

BRIDGING THE GAP BETWEEN HOSPITAL & HOME

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**An Exploration of Healing Design Principles Towards the Definition of
a Transitional Healthcare Typology: Virginia Park Healthcare Facility in Detroit**

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ABSTRACT

This thesis project began with an investigation of the current healthcare industry and healing design practices. A gap exists in the current healthcare industry between hospital and home. This gap forces people to rush their healing process and often leads to additional complications. Throughout this thesis project, in-depth literature review and case studies were compiled to derive a set of healing design principles. These principles are intended to be used in the design process of healing facilities.

To begin to bridge the gap between the hospital and home, a new healthcare typology has been proposed within this thesis project. This typology is a transitional healing facility that would act as a half-way point between the hospital and home. This facility is meant to serve people with physical conditions for a stay of up to six months. The design of this facility was created to promote recovery, healing, and successfully lead people to the point of remission. This facility would allow people to heal in a proper environment without the stressors of home life surrounding them. Overall, this thesis project offers new solutions on how architectural spaces can support the healing journey to promote ease and remission. While doing so, this thesis project tackles specific issues surrounding the current healthcare industry through the lens of design.

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**“ Great things are never done
by one person. They're
done by a team of people. ”**

- Steve Jobs

01

ACKNOWLEDGEMENTS

This book is dedicated first and foremost to all of the warriors out there living with physical conditions. Your strength is what gave me the inspiration to pursue this thesis topic and find ways that architecture can help to support you despite your physical condition. I will continue to fight for accessibility within design for those that have visible and invisible illnesses. Keep fighting warriors!

Without the help of several important people this thesis project would not have been possible.

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I would also like to thank my external advisor Stephanie Sweet for her guidance and help throughout the whole journey. Stephanie helped me to push through design blocks and reminded me to ground the project back to its core mission of helping people. She was an incredible sounding board and was always available to help with resources, brainstorming sessions, or for simply a moment to vent. Thank you, Stephanie, for dedicating your time to helping me over the past year on this project.

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It truly takes an army, and without all these people this thesis project would not have been completed. Thank you!

01

THESIS STATEMENT

All architectural spaces have the ability to support or hinder each person's wellbeing along their life journey. For patients, this idea becomes even more relevant. How are the spaces surrounding them, helping to aid in their healing journey?

Healing is an ongoing journey towards a healthy state of living that is achieved with physical body healing, spiritual, cultural, and emotional healing practices, and is often measured by reaching certain stages in prognosis or milestones in recovery. Healing is a very complex and highly subjective practice. Many studies have discussed the linkages between the environment and mental and physical healing, and emphasized the importance of healing design research and of improving the quality of space design for people's healing.

Since the mid to late 1900s, there has been ample research surrounding the improvement of hospitals and healthcare facilities to promote more significant healing for patients. Research has been conducted on various interrelated topics surrounding healing, including the negative impact of stress on healing, the benefits of nature on recovery, and the connection to the five senses during the healing process.

The research surrounding healing and health care facilities is vast and dense. However, what happens to patients once they leave the hospital? How do they transition back to normalcy and return home from the hospital in a relaxed manner? This transition is typically not easy and has been identified as the area of focus and investigation for this thesis project. The motivation for this thesis project is to bridge the gap between hospital and home to ease the recovery process for people with physical conditions. This void is addressed through the identification of a set of five categories of design principles and the testing of these principles in the design of the transitional facility specifically designed to ease the healing journey and

support people as they transition back to a sense of normalcy/remission before returning home. Background research on healthcare design, as well as site visits, case studies, and patient interviews, have created the basis for the identification of the healing design principles.

In conclusion, this thesis project proposes solutions geared towards addressing the void in the healthcare industry in relation to the transition between the hospital and home. This thesis allowed for the compilation of a substantial list of healing design principles that can be applied to any environment. A transitional facility typology is proposed as a possible solution to this issue in Detroit. Through the careful design of a transitional healing facility, this project offers a new perspective on how architectural spaces can support the healing journey to promote ease and remission.

02

THESIS OBJECTIVES

02.1. FRAMING THE ISSUE	8
02.2. THESIS OBJECTIVES	9
02.3. THESIS PURPOSE	9



FIGURE 2.1
Physical healing journey

“ Perhaps the most difficult aspect of the evidence-based design process is to take the evidence and understand it, critically interpret it, and then interpret its relevance for the unique context of each project.”

- Dr. Roger Ulrich

02.1. FRAMING THE ISSUES

A GAP IN THE HEALTHCARE INDUSTRY

The current healthcare industry mainly focuses on getting people from hospital to home with a direct path. However, this is not always the best option for people, and can often lead to further complications and readmission to the hospital. Staying in hospital long term is expensive, and unnecessary for most. But, for many, home can offer a lot of distractions, chaos, and additional obstacles as well. So, asking people to leave the hospital and return home in a vulnerable condition, may not be the best solution. Therefore, the introduction of a new intermediate facility, or modification to the linear approach may be in order. Adding a new option to the healthcare system may be the right approach to offer opportunities for people who are ready to leave the hospital, but are not prepared to return to their regular home life yet.

HOMOGENEOUS APPROACH TO HEALTHCARE

The treatment routes for most patients are very homogenous. Although the healthcare industry does acknowledge that healing happens at different rates, the care within the hospital is typically very standard for most people, and this type of approach to treatment and healing may not be the most effective. Dr. Yaneer Bar-Yam explains that “a public health system should recognize key distinctions between individual and population care and develop systems that are well designed for delivering distinct types of services.”¹ Therefore, by focusing on the individual needs of each person, healthcare can begin to help people more effectively. This does not mean that specific protocols and systems should not be in place to treat certain medical conditions. Instead, the concept is to approach each person and their needs based on their healing journey. This issue is majorly related to the overall structure of the healthcare system, but it is also associated with the design of healthcare spaces. Design can be done more effectively by offering more options, flexibility, and adaptability for both the patients and the healthcare providers.

LACK OF EDUCATION ON LIFESTYLE MODIFICATIONS

Lack of education on lifestyle modifications is one of the main reasons why most people do not thrive when returning home from the hospital. Without proper information on how to modify their lifestyle both short term and long term, many people risk reentry to the hospital. Many medical conditions require lifestyle modifications to avoid the return or worsening of the issues. Some examples of the education may be for the physical body for things like nutritional information, health and wellness techniques, and exercises. But the information may be related to improving mental health with things like counseling, wellness techniques, and learning new life skills. Overall, the lack of education upon discharge from the hospital is a problem and does not provide people with all the tools they need to heal and return to a normal life properly.

02.2. THESIS OBJECTIVES

1
TO ESTABLISH
 Principles For
 Healing Design

To begin to tackle the previously mentioned issues, this thesis project is concerned with three main objectives. The main focus is to create a set of principles for designing healing environments. These design principles will serve as a universal framework for designing healing spaces. These principles will then be translated to different space types like private spaces such as the home, or more public environments, such as hospitals or other health care facilities.

2
TO EASE
 The Healing
 Journey

With the help of these design principles and other supporting research, this thesis project aims to create a transitional health care facility. The purpose of this transitional health care facility is to bridge the gap between hospital and home. The leap from full 24-hour care in the hospital to very little or no care at home can be challenging for many. Therefore, this type of facility would allow for a smoother transition from hospital to home.

3
TO EDUCATE
 People About Their
 Healing Process

This transitional health care facility intends to help people on their journey towards remission. However, it is not enough to house them for a short time and send them back home. Therefore, education is a significant component of this thesis project. Education will be provided on the healing and hindering properties of the environment, as well as information and workshops on developing new life skills, like time management, stress management, budgeting, and more.

02.3. THESIS PURPOSE

This topic is of great importance because it would add new insight into the health care design industry. There is ample focus on health care design within hospitals and large health care facilities. However, there is little research on how design principles work within smaller facilities.

In addition, the proposed transitional health care facility serves a demographic that is currently underserved in the health care industry. The facility would help the demographic of people aged 20-50

years old. This age group is quite vulnerable in the sense that they may be starting their careers, may be newly married, or have children making healing a more complicated process at home.

The majority of transitional type facilities serve pediatric or geriatric patients. Thus, a facility for young to middle-aged adults is needed to fill a void in the current health care industry. This age population is often neglected in the recovery stage of healing as they are perceived to

heal independently with minimal intervention and support. However, this is not necessarily the case because of factors such as career, family, children, and depression/anxiety that often come with healing in isolation at home.

Finally, the education component will empower people to be in control of their healing journey. By incorporating education on healing design principles and holistic healing approaches, it will allow for a smoother healing journey for patients.

03

COMPLEXITY OF HEALING

03.1. WHAT IS HEALING?

12 - 15

03.2. LITERATURE

16 - 19



FIGURE 3.1
Rehabilitation Collage

**“ Healing is a movement in a
desired direction - a journey that
takes you from illness to health. ”**

- Esther Sternberg

03.1. WHAT IS HEALING?

DEFINING HEALING

This thesis project is grounded in the idea of healing within the framework of the built environment. Architectural spaces and places have the power to support people along their healing journey. This thesis project is working to prove the importance of the built environment on the health and wellbeing of people. Healing was investigated through case study analysis and literature review for the duration of this thesis. While researching the topic of healing, three major themes unfolded concerning the built environment. These include the role of nature in healing, designing with sensitivity towards the senses, and eliminating stressors within healing environments. These themes became helpful research in the creation of the healing design guidelines.

Healing has been defined in many different ways by different researchers. Some define healing in a much more holistic way, whereas others take a scientific and definitive approach. Dr. Sternberg defines healing “as a movement in a desired direction—a journey that takes you from illness to health.”² (pg.14) This definition described healing as a non-linear and everchanging experience. Whereas, David Weber, author of “The Seven Principles of Healing Architecture,” describes healing in a chronological sense “that can be achieved by satisfying a set of conditions and principles.”³

A new proposed definition for healing will be used based on the compiled research. Healing will be defined as an ongoing journey towards a healthy state of living that is achieved with a combination of physical body, spiritual, cultural, and emotional healing practices, as well as reaching certain stages in prognosis. This definition emphasizes the importance of recognizing healing as an ever-changing ongoing path. Therefore, healing is not a destination-based path; rather, it is a long term journey that brings you to a healthy state of living. A healthy state is hard to define because “healthy” can mean different things for people with various conditions. This approach emphasizes the importance of subjectivity and the human experience. Although people experience certain stages in prognosis at different rates, it is essential to realize that there are specific quantitative measurements used to measure the healing rate within each person. These measurements are taken in many different ways based on the condition. The measurements could include blood markers, physical abilities, and more.

HEALING

an ongoing journey towards a healthy state of living that is achieved with a combination of physical body, spiritual, cultural, and emotional healing practices, as well as reaching certain stages in prognosis.

FIGURE 3.2
*Diagram of physical
condition time line*

PHYSICAL & PSYCHOLOGICAL CONDITIONS

For this investigation, physical conditions will be under assessment. Physical conditions are short-term, long-term, or chronic medical conditions that are associated with primarily physical symptoms, as opposed to symptoms concerning the psyche. For this thesis project, short-term is any condition that lasts for less than three months, long-term is any condition that persists for three months to three years, and chronic conditions persist longer than three years. Short-term and long-term physical conditions could include things such as broken limbs, muscle/tendon problems, or an aortic aneurysm. Chronic conditions could consist of Crohn's disease, Multiple Sclerosis, Arthritis, Hashimoto's disease, and more.

It is critical to be mindful of the link between the body and mind. Thus, it is important to consider mental health in relation to physical conditions.

However, due to the complex nature of psychological and neurological conditions, this thesis project is focusing on mood disorders (depression and bipolar) and anxiety disorders only. The project will not be touching on personality, psychotic, eating, trauma-related, or substance abuse disorders.

SHORT TERM CONDITION

A condition that is short in duration, progresses rapidly and lasts for less than 3 months.
Ex: Broken Arm or Pneumonia

PHYSICAL CONDITIONS

Short term, long term, or chronic medical condition that are associated with primarily physical symptoms, rather than symptoms concerning the psyche.

LONG TERM CONDITION

A condition that has a recent onset, somewhat rapid changes, and is persistent for 3 months to 3 years.

PSYCHOLOGICAL CONDITIONS

A condition characterized by abnormal thoughts, feelings, and behaviors.

CHRONIC CONDITION

A condition that has periods of remission and relapse that persists for greater than 3 years.

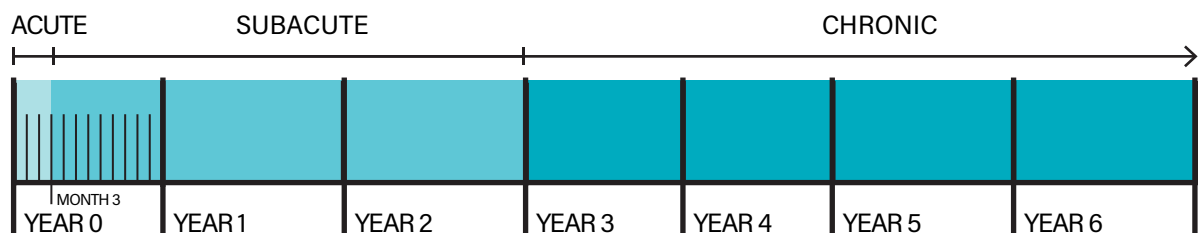


FIGURE 3.3
Icon of physical factors related to healing



FIGURE 3.4
Icon of psychological factors related to healing



FIGURE 3.5
Icon of cultural factors related to healing



FIGURE 3.6
Icon of spiritual factors related to healing



PHYSICAL

Religious Ceremonies
Prayer/Meditation
Religious Rituals
Alternative Medicine

PSYCHOLOGICAL

Natural Medicine
Purgative Rituals
Manipulation of the Body through Gestures
Diagnostic Principles to determine the nature of the affliction in terms of cause, consequences
Rituals with words, music, costumes, & food

CULTURAL

Psychological Therapy
Group/Family
Interpersonal
Mindfulness
Modern Medicine
Movement Medicine

SPIRITUAL

Modern Medicine
Physical Therapy
Acupuncture
Massage Therapy

03.1. WHAT IS HEALING?

FACTORS RELATED TO HEALING

Healing is a very personal practice, and thus has numerous variables. Factors that pertain to healing include physical body, cultural, spiritual, and psychological realms. Each of these factors plays a role in the healing process. Depending on the individual, each of these variables may have differing degrees of importance.

Physical body healing is related to the physical components of the body, such as the organs, muscles, tendons, or bones.⁴ This type of healing is managed through modern medicine, physical therapy, acupuncture, chiropractic treatment, or massage therapy. Psychological healing is related to the feelings and emotions of the person.⁵ This type of healing can be done with psychological therapy, modern medicine, and movement medicine.

Cultural healing is centered on an ethnic or cultural practice that uses traditional methods of healing rather than modern scientific methods to provide health care for other members of the group.⁶ Techniques used for cultural healing may include natural medicine, purgative rituals, diagnostic principles, or rituals

using words or music. Spiritual healing is an activity of making a person healthy without using modern medication or other physical methods.⁷ These techniques could include religious ceremonies, prayer/meditation, religious rituals, or alternative medicine. Overall, there are numerous variables involved in healing. However, these four categories aid in describing the methods in which healing practices can occur.

PHYSICAL HEALING

Is related to the physical components of the body such as the organs, muscles, tendons, or bones.

PSYCH HEALING

Is related to the feelings and emotions of the person.

CULTURAL HEALING

Is associated with an ethnic or cultural belief that uses traditional methods of healing.

SPIRITUAL HEALING

Is an activity of making a person healthy without using modern medicines.

03.3. LITERATURE REVIEW

While researching the topic of healing in relation to the built environment, three major themes emerged. These topics played a significant role in grounding this investigation. The three themes include the role of nature in healing, designing with sensitivity towards the human senses, and eliminating stressors within healing environments.

INCLUSION OF NATURE

Researchers have identified a direct link between nature and the healing process. A pioneer in this field of research was Dr. Roger Ulrich. One of the most important findings regarding nature and healing came from a study published in *Science Magazine* in 1984 titled "View Through a Window May Influence Recovery from Surgery."

This study assessed 66 patients undergoing cholecystectomy (gallbladder removal) in a Pennsylvania hospital. Half of the patients were assigned to rooms with windows looking out to a natural scene post-operation, and the other half were assigned to a room with windows facing a brick wall. This study found that those with windows facing out into nature had shorter postoperative hospital stays and took fewer pain medications than those with windows facing the brick wall.

This finding reinforces the concept that nature is essential in the healing journey. ⁸ As such, it will play an important role in this thesis.

Since the time of this publication, numerous researchers have conducted more in-depth research into the topic of nature and healing. David Weber, for example, defines one of the seven principles for healing architecture as harmony with nature and site. He states in his paper, "healing architecture is a dialogue

between shaped outdoor spaces and naturally occurring features like hills and trees."³ Other researchers, including Marek Dominiczak⁹ and Laurence Kirmayer¹⁰, highlight the link between nature and healing culturally and historically throughout time. Thus, the use of nature in healing has been present since the advent of medicine.



FIGURE 3.7
Icon representing nature

SENSITIVITY TO THE SENSES

Several researchers to date have demonstrated the importance of understanding the sensitivity of the senses within healing architecture. Dr. Ester Sternberg is one of the most notable researchers in this area of healing architecture. Much of the research from Dr. Sternberg and her book *Healing Spaces* helped to publicize the research on healing and the senses.

The five traditional senses include auditory, visual, olfactory, somatosensory, and gustatory. Every sense is impacted differently within each environment. Although the influence may be positive or negative, it is still significant.

Dr. Sternberg explains that loud or persistent sound can cause stress in the body. Such a stimulus is commonly found in hospitals through the noise of machines and staff. Sounds such as nature and calming music, however, can reduce stress, and thus aid in healing. Disturbing visuals, harsh lighting, or busy patterns and textures can all be sources of stress on sight. Replacing these stressful visuals with views of nature, ample natural light, and calming colors and textures can promote patient healing. Smells can rapidly trigger memories and bodily reactions. Therefore, it is important to include proper ventilation, natural scents, and aromatherapy when possible within

health care environments.

Touch also significantly impacts healing for patients. It is important to include natural, soft materials whenever possible. Finally, natural and nutritious foods are critical to promoting healing environments when concerning the gustatory sense.²

Other researchers have identified additional concepts regarding healing and the senses. Richard Mazuch and Rona Stephen, for example, researched “sense sensitive design.” Some of their conclusions explain that natural and artificial lighting, colors, views, artwork, aroma, modulation of space, and form are essential for sensitive sense design.¹¹ These findings fall in line with the information outlined by Dr. Sternberg, thus reinforcing the importance of these findings in healing design.



FIGURE 3.8
Icon representing the senses

03.3. LITERATURE REVIEW

ELIMINATING STRESSORS

Within the realm of the built environment, Dr. Ulrich performed significant research concerning stress and healing. "Effects of interior design on wellness" was a study led by Dr. Ulrich in 1991.¹² This investigation outlines the issues with current health care facilities (at the time) and what can be done to enhance the experience for the patients mental and physical health. Ulrich states, "For far too long, healthcare facility designs have been focused towards making facilities that are functionally effective but psychologically hard." He proceeds to explain that "psychologically hard" implies that the environments are too stressful and do not suit the psychological needs of patients, staff, and visitors. Psychologically hard environments can lead to increased anxiety and delirium, high blood pressure, and increased use of pain medication.

In addition, Dr. Ulrich highlights the theory of supportive design. **The concept of supportive design argues that in order to promote wellness, healthcare facilities require design that aid in coping with stress. Therefore, healthcare facilities should not raise obstacles or create environments that increase the bodies stress response.¹²**

A multitude of other studies have also demonstrated the importance

of eliminating stress within the built environment to solicit healing. Lou Podbelski explains in the paper, "Healing Architecture: Hospital Design and Patient Outcomes" that one of the main goals for healthcare design is to eliminate environmental stressors. Thus, creating a calming and more serene atmosphere is very important to provide patients with a proper healing environment.¹³

From a biological standpoint, stress promotes numerous issues within the body, and may impair healing. Several studies have shown the adverse effects that stress has on the body and its ability to heal. A 2006 study in Neuroimmunomodulation demonstrated that stress on the body increased wound healing time.¹⁴ In addition, a meta-analysis with over 30 years of collected data, concluded that the immune system might become significantly impaired when stressed.¹⁵ The higher the degree that the immune system is compromised, the more difficult it is for the body to prevent infection and promote healing.

A study conducted in 2017 identified that stress weakens the bodies normal functioning and a person's ability to live a healthy life. Stress negatively affects the respiratory, digestive, and muscular systems to name a few.¹⁶ Concerning mental health, studies have shown that psychological stress increases depression and anxiety.¹⁷

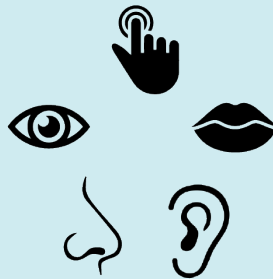
Overall, stress negatively impacts the body in many ways. Therefore, it is critical for healing environments to minimize, if not eliminate, stress on the body and the mind.



FIGURE 3.9
Icon representing stress

CONCLUSION

In conclusion, research within the field of healing has a significant focus on including nature, calming the senses, and eliminating stressors. Much of this research identifies how the built environment can do so. This includes interior design strategies, facility layout, and organizational structure of the building. This demonstrates that designers have an essential role in the healing process within healthcare environments, but also within all forms of architecture. By understanding environmental stressors, incorporating nature, and sensitivity to the senses, architectural design can solicit healing in all built environments, not just healthcare environments. The final design of this thesis project will use all of the compiled research to inform the healing design principles, as well as the architectural moves.



04

INVESTIGATIONS

04.1. HUMAN EXPERIENCE	22 - 29
04.2. ILLNESS TO REMISSION	30 - 37
04.3. CONNECTION TO PLACE	38 - 39
04.4. FACILITY COMPARISON	40 - 41



FIGURE 4.1
*Behavioral stage of
remission in healing*

**“ The most underutilized resource
in all of healthcare is the patient.”**

- Dave deBronkart

“ Understanding each person's illness at a macro and micro level provided a thorough understanding of the complexity of each illness & healing journey. ”

04.1. THE HUMAN EXPERIENCE

PATIENT INTERVIEWS

The person is the focal point of this thesis. As such, a thorough investigation of the physical and psychological struggles was important. Without fully comprehending the patient perspective, this thesis would be routed in the wrong direction.

The first study conducted on the human experience was a series of five patient interviews focusing on individuals with physical conditions. These interviews were performed by phone or in person with a series of questions. (see Appendix A for full interviews) The primary goal of this investigation was to map out the timeline of the person's illness as well as a day in their life.

Understanding each person's illness at a macro and micro level provided a thorough understanding of the complexity of each illness and healing journey.

Of the five people interviewed, one had an acute condition, two had subacute conditions, and two had chronic conditions since youth.

John, an 80 year old male, had the acute condition. He underwent surgery to repair an aortic aneurysm, which was identified following routine imaging. John's condition lasted only

a few months as he was able to fully recover quickly from this surgery. Although the first few weeks after surgery were challenging, John had a fairly linear recovery. Jackie, a 22 year old woman, has a subacute condition. Three years ago, she discovered that she has cervical lordosis (abnormal spine curvature). This condition is rare and also extremely dangerous. If left uncorrected, something as minor as whip lash could leave her paralyzed. For the past three years, she has been participating in corrective therapy to physically manipulate her spine. She works every day to get her spine back into normal alignment.

Alyssa, is a 25 year old woman who also has a subacute condition. She was injured in a car accident three years ago leaving her with spinal pain. This injury lead to degenerative disc disease, accelerated arthritis, and a protruding disc. She has been completing intensive therapy for three years, and continues to work daily to recover and improve her wellbeing. She found that exercise and getting a personal trainer helped her the most through her healing process. Leo, is a 22 year old man who has had a chronic illness for half of his life. At eleven years old, he was diagnosed with hyperthyroidism, but he was misdiagnosed. It was not until the age of eighteen that he was properly

diagnosed with Hashimotos disease (an autoimmune condition which leads to hypothyroidism). Throughout this journey he has had periods of remission and flare. He also found out this year that he is one of the rare cases that has both Hashimotos and Graves disease (hyperthyroidism). Leo has struggled to find proper care, and has unfortunately lost 85% of his thyroid due to the unfortunate misdiagnosis. Finally, there is Nora, a 29 year old woman who has had her chronic illness for twelve years. She was first diagnosed with Adenomyosis, and finally got the diagnosis for Endometriosis two years ago. This was after ten years of being dismissed by doctors and medical professionals. She has undergone four surgeries and stages of remission and flares, much like Leo.

LIFETIME OF AN ILLNESS

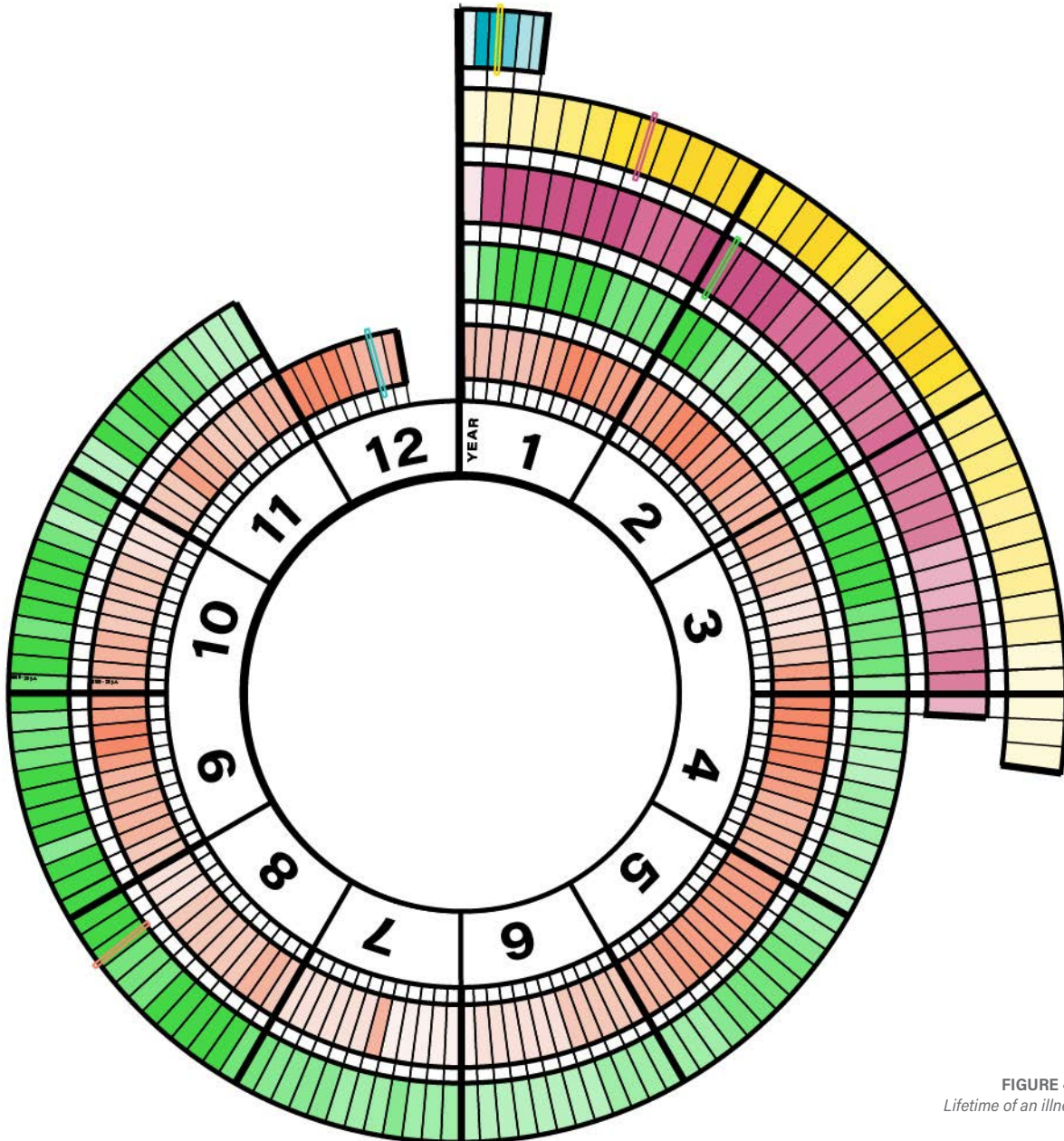
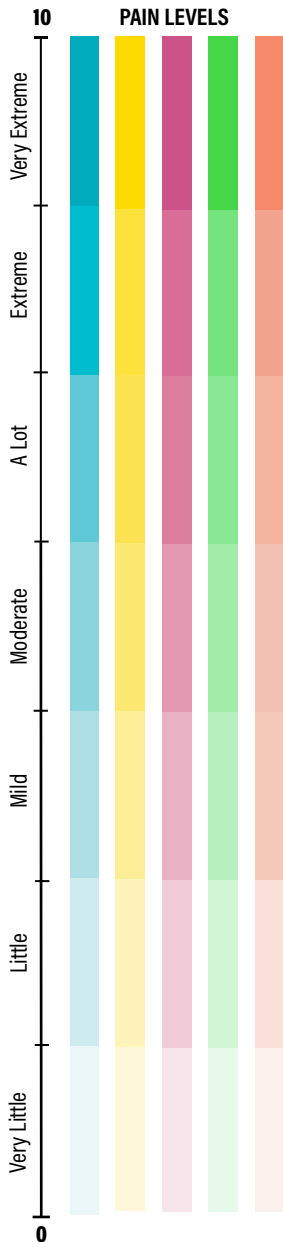


FIGURE 4.2
Lifetime of an illness



JOHN'S JOURNEY

AGE: 80 YEARS OLD
 HEALING LENGTH: 75 DAYS
 DIAGNOSIS: AORTIC ANEURYSM



JACKIE'S JOURNEY

AGE: 22 YEARS OLD
 HEALING LENGTH: 4 YEARS +
 DIAGNOSIS: CERVICAL LORDOSIS



ALYSSA'S JOURNEY

AGE: 26 YEARS OLD
 HEALING LENGTH: 3 YEARS +
 DIAGNOSIS: DEGENERATIVE DISC



LEO'S JOURNEY

AGE: 22 YEARS OLD
 HEALING LENGTH: 11 YEARS +
 DIAGNOSIS: GRAVES + HASHIMOTOS



NORA'S JOURNEY

AGE: 29 YEARS OLD
 HEALING LENGTH: 12 YEARS +
 DIAGNOSIS: ENDOMETRIOSIS



04.1. THE HUMAN EXPERIENCE

PATIENT INTERVIEWS

Each person's story and journey is unique. So, understanding the complexity and subjectivity of each illness and healing journey is very important. From these interviews, a set of overlapping characteristics were identified.

These characteristics include increased exhaustion and fatigue, difficulty managing pain and discomfort, problems with ease and accessibility, mental health problems, and the importance of self-care rituals. Each of these characteristics were considered when organizing the design principles for healing, and throughout the design process for the proposed transitional health care facility.

