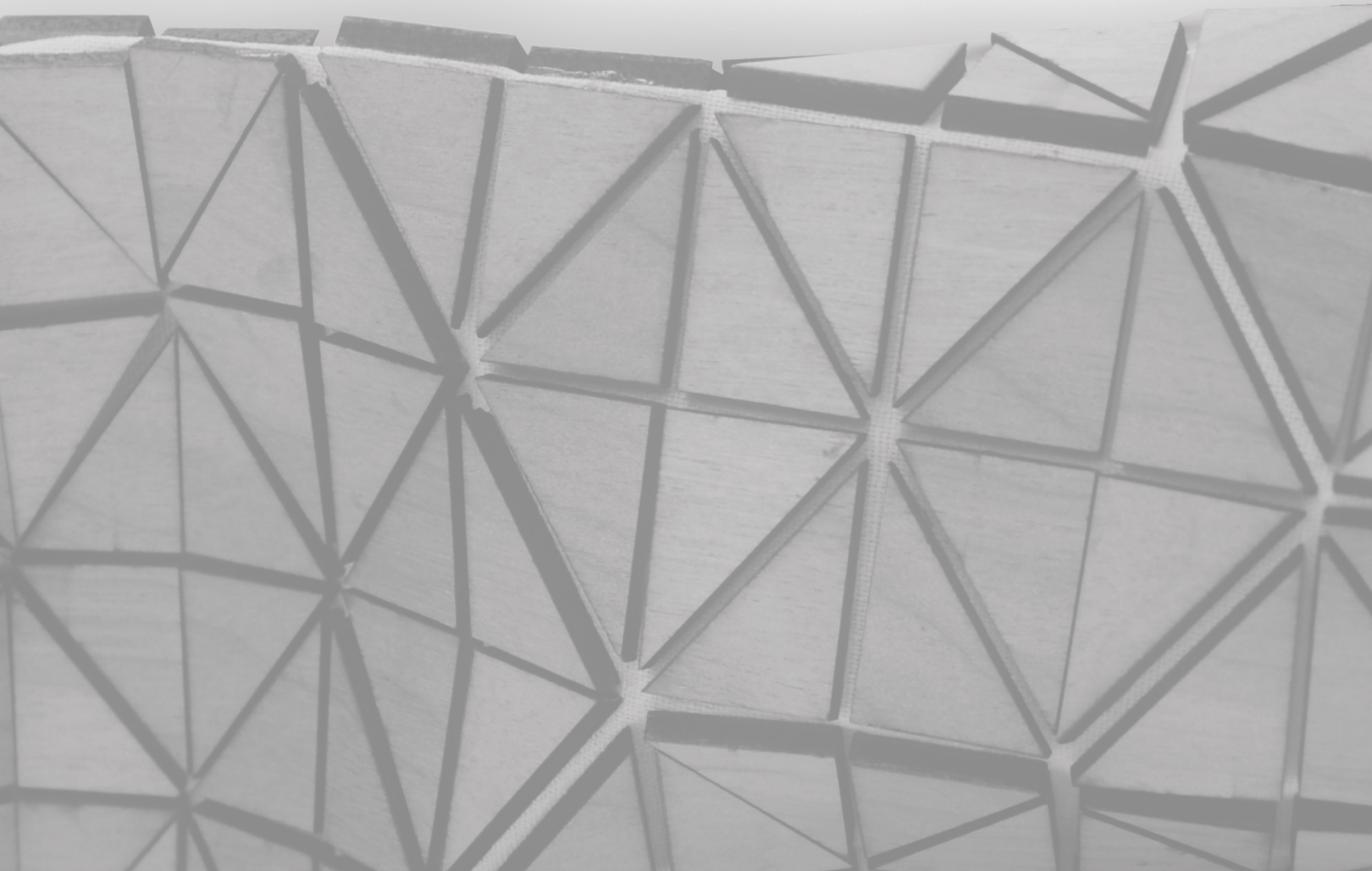
FAMILY-CENTERED END-OF-LIFE CARE

Increase in quality of end-of-life care for the resident.

3.4 | SUMMARY: PROJECT DESIGN GUIDELINES

Patient-focused, family-centered care principles provide a holistic perspective of end-of-life care, where the needs of patients and caregivers are mutually exclusive. These principles emphasize the importance of both quality end-of-life care of the patient, as well as the physical, psychological, psychosocial, and spiritual support for grieving caregivers. Through the analysis of these fundamental challenges associated with caregiving while grieving, appropriate design decisions have been applied to the design of an independent hospice facility. The following table (Table 2) summarizes the specific design considerations derived from the review of literature on caregiver grief and bereavement:

SECTION	CONCEPTS FROM LITERATURE	KEY DESIGN CONSIDERATIONS
THE EVOLUTION OF GRIEF AND BEREAVEMENT	*The Kübler-Ross Model and the Five Stages of Grief:* *1. Denial and Isolation;* *2. Anger;* *3. Bargaining;* *4. Depression; and* *5. Acceptance.*	*Create spaces that respond to the Kübler-Ross Model:* *1. Denial and Isolation: Create spaces that promote the active communication of critical information regarding the trajectory of a life-limiting illness, as well as the personal support from healthcare providers, volunteers, family members, friends, and fellow caregivers;* *2. Anger: Create spaces that allow for the healthy expression and release of anger;* *3. Bargaining: Create spaces that facilitate open conversations between healthcare provider, patient, and caregiver regarding the process of a terminal illness and end-of-life care;* *4. Depression: Create spaces that offer confidentiality and privacy for those seeking additional support and guidance through grief and bereavement; and* *5. Acceptance: Create spaces that foster a sense of closure through the celebration of life.*
ANTICIPATORY GRIEF	*The physical, psychological, psychosocial, and spiritual responses of grieving caregivers during the end-of-life care of a loved one.*	*Design an independent hospice facility that promotes the process of healthy grieving by supporting the physical, psychological, psychosocial, and spiritual impacts of palliative caregiving:* *- A facility that accommodates for uninterrupted sleep;* *- A facility that is accessible for those with physical challenges;* *- A facility that offers healthy nutritional choices;* *- A facility that promotes indoor and outdoor physical activity;* *- A facility that provides a productive means of releasing anger and frustration;* *- A facility that reduces stress, guilt, inadequacy, anxiety, irritability, depression, and frustration through interior design;* *- A facility with spaces of confidentiality and privacy for personal emotional and spiritual counseling;* *- A facility with accessible, effective communication between caregiver, healthcare provider, and resident;* *- A facility that offers 24-hour personal end-of-life care;* *- A facility that promotes, yet does not impose, caregiver participation in the physical aspects of end-of-life care – including, but not limited to, cooking, feeding, and personal hygiene;* *- A facility that initiates caregiver support networks;* *- A facility that provides nondenominational spaces for faith based practices; and* *- A facility that offers spiritual and religious guidance both prior to and following the resident's death.*
PATIENT-FOCUSED, FAMILY-CENTERED END-OF-LIFE CARE	*The patient-focused, family-centered model of palliative care.*	*Design a hospice environment that equally values and acknowledges the physical and emotional needs of caregivers and patients through programmatic and atmospheric design considerations.*



CHAPTER 4.0

CASE STUDY INQUIRY PROCESS

Caregiving within a hospice environment can provide a favorable alternative to caregiving within the home. The additional emotional and physical aid offered by healthcare workers, other caregivers, and volunteers can help to support the health and well-being of family caregivers throughout the challenging experience of end-of-life care. The following case studies of two existing independent hospices demonstrate how their design can support the needs of family caregivers in the delivery of palliative care. Two independent facilities in Winnipeg, Manitoba – Jocelyn House Hospice and The Grace Hospice – were chosen in order to provide a context for the final design decisions of this practicum project. The subsequent analysis of each facility resulted in multiple design considerations related to the spatial planning, aesthetic qualities, zoning and circulation paths, and accessibility issues of the proposed hospice.

4.1 | METHODOLOGY

4.1.1 PROCEDURE

In order to incorporate the knowledge and opinions of those who work within palliative care environments in Winnipeg, Manitoba, two case studies were conducted. Two independent facilities – Jocelyn House Hospice and The Grace Hospice – were selected based on their programme and location. As both facilities are the only independent hospices located in Winnipeg, Manitoba, they provide a context for the proposed design solution of this practicum project.

A semi-structured interview with one employee of each hospice was completed at both facilities, where interviewees included Jo-Ann Duggan s.q.m. – Manager of Volunteer and Spiritual Care Services at Jocelyn House Hospice, and Shauna Boitson – Clinical Manager at The Grace Hospice. A semi-structured interview is a form of interview that has a clear purpose with questions worked out in advance, however, some flexibility in the fluidity and order of questions is offered as the situation merits. Questions during a semi-structured interview can be reworded, left out, and/or given explanations to the interviewee (Robson, 1993). This interview approach was selected as a method of broadening the conversation beyond the prepared questions in order to facilitate a stronger dialogue between interviewer and interviewee. Each interview was conducted one-on-one with myself, and took place in a space of the interviewee's choice at each facility.

Prior to each interview, this study was given human ethics approval by the Joint-Faculty Research Ethics Board at the University of Manitoba, as well as the Winnipeg Regional Health Authority Research Access at the Grace Hospital. In fulfillment with the requirements of both ethics reviews, Participant Consent Forms were read and signed by both participants at the beginning of each interview (see Appendix D).

Over the course of the interview, both participants within the study were asked the following questions:

1. What is the history of the facility?;
2. How is the current facility used by caregivers?;
3. What features does the current facility have to support caregiver activities?;
4. What types of roles do you see caregivers performing? E.g. Emotional, physical, informational, and/or instrumental?; and

5. If you were given the opportunity for a brand new facility, what changes/additions would be made to the design?

In order to answer questions two, three and four, an inventory of spaces and amenities was acquired at each hospice. At Jocelyn House Hospice, a walkthrough of the facility was conducted by Jo-Ann Duggan s.q.m. at the beginning of the interview. During the walkthrough, I personally recorded an inventory of the facility's individual spaces and amenities. At The Grace Hospice, Shauna Boitson verbally offered a similar inventory of spaces and amenities, where a walkthrough was conducted following the interview. At both facilities, each space was then questioned in terms of how caregivers use each space, how caregiver activities are supported within each space, and what types of roles caregivers perform within each space. Each interview lasted approximately 60 minutes in length and was recorded using an audio recording device. The interviews were then personally transcribed for the purpose of analysis.

4.1.2 DATA ANALYSIS

Following a full transcription of interviews with Jo-Ann Duggan s.q.m. and Shauna Boitson, each conversation was personally coded, line-by-line, in relation to three categories of caregiver needs. These categories included: behavioral needs, psychological needs, and special needs. Behavioral needs refer to the activities performed by caregivers. Psychological needs refer to the emotional support, privacy and socialization requirements, values, and aesthetic preferences of caregivers. Lastly, special needs refer to the visual, cognitive, and mobility requirements of caregivers (Karpan, 2011). Coded data was then personally assembled into a matrix of rows and columns, where rows represent the comparison of Jocelyn House Hospice to The Grace Hospice, and columns represent the information gathered during each interview (Table 3). Gathered information includes facility spaces, caregiver access to each space, caregiver behavioral needs, caregiver psychological needs, caregiver special needs, and facility circulation and zoning. Finally, each space was compared and contrasted between facilities in order to generate naturally occurring themes.

▼ T3 | EXCERPT OF HOSPICE INTERVIEW DATA ANALYSIS

	SPACE	CAREGIVER ACCESS	BEHAVIORAL NEEDS	PSYCHOLOGICAL NEEDS	SPECIAL NEEDS	CIRCULATION AND ZONING
JOCELYN HOUSE HOSPICE	*Living Area (First Floor)*	*YES*	*- Gathering; - Visiting; and - Well used.*	*- Can be private; - "Safe place to gather with your people"; - "...place of comfort...."; and - "...quiet area for family members."*	-	*- Open concept; and - Families can come together and be supported by staff.*
THE GRACE HOSPICE	*Living Area*	*YES*	*- Gathering; - Visiting; - Used by residents from time to time.*	-	-	-
JOCELYN HOUSE HOSPICE	*Dining Area (First Floor)*	*YES*	*- Gathering of residents, staff, volunteers, visitors, etc...; - "...support a family atmosphere"; and - "At lunchtime we had every chair full, plus this walker."*	-	-	-
THE GRACE HOSPICE	*Dining Area*	*YES*	*- Primarily used for food related activities; and - People come for family occasions and gather as a group.*	-	-	-

4.2 | RESULTS

4.2.1 CASE STUDY I: JOCELYN HOUSE HOSPICE

Jocelyn House Hospice was Jocelyn Hutton's family home when she was diagnosed with cancer at the age of 17. Following her diagnosis, she first questioned "why me" (Duggan, 2012)? When Jocelyn came to the realization that death was not a state to be feared and more an opportunity to bring awareness to the often fatal disease, she then questioned "why not me" (Duggan, 2012)? Her courageous battle with cancer and efforts to live her final days, inspired her parents to convert their family bungalow into Western Canada's first freestanding hospice following her death (Jocelyn House Hospice, n.d.).

Subsidized by the Winnipeg Regional Health Authority (WRHA) and a dependable network of donors, sponsors and volunteers, Jocelyn House Hospice is the only freestanding, non-profit hospice in Winnipeg. Through the Hospice and Palliative Care program, each resident and their family will interview at Jocelyn House Hospice in order to make sure the facility is appropriate for both parties. If all parties feel Jocelyn House Hospice is a good match, for $30.00 per day, residents are offered 24-hour, personal end-of-life care (Duggan, 2012). Located on a scenic riverside property, the home-like atmosphere at Jocelyn House Hospice supports the care of four residents and includes a kitchen, dining area, living area, sunroom, deck, two office spaces, a laundry space, and indoor and outdoor storage (Figure 11-14). Jocelyn House Hospice has been providing residents and families with "high quality, progressive palliative care" and access to the "information, knowledge, control, and power to make decisions about care" for over twenty-five years (Jocelyn House Hospice, n.d.).

▼ F11 | JOCELYN HOUSE HOSPICE

▲ F12 | JOCELYN HOUSE HOSPICE | LIVING AREA

▲ F13 | JOCELYN HOUSE HOSPICE | DINING AREA

▲ F14 | JOCELYN HOUSE HOSPICE | SUNROOM

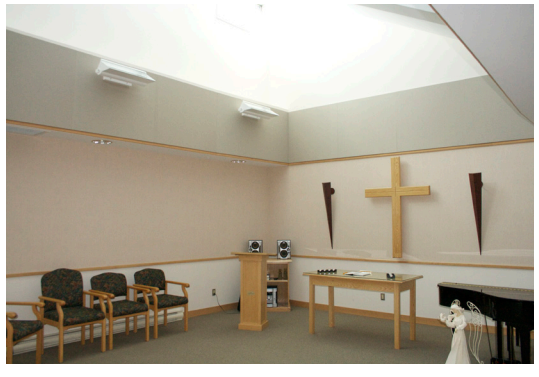
4.2.2 CASE STUDY II: THE GRACE HOSPICE

Founded in January of 2004 through a partnership of The Grace Hospital and the Salvation Army (Boitson, 2012), the Grace Hospice is an independent facility, where "residents are helped to experience reduced suffering, improved comfort, and opportunities to realize the potential for personal growth and spiritual healing in the last days of their lives" (Grace Hospital, 2013). The 18,000 square foot building, located directly adjacent the Grace Hospital, supports twelve resident rooms, a chapel, kitchen, dining area, children's play area, sunroom, patio, laundry room, and storage. Each resident room comes equipped with a television, microwave, coffee maker, telephone, closet space, private bath, and a pull-out sofa for family members and friends (Figure 15-18). In addition to these amenities, the hospice also provides 24-hour nursing care, on site food preparation, housekeeping services, and telephone and computer access (Grace Hospital, 2013).

Residents are admitted through the WRHA Palliative Care Program based on whether or not their needs and goals can be met within this type of hospice environment (Boitson, 2012). As an independent facility, the Grace Hospice is primarily funded by donors of the Grace Hospital Foundation and the $30.00 per diem resident rate, paid at the end of each month to the Grace Hospital Finance Department (Grace Hospital, 2013).

▼ F15 | THE GRACE HOSPICE

▲ F16 | THE GRACE HOSPICE | DINING AREA



▲ F17 | THE GRACE HOSPICE | CHAPEL

▲ F18 | THE GRACE HOSPICE | RESIDENT ROOMS

4.2.3 COMPARISON AND CONTRAST: JOCELYN HOUSE HOSPICE AND THE GRACE HOSPICE

The comparison and contrast of Jocelyn House Hospice and The Grace Hospice reveals the advantages and limitations of both facilities in terms of caregiver support. In addition to providing valuable insight into the advantages and limitations of current independent hospices in Winnipeg, this comparison has also yielded a common design element critical to family caregiving – gathering spaces.

Jocelyn House Hospice's design advantages and limitations are attributable to its conversion from a single family dwelling to a hospice facility. During the interview, Duggan (2012) described many of the positive outcomes associated with the open concept and multifaceted utilization of the home's more public spaces. These public spaces – including the living area, dining area, and kitchen – offer caregivers, residents, family members, friends, volunteers, and healthcare providers an opportunity to communicate, comfort, gather, grieve, and ultimately, to support one another (Figure 19) (Duggan, 2012). Duggan (2012) illustrated this by noting the additional support gained by caregivers as they "get to know one another" (Duggan, 2012). At Jocelyn House Hospice, the interior environment is also equally as important as the exterior environment in promoting supportive interpersonal connections. Its location within a residential neighborhood and adjacency to the Seine River has created a peaceful, yet social environment, were the visual and physical connection to "nature is vital" (Figure 20) (Duggan, 2012). Indoor and outdoor spaces that facilitate "hosting in a spirit of hospitality", a "safe place to gather with your people", and a "place of comfort" and "healing" (Duggan, 2012) are all design considerations that have allowed Jocelyn House Hospice to successfully support caregivers throughout end-of-life care.

▼ F19 | JOCELYN HOUSE HOSPICE | OPEN CONCEPT INTERIOR

F20 | JOCELYN HOUSE HOSPICE | EXTERIOR LANDSCAPE ▶

Despite the many design related successes of Jocelyn House Hospice, inherent limitations exist as a result of palliative healthcare performed in a residential environment. Spatial constraints are one such limitation and can be viewed most predominately within the resident rooms. As each of the four rooms is quite small in size, residents are limited to approximately three guests at one time (Figure 21) (Duggan, 2012). This can present issues during the last days of life when an often large number of family members and friends come to say their final goodbyes. Accessibility and sanitary concerns also arise, as rooms are separated over two levels, the basement and main floor, and do not have en-suite washroom accommodations (Figure 22 and 23). The small footprint of the residence creates exterior limitations as well. The facility's building and site – located away from major transportation routes and bordering the Seine River – deters caregivers, volunteers, and healthcare providers from utilizing the public transit system and prevents future building expansions due to riverbank erosion and neighborhood parking and zoning concerns (Figure 24) (Duggan, 2012). Although the building and site have restricted Jocelyn House Hospice in a number of ways, Duggan (2012) continues to define the center as "truly the dream ideal place" (Duggan, 2012).

▼ F21 | JOCELYN HOUSE HOSPICE | RESIDENT ROOM

▼ F22 | JOCELYN HOUSE HOSPICE | ACCESSIBILITY ISSUE

▼ F23 | JOCELYN HOUSE HOSPICE | ACCESSIBILITY ISSUE

▼ F24 | JOCELYN HOUSE HOSPICE | RIVERBANK EROSION

In contrast to the open concept of Jocelyn House Hospice, the design advantages at The Grace Hospice reside in its more private spaces. Each of the twelve resident rooms represent the facility's most successful private spaces in terms of consistency and caregiver support. Consistency refers to each room's relative size, view, and inventory of amenities, where caregiver support refers to the specific design considerations that directly impact the involvement of caregivers. Boitson (2012) described each resident room as large enough to accommodate "two conversations going on at the same time" (Boitson, 2012). These spacious rooms provide an opportunity for caregivers, family members, and friends to interact and support one another without disturbing the resident or physically leaving the room (Figure 25). Adjacent to the twelve resident rooms, The Grace Hospice has also carefully considered the design of zoning and circulation paths. Located along the same side of the corridor and designed along a slight curvature, caregivers are provided with a secondary space of pause, without feeling as if they have "gone away" (Figure 26) (Boitson, 2012). This corridor also enables the discrete removal of the loved one following their passing. In addition to the resident rooms, the sunroom, patio, family room, and chapel are all private spaces that successfully support caregiver needs at The Grace Hospice (Figure 27-29). Each of these spaces encourages the interaction and communication of caregivers, residents, staff, and volunteers by creating a comforting, supportive, and confidential atmosphere (Boitson, 2012). The many private spaces found at The Grace Hospice enable caregivers to effectively transition into challenging emotional, physical, and informational roles associated with the end-of-life care of a family member or friend.

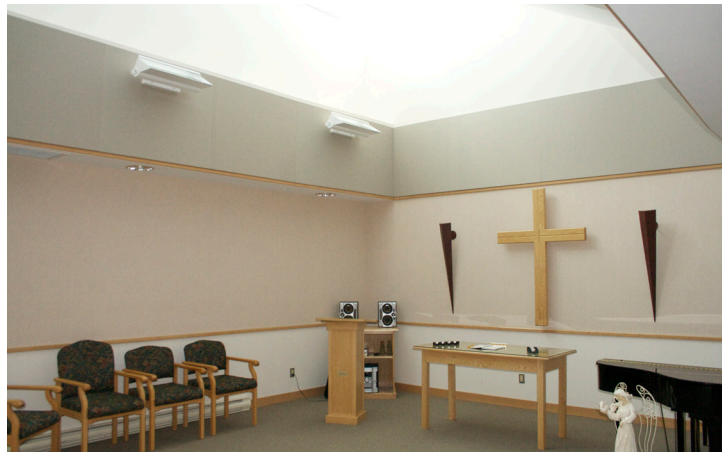
F25 | THE GRACE HOSPICE | RESIDENT ROOMS

F26 | THE GRACE HOSPICE | CORRIDOR

F27 | THE GRACE HOSPICE | SUNROOM AND PATIO

F28 | THE GRACE HOSPICE | FAMILY ROOM

F29 | THE GRACE HOSPICE | CHAPEL



The advantages of the private spaces of The Grace Hospice can be directly related to the limitations of its public spaces. Despite the presence of family gatherings, many of these public areas – including the dining area, living area, children's play area, and Day Hospice – are only occupied "from time to time" or "underutilized" (Figure 30 and 31) (Boitson, 2012). Boitson (2012) also described how family and friends often do not stay for long periods of time and tend to gather only for the last days of life within the resident's room (Boitson, 2012). As a result, their large, expansive spaces and absence of spatial congruency lack the sense of intimacy and interaction achieved within its private spaces.

◀ F30 | THE GRACE HOSPICE | PUBLIC SPACES

◀ F31 | THE GRACE HOSPICE | PUBLIC SPACES

Despite their inherent differences, both Jocelyn House Hospice and The Grace Hospice have established an important design element in support of family caregivers – gathering spaces. Gathering spaces offer an opportunity for residents, caregivers, family members, friends, healthcare providers and volunteers to visit, comfort, and grieve throughout their challenging experiences. At Jocelyn House Hospice, gathering spaces are predominantly public spaces, and include the kitchen, dining area, living area, sunroom, deck, and patio. Gathering spaces at The Grace Hospice, however, are primarily private spaces, and include resident rooms, the sunroom, the chapel, and the family room. Within both facilities, these gathering spaces can be characterized as multifaceted places that support communication and privacy, joy and grief, as well as the experience of death and celebration of life (Figure 32 and 33).

▼ F32 | JOCELYN HOUSE HOSPICE | THE GRACE HOSPICE | GATHERING SPACES

F33 | JOCELYN HOUSE HOSPICE | THE GRACE HOSPICE | GATHERING SPACES ▶

4.3 | SUMMARY: PROJECT DESIGN GUIDELINES

Case studies of both Jocelyn House Hospice and The Grace Hospice yielded valuable information regarding current palliative care services and hospice design in Winnipeg. Acknowledging the advantages and restrictions of both facilities in terms of caregiver support, as well as establishing gathering spaces as a critical design element has informed both the programme and subsequent design decisions of this practicum project. The following sections outline the benefits and limitations of the chosen method of analysis, future opportunities for further investigation, and a summary of the key design considerations concluded from the examination of each case study.

4.3.1 BENEFITS, LIMITATIONS, AND OPPORTUNITIES: THE SEMI-STRUCTURED INTERVIEW

Selecting the semi-structured interview of two employees of two independent hospices in Winnipeg as the optimal method of case study analysis for this practicum project, presented benefits, limitations, and opportunities for further research. The benefits and limitations of this analysis are based on the method itself and the execution of the study, while opportunities for further research are reflected in the overall scope of the project.

4.3.1.1 Benefits.

As stakeholders in the delivery of quality end-of-life care for residents and their caregivers, the participation of those who work within current hospice environments was critical to this design investigation. The semi-structured interview of both Jo-Ann Duggan s.q.m. of Jocelyn House Hospice and Shauna Boitson of The Grace Hospice offered a non-invasive method of investigation into the support of caregivers within local independent hospice environments. This format of interview was also chosen as an opportunity for reciprocal learning between healthcare professionals and the realm of interior design. As a result, a broad range of responses and personal expression emerged throughout both interviews, and has influenced the programmatic decisions, spatial considerations, and aesthetic qualities of the final design intervention.

The process of approval from human ethics at the University of Manitoba and the Winnipeg Regional Health Authority was also beneficial to the success of this study. A thorough understanding of my research intentions were developed through a series of documents, including the completion of a Participant Consent Form, Ethics Protocol Submission Form, and Research Access Proposal. These documents provided specific guidelines for the interview process as a means of minimizing the disruption to each participant's day-to-day schedule and the delivery of an articulate and informed interview.

4.3.1.2 Limitations.

Despite the benefits of this specific inquiry process, limitations exist in terms of the demographic and number of participants. The interview of caregivers themselves, as opposed to employees of each hospice, would have provided a more direct evaluation of how each environment supports the needs of caregivers during end-of-life care. If additional participants were also interviewed, a wider range of responses may have been observed as well. Additional participants may have included those who frequent Jocelyn House Hospice and The Grace Hospice on a regular basis, such as healthcare providers, volunteers, and maintenance staff.

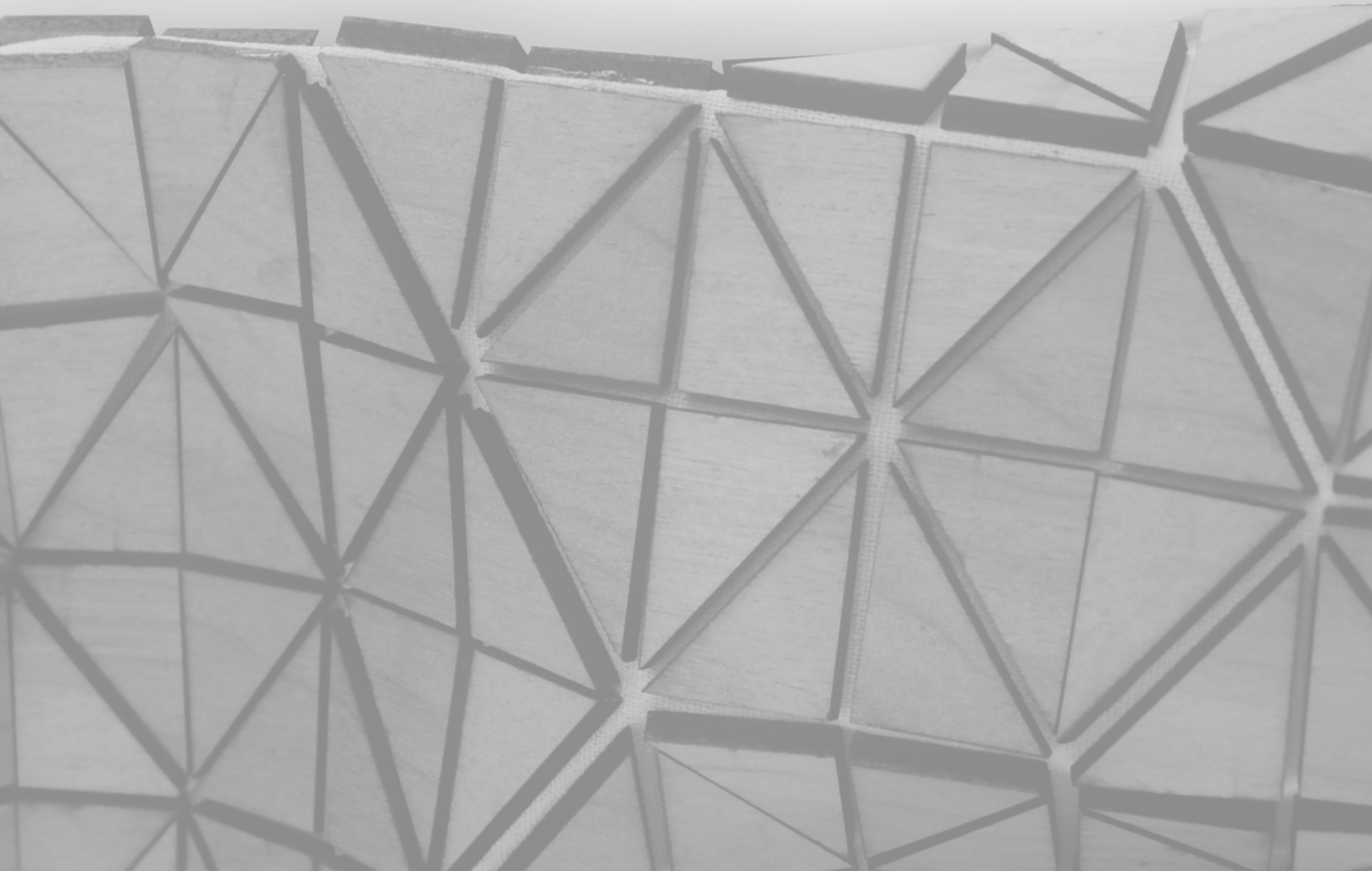
4.3.1.3 Further Research.

Lastly, the limitations of this study present opportunities for further research into the support of caregivers within independent hospice facilities. Conducting interviews with current caregivers of the terminally ill would be suitable for a project of a larger scope and yield a higher volume of information specific to caregiver needs. Multiple interviews conducted with those of a broader range of age, sex, race, cultural group, and religion would also increase the knowledge and understanding of caregiver support at the end of life for multiple affected populations.

4.3.2 KEY DESIGN CONSIDERATIONS: JOCELYN HOUSE HOSPICE AND THE GRACE HOSPICE

The key design considerations derived from the analysis of caregiver support at Jocelyn House Hospice and The Grace Hospice can be summarized into programmatic and atmospheric implications for this practicum project. Table 4 demonstrates these implications by identifying each advantage and limitation of both Jocelyn House Hospice and The Grace Hospice, and directly translating them into specific design considerations for the proposed independent hospice facility. These design considerations include: spatial planning, aesthetic qualities, zoning and circulation paths, and accessibility issues.

HOSPICE	ADVANTAGES	LIMITATIONS	KEY DESIGN CONSIDERATIONS
JOCELYN HOUSE HOSPICE	*Open concept.*	-	*Promote active communication between caregiver, healthcare provider, and resident through an open concept plan.*
	Location along the Seine River.	-	*Foster both visual and physical connections between the built environment and the natural environment in order to promote human health and wellness.*
	-	*Small resident rooms.*	*Design resident rooms with enough space to comfortably accommodate the gathering of caregivers, family members, and friends.*
	-	*Split-level building plan.*	*Select a single story building to avoid accessibility concerns for those with mobility issues.*
	-	*Active transportation issues as a result of building location.*	*Select a site that is in close proximity to active transportation routes and major thoroughfares.*
	-	*Proximity to the Seine River preventing building expansion.*	*Select a site that is large enough to accommodate future hospice expansion if necessary.*
	Gathering spaces.	-	*Initiate interpersonal connections between caregivers and healthcare providers, volunteers, residents, and fellow caregivers through the use of public, semi-private and private gathering spaces.*
THE GRACE HOSPICE	*Consistency of all resident rooms, in terms of their relative size, view, and inventory of amenities.*	-	*Provide each resident with a room that is consistent in relative size, view, and inventory of amenities – no room is better than another.*
	Spacious resident rooms.	-	*Design resident rooms with enough space to comfortably accommodate the gathering of caregivers, family members, and friends.*
	Resident rooms aligned on one side of the corridor.	-	*Provide caregivers with secondary spaces of pause directly adjacent resident rooms.*
	Slight curvature of the hallway adjacent to resident rooms.	-	*The strategic design of exists to ensure the discrete removal of the loved one following their passing.*
	Intimate private spaces.	-	*The use of private and semi-private spaces to ensure confidentiality and privacy when necessary.*
	-	*Large scale public areas.*	*Create public spaces that are large enough to accommodate the gathering of caregivers, residents, healthcare professionals, and volunteers, yet small enough to create a sense of intimacy.*
	-	*Spatial congruency between public areas.*	*Design public spaces that flow between one another through an open concept plan.*
	Gathering spaces.	-	*Initiate interpersonal connections between caregivers and healthcare providers, volunteers, residents, and fellow caregivers through the use of public, semi-private and private gathering spaces.*



CHAPTER 5.0

HEALTH AND WELL-BEING, BIOPHILIC DESIGN PRINCIPLES, AND CAREGIVERS

There is a direct relationship between the built environment and human health and well-being (Srinivasan, O'Fallon, & Dearry, 2003). When applied to hospice environments, this relationship can positively or adversely affect the physical, psychological, psychosocial, and spiritual state of caregivers. As the health and well-being of caregivers is critical to the quality end-of-life care of the patient (Bialon & Coke, 2012), the ability of hospice interior and exterior environments to support the needs of caregivers is imperative. This chapter suggests the integration of fundamental and evidence-based healthcare design strategies and human-nature connections as both programmatic and atmospheric methods of alleviating the adverse effects of caregiving, identified in Chapters 2 and 3, within a hospice environment. More specifically, the first section of this chapter analyses the fundamental recommendations for improved indoor environmental quality (IEQ) and evidence-based healthcare design strategies, where the second section investigates biophilia in terms of restorative environmental design, biophilic design principles, evidence-based biophilic healthcare design, and biophilic architectural space.

5.1 | HEALTH AND WELL-BEING: HOSPICE ENVIRONMENTS

5.1.1 INDOOR ENVIRONMENTAL QUALITY (IEQ)

Providing an environment that is both physically and psychologically healthy for those living, practicing, and visiting an independent hospice, can be supported through the indoor environmental quality (IEQ) of the facility. Indoor environmental quality is an evaluation of five primary elements essential in the creation of a healthier interior environment. These five primary elements include indoor air quality (IAQ), thermal comfort, acoustic comfort, daylighting, and views (Bonda & Sosnowchik, 2007). Each of the five elements of IEQ is evaluated below as a means of establishing appropriate mechanical systems, material selections, furniture, fixtures and equipment (FF&E), as well as spatial adjacencies for the proposed hospice facility.

5.1.1.1 Indoor Air Quality.

Indoor air pollutants compromise the health, comfort, productivity, and learning abilities of building occupants (Black, 2007). Remediating these effects of poor indoor air quality (IAQ) by eliminating potential pollutants requires three specific design considerations: ventilation, filtration, and source control. Supply, circulation, and filtration of clean air within a building can be achieved through appropriate ventilation rates and the maintenance of Heating, Ventilation, and Air Conditioning (HVAC) systems (Bonda & Sosnowchik, 2007). The cleanliness of the air itself can also be sustained through pollutant source control. As many building materials, furniture, and finishes contain volatile organic compounds (VOCs), selecting products that are low or no-emitting can drastically reduce indoor air pollutants and increase the overall IAQ of the environment (Bonda & Sosnowchik, 2007).

5.1.1.2 Thermal Comfort.

Maintaining an appropriate thermal comfort for building occupants can be difficult to achieve; where temperature, humidity, and air movement all influence the indoor thermal experience. Design implications in terms of thermal comfort and regulation can include personal thermal controls for each space, as well as the uniform distribution and circulation of air through raised-floor systems (Bonda & Sosnowchik, 2007).

5.1.1.3 Noise Pollution.

Analogous to indoor air pollutants, noise pollution can adversely affect the well-being and performance of hospice residents, caregivers, employees, visitors, and volunteers. The acoustics of a space can be controlled via the "ABCs of speech privacy" – Absorb, Block, and Cover. Table 5 summarizes the ABCs of speech privacy in terms of product selection and performance indicators (Bonda & Sosnowchik, 2007).

5.1.1.4 Daylighting and Views.

The benefits of natural light and access to views of the outdoors affects not only its occupants, but the operational requirements of the building as well. When provided with access to appropriate daylight levels and views, the occupant's well-being and performance increases as the building itself lowers

its energy consumption, and congruently its operating costs. The use of light shelves, window coverings, louvers, window films, skylights, and views of nature are a number of the ways in which these benefits can be achieved.

Although each of the five elements of indoor environmental quality are widely utilized in a broad range of building typologies, these elements can be directly translated into specific design considerations for an independent hospice facility that promotes the health and well-being of its occupants. More specifically – **Indoor Air Pollutants:** the use of displacement ventilation and a MERV 13-16 rated (Minimum Efficiency Rating Value) filtration system that both minimize the presence of airborne pollutants and are in accordance with the Canadian Standards Association (CSA) for the design of healthcare facilities. Additionally, the conscious selection of materials, furniture, and finishes that are low or no-emitting; **Thermal Comfort:** the maintenance of personal thermal comfort through a radiant in-floor heating and cooling system that uniformly distributes and circulates air; **Noise Pollution:** the absorption, blockage, and covering of noise pollution through the selection of appropriate furniture, finishes, and equipment; **Natural Light:** the selection of a building that offers ample natural light through openings and orientation; and **Views:** the provision of views to the natural environment from every vantage point of the facility.

▼ T5 | THE ABCs OF SPEECH PRIVACY

METHOD	PRODUCTS TO USE	PERFORMANCE INDICATORS
***A**BSORB*	*Acoustical ceilings + fabrics + carpets*	*AC rating + NRC rating + IIC rating + INR rating*
***B**LOCK*	*Furniture systems + panels + walls + partitions + screens + glass*	*STC rating + CAC rating*
***C**OVER*	*Sound masking – plenum-mounted or in-ceiling*	*dB/dBA rating*

5.1.2 EVIDENCE-BASED HEALTHCARE DESIGN

Evidence-based healthcare design has been developing and expanding its knowledge base for over for over twenty-five years. Evidence-based healthcare design is defined as a field of study and research method that utilizes empirical investigations and concrete evidence to guide the design of healthcare facilities (McCullough, 2010). This design approach analyzes and promotes the health benefits associated with specific design features of the physical environment (Berry, Parker, Coile, Haliton, O'Neill, & Sadler, 2004).

Professor of architecture and the leading international researcher in evidence-based healthcare design, Dr. Roger Ulrich has completed three extensive studies over the past eight years that outline evidence-based healthcare design strategies and its knowledge gaps to date (Ulrich, Berry, Quan, & Parish, 2010; Ulrich, et al., 2008; Ulrich, Zimring, Quan, Joseph, & Choudhary, 2004). Ulrich's design methodologies have been evaluated most extensively within hospital settings, and relate most often to patients and staff (Ulrich, et al., 2008; Ulrich et al., 2004). As caregivers can be viewed as both recipients and providers of care (Monroe & Oliviere, 2009), similar design considerations can be applied to caregivers within hospice environments. The following summarizes the design considerations concluded by each study.

A comprehensive examination and evaluation of literature related to "how improved hospital design can help reduce staff stress and fatigue and increase effectiveness in delivering care, improve patient safety, reduce patient and family stress and improve outcomes, and improve overall healthcare quality" was conducted by Ulrich et al. in 2004 (Ulrich et al., 2004). This extensive inquiry of over "600 rigorous studies" related to hospital environments and health, resulted in a summarization of seven key design strategies for healthier healthcare environments. These seven key design strategies included:

1. Single-bed rooms as a method to " lower hospital-induced nosocomial infections, reduce room transfers and associated medical errors, greatly lessen noise, improve patient confidentiality and privacy, facilitate social support by families, improve staff communication to patients, and increase patients' overall satisfaction with health care";

2. Noise reduction as a method of reducing stress and improving sleep. Design considerations may include the provision of single-bed rooms, high-performance sound-absorbing ceilings, and the elimination of noise sources;

3. Views of nature as a method of reducing patient stress and creating positive distractions;

4. Wayfinding systems as a method that "allow[s] users, and particularly outpatients and visitors, to find their way efficiently and with little stress";

5. "Improve[d] ventilation through the use of improved filters, attention to appropriate pressurization, and special vigilance during construction";

6. Natural and full-spectrum light as a method of improved lighting; and

7. Spatial adjacency and planning considerations for wards and nursing stations as a method to "reduce staff walking and fatigue, increase patient care time, and support staff activities such as medication supply, communication, charting, and respite from stress." (Ulrich et al., 2004)

This study was updated and elaborated on in 2008 by Ulrich et al., where it categorized further design strategies for improving patient safety through environmental measures, improving other patient outcomes through environmental measures, and improving staff outcomes through environmental measures (Ulrich, et al., 2008). Table 6 illustrates a summary of the relationships between design strategies and healthcare outcomes described throughout the study.

▼ T6 | SUMMARY OF THE RELATIONSHIPS BETWEEN DESIGN FACTORS AND HEALTHCARE OUTCOMES

HEALTHCARE OUTCOMES / DESIGN STRATEGIES OR ENVIRONMENTAL INTERVENTIONS	*SINGLE-BED ROOMS*	*ACCESS TO DAYLIGHT*	*APPROPRIATE LIGHTING*	*VIEWS OF NATURE*	*FAMILY ZONE IN PATIENT ROOMS*	*CARPETING*	*NOISE-REDUCING FINISHES*	*CEILING LIFTS*	*NURSING FLOOR LAYOUT*	*DECENTRALIZED SUPPLIES*	*ACUITY-ADAPTABLE ROOMS*	
REDUCED HOSPITAL-ACQUIRED INFECTIONS	++											
REDUCED MEDICAL ERRORS	+		+				+				+	
REDUCED PATIENT FALLS	+		+		+	+			+		+	
REDUCED PAIN		+	+	++			+					
IMPROVED PATIENT SLEEP	++	+	+				+					
REDUCED PATIENT STRESS	+	+	+	++	+		++					
REDUCED DEPRESSION		++	++	+	+							
REDUCED LENGTH OF STAY		+	+	+							+	
IMPROVED PATIENT PRIVACY AND CONFIDENTIALITY	++				+		+					
IMPROVED COMMUNICATION WITH PATIENTS AND FAMILY MEMBERS	++				+		+					
IMPROVED SOCIAL SUPPORT	+				+	+						
INCREASED PATIENT SATISFACTION	++	+	+	+	+	+	+					
DECREASED STAFF INJURIES								++			+	
DECREASED STAFF STRESS	+	+	+	+			+					
INCREASED STAFF EFFECTIVENESS	+		+				+		+	+	+	
INCREASED STAFF SATISFACTION	+	+	+	+			+					

+ *Indicates that a relationship between the specific design factor and healthcare outcome was indicated, directly or indirectly, by empirical studies reviewed in this report.*
++ *Indicates that there is especially strong evidence (converging findings from multiple rigorous studies) indicating that a design intervention improves a healthcare outcome.*

Most recently, Ulrich et al. published "A Conceptual Framework for the Domain of Evidence-Based Design" in the fall of 2010. This article outlined a conceptual framework for the evolution of evidence-based healthcare design and the knowledge gaps between specific healthcare facility design variables, participants, and organizational outcomes (Ulrich et al., 2010). This study is most relevant to this practicum project, as it specifically compared family outcomes to built environment design variables. Table 7 demonstrates the need for additional research in the area of family outcomes, where the overall satisfaction with family support spaces is the only design intervention supported by "converging findings from multiple rigorous studies" (Ulrich et al., 2010).

▼ T7 | THE STATE OF EVIDENCE-BASED DESIGN RESEARCH FOR FAMILY OUTCOMES

BUILT ENVIRONMENT DESIGN VARIABLE CATEGORIES	FAMILY OUTCOMES								
	QUALITY OF STAFF COMMUNICATION TO FAMILY	*PERCEIVED MEDICAL QUALITY*	*PERCEIVED SERVICE QUALITY*	*PERCEIVED RESPECT OF FAMILY ROLE*	*TIME SPENT AT FACILITY*	*TIME SPENT WITH PATIENT*	*COMMITMENT TO HOSPITAL*	*OVERALL SATISFACTION*	*STRESS/EMOTIONAL DURESS*
AUDIO ENVIRONMENT	*1*		*1*		*1*	*1*	*1*	*2*	*1*
VISUAL ENVIRONMENT			*1*		*1*	*1*	*1*	*1*	*1*
SAFETY ENHANCEMENT		*1*	*1*					*1*	
WAYFINDING SYSTEM			*2*	*1*	*1*	*1*	*1*	*2*	*1*
SUSTAINABILITY			*1*		*1*	*1*	*1*	*1*	*1*
PATIENT ROOM	*2*	*2*	*2*	*1*	*1*	*2*	*2*	*2*	*1*
FAMILY SUPPORT SPACES			*2*	*2*	*1*	*1*	*1*	*3*	*2*

1 *Indicates that a relationship between the specific design factor and an outcome is not yet supported directly by empirical studies, but may be considered a plausible hypothesis given theory and indirectly relevant research.*
2 *Indicates that a relationship between this specific design factor and healthcare outcomes is supported by empirical studies.*
3 *Indicates there is especially strong evidence (converging finding from multiple rigorous studies) indicating that the design intervention influences a healthcare outcome.*
Empty cell indicates that there is no relationship between the design factor and the outcome

The evaluation of the evidence-based healthcare design strategies outlined by Ulrich et al. in 2004, 2008 and 2010, offers a number of specific design guidelines for the development of a comprehensive programme for the proposed facility. Collectively, these design guidelines include the following: single-bed rooms; access to daylight; appropriate lighting; views of nature; family zone in patient rooms; noise-reducing finishes; ceiling lifts; convenient nursing floor layout; decentralized supplies; acuity-adaptable rooms; wayfinding systems; improved ventilation; and family support spaces.

The analysis of indoor environmental quality and evidence-based healthcare design is ultimately to acknowledge and apply the benefits of well-designed healthcare environments on the health and well-being of its occupants. Both methodologies offer common strategies that can be translated into the design of healthier, safer and more efficient hospice environments that support the needs of informal caregivers during end-of-life care. Lastly, these strategies provide a foundation of supportive literature for the biophilic design principles discussed in the following section. Inspired by direct and indirect connections to nature, biophilia solidifies the synergistic relationship between human health and the built environment.

5.2 | BIOPHILIC DESIGN PRINCIPLES

> "Life follows life"
>
> – Richard Cook
>
> (Finnegan, 2011)

The inherent connection between humans and nature is an extension of our evolutionary progression within a predominately natural, inartificial world (Kellert, 2008). This innate human affinity for life and lifelike processes is termed *biophilia* (Wilson, 1984), where it's translation into the design of the built environment is defined as *biophilic design* (Kellert, 2008). The importance of biophilia and biophilic design to the sustainability of human physical, emotional, and intellectual health and well-being are in direct correlation with the intentions of this practicum project. The following analysis of restorative environmental design, biophilic design principles, evidence-based biophilic healthcare design, and biophilic architectural space offers a method by which nature can inform the conceptual framework, spatial character, and architectural language of the design of an independent hospice facility.

5.2.1 RESTORATIVE ENVIRONMENTAL DESIGN AND BIOPHILIC DESIGN PRINCIPLES

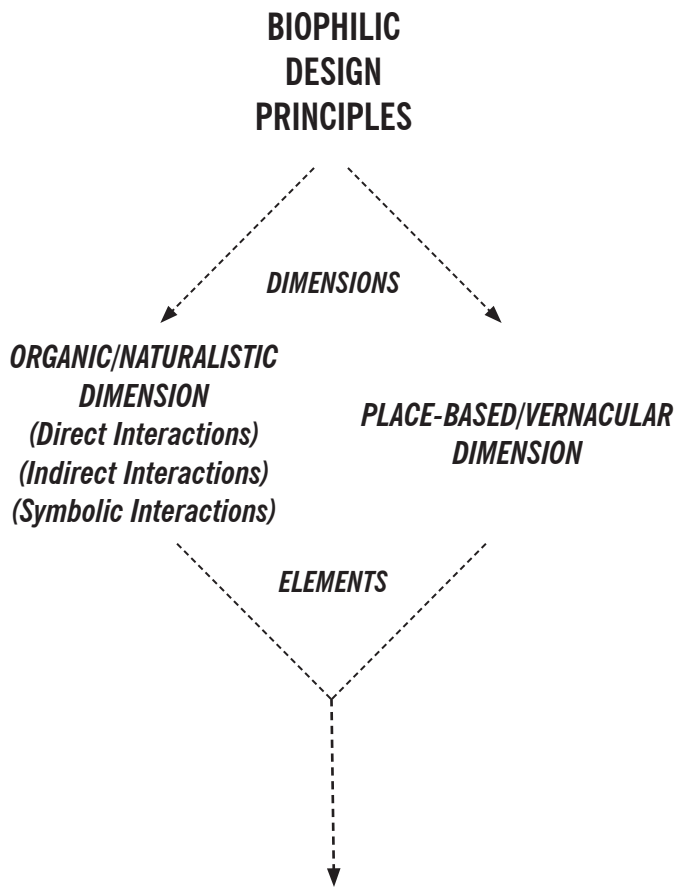
There is a current disengagement between humans and nature as a result of an unsustainable modern urban built environment. In an effort to shift away from this unsustainable design paradigm, "restorative environmental design" offers a more holistic strategy that "fosters beneficial contact between people and nature in modern buildings and landscapes" (Kellert, 2008). This approach also aspires towards a "low-environmental-impact strategy that minimizes and mitigates adverse impacts on the natural environment" (Kellert, 2008). As current sustainable design strategies traditionally focus on the latter half of restorative environmental design, the contact between people and nature can be supported through the incorporation of biophilic design principles. These principles can be separated into two basic dimensions, six elements, and over 70 attributes (Kellert, 2008) that collectively contribute to the development of a conceptual framework for the design of an independent hospice facility.

The organic or naturalistic dimension represents the first dimension of biophilic design. This dimension is identified as the "shapes and forms in the built environment that directly, indirectly, or symbolically reflect the inherent human affinity for nature" (Kellert, 2008). Direct interactions with nature refer to the "relatively unstructured contact with self-sustaining features of the natural environment", including "daylight, plants, animals, natural habitats, and ecosystems" (Kellert, 2008). An indirect interaction "involves contact with nature that requires ongoing human input to survive", for example, a "potted plant, water fountain, or aquarium" (Kellert, 2008). Lastly, the symbolic interaction with nature "involves no actual contact with real nature, but rather the representation of the natural world through image, picture, video, metaphor, and more" (Kellert, 2008). The second dimension of biophilic design is the place-based or vernacular dimension. This dimension is represented in the "buildings and landscapes that connect to the culture and ecology of a locality or geographic landscape", where a sense of familiarity and meaning is achieved through the built form (Kellert, 2008).

The organic/naturalistic and place-based/vernacular dimensions of biophilic design can be translated further into six elements of biophilic design. These elements include: environmental features, natural shapes and forms, natural

patterns and processes, light and space, place-based relationships, and evolved human-nature relationships. Environmental features represent "relatively well-recognized characteristics of the natural world in the built environment" (Kellert, 2008). Natural shapes and forms are "representations and simulations of the natural world often found on building facades and within interiors" (Kellert, 2008). Natural patterns and processes represent "the incorporation of properties found in nature into the built environment" (Kellert, 2008). Light and space represent the "qualities of light" distributed throughout a space (Kellert, 2008). Place-based relationships represent "the successful marriage of culture with ecology in a geographical context" (Kellert, 2008). Lastly, the evolved human-nature relationships represent "the fundamental aspects of the inherent human relationship to nature" (Kellert, 2008). These six elements can be broken down further into over 70 biophilic design attributes (Kellert, 2008). Figure 34 is a diagrammatic interpretation of the above dimensions, elements, and attributes of biophilic design in an effort to visually represent the inherent connections between humans, nature, health, and the built environment.

The incorporation of restorative environmental design qualities and biophilic design dimensions, elements, and attributes within the proposed hospice, represents a literal and conceptual translation of the quote "life follows life" (Finnegan, 2011) where the human affinity for natural systems is exemplified. As the affinity for natural systems is at the core of human health and well-being, the use of natural qualities, dimensions, elements, and attributes throughout the facility will create a hospice atmosphere which supports the physical, psychological, psychosocial, and spiritual needs of caregivers.



▲ F34 | DIMENSIONS, ELEMENTS, AND ATTRIBUTES OF BIOPHILIC DESIGN

5.2.2 EVIDENCE-BASED BIOPHILIC HEALTHCARE DESIGN

In addition to the growing body of empirical research and literature regarding evidence-based healthcare design, evidence-based *biophilic* healthcare design has also been proven to reduce patient, caregiver, and healthcare provider stress and improve health outcomes, including observable signs and symptoms, satisfaction, safety, and economic outcomes (Ulrich, et al., 2008). One of the first conclusive studies of nature's direct impact on human health and well-being was conducted in 1984 by previously mentioned pioneer of evidence-based healthcare design, Dr. Roger Ulrich. His study focused on the "restorative effect of natural views" on the intake of pain medications, duration of stay, presence and/or severity of complications, and recovery period of surgical patients in hospital settings (Ulrich R. S., 1984). Ulrich (1984) found that patients with a landscape view used fewer narcotics for pain, had shorter hospital stays, and a more positive postsurgical recovery than those with views to a brick wall (Ulrich R. S., 1984). His conclusions became the catalyst for further studies related to the healing effects of biophilia within healthcare environments. Ulrich (2008) examined biophilic attributes, including exposure to daylight, naturalistic art and gardens, which resulted in implications for the evidence-based biophilic design considerations of current healthcare facilities (Ulrich R. , 2008). Utilizing the text provided by Ulrich (2008), Table 8 outlines the eight identified healthcare design recommendations in terms of spatial considerations and health outcomes, in order to understand the emerging trends in biophilic healthcare design and their influence on the design of hospice environments (Ulrich R. , 2008). Many of these recommendations have been incorporated into the design of the proposed facility as a means of improving the physical and mental well-being of caregivers, patients, staff, and volunteers.

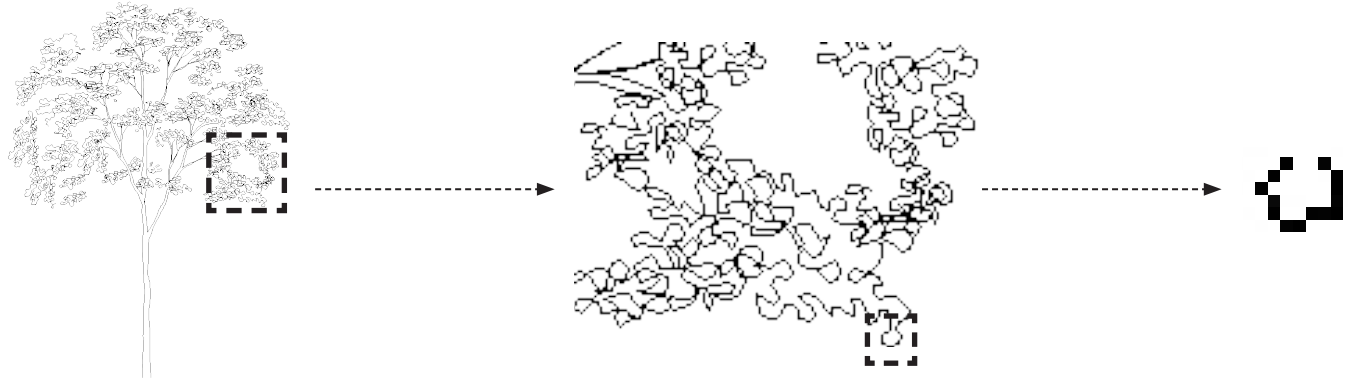
▼ T8 | IMPLICATIONS FOR EVIDENCE-BASED BIOPHILIC HEALTHCARE DESIGN (ULRICH, ET AL., 2008)

HEALTHCARE DESIGN RECOMMENDATIONS	SPATIAL CONSIDERATIONS	HEALTH OUTCOMES
RESTORATIVE WINDOW VIEWS OF NATURE AND GARDENS.	*Located in patient rooms, waiting areas, staff work spaces, and any additional high-stress interior environments;* *Bedridden patients should also have a direct view of natural environments; and* *Prioritization of these views within treatment rooms, procedure rooms, and any additional spaces of high stress and/or pain.*	*Reduced stress and pain.*
NATURE VIEWS OF GREEN FOLIAGE, FLOWERS, WATER, SAVANNA-LIKE OR PARK-LIKE CHARACTERISTICS, UNTHREATENING WILDLIFE, AND SUNSHINE OR GOOD LIGHT.	*Avoid window views of spaces that are dominated by hardscape or starkly built, rooftops and parking lots lacking vegetation, walls of other buildings, and abstract or ambiguous sculpture that can be interpreted in multiple ways.*	*Alleviation of stress; and* *Improved patient outcomes.*
DAYLIGHT AND SUN EXPOSURE.	*Building orientation and site planning; and* *Avoid a site that may be shaded by surrounding buildings.*	*Reduced patient depression, pain, and other improved outcomes.*
AVOID DEEP PLAN BUILDING LAYOUTS AND FLOOR PLANS WITH A LARGE PROPORTION OF WINDOWLESS ROOMS.	*Avoid patient windows that face an enclosed and roofed atrium with few skylights and little natural light.*	*May worsen patient and staff outcomes; and* *May cause privacy issues, where patient windows may need to be tinted.*
EXPOSURE TO DAYLIGHT AND RESTORATIVE NATURE VIEWS THROUGH LARGE WINDOWS.	*Located in patient rooms and other spaces of high depression, pain, and stress;* *Avoid designs that create sun glare patches; and* *Patient bathrooms should be located on the hallway or headwall side of the room, as opposed to the window or outboard wall.*	*Reduced patient depression, pain, and stress.*
WELL-DESIGNED OUTDOOR GARDENS FOR PATIENTS, FAMILY, AND STAFF.	*Prominent real nature content, convenient wayfinding to the garden, accessibility, movable seating that facilitates social interaction, access to privacy, congruent nature sounds rather than intrusive urban or machine sounds, and opportunities for physical activity, movement, or exercise;* *Easily accessible shade;* *Support of restorative sedentary activities – such as viewing nature and socializing – for adult family members and staff.* *Active play features and calm refuges for children's gardens and their parents; and* *Decentralized gardens close to patient care units, waiting areas, and staff work spaces in large facilities.*	*Increase in overall health and well-being;* *Increase in benefits; and* *Increase in garden use.*
VISUAL ART IS DISPLAYED.	*Located in patient rooms and other spaces where stress and pain are problems;* *Representation nature subject matter with unambiguously positive content is given priority;* *Subject matter categories may include: waterscapes with calm or nonturbulent water; landscapes with visual depth or openness in the immediate foreground; nature settings depicted during warmer seasons when vegetation is verdant and flowers are visible; scenes with positive cultural artifacts such as barns and older houses in nature surroundings; garden scenes; people at leisure in places with prominent nature; and outdoor scenes in sunny conditions, not overcast or foreboding weather; and* *Avoid abstract, emotionally negative, or surreal artwork.*	*Reduced stress and pain.*
TECHNOLOGY THAT ALLOWS PATIENTS TO EXPERIENCE SIMULATED NATURE.	*Located in high stress environments where visual contact with real nature is not feasible; and* *Nature simulations involving both visual and audio may be more engrossing and thus alleviate extreme pain.*	*Reduced stress and pain.*

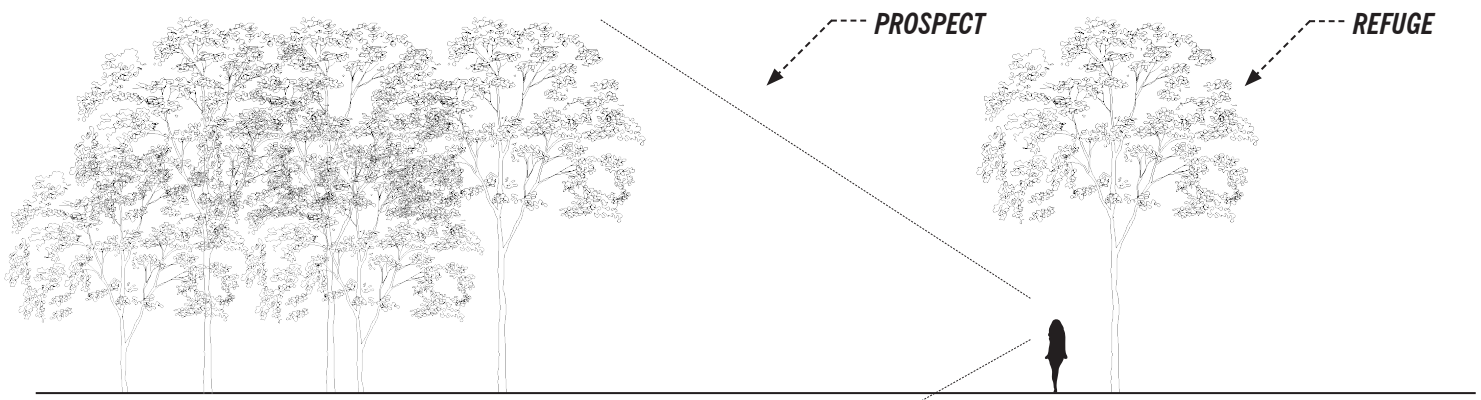
5.2.3 BIOPHILIC ARCHITECTURAL SPACE | FIVE SURVIVAL-ADVANTAGEOUS CHARACTERISTICS

The evolutionary theory of natural selection – introduced by Charles Darwin in his 1856 book, On The Origin of Species – describes the ways in which our species has evolved to either express or inhibit specific traits related to functional objectives (Darwin, 1859). Biophilic architectural space is a translation of this evolutionary theory into the built form, where five "survival-advantageous characteristics" have been identified. Based on empirical research and theoretical knowledge, these five characteristics hypothesize common attributes of architectural language that we as a species find attractive, in an effort to create a lasting built environment (Hildebrand, 2008). The analysis of complex order, prospect and refuge, enticement and peril, individually and collectively assist in the generation of conceptual framework for this design intervention.

Complex order is the conscious and unconscious human attraction to the order and complexity of sensory materials found in the built environment. Order and complexity, however, must occur simultaneously – as to avoid the resultant monotony or chaos in their independence of one another (Figure 35) (Hildebrand, 2008). The theories of prospect and refuge autonomously express the human need for both opportunity and safety. Essentially, "from the refuge we must be able to survey the prospect, and from the prospect we must be able to retreat to the refuge (Figure 36) (Hildebrand, 2008). Enticement offers a "view and access to a setting brighter than the one we occupy, whose features are only partly revealed" (Figure 37) (Hildebrand, 2008). Lastly, the concept of peril fully acknowledges the characteristic dangers of a specific setting, conscious of the fact that these represent dangers that we are capable of controlling. Peril must not be mistaken for anxiety, as anxiety represents dangers that are not entirely within our control (Figure 38) (Hildebrand, 2008).