Everyone experienced exhaustion and fatigue to some degree. For example, John stated, "I did not do much for the first few weeks after surgery. I was very tired and mainly focused on resting. The pain medication helped with a lot of the discomfort and also made sleeping a lot easier." Difficulty managing pain and discomfort was something that everyone interviewed struggled to manage. Jackie stated in the interview, "I knew what to expect from my appointment, but I did not think it would be so mentally & physically challenging. They were physically manipulating my spine, and that was incredibly painful." Problems with ease and accessibility were discussed in every interview.

This characteristic was mainly mentioned regarding their ability to move around their home and other buildings with their illness. Alyssa explained, "School was very hard to manage. Even simple things like walking to class became a chore. My grades began to decline because I couldn't physically make it to my classes some days." Every person discussed mental health issues in the interviews; however, some people were comfortable sharing more than others. Leo explained, "By evening, my energy was at 0. I felt very anxious most days and depressed because of the struggle that each day brought." Finally, self-care rituals were explained in various ways depending on the person interviewed and their beliefs. Self-care rituals often had to do with more holistic medicine practices or stress management techniques. Nora explained, "I try to pause when I get home and really listen to how I am feeling mentally and physically. I like to start my wind-down routine with some form of self-care. I find that baths really help with my pain levels, and I also use CBD creams for the pain." Overall, the patient study provided extremely valuable information about the daily struggles of a person living with a physical health condition. The findings from this study not only provided a look into the human experience, but also provided insight into the most prominent issues people with physical conditions face.

JOHN

TIME: 75 DAYS

DIAGNOSIS:
AORTIC ANEURYSM

An enlargement (dilatation) of the aorta to greater than 1.5 times normal size

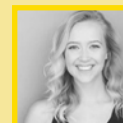


JACKIE

TIME: 4 YEARS +

DIAGNOSIS:
CERVICAL LORDOSIS

When your spine in the neck region doesn't curve as it normally should.



ALLYSA

TIME: 3 YEARS +

DIAGNOSIS:
DEGENERATIVE DISC

When the discs between the vertebrae of the spine deteriorates or breaks down.



NORA

TIME: 12 YEARS

DIAGNOSIS:
ENDOMETRIOSIS

The tissue that normally line the inside of the uterus grows outside.



LEO

TIME: 11 YEARS

DIAGNOSIS:
HASHIMOTOS

The immune system influences the action of the thyroid gland



EXHAUSTION & FATIGUE
DIFFICULTY SLEEPING
TIRED

- *"I did not do much for the first few weeks after surgery. I was very tired and mainly focused on resting. The pain medication helped with a lot of the discomfort and also made sleeping a lot easier."*
 - *"By this point in the day my energy was at 0. I felt very anxious most days and depressed because of the struggle that each day brought."*
-

EASE & ACCESSIBILITY
COMMUNITY ASSISTANCE
FAMILY

- *"My family helped to clean and make food. This allowed me to be comfortable and not over exert myself."*
 - *"School was very hard to manage. Even simple things like walking to class became a chore. My grades began to decline. My mental health was not great and I struggled everyday to stay positive."*
-

SORE & DISCOMFORT
HIGH PAIN LEVELS
UNCOMFORTABLE

- *"My morning commute is very difficult and sometimes the walking from my car to the office can really trigger my pain levels."*
 - *"I knew what to expect from my appointment but I did not think it would be so mentally & physically challenging. They were physically manipulating my spine and that was incredibly painful."*
-

MENTAL HEALTH
ANXIETY
SADNESS
DEPRESSION

- *"The morning and the night were the worst... My throat was extremely swollen when I was laying down. I drank a lot of hot water and tea in the morning to help with pain."*
 - *"Night time was the hardest with my mental health. I was so exhausted from the day and everything seemed far worse."*
-

SELF CARE RITUALS
APPOINTMENTS
STRETCHING
PAIN RELIEF

- *"I try to pause when I get home and really listen to how I am feeling mentally and physically. I like to start my wind down routine with some form of self care. I find that baths really help with my pain levels and I also use CBD creams for the pain."*
- *"Chiro and physio were essential at this time. I needed to work to get my spine better and also to reset my rib."*

04.1. THE HUMAN EXPERIENCE

PSYCHOLOGICAL PHASES OF HEALING

The patient interviews helped develop a comprehensive understanding of various physical conditions. However, the psychological component of healing was not heavily discussed by most people during their interview. Typically the conversations touched briefly on mental health, but not many people wanted to share fully on this topic. Therefore, additional research explained the psychological stages of healing. These stages fall closely in line with the stages of grieving. Just like the stages of grieving, the stages of healing are meant to be descriptive and not prescriptive.¹⁸ Thus, most people will experience

each of these stages, but for some, they may skip stages, stay longer in certain steps, or bounce back and forth between stages. The length of time that each person spends in these stages is highly individualized and

“Mental health is an integral part of everyone's life, so linking the psychological back to the physical condition is crucial.”

unpredictable. However, a patient with a chronic illness will typically cyclically experience these stages.

The investigation of the psychological component of healing was essential to understand the human experience fully. Mental health is an integral part of everyone's life, so linking the psychological back to the physical condition is crucial.

The psychological stage of healing provided for a well-rounded understanding of healing as a whole.

PSYCHOLOGICAL PHASES OF HEALING

Denial (after diagnosis)

Shock about the diagnosis. Denial can be dangerous for people because they may hurt themselves.



FIGURE 4.3
Collage of denial after diagnosis

Pleading & Bargaining

Bargaining & pleading for things to go back to the way they were. Trying to “self-cure” and willing to try anything to make this problem go away.



FIGURE 4.4
Collage of pleading & bargaining

Anger & Resentment

After the pleading does not work, anger begins to set in. Anger can be towards themselves, their disease, or the lack of treatment/cures.



FIGURE 4.5
Collage of anger & resentment



FIGURE 4.10
Collage of psychological stages of healing

Anxiety & Depression

Because of the life altering events or diagnosis, anxiety and depression set in to mourn the loss of the persons past life.

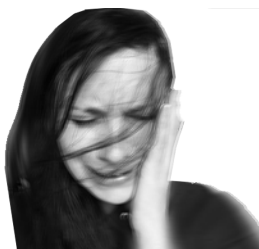


FIGURE 4.6
Collage of anxiety & depression

Loss of Self & Confusion

A form of identity crisis due to the major life changing events. The person is questioning where they fit into life and what has changed.



FIGURE 4.7
Collage of loss of self and confusion

Re-evaluation of Life & Roles

Because of the identity crisis, the person begins to see how their life has changed and how their roles and goals must change too.



FIGURE 4.8
Collage of re-evaluation of life goals and roles

Acceptance & Adaptation

The person begins to accept how their illness and condition will be integrated into their life.



FIGURE 4.9
Collage of acceptance & adaptation

04.2. FROM ILLNESS TO REMISSION

STAGES OF ILLNESS

By analyzing and understanding each stage of illness, the sequence of how a patient progresses from illness to remission becomes much clearer. Remission and return to a healthy life is the ultimate goal for people who develop an illness. Although remission is desirable, it is a term that is challenging to define as it is highly subjective. A meta-analysis, however, has defined remission as "a patient with a sustained (greater than 6 months) pain score of less than 3 out of 10 on the Visual Analogue Scale".¹⁹

The five phases of illness include the incubation phase, the prodrome phase, the period of illness, the period of decline, and the period of convalescence/remission.²⁰ The incubation phase is identified when the first change occurs within the body before any visible signs or symptoms. The prodrome phase is a pre-illness phase identified on the moment in which the patients begin to experience

early symptoms. Period of illness is the phase in which the signs and symptoms of disease and illness are the most obvious and severe. The period of decline is the phase in which the patient is recovering from the illness. Finally, the period of convalescence/remission is identified as the moment in which the patient returns to a state of normalcy. The majority of illness-related symptoms would have improved or stopped altogether by this point in time.

The five phases of illness act as a typical template for illness; however, it is essential to note that the stages of illness do not have specific time periods given because the entire process is very subjective. Some may go through the phases reasonably quickly, and others may not. The process is very personal; however, the goal remains the same – to reach the point of remission.

PRODROME PHASE

A pre-illness phase where patients begin to see early symptoms

ILLNESS PHASE

A phase where the signs and symptoms of disease and illness are the most obvious and severe

DECLINE PHASE

The phase in which the patient is recovering from the illness

CONVALESCENCE

The patient is back to a state of normalcy within their life, and majority of illness related symptoms have improved

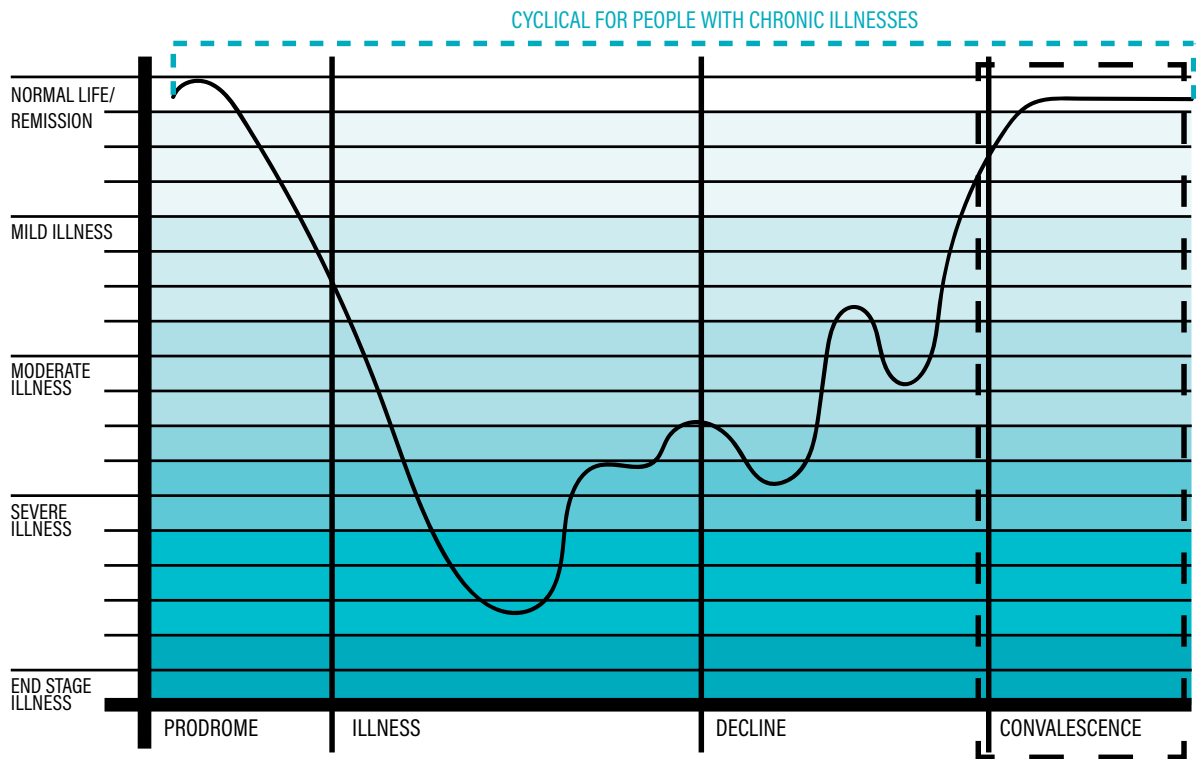


FIGURE 4.11
Typical Stages of Illness

04.2. FROM ILLNESS TO REMISSION

COMPONENTS OF REMISSION

The main goal of healing is to reach a state of remission. Understanding the components of remission is vital to reach this point of normalcy. There is very little concrete research focused on the different components related to remission. Therefore, based on previous patient interviews and utilization of the supplemental research, four dimensions of remission were theorized. These dimensions include improved psychological and emotional state, change in behaviors and actions, improved physical movement, and changes to economic and social stressors.

The psychological and emotional improvement is correlated with a patient's ability to be positive and hopeful, to focus on activities other than health, and to have no psychological barriers from their health. (Figure 4.12) Changes to behaviors and actions are connected to the persons daily tasks and rituals. This entails taking few or no medications, having fewer doctors' appointments, and the addition of more spontaneity in life. (Figure 4.13) Improved physical movement is related to having greater endurance and stamina, no or few impairments to physical movement, and no or few symptoms effecting daily life. (Figure 4.14) Finally, the changes in societal and economic stressors include minimal economic burden from health bills, no or few limitations at work, and no or few skipped social events. (Figure 4.15) By understanding these dimensions, the idea of remission and returning to

normalcy become easier to comprehend. These, however, remain highly subjective. As such, these components are meant to be flexible in their interpretation. These dimensions helped to explain the idea of remission from a human perspective. Since remission is the ultimate goal in healing, these four dimensions of remission became key to the design portion of this thesis project.

This study and exercise was pivotal to this thesis project because it created a goal to strive towards. The transitional facilities and healing design principles must be focused on reaching this point of remission. Otherwise, the thesis project would not be grounded with a proper purpose and objective.

“ The main goal of healing is to reach a state of remission. Understanding the components of remission is vital to reach this point of normalcy. ”

PSYCHOLOGICAL

Hopeful & Happy

Greater Self Determination
& Choice

Better Focus on
Activities Besides Health



FIGURE 4.12
*Collage of psychological
component of remission*

BEHAVIORAL

No or Few Medications

No/Few Medical Appointments

Greater Spontaneity

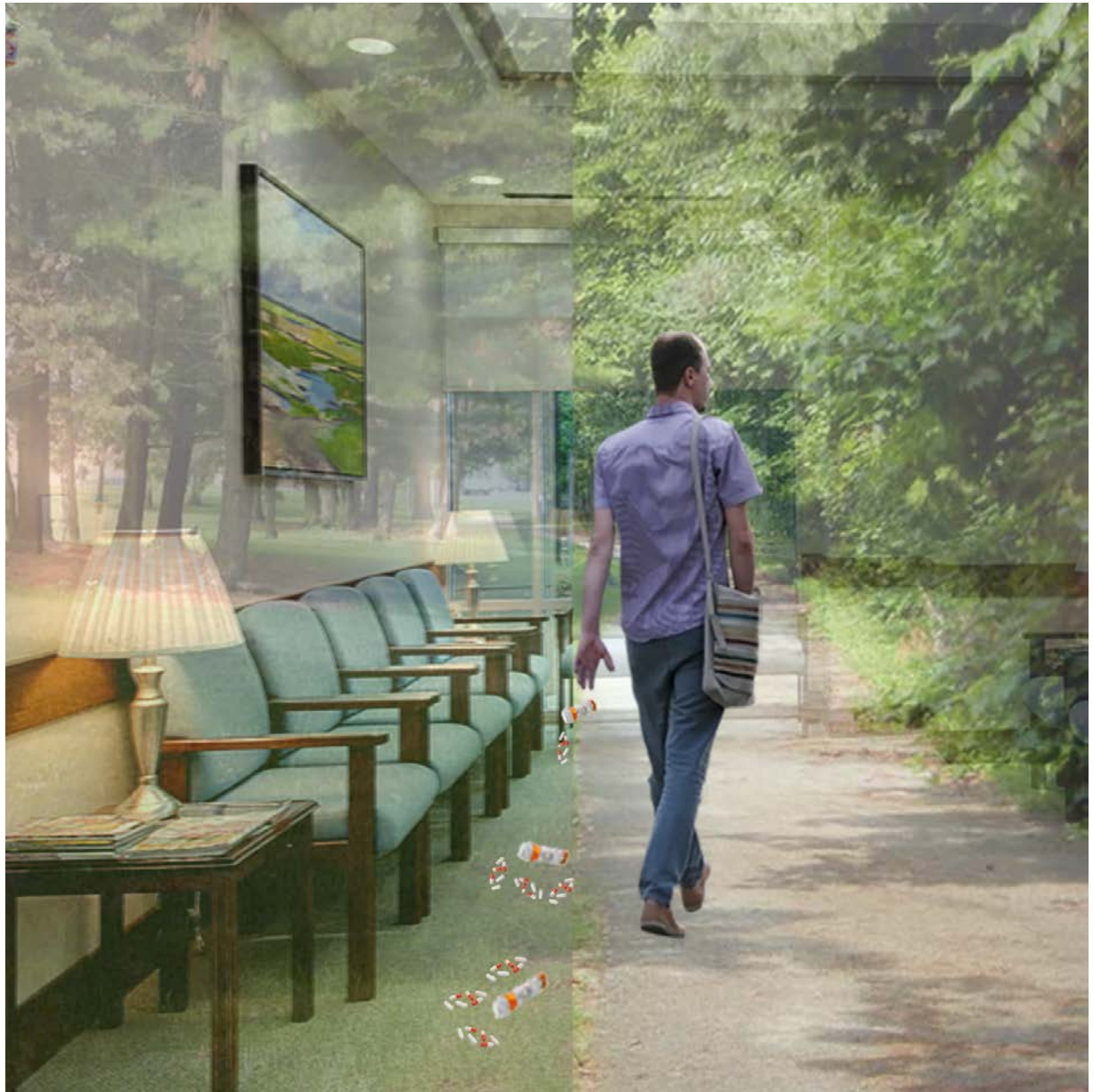


FIGURE 4.13
*Collage of behavioral
component of remission*

PHYSICAL

Normal Endurance & Stamina

No/Few Modification
Physically

No/Few Symptoms
Affecting daily activity

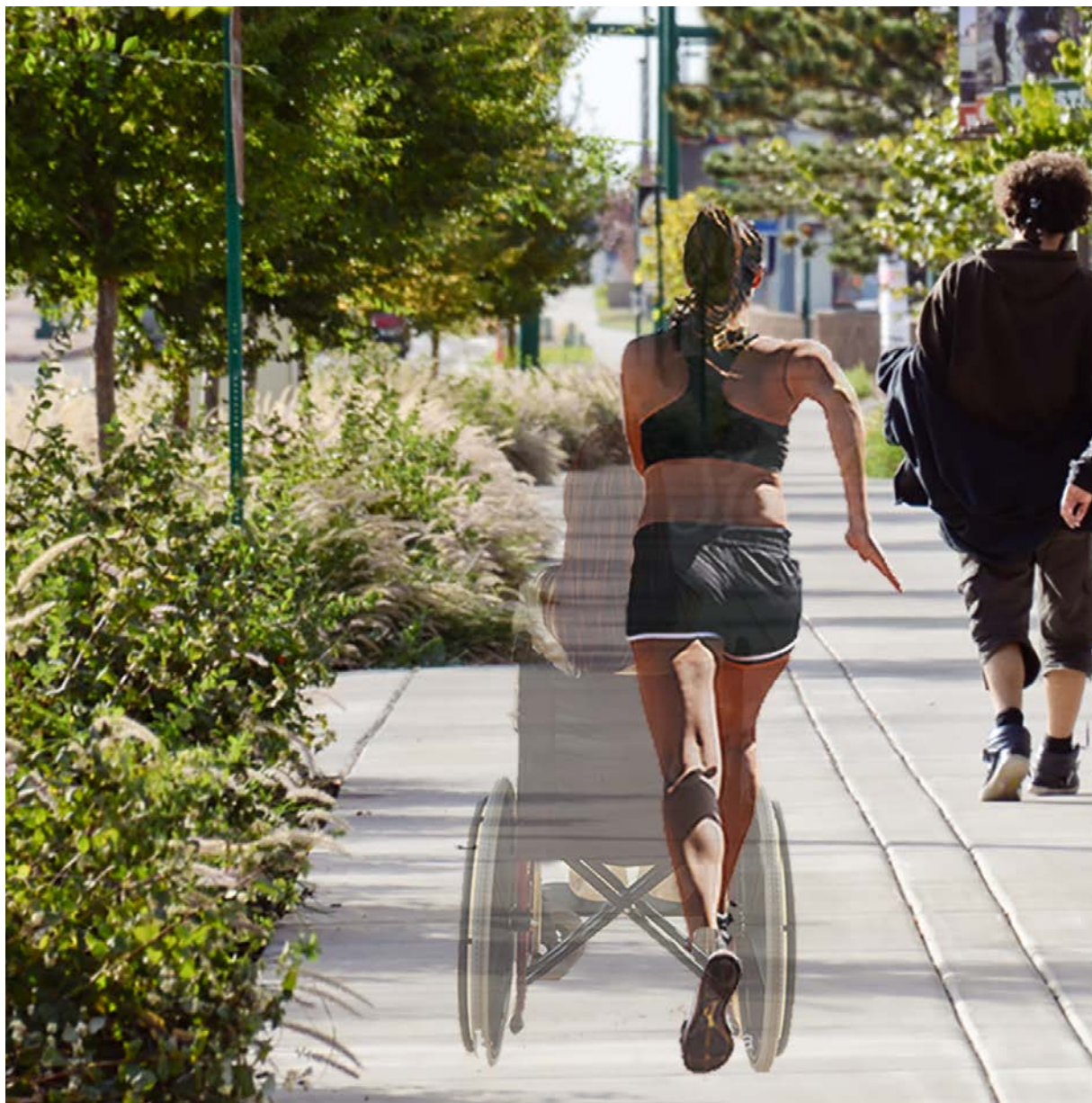


FIGURE 4.14
*Collage of physical
component of remission*

SOCIETAL & ECONOMIC

No or Minimal Economic
Struggles due to Health
Care Bills

No or Few Limitations at Work

Few Skipped Social Events



FIGURE 4.15
*Collage of social &
economic stage of remission*

COMMON HEALING PLACES

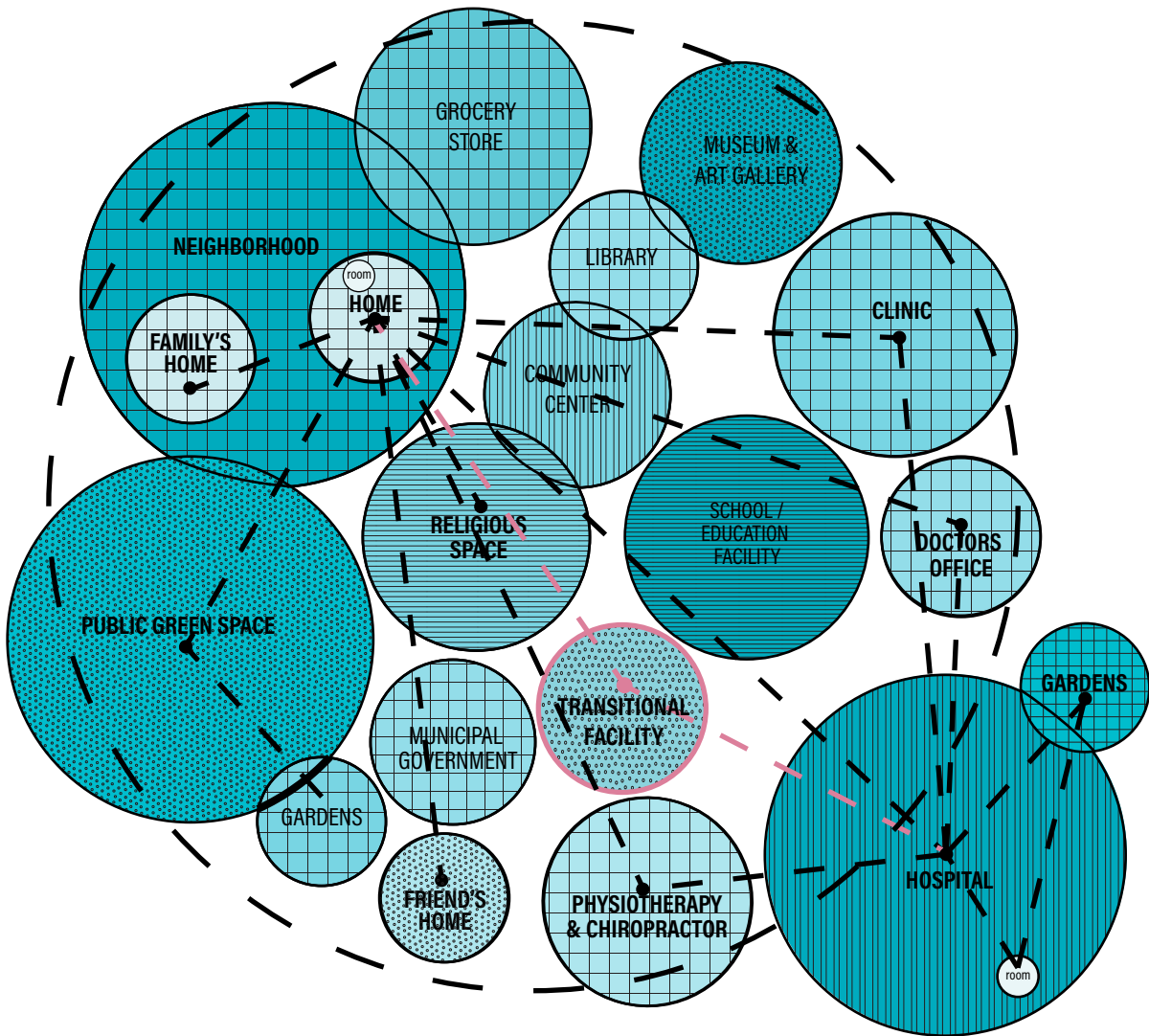
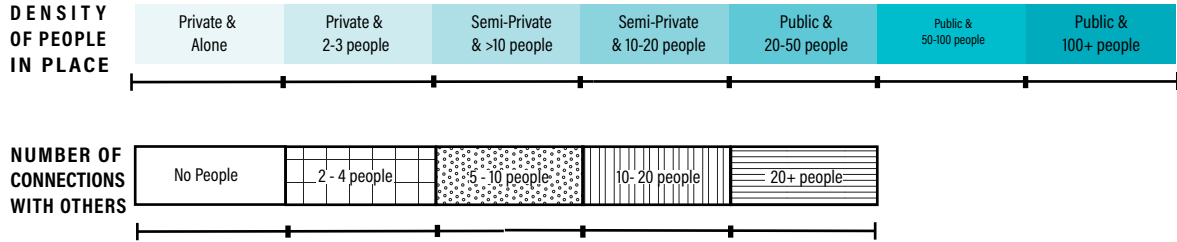


FIGURE 4.16
Diagram of healing places

COMMUNITY

04.3. CONNECTION TO PLACE

HEALING SPACES & HUMAN INTERACTION

To begin to translate the healing research into the built environment, an analysis of the key places related to healing was conducted. According to Scott Doyon of the firm Place Makers, the key components within a community include good governance, walkability, connectedness, mixed-use spaces, parks and gardens, partnership, programming, and schools.²¹ Additional research conducted by John McKnight identifies schools, hospitals, churches, libraries, recreation centers, social clubs, and town landmarks as essential community assets.²² This research was utilized to create an abstract representation of a generic city structure. This diagram was then overlaid with information on key healing places, and human interaction within these places.

From the study of community structure and supporting research, six key healing places were identified. These healing places include outdoor space, community, home, supportive family spaces, the hospital, and religious institutions. While mapping the abstract city structure, speculative information was added on human interaction that is performed within each location. The social interaction piece was added in order to visualize the general significance of connection within these places. A comparison between the number of individuals within these spaces and the number of interactions between people demonstrated that the quality of interaction is much more important than the quantity.

COMMUNITY & HEALING

"Connection to community matters for those who have experienced trauma, yet many interventions do not build on or in some cases disrupt positive connections to community."²³

FIGURE 4.17 *Community Setting*



HOME & HEALING

"It is a long known fact that the physical environment has an effect on the healing process, both positive and negative. Knowing this, it is important when releasing a patient to heal at home to consider the home as a component of the continuum of care."²⁴

FIGURE 4.18 *Home environment*



RELIGIOUS SPACES & HEALING

"How people perceive their experiences of illness and/or healing are dependent on the spatiality of spiritual and emotional encounters."²⁵

FIGURE 4.19 *Religious institution*



SUPPORT & HEALING

"Social support is critical to health and wellbeing. There is significant evidence of the positive impact of social support from clinicians and from family on behavior change, mortality and morbidity."²⁶

FIGURE 4.20 *Supportive environment*



HOSPITAL & HEALING

"Studies show that well-designed hospital environments can reduce patients' anxiety and stress, accelerate recovery, shorten hospitalizations, reduce medication use, lessen pain, and promote a sense of well-being."²⁷

FIGURE 4.21 *Hospital open space*



GREEN SPACE & HEALING

"Green spaces provide vital health services as well as environmental services, facilitating activity and promoting better mental health and well-being."²⁸

FIGURE 4.22 *Outdoor green space*





LONG TERM CARE

Facility that provides care and services for people who no longer are able to live independently or who require on site nursing care and full time supervision.³⁰



SKILLED NURSING

A facility staffed by medical professionals and provide short-term care and recovery for patients after surgeries and long-term illness.²⁹

SPORTS REHAB

A facility with a multi-disciplinary approach to the prevention, evaluation, and treatment of injuries with 24-hour care facilities or rehab facilities outside of hospital.³¹

HOLISTIC HEALING

A facility that uses a form of healing that considers the whole person, including body, mind, spirit, and emotions, in the quest for optimal health and wellness.³²

04.4. FACILITY COMPARISON

INTRODUCTION

The final goal of this thesis is to create a transitional care facility to smooth the transition from hospital to home. To properly develop such a facility, an in-depth analysis of eight different types of transitional care facilities and programs that currently exist was critical. The four facility types included Skilled Nursing, Long Term Care, Sports Rehab, and Holistic Healing centers. The four transitional programs included In-Home Care,³³ PARtNER & Project BOOST,³⁴ Stay / Return to Work,³⁵ and Health Homes.³⁶ (Appendix B) This study clarified the advantages and disadvantages of each type of facility and program. This provided helpful information to narrow down the focus of the transitional facility for this thesis.



FIGURE 4.25
Representation of holistic
healing center



FIGURE 4.26
Representation of sports
rehabilitation center

05

HEALING PRINCIPLES

05.1. HEALING PRINCIPLES

43 - 47

05.2. TESTING PRINCIPLES

48 - 53



FIGURE 5.1
*Representation of promoting
independence*

05.1. PRINCIPLES FOR HEALING SPACES

DESIGN PRINCIPLES

With the help of literature, supporting research, and the previously conducted studies, the healing principles were identified. Creating these principles was a way to categorize and organize all the supporting research and study findings from this thesis. These principles are intended to be translated into the private sector, such as the home, or into larger public realms, such as health care facilities. The previously conducted studies that were most beneficial to the compilation of these principles were the patient interviews (see pg.23), components of remission (see pg.30), and transitional case study analysis (see pg.40).

The patient interview study yielded five overlapping concerns from patients, including exhaustion and fatigue, difficulty managing pain and discomfort, problems with ease and accessibility, mental health problems, and the importance of self-care rituals. (see pg. 27) The study on remission and illness was also very beneficial to the identification of the design principles. Focusing on the concept of remission will inform some actions and behaviors of people healing and moving towards this point of remission. (see page 30) In addition, in-depth case study research helped to inform these design principles. The case study research from transitional facilities helped determine the advantages

and disadvantages of each design and facility style. These findings were considered when compiling the design principles.