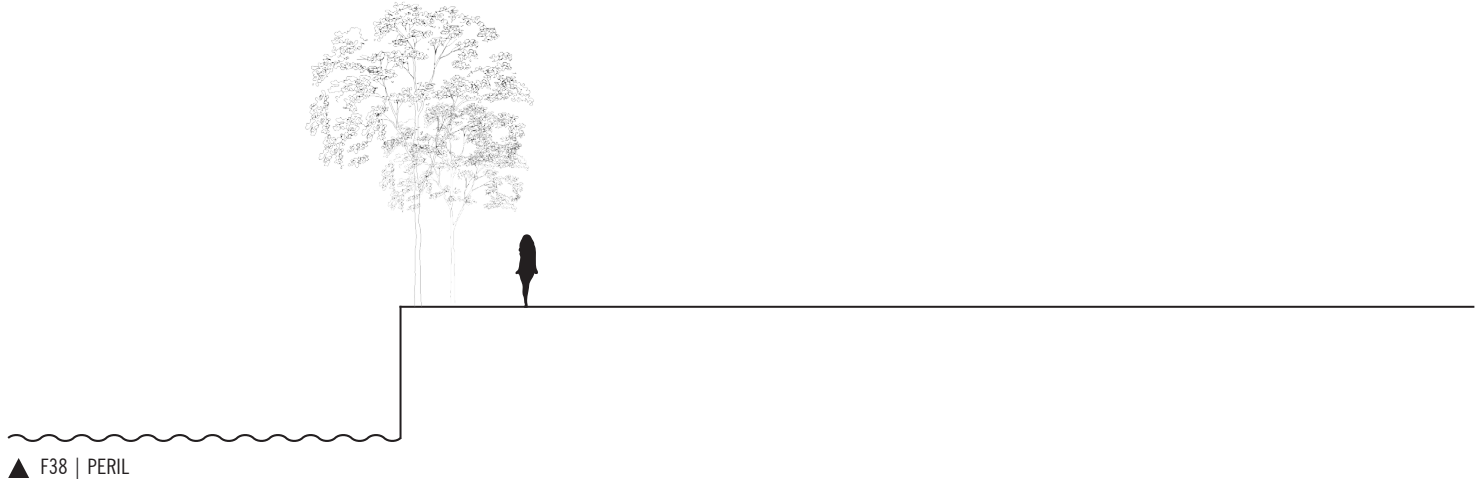


▲ F35 | COMPLEX ORDER



▲ F36 | PROSPECT AND REFUGE

▲ F37 | ENTICEMENT

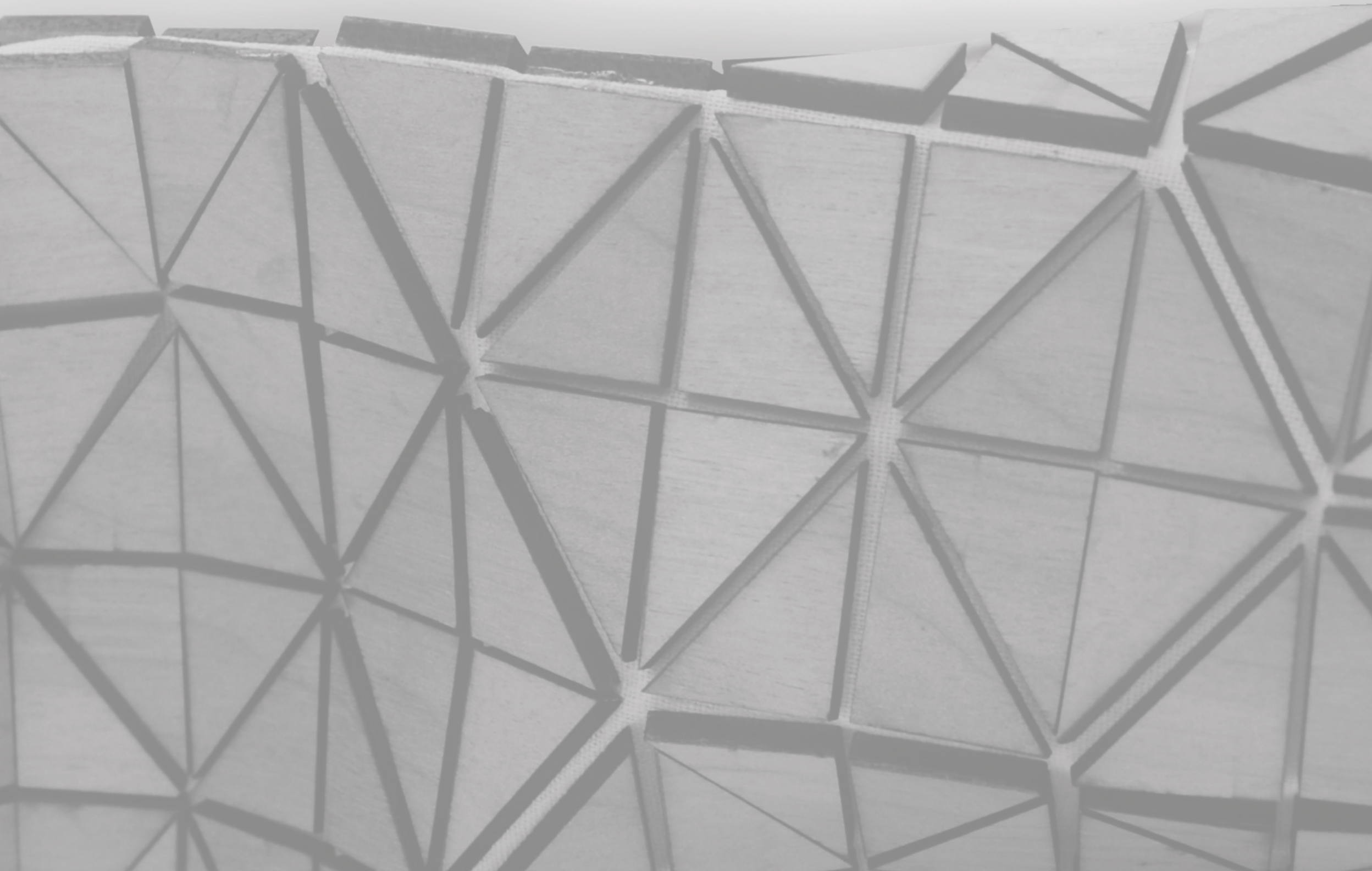


▲ F38 | PERIL

5.3 | SUMMARY: PROJECT DESIGN GUIDELINES

As a means of understanding the physical, psychological, psychosocial, and spiritual needs of caregivers, the adverse effects of caregiving at the end-of-life have been identified in Chapters 2 and 3. This chapter, however, recognizes and suggests the fundamental strategies of quality built environments and the tenets of biophilic design as an approach to alleviating many of the identified adverse effects of caregiving. Additionally, many of the environmental design strategies and innate human-nature connections have contributed to the development of a functional and conceptual framework for the proposed design intervention. Specific functional and conceptual guidelines derived from the literature have been summarized below (Table 9). It is important to note that many of the following design strategies and guidelines have overlapping characteristics and health outcomes.

SECTION	CONCEPTS FROM LITERATURE	KEY DESIGN CONSIDERATIONS
INDOOR ENVIRONMENTAL QUALITY	*Five primary elements of indoor environmental quality:* *1. Indoor air quality (IAQ);* *2. Thermal comfort;* *3. Acoustic comfort;* *4. Daylighting; and* *5. Views.*	*Create an independent hospice facility that promotes the health and well-being of its occupants through the five elements of indoor environmental quality:* *1. Indoor Air Pollutants: the use of displacement ventilation and a MERV 13-16 rated (Minimum Efficiency Rating Value) filtration system that both minimize the presence of airborne pollutants and are in accordance with the Canadian Standards Association (CSA) for the design of healthcare facilities. Additionally, the conscious selection of materials, furniture, and finishes that are low or no-emitting;* *2. Thermal Comfort: the maintenance of personal thermal comfort through a radiant in-floor heating and cooling systems that uniformly distributes and circulates air;* *3. Noise Pollution: the absorption, blockage, and covering of noise pollution through the selection of appropriate furniture, finishes, and equipment;* *4. Natural Light: the selection of a building that offers ample natural light through openings and orientation; and* *5. Views: the provision of views to the natural environment from every vantage point of the facility.*
EVIDENCE-BASED HEALTHCARE DESIGN	*Evidence-based healthcare design strategies outlined by Ulrich et al. in 2004, 2008 and 2010.*	*Establish a comprehensive programme that responds to the evaluation of the evidence-based healthcare design strategies outlined by Ulrich et al. in 2004, 2008, and 2010. Collectively, these design strategies include the following:* *- Single-bed rooms;* *- Access to daylight;* *- Appropriate lighting;* *- Views of nature;* *- Family zone in patient rooms;* *- Noise-reducing finishes;* *- Ceiling lifts;* *- Convenient nursing floor layout;* *- Decentralized supplies;* *- Acuity-adaptable rooms;* *- Wayfinding systems;* *- Improved ventilation; and* *- Family support spaces.*
RESTORATIVE ENVIRONMENTAL DESIGN AND BIOPHILIC DESIGN PRINCIPLES	*Restorative environmental design that "fosters beneficial contact between people and nature in modern buildings and landscapes" and the two dimensions, six elements, and over 70 attributes of biophilic design principles.*	*A literal and conceptual translation of the quote "life follows life", where the human affinity for natural systems is exemplified through design.*
EVIDENCE-BASED BIOPHILIC HEALTHCARE DESIGN	*Evidence-based biophilic healthcare design recommendations outlined by Ulrich in 1984 and 2008.*	*Incorporate the eight evidence-based biophilic healthcare design recommendations:* *1. Restorative views of nature and gardens;* *2. Views of nature that include foliage, flowers, water, savanna-like/park-like characteristics, unthreatening wildlife, and sunshine or good light;* *3. Daylight and sun exposure;* *4. The avoidance of deep plan layouts and windowless spaces;* *5. Large windows;* *6. Outdoor gardens;* *7. Visual art; and* *8. Technology for simulated nature.*
BIOPHILIC ARCHITECTURAL SPACE	*The five survival-advantageous characteristics of biophilic architectural space:* *1. Complex Order;* *2. Prospect;* *3. Refuge;* *4. Enticement; and* *5. Peril*	*Create an architectural language that reflects the five survival-advantageous characteristics of biophilic architectural space:* *1. Complex order: the strategic utilization of volume development, form, scale, massing, colour, and materiality inspired by the natural environment;* *2. Prospect: the representation of opportunity by means of emphasizing the visual and physical connection between spaces – public versus private and interior versus exterior;* *3. Refuge: the provision of appropriate spaces of safety, pause, and recluse;* *4. Enticement: strategic spatial planning in terms of sightlines, views, and vistas; and* *5. Peril: the acknowledgement of death, yet the celebration of life, through open concept spatial planning.*



CHAPTER 6.0
PRECEDENT ANALYSIS

A precedent analysis of architectural and interior design projects is intended to inform the future of the built environment, where designers celebrate a building's successes and improve upon it's limitations. In this chapter, three precedents have been selected for their programmatic and/or atmospheric relationship to the design of an independent hospice facility that supports the needs of informal caregivers during end-of-life care. These programmatic and atmospheric characteristics include caregiver support within a healthcare environment, small-scale integrative healthcare facilities, and the principles of biophilic healthcare design.

6.1 | PRECEDENT I: SEATTLE CANCER CARE ALLIANCE (SCCA) HOUSE

Location: *Seattle, Washington*
Architect/Designer: *Weinstein Architects and Urban Designers LLC + PUBLIC47 Architects LLC*
Size: *14,000 square feet*
Date Completed: *2009*

▲ F39 | SCCA HOUSE

6.1.1 PROGRAMMATIC CHARACTERISTICS

Selected for its active integration of caregivers within a healthcare environment, Seattle Cancer Care Alliance (SCCA) House is a "home away from home" (Seattle Cancer Care Alliance [SCCA], 2013) for oncology patients receiving cancer treatments at the SCCA clinic, and their caregivers. As an alternative to a standard hotel or medical facility, this affordable 80-unit center provides patients and their caregivers with non-institutional temporary housing. Available in three separate options, patients may choose to room by themselves, with their caregivers, or with their families during this challenging experience.

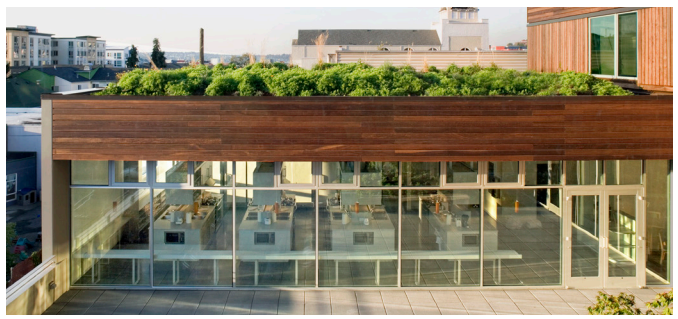
SCCA House also offers a safe, secure, and healthy environment that promotes the active communication between patients, caregivers, staff, and volunteers through the provision of:

- [A] large common kitchen and dining room;
- Exercise room;
- Infection control measures consistent with SCCA clinic…;
- Resource center and library;
- Theater;
- Children's room;
- Meditation room;
- Free laundry units available 24 hours a day;
- Outdoor courtyards;
- Free wireless Internet access;
- Secure garage and parking;
- Free shuttle service to and from SCCA clinic every 20 minutes;
- Secure entry;
- Sponsored events held at SCCA House to support patients and family; and
- Social events, such as community sponsored dinners, bingo nights, and game nights where you can meet and talk with other cancer patients, caregivers, and families. (SCCA, 2013)

6.1.2 ATMOSPHERIC CHARACTERISTICS

In addition to its programmatic qualities, SCCA House is an award winning facility that "strives to create space that will have a healing influence by reducing stress and facilitating interaction between patients and caregivers" (Public47 Architects, n.d.). Weinstein Architects and Urban Designers LLC, and PUBLIC47 Architects LLC have done so by designing an environment that is both healthier for its occupants and environmentally sustainable. The prioritization of the health and well-being of patients, caregivers, staff, and volunteers has been achieved through the incorporation of specific design considerations. These design considerations improve the productivity and mood of occupants, reduce occupant stress, and improve the facility's indoor air quality through the integration of automatic lights, a green rooftop, low volatile organic compound (VOC) paints, carpet, adhesives and flooring, and a high-performance MERV-13 (Minimum Efficiency Reporting Value) air filtration system. In addition to the associated health benefits of the above design considerations, their contribution to the sustainability of the built environment is equally as important. Striving for excellence within the realm of sustainable architecture, SCCA House has also incorporated an energy efficient elevator, low-water toilets, bamboo plywood and brick finishes, and a heat recovery system within its LEED™ Gold Certified building (SCCA, 2013).

The core values, programmatic goals, and sustainable design strategies of SCCA House are a direct reflection of the design objectives this practicum project hopes to achieve. Additionally, their ability to support patients and caregivers in their journey through cancer treatment can be directly translated into the two project goals of this practicum, established in the Project Introduction (see page 6).



▲ F40 | SCCA HOUSE | ROOFTOP GARDEN

▲ F41 | SCCA HOUSE | CORRIDOR

▲ F42 | SCCA HOUSE | LOUNGE AREA

▲ F43 | SCCA HOUSE | KITCHEN AREA

6.2 | PRECEDENT II: MAGGIE'S CENTRES (CURRENTLY OPERATING)

▲ F44 | MAGGIE'S EDINBURGH

Nearest NHS Hospital: *Western General Hospital*
Location: *Edinburgh, Scotland*
Architect/Designer: *Richard Murphy Architects*
Size: *Unknown*
Date Opened: *1996*

▲ F45 | MAGGIE'S GLASGOW GATEHOUSE

Nearest NHS Hospital: *Western Infirmary*
Location: *Glasgow, Scotland*
Architect/Designer: *Page\Park Architects*
Size: *Unknown*
Date Opened: *2002*

▲ F46 | MAGGIE'S DUNDEE

Nearest NHS Hospital: *Ninewells Hospital*
Location: *Dundee, Scotland*
Architect/Designer: *Frank Gehry*
Size: *2422 ft²*
Date Opened: *2003*

▲ F50 | MAGGIE'S CHELTENHAM

Nearest NHS Hospital: *Cheltenham General Hospital*
Location: *Cheltenham, England*
Architect/Designer: *Sir Richard MacCormac, MacCormac Jamieson and Pritchard (MJP) Architects*
Size: *Unknown*
Date Opened: *2010*

▲ F51 | MAGGIE'S GLASGOW GARTNAVEL

Nearest NHS Hospital: *Gartnavel Hospital*
Location: *Glasgow, Scotland*
Architect/Designer: *Rem Koolhaas, Office for Metropolitan Architecture (OMA)*
Size: *5747 ft²*
Date Opened: *2011*

▲ F52 | MAGGIE'S NOTTINGHAM

Nearest NHS Hospital: *Nottingham City Hospital*
Location: *Nottingham, England*
Architect/Designer: *Piers Gough, Campbell Zogolovitch Wilkinson and Gough (CZWG) Architects*
Size: *1181ft²*
Date Opened: *2011*

▲ F47 | MAGGIE'S HIGHLANDS

Nearest NHS Hospital: *Raigmore Hospital*
Location: *Inverness, Scotland*
Architect/Designer: *Page\Park Architects*
Size: *738 ft²*
Date Opened: *2005*

▲ F48 | MAGGIE'S FIFE

Nearest NHS Hospital: *Victoria Hospital*
Location: *Fife, Scotland*
Architect/Designer: *Zaha Hadid*
Size: *approximately 2700 ft²*
Date Opened: *2006*

▲ F49 | MAGGIE'S LONDON

Nearest NHS Hospital: *Charing Cross Hospital*
Location: *Hammersmith, London, England*
Architect/Designer: *Rogers Stirk Harbour + Partners LLP*
Size: *3983 ft²*
Date Opened: *2008*

▲ F53 | MAGGIE'S SOUTH WEST WALES

Nearest NHS Hospital: *Singleton Hospital*
Location: *South West Wales, Wales*
Architect/Designer: *Kisho Kurokawa*
Size: *990 ft²*
Date Opened: *2011*

▲ F54 | MAGGIE'S HONG KONG

Nearest NHS Hospital: *Tuen Mun Hospital*
Location: *Hong Kong, China*
Architect/Designer: *Frank Gehry*
Size: *Unknown*
Date Opened: *2013*

6.2.1 PROGRAMMATIC CHARACTERISTICS

Inspired by a personal struggle with cancer, Maggie's Centres foster a comforting, healthy, and architecturally intriguing environment for those affected by cancer. Each of the eleven functioning centres is located adjacent to a UK National Health Service (NHS) cancer hospital, where their programme focuses on the psychosocial aspects of cancer care (Lee, 2010). Maggie's programme offers five core elements of support that include: emotional and psychological support, relaxation and stress management, the explanation and provision of information, benefits and financial advice, and practical support for living with cancer (Maggie's Centres, n.d.). These five elements of support are a direct reflection of the programmatic initiatives proposed for the hospice, where similarly to caregivers, anyone "liv[ing] with, through, and beyond cancer…" (Maggie's Centres, n.d.) is welcome.

6.2.2 ATMOSPHERIC CHARACTERISTICS

Designed by world-renowned architects, including Frank Gehry, Zaha Hadid and Rem Koolaas, Maggie's Centres provide a "welcoming, domestic, warm, skittish, personal, [and] small-scaled" (Jencks, 2010) environment for cancer patients, survivors, families, and friends. Although each centre is architecturally unique, their spatial considerations, overall layout, atmospheric qualities, and connections to the natural environment are based upon the fundamental principles of informality and "kitchenism" (Jencks, 2010). The concept of informality relates to domesticity and home-like environments, while 'kitchenism' refers to the centralized placement of the kitchen. This "centrality of food and drink allows people to enter and exit without declaring themselves, try things out, listen or leave without being noticed" (Jencks, 2010). All Maggie's Centres possess this design characteristic, as each entrance is removed from the formalities of the reception desk, and leads guests directly into the kitchen, dining, and lounge spaces (Lee, 2010).

6.2.2.1 Spatial Considerations.

The spatial considerations and overall layout of Maggie's Centres are founded in a small-scale, domestic and open-concept design, analogous to that of the proposed hospice. These spatial qualities promote a sense of intimacy, yet openness through the use of semi-private spaces. This intimacy and openness encourages the personal interaction between visitors, and subsequently, the creation of a support network and community for those struggling with the effects of cancer (Jencks, 2010; Lee, 2010).

6.2.2.2 Atmospheric Qualities.

Maggie's Centres also have a visually and physically engaging atmospheric quality that promotes the health and well-being of occupants through design (Heathcote, 2010). This promotion of personal health through the built environment is also a direct reflection of the intentions of the proposed hospice. The extensive incorporation of vibrant and contrasting colours, natural materials, and daylight creates an inviting and lively environment clearly visible throughout the landscape, architectural, and interior design of all Maggie's Centres.

6.2.2.3 Connections to the Natural Environment.

Lastly, the importance of visual and physical connections to the natural environment is another overlapping quality of the proposed hospice and Maggie's Centres. Landscape design, interior courtyards, skylights, and direct architectural references to natural human and environmental processes are a number of the ways in which Maggie's Centres incorporate nature and the built environment.

The programmatic and atmospheric goals of Maggie's Centres reinforce the concept of inclusiveness and the importance of architecture and design in the process of healing. Additionally, these centres foster a positive relationship between architecture and occupant, whose design represents both aesthetic appeal and functional merit. Although Maggie's Centres do not focus on the end-of-life care of those suffering from terminal illnesses, the centres' fundamental goals, programme, and environmental qualities can be directly translated into physical and psychological support for caregivers, and subsequently, the final design of the proposed independent hospice facility.

6.3 | PRECEDENT III: PAIMIO HOSPITAL (FORMERLY THE PAIMIO TUBERCULOSIS SANATORIUM OR PAIMIO SANATORIUM)

Location: *Paimio, Finland*
Architect/Designer: *Alvar Aalto*
Size: *unknown*
Date Completed: *1932*

▲ F55 | PAIMIO SANATORIUM

▲ F56 | PAIMIO SANATORIUM

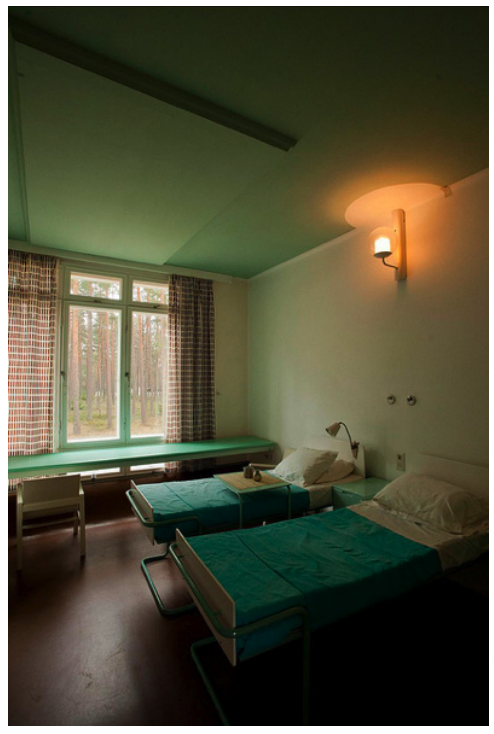
6.3.1 PROGRAMMATIC CHARACTERISTICS

The direct relationship between human health, nature, and the built environment is exemplified in the third precedent – the Paimio Tuberculosis Sanatorium (the Sanatorium). Originally, the facility itself included a dedicated wing for tuberculosis (TB) patients, a separate wing comprised of a canteen, kitchen and social facilities, as well as a service wing, greenhouse, and mortuary. Completed in 1932, the Sanatorium was in functional contrast with the predominately rational and technological state of modern healthcare at that time. At the root of this functional contrast was the Sanatorium's ability to foster connections with the natural environment as a method of promoting the health and wellness of patients suffering from TB (Schildt, 1998).

6.3.2 ATMOSPHERIC CHARACTERISTICS

Alvar Aalto, who won the architectural competition for the commission of the Paimio Sanatorium in 1929, believed that architecture could directly contribute to the medical field through the process of healing. This perception is well represented throughout the Sanatorium, where "every architectural detail had a clinical function and formed part of the treatment" process (Schildt, 1998). These architectural details are a demonstration of the traditional Functionalist use of light, air and sunshine, and can be observed at both large and small scales. The patient rooms, social areas, and sun balconies capitalized on the north-south orientation of the building, where the healing potential of direct sunlight was acquired from its southward facing access. At a smaller scale, the interior design was based upon "the depleted strength of the patient, reclining in his bed. The color of the ceiling [was] chosen for quietness, the light sources [were] outside the patient's field of vision, the heating [was] oriented towards the patient's feet, and the water [ran] soundlessly from the taps to make sure that no patient disturbs his neighbor" (as cited in Schildt, 1998). Furthermore, the industrial design considerations of the facility were also based on functional requirements, where the angle of the Paimio chair was intended to ease the breathing of Sanatorium patients (Figures 55-59) (Schildt, 1998).

The architectural, interior, and industrial design of the Paimio Tuberculosis Sanatorium altogether express the healing potential of the natural environment. This cultivation of nature's healing potential through biophilic design principles, as outlined in Chapter 5, is critical to the design of an independent hospice facility that supports the needs of caregivers during end-of-life care.



▲ F57 | PAIMIO SANATORIUM | PATIENT ROOM

▲ F58 | PAIMIO SANATORIUM | STAIRWAY

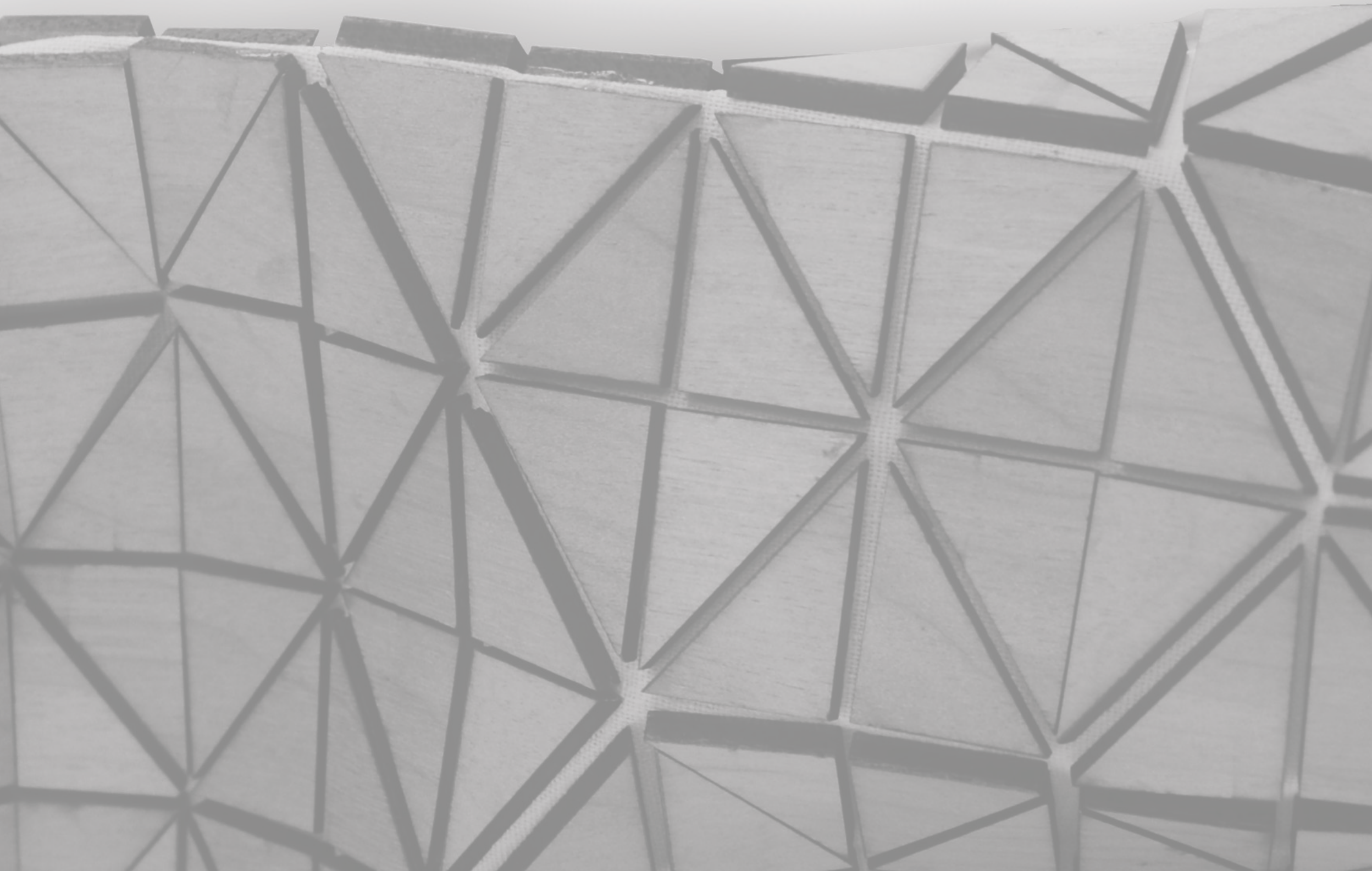
▲ F59 | PAIMIO SANATORIUM | PAIMIO CHAIR AND PATIENT BED

6.4 | SUMMARY: PROJECT DESIGN GUIDELINES

SCCA House, Maggie's Centres, and the Paimio Tuberculosis Sanatorium all offer an array of programmatic and/or atmospheric implications for the design of the proposed independent hospice facility. In the following table (Table 10), the programmatic and/or atmospheric features of each precedent have been translated into design considerations that positively influence the support of caregivers during end-of-life care.

▼ T10 | PROJECT DESIGN GUIDELINES DERIVED FROM THE PRECEDENT ANALYSIS OF SCCA HOUSE, MAGGIE'S CENTRES, AND THE PAIMIO TUBERCULOSIS SANATORIUM

PRECEDENT	FEATURE	KEY DESIGN CONSIDERATIONS
SCCA HOUSE	*Extensive provision of amenities that support the functional and emotional needs of patients and caregivers.*	*Offer a similar catalog of amenities that focus on the functional and emotional needs of caregivers on a smaller scale.*
	An environment that is both healthier for its occupants and environmentally sustainable.	*Utilize similar mechanical systems and building materials to enhance the health and well-being of occupants, indoor environmental quality, and building energy efficiency.*
	Psychosocial support for anyone affected by cancer including: *- emotional and psychological support;* *- relaxation and stress management;* *- the explanation and provision of information;* *- benefits and financial advice; and* *- practical support for living with cancer.*	*Offer an environment that supports the psychosocial needs of caregivers during end-of-life care including:* *- semi-private and private spaces for emotional and psychological support;* *- spaces for relaxation and stress management;* *- open spaces for the delivery of information and active communication;* *- private and confidential spaces for the communication of benefits and financial advice; and* *- spaces for the practical support of patients and caregivers living within an independent hospice facility.*
MAGGIE'S CENTRES	*Based upon the fundamental principles of informality and "kitchenism".*	*Create an environment that is focused on domesticity and centered around communal gathering spaces, such as the kitchen.*
	Spatial considerations and overall layout founded in a small-scale, domestic, and open-concept design.	*Maintain an intimacy and openness in order to encourage the personal interaction between caregivers, patients, staff and volunteers, and subsequently, the creation of a support network and community.*
	Visually and physically engaging atmospheric quality through: *- vibrant and contrasting colours;* *- natural materials; and* *- daylight.*	*Utilize similar architectural and interior design strategies to create a visually and physically engaging hospice environment.*
	Visual and physical connections to the natural environment, including: *- landscape design;* *- interior courtyards;* *- skylights; and* *- natural human and environmental processes.*	*Utilize similar visual and physical connections to the natural environment to promote the health and well-being of hospice occupants.*
PAIMIO TUBERCULOSIS SANATORIUM	*Architectural, interior, and industrial design details that express the healing potential of the natural environment.*	*Incorporate nature within the architectural, interior, and industrial design of the hospice – including physical, visual, and auditory representations.*



CHAPTER 7.0
DESIGN PROGRAMME

As outlined in the introduction of this practicum document, the primary objectives of this design intervention are twofold. The intentions of this exploration are to redefine the design of existing independent hospice facilities to include the physical, psychological, psychosocial, and spiritual needs of caregivers, and as a result, acknowledge them as partners in the end-of-life care of a loved one. This holistic approach to palliative care integrates the overarching principles of healthy anticipatory grieving and patient-focused, family-centered end-of-life care, alongside the fundamental strategies of quality built environments and the tenets of biophilic design. The following chapter merges the concepts developed within this project's theoretical framework, case study exploration, and precedent analysis into a comprehensive programme for the proposed facility. The programme outlines the client and user profiles, the facility's spatial, functional, atmospheric and technological requirements, as well as the desirable spatial adjacencies.

7.1 | HUMAN FACTORS

7.1.1 CLIENT PROFILE

In Winnipeg and Manitoba, both the Manitoba Caregiver Coalition (MCC) and Hospice and Palliative Care Manitoba (HPCM) have made efforts to bring awareness to the importance of caregivers within a hospice environment. Their core values are represented in the belief that hospice and palliative care can be delivered in an integrative and inclusive manner, where caregivers and residents are treated as equals. As two organizations and stakeholders concerned with the health and well-being of caregivers, the Manitoba Caregiver Coalition and Hospice and Palliative Care Manitoba represent the proposed clients of the new facility.

The supporting role of the Manitoba Caregiver Coalition and Hospice and Palliative Care Manitoba within the facility extends beyond their current services. As non-profit, charitable organizations, the MCC and HPCM will work with the Winnipeg Regional Health Authority (WRHA), in order to provide access to healthcare professionals and specialists, and to assist in financing opportunities. Current services offered by each organization will also be maintained. The MCC will continue to promote advocacy and policy development for caregivers, while HPCM maintains its services of grief and bereavement counseling, as well as its Compassionate Care Course for volunteers. Charitable funding and grants through the Manitoba Hospice Foundation Inc. will also assist in the subsidization of this facility.

7.1.2 USER PROFILES | PRIMARY USERS

The primary users of the proposed independent hospice facility include residents, informal caregivers, healthcare providers, social workers, nutritionists/chefs, and volunteers. These six primary user groups have been identified as a reflection of their direct involvement in the provision and reception of quality end-of-life care. They have also been characterized by their demographic and duration of time spent at the facility.

7.1.2.1 Residents.

The eight residents who will receive end-of-life care at the hospice are in the last stages of life, where their illness is no longer curable and treatment is focused on pain management and the relief of suffering. Their physical care will include the daily provision of three healthy meals, as well as personal hygiene based on the resident's capabilities, such as bathing and dressing. Residents will also receive psychological care through familial support, counseling services, and direct communication with staff and volunteers. Although most are elderly – where 57% are 65 or older, and 17% are at least 85 years of age (Decima Research Inc, 2002)– the palliative care provided at the hospice is not age specific and offers its services to anyone, of any age. As residents are in the final stages of their illness, most will live at the facility for only a few weeks. However, as the duration of stay at the facility is unpredictable, there is no limit to how long a resident can stay in care.

7.1.2.2 Informal Caregivers.

Typically, the informal caregiver represents a singular individual with a close, personal relationship to the resident – a wife, husband, mother, father, daughter, son, or family friend – who is both a provider and recipient of care. Approximately eight caregivers – one per resident – predominantly provide their loved ones with psychological, social, and spiritual care, yet are often involved with practical care. As care recipients, informal caregivers will also be offered psychological, social, and spiritual care through grief and bereavement counseling, both prior to and following the resident's death. Their basic needs of life will be accommodated through the provision of sleeping quarters, cooking facilities, spaces for personal hygiene, and access to indoor and outdoor spaces for physical activity. Supported by healthcare providers, social workers, nutritionists/chefs, volunteers and the facility itself, informal caregivers are able to focus their time with their loved one and on their own personal health and well-being. Their frequency and length of time spent at the hospice is also personal preference, where accommodations are suitable for anyone, despite the characteristically middle-aged female demographic – as 77% of Canadian caregivers are female and 70% are at least 45 years of age (Decima Research Inc, 2002).

7.1.2.3 Healthcare Providers.

The primary healthcare providers that offer 24-hour medical care at the hospice will include palliative care doctors, nurses, and healthcare aides. The doctors and nurses will administer treatments for pain control, symptom management, and any additional medical care, while healthcare aides will predominately provide the practical care for the resident. Two palliative care doctors will work in rotation, visiting the facility as needed, and will be on-call seven days a week, 24 hours a day in case of emergencies. Two nurses and two healthcare aides will also be on staff at all times, and will rotate in three 8-hour shifts.

7.1.2.4 Social Workers.

As healthcare providers offer the physical end-of-life care at the hospice, two social workers will provide the psychological care to both residents and caregivers. In opposite rotations, their roles will include the psychological, social, financial, and spiritual care of residents and caregivers, as well as the provision of loss, grief, and bereavement counseling. Social workers will prepare residents and their families for death through an open channel of information regarding illness trajectory, finances, and coping mechanisms. Their fulltime availability at the facility in addition to the scheduling of personal appointments, are all services offered to residents, primary caregivers, and family members seven days a week.

7.1.2.5 Nutritionists/Chefs.

The importance of the dietetic health and well-being of hospice occupants will be supported by two fulltime nutritionists/chefs at the facility. These nutritionists/chefs will work collectively with residents, caregivers, families, staff, and volunteers to ensure that the appropriate dietary requirements of residents are fulfilled through an appetizing and innovative palate. Each nutritionist/chef will work in opposing shifts, where they will cook and create together at least two days of the week. In addition to the provision of three full meals per day for residents, the nutritionists/chefs will also offer supplementary culinary services to other hospice occupants. These services will include the option for caregivers, family members, staff and volunteers to join residents in any meal for a $3.00 fee, food preparation for special occasions at a small fee, as well as complimentary catering during all celebration of life services.

7.1.2.6 Volunteers.

Lastly, professionally trained volunteers will also be dominant figures at the hospice. Their multifaceted duties range from the physical and psychological support for residents and caregivers, to sustaining the basic functions of the hospice. Facility maintenance, grounds keeping, grocery shopping, feeding, and companionship are number of the activities offered by a dedicated collection of volunteers. Generally scheduled in 2-hour shifts during business hours, volunteers offer their time as they are able, and represent a variety of demographics – young, old, male, female, students, employed, retired, and so on.

7.1.3 USER PROFILES | SECONDARY USERS

The family members and friends of the resident represent the secondary users of the independent hospice facility. An estimation of four individuals per resident will visit the hospice on a regular basis for short periods of time, where they offer companionship, emotional support, and periodic practical care. Although their involvement at the facility will predominantly be emotional and focused around the final days of the resident's life, these users can choose to be as integrated in the activities of hospice daily life as they desire. This integration may involve assisting in meal preparation, feeding, socializing, and counseling. As such, family members and friends may be present during informational sessions and bereavement counseling provided by social workers at the facility. Additionally,

their physical needs will be supported during this process through direct access to cooking and hygiene amenities and services. This includes the opportunity to join residents for breakfast, lunch or dinner, at a charge of $3.00 per meal.

7.1.4 USER PROFILES | TERTIARY USERS

Those who periodically visit the facility represent the tertiary users of the hospice. These users may include healthcare specialists, spiritual care advisors, music therapists, and other specialized end-of-life care professionals. These individuals offer specific expertise in improving the quality of end-of-life care, where their services can be specially requested by any of the primary users. Despite their infrequent presence at the hospice, they are no less important to the delivery of quality palliative care.

7.2 | SPATIAL REQUIREMENTS

7.2.1 PROGRAMME OUTLINE

The proposed independent hospice facility offers the 24-hour, personal inpatient palliative care of eight individuals suffering from terminal illnesses. Financially supported by healthcare providers supplied by the WRHA, a dedicated group of volunteers, private donations and grants, and the $30.00 paid per day by residents, the facility itself is a fiscally viable model of palliative care for the city of Winnipeg. Additionally, its 11,626 ft^2 footprint can accommodate up to approximately 60 people at any given time.

7.2.2 SPATIAL, FUNCTIONAL, ATMOSPHERIC, AND TECHNOLOGICAL REQUIREMENTS

Based on the theoretical framework, case study inquiry process, and precedent analysis outlined in Chapters 2 through 6, as well as the programmatic requirements listed above, the following table (Table 11) is a visual representation of the spatial, functional, atmospheric, and technological requirements of the proposed independent hospice.

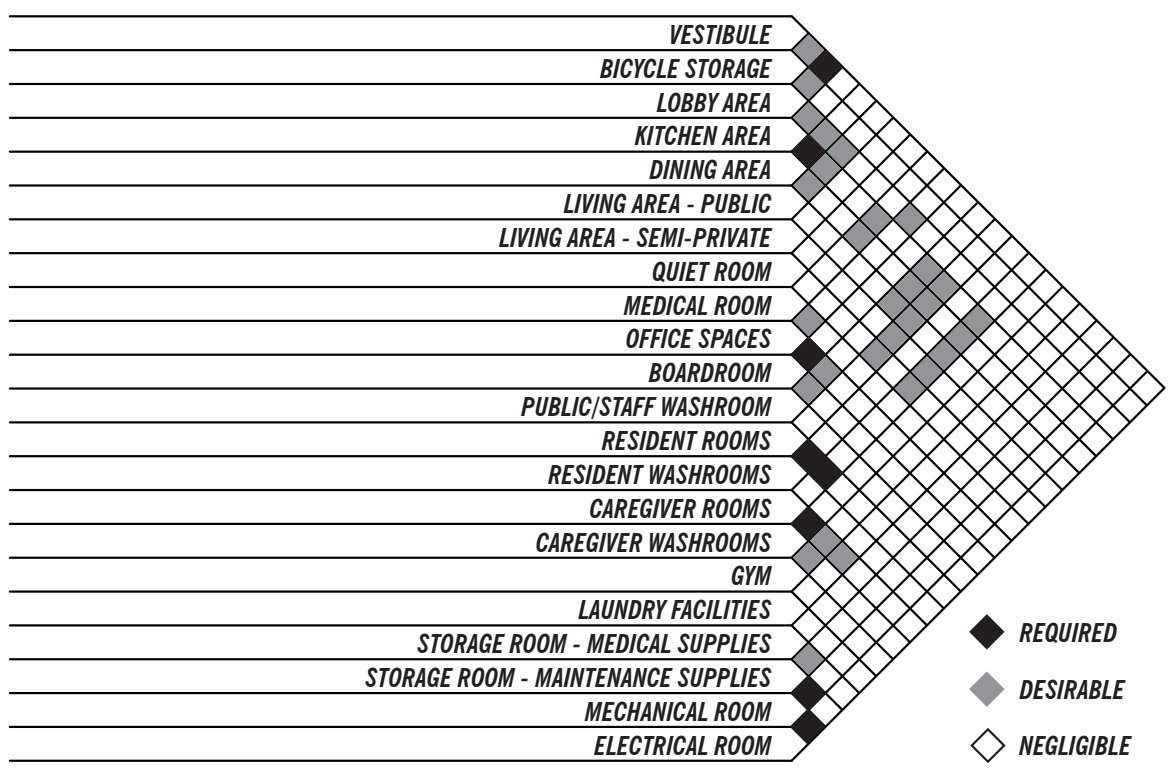
SPACES	QUANTITY	SQ. FT. (EA.)	TOTAL SQ. FT.	ACTIVITIES	DESIRED ATMOSPHERE	FURNITURE, FIXTURES + EQUIPMENT	TECHNICAL REQUIREMENTS
PARKING SPACES	*19* *2*	*162* *198*	*3,078* *396*	*Parking.*	*Accessible; and* *Safe.*	*Outdoor lighting.*	-
GARDEN – NUTRITION + RECREATION	*5*	*24*	*120*	*Planting;* *Watering;* *Weeding;* *Picking;* *Relaxing; and* *Socializing.*	*Accessible;* *Safe;* *Comfortable; and* *Relaxing.*	*Outdoor lighting; and* *Gardening equipment.*	-
EXTERIOR GREEN SPACE	-	*10,000 (appx.)*	*10,000 (appx.)*	*Relaxing;* *Socializing;* *Resting;* *Exercising; and* *Efficient bicycle storage.*	*Accessible;* *Safe;* *Comfortable; and* *Welcoming.*	*Bicycle storage;* *Outdoor lighting;* *Outdoor lounge + recreational seating; and* *Outdoor tables.*	-
VESTIBULE	*2*	*60* *80*	*140*	*Enter + Exit;* *Transition;* *Sitting.*	*Welcoming; and* *Safe.*	*Seating.*	*Intercom and swipe card system.*
LOBBY AREA	*1*	*100*	*100*	*Greeting;* *Transitioning;* *Orientation; and* *Gathering.*	*Welcoming;* *Comforting;* *Informal;* *Safe; and* *Convenient.*	*Lounge seating;* *Coffee tables; and* *Clothing storage.*	*Wifi.*
KITCHEN AREA	*1*	*243*	*243*	*Food preparation;* *Cooking;* *Gathering;* *Collaborating;* *Cleaning; and* *Storage.*	*Relaxing;* *Comforting; and* *Informal.*	*Commercial refrigerator + freezer + oven + stove + microwave + sink;* *Preparation counter space; and* *Storage space.*	*Wifi;* *Intercom system; and* *MERV 13-16 filtration system.*
DINING AREA				*Eating;* *Gathering;* *Visiting; and* *Socializing.*	*Relaxing;* *Comforting; and* *Informal.*	*Dining table; and* *Dining seating.*	*Wifi;* *Intercom system; and* *MERV 13-16 filtration system.*
LIVING AREA – PUBLIC	*1*	*402*	*402*	*Gathering;* *Visiting;* *Socializing; and* *Entertaining.*	*Relaxing;* *Comforting; and* *Informal.*	*Lounge seating; and* *Coffee tables.*	*Internet + wifi;* *Intercom system;* *TV + VCR + DVD player;* *Screen + projector; and* *MERV 13-16 filtration system.*
LIVING AREA – SEMI-PRIVATE	*2*	*255* *227*	*452*	*Gathering;* *Discussion;* *Spiritual care; and* *Prayer.*	*Safe;* *Relaxing;* *Comforting;* *Intimate; and* *Informal.*	*Lounge seating;* *Coffee tables; and* *Storage space.*	*Wifi;* *Intercom system; and* *MERV 13-16 filtration system.*

QUIET ROOM	*1*	*231*	*231*	*Gathering; Discussion; Spiritual care; and Prayer.*	*Safe; Relaxing; Comforting; Intimate; and Informal.*	*Lounge seating; and Coffee tables.*	*Wifi; Intercom system; and MERV 13-16 filtration system.*
MEDICAL ROOM	*1*	*120*	*120*	*Discussion; Distribution + organization of medications; Paperwork; and Computer work.*	*Secure; Confidential; Productive; and Comfortable.*	*Workspace; Task chair; Computer; Telephone; Lockable medical storage; Cold medical storage; Storage space; and Counter space.*	*Internet + wifi; Intercom system; and MERV 13-16 filtration system.*
OFFICE SPACE	*2*	*163*	*326*	*Discussion; Paperwork; Computer work; Interviewing; and Communication.*	*Secure; Confidential; Productive; and Comfortable.*	*Workspace; Task chair; Computer; Telephone; Lockable storage; and Storage space.*	*Internet + wifi; Intercom system; and MERV 13-16 filtration system.*
BOARDROOM	*1*	*404*	*404*	*Discussing; Collaboration; Interviewing; and Communication.*	*Secure; Confidential; Productive; and Comfortable.*	*Meeting table; Task chairs; Coffee station; and Storage space.*	*Internet + wifi; Screen + projector; Intercom system; and MERV 13-16 filtration system.*
RESIDENT ROOMS	*8*	*393*	*3144*	*Sleeping; Eating; Visiting; Gathering; Socializing; Discussion; Prayer; Bathing; and Personal hygiene.*	*Safe; Private; Relaxing; Comforting; Intimate; Clean; and Comfortable.*	*Bed; Daybed; Closet space; Lounge seating; Low-water toilet; Lavatory; Mirror; Vanity counter space; and Roll in shower.*	*Ceiling lift; Wifi; Intercom system; TV + VCR + DVD player; and MERV 13-16 filtration system.*
CAREGIVER ROOMS	*2*	*393*	*786*	*Sleeping; Eating; Working; Gathering; Prayer; Bathing; and Personal hygiene.*	*Safe; Private; Relaxing; Comforting; Intimate; Clean; and Comfortable.*	*Bed; Closet space; Desk space; Lounge seating; Low-water toilet; Lavatory; Mirror; Vanity counter space; and Bathtub + shower.*	*Wifi; Intercom system; TV + VCR + DVD player; and MERV 13-16 filtration system.*
GYM	*1*	*231*	*231*	*Exercising; and Personal hygiene.*	*Private; Clean; Comfortable; and Motivational.*	*Exercise equipment; Scale; Stacking chairs; Low-water toilet; Lavatory; Mirror; Vanity counter space; and Shower.*	*TV + VCR + DVD player; Intercom system; and MERV 13-16 filtration system.*

LAUNDRY FACILITIES	*1*	*336*	*336*	*Washing + drying + folding clothing.*	*Clean; and Comfortable.*	*Commercial washing machine + dryer; Counter space; and Storage space*	*Intercom system; and MERV 13-16 filtration system.*
STORAGE ROOM – MEDICAL SUPPLIES	*1*	*200*	*200*	*Efficient storage of medical supplies + equipment.*	*Safe; and Convenient.*	*Open shelving; Lockable storage space; and Storage space.*	*Intercom system; and MERV 13-16 filtration system.*
STORAGE ROOM – MAINTENANCE SUPPLIES				*Efficient storage of maintenance supplies + equipment.*	*Safe; and Convenient.*	*Open shelving; Lockable storage space; and Storage space.*	*Intercom system; and MERV 13-16 filtration system.*
MECHANICAL ROOM				*Mechanical maintenance.*	*Safe; and Convenient.*	*Open shelving; Lockable storage space; and Storage space.*	*Intercom system; and MERV 13-16 filtration system.*
ELECTRICAL ROOM				*Electrical maintenance.*	*Safe; and Convenient.*	-	*Intercom system; and MERV 13-16 filtration system.*

7.2.3 SPATIAL ADJACENCIES

The following spatial adjacency matrix outlines the required, desirable, and negligible relationships between spaces within the proposed hospice facility:

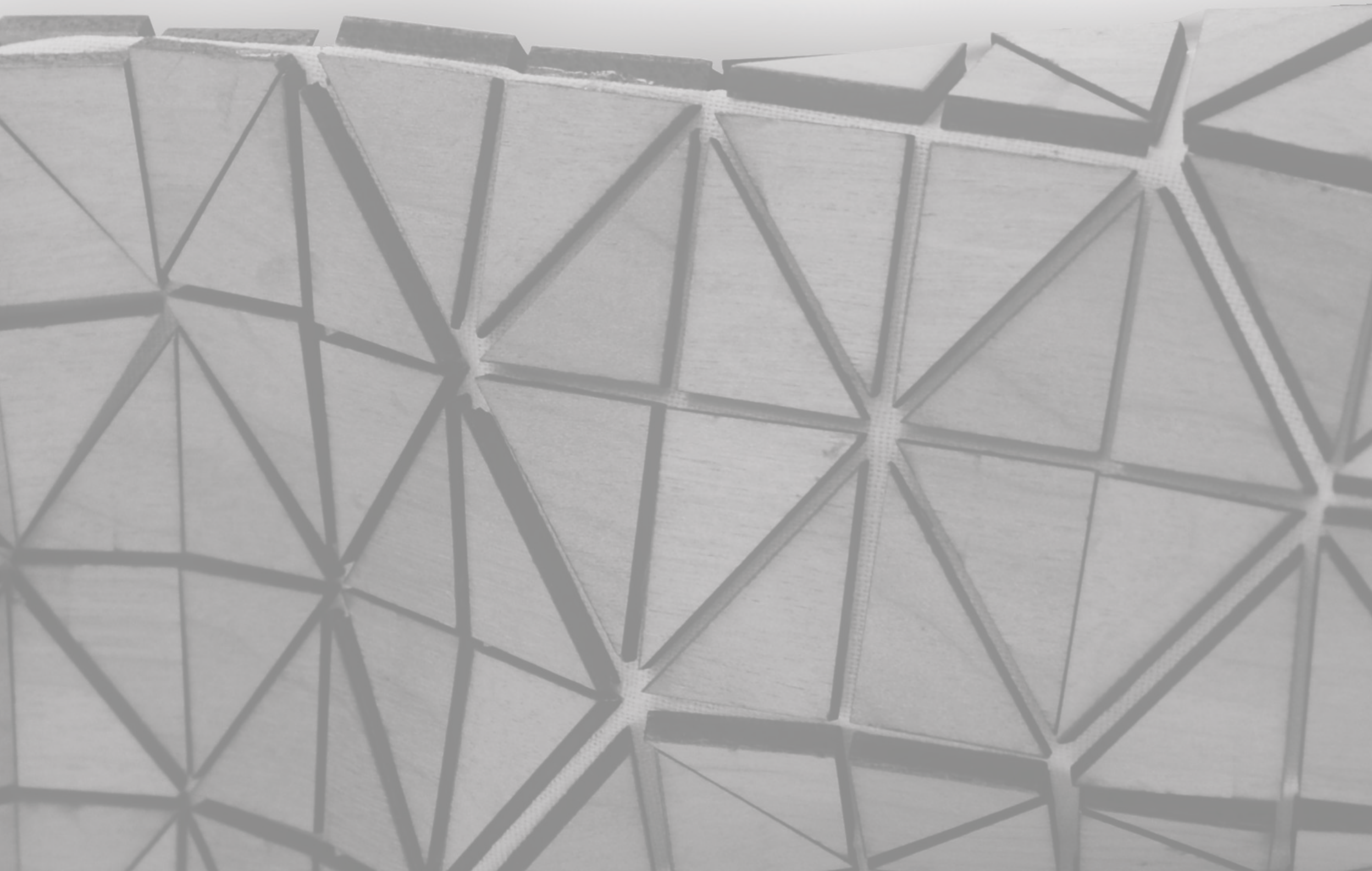


F60 | SPATIAL ADJACENCY MATRIX ▶

7.3 | SUMMARY: CONNECTIONS BETWEEN THEORY, INQUIRY PROCESS, PROGRAMME, AND DESIGN

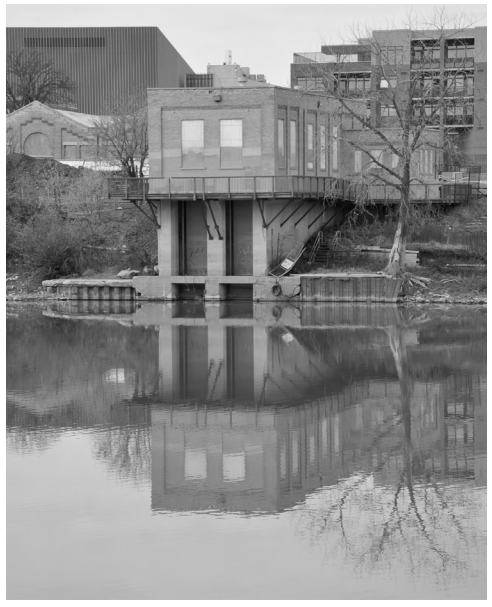
The theoretical framework, case study inquiry process, and precedent analysis collectively identify many key design strategies required for the support of caregiver needs within a hospice environment. The following table (Table 12) summarizes these key design strategies in relation to the overarching concepts discussed within each chapter:

	THE ROLE OF THE CAREGIVER	GREIF AND BEREAVEMENT	CASE STUDIES	BIOPHILIA	PRECEDENT ANALYSIS
OVERARCHING CONCEPTS	*The Evolution of Hospice and Palliative Care* *The Role of the Caregiver within Hospice Environments* *Caregiver Resources and Organizations*	*Anticipatory Grief* *Patient-Focused, Family-Centered Model of End-of-Life Care*	*Case Study I: Jocelyn House Hospice* *Case Study II: The Grace Hospice*	*Indoor Environmental Quality (IEQ)* *Evidence-Based Healthcare Design* *Restorative Environmental Design and Biophilic Design Principles* *Evidence-Based Biophilic Healthcare Design* *Biophilic Architectural Space: Five Survival-Advantageous Characteristics*	*SCCA House* *Maggie's Centres* *The Paimio Tuberculosis Sanatorium*
KEY DESIGN STRATEGIES	*The creation of a home-like environment.* *The provision of basic residential amenities.* *The introduction of mental health and spiritual guidance programs.*	*A facility that:* *- Accommodates for uninterrupted sleep;* *- Is accessible for those with physical challenges;* *- Offers healthy nutritional choices;* *- Promotes indoor and outdoor physical activity;* *- Provides a productive means of releasing anger and frustration;* *- Reduces stress, guilt, inadequacy, anxiety, irritability, depression, and frustration through interior design;* *- Provides spaces of confidentiality and privacy for personal emotional and spiritual counseling;* *- Provides accessible, effective communication between caregiver, healthcare provider, and resident;* *- Offers 24-hour personal end-of-life care;* *- Promotes, yet does not impose, caregiver participation in the physical aspects of end-of-life care;* *- Initiates caregiver support networks;* *- Provides nondenominational spaces for faith based practices; and* *- Offers spiritual and religious guidance both prior to and following the resident's death.*	*Open concept plan.* *The importance of gathering spaces.* *Visual and physical connections between the built environment and the natural environment.* *Enough space in resident rooms to comfortably accommodate the gathering of caregivers, family members, and friends.* *Providing caregivers with secondary spaces of pause directly adjacent to resident rooms.*	*The promotion of occupant health and well-being through the five elements of indoor environmental quality.* *A comprehensive programme that responds to the evaluation of the evidence-based healthcare design strategies outlined by Ulrich et al. in 2004, 2008, and 2010.* *The direct, indirect, and symbolic incorporation of nature through the dimensions, elements, and attributes of biophilic design.* *The creation of a conceptual framework that reflects the five survival-advantageous characteristics of biophilic architectural space.*	*The extensive provision of residential amenities that support the functional and emotional needs of residents and caregivers in an environment that is both healthier for its occupants and environmentally sustainable.* *Spatial considerations and overall layout founded in a small-scale, domestic and open-concept design, with a visually and physically engaging atmospheric quality.* *Architectural, interior, and industrial design details that express the healing potential of the natural environment.*



CHAPTER 8.0
SITE AND BUILDING ANALYSIS

Emphasizing the positive connection between the built environment and human health and well-being is at the core of the site and building selection for the proposed independent hospice. Based on the programmatic requirements established in Chapter 7, this site and building selection responds to the physical and psychological needs of caregivers in terms of its location, central access to amenities, and scale. The following chapter analyses both the site and building in relation to its context, views, circulation, climate and vegetation, building history, and existing exterior and interior building conditions, in order to ensure their appropriateness to the project itself.



▲ F61 | PUMP AND SCREEN HOUSE

8.1 | SITE ANALYSIS

8.1.1 SITE CONTEXT AND INVENTORY

The Winnipeg location of the proposed independent hospice was selected as a response to the growing recognition of informal caregivers in Manitoba – through the Manitoba Caregiver Coalition and Hospice and Palliative Care Manitoba – and the need for additional corporeal support within local palliative care environments. Overhanging the banks of the Winnipeg Red River, the former City Hydro Pump and Screen House serves as the site for the facility. Situated on Waterfront Drive between James and Pacific Avenue in the northeast corner of the Exchange District, its central location in a mixed-use neighborhood offers many benefits to both caregivers and hospice occupants in terms of convenience and personal health and wellness. Caregivers, staff, and volunteers are in close proximity to many amenities – including restaurants, convenience and grocery stores, fitness centers, and outdoor green space – that collectively provide healthy meals outside of the facility, fresh groceries for the facility, and opportunities for personal wellness and active living. Additionally, the hospice is centrally located between St. Boniface Hospital, Health Sciences Centre, and Misericordia Health Centre in case of a medical emergency that cannot be addressed at the facility. Current residential and mixed-use redevelopments taking place throughout the surrounding area have also facilitated a safe and active environment, ideal for the facility and its occupants. Figure 62 represents a visual inventory of the adjacent ammenities, supportive of the needs of caregivers and the hospice itself.

▲ F62 | SITE INVENTORY MAP

8.1.2 CIRCULATION

Selecting a site that is easily accessible by major thoroughfares, public transit, cycling paths, and pedestrian walkways reinforces two fundamental needs of caregivers in hospice environments – transportation and accessibility. The Pump and Screen House provides caregivers, who may travel long distances from within or outside of the city to be with their loved ones, with an accessible, convenient, and central location. The sizable scale of the site also offers ample ground space to accommodate a 21-car parking lot for caregivers, staff and volunteers, as well as the opportunity to connect adjacent pedestrian walkways to the facility. Figure 63 demonstrates these surrounding circulation paths that link cars, buses, boats, bikes, and people to the hospice and its occupants.

SITE
SELECTION

River Taxi Dock

Bus Stops

Painted Bike Lane

Bike Boulevard

Paved Path

N

▲ F63 | CIRCULATION MAP

8.1.3 VIEWS

The importance of natural views to the health and well-being of caregivers is also well represented in the site selection. The most predominate natural view of the site is that of the Red River. As discussed in Chapter 5, water represents one of the twelve environmental features related to the two basic dimensions of biophilic design (Kellert, 2008). Beyond water's utilitarian value as a physical support of life, this visual and acoustic connection with the Red River offers an aesthetic and restorative quality for caregivers during this challenging experience (Mador, 2008). Additionally, the Pump and Screen House has nearly a 360° view of natural settings – a park follows the shoreline to its northeast, the northwest peak of Wittier Park can be seen from across the river, and Stephen Juba Park is directly accessible to its south. These natural settings have the ability to "enhance [the] comfort, satisfaction, well-being, and performance" (Kellert, 2008) of all hospice occupants.

Creating place-based relationships through views is another way in which this site promotes the health and well-being of caregivers. These place-based relationships, also discussed in Chapter 5, have been achieved by establishing geographic, historic, ecological, and cultural connections to place (Kellert, 2008). The Red River, a prominent geographical feature of the site and of Manitoba, fosters a sense of familiarity and geographic connection to place for hospice occupants. Secondly, the site embodies a historical significance and connection to place in terms of its presence in the Exchange District, its relationship to the trade routes of the Red River, and its proximity to the historic and current redevelopments at The Forks. Ecological connections to place also exist in the site's literal connection to both the Red River and Stephen Juba Park. Lastly, the site offers a cultural connection to place through the architectural and natural vernacular of its surroundings, including the buildings of the Exchange District, the Red River and surrounding natural landscapes, the Esplanade Riel Bridge, and the current construction of the Canadian Museum for Human Rights at the Forks.

The following panoramic views demonstrate a visual connection between a number of the biophilic design principles discussed in Chapter 5, the site and building location, and hospice occupants (Figure 64-66).

▲ F64 | 180º VIEW OF THE SITE | SUMMER

▲ F65 | 180º VIEW OF THE SITE | FALL

▲ F66 | 180º VIEW OF THE SITE | WINTER

8.1.4 CLIMATE AND SITE CONDITIONS

Despite the extreme climate change that Winnipeg experiences each year, with temperatures reaching beyond ±30 degrees Celsius, these atmospheric conditions offer the site a broader range of design opportunities. The successful integration of the surrounding environmental conditions to the hospice can be achieved through an examination of the Red River, daylight patterns, and vgetation.

As a major environmental feature of the site, the Red River offers an opportunity for diverse, seasonal interactions by caregivers. During the warmer months, the river plays an audio, visual and physical role at the facility, where caregivers can listen, watch, or commute via the river. Additionally, in the cooler, winter months, caregivers can physically interact with the river by walking, skating, or skiing on its surface. Enhancing these seasonal connections to the Red River have been achieved through landscaping interventions, as well as blurring the boundaries between the interior and exterior of the hospice.

Throughout all twelve months of the year, Winnipeg receives an abundance of sunlight. This consistent influx of sunlight creates additional opportunities for the hospice in terms of improving the health and well-being of caregivers and residents, the productivity of staff and volunteers, and the energy consumption of the building itself. These improvements have been facilitated through the orientation of interior and architectural interventions, and through the use of specific solar energy strategies, including window locations, the UV transparency and reflectance of the windowpanes, as well as the use of window shades.

The surrounding vegetation of the proposed independent hospice is diverse in both variety and opportunity. Adjacent habitats and ecosystems, including the Red River, Stephen Juba Park, and Whittier Park, are all home to a diverse array of flora and fauna. The redevelopment of this site into a hospice facility presents an opportunity to incorporate these diverse habitats and ecosystems through interior and exterior design interventions. These interventions include: the direct connection of the site to the existing natural landscapes; the reintroduction of existing fauna to the bare regions on site; the initiation of garden space for the growth of organic vegetables and herbs for nutritional use at the facility; the initiation of garden space for recreational and therapeutic use; as well as the inclusion of local vegetation throughout the interior of the hospice.

Each of the identified atmospheric conditions suggests an opportunity for interior, architectural, and landscaping interventions for the proposed independent hospice facility. These interventions capitalize on the existing Winnipeg climate in order to support caregivers during end-of-life care. Figure 67 illustrates the site's surrounding climate conditions discussed above through surrounding vegetation.

▲ F67 | MAP OF SURROUNDING VEGETATION

8.2 | BUILDING ANALYSIS

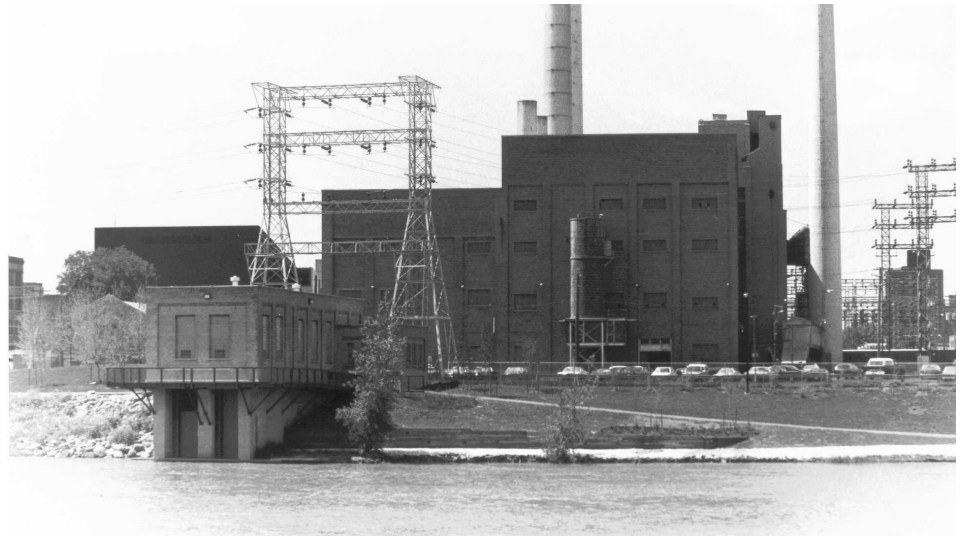
8.2.1 BUILDING HISTORY

The Pump and Screen House was constructed in 1951 by City Hydro (now named Manitoba Hydro) as a means of transferring water from the Red River to the adjacent Steam Plant. Originally located at the convergence of Rupert Street and Waterfront Drive, this Steam Plant was erected as "a central steam heat distribution center" for the city of Winnipeg during the 1920s. The addition of a 15 megawatt turbine and 25 megawatt turbine to the Steam Plant in 1951 required extensive "volumes of water to cool and condense the steam as it left the turbine on its way back to the boilers". As a result, the Pump and Screen House offered a constant supply of river water for the cooling and condensation of steam produced by these two substantial turbines (City of Winnipeg Historical Buildings Committee, 2000). Despite its closure in the 1990s, the "Pump and Screen House is illustrative of the type of public venture the City of Winnipeg and its leaders supported in order to improve the lives of citizens" (City of Winnipeg Historical Buildings Committee, 2000). This statement is a direct reflection of the core values of the proposed independent hospice, where the facility strives to improve the lives of caregivers during end-of-life care.