The gathered information from these studies and additional research conducted from other scholars were considered when identifying the design principles. The five design principles include connection to nature, additional accommodations, promoting independence, creating comfort, and spatial qualities. Each of these design principles were identified to provide an optimal living environment while healing. Many of these principles were derived from compiled research; thus the validity of each of these principles lies in compiled external research and studies done within this thesis project.

CONNECTION TO NATURE

Connection to nature is concerned with natural lighting, views to outdoors, nutritious foods, calming scents and sounds, calming colors and textures, and ample outdoor space. This principle is derived from the many studies performed on the healing nature done by Dr. Roger Ulrich.⁸ As well as the work from Marek Dominiczak⁹ and David Weber³ on nature in healing design. (see pg. 16 for more information on healing and nature)

ADDITIONAL ACCOMMODATIONS

This principle entails ample support spaces, as well as mental and physical health professionals on-site for various forms of therapies. These mental and physical health providers include professionals that go beyond traditional doctor and nursing care. Additional accommodations is inspired by the work of Dr. Roger Ulrich based on a 1991 publication regarding interior design and healing environments¹² (see pg. 18 for more information on the study findings) This principle is also inspired by the patient interview findings from this thesis project. The primary patient interview findings that aided with this principle were concerning pain management, problems with ease and accessibility, and mental health problems. (see pg. 27)

Cont'd on page 46

HEALING DESIGN PRINCIPLES



CONNECTION
TO NATURE

VIEWS & LIGHTING

- Views to Outdoors
- Windows in all places
- Adequate lighting

NUTRITION

- Organic Food
- Various Diet Plans
- Choice with Food

SCENTS & SOUNDS

- Sounds of Nature
- Sound Absorbing Materials
- Aromatherapy

COLOR & TEXTURE

- Calm Colors
- Natural Textures
- Organic Materials

OUTDOOR SPACE

- Gardens
- Walking Paths
- Greenhouse



ADDITIONAL
ACCOMMODATIONS

SUPPORT SPACES

- Community Spaces
- Activity Rooms
- Cultural/Spiritual Practice Spaces

PHYSICAL HEALTH

- Chiropractic care
- Physical Therapy
- Dietitian

MENTAL HEALTH

- Therapists on site
- Social Workers
- Music Therapy
- Animal Therapy

FIGURE 5.2
GREEN - Representation of connection to nature

FIGURE 5.3
PINK - Representation of additional accommodations



PROMOTING INDEPENDENCE

CHOICE IN SPACE

Self-care Pods

Communal Areas

Private Rooms

ACTIVITIES

Art /Music classes

Light Exercise classes

Out of facility trips

AMPLE STORAGE

Space for Possessions

Display area for photos

Secure Storage space



CREATING COMFORT

SENSE OF HOME

Art & Family Photos

Space for visitors

Uniqueness of every patient room design

ERGONOMIC FURNITURE

Ample Bed Height

Supportive Furniture

Choice with Furniture

ADDITIONAL SPACE

Wider Hallways

Resting Space in Hallways

PROXIMITY

Bed close to Bathroom

Room close to Common Space

SIMPLICITY

Simple Technology

Simple Textures

Simple Wayfinding

FIGURE 5.4
BLUE - Representation of promoting independence

FIGURE 5.5
YELLOW - Representation of creating comfort

05.1. PRINCIPLES FOR HEALING SPACES

DESIGN PRINCIPLES

Cont'd from page 43

PROMOTING INDEPENDENCE

Promoting Independence is about having ample choice in space, a variety of activities on-site, and ample storage for their possessions. This principle is derived from patient interviews (see pg. 27) results and transitional case study findings. (see pg. 40) The primary patient interview findings that aided with promoting independence were concerning mental health problems and the importance of self-care rituals. A variety of activities and privacy levels is essential for options with self-care and supporting their mental health. In addition, the transitional case study findings found that storage for their possessions was significant in supporting mental health and comfort. Additionally, choice in space is successfully present in each case study to allow people the opportunity to structure parts of their days.

CREATING COMFORT

This principle relates to physical comfort, which is achieved through ergonomic furniture, close proximity to bathrooms and other services, and additional space in hallways and bedrooms. However, this principle is also concerned with mental comfort. This portion is achieved by creating a home-like environment and offering simplicity within the facility. Creating comfort was inspired by the work of Dr. Sternberg in Healing Spaces²

and the research of Richard Mazuch and Rona Stephen¹¹. Dr. Sternberg's research on the senses applies to this principle because comfort is achieved when the design is sensitive to the role of the senses. Additionally, the research of Richard Mazuch and Rona Stephen on "sense sensitive design" added practical information on how to engage the senses to encourage comfort. (see pg. 17 for more information on the study findings) Furthermore, this principle is inspired by patient interview findings based on the concern of ease and accessibility in their spaces and mental health problems. (see pg. 27)

SPATIAL QUALITIES

The final principle was added to translate the first four principles into design. The spatial quality principle includes guidelines related to density in both the vertical and horizontal direction, permeability of the edges and material selection, proximity concerning the space between people and level of privacy in spaces, and finally the edges and paths focusing on circulation loops and blending the indoor and outdoor spaces. This final principle was a vital component to add to the set of guidelines to translate the findings into the architectural realm. Density is achieved through compression and release in the spaces, both with ceiling height and room width. The permeability of the edges is

achieved through material selection such as glass, perforated materials, and materials higher in density. Variation in proximity is achieved with choice in spaces and fluctuating levels of privacy within the building. Finally, edges and paths created for optimal circulation throughout is very important.

Overall, it is important to keep all principles in mind throughout the design process of a healing facility. Using all of these principles is critical to creating the best space possible for the healing journey and reaching the point of remission.

FIGURE 5.6
*PEACH - Representation of
Spatial Qualities*



DENSITY

Variation in width of spaces & corridors

Variation in ceiling height of spaces

PERMEABILITY

Variation of Lighting

Transparent Edges

Variation in materiality

PROXIMITY

Variation in social distancing in spaces

Double-height spaces & ability to see others

EDGES & PATHS

Flexible edges with furniture & planting

Circulation loops

Blending indoor & outdoor conditions

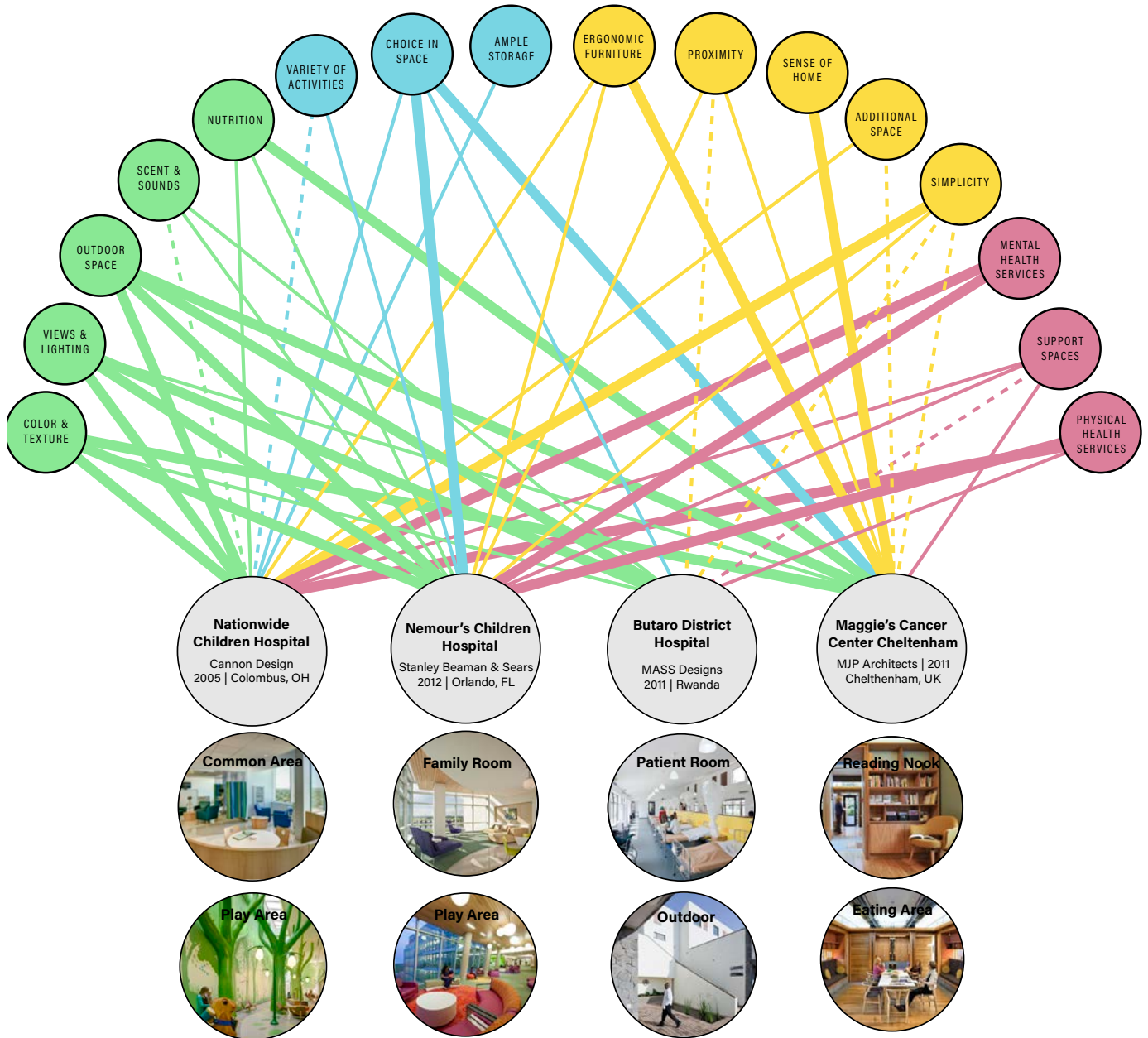


FIGURE 5.7
Case study analysis with healing principles

05.2. CASE STUDY TESTS

TESTING DESIGN PRINCIPLES

In order to test how many health care facilities currently utilize all of these principles, a case study comparison was conducted. This study compared Nationwide Children's Hospital designed by Cannon Design³⁷, Nemour's Children Hospital designed by Stanley Beaman and Sears,³⁸ Butaro District Hospital designed by MASS Designs³⁹, and Maggie's Cancer Center Cheltenham designed by MJP Architects⁴⁰. Comparing these four facilities clearly illustrates that all of the identified design principles are valid for investigation as each facility correlates with most design principles. By examining the case studies, it became apparent that it is hard to encompass all principles within the design of one facility. Each of these facilities prioritized different aspects within their design. However, for the design of this transitional facility, the goal was to try to utilize all principles in some capacity within the design. (Figure 5.7)

In order to advance this thesis project, research on healing case studies was significant. Therefore, an in-depth analysis of two health care facilities was conducted. For each case study, an analysis was performed of the overall layout, green space, circulation, massing moves, and patient room layout. The first case study was Nemour Children's Hospital.³⁸ This Florida hospital is a large, 630 000 sqft facility within an urban city environment. Analysis

of this facility was beneficial to understand broader massing moves and overall flow and circulation of different users within the facility. Because it is a children's hospital, this facility excels at creating a fun environment. There were certain elements spatially and organizationally that were great learning opportunities for this thesis. In particular, the use of color and furniture layout was very efficient in creating a non-clinical environment and a welcoming atmosphere. (Figure 5.8)

The second case study was for Almost Home Kids⁴¹ in a neighborhood setting within Illinois. This facility serves as a transitional facility for children from hospital to home. This facility is much smaller than the first case study with 22000 sqft. Almost Home Kids is much closer to the overall massing and scale of the proposed facility for this thesis project, so an analysis of this facility was very beneficial. Studying the overall layout and massing of this facility helped to inform some of the design moves within the proposed transitional health care facility for this thesis project. An area, in particular, was the informal spaces and nooks within this facility that create a home-like environment. In addition, the façade treatment and massing are very sensitive to the context of the facility within a suburban neighborhood. Since

the proposed transitional facility is also placed within a neighborhood setting, this facility served as an excellent precedent for the proposed transitional facility. (Figure 5.12)

To better understand patient room layout, an analysis was conducted for the patient rooms of Almost Home Kids. (Figure 5.16 + 5.17) The room organization for this facility was very clinical and rigid. It was functional and rational; however, it lacked a home-like approach and some key healing principles. From this analysis, it became clear that the proposed transitional facility requires a looser approach to patient rooms with a more home-like private environment. Shared common spaces, like living and dining, as well as access to outdoors from the patient rooms, are a few ways that the patient room design could be more home-like. Therefore, taking these understandings forward into the design of the proposed transitional health care facility was beneficial for the success of this facility. Overall, both of the case studies analyzed provided valuable insight for this thesis project.

NEMOUR CHILDRENS HOSPITAL

630 000 sqft | Orlando, Florida | Stanley Beaman & Sears

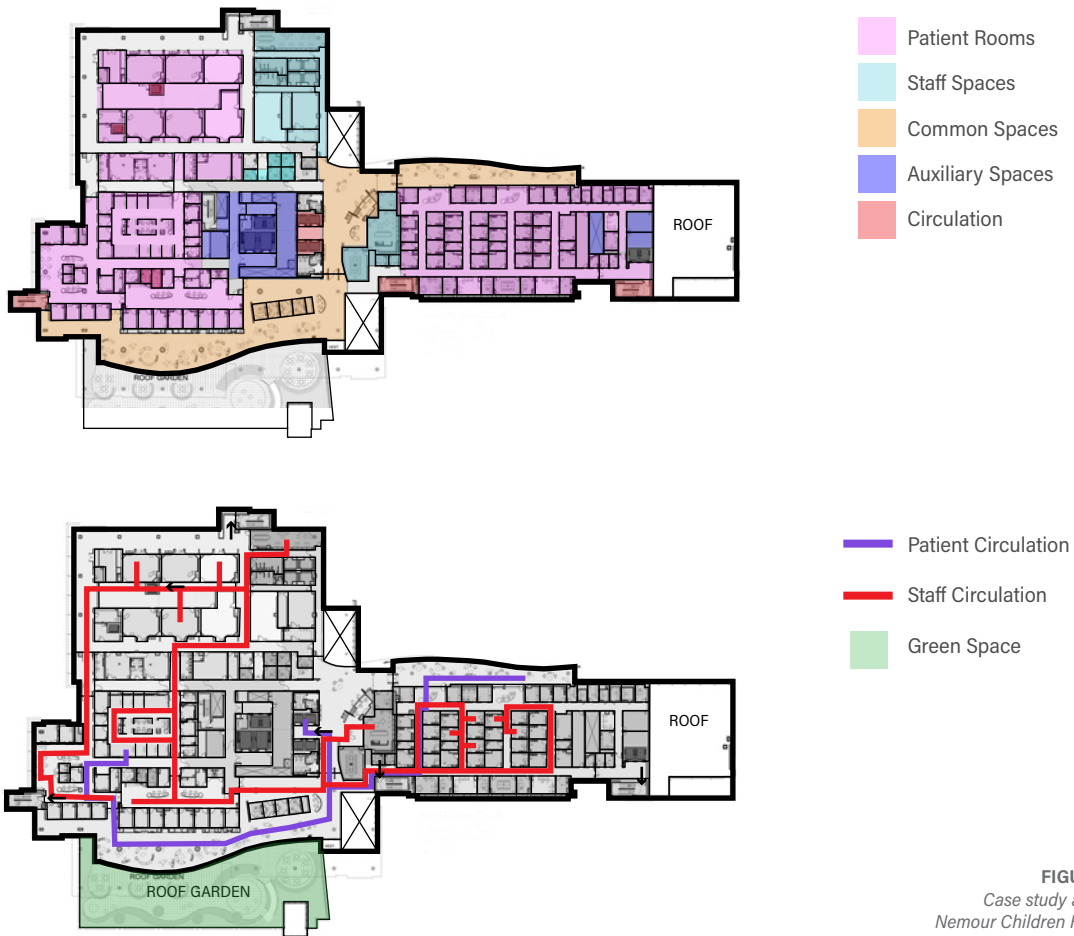


FIGURE 5.8
Case study analysis
Nemour Children Hospital

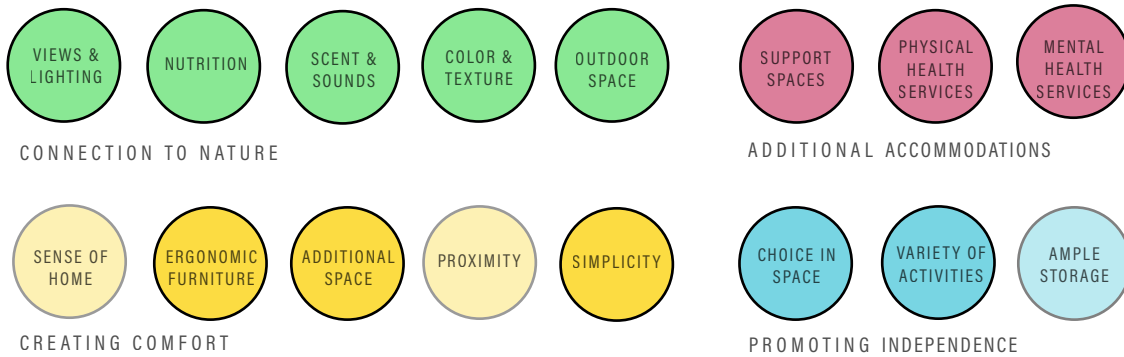


FIGURE 5.9



FIGURE 5.10



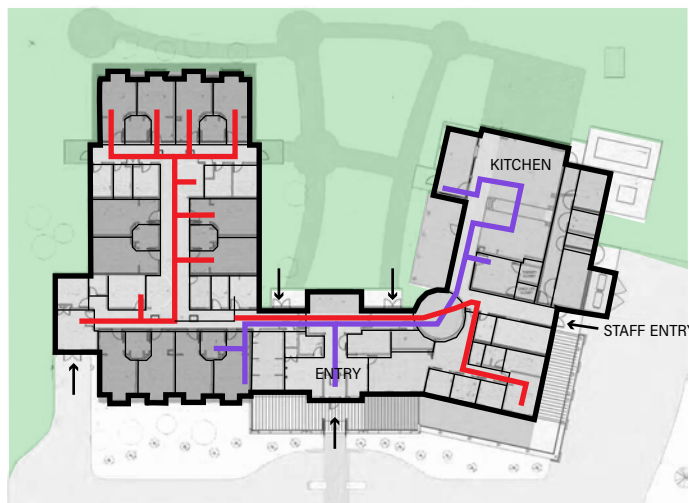
FIGURE 5.11

ALMOST HOME KIDS

22 000 sqft | Peoria, Illinois | Stantec



- Patient Rooms
- Staff Spaces
- Common Spaces
- Auxiliary Spaces
- Circulation



- Patient Circulation
- Staff Circulation
- Green Space

FIGURE 5.12
Case study analysis
Almost Home Kids

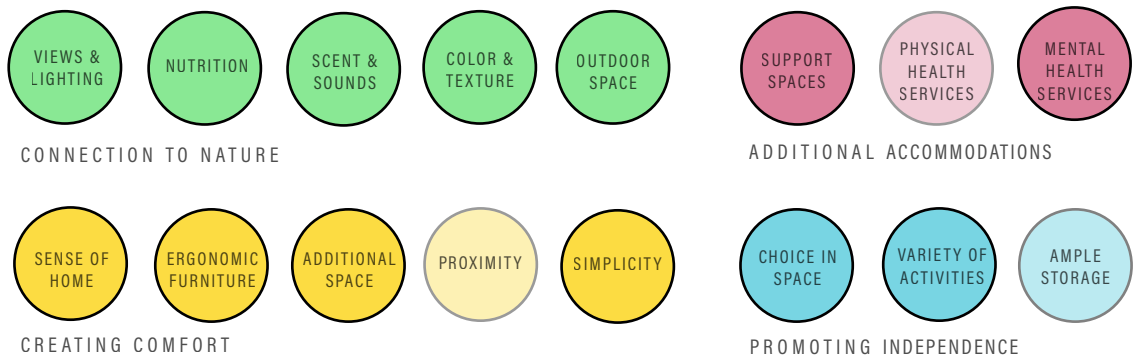


FIGURE 5.13



FIGURE 5.14

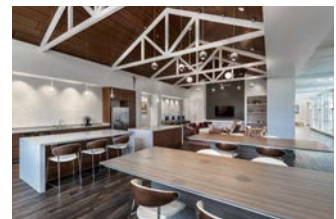
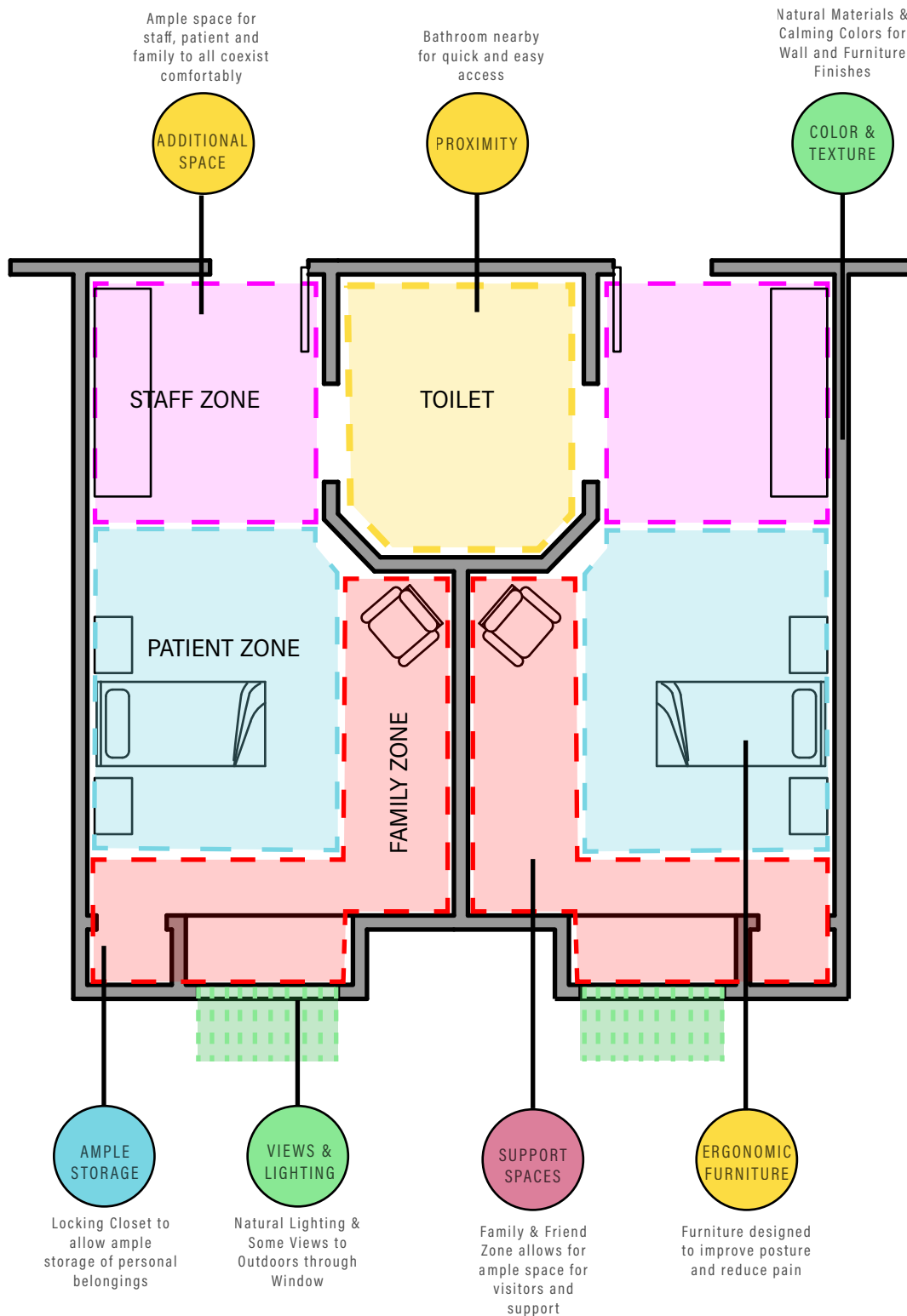


FIGURE 5.15

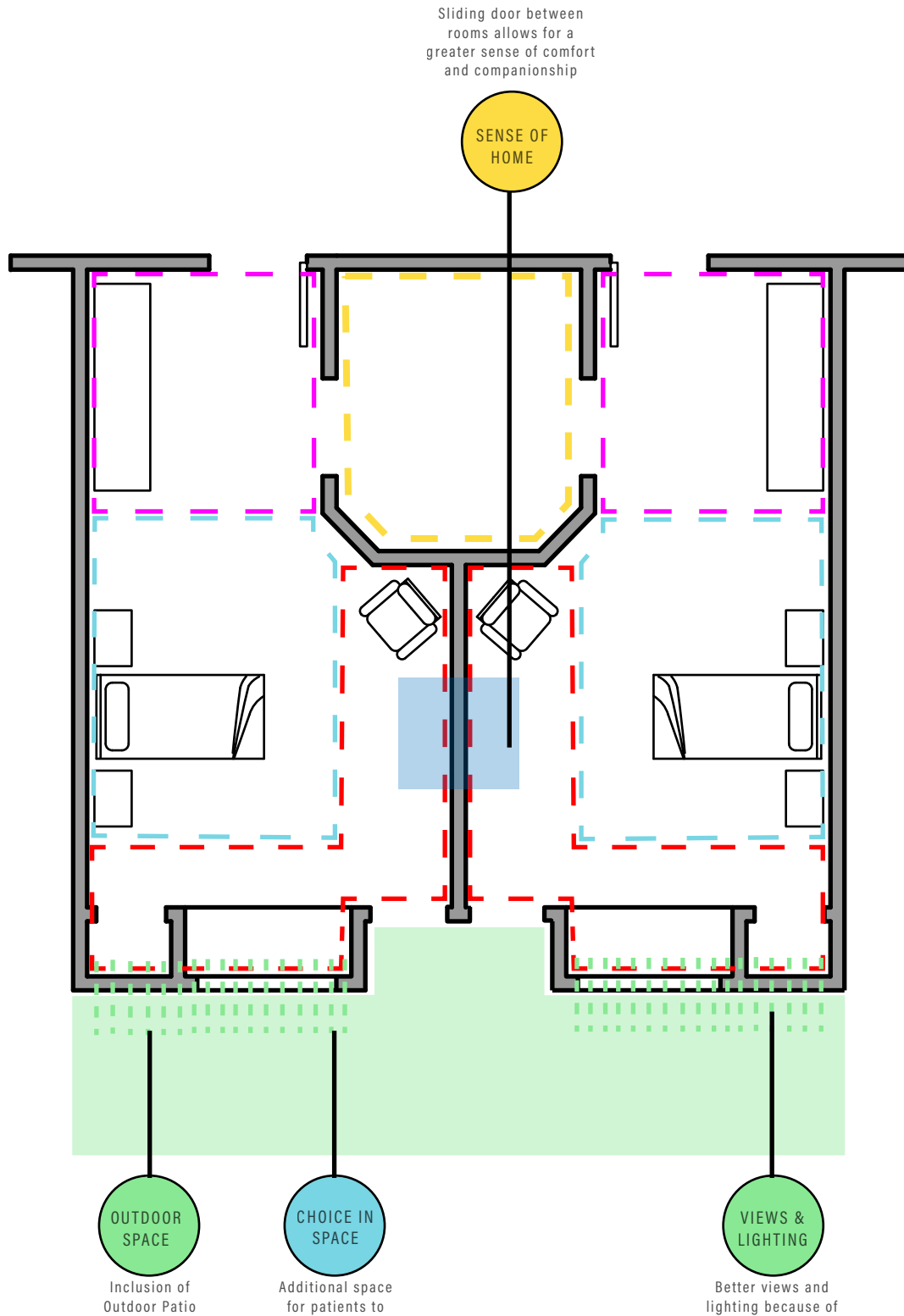
ALMOST HOME KIDS PATIENT ROOM DESIGN - ORIGINAL ROOM

FIGURE 5.16
Almost Home Kids
Original Room Design



**ALMOST HOME KIDS
PATIENT ROOM DESIGN - UPDATED ROOM**

FIGURE 5.17
*Almost Home Kids
Updated Room Design*



06

SITE & DESIGN

06.1. FACILITY PURPOSE	54 - 57
06.2. SITE	58 - 69
06.3. PROCESS WORK	70 - 83
06.4. FINAL DESIGN	84 - 107

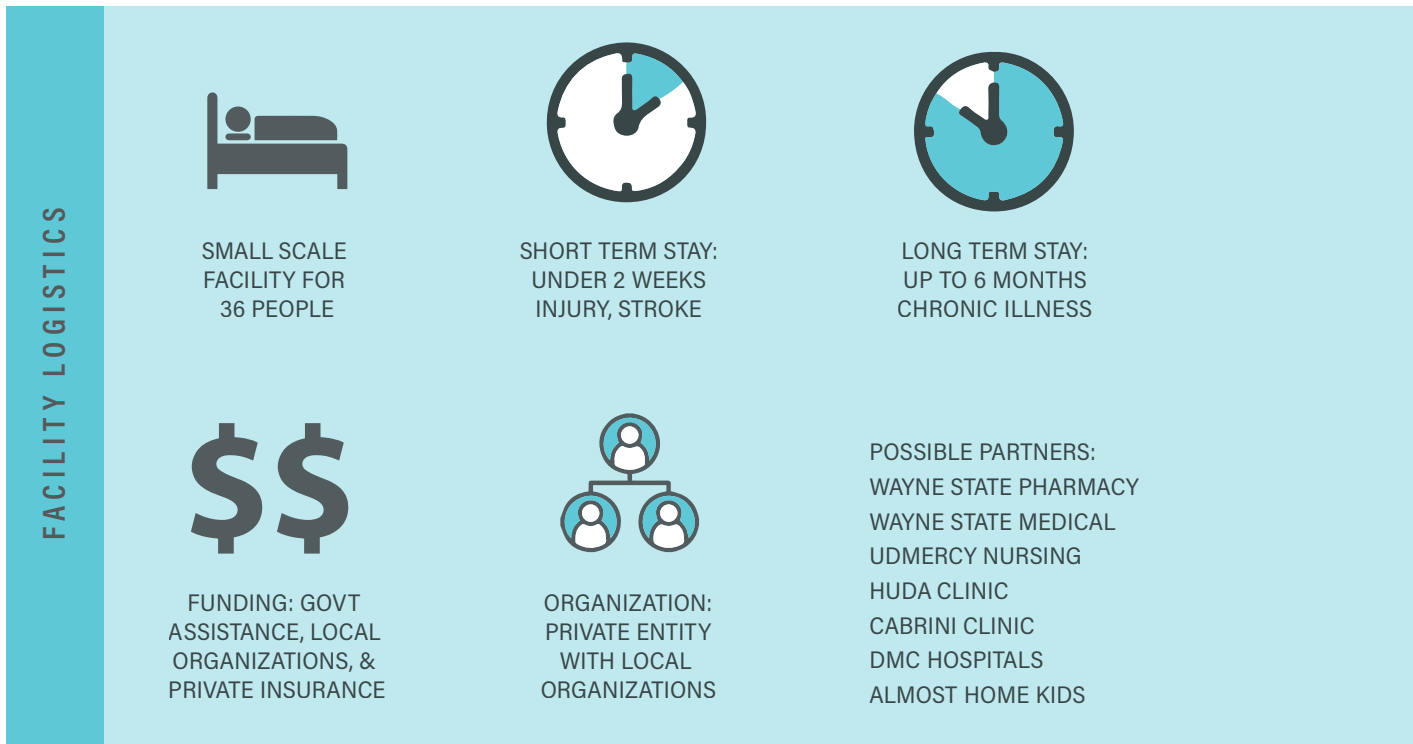


FIGURE 6.1
*Collage of transitional
facility interior garden*

**“ Recognizing the need is the
primary condition for design. ”**
- Charles Eames



FIGURE 6.2
Facility logistics & purpose graphic



06.1. TRANSITIONAL FACILITY

PURPOSE

The case study research and previous investigations helped to inform that the main purpose of the proposed transitional facility is to create a healing environment for people aged 20-50 years old. This age group is quite vulnerable in the sense that they may be starting their careers, may be newly married, or have children making healing a more complicated process at home. Therefore, focusing on the age group in the middle will be able to fill a void in the current health care system. Therefore, the target user for this facility would be anyone aged 20-50 years old, with any range of physical condition and any range of economic status.