8.2.2 EXTERIOR EXISTING CONDITIONS

Designed by City Hydro employees, the Pump and Screen House is a 4327 square foot, T-shaped, single story building that rests above a two-level basement. As the building overhangs the Red River, a pedestrian walkway was later added to the north, south, and east façades of the structure as a venture of riverbank improvement projects in Winnipeg (Figure 68). Constructed as a "utilitarian structure" (City of Winnipeg Historical Buildings Committee, 2000), its building materials consist of reinforced concrete, steel beams, and brick. Originally finished with glass blocks, the recessed window openings lining all façades have since been filled in. Despite the lack of architectural ornamentation, the building's corbelled exterior façades, that surround each of these recessed window openings, are an intentional reflection of the design details of the original Steam Plant (since demolished) and adjacent James Avenue Pumping Station (Figure 69) (City of Winnipeg Historical Buildings Committee, 2000). As this structure is transformed from its original state into the function of an independent hospice, its new design will also reflect its surrounding environment through the incorporation of past and present functional and aesthetic qualities.

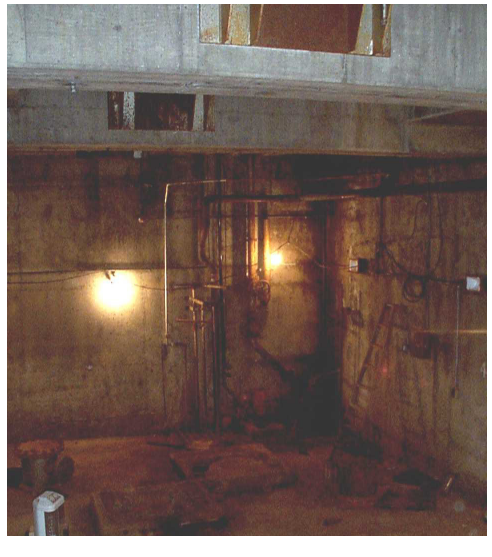
▲ F68 | PEDESTRIAN WALKWAY



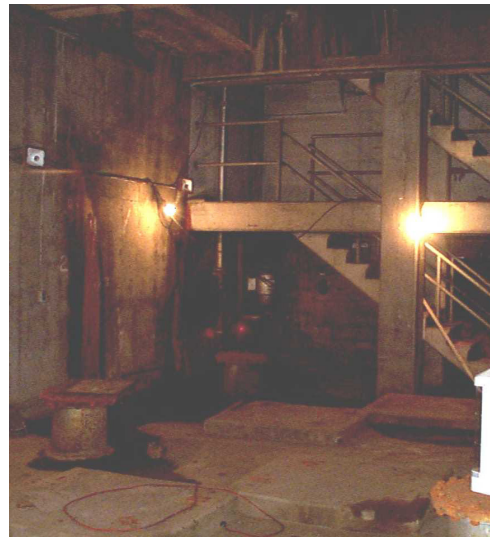
▲ F69 | RELATIONSHIP TO ADJACENT STRUCTURES

8.2.3 INTERIOR EXISTING CONDITIONS

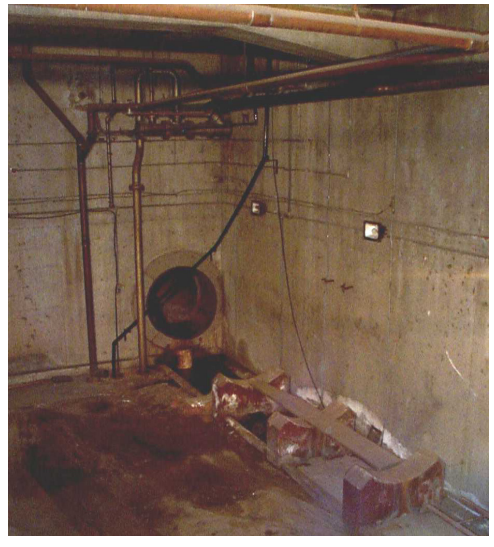
The interior of the Pump and Screen House is structurally and aesthetically honest, where its reinforced concrete foundation, steel frame, and brick walls have all been left exposed (Figure 70-73). In terms of its spatial qualities, the building is predominately open concept, where its ground floor has nearly 2000 square feet of open space. Despite the removal of the original pumping and screening equipment, its interior has also remained virtually untouched (City of Winnipeg Historical Buildings Committee, 2000). This architectural honesty and historical preservation directly reflect the core values of the proposed independent hospice, where communicative transparency and celebration of life are critical to supportive end-of-life care.



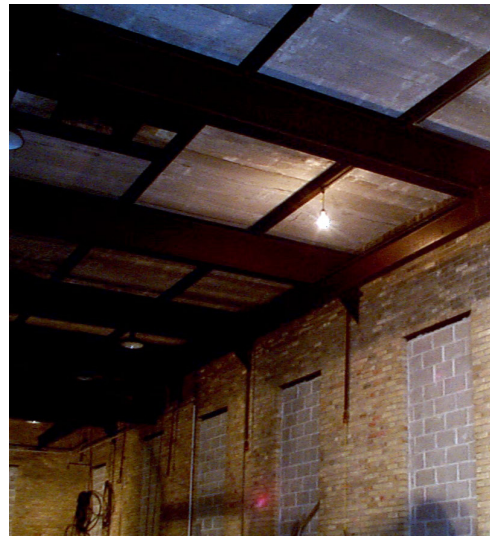
▲ F70 | BASEMENT 2 | PIPING



▲ F71 | BASEMENT 2 | STAIRS



▲ F72 | BASEMENT 1 | PIPING



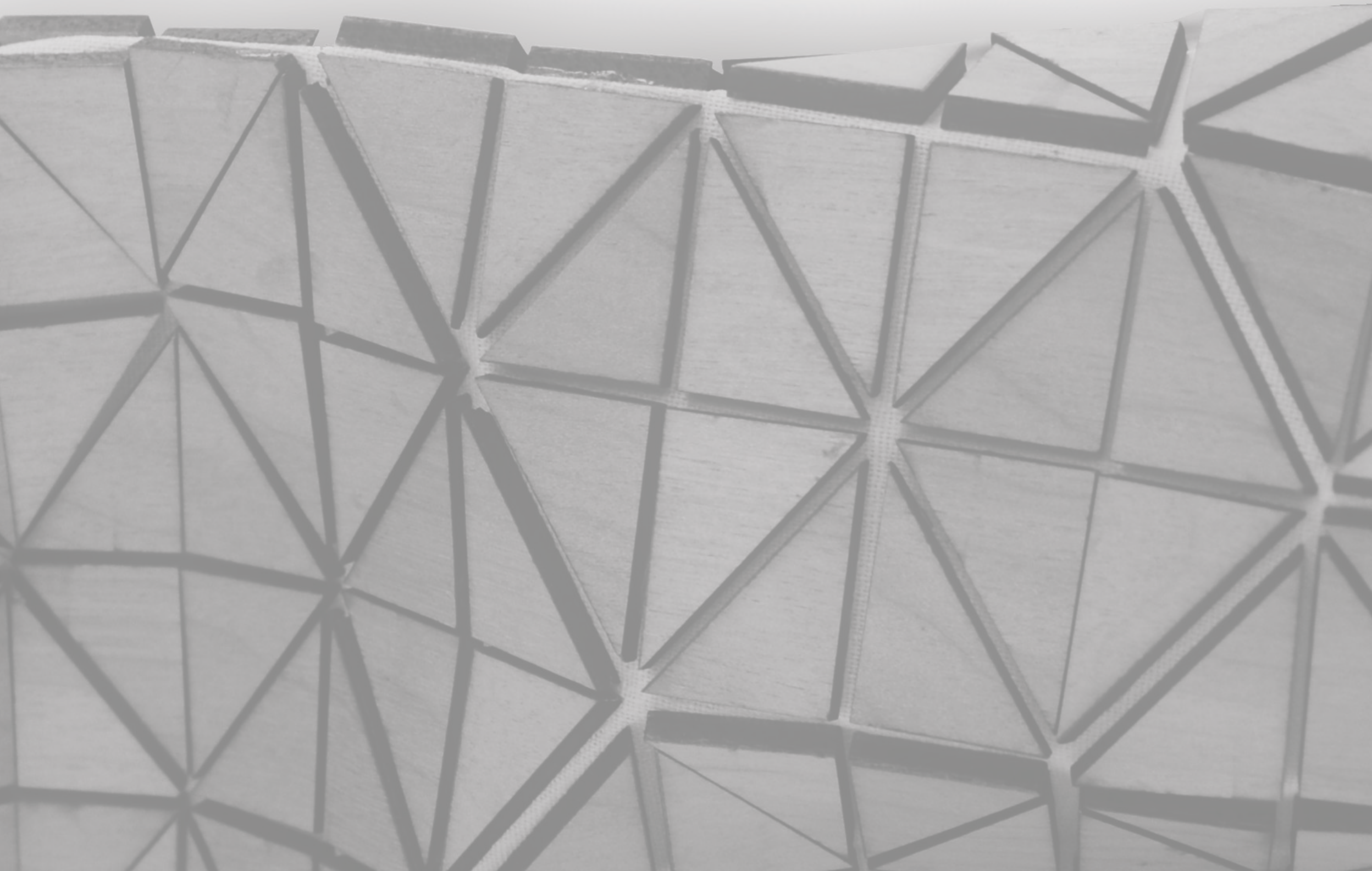
▲ F73 | GROUND FLOOR | CEILING

8.3 | SUMMARY: PROJECT DESIGN GUIDELINES

The former Winnipeg Pump and Screen House has been selected as the site and building for the proposed independent hospice facility for its location, scale, connection to nature, architectural heritage, and adaptability. In order to emphasize the importance of an appropriate site and building selection for the hospice, Table 13 visually demonstrates the direct correlation between these five selection criterion and the site and building conditions analyzed within the chapter.

▼ T13 | CORRELATION BETWEEN THE FIVE SELECTION CRITERION AND THE SITE AND BUILDING CONDITIONS

	SITE				BUILDING		
	SITE CONTEXT AND INVENTORY	***CIRCULATION***	***VIEWS***	***CLIMATE AND SITE CONDITIONS***	***HISTORY***	***EXTERIOR EXISTING CONDITIONS***	***INTERIOR EXISTING CONDITIONS***
LOCATION	*Close proximity to local restaurants, convenience and grocery stores, fitness centers, and hospitals.*	*Accessible by major thoroughfares, public transit, cycling paths, and pedestrian walkways.*	*Direct views of the Red River, Whittier Park, and Stephen Juba Park.*	*Direct connection to the Red River; Access to direct sunlight; and Direct access to Stephen Juba Park.*	*Historical significance with the Exchange District and to the Red River.*	*Overhanging the Red River; and Direct access to Stephen Juba Park.*	-
SCALE	*Appropriate scale within the context of its mixed-use residential and commercial area.*	*Appropriate scale for pedestrian and vehicular interaction; and Appropriate scale for the addition of a 21 car parking lot.*	-	*Appropriate scale for the incorporation and addition of local vegetation to the site.*	-	*Single storey building height at grade is ideal for those with mobility issues; and Appropriate scale for the expansion of the original building.*	*Open concept.*
CONNECTION TO NATURE	*Located directly adjacent to the Red River and Stephen Juba Park.*	*Accessible by land via car, bus, bike, and walking; and Accessible by water/ice via boat and walking.*	*Direct views of the Red River, Whittier Park, and Stephen Juba Park.*	*Visual and physical connection to the Red River, daylight, and the surrounding vegetation.*	*Direct connection to the Red River.*	*Direct connection to the Red River; and Direct access to Stephen Juba Park.*	*Large window openings offer a visual connection to the exterior on every façade of the building.*
ARCHITECTURAL HERITAGE	*Located in the northeast corner of the Exchange District.*	-	*Direct views of the Exchange District, including its former counterpart – the James Avenue Pumping Station; and Direct views of buildings of current architectural significance, including the Esplanade Riel Bridge and the Canadian Museum for Human Rights.*	-	*Historical significance in terms of the Exchange District and to the Red River.*	*Structural and aesthetic congruence with the surrounding buildings – most predominately, the James Avenue Pumping Station.*	*Structural and aesthetic congruence with the surrounding buildings – most predominately, the James Avenue Pumping Station.*
ADAPTABILITY	-	*Large enough to accommodate a 21 car parking lot for caregivers, staff, and volunteers; and Opportunity to connect with adjacent pedestrian walkways.*	*Reopening the existing windows that were previously filled in.*	*Large enough to accommodate the direct connection of the site to the existing natural landscapes, the reintroduction of existing fauna to the bare regions on site, the initiation of garden space for the growth of organic fruits, vegetables and herbs for nutritional use at the facility, and the initiation of garden space for recreational and therapeutic use.*	*The adaptive reuse of a historical building in Winnipeg; and The preservation of many of its structural and aesthetic attributes.*	*The adaptive reuse of a historical building in Winnipeg; The preservation of many of its structural and aesthetic attributes; and Opportunities for the expansion of the original building.*	*The adaptive reuse of a historical building in Winnipeg; The preservation of many of its structural and aesthetic attributes; and Reopening the existing windows that were previously filled in.*



CHAPTER 9.0
SPATIAL CONCEPT AND DESIGN

The fundamental requirement of a traditional independent hospice facility is to provide quality end-of-life care for those suffering from terminal illnesses. The fundamental goal of this practicum project, however, is to go beyond this traditional model of end-of-life care, where the needs of informal caregivers are included in the design of a proposed independent hospice facility for Winnipeg, Manitoba. The design of Exchange Hospice proposed in this chapter, includes a full, presentation quality drawing set, as well as a narrative of the overall spatial concept and atmospheric qualities of the facility. Based on the inquiry processes discussed in Chapters 2 through 6, the intentions of this final design intervention are ultimately to create a home-like hospice environment for caregivers and their loved ones that fosters support, communication, comfort, and a sense of community throughout the journey of end-of-life care.

9.1 | SPATIAL CONCEPT

The spatial concept developed for the proposed hospice is founded in the fundamental human desire for contact with the natural environment – biophilia. As discussed in Chapter 5, the incorporation of biophilic principles into the design of an independent hospice facility can potentially contribute to improved health and well-being of caregivers, and subsequently, the overall quality of end-of-life care for the resident (Teno, Casey, Welch, & Edgman-Levitan, 2001). Through direct, indirect and symbolic methods, this concept emphasizes both physical and visual relationships to the natural environment in a variety of approaches and scales. Derived from the tenets of biophilic design, the following sections discuss the overall architectural language and design features for Exchange Hospice.

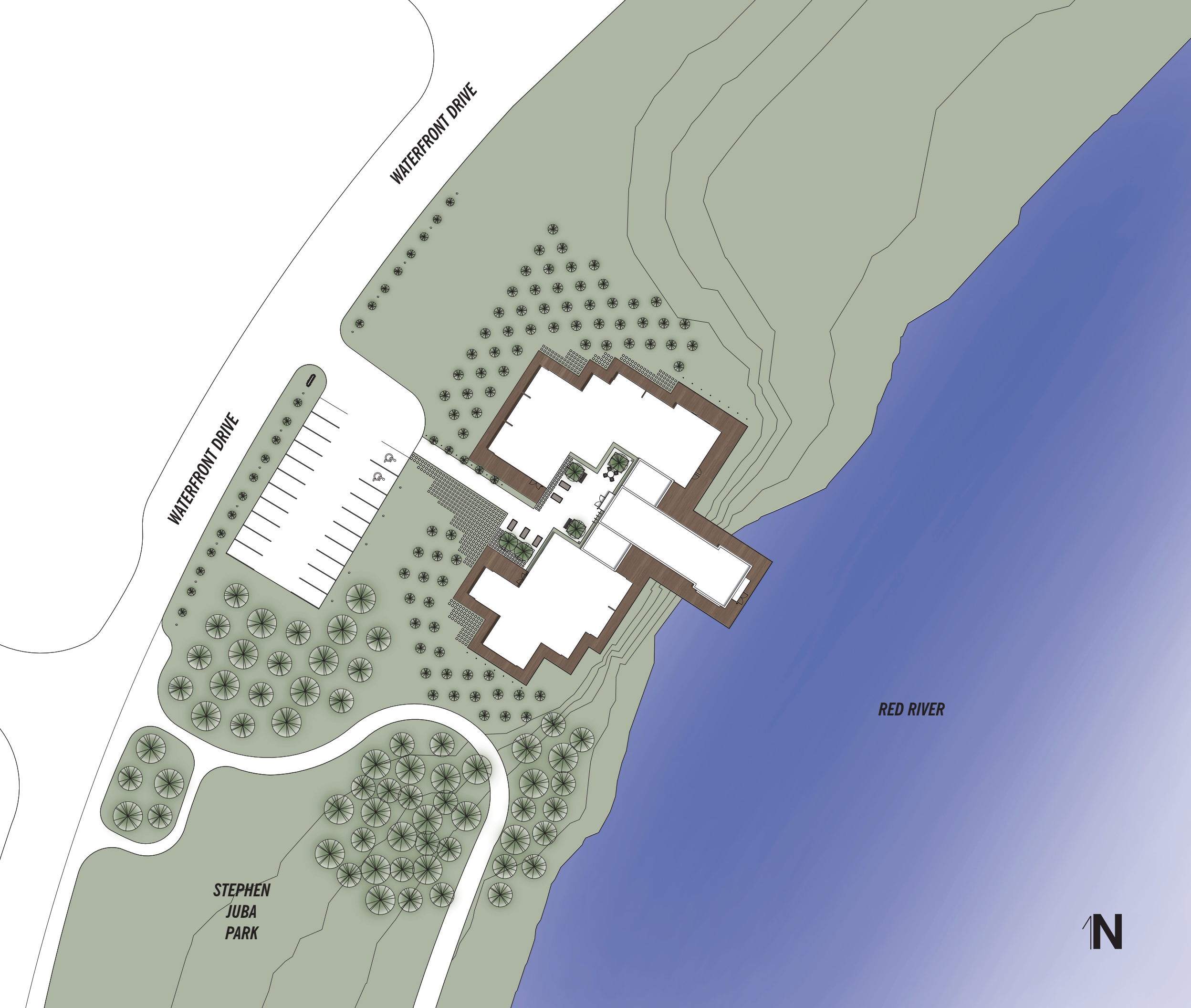
9.1.1 OVERALL ARCHITECTURAL LANGUAGE

Nature in relation to the overall architectural language of the hospice has been incorporated through the act of 'framing', where each view or physical connection between the built and natural environment is carefully and intentionally composed. As connections to nature are vital to the health and well-being of hospice occupants, this concept of 'framing' predominantly focuses on direct relationships to the natural environment. Outlined in Chapter 5, these direct relationships can be achieved in a number of ways, including access to natural views, light, and habitats (Kellert, 2008). By blurring the boundaries between interior and exterior environments wherever possible, each space within Exchange Hospice has a view and/or direct access to the outdoors.

9.1.2 DESIGN FEATURES

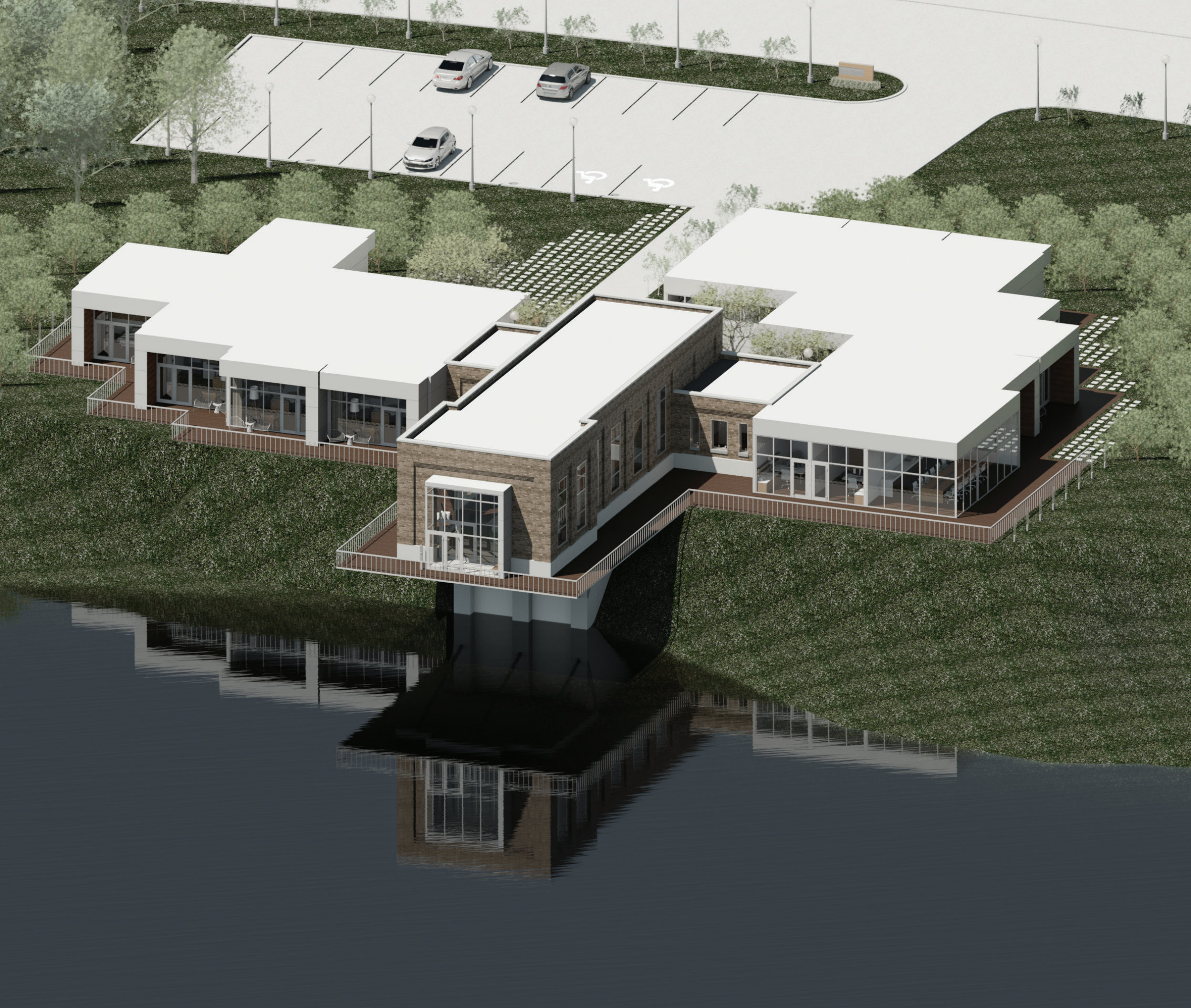
Indirect and symbolic connections to the natural environment, also outlined in Chapter 5, have been incorporated into Exchange Hospice through its design features. Inspired by nature, these design features include the overall form of the building's addition, architectural and decorative interior elements, as well as material and furniture selections. Firstly, the overall form of the building's addition, as well as specific architectural elements within the hospice have been influenced by the third element of biophilic design – natural patterns and processes – and a number of its fourteen associated attributes. Both features express a similar design language that reflects a more symbolic representation of nature through patterned wholes, the integration of parts to wholes, and fractals. Both individually and collectively, these design details create organic forms through geometric patters – organic geometry. Additionally, Exchange Hospice's decorative interior elements also incorporate both indirect and symbolic representations of nature. Indirect representations have been incorporated through the use of potted plants and terrariums dispersed throughout the hospice. Similarly, symbolic representations of nature, including photographic imagery, have also been distributed in a number of areas within the hospice. Lastly, the material and furniture selections of Exchange Hospice have been carefully chosen to reflect the natural environment as well. Natural finishes, colours and textures combined with curvilinear furniture, symbolically represent nature through interior design features within the hospice facility.

F74 | SITE PLAN ▶


WATERFRONT DRIVE
WATERFRONT DRIVE
STEPHEN
JUBA
PARK
RED RIVER
N

9.2 | DESIGN

The design outlined in the following section involves the adaptive reuse and partial new construction of an independent hospice facility. Located on the riverside of Waterfront Drive, the facility responds to its surrounding landscape in order to capitalize on the healing potential of the natural environment. Additionally, the overall architectural and interior design of the hospice strives to maintain the structural honesty and rectilinear design of the original Pump and Screen House by employing a similar rectilinear language and material palate.
The naming of Exchange Hospice was derived from both its locale and fundamental goals of the project itself. As the selected site is located in the North East corner of the well-known Exchange District in Winnipeg, the name offers a sense of directionality and familiarity for those who are new to the facility. The fundamental goals of the proposed hospice are also reflected in the name, as its programme and design facilitate active communication and the exchange of support between caregivers, residents, healthcare providers, volunteers, and visitors of the hospice. Shaped by nature and supported by literature, case studies and a precedent analysis, the following design proposal developed for Exchange Hospice demonstrates how interior design can better support informal caregivers during end-of-life care within an independent hospice facility.



9.2.1 EXTERIOR LANDSCAPING

The direct connection between Exchange Hospice and the natural environment is clear. Flanked to the south by Stephen Juba Park and to the east by the Red River, the site responds to it's surrounding environment through a number of landscaping interventions. Staggered rows of trees line the perimeter of the north, west, and south facades of the building in order to create visual interest for hospice occupants, as well as a physical and visual barrier from the surrounding public areas. These staggered rows also invoke a sense of enticement, the fourth survival advantageous characteristic of biophilic architectural space discussed in Chapter 5. The juxtaposition of open green space and hardscapes also provide direct and accessible connections to nature for hospice occupants (Figure 76).

F76 | ENTRY TO EXCHANGE HOSPICE ▶


EXCHANGE
HOSPICE

▲ F77 | MAIN PATHWAY

In addition to the natural environment, exterior landscaping interventions have also been influenced by the programmatic goals and needs of the hospice, where these programmatic goals and needs focus on occupant health and well-being, as well as accessibility issues.

Within the courtyard, located at the front entrance of the hospice, five gardening planters have been provided for both recreational and nutritional purposes. Two planters are welcome for recreation and therapeutic use by caregivers, residents, staff, and visitors, where the other three have been offered to the nutritionists/chefs for growing fresh vegetables and herbs during the summer months (Figure 77). Patio furniture has also been provided for those who wish to sit, eat, and relax outdoors.

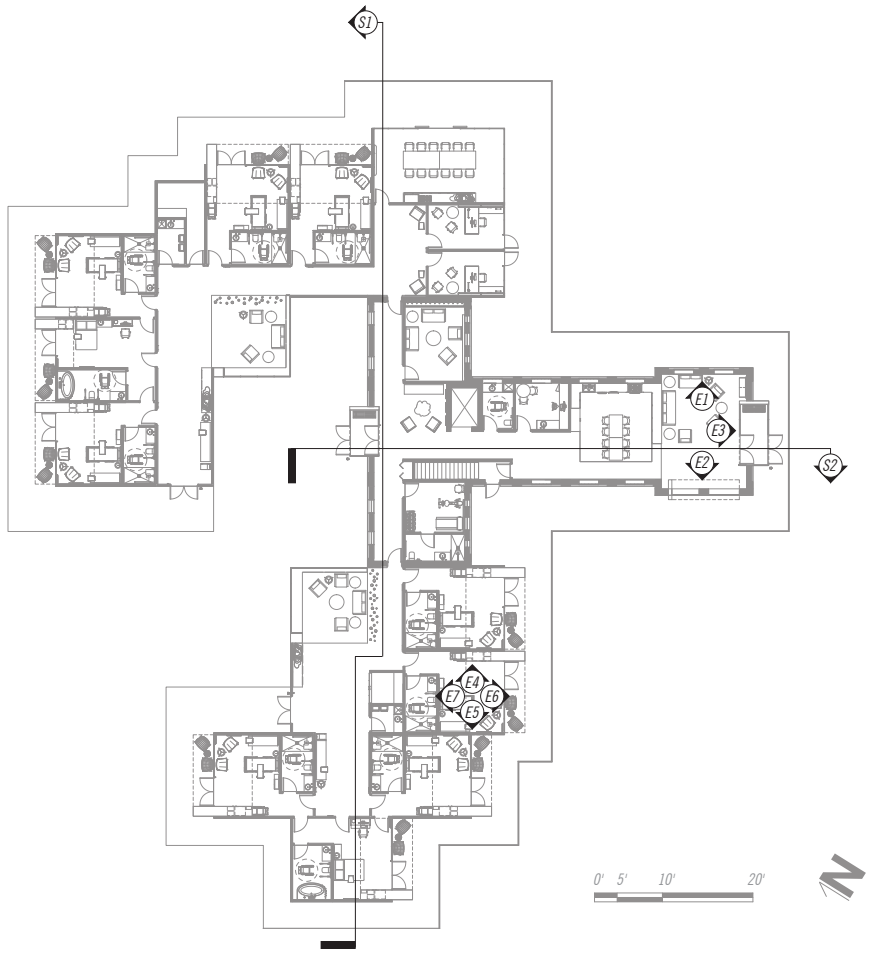
In terms of accessibility, the landscape of the interior courtyard and walkway leading up to the facility has been leveled to grade and paved. As mobility issues are prevalent in hospice environments, this allows caregivers and residents to move freely about the grounds. Lastly, paving stones offer additional accessibility to the hospice by providing the structural stability for emergency vehicles, without compromising the surrounding green space (Figure 78).

F78 | ACCESSIBILITY ▶

9.2.2 ENTRY

Upon arrival at Exchange Hospice, a procession of lights guides caregivers directly to the front entrance of the facility. An intercom and swipe card system has been implemented at all entrances of the facility for both personalization and safety reasons. Those who are new to the facility will be greeted via the intercom system in order to immediately establish a line of communication between staff and caregivers. Establishing this personal line of communication from the moment caregivers enter the facility supports the need for active dialogue during end-of-life care – one of the fundamental strategies for alleviating caregiver burden discussed in Chapter 2. Following this initial introduction to Exchange Hospice, caregivers will be provided with a swipe card that can be used any time of the day, any day of the week for direct and secure access to the facility. The overall architectural language developed for the facility is also demonstrated in the first interaction caregivers have at Exchange Hospice. The connection between exterior and interior environments has been emphasized by the act of 'framing' of the glazed vestibule. Additional signage on the north side of the vestibule is also used as a wayfinding strategy for those who have not accessed the hospice via Waterfront Drive (Figure 79).

F79 | MAIN ENTRY AND COURTYARD ▶



▲ F80 | FLOOR PLAN | UNRENDERED

9.2.3 SPATIAL ORGANIZATION

The spatial organization of Exchange Hospice is based upon an open concept plan that facilitates active communication between caregivers, residents, staff, volunteers, and visitors. The case study analysis of Jocelyn House Hospice, examined in Chapter 4, revealed the many benefits of an open, yet intimate floor plan. The open concept of Jocelyn House Hospice's living, dining, and kitchen areas allow for the active exchange of information and the creation of a community between hospice occupants. As this active communication between hospice occupants can assist in alleviating many of the negative psychological responses of caregiving, discussed in Chapter 3, a similar layout has been developed for Exchange Hospice. Promoting collaboration and open dialogue, the design of the kitchen, dining, and living areas flow seamlessly between one another. Furthermore, the two semi-private living spaces located in each branch of the hospice, offer an open, yet intimate place of pause and reflection (Figure 81).

F81 | FLOOR PLAN ▶


RESIDENT ROOM 5
RESIDENT ROOM 6
LIFT STORAGE
SOILED LINEN
BOARDROOM
OFFICE 2
OFFICE 1
RESIDENT ROOM 7
QUIET ROOM
CAREGIVER ROOM 2
MEDICAL ROOM
SEMI-PRIVATE
LIVING AREA 2
KITCHEN AREA
RESIDENT ROOM 8
MAIN ENTRY
LOBBY
DN
DINING AREA
LIVING AREA
GYM
RESIDENT ROOM 1
SEMI-PRIVATE
LIVING AREA 1
RESIDENT ROOM 2
LIFT STORAGE
SOILED LINEN
RESIDENT ROOM 4
RESIDENT ROOM 3
CAREGIVER ROOM 1
0'
5'
10'
20'

9.2.4 LOBBY

Once inside, the dropped ceiling feature of the lobby space offers visual interest for visitors, while symbolically representing the biophilic design element – natural patterns and processes. The geometric pattern of the wood emphasizes both the integration of parts to wholes and patterned wholes – two of the fourteen attributes of natural patterns and processes (Kellert, 2008). This feature also creates a more intimate seating area, as it decreases the overall volume of the space to a more human scale (Figure 82).

Programmatically, this lobby area is predominately utilized as a transition space for caregivers. Reading material provided in the brochure and magazine holders – regarding end-of-life care, grief and bereavement counseling, financial information, and so on – as well as iPads with wifi capabilities, are offered to caregivers as they pause before being picked up, wait for a meeting with the social worker, or to simply stop and rest.

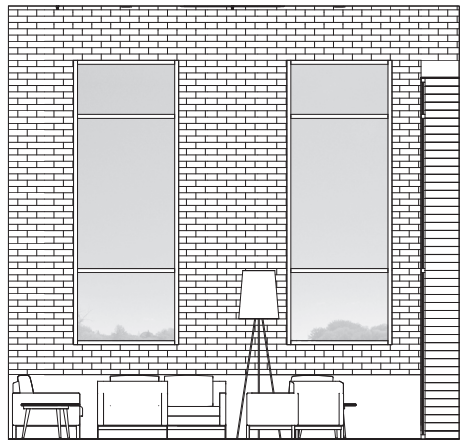
F82 | LOBBY ▶


WELCOME
EXIT

9.2.5 KITCHEN | LIVING | DINING

The direct visual connection between the front and rear entrances of Exchange Hospice guides caregivers into the more public spaces of the facility – the kitchen, dining, and living areas. The centrality of the kitchen, dining, and living areas is a reflection of the concepts of domesticity and 'kitchenism', two atmospheric qualities translated from the second precedent study – Maggie's Centres. Additionally, the open concept of these three spaces creates a communal atmosphere for gathering, a key design feature established from the case studies of Jocelyn House Hospice and The Grace Hospice in Chapter 4. This communal gathering space offers an environment where caregivers may participate in meal preparation, mealtimes, movie nights, celebration of life services, and ultimately the support of one another (Figure 83).

F83 | KITCHEN AND DINING AREA ▶



F84 | LIVING AREA | E1 | NORTH ELEVATION | SCALE: 1/8" = 1'-0" ▲

F85 | LIVING AREA | E2 | SOUTH ELEVATION | SCALE: 1/8" = 1'-0" ▲

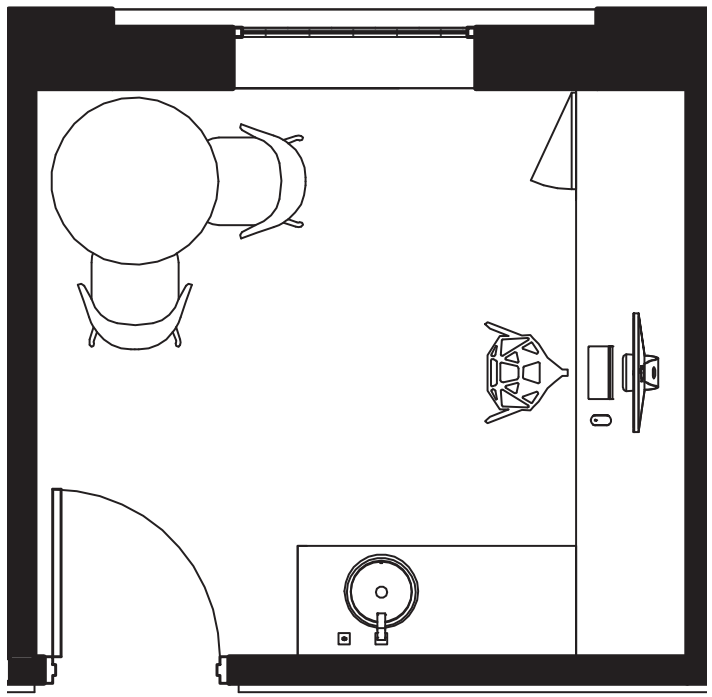
F86 | LIVING AREA | E3 | EAST ELEVATION | SCALE: 1/8" = 1'-0" ▲

F87 | WINDOW FEATURE ▶


EXIT

Not only does the open concept of the kitchen, dining, and living areas promote connections between occupants, they also promote connections to the natural environment. The most prominent example of this is that of the exaggerated window 'frame' extruding from the south façade of the living area. This window feature offers an alternative seating area that overlooks the Red River, Stephen Juba Park, the river railway crossing, the Esplanade Riel Bridge, and the Canadian Museum for Human Rights (Figure 87). The framing of these views also emphasizes the place-based/vernacular dimension of biophilic design, discussed in Chapter 5. In addition to the window feature, the expansive windows within the rest of the space provide ample daylight and a nearly 360° view of the surrounding natural landscapes. The base of these windows can also be opened, if desired, to further the sensory experience through audio and olfactory connections to nature. Lastly, indirect and symbolic connections to nature have also been incorporated through the use of potted plants, large-scale images of local flora, and a dropped ceiling based on natural patterns and processes (Figure 88).

◀ F88 | KITCHEN/LIVING/DINING AREAS

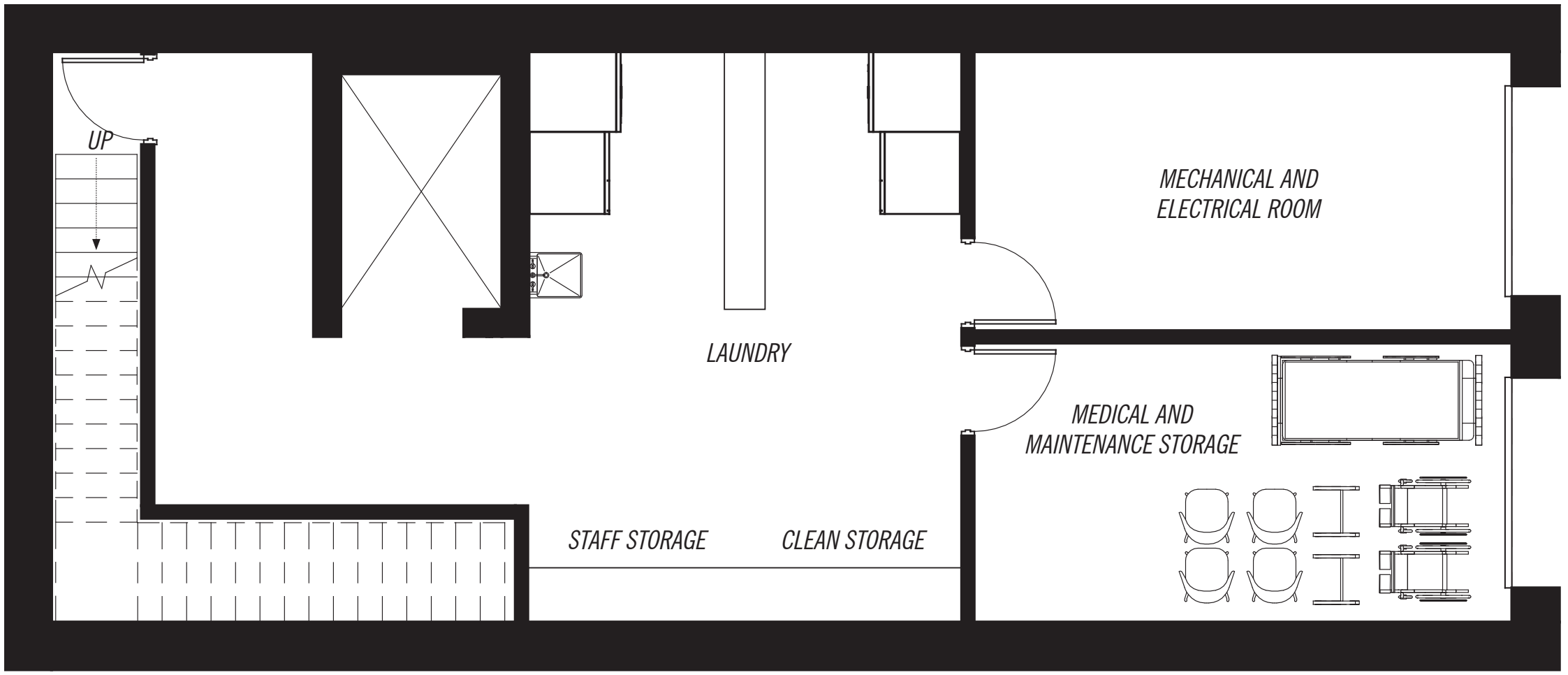


▲ F89 | MEDICAL ROOM

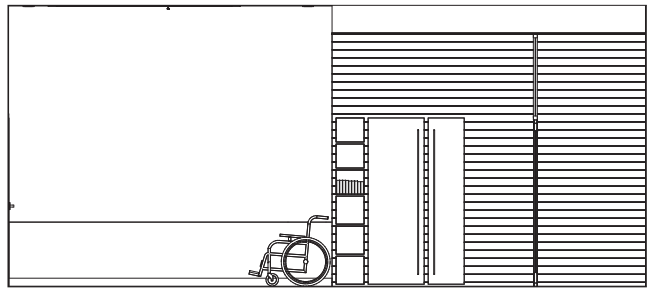
9.2.6 MEDICAL ROOM AND LAUNDRY FACILITIES

A medical room has been provided directly adjacent to the kitchen and dining area for the storage of medications, the digital recording and input of resident medical history, as well as the discussion of personal medial information. This is also a space where healthcare professionals can confidentially exchange resident information between shifts (Figure 89).

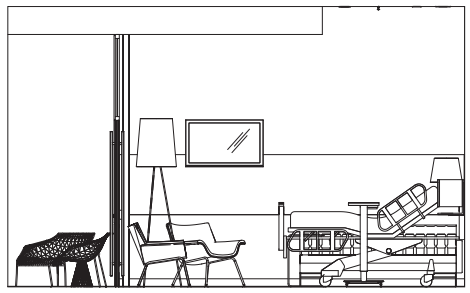
Laundry facilities have been provided in the basement of Exchange Hospice, where this service is also offered to caregivers who may be staying at the facility for an extended period of time (Figure 90).



▲ F90 | BASEMENT FLOOR PLAN

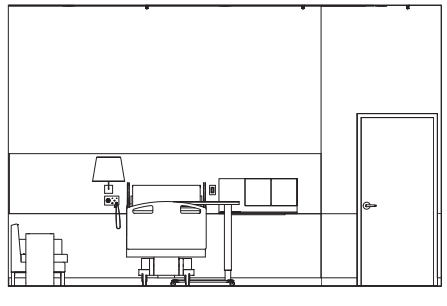


F91 | RESIDENT ROOM 2 | E4 | NORTH ELEVATION | SCALE: 1/8" = 1'-0" ▲



F92 | RESIDENT ROOM 2 | E5 | SOUTH ELEVATION | SCALE: 1/8" = 1'-0 " ▲

F93 | RESIDENT ROOM 2 | E6 | EAST ELEVATION | SCALE: 1/8" = 1'-0" ▲



F94 | RESIDENT ROOM 2 | E7 | WEST ELEVATION | SCALE: 1/8" = 1'-0" ▲

9.2.7 RESIDENT ROOMS

The interior design of the resident rooms was driven primarily by three main goals: the incorporation of biophilic design principles, the creation of a home-like environment, and the accommodation of caregiver needs.

9.2.7.1 Biophilic Design Principles.

The concept of 'framing' – as demonstrated in both vestibules and living area – has created an overall architectural language for the space, where the eye is drawn directly to the natural landscape beyond the floor to ceiling glazing. This view is also emphasized by two design features inspired by biophilia. The first is that of the painted geometric pattern created on the front face of the 'frame'. Just as in the dropped ceiling in the lobby and kitchen areas, this pattern has also been derived from the biophilic element natural patterns and processes. The linear use of wood is the second design feature within the resident rooms inspired by the natural environment. The underside of the 'frame' has been lined with natural wood slats, which run directly from the interior of the room to the exterior overhang of the patio. Double doors in the full height glazing offer direct access to this outdoor patio space for residents and their caregivers. Although many residents may be too ill to leave the comfort of their beds, the double doors and exterior overhang allow residents and caregivers to enjoy the natural environment, regardless of ability (Figure 95).

F95 | RESIDENT ROOM 2 | SOUTH-EAST VIEW ▶

▲ F96 | RESIDENT ROOM 2 | WEST VIEW

9.2.7.2 Home-Like Environments.

The creation of a home-like environment within each of the 8 resident rooms has been achieved predominately through specific opportunities for personalization. A number of design features offer flexible spaces for residents to make these rooms their own. These personalization details include room tags for the resident's names, open shelving to display personal items, and a corkboard running the west and south walls (Figure 96).
The avoidance of typical institutional design attributes, discussed in Chapter 2, also played a major role in the creation of a home-like atmosphere for residents. The use of natural materials and a muted colour palate to bring warmth to the space; a recessed ceiling lift; a personal roll in shower; built-in hanging and folding storage for clothing and extra linens; as well as an iPad that serves as an intercom system and multimedia device are a number of the home-like design considerations employed within these spaces.

Lastly, an underfloor radiant heating system was selected for its increase of the thermal comfort and indoor air quality for residents, as well as its energy efficiency for the building itself. Similarly, displacement ventilation was also selected for its positive effects on both the indoor air quality of the space and energy efficiency of the building as a whole.

9.2.7.3 Caregiver Needs.

Specific considerations have also been employed to support the needs of caregivers within the design of the resident rooms. As caregivers may be visiting Exchange Hospice for an extended and unpredictable amount of time, identified in Chapters 2 and 3, a daybed has been provided next to the resident's bed as a temporary sleeping accommodation. Selected as an alternative to a typical pull out couch or Murphy bed, the daybed offers both a comfortable seating and sleeping option with minimal disruption for the resident.
As caregivers, family members, and friends gather within the resident's room during the last days of life, the relative size of the rooms and furniture selection have also been designed appropriately. Similarly to The Grace Hospice, the rooms offer a variety of seating options and ample space for those who wish to pay their respects (Figure 97).

F97 | RESIDENT ROOM 2 | NORTH-EAST VIEW ▶

▲ F98 | CAREGIVER ROOM 1 | WEST VIEW

9.2.8 CAREGIVER ROOMS

Exchange Hospice reaches beyond the typical hospice programme by offering personal sleeping and hygiene accommodations directly adjacent the resident rooms. Two caregiver rooms have been provided at the facility, where each caregiver room can directly access two separate resident rooms. Based on the programme at SCCA House and the physical and psychological needs of caregivers, discussed in Chapters 6 and 3 respectively, these caregiver rooms offer full sleeping accommodations; en suite washroom facilities with a vessel tub; built-in hanging and folding storage; as well as a workstation with a desktop computer.

Resident rooms alike, the caregiver rooms have also been driven by biophilic design and the creation of a home-like environment. The concept of 'framing'; use of biophilic design features; direct access to the outdoors; spaces for personalization, including room tags, open shelving, and a wall mounted corkboard; as well as the use of natural materials, have all been translated from the resident rooms through to the caregiver rooms (Figures 98 and 99).

F99 | CAREGIVER ROOM 1 | SOUTH-EAST VIEW ▶

9.2.9 SEMI-PRIVATE LIVING SPACE

Two breakout spaces for caregivers, residents, family members, and friends have been provided in both branches of Exchange Hospice. These semi-private living spaces are typically used as intimate, communal gathering spaces, separate from the resident rooms and public spaces of the hospice. Noted in the literature discussed in Chapter 3 and observed in the interview at Jocelyn House Hospice, the promotion of active dialogue and the creation of a communal environment has the ability to relieve many of the psychological strains associated with informal caregiving. Additionally, these spaces also support positive psychosocial relationships between caregivers, residents, family members, friends, staff, and volunteers. Each living space, therefore, offers a comfortable seating arrangement, where occupants are encouraged to sit and share their experiences. Biophilic principles have heavily influenced the design features and details of these two spaces through 'framing' and indirect relationships to nature. The creation of a window seat and small ledge frames the space from both the interior and exterior of the building. This act of 'framing' – similarly to the window seat in the living area – creates both a sense of prospect and refuge, or alternatively, the human desire for both opportunity and safety (Hildebrand, 2008). Additionally, ceiling-hung terrariums create an atypical boundary, separating the living spaces from the surrounding corridors through an indirect representation of nature (Figures 100 & 101).

F100 | SEMI-PRIVATE LIVING SPACE 2 ▲

F101 | SEMI-PRIVATE LIVING SPACE 1 ▶


EXIT

9.2.10 GYM

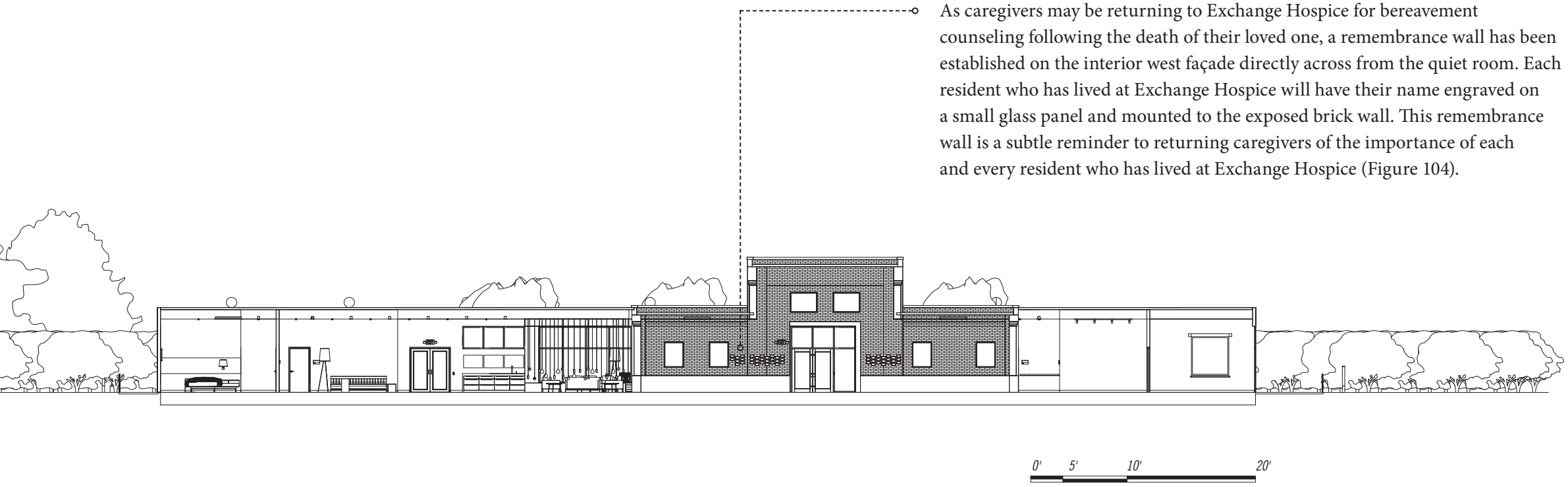
As the health and well-being of grieving caregivers is often compromised during the progression of a loved one's illness, analyzed in Chapters 2 and 3, a small gym has been provided at Exchange Hospice. This gym offers caregivers both an opportunity to be physically active and to constructively release any anger, tension, and stress that may arise during the progression of a terminal illness. The concept of framing has also been incorporated into the design of the gym through a small ledge that outlines and emphasizes the two windows of the existing building. Additionally, the treadmill and exercise bike have been positioned as to orient gym-goers to a direct view of the exterior walkway and Red River (Figure 102).

F102 | GYM ▶

9.2.11 QUIET ROOM

The importance of spiritual and faith based practices to the needs of grieving caregivers, identified in Chapter 2, has been supported through the incorporation of a quiet room. This nondenominational space creates a calming atmosphere for pause, reflection, privacy, counseling, and guidance. In order to achieve a calming atmosphere for contemplation, auditory and visual connections to the natural environment have been incorporated into the design. A cable water feature lining the north wall of the space offers an alternative sensory experience, where the sound of trickling water invokes both dimensions of biophilic design – organic/naturalistic and place-based/ vernacular (Kellert, 2008). The use of water itself represents the organic/ natural dimension of biophilic design, while water's direct association to the Red River and history of the building demonstrates a geographic, historic, ecological, and cultural connection to place (Kellert, 2008). A visual connection to nature has also been established through the use of an exaggerated frame surrounding each of the three existing windows. This frame draws the eye towards the river, while providing a small ledge for candles, reading material, or other personal items (Figure 103).

As caregivers may be returning to Exchange Hospice for bereavement counseling following the death of their loved one, a remembrance wall has been established on the interior west façade directly across from the quiet room. Each resident who has lived at Exchange Hospice will have their name engraved on a small glass panel and mounted to the exposed brick wall. This remembrance wall is a subtle reminder to returning caregivers of the importance of each and every resident who has lived at Exchange Hospice (Figure 104).



▲ F104 | SECTION 1 | NORTH-SOUTH

F103 | QUIET ROOM ▶

9.2.12 OFFICE SPACES

One of the two office spaces at Exchange Hospice will be occupied by two full time social workers. These social workers will be available to caregivers both prior to and following the death of their loved one. Grief and bereavement counseling, financial assistance, and coping strategies are a number of the services offered to caregivers within this private and confidential environment. The secondary office space, however, will be used intermittently by healthcare professionals, the director of the facility, and/or members of the Manitoba Caregiver Coalition and Hospice and Palliative Care Manitoba.

Both offices have full height glazing on their east walls that showcase the view of the Red River and Whittier Park. Doors in both curtain walls also offer a direct connection to the exterior walkway that surrounds the perimeter of Exchange Hospice. Lastly, each office incorporates both natural materials and imagery as symbolic representations of nature (Figure 105).

F105 | OFFICE SPACE 1 ▶

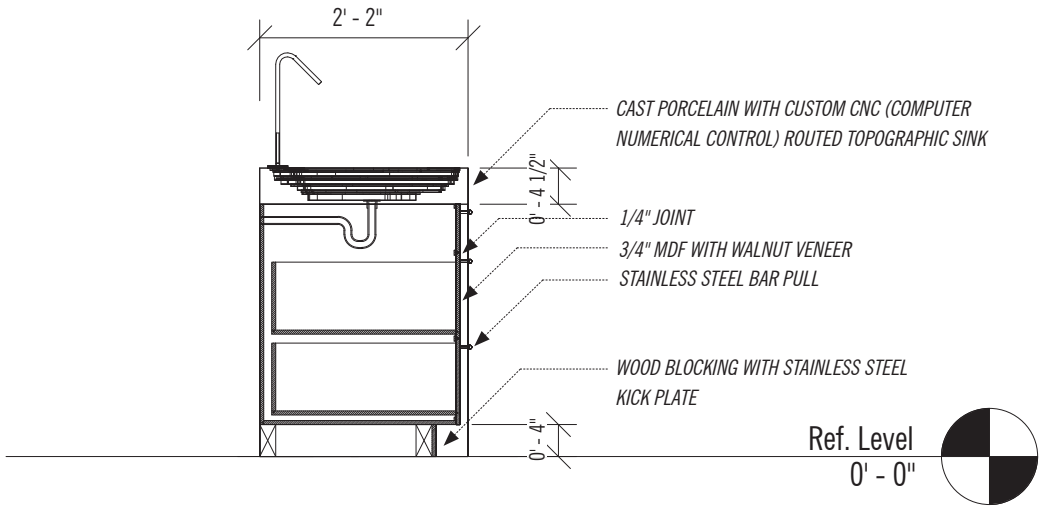
▲ F107 | BOARDROOM | NORTH-EAST VIEW

9.2.13 BOARDROOM

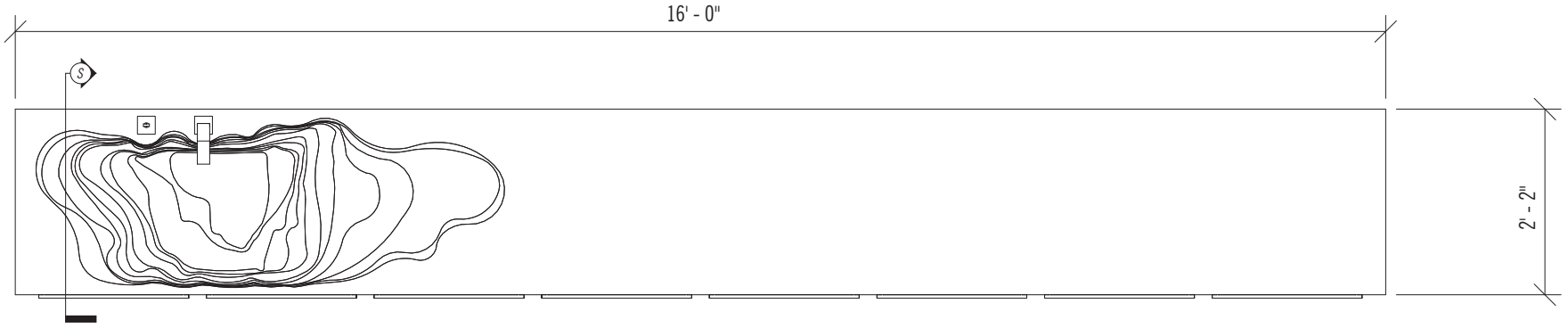
As the Manitoba Caregiver Coalition and Hospice and Palliative Care Manitoba are the proposed clients, Exchange Hospice offers a boardroom for presentations, annual meetings, and collaborative opportunities with other organizations (Figure 106).

Similarly to the office spaces, full height glazing on the north and east facades offer both visual and physical connections to the outdoor environment. Sliding doors on the north side of the boardroom's curtain wall also allow for impromptu meetings on the exterior walkway, weather permitting (Figure 107). The detailing of the custom sink coffee station also gives reference to the surrounding landscape as it symbolically mimics the topography of the site of Exchange Hospice (Figures 108-111).

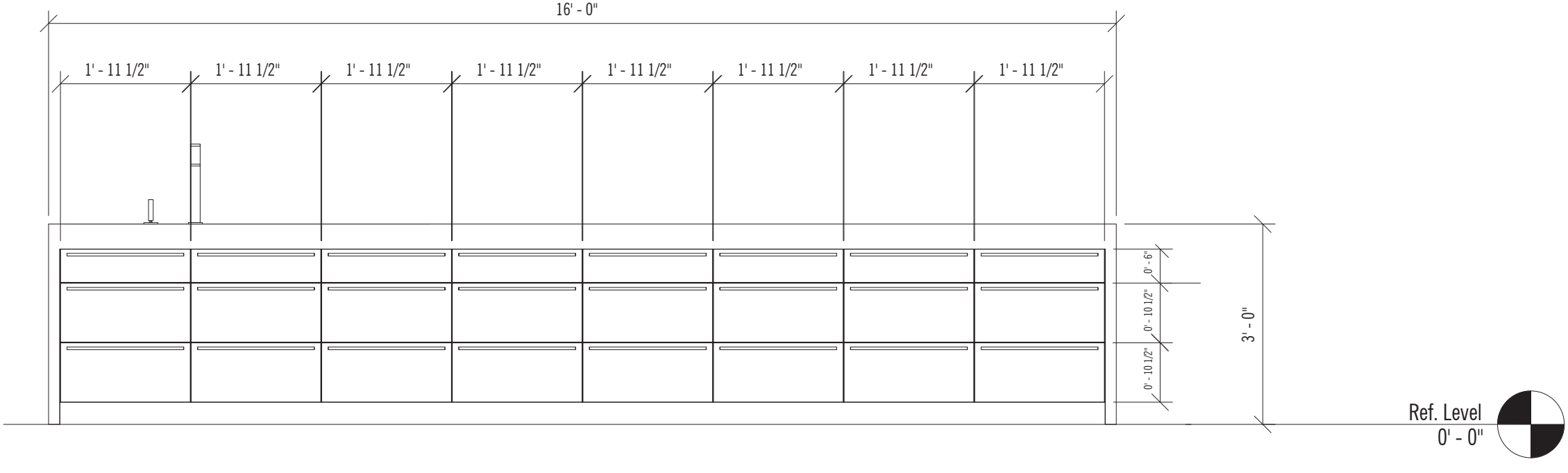
F106 | BOARDROOM ▶



▲ F108 | BOARDROOM COFFEE STATION DETAIL | SECTION | SCALE: 1/2" = 1'-0"

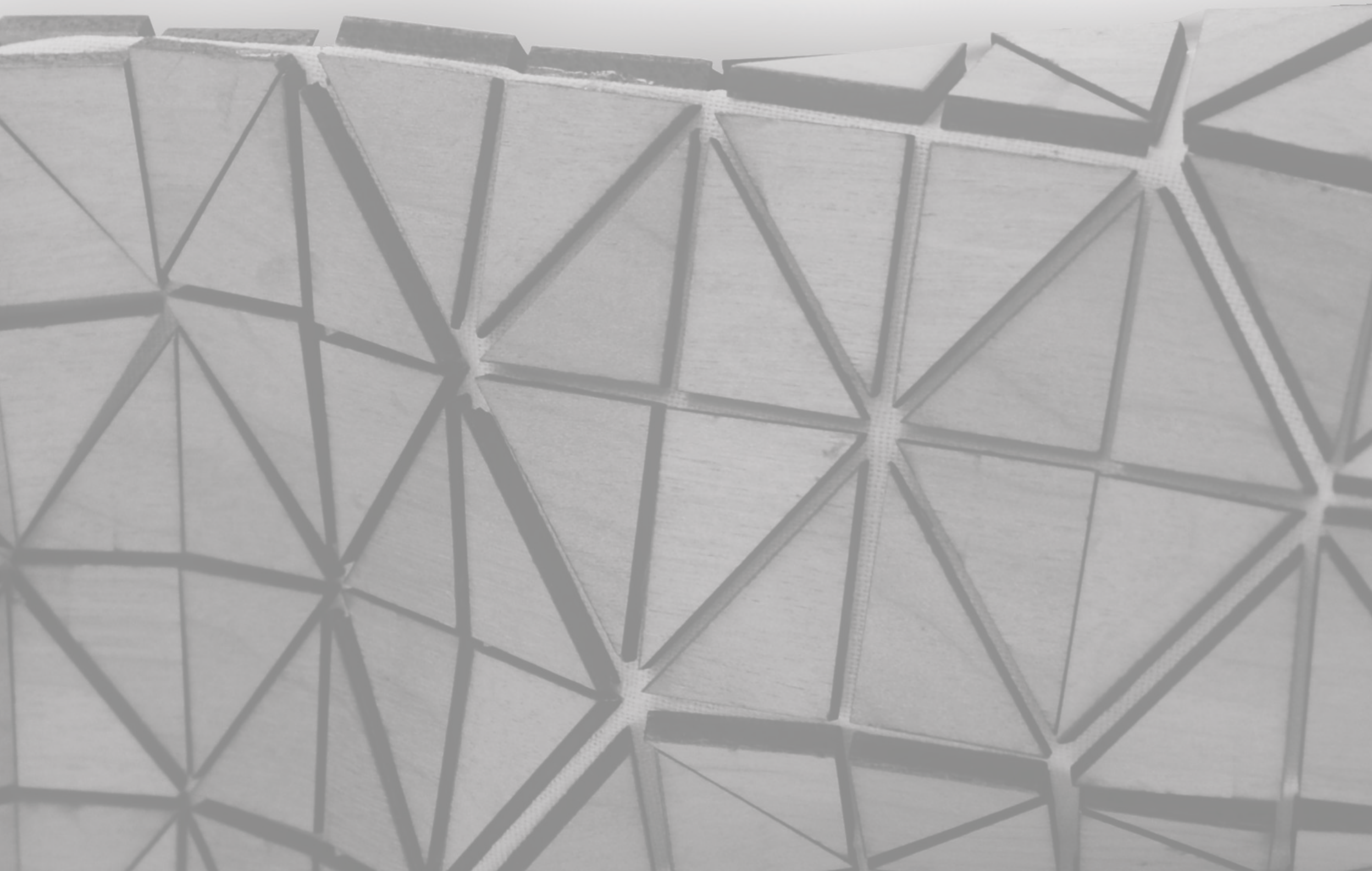


▲ F109 | BOARDROOM COFFEE STATION DETAIL | PLAN VIEW | SCALE: 1/2" = 1'-0"



▲ F110 | BOARDROOM COFFEE STATION DETAIL | FRONT VIEW | SCALE: 1/2" = 1'-0"

▲ F111 | BOARDROOM COFFEE STATION DETAIL | AXONOMETRIC



CHAPTER 10.0
CONCLUSION

The interior, architectural, and landscape design of Exchange Hospice has been influenced by a holistic view of end-of-life care. This holistic approach to palliation focused on the physical, psychological, psychosocial, and spiritual needs of caregivers as a method of improving quality end-of-life care for the resident. The overarching goals of this practicum project examined these caregiver needs in terms of the role of caregivers within hospice environments, the experience of grief and bereavement, existing local hospices, as well as a precedent study. Biophilia and connections to the natural environment were also identified as a means of alleviating the negative effects of informal caregiving at the end of life.