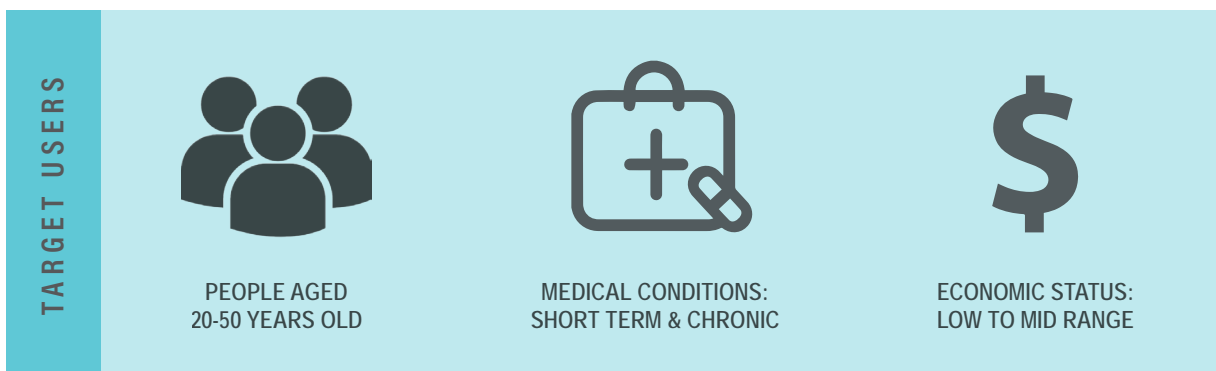
The facility is designed to allow people to heal at their own pace, with assistance, and in a community setting. This facility would allow the people to remove any burden on

their family and reduce the risk of reentry into the hospital. In addition, the facility would provide education to help people through their healing journey and return to normal life, career, and social life as best as possible. The facility could hold up to 36 people ranging from stays of a few days to six months. Funding would be provided from government assistance programs and local organizations. Much of the care would come from local hospitals and medical groups, as well as medical, pharmacy, and nursing students from local universities.

The primary objective of this facility is to provide a place for people to heal from any illness or injury with assistance. This facility would help to ease the transition from hospital to home because the patient would work with health care providers

to begin to perform activities independently within the facility before returning home. This process would minimize hospital readmission, and also provide the patient with an opportunity to learn how to live independently again without the fear of being alone within their own home. With the aid of the healing design principles (see pg. 43), this facility will provide the optimal healing environment for anyone in recovery from a physical health condition.

FIGURE 6.3
Target User Graphic

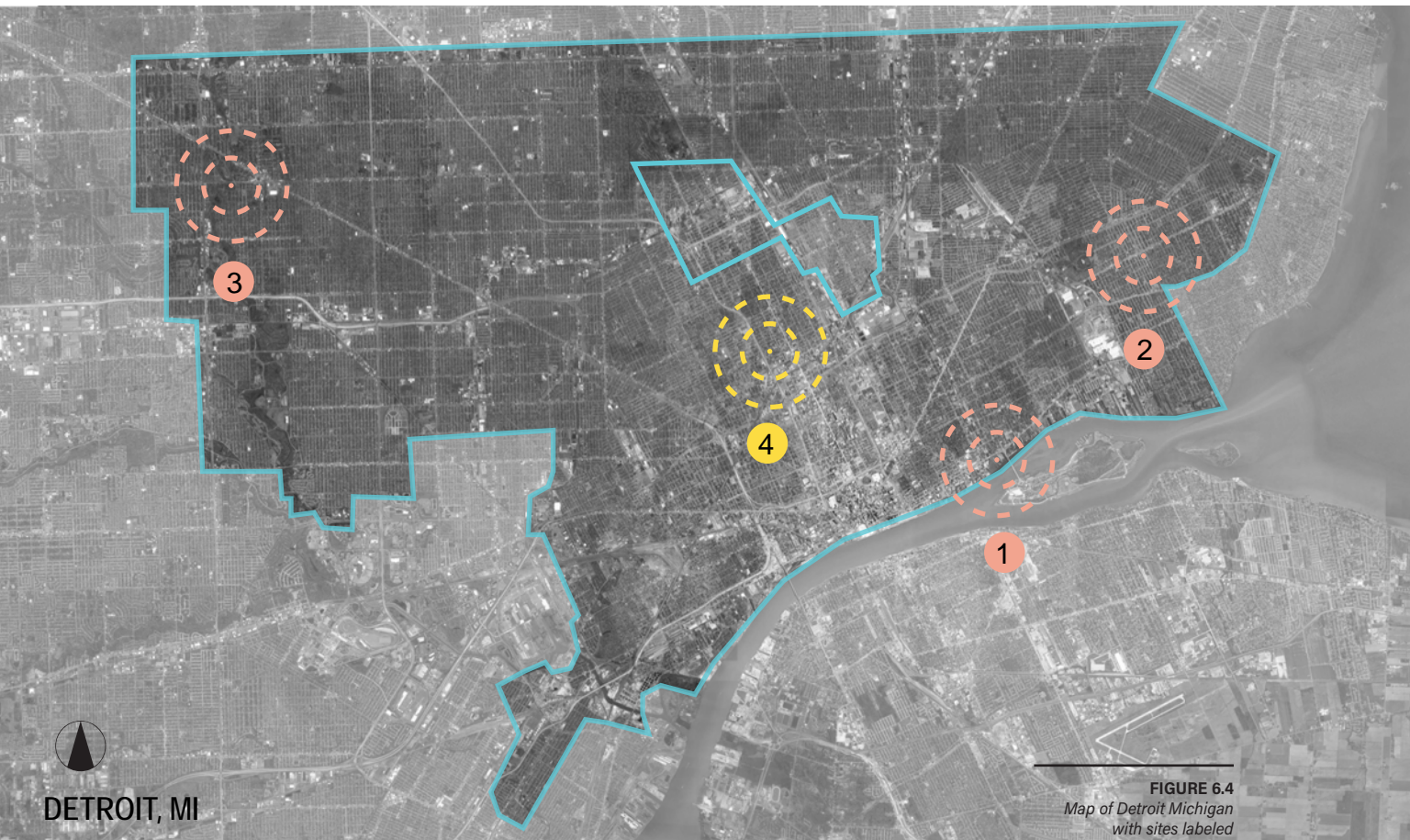


1 ISLAND VIEW LOCATION

3 RIVERDALE LOCATION

2 MORNINGSIDE LOCATION

4 NEW CENTER LOCATION



06.2. SITE SELECTION

SITE SELECTION PROCESS

This facility is located in Detroit, Michigan. The design principles, however, allow for such a facility to be built anywhere across the world. This facility is to be a community-scale intervention. As such, four community-based sites within Detroit, Michigan, were selected, as opposed to one mega-facility. Each of these proposed sites were selected based on a set of criterion. This criterion required that each site is close to nature, has close proximity to transportation, is close to local resources, the demographic within the area is greater than 45% aged 20-50 years old, and it has funding from the municipality as a strategic neighborhood.

The four sites selected within Detroit include an Island View site close to the waterfront, a residential site within Morningside, a secluded natural site in Riverdale, and a residential/urban site in Virginia

Park. Each of these locations satisfies all site selection criteria and provides ample opportunity for different healing environments. For this thesis project, one facility was selected for full design due to limitations of time and focus. The site selected for the full design is the Virginia Park location. This site was picked because of the great connection to nature, the quantity of amenities surrounding it, the demographic, the proximity to public transit, and the proximity to an urgent care and hospital. Additionally, the site is close to many community assets such as banks, grocers, food locations, and schools nearby.

SITE SELECTION

CLOSE TO NATURE

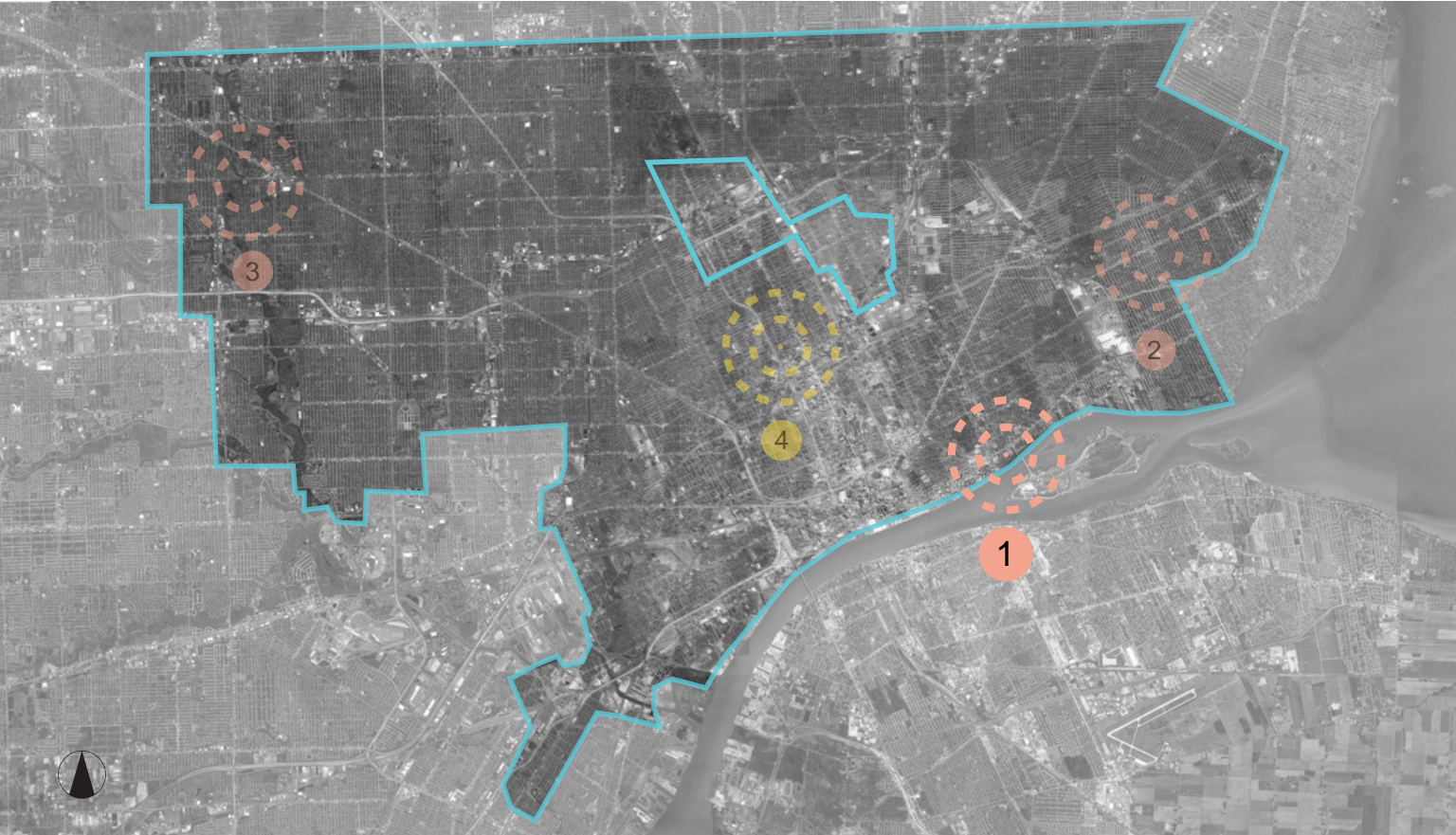
< 40% OF PEOPLE AGED 20-50

PROXIMITY TO TRANSPORT

STRATEGIC NEIGHBORHOOD

CLOSE TO RESOURCES

DATA SUPPORTING AREA



SITE 1: ISLAND VIEW


ADDRESS: 6478 E Jefferson Ave, Detroit, MI 48207
 AREA: 1 828 954 sq.ft.


WALK SCORE: 67 TRANSIT SCORE: 46 BIKE SCORE: 66


FIGURE 6.5
 Map of Detroit, Michigan
 with sites labeled

FIGURE 6.6
 Photos of Island View location



46% 
 AGED 20-50 Y.O.

89% 
 AFRICAN
 AMERICAN

82% 
 OCCUPIED HOUSING

Islandview and
 Greater Villages
 \$ selected for Strategic
 Neighborhood Fund



FIGURE 6.7
Map of Island view site with details

- Existing Green Space
- Primary Streets
- Secondary Street

EXISTING COMMERCIAL

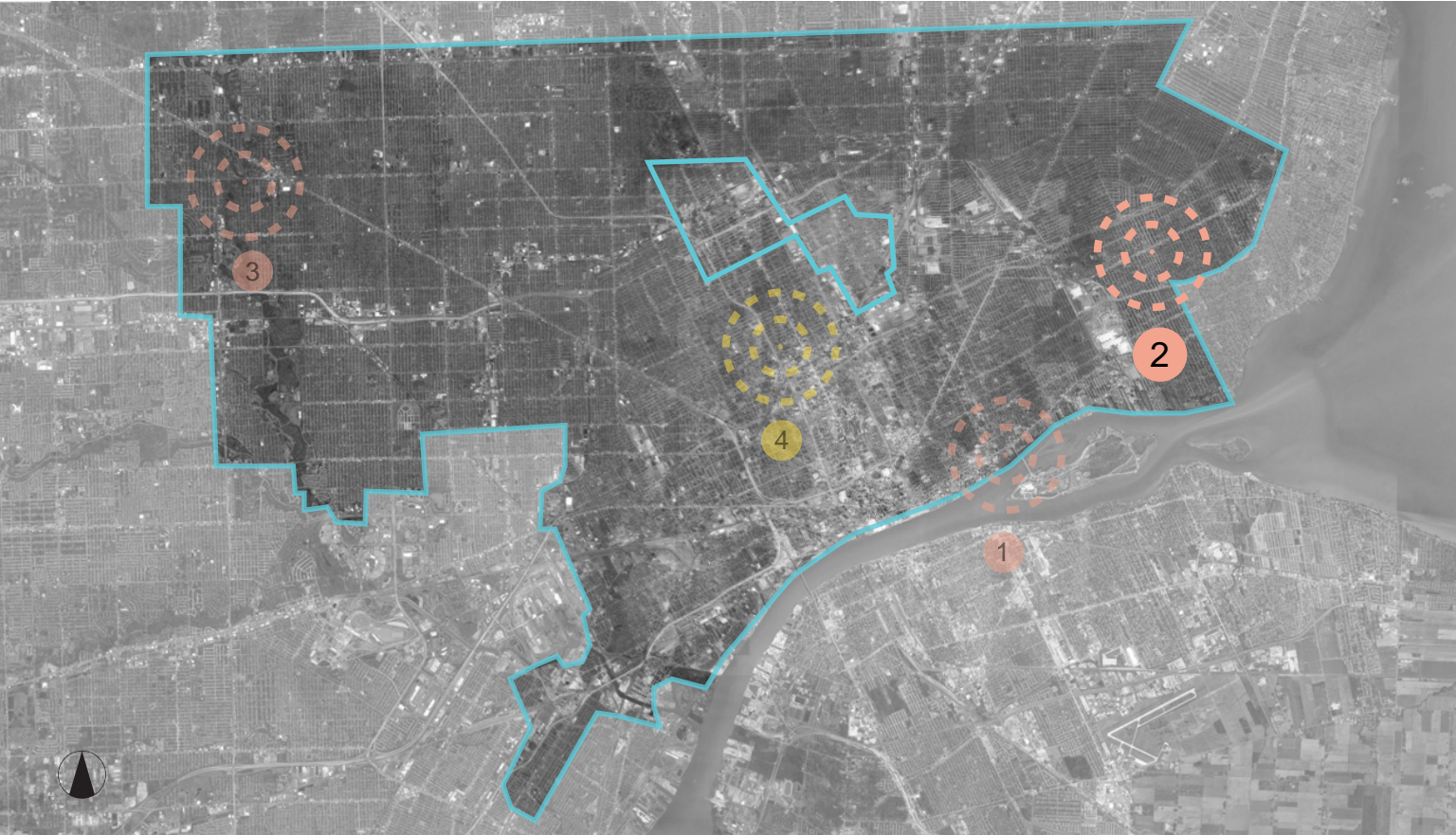
- 3 US Coast Guard Sector Detroit
- 14 Mr. Pops Detail Shop
- 15 Lofts At Rivertown

EXISTING HEALTH CARE

- 4 Henry Ford Medical Center - Harbortown

EXISTING ANCHOR INSTITUTIONS

- 1 Walgreens
- 2 Detroit Recreation Administration South
- 5 CVS
- 6 Fifth Third Bank
- 7 Martin Luther King Jr High School
- 8 Detroit Academy of Arts & Sciences
- 13 Marathon Gas Station
- 16 Heart & Soul Ministries
- 17 Immanuel House of Prayer
- 27 Mount Elmwood Cemetery



SITE 2: MORNINGSIDE

ADDRESS: 4750 Alter Rd, Detroit, MI, 48215
 AREA: 26 231 sq.ft.

WALK SCORE: 67


TRANSIT SCORE: 37


BIKE SCORE: 59


FIGURE 6.8
 Map of Detroit, Michigan
 with sites labeled

FIGURE 6.9
 Photos of Morningside location



48% 
 AGED 20-50 Y.O.

89% 
 AFRICAN
 AMERICAN

78% 
 OCCUPIED HOUSING

MORNINGSIDE
 \$ East Warren was
 selected for Strategic
 Neighborhood Funds



FIGURE 6.10
Map of Morningside site
with details

- Existing Green Space
- Primary Streets
- Secondary Street

EXISTING COMMERCIAL

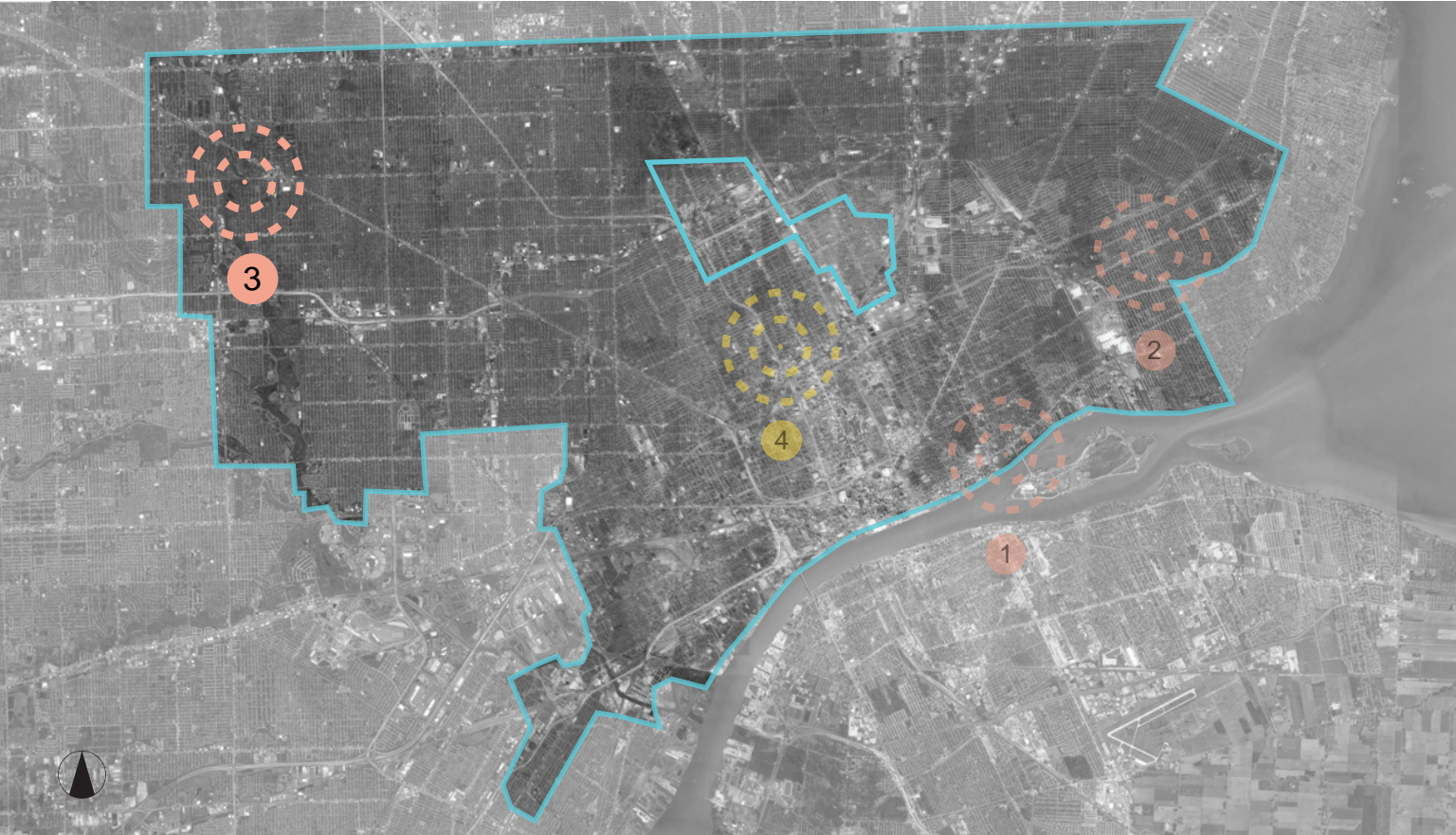
- 6 Detroit K-9 Pet Supplies
- 9 East Warren Avenue Hardware
- 10 Supreme Heating & Cooling
- 11 Royal Skateland
- 14 Warren Fish & Seafood
- 15 Ultimate Tires
- 16 Motor City Boxing
- 17 Soul Food East Side

EXISTING ANCHOR INSTITUTIONS

- 7 Bibleway Deliverance Evnglstrc
- 12 Citgo
- 13 U-Snap-Bac
- 18 Blessed Community Baptist Church

EXISTING HEALTH CARE

- 2 Samaritan Health Center
- 20 Nottingham Pharmacy



SITE 3: RIVERDALE


ADDRESS: 22750 N Riverdale Dr, Detroit, MI, 48219
 AREA: 370 715 sq.ft.


WALK SCORE: 79 TRANSIT SCORE: 44 BIKE SCORE: 64

FIGURE 6.11
 Map of Detroit, Michigan
 with sites labeled

FIGURE 6.12
 Photos of Riverdale location



47% 
 AGED 20-50 Y.O.

91% 
 AFRICAN
 AMERICAN

81% 
 OCCUPIED HOUSING

BRIGHTMOOR
 \$ selected for Strategic
 Neighborhood Fund

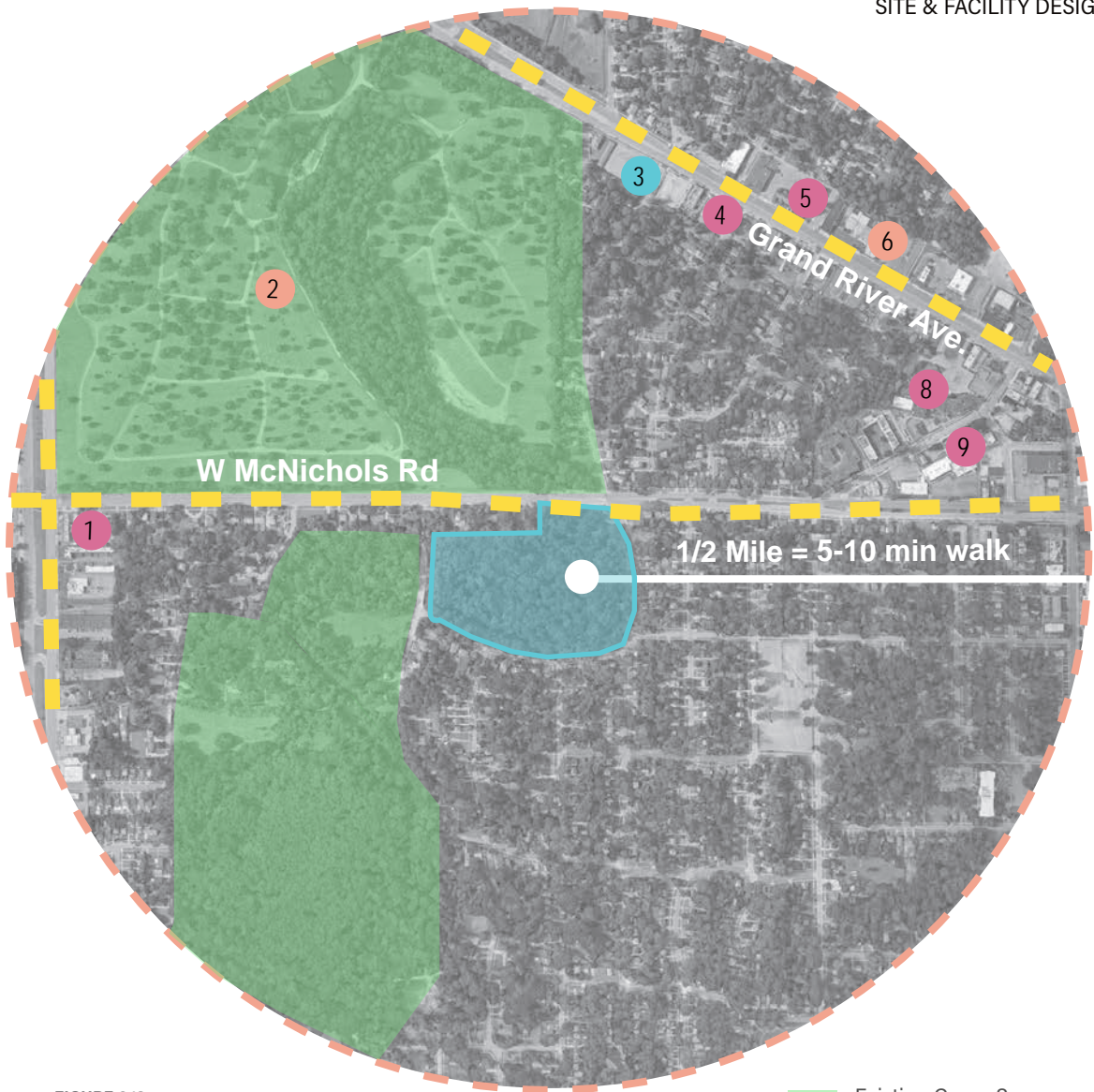


FIGURE 6.13
Map of Riverdale site with details

- Existing Green Space
- Primary Streets
- Secondary Street

EXISTING COMMERCIAL

- 2 Grand Lawn Cemetery
- 6 Furniture & Beyond

EXISTING HEALTH CARE

- 3 DaVita Redford Dialysis

EXISTING ANCHOR INSTITUTIONS

- 1 Mobil
- 4 United States Postal Service
- 5 Christian Baptist Church
- 8 Old Redford Academy - Elementary School
- 9 Old Redford Academy - Middle School



SITE 4: VIRGINIA PARK

ADDRESS: 857 Virginia Park St, Detroit, MI 48202
 AREA: 53 000 sq.ft.


WALK SCORE: 74 TRANSIT SCORE: 45 BIKE SCORE: 74


FIGURE 6.14
 Map of Detroit, Michigan
 with sites labeled

FIGURE 6.15
 Photos of Virginia Park location



50% 
 AGED 20-50 Y.O.

81% 
 AFRICAN
 AMERICAN

71% 
 OCCUPIED HOUSING

NEW CENTER
 DMMC provided
 funds to businesses
 - open in the area

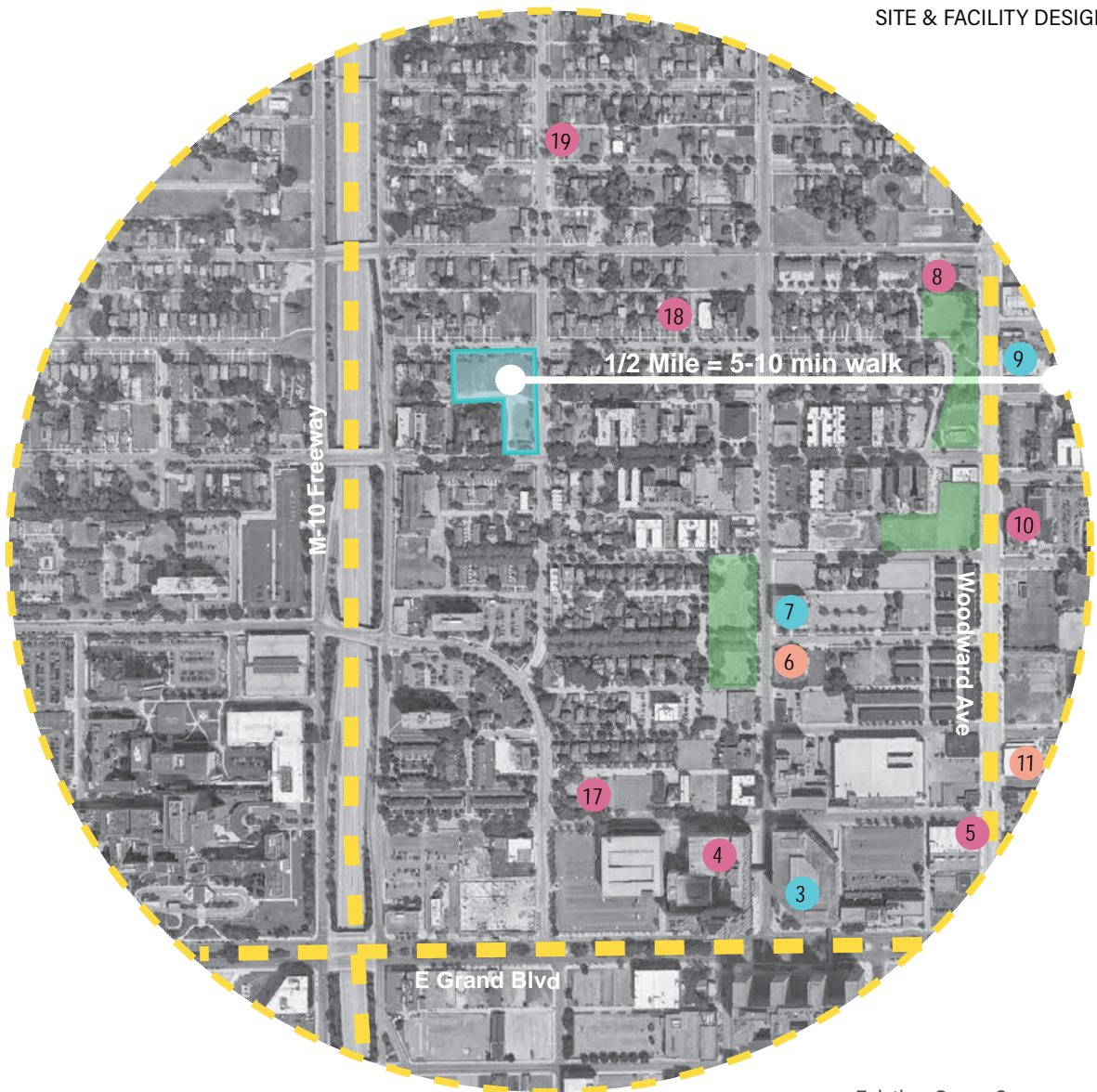


FIGURE 6.16
Map of the Virginia Park site
with details

- Existing Green Space
- Primary Streets
- Secondary Street

EXISTING COMMERCIAL

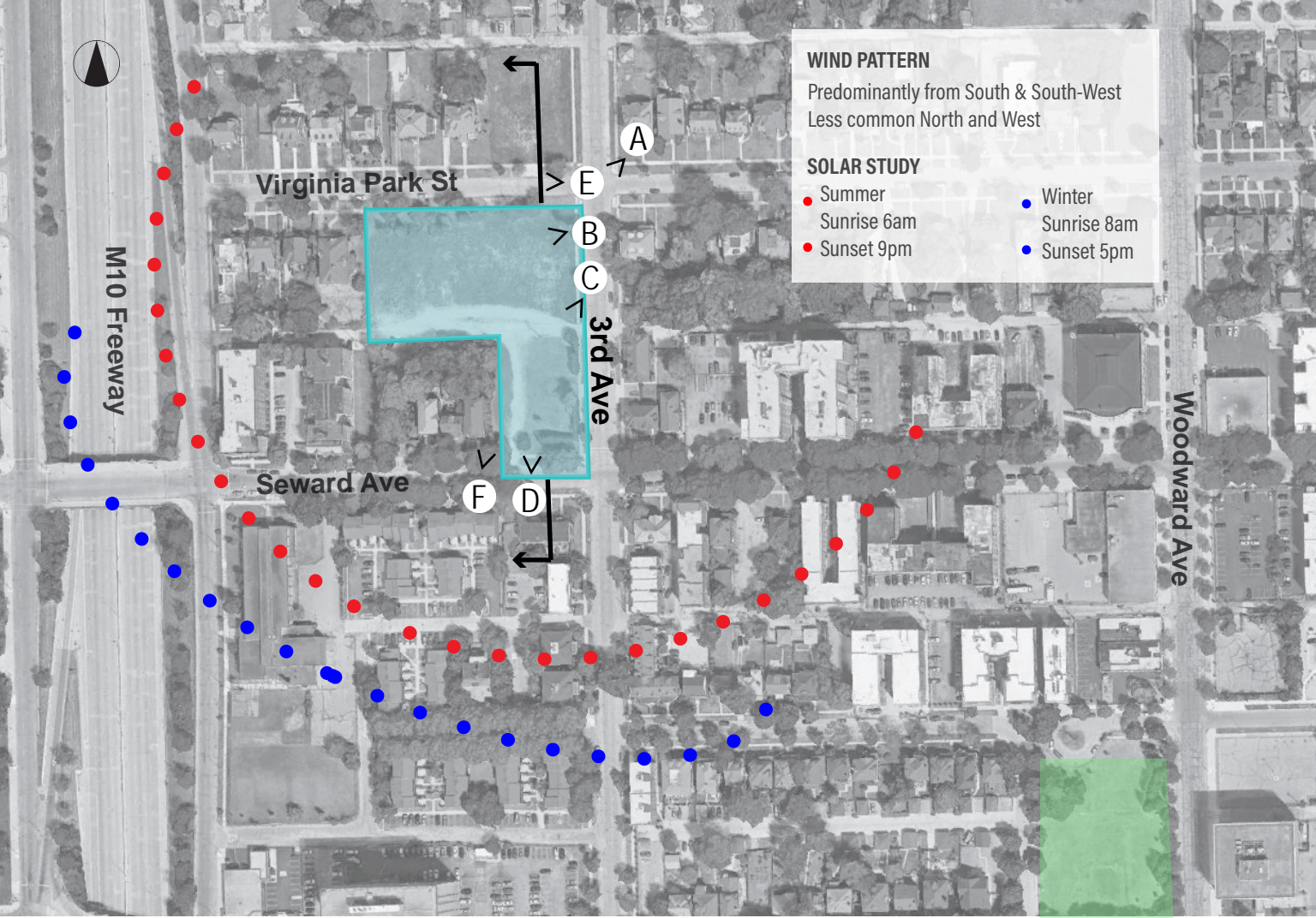
- 6 Coleman Young Foundation
- 11 Penske Tech Center

EXISTING HEALTH CARE

- 3 Henry Ford Medical Center - New Center
- 7 DaVita New Center Dialysis
- 9 DMC Urgent Care-MI

EXISTING ANCHOR INSTITUTIONS

- 4 Fisher Theatre
- 5 Citizens Bank
- 8 Citgo
- 10 Metropolitan United Methodist Church
- 17 Detroit Parent Network
- 18 Matrix Human Services - Youth Services
- 19 Redeemed Missionary Baptist Church



SITE 4: VIRGINIA PARK

ADDRESS: 857 Virginia Park St, Detroit, MI 48202
AREA: 53 000 sq.ft.

WALK SCORE: 74 TRANSIT SCORE: 45 BIKE SCORE: 74

FIGURE 6.17
Detailed map of the Virginia Park location

FIGURE 6.18
Site Section Virginia Park

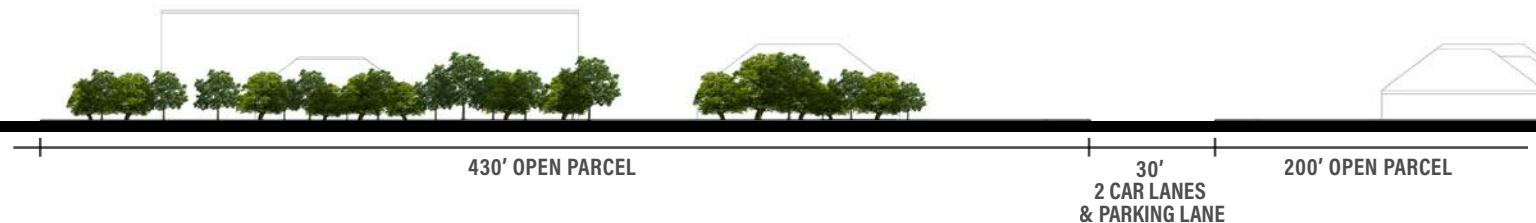


FIGURE 6.19
*Site photos of the Virginia
park location*



**“ To create, one must first
question everything.”**

- Eileen Gray

06.3. PROCESS WORK

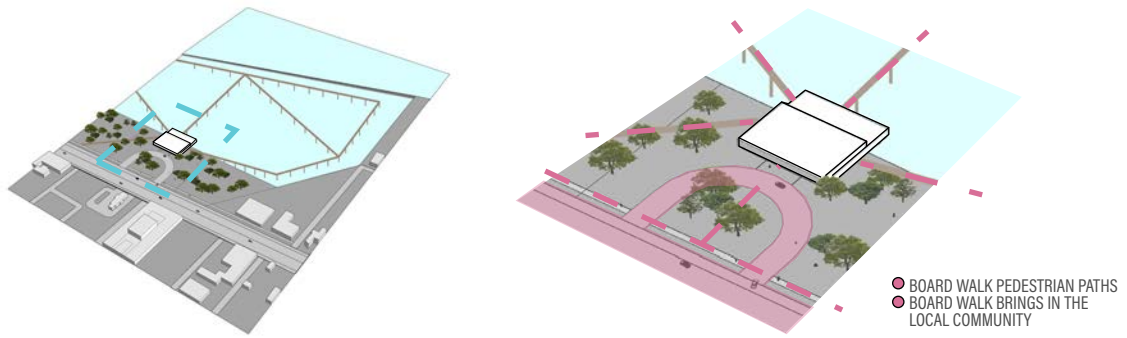
DESIGN CHARETTE 1

To begin to translate the healing principles into design, three conceptual massing ideas were developed for the Island View site. The Island View location was initially selected for a complete design. However, through this design charrette, it became apparent that this site was not the right location for the main design. Each of these schemes were driven by a few key ideas and were meant as a way to investigate how the building design relates to the street, land, water, and adjacencies. The first scheme was focused on the connection to nature and the local community. This idea was based around a marsh wetland idea that has previously been proposed for the Uniroyal site. The marshland would act as a natural filtration system for excess stormwater. The site would also have a series of boardwalks that would bring the public into the site.

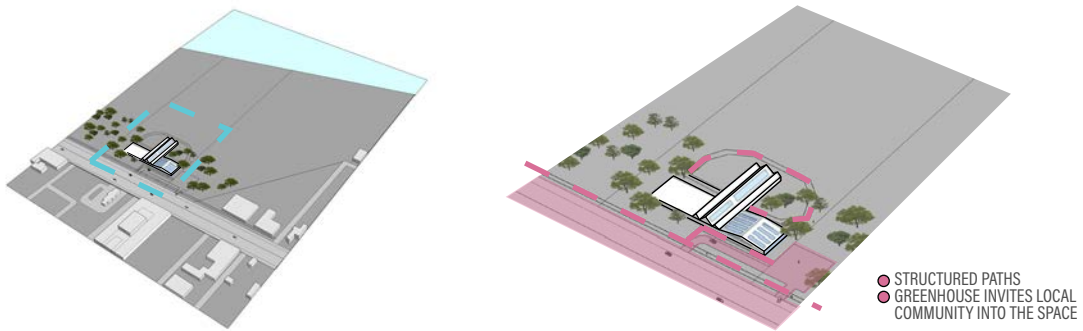
The second concept was focused on a high quality of light and connection to the local community. This idea includes a greenhouse that can be run by community volunteers and patients. This would be a fantastic way to connect to the local community, but also allow the patients to be involved. Light is significant in this scheme, not only in the greenhouse portion, but in

other shared spaces in the facility. The final idea focused on offering a large amount of choice in space within the facility, and having views out to the water. This concept is tucked into the site, and is more secluded from the community. This model contains private rooms facing the waterfront that would be rented out by patients periodically for quiet time and privacy. All of these design ideas were meant to be quick charrette style ideas to begin to address design layout, key principles, program, and some materiality. This study was beneficial in displaying that this site was not the right fit for the main location because it is too large and secluded from the community. This charrette was also helpful to test ideas and begin to filter through healing design principles in some fashion.

CHARETTE 1 - DESIGN 1



CHARETTE 1 - DESIGN 2



CHARETTE 1 - DESIGN 3

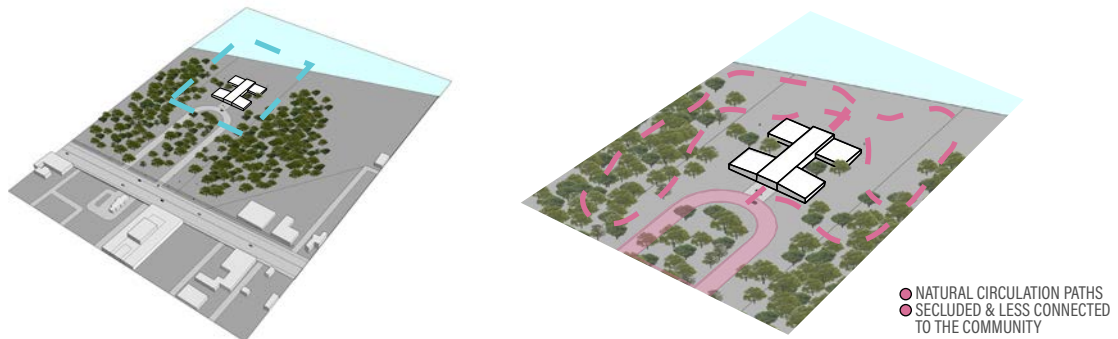
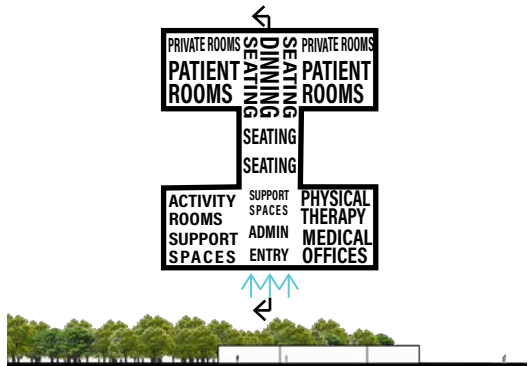
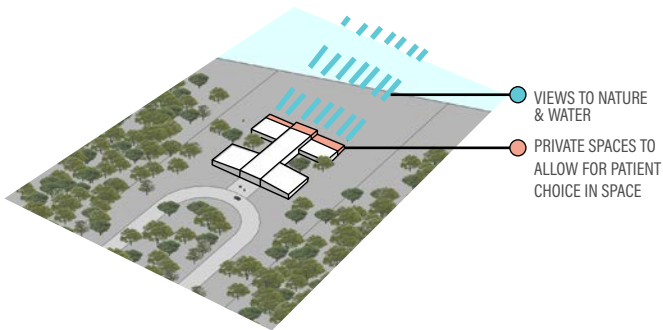
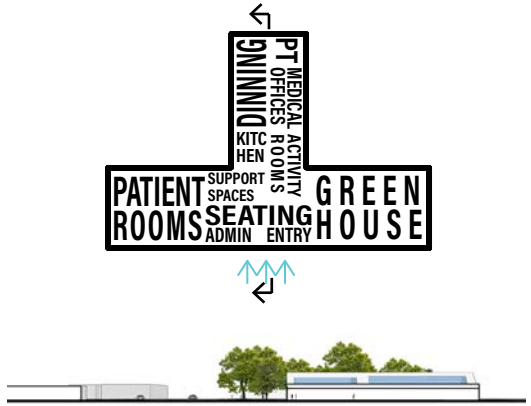
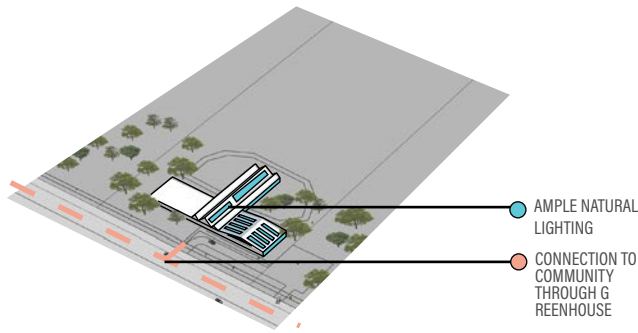
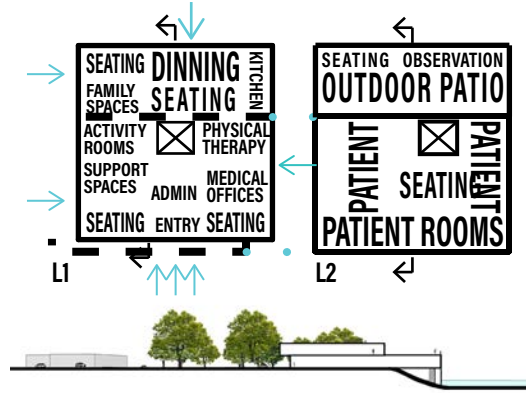
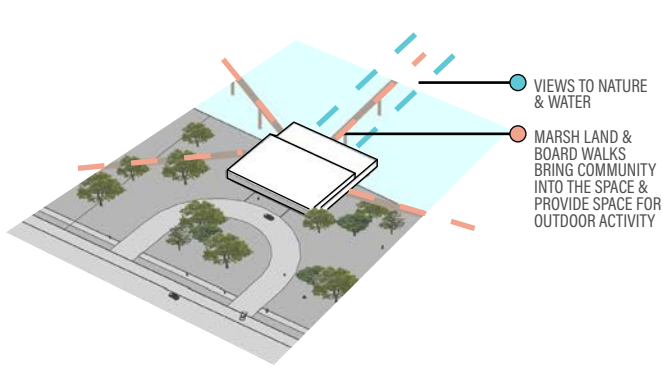


FIGURE 6.20
Design charette 1 concept drawings



**“ Take care of the patient and
everything else will follow. ”**

- Thomas First, M.D.

06.3. PROCESS WORK

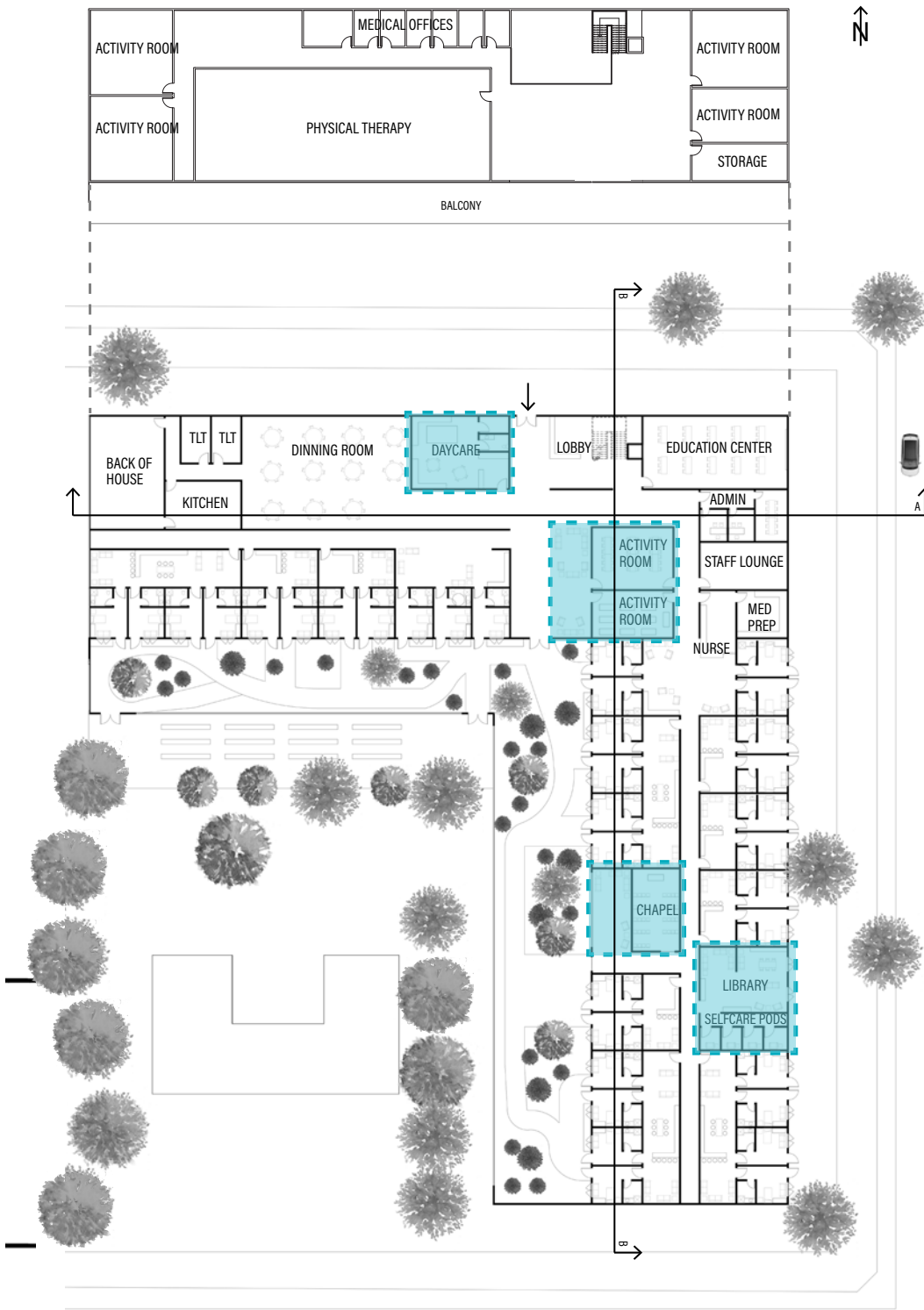
DESIGN CHARETTE 2

The second design charrette was focused on developing two new schemes for the Virginia Park Transitional Facility. Since the first design charrette, the site was reinvestigated and relocated to Virginia Park. This site offered many more benefits and was more centrally located within a community in Detroit, Michigan. The first design was focused on an interior garden, with rooms lining the perimeter of the interior garden space. This design allowed for each resident to have their own patio with access to a garden space year-round. This design had most amenities on the first floor with the physical therapy, medical services, and activity spaces on the second floor. Design one included shared seating and kitchen areas adjacent to resident rooms. In addition, self-care spaces and additional activity areas were provided. This design had a good overall massing idea, focusing on the interior garden as the central feature. However, the concept as a whole was too closed off and lacked personality. More attention was required on the massing moves and the sectional quality of the spaces, as well as floor plan layout.

The second design was a single-story building with an internal garden as the main feature. This

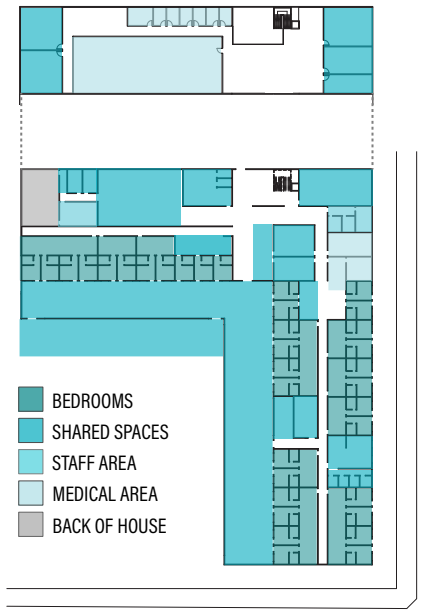
design had the rooms lining the perimeter of the building clustered around outdoor courtyards. Additional spaces, such as physical therapy, medical spaces, dining, and activity rooms, lined the north and east walls. Furthermore, the interior garden was placed in the center of the building as a congregation point. This design was successful in creating more interior and outdoor garden spaces. However, the overall floor plan layout and circulation was very confined. All the spaces were cramped, and there was not much room for informal meeting spaces and seating. The grouping of resident rooms with shared amenities, although a good idea, was not practical. This idea required too much additional space and did not promote collaboration between all residents. Instead, this idea confined people to their quads or coupled shared spaces. Overall, both of these designs were great starting points to begin to think of fundamental ideas for the design of this facility. These ideas included lots of garden spaces, ample natural lighting, auxiliary space locations, opportunity for informal meeting spaces, and a range of activity options.

CHARETTE 2 - DESIGN 1

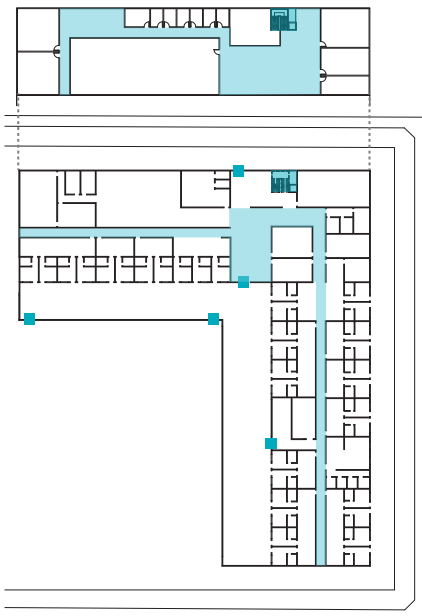


FLOOR PLAN

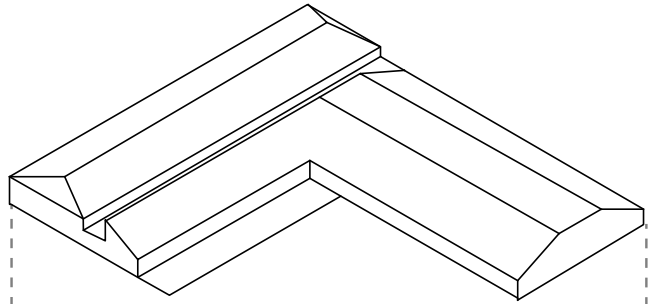
FIGURE 6.21
Design charette 2 scheme 1
concept drawings



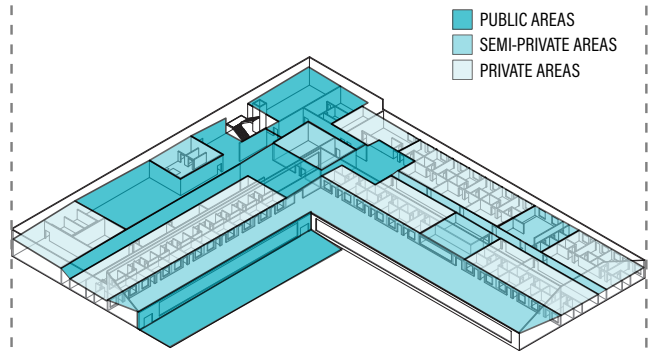
PROGRAM DIAGRAM



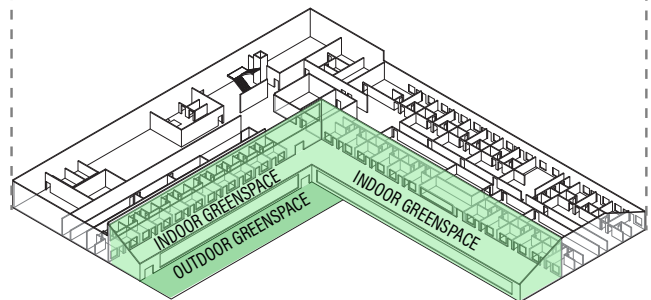
CIRCULATION DIAGRAM



PARTI DIAGRAM



PRIVACY DIAGRAM



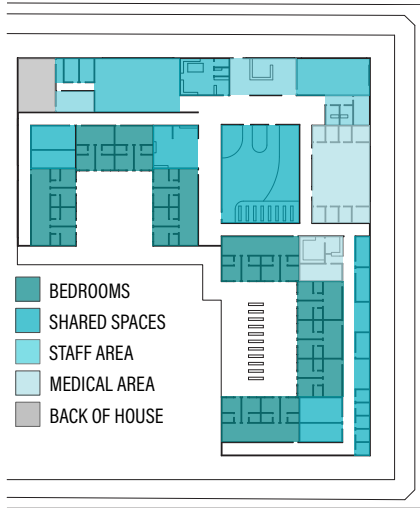
GREEN SPACE DIAGRAM

CHARETTE 2 - DESIGN 2

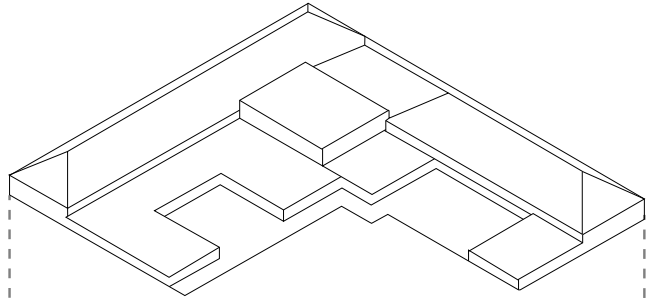


FLOOR PLAN

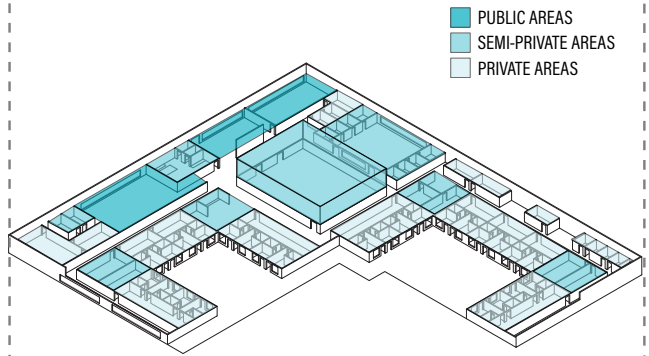
FIGURE 6.22
*Design charette 2 scheme 2
concept drawings*



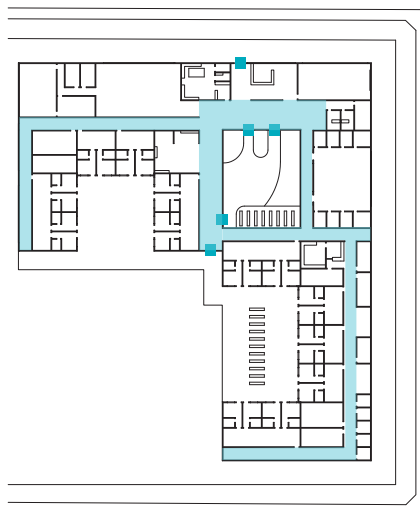
PROGRAM DIAGRAM



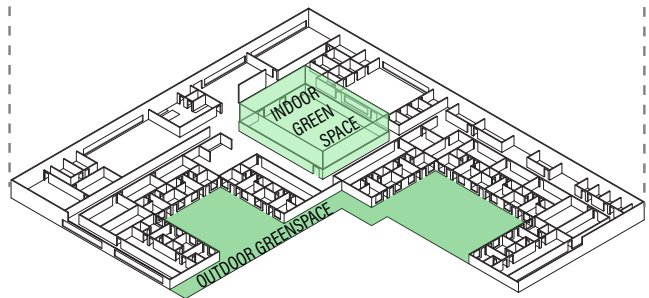
PARTI DIAGRAM



PRIVACY DIAGRAM



CIRCULATION DIAGRAM



GREEN SPACE DIAGRAM

“ We shape our buildings and afterwards our buildings shape us.”

- Winston Churchill

06.3. PROCESS WORK

DESIGN SCHEME 4

Building off of the previous designs, this scheme provided a more in-depth look at various ideas. Some ideas included the placement of garden spaces, circulation paths, and the ease of collaboration. Scheme four focused around the interior gardens and circulation loop created within the garden on both the first and second floors. This design breaks down the interior gardens into multiple smaller indoor garden spaces. Each of these interior gardens connect together with a green loop, and were adjacent to resident rooms. Dining, seating areas, physical therapy, medical offices, and activity spaces lined the North and East side of the building. Certain zones of the floor layout were organized with a series of movable walls. This system would allow for residents to select their environment based on their privacy and activity desires for the day. This offered a sense of collaboration within the project and allowed residents to adapt their surroundings based on their needs.