The final design for Exchange Hospice has been informed by a diverse collection of resources ranging from medical journals, to personal interviews, to evidence-based healthcare design, to biophilic interior design strategies. Each inquiry process offered an alternative perspective and approach for designing a hospice environment that would meet and exceed the needs of informal caregivers. Additionally, this diverse inquiry process has pushed the design outcome beyond a traditional model of programmatic support systems to include interior design as a healing technique.

Although the proposal of Exchange Hospice has met the programmatic and atmospheric goals of an inclusive hospice facility, identified at the beginning of the this design process, further research, analysis, and design explorations may have been beneficial to the finalized design. Due to the scope of the project, the critical collaboration between designers, healthcare professionals, caregivers, residents, and building system specialists was not possible. This interdisciplinary design approach would have offered the design additional expertise that could not have otherwise be gathered from a literature review.

Despite the advantages of additional explorations and collaborative studies, the design of Exchange Hospice has been successful in achieving the four design objectives established in the Introduction:

1. **What are the physical, psychological, psychosocial, and spiritual needs of caregivers, and how can they be addressed through the design of an independent hospice facility?**;

The physical, psychological, psychosocial, and spiritual needs of caregivers were identified through an extensive literature review and interview process, described in Chapters 2 through 4. These four caregiver needs have been primarily addressed in terms of programmatic strategies for the proposed independent hospice facility. The incorporation of specific residential accommodations, hygiene and nutritional amenities, as well as spatial adjacencies are a number of the programmatic strategies employed for the promotion of a healthy, balanced lifestyle, active communication, and continuous support for caregivers throughout this challenging experience.

2. **How can the fundamental characteristics of the grieving process inform the design of a hospice facility that supports the physical, psychological, psychosocial, and spiritual needs of caregivers?**;

Similarly to the first design objective, the fundamental characteristics of the grieving process have predominantly informed the programme of Exchange Hospice. Based on the evolution of grief and bereavement, the characteristics of anticipatory grief, as well as the fundamental goals of the patient-focused, family-centered model of palliative care, the specific needs of caregivers have been addressed through the inclusion of unique caregiver spaces and accommodations. These spaces and accommodations have included, but are not limited to, two caregiver rooms with hygiene amenities; a communal kitchen for nutrition; semi-private living spaces and an open concept for active communication; a gym for the promotion of a healthy lifestyle; a quiet room for spiritual guidance; as well as offices for grief and bereavement counseling.

3. **How can the case studies of two existing independent hospice facilities in Winnipeg, Manitoba, and the analysis of three precedents address the physical, psychological, psychosocial, and spiritual needs of caregivers?**; and

Both the case study inquiry process of Jocelyn House Hospice and The Grace Hospice and the analysis of SCCA House, Maggie's Centres, and The Paimio Tuberculosis Sanatorium, have offered a number of specific design considerations for Exchange Hospice that directly affect the needs of its caregivers. The advantages of Jocelyn House Hospice and The Grace Hospice have been translated into the design of the proposed facility in order to promote active communication between resident, caregiver, and staff; create a home-like environment; foster visual and physical connections to the natural environment; initiate interpersonal relationships between hospice occupants; as well as to offer places of privacy and confidentiality. A comparable list of programmatic and atmospheric characteristics for Exchange Hospice was also influenced by the analysis of the three precedents in Chapter 6. This analysis of SCCA House, Maggie's Centres, and The Paimio Tuberculosis Sanatorium also suggested communication, home, nature, openness, and privacy as design strategies for supportive caregiver environments.

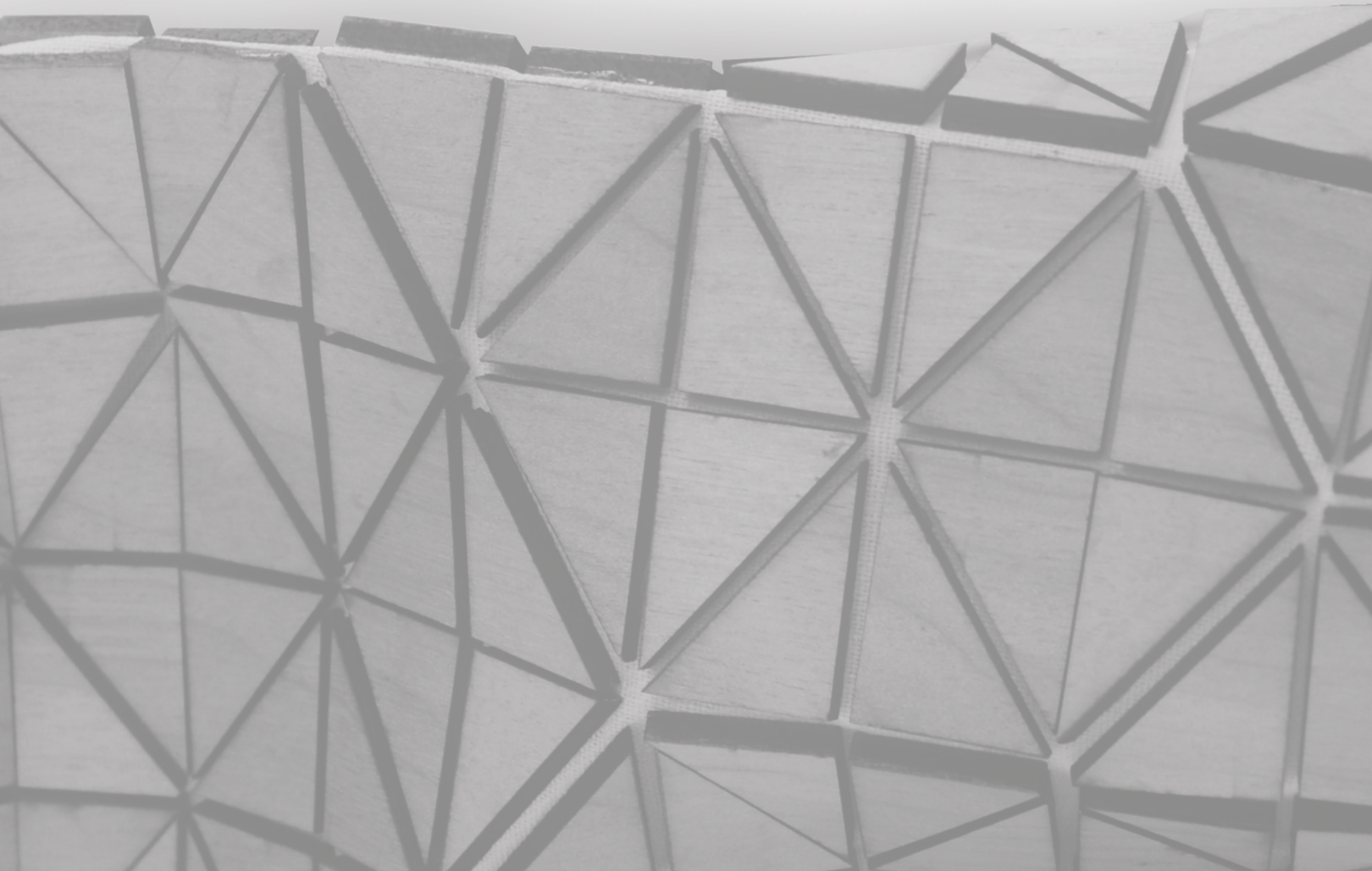
4. What design considerations and strategies can be derived from evidence-based healthcare design and the principles of biophilic design?

Programmatic strategies for Exchange Hospice were influenced by fundamental and evidence-based healthcare design, where it's overall design concept was derived from the tenets of biophilic design. Fundamental and evidence-based healthcare design strategies included an improved indoor environmental quality from a building systems and materials approach; appropriate spatial adjacencies for safety, convenience, and efficiency; the incorporation of communal, supportive environments; as well as access to daylight and natural views. In contrast, biophilic design was translated into the architectural language and design features of Exchange Hospice through the 'act of framing'; direct, indirect, and symbolic connections to the natural environment; as well as material and furniture selections. Although evidence-based healthcare design and biophilic design influenced explicit elements of the proposed facility, the desired outcome of both strategies was to improve the health and well-being of caregivers.

Each of these design objectives has, in some way, shaped the programmatic decisions, spatial qualities, and/or overall architectural language of Exchange Hospice. By achieving these four design objectives, this major degree project has ultimately demonstrated how the design of an independent hospice facility can support the needs of informal caregivers during end-of-life care.

F112 | ENTRY TO EXCHANGE HOSPICE | NIGHT VIEW ▶


EXCHANGE
HOSPICE



CHAPTER 11.0
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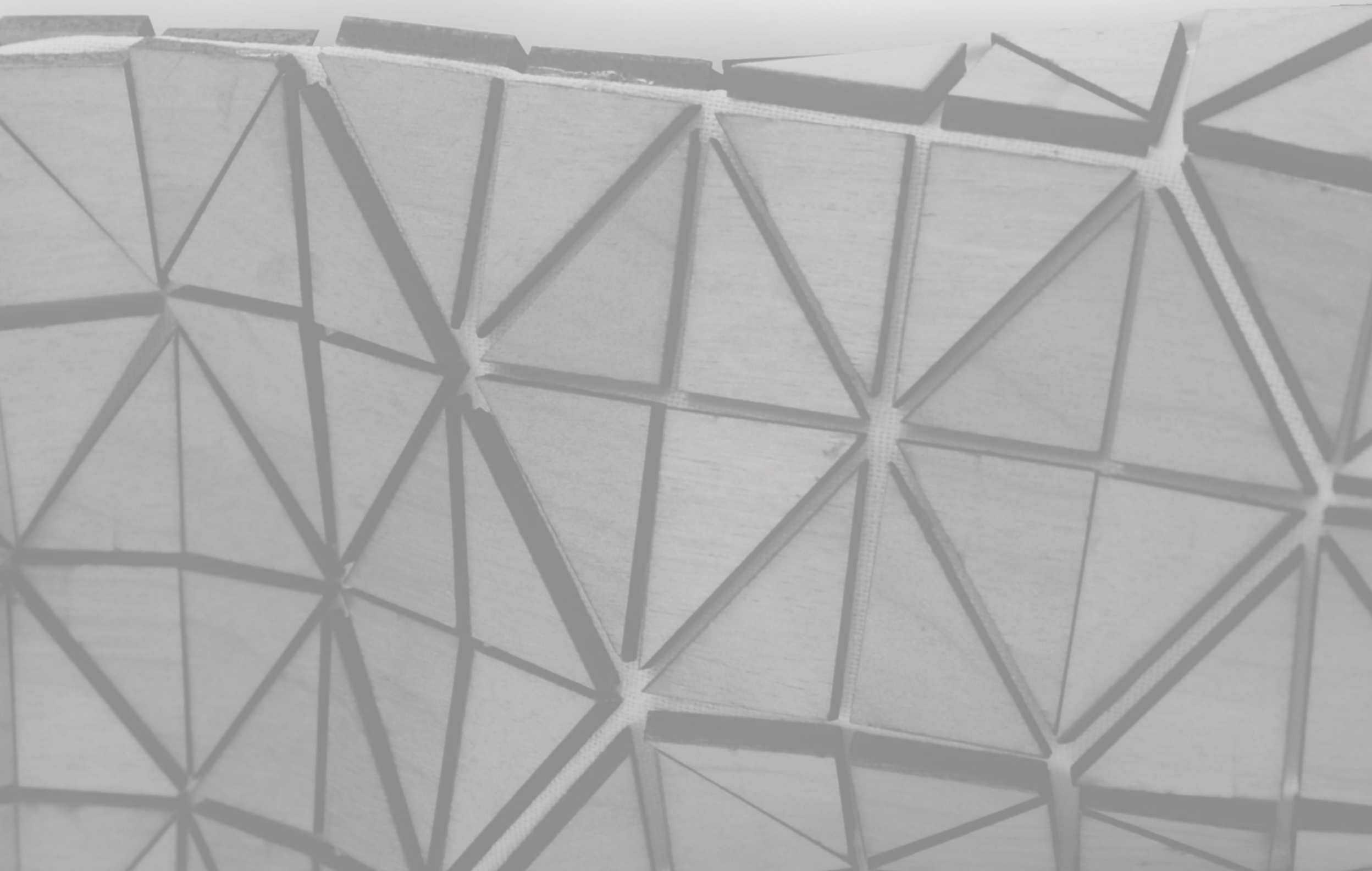
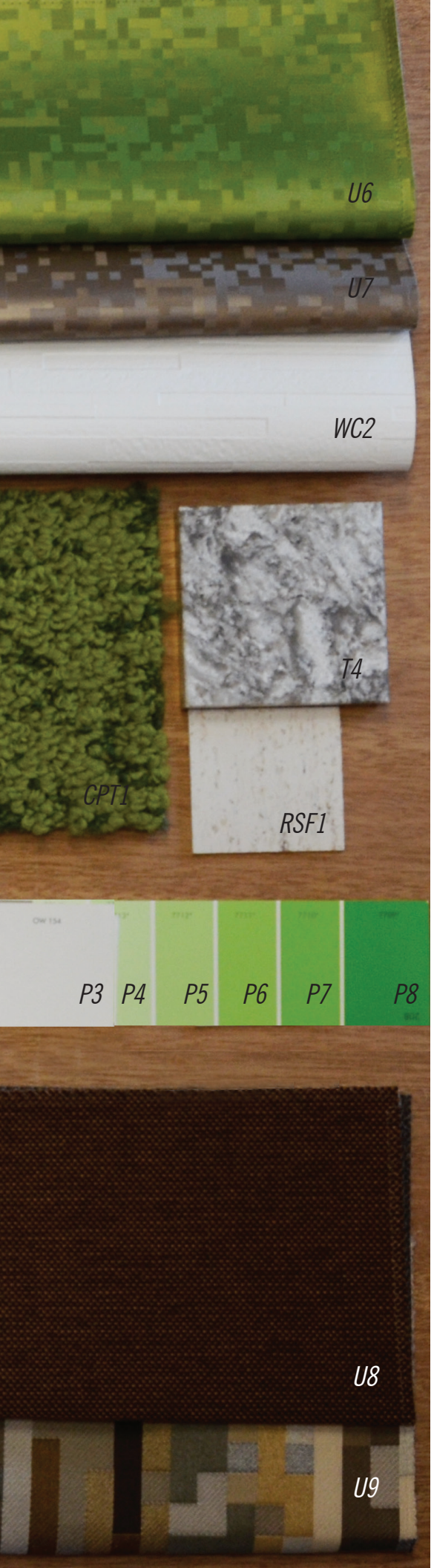


APPENDIX A

MATERIAL SELECTIONS

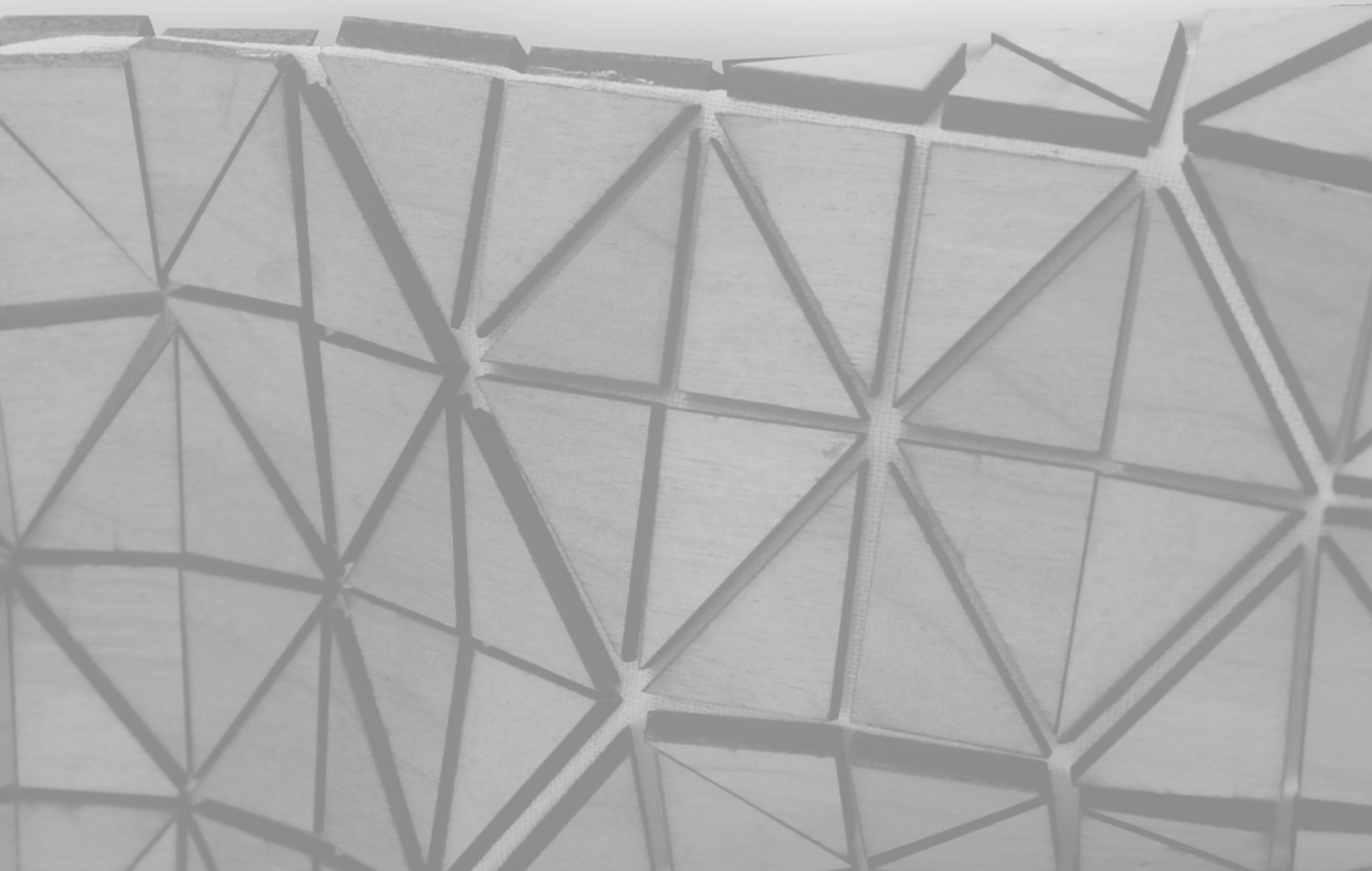

DC1
EC1
EC2
G1
EF1
HS1
F1
T1
F2
T2
T3
WT2
P1
P2
WT1
WC1
U1
U2
U3
U4
U5



MATERIAL SCHEDULE

LOCATION	ABBREVIATION	APPLICATION	MANUFACTURER	COLLECTION	COLOUR	PRODUCT CODE	NOTES
Exterior	EF1	Exterior Flooring	Custom	-	Natural Walnut	-	-
Exterior	EC1	Exterior Cladding	Alucobond	Alucobond Plus	Glade Green Cool	-	Fire resistant core
Exterior	EC2	Exterior Cladding	Alucobond	Alucobond Plus	Bone White Cool	-	Fire resistant core
Exterior	G1	Reflective Window Film	Pilkington	Eclipse Advantage	Clear Coated	-	Solar Control Low-E
Lobby + Kitchen Area + Dining Area	DC1	Dropped Ceiling	Custom	-	Maple	-	-
Public + Semi-Private+ Private Spaces	HS1	Furniture Finishes	Custom	-	Maple	-	-
Public Spaces + Resident Rooms + Caregiver Rooms	F1	Flooring	Armstrong Commercial Hardwood	Performance Plus	Natural - Walnut	ESP5251	Stain and gauge resistant + Antimicrobial
Vestibules + Kitchen Area	F2	Flooring	Olympia Tile + Stone	Natural Stone	Bianco Wood Brushed	GM.B.WOOD.1224.BD	-
Kitchen Area	T1	Countertop Quartz	Cambria	Classic Collection	Snowdon White	-	Nonporous
Kitchen Area	T2	Backsplash Tile	Olympia Tile + Stone	Cristallo Collection	Super White	OD.CR.SWT.0,5x1,9.BL	Brick layered + Glossy/matte blends + Mesh mounted
Kitchen Area	T3	Backsplash Tile	Olympia Tile + Stone	Cristallo Collection	Special Grey	OD.CR.SGY.0,5x1,9.BL	Brick layered + Glossy/matte blends + Mesh mounted
Public Spaces	WC1	Wall Covering	Maharam	Prairie	Walnut	399413/007	Washable + Heavy metal free dyes
Public Spaces + Semi-Private Living Spaces	WT1	Window Treatment	Maharam	Skyline by Kvadrat	-	283722/116	Reduced environmental impact
Resident Rooms + Caregiver Rooms	WT2	Window Treatment	Maharam	Increment	Fossil	511443/001	Significant antibacterial effect + Decreased risk of bacterial transmission +Inherently antibacterial + Inherently flame resistant + Washable to 160
Living Area + Semi-Private Living Spaces + Quiet Room	CPT1	Carpet Tile	Interface Flooring	Urban Retreat	Straw/Grass	12711103503	80% total recycled content
Kitchen Area	U1	Upholstery	Maharam	Bitmap	Polar	46606/001	100% vinyl + Antimicrobial and stain resistant + 100,000+ double rubs
Living Area	U2	Upholstery	Maharam	Wafer	Thistle	465330/004	100,000+ cycles + Reduced environmental impact
Living Area	U3	Upholstery	Maharam	Wafer	Vital	465330/013	100,000+ cycles + Reduced environmental impact
Living Area + Lobby + Office Spaces + Boardroom	U4	Upholstery	Maharam	Wafer	Igloo	465330/001	100,000+ cycles + Reduced environmental impact
Lobby	U5	Upholstery	Maharam	Regatta	Drift	466189/001	Stain resistant + 90,000+ double rubs + Reduced environmental impact
Resident Rooms	U6	Upholstery	Maharam	Bitmap	Armadillo	466066/002	100% vinyl + Antimicrobial and stain resistant + 100,000+ double rubs
Resident Rooms	U7	Upholstery	Maharam	Bitmap	Aloe	466066/010	100% vinyl + Antimicrobial and stain resistant + 100,000+ double rubs
Resident Rooms	WC2	Wall Covering	Maharam	Indent	Plaster	399100/001	100% vinyl

	Public + Semi-Private+ Private Spaces	*P1*	*Paint*	*Benjamin Moore*	*-*	*Cabot Trail*	*CC-480*	*-*
	Public + Semi-Private+ Private Spaces	*P2*	*Paint*	*Benjamin Moore*	*-*	*Rocky Road*	*CC-470*	*-*
	Public + Semi-Private+ Private Spaces	*P3*	*Paint*	*Benjamin Moore*	*-*	*Drifted Sand*	*OW 154*	*-*
	Resident Rooms + Caregiver Rooms	*P4*	*Paint*	*Benjamin Moore*	*-*	*Point Pleasant Heighs*	*7713*	*-*
	Resident Rooms + Caregiver Rooms	*P5*	*Paint*	*Benjamin Moore*	*-*	*Snappy Green*	*7712*	*-*
	Resident Rooms + Caregiver Rooms	*P6*	*Paint*	*Benjamin Moore*	*-*	*Lick of Lime*	*7711*	*-*
	Resident Rooms + Caregiver Rooms	*P7*	*Paint*	*Benjamin Moore*	*-*	*Sour Apple*	*7710*	*-*
	Resident Rooms + Caregiver Rooms	*P8*	*Paint*	*Benjamin Moore*	*-*	*Latest Look*	*7709*	*-*
	Resident Rooms + Caregiver Rooms	*T4*	*Countertop Quartz*	*Cambria*	*Quarry Collection*	*Ferndale*	*-*	*Nonporous*
	Gym + Soiled Linen + Lift Storage	*RSF1*	*Resilient Sheet Flooring*	*Johnsonite*	*Optima*	*Raw Ivory W*	*862*	*-*
	Semi-Private Living Spaces + Quiet Room	*U8*	*Upholstery*	*Levey Industries*	*Axis*	*Allspice*	*U-AXI-ALLS*	*-*
	Caregiver Rooms + Semi-Private Living Spaces + Quiet Room + Office Spaces	*U9*	*Upholstery*	*Maharam*	*Anagram*	*Quarry*	*466067/001*	*PFOA free stain resistant + 90,000+ double rubs + Reduced environmental impact*



APPENDIX B

REFLECTED CEILING PLANS AND SECTIONS

SELUX SATINLIGHTS SQUARE RECESSED (200)

TRACK LIGHT - WALL WASHER

SPRINKLER HEAD

AIR VENT

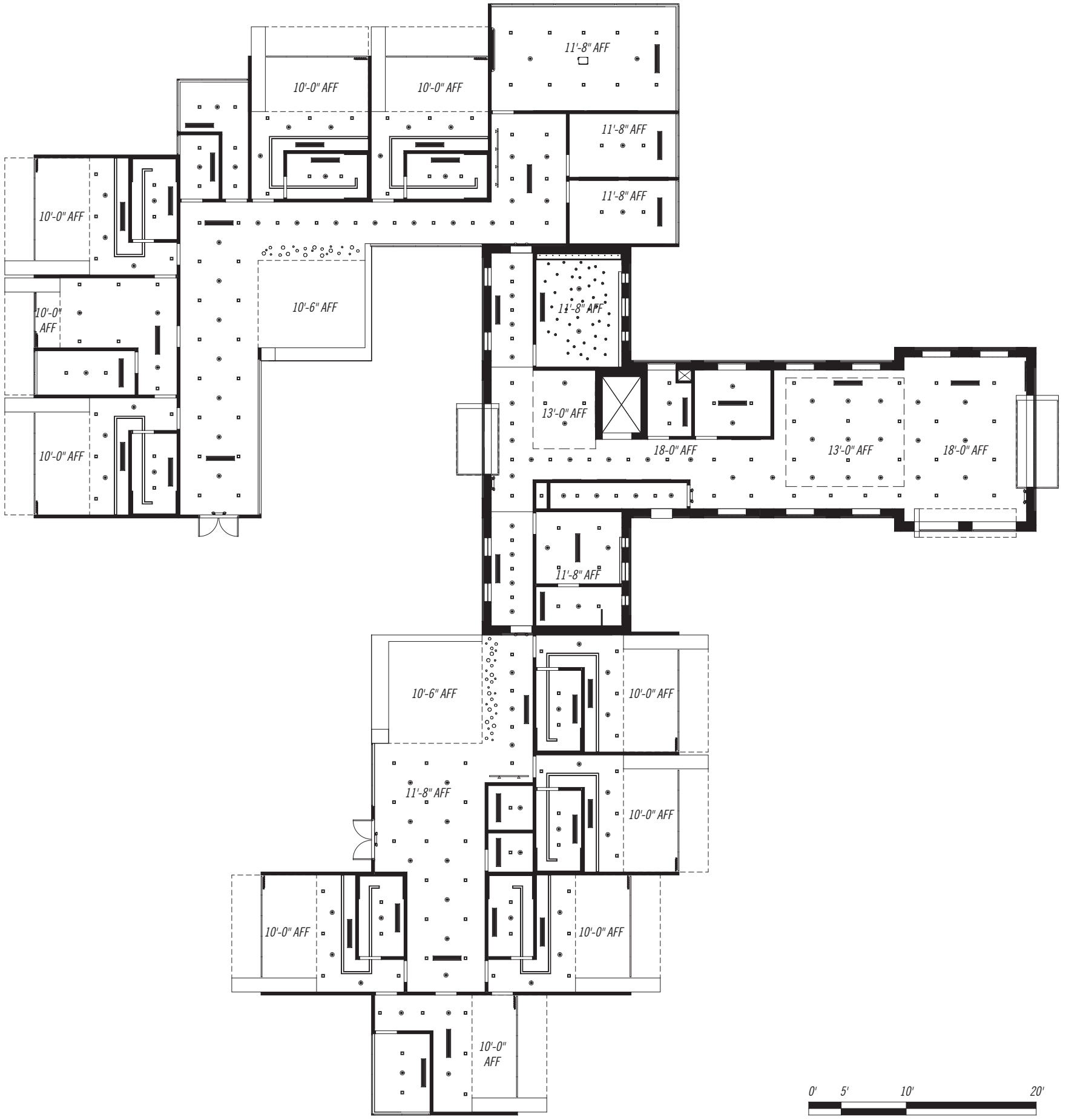
EMERGENCY EXIT SIGN

CEILING-HUNG TERRARIUMS

CEILING LIFT

BOCCI PENDANT LIGHTS

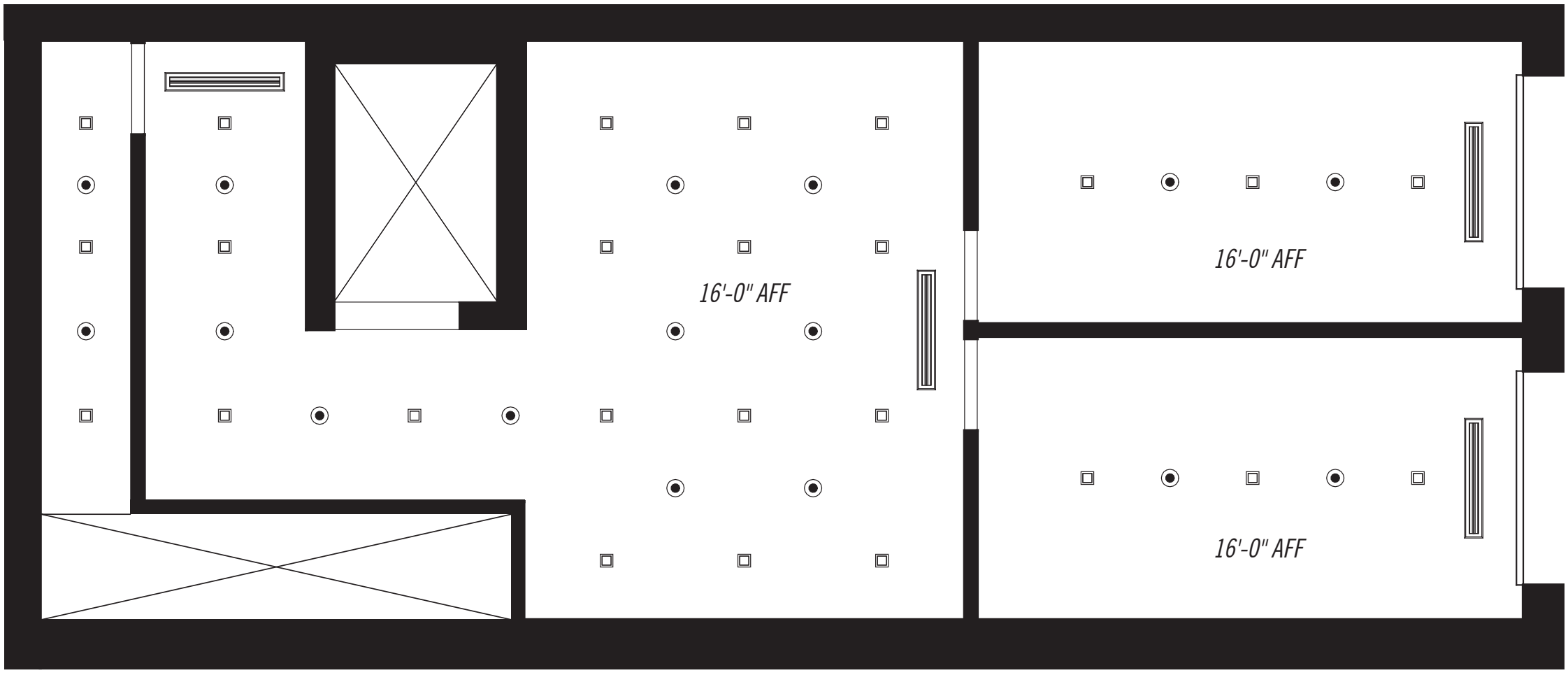
F114 | REFLECTED CEILING PLAN ▶

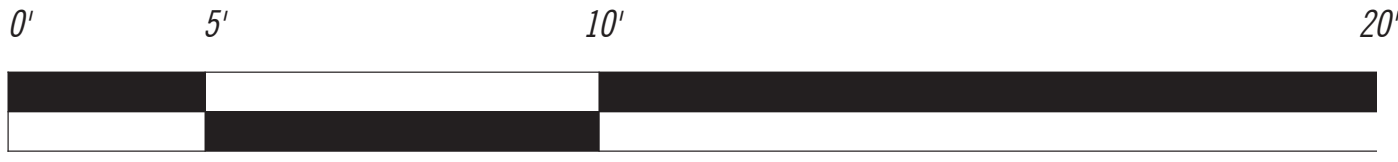

11'-8" AFF
10'-0" AFF
10'-0" AFF
11'-8" AFF
11'-8" AFF
10'-0" AFF
10'-6" AFF
11'-8" AFF
10'-0" AFF
13'-0" AFF
18'-0" AFF
13'-0" AFF
18'-0" AFF
10'-0" AFF
11'-8" AFF
10'-6" AFF
10'-0" AFF
11'-8" AFF
10'-0" AFF
10'-0" AFF
10'-0" AFF
10'-0" AFF
0'
5'
10'
20'