Overall, this scheme had a lot of notable design moves. The attention to circulation loops was essential to promote movement for the residents. In addition, the movable wall systems were excellent for offering choice and collaboration between residents. However, a few design moves were still incomplete from this scheme.

First of all, the resident rooms did not all have access to exterior windows. In addition, the views from each residents room would be skewed based on their arrangement. Therefore, rearranging the interior garden space and how the rooms lined the space was essential. Secondly, the exterior garden space and circulation routes did not spark collaboration and did not offer any variation in privacy and activity spaces. Moving forward, more variation was required with the layout and plantings. Finally, the façade and sectional quality needed to be improved. This scheme was still very flat and did not reflect the interior program from the exterior. The final design required a more playful approach to the façade and sectional quality, allowing for more variation in ceiling heights and lighting within the spaces. Overall, this scheme was a great stepping stone for the final design. Many of the design features in this scheme were kept and enhanced in the final scheme.

DESIGN SCHEME 4

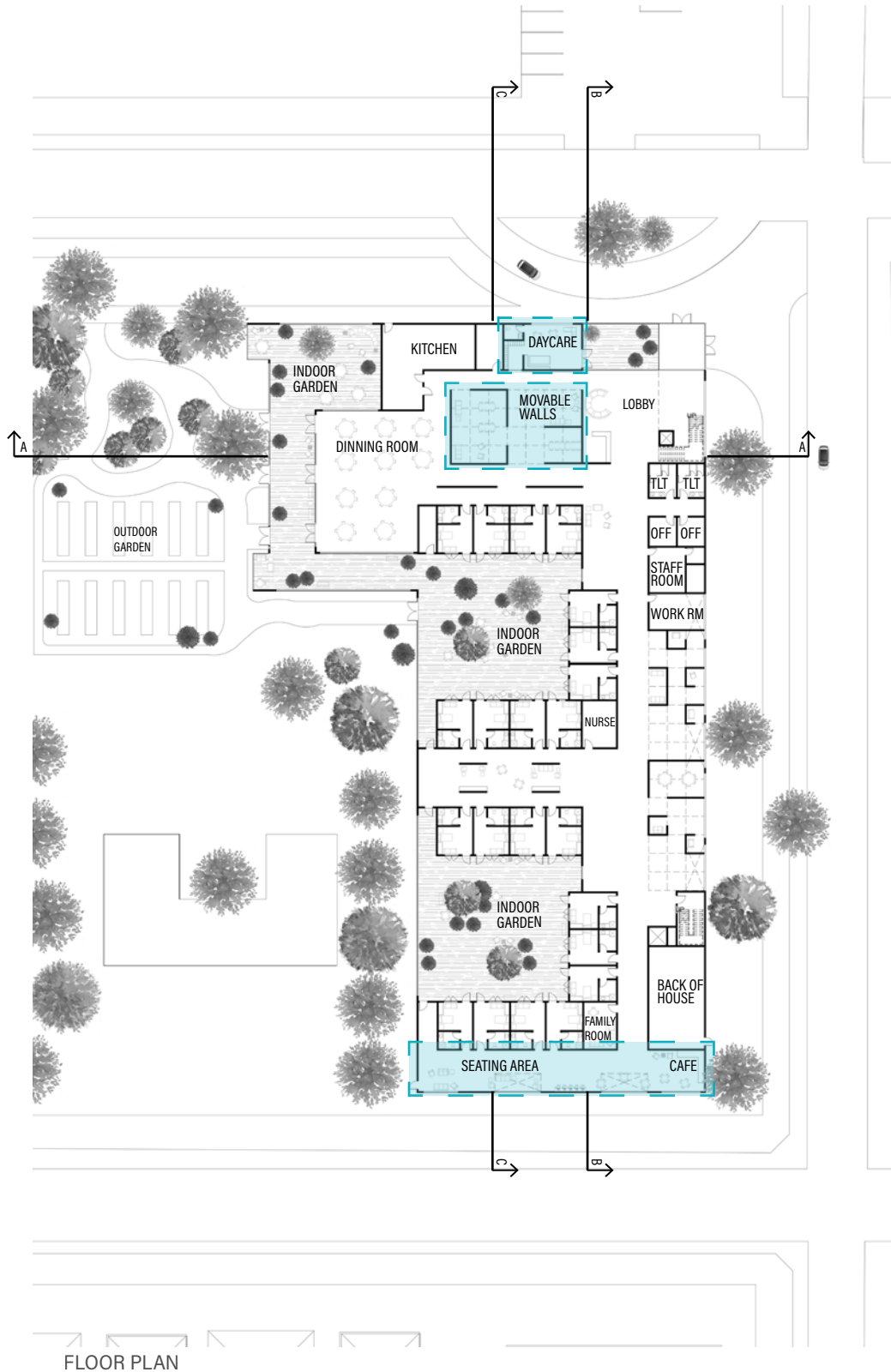
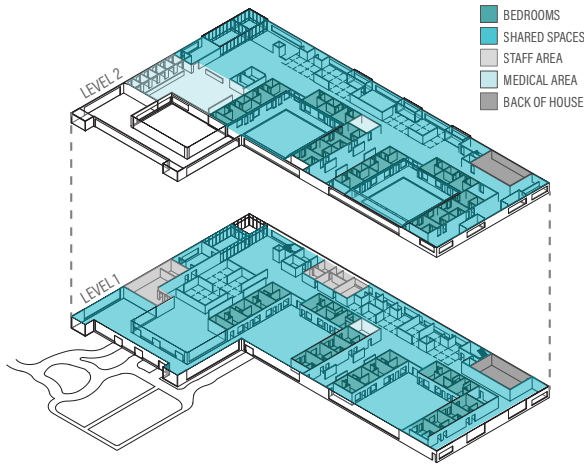
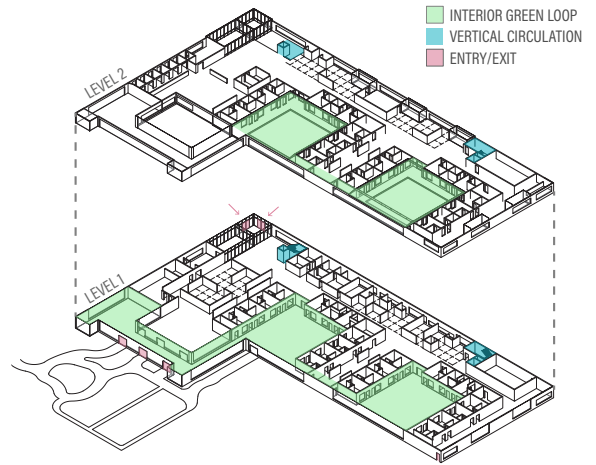


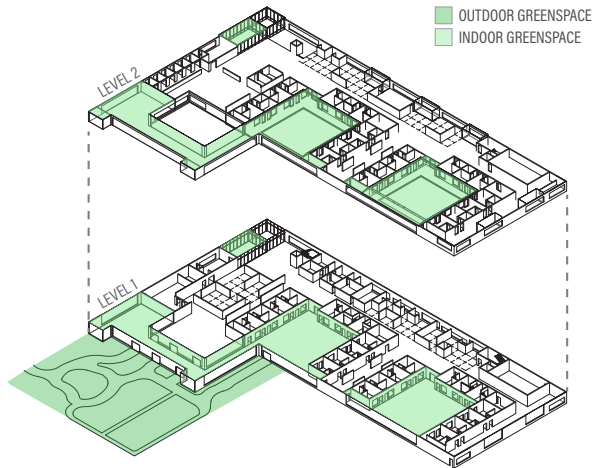
FIGURE 6.23
Design scheme 4
concept drawings



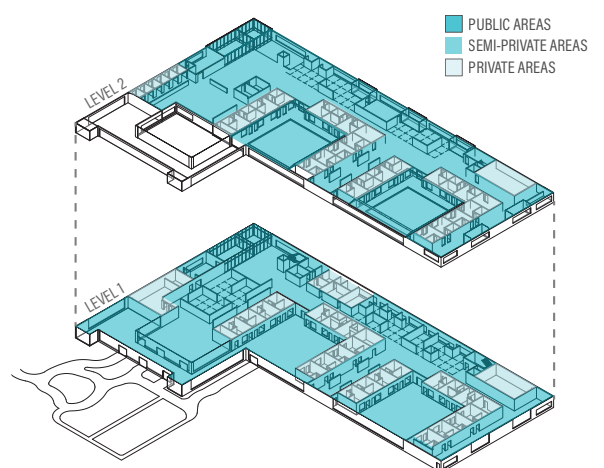
PROGRAM DIAGRAM



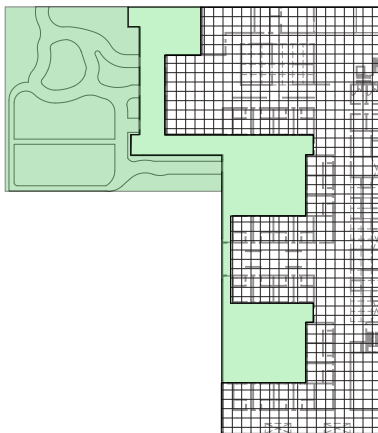
CIRCULATION DIAGRAM



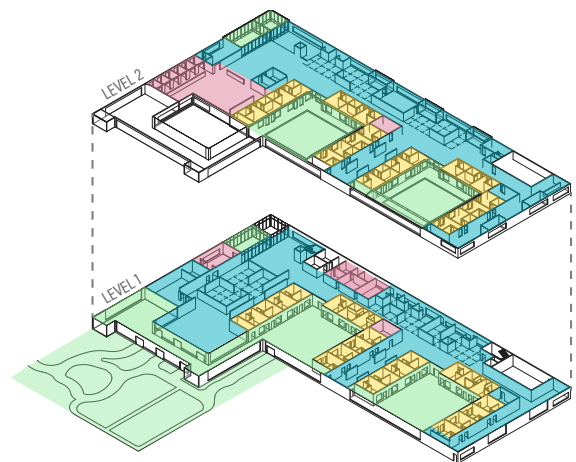
GREEN SPACE DIAGRAM



PRIVACY DIAGRAM



PARTI DIAGRAM



- OUTDOOR SPACE
- SIMPLICITY
- CHOICE IN SPACE
- SUPPORT SPACES
- VIEWS & LIGHTING
- SENSE OF HOME
- VARIETY OF ACTIVITIES
- HEALTH SERVICES

PRINCIPLE DIAGRAM

**“ Proper healthcare is a
right, not a privilege. ”**
- Edward Kennedy

06.4. FINAL DESIGN

INTRODUCTION & DESIGN CONCEPT

All studied research, and previous investigations led this project to the development of the transitional facility design. This facility was designed using all of the knowledge and research compiled throughout this investigation. In particular, the healing design principles were hugely influential in the creation of this design. The transitional healing facility is focused on three main ideas. Firstly, focusing on nature and the transition from the interior and exterior spaces. This idea comes to life with the use of indoor garden spaces that bleed to the exterior garden. Second, focusing on collaboration achieved with a movable wall system that can transform many spaces into what works best for the residents at the time. Finally, focusing on education with physical therapy and specialists on-site to offer a range of expertise on the healing journey of each person.

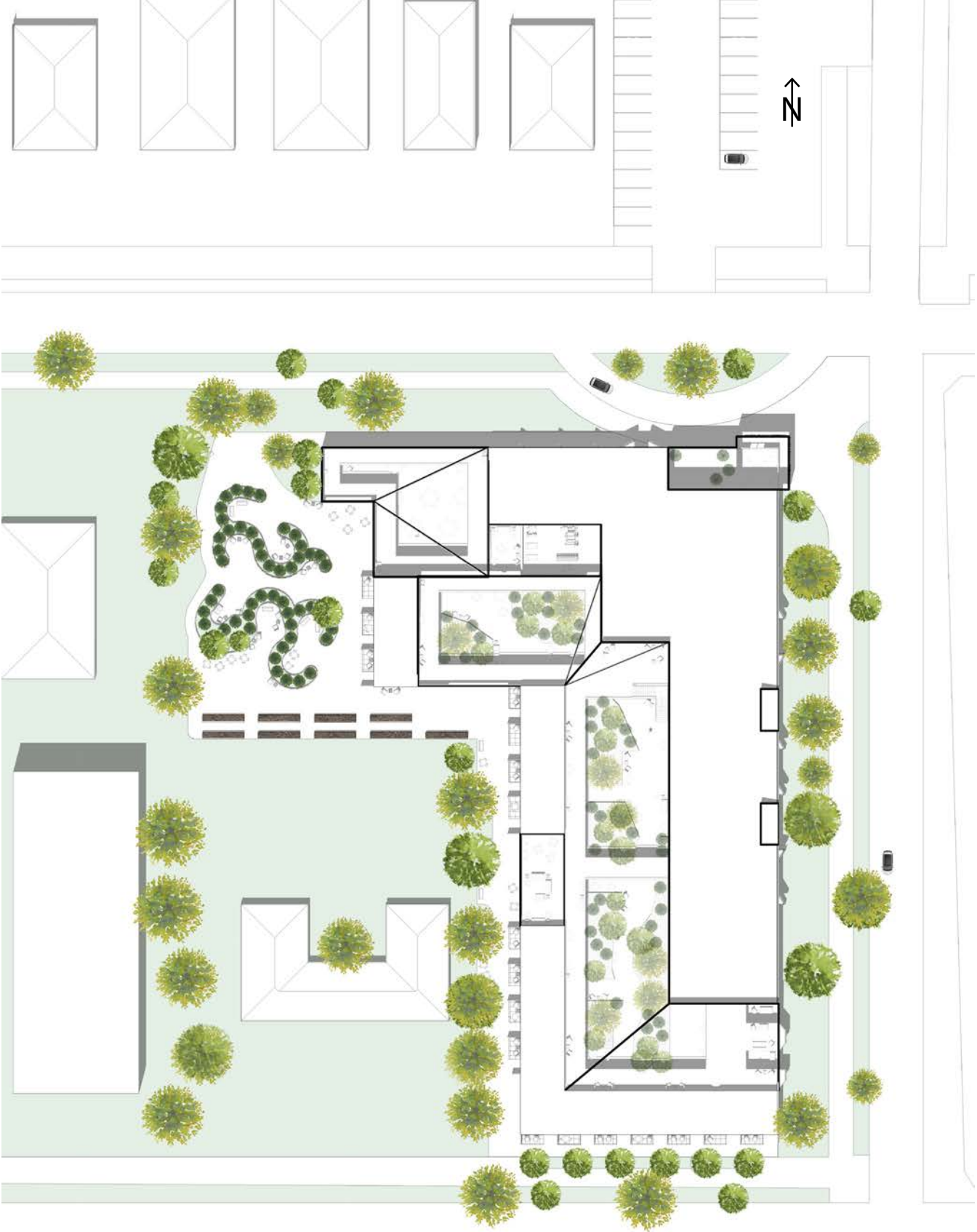
The facility design is focused on the three main ideas while still incorporating the components from each of the five healing principles. With the help of precedent studies, user needs, and the healing design principles, a series of additional spaces are placed within this facility. To offer various health and wellness programs, multipurpose spaces are placed throughout the facility. Many of these spaces are organized with movable walls, which can offer a lot

of different uses and configurations based on the need. In order to cater to the family unit, family zones and hangout areas were designed. A small daycare center was also placed within the facility to allow residents who are parents to have their children for the day within the facility, but to have the option for additional child care assistance when they became fatigued or overwhelmed.

A chapel and private self-care areas are also provided within the facility for quiet time, prayer, meditation, or relaxation. Finally, each bedroom has a private bathroom, ample storage, seating area for friends and family, desk, and TV unit. In addition, the first-floor rooms have private outdoor seating areas for each resident. Each of these spaces within the transitional facility were carefully planned with the healing design principles. Throughout the evolution of the design, it was critical to test and continue to develop the healing design principles. This testing process allowed for the best possible list of healing design guidelines to be compiled.

The program of this facility is split between the two levels of the L-shaped building. The shape of the building creates for a west and south wing wrapping the site. The first-floor entry opens up to the lobby space. Beyond the lobby in the west wing

is the daycare space, movable-wall seating area, and dining. To the south of the lobby are the administrative offices, medical areas, and additional seating and activity spaces. Wrapping the south-west edge of the building is the interior garden with 18 resident rooms lining the outside perimeter. The second story can be accessed through a series of three different vertical circulation stacks. One located near the main lobby, one located in the south-east corner, and one located within the interior garden in the center of the building. The second story contains the physical therapy, medical services, and meeting spaces in the west wing. The south wing of the building contains the chapel, and additional seating and activity zones. Much like the first floor, the interior garden extends up in the south-west side of the building, offering a series of walkways and paths to 18 additional resident rooms. Overall, the layout and design of this facility was centrally focused on the interior garden space with the additional functions lining the perimeter.



SITE PLAN

FIGURE 6.24
*Final design site plan
 and section*

DESIGN THEMES

DESIGN PRINCIPLES

1

NATURE

Blurring the interior & exterior transition



2

COLLABORATE

Flexibility of space & privacy with movable walls



3

EDUCATE

Inform people about their healing process



SITE SECTION (C)





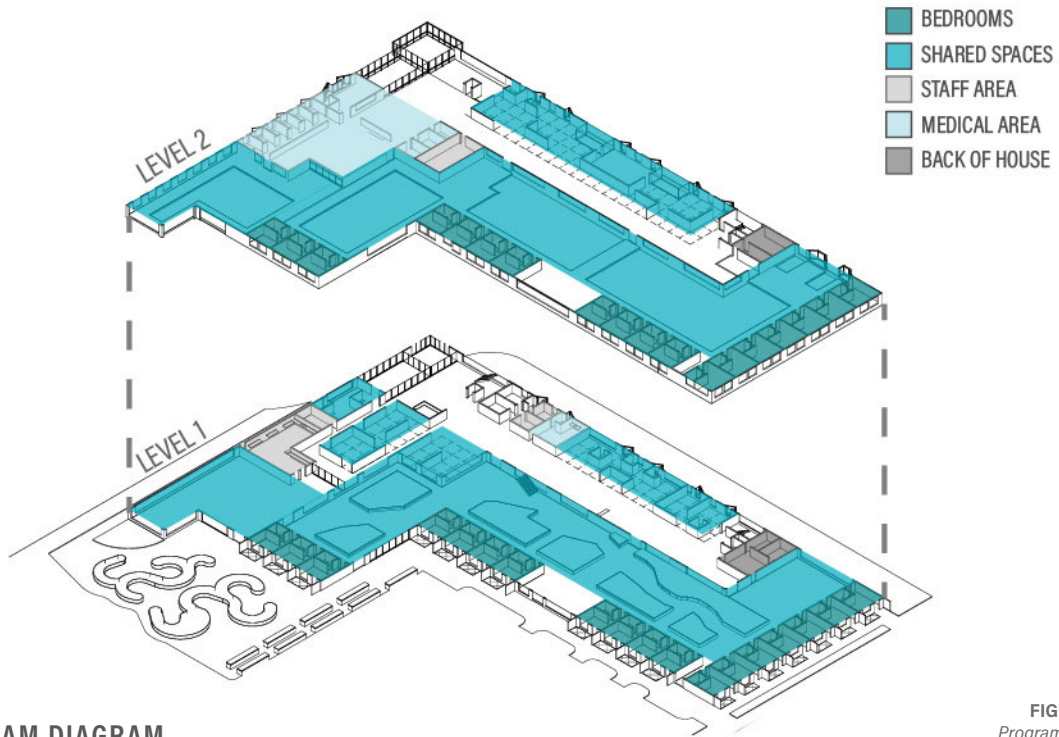
FIRST FLOOR PLAN

FIGURE 6.25
Final first floor plan



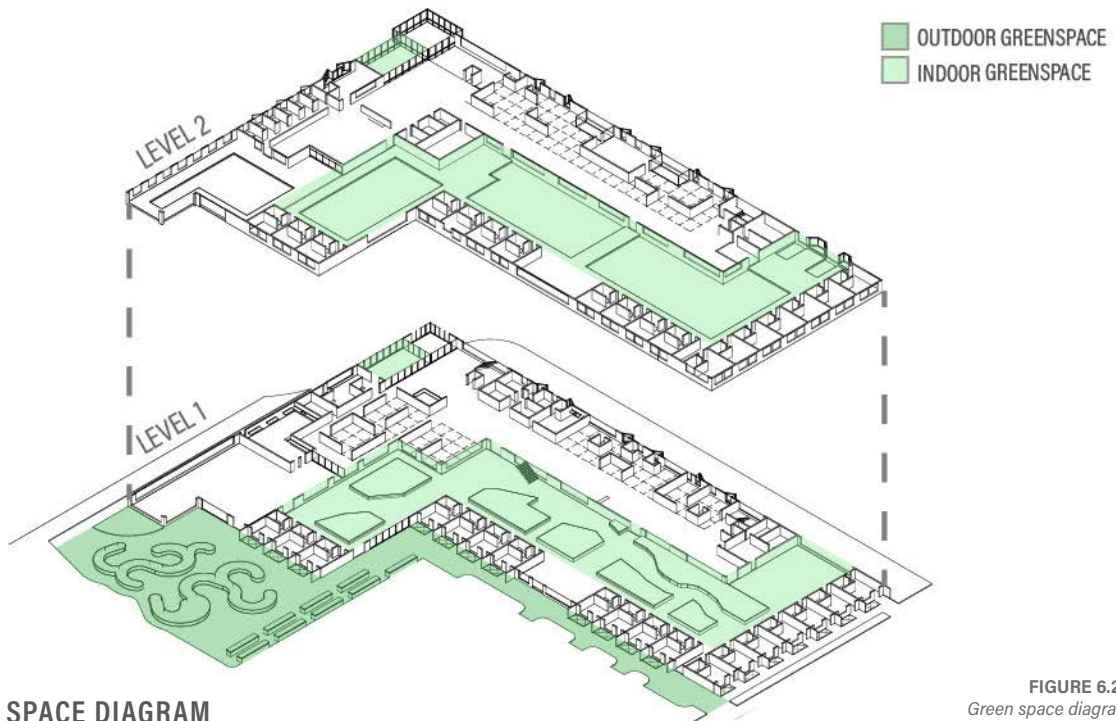
SECOND FLOOR PLAN

FIGURE 6.26
Final second floor plan



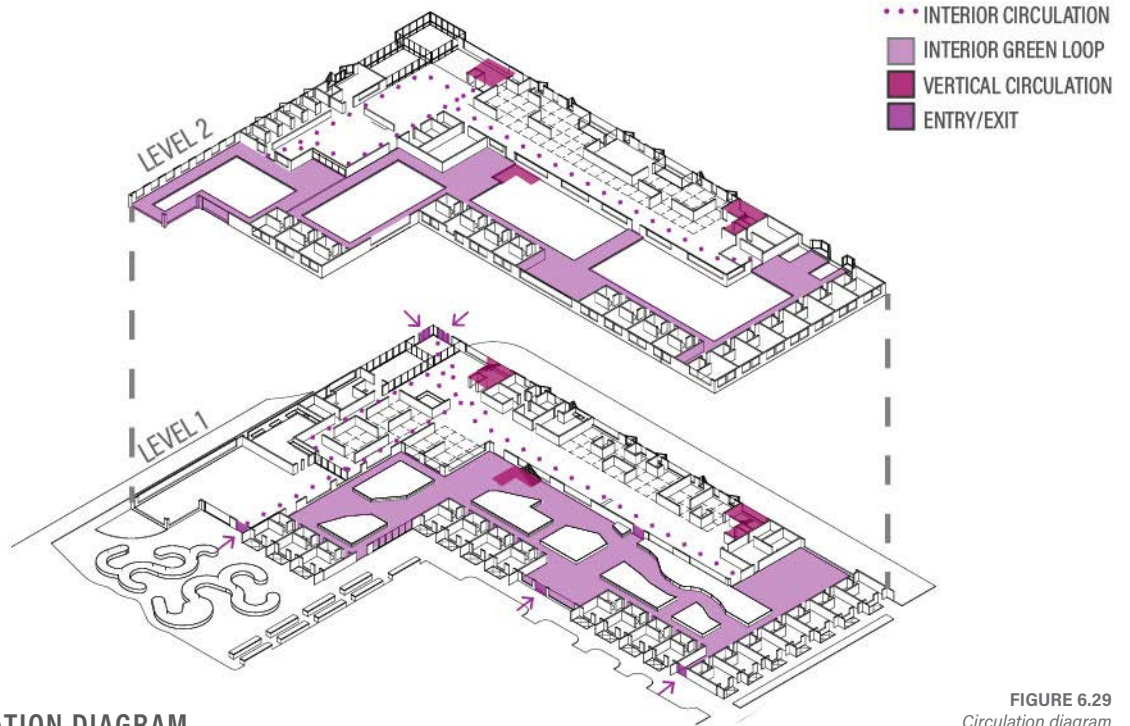
PROGRAM DIAGRAM

FIGURE 6.27
Program diagram



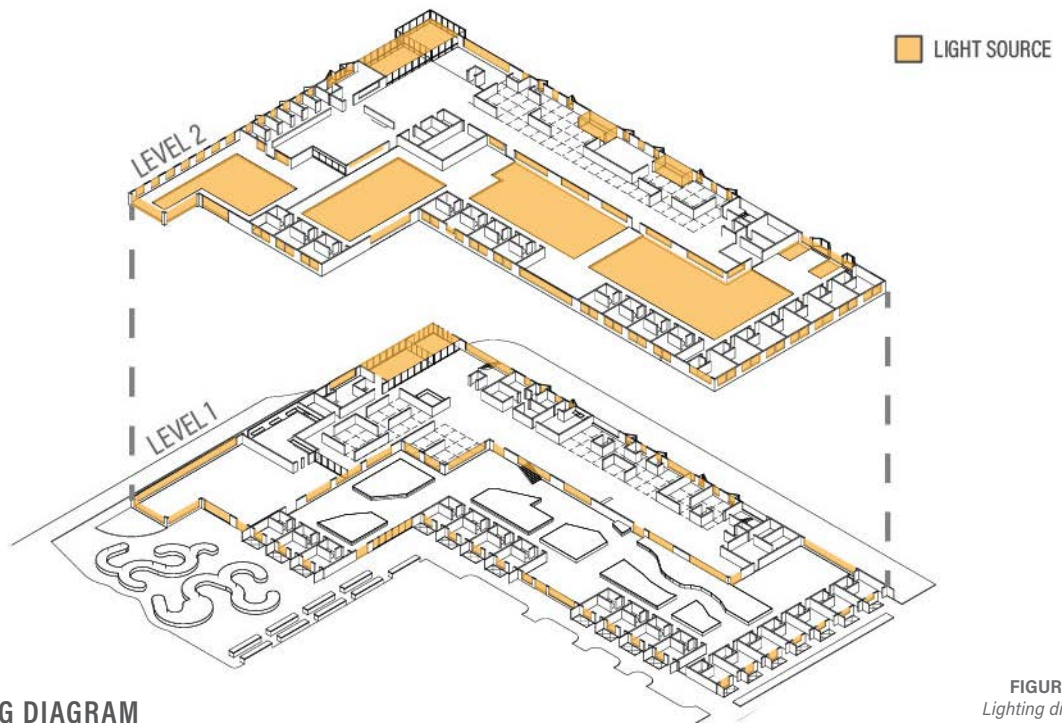
GREEN SPACE DIAGRAM

FIGURE 6.28
Green space diagram



CIRCULATION DIAGRAM

FIGURE 6.29
Circulation diagram



LIGHTING DIAGRAM

FIGURE 6.30
Lighting diagram



FIRST FLOOR PLAN

FIGURE 6.31
Final first floor plan

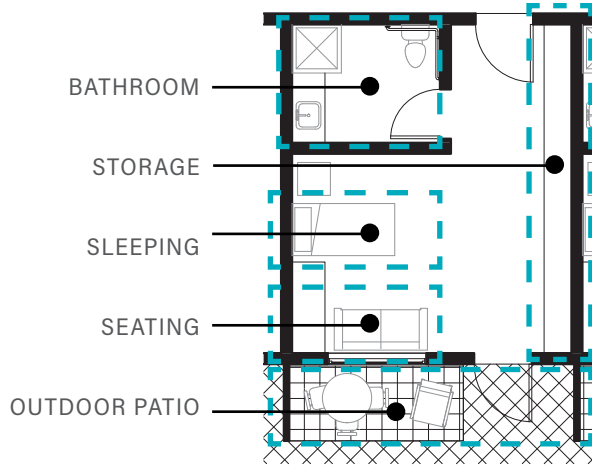


FIGURE 6.32
Private room plan

RESIDENT PRIVATE ROOM 1

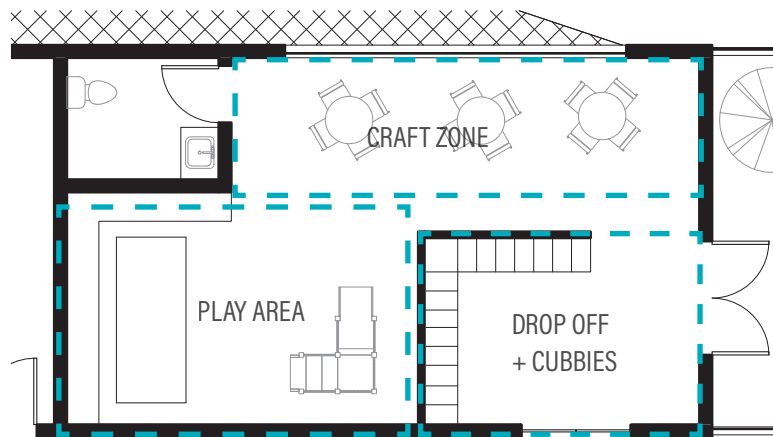


FIGURE 6.33
Daycare plan

DAYCARE PLAN 2

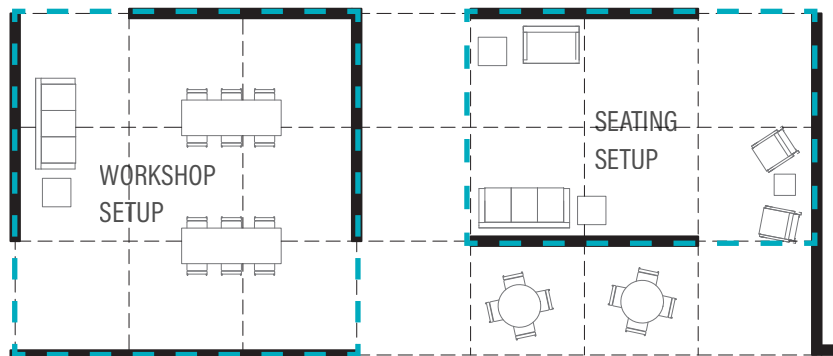


FIGURE 6.34
Movable wall plan

MOVABLE WALL PLAN 3

DESIGN PRINCIPLES IN ACTION

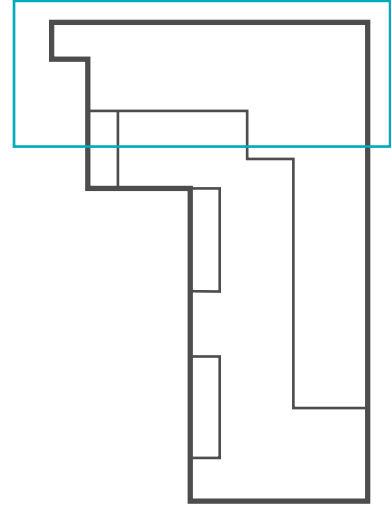
The main driver for this facility design was the healing design principles. Each principle helped to drive certain design moves, including materiality, layout, and massing. The diagram(right) is meant to display how each principle is used in this particular sliver of the building. Connection to nature is present through the expansive windows bringing in ample natural lighting and framing views to outdoors. Natural color and textures are used in the wall and floor coverings, and the fabric and furniture coverings. Finally, outdoor gardens and access to nature is present within the indoor garden space and the outdoor garden and paths.