SELUX SATINLIGHTS SQUARE RECESSED (200)

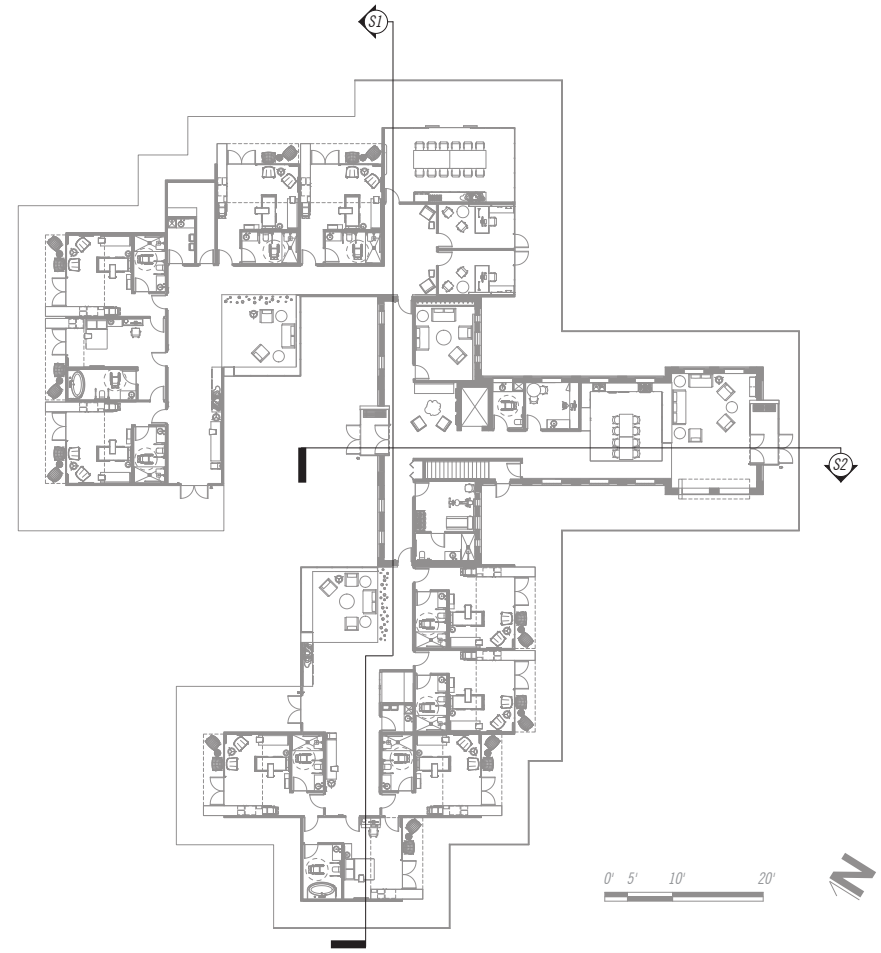
SPRINKLER

AIR VENT



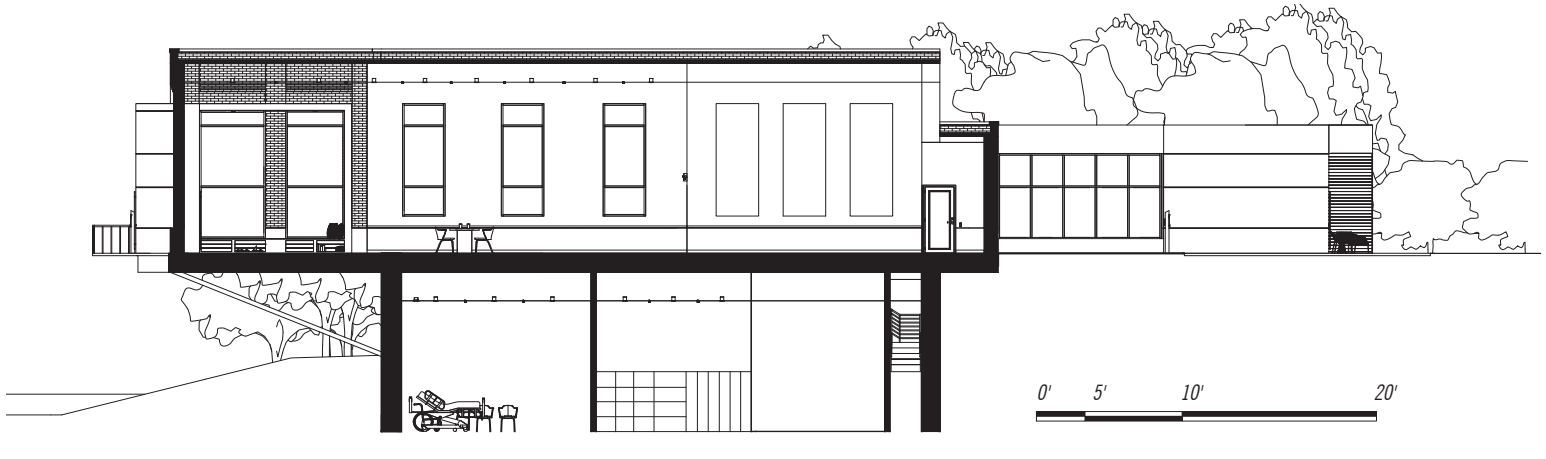


▲ F115 | BASEMENT REFLECTED CEILING PLAN

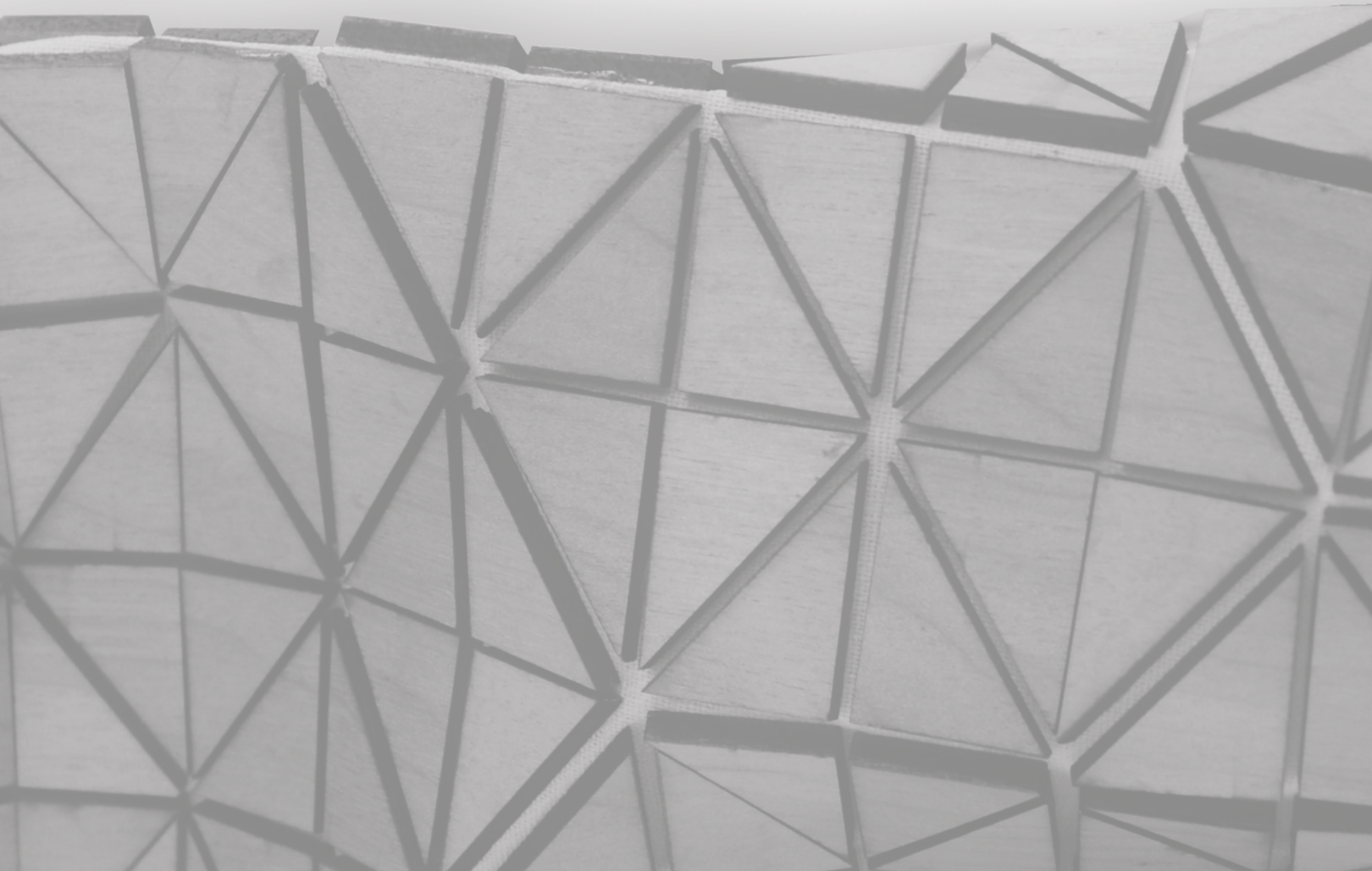


▲ F116 | FLOOR PLAN | SECTION CUTS

▲ F117 | SECTION 1 | NORTH-SOUTH



▲ F118 | SECTION 2 | EAST-WEST



APPENDIX C

ACCESS AND LIFE SAFETY REQUIREMENTS

In order to ensure occupant safety for all users and compliance with Canada's building bylaws throughout the design of the independent hospice facility – proposed in Chapter 9 – the National Building Code of Canada 2010 was analyzed (Canadian Commission on Building and Fire Codes National Research Council of Canada, 2010).

PART 3: FIRE PROTECTION, OCCUPANT SAFETY AND ACCESSIBILITY

SECTION 3.1. | GENERAL

3.1.2. CLASSIFICATION OF BUILDINGS OR PARTS OF BUILDINGS BY MAJOR OCCUPANCY
3.1.2.1. Classification of Buildings

The proposed independent hospice facility is intended for use by one major occupancy. According to Table 3.1.2.1. the facility's major occupancy classification is Group B (Division 3): Care occupancies, hospices without treatment.

3.1.5. NONCOMBUSTIBLE CONSTRUCTION
3.1.5.1. Noncombustible Materials

The proposed independent hospice facility utilizes the original brick and concrete construction, a noncombustible material, to support its floors and roof assemblies.

3.1.17. OCCUPANT LOAD
3.1.17.1. Occupant Load Determination

The occupant load for each floor within the proposed independent hospice facility, based on Table 3.1.17.1., are as follows:

Main Floor

Lobby Area (Anticipated Occupancy) = 4 people
Assembly uses (space with non-fixed seats and tables)
102 ft2 (9.47m2) / 10.2 ft2 (0.95 m2/person) = 10 people max.

Gym (Anticipated Occupancy) = 2 people
Assembly uses (standing space)
231 ft2 (21.4 m2) / 4.3 ft2 (0.40 m2/person) = 10 people max.

Quiet Room (Anticipated Occupancy) = 6 people
Assembly uses (space with non-fixed seats and tables)
231 ft2 (21.4 m2) / 10.2 ft2 (0.95 m2/person) = 22 people max.

Medical Room (Anticipated Occupancy) = 2 people
Assembly uses (space with non-fixed seats)
120 ft2 (11.1 m2) / 8.1 ft2 (0.75 m2/person) = 14 people max.

Living Area – Public (Anticipated Occupancy) = 10 people
Assembly uses (reading or writing rooms or lounges)
402 ft2 (37.3 m2) / 19.9 ft2 (1.85 m2/person) = 20 people max.

Kitchen and Dining Area (Anticipated Occupancy) = 10 people
Assembly use (dining, beverage, and cafeteria space
243 ft2 (22.5 m2) / 12.9 ft2 (1.20 m2/person) = 18 people max.

Office Space 1 (Anticipated Occupancy) = 2 people
Assembly uses (space with non-fixed seats)
163 ft2 (15.1 m2) / 8.1 ft2 (0.75 m2/person) = 20 people max.

Office Space 1 (Anticipated Occupancy) = 2 people
Assembly uses (space with non-fixed seats)
163 ft2 (15.1 m2) / 8.1 ft2 (0.75 m2/person) = 20 people max.

Boardroom (Anticipated Occupancy) = 12 people
Assembly uses (classroom)
404 ft2 (37.5m2) / 19.9 ft2 (1.85 m2/person) = 20 people max.

Patient Rooms (x8) (Anticipated Occupancy) = 1 patient x 8 rooms = 8 people
Care, treatment or detention uses (care, treatment and sleep room areas)
393 ft2 (36.5 m2) / 107.6 ft2 (10 m2/person) = 3 people
3 people x 8 rooms = 24 people total max.

Caregiver Rooms (x2) (Anticipated Occupancy) = 2 people
Residential uses (dwelling units) = 2 people
2 people x 2 rooms = 4 people total max.

Living Area – Semi-Private 1 (Anticipated Occupancy) = 4 people
Assembly uses (reading or writing rooms or lounges)
225 ft2 (20.9 m2) / 19.9 ft2 (1.85 m2/person) = 11 people max.

Living Area – Semi-Private 2 (Anticipated Occupancy) = 4 people
Assembly uses (reading or writing rooms or lounges)
227 ft2 (21.1 m2) / 19.9 ft2 (1.85 m2/person) = 11 people max.

Total Anticipated Occupancy (Main Floor) = 68 people

Basement

Laundry Room (Anticipated Occupancy) = 4 people
Other uses (cleaning and repair goods)
336 ft2 (31.2 m2) / 49.5 ft2 (4.60 m2/person) = 6 people max.

Total Anticipated Occupancy (Basement) = 4 people

Total Anticipated Hospice Occupancy = 72 people

SECTION 3.2. | BUILDING FIRE SAFETY

3.2.1. GENERAL

The proposed independent hospice facility occupies one storey, including a basement, and faces one street.

3.2.2. BUILDING SIZE AND CONSTRUCTION RELATIVE TO OCCUPANCY

3.2.2.10. Streets

As the proposed independent hospice facility's West façade faces Waterfront Drive, it is considered to face one street.

3.2.2.46. Group B, Division 3, up to 3 Storeys (Noncombustible), Sprinklered

The proposed independent hospice facility shall be of noncombustible construction, and: - be sprinklered throughout;
- use floor assemblies that are fire-separations with a fire-resistance rating not less than 1hr; and
- load-bearing walls shall have a fire-resistance rating not less than that required for the supported assembly.

3.2.3. SPATIAL SEPARATION AND EXPOSURE PROTECTION

3.2.3.10. Unlimited Unprotected Openings

The proposed independent hospice facility has limiting distances on all of its facades greater than 9 m, therefore, all of its unprotected openings may have glazing that is not fire-rated, and there is no limit to the area of this glazing.

3.2.4. FIRE ALARM AND DETECTION SYSTEMS

3.2.4.1. Determination of Requirement for a Fire Alarm System

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

3.2.4.3. Types of Fire Alarm Systems

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

3.2.4.11. Fire Detectors

The proposed independent hospice facility does not require fire detectors, as all floor areas are sprinklered throughout. However, elevator shafts require fire detectors, as they are not sprinklered.

3.2.4.12. Smoke Detectors

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

3.2.4.21. Smoke Alarms

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

3.2.5. PROVISIONS FOR FIREFIGHTING

3.2.5.5. Location of Access Routes

Access routes must be located so that the principal entrance and every access opening of the proposed independent hospice facility shall be between 3-15m (10-49ft) from the face of the building. This access is provided on Waterfront Drive.

3.2.7. LIGHTING AND EMERGENCY POWER SYSTEMS

3.2.7.3. Emergency Lighting

Emergency lighting within the proposed independent hospice facility must 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 sleeping rooms in a care occupancy, except corridors serving sleeping rooms within individual suites of a care occupancy; and
- public corridors.

3.2.7.4. Emergency Power for Lighting

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

3.2.7.8. Emergency Power for Fire Alarm Systems

Fire alarm systems of the proposed independent hospice facility require an emergency power supply that is capable of providing supervisory power for not less than 24hr, and immediately following that period, emergency power under full load for not less than 1hr.

SECTION 3.3. | SAFETY WITHIN FLOOR AREAS

3.3.1. ALL FLOOR AREAS

3.3.1.1. Separation of Suites

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

3.3.1.3. Means of Egress

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

3.3.1.4. Public Corridor Separations

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

3.3.1.5. Egress Doorways

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

3.3.1.9. Corridors

The minimum width of a public corridor is 1100 mm (3.5ft). All of the corridors within the proposed independent hospice facility are 1800mm (6ft) wide or greater. Additionally, there are no dead end corridors longer than 6m (20ft) within the proposed independent hospice facility.

3.3.1.13. Doors and Door Hardware

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

3.3.1.17. Capacity to Access to Exits

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

3.3.1.18. Guards

The proposed independent hospice facility requires a guard not less than 1070mm (3.5ft) high around the exterior balcony perimeter. Additionally, openings within the guard shall not allow the passage of spheres larger than 100 mm (4 inches) in diameter. The guards shall also be designed so that no member, attachment or opening located between 140 mm (5.51 inches) and 900 mm (35.4 inches) above the level protected by the guard facilitates climbing.

3.3.1.19. Transparent Doors and Panels

The design and construction of transparent doors and panels at the facility must be readily apparent through the attachment of non-transparent hardware, and be constructed of laminated tempered safety glass or wired glass.

3.3.2. ASSEMBLY OCCUPANCY

3.3.2.3. Fixed Seats

Non-fixed seats at the proposed independent hospice conform to the National Fire Code (NFC).

3.3.3. CARE, TREATMENT OR DETENTION OCCUPANCIES

3.3.3.3. Corridors

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

3.3.3.4. Doorway Width

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

3.3.3.5. Compartments and Fire Separations

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

SECTION 3.4. | EXITS

3.4.1.2. Separation of Exits

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

3.4.2. NUMBER AND LOCATION OF EXITS FROM FLOOR AREAS
3.4.2.1. Minimum Number of Exits

Every floor area of the proposed independent hospice facility is served by at least two exits.

3.4.2.5. Location of Exits

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

3.4.3. WIDTH AND HEIGHT OF EXITS
3.4.3.2. Exit Width

Exit widths of the proposed independent hospice facility conform to the requirements listed in Table 3.4.3.2.B. Minimum Widths of Exit Corridors, Passageways, Ramps, Stairs and Doorways in Group B, Division 2 and Division 3 Occupancies.

3.4.3.4. Headroom Clearance

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

3.4.4. FIRE SEPARATION OF EXITS
3.4.4.1 Fire-Resistance Rating of Exit Separations

The fire-resistance rating of exit separations at the proposed independent hospice facility is 2hr for each exit.

3.4.5. EXIT SIGNS
3.4.5.1 Exit Signs

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

3.4.6. TYPES OF EXIT FACILITIES

3.4.6.1. Slip Resistance of Ramps and Stairs

The surfaces of all landings and treads in the proposed independent hospice facility have slip resistant finishing.

3.4.6.2. Minimum Number of Risers

The proposed independent hospice facility does not have any interior flights of stairs with less than 3 risers.

3.4.6.3. Maximum Vertical Rise of Stair Flights and Required Landings

The flight of stairs at the proposed independent hospice facility does not have a vertical rise greater than 3.7m (12.1ft) between landings. A landing is also provided at the top and bottom of each flight of interior stairs, and where a doorway opens onto the stairs.

3.4.6.4. Dimensions of Landings

The width of the landing is the same width as the stairway of the proposed independent hospice facility, where the length of the landing is no more than 1100mm (3.6ft).

3.4.6.5. Handrails

The stairway at the proposed independent hospice facility has a handrail on at least one side that conforms to sentences 3.4.6.5. (2-12).

3.4.6.8. Treads and Risers

The stairs at the proposed independent hospice facility conform to sentences 3.4.6.8. (1-10).

3.4.6.11. Doors

The distance between a stair riser and the leading edge of a door during its swing shall be not less than 300mm (11.8in) and all exit doors shall be clearly identifiable.

3.4.6.12. Direction of Door Swing

With the exception of doors serving patient and caregiver rooms, all doors in the proposed independent hospice facility open in the direction of exit travel, and swing on vertical axis.

3.4.6.14. Self-Closing Door Swing

Within the proposed hospice facility, an exit door that is normally required to be kept closed is provided with a self-closing mechanism and will never be secured in an open position.

SECTION 3.5. | VERTICAL TRANSPORTATION

3.5.3. FIRE SEPARATIONS

3.5.3.1. Fire Separations for Elevator Hoistways

The vertical service space used as an elevator hoistway in the proposed independent hospice facility requires a fire separation with a fire-resistance rating of 2hrs and conforming to Table 3.5.3.1., as it services a Group B, Division 3 occupancy.

3.5.4. DIMENSIONS AND SIGNS

3.5.4.1. Elevator Car Dimensions

The interior dimensions of the elevator at the proposed independent hospice facility will accommodate a patient stretcher 2010mm long (79.1in) and 610mm (24in) wide. The interior dimensions of the elevator are 1524 mm (60 inches) long and 2438 mm (96 inches) deep.

SECTION 3.7. | HEALTH REQUIREMENTS

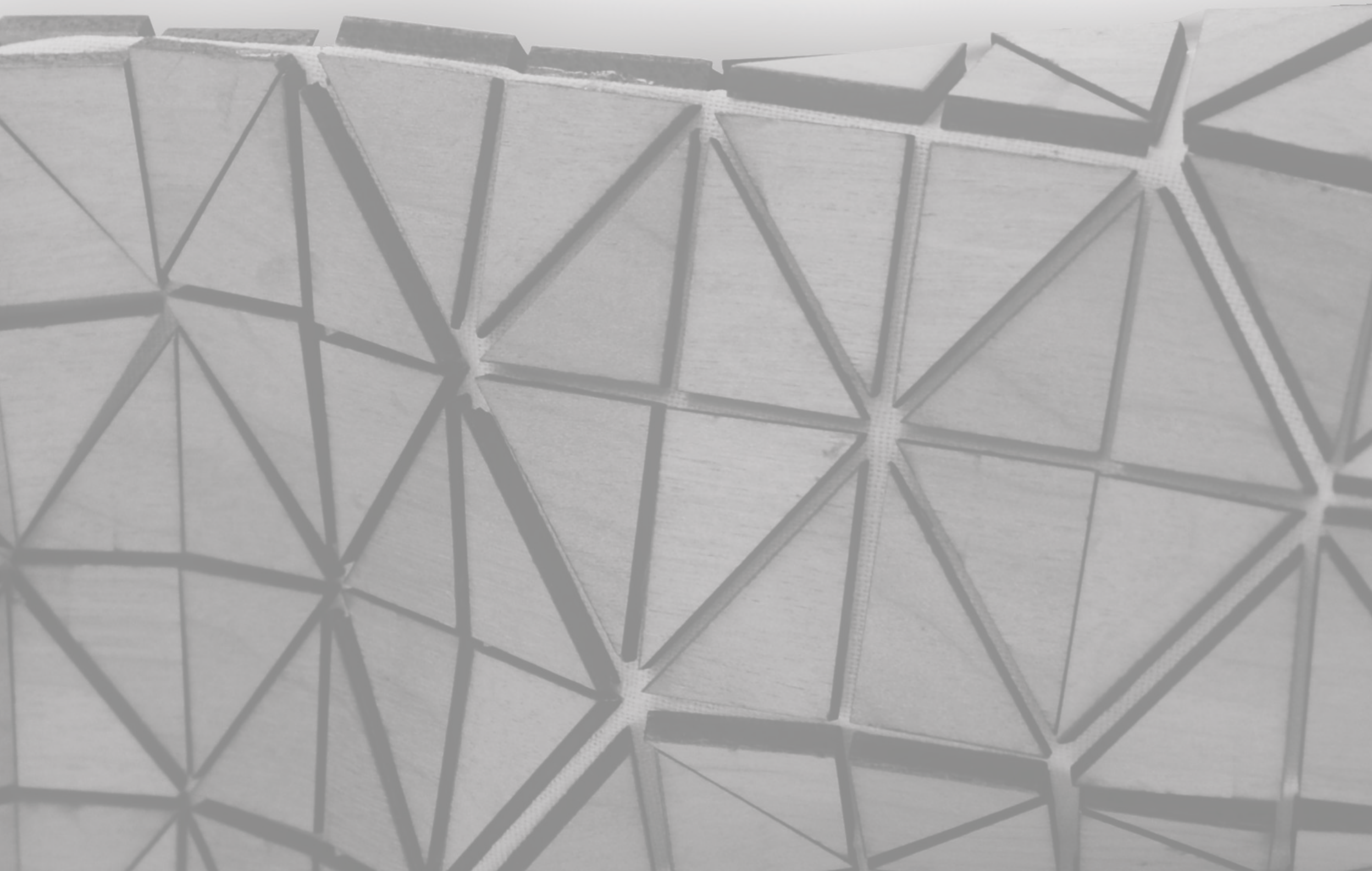
3.7.2. PLUMBING FACILITIES

3.7.2.2. Water Closets

The number of water closets provided for patients and caregivers exceeds the one per 10 persons of each sex specified for care and residential occupancies. Two additional unisex washrooms are provided for the assembly occupancies of the hospice.

SECTION 3.8. | BARRIER-FREE DESIGN

The proposed independent hospice facility is designed to be barrier-free and complies with the requirements outlined in the code.



APPENDIX D

ETHICS APPROVAL

UNIVERSITY OF MANITOBA | Office of the Vice-President (Research and International)
Research Ethics and Compliance

Human Ethics
208 - 194 Dafoe Road
Winnipeg, MB
Canada R3T 2N2
Fax 204-269-7173

APPROVAL CERTIFICATE

June 25, 2012

TO: **Jessica Kost** (Advisor S. Mallory-Hill)
Principal Investigator

FROM: **Wayne Taylor, Chair**
Joint-Faculty Research Ethics Board (JFREB)

Re: **Protocol #J2012:079**
"Caring for Caregivers: The Design of an Independent Hospice Facility"

Please be advised that your above-referenced protocol has received human ethics approval by the **Joint-Faculty Research Ethics Board**, which is organized and operates according to the Tri-Council Policy Statement (2). **This approval is valid for one year only**.

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.

Please note:

- **If you have funds pending human ethics approval, the auditor requires that you submit a copy of this Approval Certificate to the Office of Research Services, fax 261-0325 - please include the name of the funding agency and your UM Project number. This must be faxed before your account can be accessed.**

- **if you have received multi-year funding for this research, responsibility lies with you to apply for and obtain Renewal Approval at the expiry of the initial one-year approval; otherwise the account will be locked.**

The Research Quality Management Office may request to review research documentation from this project to demonstrate compliance with this approved protocol and the University of Manitoba *Ethics of Research Involving Humans*.

The Research Ethics Board requests a final report for your study (available at: http://umanitoba.ca/research/orec/ethics/human_ethics_REB_forms_guidelines.html) **in order to be in compliance with Tri-Council Guidelines.**

Winnipeg Regional Health Authority | Office régional de la santé de Winnipeg
Caring for Health | À l'écoute de notre santé

GRACE HOSPITAL

300 Booth Drive
Winnipeg, Manitoba R3J 3M7
Phone: 204.837.0142
Fax: 204.831.0029
www.gracehospital.ca

10 July 2012

Jessica Kost
University of Manitoba
Interior Design Program

Dear Ms. Kost:

RE: Caring for Caregivers: The Design of an Independent Hospice Facility

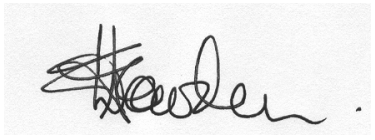
Following review by the appropriate departments, your Request for Research Access for this study was reviewed by Senior Management on 09 July 2012.

Approval for this study has been given for you to proceed.

Should there be any amendments with the study, inform us of said amendments at the same time you are in contact with Ethics.

I wish you well in your Study and would appreciate being advised of the results.

Yours sincerely,



Elizabeth Anne Cowden
BSc, MB, CHB(Hons), FRCP (Glasg), FRCPC, MD
Chief Medical Officer
Grace Hospital

EAC/er
cc: E. Omar, Program Director
S. Boitson, Clinical Manager

UNIVERSITY OF MANITOBA **Faculty of Architecture**

Architecture
City Planning
Environmental Design
Interior Design
Landscape Architecture

201 Russell Building
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Canada R3T 2N2
Tel: (204) 474-9458
Fax: (204) 474_7532

PARTICIPANT CONSENT FORM

Research Project Title: Caring for Caregivers: The Design of an Independent Hospice Facility

Principal Investigator:
Jessica Kost
Graduate Student
Master of Interior Design Program

Research Supervisor:
Dr. Shauna Mallory-Hill
Asst. Professor, Dept. Interior Design
Faculty of Architecture
University of Manitoba
Winnipeg, MB, R3T 2N2

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

My name is Jessica Kost. I am a Master of Interior Design student at the University of Manitoba currently working on my practicum project. A practicum is a final project that involves developing an interior design for a building, based on research regarding a particular topic. The topic of my practicum project is **how the design of an independent hospice facility can support the needs of family caregivers in the delivery of palliative care**. This project involves preparing a written report and a proposed design. I am currently studying the design of existing independent hospice facilities in Winnipeg to better understand the needs of caregivers in order to help me create the design for my proposed hospice. I would like to incorporate the knowledge and opinions of people who work in such facilities, and in particular, how their facility's design relates to caregivers, in my design process.

I am, therefore, looking for interested staff members to participate in a semi-structured interview. A semi-structured interview is a form of interview that has a clear purpose with questions worked out in advance, but has some flexibility in the fluidity and order of questions as the situation merits. Questions during a semi-structured interview can be reworded, left out, and/or given explanations to the interviewee. This interview will be conducted one-on-one with me, and would take place in a private space at your facility. The interview will be 30-60 minutes in length.

Over the course of the interview, you will be asked (1) to give a brief history of the facility, (2) how the current facility is used by caregivers and (3) what features it has to support caregiver activities, and, (4) if you were given the opportunity for a brand new facility, what changes/additions would be made to the design. In addition to the questions listed above, building plans of the facility may also be presented where you may be asked to comment on the use of specific spaces.

Upon consent of each interviewee, interviews will be recorded using an audio recording device. The content of which may be transcribed for the purpose of analysis. All audio recordings and transcriptions will be stored on a secure laptop computer. Recordings and any transcriptions of the interview will be kept private and destroyed upon the completion of my practicum project, which is projected to be Fall 2012.

Please indicate whether or not you wish to be recorded:

- ☐ Yes, you may record our conversation
- ☐ No, you may not record our conversation

All information gathered will be strictly confidential. Unless required by law, no information that might directly or indirectly reveal your identity will be released or published without your specific consent to the disclosure.

Please indicate whether or not you would like to remain anonymous:

- ☐ Yes, I would like to remain anonymous
- ☐ No, you may use my name

If you answered, “Yes, I would like to remain anonymous”, in my final practicum document the interviewee (you) will be identified as a “staff member of the <<facility name>>”.

As a participant, you will be provided with access to a summary of the results via email, or a hard copy can be delivered you, no later than two weeks after the interview is carried out. I will also provide the <<facility name>> with a digital copy of my final practicum document as a token of my appreciation for your help and cooperation through the process.

Following the completion of my practicum project and Master of Interior Design, my practicum document will be published though the University of Manitoba and a digital copy uploaded to MSpace. MSpace is an on-line repository for the collection, storage, preservation, and accessibility of digital versions of intellectual output of the UM community members. The information located on MSpace is open to the public.

By participating in this study, you will be providing me with valuable information regarding current hospice and palliative care design. The information collected will allow me to make more informed design decisions for my practicum project. As the final document will be accessible to designers, healthcare professionals, and the general public, the information can be used to positively influence future hospice and palliative care designers who wish to consider the needs of caregivers in their designs. Thus, you play an indirect, yet important role in the support of caregivers within hospice and palliative care design.

Your participation is entirely voluntary. Should you decide to participate in this research, you always have the right to end your participation **at any time** and for any reason by asking the interviewer to end the session.

Should you have any concerns or questions please contact Jessica Kost at

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the University of Manitoba Ethics Review Board (ERB). If you have any concerns or complaints about this project you may contact any of the above-named persons or Margaret Bowman, the Human Ethics Coordinator (HEC) at 474-7122 or margaret_bowman@umaniotba.ca. A copy of this consent form has been given to you to keep for your records and reference.

Facility Name: _____ Participant's Name: _____

Participant's Signature: _____ Date: _____

Researcher's Signature: _____ Date: _____