Additional accommodations are present in the facility with both physical health services and mental health services. Physical therapy, medical doctors, therapists, chiropractors, dieticians, and more are available on site every day. Additional accommodations are also incorporated with the use of multi-purpose rooms, meeting rooms, and flexible space arrangement through the use of the movable wall systems. Promoting independence is present within the design of the flexible environments and choice in a range of activities throughout the facility. But, it is also present through space for possessions and storage. Within each private room, there is ample storage space for residents to feel like the owner of their private space.

Creating comfort is a principle that was very important during the design of the individual rooms, but also within the overall building design. Within the private rooms, comfort is provided physically with comfortable furniture and accommodations. However, it is also provided mentally with the use of additional storage

for possessions and display spaces for family photos and personal decorative or sentimental items. Comfort is provided throughout the facility by providing additional space in the hallways, resting spots along pathways, and through the décor and color palette selected. Additionally, all furniture and fixtures were selected for proper ergonomics, ease, and accessibility for all.

Finally, the spatial quality principle is present in many ways throughout this design. First, the pathways and circulation loops create for natural wayfinding and promote movement throughout the facility. Secondly, the spaces vary in density both vertically and horizontally. Vertically the spaces alternate between double-height spaces, higher ceilings, and lower ceiling spaces in the moveable wall areas. However, it also varies horizontally based on the width of the rooms and paths. Thirdly, permeability is present with the variation of material selection on the façade. Materials range from brick masonry, curtain wall, or perforated metal panel. Finally, proximity is emphasized through the distance between specific adjacent programs and the visual connection in the double-height spaces of the dining and interior garden. Overall, the design principles are all present within this design in some fashion or another. Therefore, this was a great testing opportunity for the validity of each of these principles through design.



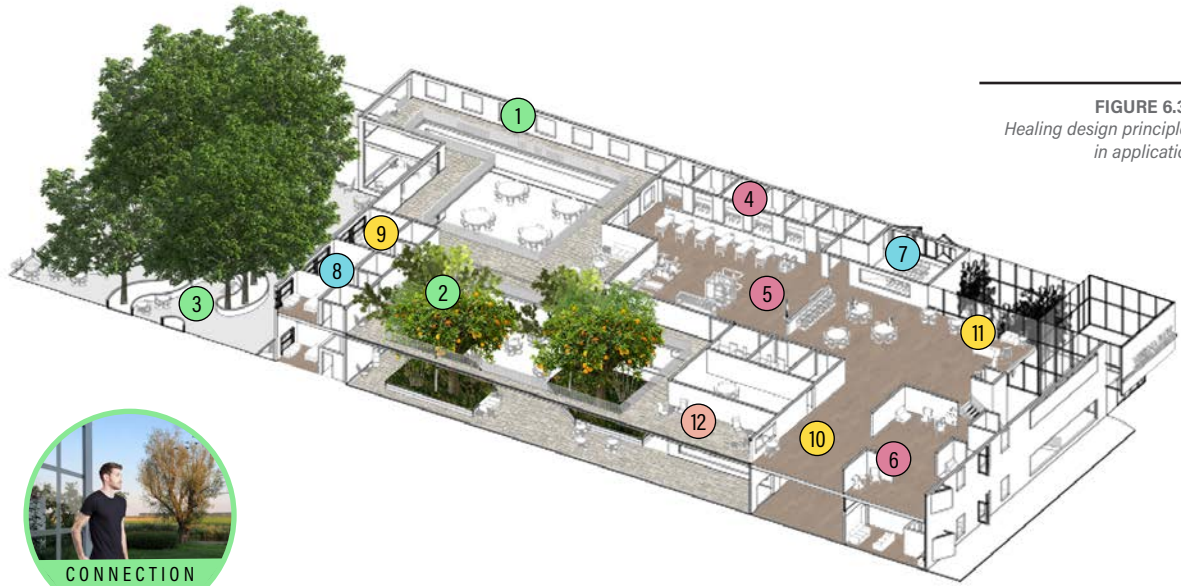


FIGURE 6.35
Healing design principles
in application

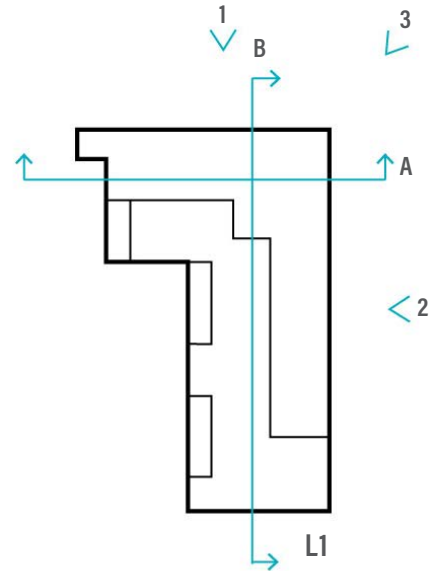


- | | | | | | | | |
|---|-----------------------------|--------------------|----------------------|----|--------------------------|-----------------------|-------------------------|
| 1 | VIEWS & LIGHTING | Views to Outdoors | Windows in all rooms | 7 | ACTIVITIES | Art /Music classes | Light Exercise classes |
| 2 | COLOR & TEXTURE | Natural Textures | Organic Materials | 8 | AMPLE STORAGE | Space for Possessions | Display area for photos |
| 3 | OUTDOOR SPACES | Walking Paths | Greenhouse | 9 | SENSE OF HOME | Art & Family Photos | Space for visitors |
| 4 | MENTAL HEALTH | Therapists on site | Social Workers | 10 | EXTRA SPACE | Wider Hallways | Resting Space |
| 5 | PHYSICAL HEALTH | Physical Therapy | Dietitian | 11 | ERGO FURNITURE | Ample Bed Height | Supportive Furniture |
| 6 | SUPPORT SPACES | Community Spaces | Activity Rooms | 12 | EDGES & PATHS | Circulation loops | Flexible edges |

ELEVATION & SECTIONS

The design of this facility kept the three main pillars of nature, collaboration, and education at the forefront of the design. Scale was significant for the design of this facility in order to feel connected to the surrounding context and residential scale. With that in mind, the skin of the building begins to push and pull on both floors to create seating nooks and angled views out to the neighborhood. The materiality alternates between a brick masonry, curtain wall, and perforated metal paneling. The perforated metal acts as a sun-shading device and a privacy mechanism in portions

of the building. From the exterior of the building, it was hugely important to express the main feature of the building - the interior garden. Therefore, the interior garden roof protrudes into the sky, allowing for people to see the main glass roof and feature from the exterior façade.



NORTH ELEVATION (1)

FIGURE 6.36
North elevation summer season



EAST ELEVATION (2)

FIGURE 6.37
East elevation fall season



EXTERIOR VIEW (3)

FIGURE 6.38
Corner view



SECTION A

FIGURE 6.39
Transverse section



SECTION B

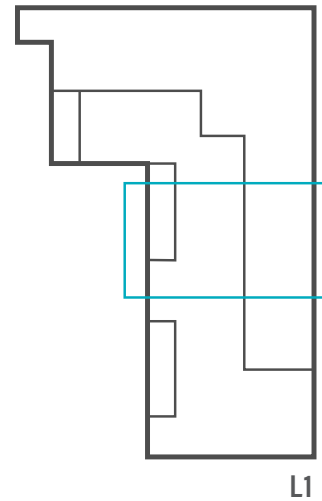
FIGURE 6.40
Longitudinal section

DESIGN THEME 1 - NATURE

The first focus idea for this facility is nature. The indoor garden acts as a great transitional space and focal point for the facility and its users. This space allows for a place like Michigan to experience nature year-round. Nature is a common theme in healthcare design because of its proven healing properties. (see pg. 16) Therefore, offering opportunities to connect to nature, both indoors and outdoors, was necessary for the design of this facility.

The indoor garden requires an optimal temperature between 65 and 75 degrees Fahrenheit, and humidity

at about 50%. Specific species were selected for planting within the indoor garden, including some fruit tree varieties. Lighting is critical for the plants to grow and stay healthy. Therefore ample natural lighting from the glass ceiling and windows provides abundant light sources. However, in the case of extended overcast days, indoor electric lighting was hidden in the roofing. Finally, raised planting beds with underground piping are used to offer sufficient planting depth and space for an inground watering system.



Orange & Fruit Trees

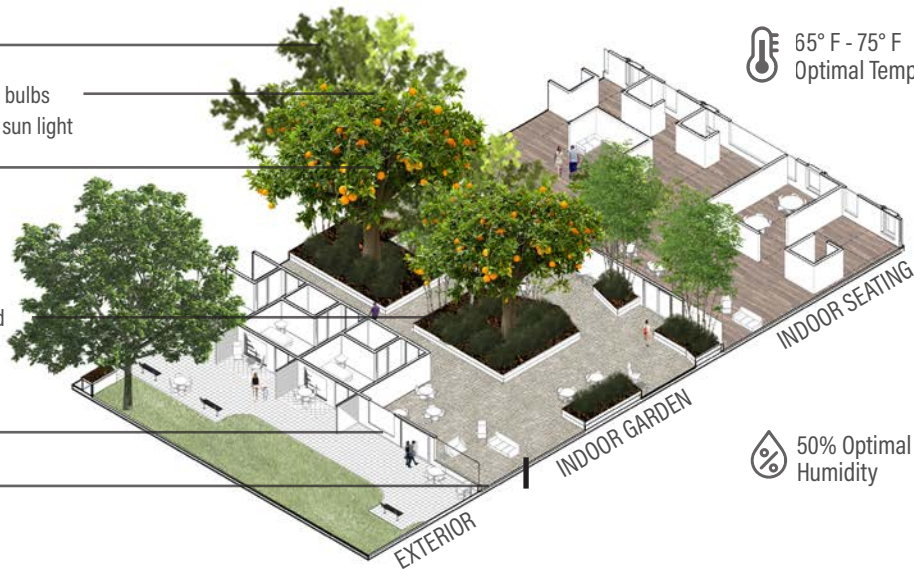
High Intensity Discharge (HID) bulbs used for plant growth besides sun light

Raised beds allow for about **18 to 20 inches of soil** which is sufficient for most plants

Underground piping installed throughout to accommodate the best watering system

Painted concrete wall

Stone tile recommended for flooring materials



TRANSITION INDOOR GARDEN SPACE

FIGURE 6.41
Nature Axonometric



FIGURE 6.42
Nature perspective

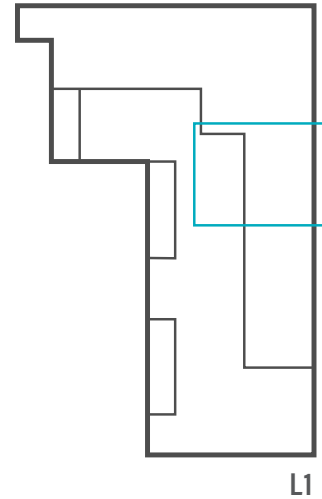


FIGURE 6.43
Nature Enlarged plan

DESIGN THEME 2 - COLLABORATE

Collaboration is the second area of focus for this facility. This concept ties into the movable walls found on both floors. By offering a variety of spaces with flexible edges, all users can have their optimal privacy level and facilitate greater connection between people. The movable wall system can be arranged in a multitude of ways to facilitate more privacy or more collaboration based on the user's current preference. These systems can be arranged for activities with a large group of people, can be divided into private self-care pods, or can be arranged for a family gathering within the facility.

This system provides greater choice and independence for the residents within this facility. Additionally, the system offers a greater sense of ownership and home-like feel within the space because of its adaptability.



MOVABLE WALL AREA

FIGURE 6.44
Collaborate Axonometric



FIGURE 6.45
Collaborate perspective

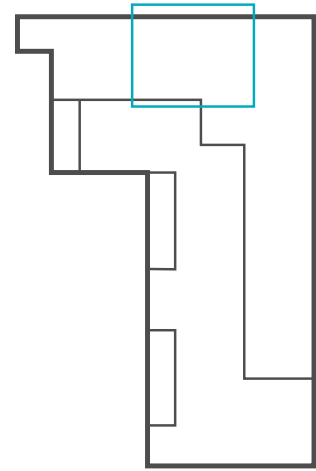


FIGURE 6.46
Collaborate Enlarged plan

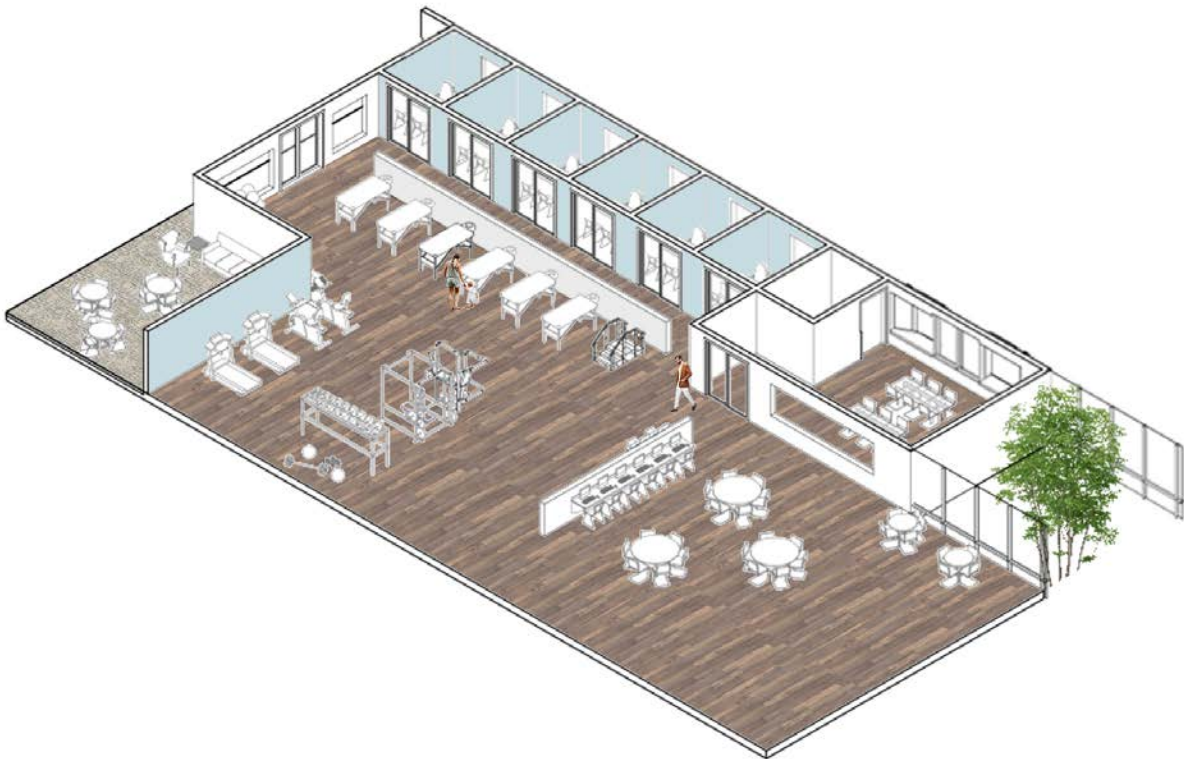
DESIGN THEME 3 - EDUCATE

Education is the third and final area of focus for this facility. This component encompasses education for the physical body and the mind through physical therapy and psychological therapy. However, education also includes workshops and classes on topics such as budgeting, time management, and other life skills for patients to improve their quality of life as they return home. Illness or injury can often create a shift in life roles and goals. (see pg. 28) Therefore, providing a multitude of educational opportunities within the facility provides options for residents to grow and expand their mindset

as they return to normalcy. Far too often, returning home brings much stress on the person and their family. So, it is vital to equip people with all the knowledge they need to lead a healthy and happy life as they return home. Without this component, most people would return to old habits and lifestyles that more than likely led to the onset of illness or injury in the first place. Therefore, increasing the risk for flare and readmission to the hospital.



L2



PHYSICAL THERAPY & MEETING SPACES

FIGURE 6.47
Education Axonometric



FIGURE 6.48
Education perspective

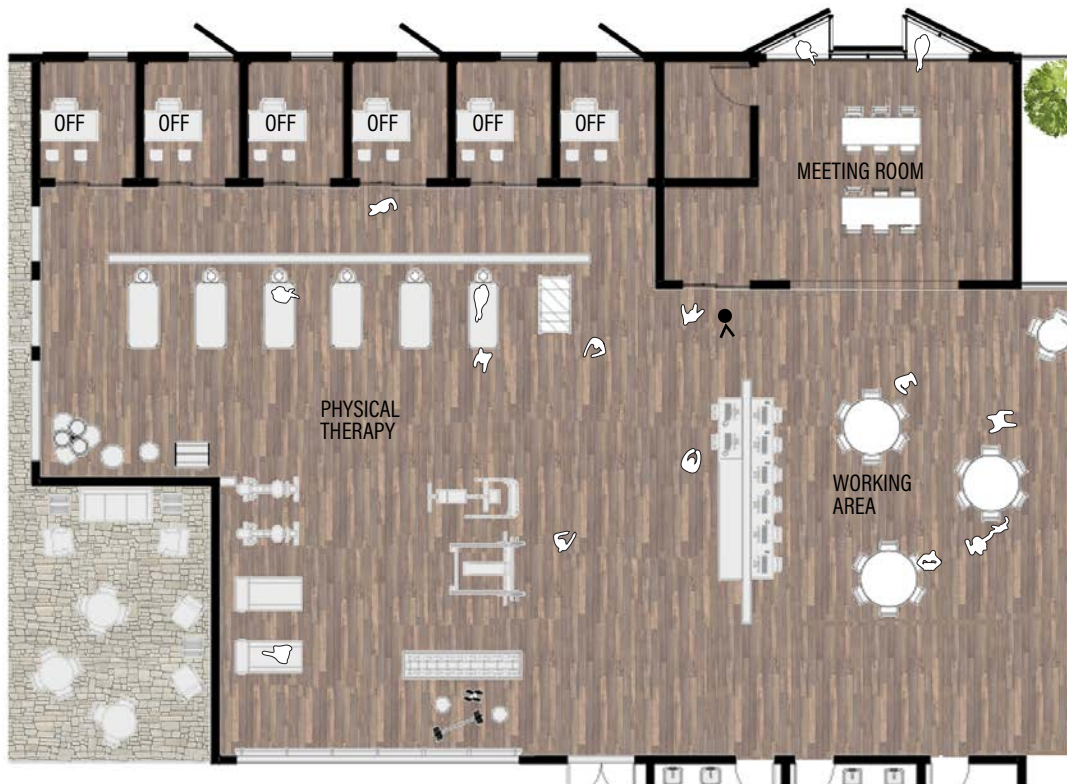
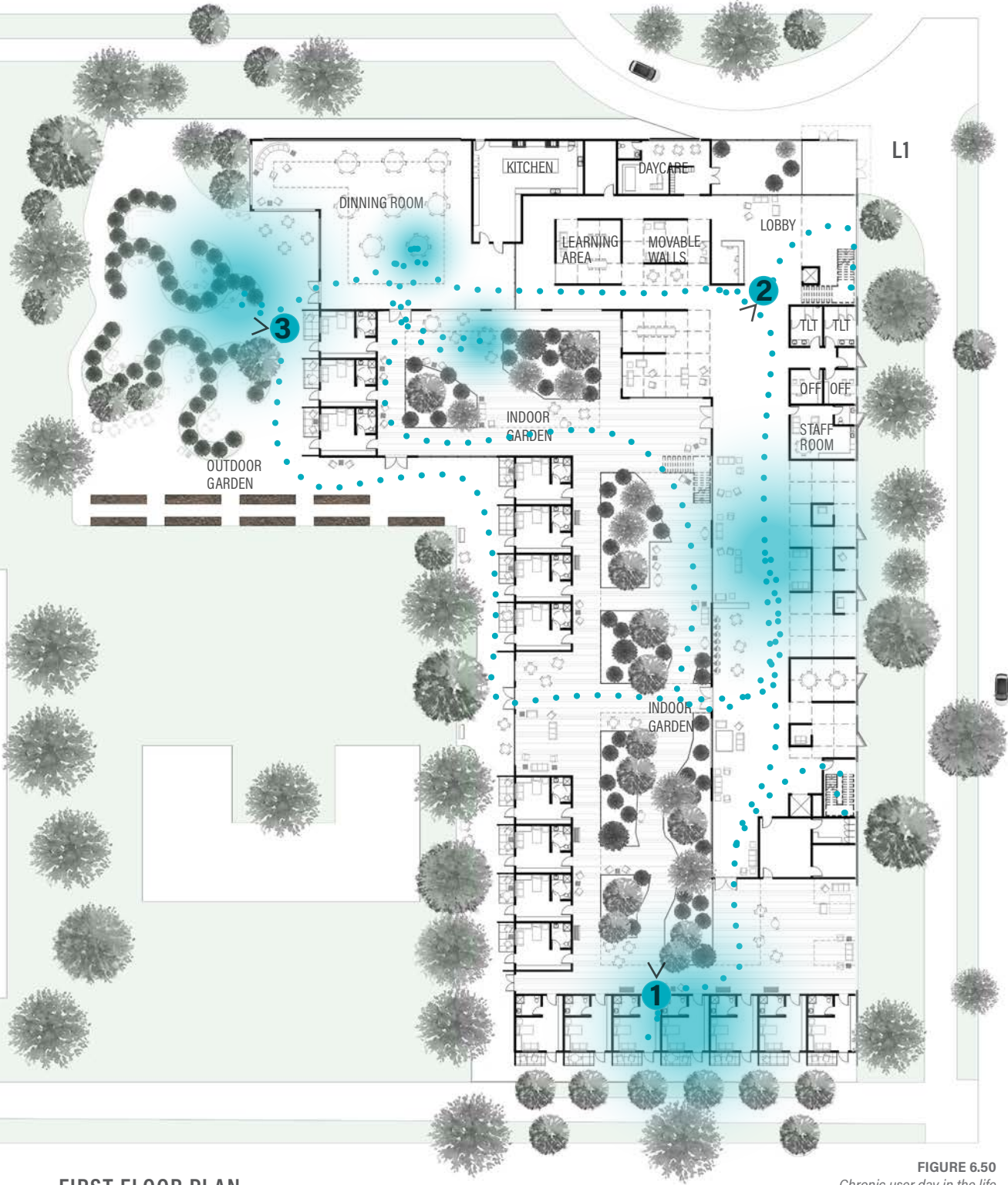


FIGURE 6.49
Education Enlarged plan



FIRST FLOOR PLAN

FIGURE 6.50
Chronic user day in the life

USER TYPE

1: CHRONIC

LENGTH OF STAY

long-term; varies from
6 - 24 weeks

NEEDS

additional nursing care +
supervision, ample rest,
activity space in personal
room

USER EXAMPLE

NORA MCHAVEN

DIAGNOSIS:

Endometriosis +
Adenomyosis

Requires time to rest and recover
away from her family after surgery
#4. Loves spending time with her
kids and requires additional space
in room.



Within this facility, there would be three main resident user types. The first type would be chronic and require a more extended stay of up to six months with more considerable assistance, care, and ample rest. An example of this type of resident could be Nora from the patient interviews. (see pg. 23) Nora requires time to rest after her latest surgery, so she has come to the facility to recover before returning home to her family and children. A day in her life in the transitional facility would include lots of time in the indoor garden, walking around the first-floor areas, and spending time outside in the garden. Although Nora's condition is severe, she can still find rest and care while remaining out of the room for the majority of the day



FIGURE 6.51
View 1
Interior Garden



FIGURE 6.52
View 2
Lobby space



FIGURE 6.53
View 3
Exterior garden



FIRST FLOOR PLAN

FIGURE 6.54
Moderate user day in the life

USER TYPE**2: MODERATE****LENGTH OF STAY**

long/short term; varies
from 2 - 6 weeks

NEEDS

some nursing care & supervision,
balance of rest & social activities,
beginning to perform daily tasks
& attend education seminars

USER EXAMPLE**LEO NORRIS****DIAGNOSIS:**

Graves +
Hashimotos

Requires time to rest after thyroid
surgery, before returning to home
alone. Studying Engineering in
University, but had to take a break
due to medical condition



The second user type would be moderate and have a stay from two to six weeks, with some assistance, nursing care, and still a decent amount of rest. An example of this type of resident would be Leo from the patient interviews. (see pg. 23) Leo is recovering from thyroid surgery and requires some time to rest before returning to his dorm at the university. His typical day entails some time sitting indoors near his room, some time tending to the gardens outside as he enjoys having a task throughout the day, and a period of time resting indoors and outdoors as well.



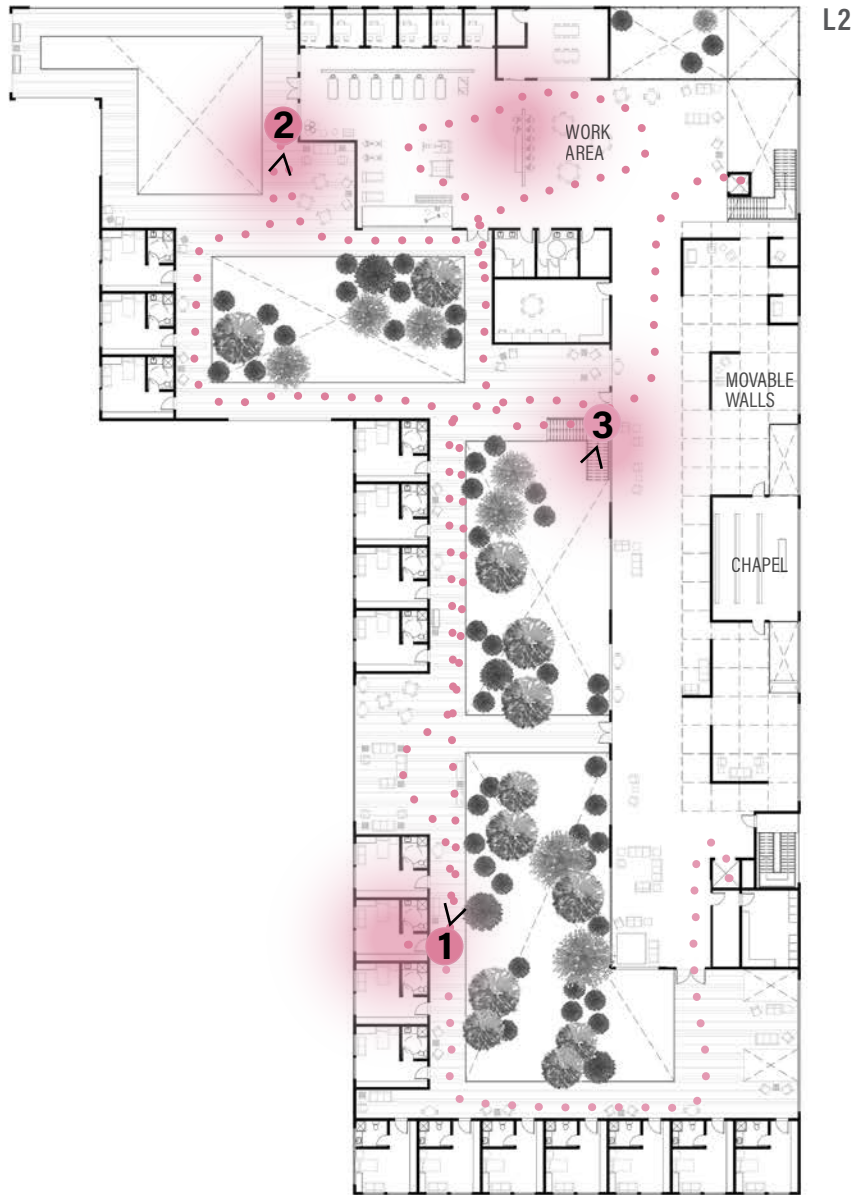
FIGURE 6.55
View 1
Interior garden



FIGURE 6.56
View 2
Exterior garden



FIGURE 6.57
View 3
Exterior walkway



FIRST FLOOR PLAN

FIGURE 6.58
Mild user day in the life

USER TYPE**3: MILD****LENGTH OF STAY**

short term; varies
from 0 - 2 weeks

NEEDS

little nursing care & supervision,
greater emphasis on social
activities, performing many daily
tasks & working within facility

USER EXAMPLE**JACKIE JONES****DIAGNOSIS:****Cervical Lordosis**

Requires additional therapy and
treatment before returning home
to her parents. Needs additional
help returning back to her job
working in a factory.



The final user type would be mild and require a stay of less than two weeks with very little assistance and nursing care. This user would be quite energetic and be able to take on many tasks. An example of this user type would be Jackie from the patient interview study. (see pg. 23) Jackie requires additional care and therapy before returning home and to her work life at a factory. Therefore, she requires only a short stay in the facility. Jackie resides on the second floor, so she enjoys walking around the balconies, spending a lot of her day in the indoor garden, going to physical therapy, and spending time outside.



FIGURE 6.59
View 1
Balcony South



FIGURE 6.60
View 2
Balcony North



FIGURE 6.61
View 3
Stairs

“ The hospital is a human invention and as such can be reinvented at any time. ”

- Leland R. Kaiser PH.D.

06.4. FINAL DESIGN

CONCLUSION

In conclusion, the Virginia Park Transitional Facility was designed to create a healing environment for people aged 20-50 years old with various physical health conditions. This transitional facility used the healing design guidelines and major overarching themes to create an optimal healing environment. Inclusion of nature, space for collaboration, and educational opportunities were the three major themes for the overall design. Each of these themes were selected and included to address the essential components of healing design. In the end, yielding a facility that is connected to nature, both indoors and outdoors, that offers healing within a community setting, and with a major emphasis on education. This facility offered an excellent opportunity to test the effectiveness of the healing design principles within a real-life application. Overall, the interior design layout of this facility takes a unique approach to healing and offers a new typology of facility within the healthcare environment. In the hopes that this new typology would bridge the gap and ease the transition for people from the hospital to home.

07

REFLECTION & CONCLUSION

Overall, this thesis project was looking at several issues surrounding the healthcare industry and explored the idea of healing design principles, and a transitional facility as possible solutions or part of the solution to these issues. Overall, each study performed throughout this thesis project was beneficial in providing some form of insight. Because illness and healing are quite sensitive topics, it was important to approach this thesis project from many different angles. Many studies aided in the process of this thesis project; however, the components of remission and the interviews were two studies that were most beneficial to the outcome of this project. Remission is the ultimate goal for people in their healing journey; therefore, it became a key focus for the design of the facility. Understanding the psychological stages in healing was very helpful in the development of this thesis project. Without the investigation of the human experience, both physically and mentally, the final result of this thesis would yield a shallow solution. Thus, it is essential to return to the idea that healing is a personal and subjective journey for all.

To improve this thesis project, it would have been beneficial to collect more human data. A questionnaire distributed to people with physical conditions would have provided for additional information regarding their biggest struggles and which parts

of the built environment contributes most to their healing. This type of study was intended to be conducted on a large scale, but due to time and limitations, it was never completed. This would be a great next step to continue to refine the design principles and expand the data collected for this thesis project.

The design of the transitional facility focused on three major themes for the design. The inclusion of nature, the need for collaboration, and the need for education all contributed to a well-rounded facility design. This design-focused not only on these ideas, but also acted as a way to test the design guidelines and apply them to a design within Detroit. The main goal for the design guidelines was to curate a set of principles that could be applied in any location or context to provide aid in the healing process. However, these principles needed to be tested through a design in some sort of actual location. The design of the transitional facility within Detroit used all the principles in one form or another. However, to better understand the effectiveness of each design move, the design principles should use a ranking scale. A rubric would allow for greater clarity on the effectiveness of each move within the context of the built environment. The grading process could be done through a post-occupancy study or by other designers looking at the design for the first time. By doing the ranking process in this way, it would

eliminate any bias towards the design. Overall, a rubric would provide for an assessment tool that could be utilized on the healing design of all built environment projects in the future. Since the design principles were meant to be universal in their use, this project could have benefited from the comparison of different facility designs within different contexts. Creating designs in different environments with these principles would allow for a greater understanding of how the principles could be improved or modified to act in a universal fashion. Ideally, a facility design would be conducted in environments that range in terms of climate, population density, culture, and economic status. By considering diverse locations in the testing process of these principles, the principles would be better informed to fit more environments.

The site for the transitional facility for this thesis project was an L-shaped lot. Although this shape provided for a design challenge, it was not the most practical site to test universal principles. A rectangular-shaped site may have yielded more easily replicable solutions using the design principles. Although this was not a major problem while testing the effectiveness of the principles, it did make the design moves more unique and less universal in the testing and application of the design principles. While designing this transitional facility, the main focus was placed

on the planning and layout of the interiors. Therefore, more time and attention could have been placed on the exterior façade. None the less, the focus on the interiors was the right route for this thesis project because the overall massing moves, and exterior façade design should be more context-driven. So, by providing greater insight into the universal design moves that can be applied within the interior of the building, it allows for any designer to take this design and the principles and easily adapt them to any location. Therefore, allowing the interior design moves to work within any building design, regardless of the context.

Moving forward with the design of this facility, a new route could be taken with modular design. A series of modular compartments could be designed to be mixed and matched in any configuration to create the ideal healing design. By creating a multitude of different options, the design could respond best to climate, population density, culture, and the overall context. Once the modular components are connected, context-driven façades could be designed to complete the entire building. A modular approach could also be taken with the design of the resident rooms. Throughout the design process, the resident rooms changed a few times. The rooms originally had shared common spaces with either two or four residents. However, this idea was eliminated to encourage

residents to intermingle within the entire facility. None the less, the resident rooms could include a little more variation within their design, and a few modules could be designed to meet different user needs. In addition, each resident room could have more attention to detail within the layout. The layout could become more open and flexible, offering more independence and individuality for each resident.

In the end, this research could be expanded upon in a multitude of directions, and the healing principles can continue to be developed into a fully comprehensive tool for healing design. Overall, this thesis project dissected three primary issues and used the healing design principles and transitional facility as possible solutions. The first issue addressed was surrounding the healthcare industry mainly focusing on getting people from hospital to home with a direct path. To bridge this gap and create a smoother transition for people from hospital to home, the transitional facility was proposed as a possible solution. The second issue that this thesis project addressed was the homogenous approach to healthcare. This issue is primarily approached by emphasizing the importance of variety and options within the design of this transitional facility and with the design principles. The final issue that this thesis project addressed was the lack of education on lifestyle modifications for patients

after leaving healthcare facilities. Within the transitional facility, education was a main theme for the design. Therefore, the project focused on both mental and physical health education and education through workshops on lifestyle modifications. In conclusion, this thesis project successfully created a set of healing design guidelines, that hopefully can be expanded upon and used as a reference for healing design in the future.



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APPENDIX A PATIENT INTERVIEWS

The person is the focal point of this thesis. As such, a thorough investigation of the physical and psychological struggles was important. Without fully comprehending the patient perspective, this thesis would be routed in the wrong direction. The first study conducted on the human experience was a series of five patient interviews focusing on individuals with physical conditions. These interviews were performed by phone or in person with a series of questions. The primary goal of this investigation was to map out the timeline of the person's illness as well as a day in their life. Understanding each person's illness at a macro and micro level provided a thorough understanding of the complexity of each illness and healing journey. Of the five people interviewed, one had an acute condition, two had subacute conditions, and two had chronic conditions since youth. The complete interviews are outlined in the following pages.

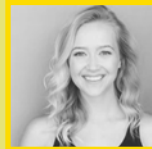
JOHN'S JOURNEY

AGE: 80 YEARS OLD
HEALING LENGTH: 75 DAYS
DIAGNOSIS: AORTIC ANEURYSM



JACKIE'S JOURNEY

AGE: 22 YEARS OLD
HEALING LENGTH: 4 YEARS +
DIAGNOSIS: CERVICAL LORDOSIS



ALYSSA'S JOURNEY

AGE: 26 YEARS OLD
HEALING LENGTH: 3 YEARS +
DIAGNOSIS: DEGENERATIVE DISC



LEO'S JOURNEY

AGE: 22 YEARS OLD
HEALING LENGTH: 11 YEARS +
DIAGNOSIS: GRAVES + HASHIMOTOS



NORA'S JOURNEY

AGE: 29 YEARS OLD
HEALING LENGTH: 12 YEARS +
DIAGNOSIS: ENDOMETRIOSIS



JOHN'S JOURNEY

AORTIC ANEURYSM

Can you explain to me your condition and how long you have had it?

I had an aortic aneurysm in 2018. They found it after I had a routine scan done for my heart. Once they performed the surgery, it went away after I recovered.

Can you expand on how you received your diagnosis and how your life changed?

When I received my diagnosis, I was in a bit of a shock. I was very worried because I am older and I had health problems. I did a little too much research on the internet which lead me down a bad path. I got a second opinion, but the results were still the same. So, the doctor explained that I needed to have surgery to take care of the issue. A few weeks after this appointment I had my surgery. The procedure went really well and I was able to go home 48 hours later. The recovery process at home was fairly long. I couldn't bend over or pick stuff up so it made it more difficult. My family was able to help me and overall the process was fairly smooth.

How do you feel today? What is your pain like now?

Overall, the pain from this procedure subsided after a few months. So, today I feel good and don't have any residual issues from this procedure.

That's great! Through all of this I want to talk a little bit about how this condition affected your mental health?

Well, I was definitely worried. I am an older person, so a surgery of this scale was definitely scary. But after it was over I was very relieved.

I understand, it's definitely scary! Can you expand on that and walk me through a day in your life during one of your worst pain days?

After the surgery, I had a lot of help from others to perform my daily tasks. I had family come over and cook for me. I was also able to hire someone to help with my wound cleaning and for daily cleaning and help around the house. I woke up most days in a lot of pain, but the medication was helpful and I spent most of my days relaxing and taking it easy. Overall, it was fairly easy to control the pain levels with the help of others.

Other than the medication did you have any selfcare rituals or items that helped with your mental and physical health?

I liked to spend time watching TV and reading. This was a good way to stay busy. I also have my dog, which was great to have a companion.

JACKIE'S JOURNEY

CERVICAL LORDOSIS

Can you explain to me your condition and how long you have had it?

I have reverse cervical lordosis, which essentially means that my spine is bent the wrong direction. I have had the condition my whole life but didn't notice symptoms until about 4-5 years ago.

Can you expand on how you received your diagnosis and how your life changed?

My whole life I was fairly active, I played sports growing up and never really had any body pain. But about 4 years ago, I started to get spinal pain, a stiff neck, and minor bruising on my neck. I wasn't really sure what was going on, but through time it began to get more and more uncomfortable and the pain was getting worse instead of better. It wasn't until about a year after I began to experience pain that I was diagnosed with reverse cervical lordosis. This was after a series of chiropractic appointments, xrays and MRIs.

This was bittersweet for me because I found the root of my pain, but I was saddened to hear that my spine was so messed up. I found out then that something as minor as whiplash could lead to severe damage to my spine or becoming paralyzed. At this point I began weekly chiropractic appointment for acupuncture and adjustments. I also was doing stretching and decompressive therapy. I also began at home therapy and used certain tools like a t-spine posture corrector or TENS machine for muscle relaxation. My goal was to move my spin back to a normal shape, so I worked tirelessly to get it there. I had routine xrays to check the movement of my spine. Daily activities were painful due to an unstable spine and neck, but I slowly was seeing progress.

How do you feel today? What is your pain like now?

Finally, after about a year and a half my spine was at the goal position, so I dropped down to biweekly chiropractic visits and I feel a lot stronger. Today I continue to work on my spinal strength by working out, being mindful of my

posture, and focusing on preventing any regression.

That's amazing. Through all of this I want to talk a little bit about how this condition affected your mental health?

The whole process was not easy on my mental health. After my diagnosis I felt very depressed at night and along my journey with these treatments. I also struggled a lot with guilt. I felt like I did this to myself. I never focused on my posture or my spine health, so I felt like the deformation was my fault. Through time I worked a lot on my mindset and tried to focus on the progress through it all.

I'm glad you were able to get to a better space mentally. Can you expand on that and walk me through a day in your life during one of your worse pain days?

Sure, so my pain was definitely the worst on the days I had stretching and decompressive therapy on my spine. So I'll walk you through how one of those days went. When I would wake up on one of those days I was extremely anxious. I had my therapy session usually around 12pm and it would last for about 3 hours. The therapy would manipulate my spine and it was probably the worst pain of my life. After this I would have an ice bath to help my muscles contract and go back into the new location after the stretching. I went home after this and basically stayed in bed for days. I had to take T3's because the pain was unbearable, I had bruising up and down my spine and it was challenging to do anything. Mentally this was extremely challenging. The pain and the condition got in the way of my life, my relationships, and my school I felt depressed and like the whole thing was my fault. But, I had a good support system and was motivated to get better. I basically spent a few days in bed after each treatment and then would repeat the process a week later.

Other than the medication did you have any selfcare rituals or items that helped with your mental and physical health?

A supportive pillow was really important as well as a lot of good tv or podcasts. I couldn't do a lot after the days I had my

therapy so I would listen, or watch shows. I also took baths to help with pain and spent time reading. Overall, my mindset was mostly focused on getting better so the determination helped a lot.

ALYSSA'S JOURNEY

DEGENERATIVE DISC DISEASE

Can you explain to me your condition and how long you have had it?

So, it all started when I was in a car accident over three years ago in April 2016. Before that I was completely fine, but after the accident, I developed some back pain and it all went downhill from there. It took a long time after the accident until the doctors found out that I have degenerative disc disease, a protruding disc, and some arthritis.

Can you expand on what happened since the accident?

After the accident, I was sent to the hospital. I had some aches and pains but nothing too abnormal considering the impact of the crash. They took an Xray and there were no apparent injuries. However, as time went on the pain did not subside. I finally had an MRI done 8 months after the accident which explained the pain. The scan showed that I had a protruding disc, degenerative disc disease and some arthritis. After the accident, I immediately started doing a lot of physiotherapy, massage therapy and chiropractic care. Despite all of this I still had a lot of pain every day. About a year and a half after the accident I popped a rib out, and this really messed with my spine. I had the worst pain of my life for about 2 months. I continued with the appointments and had a consistent level of pain for about another year. It wasn't until over 2 years after the accident in June 2018, that I made a change. I decided to stop physiotherapy, but I continued with my chiropractic care and massage therapy. At this point I got a personal trainer to help me rebuild strength. I changed my diet and started working out consistently. This was the lowest my pain ever was since the accident. I was finally feeling somewhat normal.

How do you feel today? What is your pain like now?

For about a year I was strict with my diet and my personal training. It made me feel really good. But, now I am a little less strict. My pain is still fairly low most days, but if I work long hours it does lead to some high pain days.

That's really great to hear. Through all of this I want to talk a little bit about how this condition affected your mental health?

This definitely did not have a good impact on my mental health. School became a lot to handle and I felt like I was juggling a lot. Even simple things like walking to class became a chore. My grades began to decline. My mental health was not great and I struggled everyday to stay positive. Night time was the hardest with my mental health. I was so exhausted from the day and everything seemed far worse. Some nights I went to bed without everything done, but that's okay.

That must have been difficult to manage for sure. Can you expand on that and walk me through a day in your life after your accident?

At about 9am I would wake up, feeling extremely stiff and sore from lying in one position throughout the night. I hit the snooze button a few times before I got up because I knew the day ahead of me is going to be mentally and physically exhausting. I got ready for the day, sitting at my desk with my heating pad on my back while I got ready.

By 11am I go to whatever appointment I may have had that day, whether it was chiropractic, massage, physiotherapy, etc. I still go to chiropractic and massage every week but just after my accident, I was seeing a physiotherapist, too. I remember always feeling overwhelmed when I went because I knew I wanted to feel better, but I had a hard time remembering to keep up with all of the stretches and exercises they would give me at each visit. They also offered many treatments other than physio, like cupping and acupuncture, which they treated me with occasionally during my time there. When they tried these treatments, especially acupuncture, I always felt very anxious when going to my appointments because my muscles were often so tight that it would be a really painful experience. I kept telling myself that it was all for the benefit of my health but after a while we had to dial it back because it was just too much. Luckily, chiropractic and massage treatments

have always been pleasant experiences for me and I find them beneficial to my pain and wellness.

At about 4pm I would go to work. Not long after my accident, I returned to working at my part time customer service job. Initially, I did not realize the extent of my pain and felt that going back to work would be fine, but over the coming months I learned how difficult it was to be on my feet for extended periods of time. At the time, I worked as a cake decorator in a grocery store with concrete and tile flooring, so it did not take very long to become sore during my shift, as I would be standing on unsupportive flooring, hunched over decorating cakes for hours at a time.

I usually finished my shift around 10pm. I would go home after work and settle into the evening. Using my heating pad after work was an absolute must. If absolutely needed, I would even take a bath or sit in my hot tub to relax my muscles. After that, I'm pretty much confined to the couch or my bed for the night. My back was usually throbbing by the end of the day. Every now and then, I take ibuprofen before or after work to prevent/ease the pain, but I try not to take much if I don't absolutely need to. The one thing I'm grateful for is the fact that even with the pain, I've always been able to get a reasonable sleep. I use heating pads and a memory foam pillow to make my bed as comfortable as possible to make sure I get a decent rest.

So it seems like after a while you had some selfcare items ready to go when you needed them. Can you expand a little on what helped the most in terms of selfcare?

Like I said, my heating pack is an absolute must. I use it a lot. I also find that taking a bath is really helpful to relax my muscles. I also consider my massage therapy and chiropractic appointments a form of selfcare in a way. They are something I don't have to do at this point, but I find they really help, so that's all that matters.

LEO'S JOURNEY

GRAVES & HASHIMOTO DISEASE

Can you explain to me your condition and how long you have had it?

So, I was originally diagnosed with hypothyroidism when I was 11 years old in 2008. But, I wasn't given the proper diagnosis of Hashimoto's disease until I was 18, so almost 7 years later. This past year, I also found out that I am a rare case to have both Hashimoto's and Graves diseases. So, overall I have had symptoms since age 11, so 12 years as of now (2019).

Can you expand on how you received your diagnosis and how your life changed?

Before my diagnosis of hypothyroidism, I felt normal, I didn't notice anything was wrong. Then once I had the diagnosis and got some medication I felt okay. I was a little fatigued but overall was fine until the age of 13. At this point I had a flare and had extreme swelling in my neck, my doctor changed my medication and it seemed to stabilize after a year or so. From this point on I was fairly stable until the age of 18. I was dismissed by my doctor and only had pain occasionally. But at 18, the swelling in my neck began to increase and got really bad. I was having a hard time eating because everything was so inflamed. The doctor ordered an ultrasound and found an excessive amount of lymph nodes in the neck and confirmed that I have Hashimoto's disease. This was followed by a CAT scan which showed that my thyroid has withered away to only 20% of its original size. I was given medication by the specialist to calm the flare. I also got a second opinion to confirm the diagnosis. I was referred to a new specialist and it took over 6 months to get an appointment with them. I was in a lot of pain on a daily basis. The new doctor gave me some medication and dismissed me. Leaving me without a medical team once again. By the age of 19 I had another severe flare for about 6 months. I got into a new doctor and he was excellent. He would treat me based on my symptoms and not based on blood levels. I tested out different treatments and medication levels for about a year and a half before the doctor confirmed that I have both Hashimoto's and Grave's disease. Which means that I will fluctuate between the two.

How do you feel today? What is your pain like now?

My condition feels a little more under control right now. I am currently in the graves position chemically but have symptoms of Hashimoto's. It is all a learning curve, but slowly I think things are getting better.

I'm glad that things seem to be looking better. Through all of this I want to talk a little bit about how this condition affected your mental health?

This has been a lot on my mental health ever since the bad flare began after graduating high school at age 18. My health seemed to continue to get in the way of my life and it can take a toll on your mental health. I struggled with anxiety and depression since my teenage years and this has gone through swings of ups and downs. I try to live the best life I can with what I've got.

That is a good attitude to have. Can you expand on that and walk me through a day in your life during one of your worst pain days?

Yes, so I'll walk you through my life when I was in my flare at age 18. My day would start with me waking up tired and fatigued from a rough night of sleep. I usually didn't get much sleep then. I would get up and make a hot tea to help calm the inflammation in my throat. Then I would eat something small and easy to swallow. At this time I was in university for my undergraduate degree. So I would go to my classes. I was pretty self-conscious of my constant need to cough or clear my throat. The swelling made it feel like there was always something stuck in my throat. Later on I would go to work. I was constantly distracted and had a lot of brain fog. By the time I was home from a full day of school and work I was exhausted. I would take some medication to help with the swelling and basically go to bed right away. I was pretty depressed at the time because I felt hopeless and without a solution. I felt like nobody would listen to me and that it was never going to get better. This was a really hard time in my life.

Other than the medication did you have any selfcare rituals or items that helped with your mental and physical health?

I like to paint a lot. I have painted since I was younger, but this is a really therapeutic thing for me now. I also like to journal and write out my feelings. Having a good support system has helped me along the way too. Exercise is also something that helps me to feel better and more in control of my life. I try to incorporate as much selfcare as I can in my days.

NORA'S JOURNEY

ADENOMYOSIS & ENDOMETRIOSIS

Can you explain to me your condition and how long you have had it?

I was diagnosed with adenomyosis in April 2012. But, I started having symptoms in 2009. I was also diagnosed with endometriosis finally in 2017. I was waiting for this diagnosis for a long time, but I kept being dismissed by doctors.

Can you expand on how you received your diagnosis and how your life changed?

So, when I was diagnosed with adenomyosis in 2012 I was very sick. This was diagnosed through a laparoscopy. I was struggling a lot throughout the year and had my gallbladder removed in 2013. Finally, in 2017, I received the diagnosis of Endometriosis. This was a relief because I finally got a proper diagnosis after 8 years of dealing with pain and struggles. I just had another excision surgery in March 2019 and this was my easiest surgery. I felt very prepared for this in comparison to my other surgeries. I knew what I was getting myself into and felt mentally a lot more prepared. Overtime these illnesses have changed my life and made me a different person. I am an advocate for people all around the world who suffer with endo and adenomyosis. I struggle every day, but I am constantly trying to live my best, most amazing life.

How do you feel today? What is your pain like now?

As of now, I feel pretty good. Some days are better than others, but overall I feel like I can manage my pain a lot better. I do experience some really rough days but I have a tool kit of products and treatment options for when I need them. I also have gotten better at taking care of myself both physically and mentally and this is the best change.

I am glad you're doing okay right now! Through all of this I want to talk a little bit about how this condition affected your mental health?

My mental health has gone through waves throughout the years and days. Sometimes I am fine and other days it is a real struggle. Just like anyone's life, we all go through seasons of better and

worse times. I try to listen to my body and keep my anxiety and depression at bay as much as possible. I try to let myself feel what I want to feel, but not dwell. This is what is most important.

That's a great attitude to have about it! Can you expand on that and walk me through a day in your life during one of your worst pain days?

I will give you a day after my surgery. So, after my last surgery I came home the same day and made my way downstairs in my basement to recover there. Since, this was my fourth surgery I knew what to expect so I had all my essentials laid out for me. When I got home from surgery I was in an immense amount of pain, so I used some CBD oil and watched a lot of TV. The day after surgery it is important to try to walk a bit so I also tried to include that in my day. Overall, I had a lot of help from my fiancé after my surgery, but also whenever I am in a lot of pain. It is really important to have a good support system, so I am really grateful for that. I guess I just try to manage my pain as much as possible and lay low when I can.

You talked about your tool kit. Can you expand on your selfcare rituals or items that helped with your mental and physical health?

So my toolkit contains a few different things. One of them is my supplements. I use a lot of supplements to control the inflammation and to strengthen my weakened immune system. I also use a lot of CBD products for pain. A CBD salve is a must for my pain and it is portable so I can bring it with me when I go out or to work. I also use a heating pack a lot and a TENS machine to help to ease the pain. In terms of mental selfcare, I do a lot of journaling to process my thoughts and I also like running to clear my head. Yoga is also something I like to do to ease my physical pain but also to help with my mind.

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APPENDIX B FACILITY STUDY

The final goal for this thesis was to create a transitional care facility to smooth the transition from hospital to home. To properly develop such a facility, an in-depth analysis of eight different types of transitional care facilities and programs that currently exist was critical. The four facility types included Skilled Nursing, Long Term Care, Sports Rehab, and Holistic Healing centers. The four transitional programs included In-Home Care, PARTNER & Project BOOST, Stay / Return to Work, and Health Homes.⁴² This study clarified the advantages and disadvantages of each type of facility and program. This provided helpful information to narrow down the focus of the transitional facility for this thesis project. Each facility/program was analyzed based on the type of services offered, the staff, and user types. The services were ranked based on being provided, not provided, or being limited. The services ranked included room & board, medical care types, level of supervision, personal care provided, mobility aid, level of privacy, cleaning, number of activities offered, meals provided, number of staff and types, length of stay offered, and cost. Information for each facility and program is outlined in the following pages.

FACILITY TYPE	SKILLED NURSING FACILITY ²⁹	LONG-TERM CARE FACILITY ³⁰
DEFINITION	A facility staffed by medical professionals and provide short-term care and recovery for patients after surgeries and long-term illness.	Facility that provides care and services for people who no longer are able to live independently or who require on site nursing care, 24-hour supervision or personal support.
STAFF	Physicians Psychologist Rehab nurses	Therapists Case managers Dietitians
USER	Typically elderly or people who have experienced extreme surgery or trauma. MMSEA states that at least 60% of cases in convalescent home must have one or more of the following conditions; Stroke, Spinal cord injury, Congenital deformity, Amputation, Major multiple trauma, Hip fracture, Brain injury, Neurological disorders, Burns, Three arthritis conditions, Joint replacement, when body mass index ≥ 50 , or age 85+.	Almost half of all people who live in nursing homes are 85 years or older. Relatively few residents are younger than 65 years of age. Most people have some type of disability when it comes to performing the activities of daily living (ADLs). Over 80% of nursing home residents need help with 3 or more ADLs (such as dressing & bathing).
CASE STUDY	Glacier Hills Senior Living Community Ann Arbor, MI	Chartwell OakPark Windsor, ONT
KEY TAKEAWAYS	<p>Access to outdoors to benefit mental and physical health.</p> <p>Simplicity with technology is important for patients to use everything with ease.</p> <p>Bathrooms designed for adaptation based on the persons limits. Grab bars and proximity to bed is important.</p> <p>Wayfinding within the facility and also on the grounds of the complex is very important.</p>	<p>Lounges & Social Spaces Important for Wellbeing and loneliness.</p> <p>Independence & Choice with food and decor of space, for a sense of home and comfort</p> <p>A space for their possessions is very important for their comfort levels. Storage and shelving.</p> <p>Materials & patterns need special attention because eye sight starts to deteriorate with age and illness.</p>
ROOM & BOARD		
MEDICAL CARE		
SUPERVISION		
PERSONAL CARE		
MOBILITY AID		
PRIVACY		
CLEANING		
ACTIVITIES		
MEALS		
VARIETY OF STAFF	WIDE VARIETY OF STAFF	WIDE VARIETY OF STAFF
LENGTH OF STAY	SHORT-TERM STAY	VARIES IN LENGTH OF STAY
COST	HIGH COST \$\$\$	LOW COST \$

SPORTS REHABILITATION ³¹	HOLISTIC HEALING CENTER ³²
<p>A facility with a multi-disciplinary approach to the prevention, evaluation, and treatment of injuries with 24-hour care facilities or rehab facilities outside of hospital.</p>	<p>A facility that uses a form of healing that considers the whole person, including body, mind, spirit, and emotions, in the quest for optimal health and wellness.</p>
<p>Physiatrists Chiropractors Physiotherapists</p> <p>Personal Trainers Nurse</p>	<p>Acupuncture Chiropractor Homeopathy</p> <p>Massage Therapy Naturopathy</p>
<p>For people who have experiences post-operative injuries, ACL reconstruction, Meniscus tears, Rotator cuff repair, Acute and chronic musculoskeletal injuries, Sprains and strains, Tendonitis and bursitis, Stroke, and more depending on facility specialty.</p>	<p>For people seeking recovery from any form of illness in a more natural and holistic manner. People may be recovering from a physical or psychological condition.</p>
<p>Rehabilitation Institute of Michigan Detroit, MI</p>	<p>Clinique La Prairie Switzerland</p>
<p>Additional Space & grab bars is extra important in this facility. Falling is of high concern.</p> <p>Positive messaging, materials, colors, and lighting are all important to promote optimism.</p> <p>Food & nutrition is of high importance for recovery. Meal plans and supplements are important in the care.</p> <p>Furniture and Finish selection is important. Furniture and finishes should not hinder movement or comfort.</p>	<p>Calming decor as opposed to a clinical feel with the spaces and environment.</p> <p>Materials, sounds, and scents selected to create a healing atmosphere.</p> <p>Designed for treatment and for prevention of illness/injury. Often attracting a wealthy client & not accessible for most.</p> <p>Holistic medicine and modern medicine can both play a role in the healing process. This ensures the best care.</p>
<p>WIDE VARIETY OF STAFF</p>	<p>WIDE VARIETY OF STAFF</p>
<p>VARIES IN LENGTH OF STAY</p>	<p>TYPICALLY SHORT TERM</p>
<p>MODERATE COST \$\$</p>	<p>HIGH COST \$\$\$</p>

PROVIDED
 LIMITED
 NOT PROVIDED

PROGRAM TYPE	IN-HOME CARE ³³	PARtNER & Project BOOST ³⁴
DEFINITION	Care at home for people with disabilities, illnesses, or injuries, so that they can stay in their home for as long as possible	Project BOOST is a program put in place by hospitals to ease the transition from hospital to home, used by over 180 hospitals and health systems in America. PARtNER is a transitional care model that aims to increase support to patients and caregivers at the hospital through their transition home.
STAFF	Nurse PSW Social Workers Pharmacists Home-delivered meals. Therapists	BOOST uses an Advisory board and a BOOST Team: RN, MD, PharmD, SW, CM PARtNER model uses a Patient Navigator & Peer Coach
USER	Elderly people, chronically ill people, people recovering from surgery, people with mental or physical disabilities	BOOST is used for patients being discharged from hospital to home. PARtNER is used for any patients but especially for those at risk.
KEY TAKEAWAYS	A lot of factors determine the level of care provided in home Furniture Selection is very important. Beds cannot be too high, toilets need to be close by. Independence means a greater fear of falling while alone. Grab bars and rest spots are important. Avoiding clutter & too many people in the home for visits. Remove any clutter or excess furniture.	Social Support is important for a smooth transition home from hospital. It requires an active group of healthcare providers to ensure the best care for patients. Cooperation between health care providers, family, friends and the patient is required for an easy transition. An indepth discharge plan must be created and explained to patients before leaving the facility.
ROOM & BOARD		
MEDICAL CARE		
SUPERVISION		
PERSONAL CARE		
MOBILITY AID		
PRIVACY		
CLEANING		
ACTIVITIES		
MEALS		
VARIETY OF STAFF	VARIETY OF STAFF	LOW VARIETY OF STAFF
LENGTH OF STAY	VARIABLE LENGTH OF STAY	SHORT-TERM STAY
COST	HIGH COST \$\$\$	LOW COST \$

STAY / RETURN TO WORK ³⁵	HEALTH HOMES ³⁶
<p>A program that allows employees to resume working in an appropriate and timely manner, with or without work restrictions.</p>	<p>The preferred health home result is to improve the effectiveness in managing individuals with chronic conditions. Health homes allow clinicians to more effectively address social determinants of health for Medicaid recipients.</p>
<p>Employees and employers to help people return back to work or stay at work with certain accommodations to help ease pain from injury/illness/conditions</p>	<p>Health home providers can be a physician, community health center, community mental health center, home health agency, OB/GYN, or other provider.</p>
<p>It is mandated that Employers must find an accommodation to serve the employee who is struggling with a work related task. In the case of an injury employees have the right to refuse work until noted by a doctor and they also have the right to modified work tasks to accommodate their injury/illness/disability.</p>	<p>States can decide if their health home model will include Medicaid individuals who have two chronic health conditions, one chronic health condition and the risk of developing a second, or a serious and persistent mental health condition.</p>
<p>Returning to work is a critical part of getting past an illness or injury. Employees need to have proper accommodations for when they return/stay at work .</p> <p>Employers support and respect during an illness/injury is very important to the healing process.</p> <p>Work must be a safe space for everyone including employees and the employer.</p>	<p>Six health home core services include:</p> <ol style="list-style-type: none"> 1. comprehensive care management 2. care coordination 3. comprehensive transitional care 4. individual and family support services 5. linkage to community and social support services 6. use of HIT
<p>LOW VARIETY OF STAFF</p>	<p>WIDE VARIETY OF STAFF</p>
<p>VARIABLES IN LENGTH OF STAY</p>	<p>TYPICALLY LONG TERM</p>
<p>LOW COST \$</p>	<p>LOW COST \$</p>

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