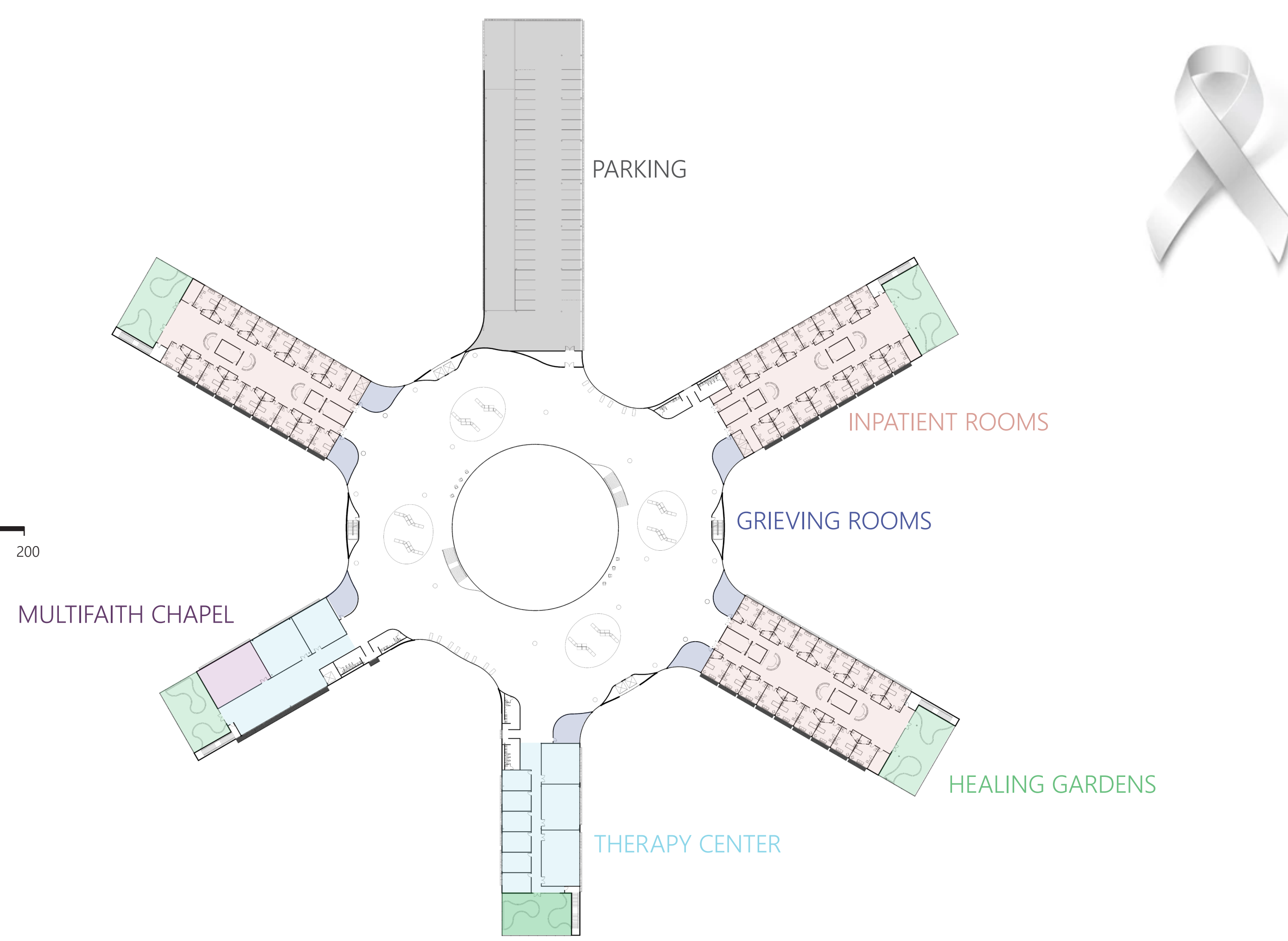


# HEALING ARCHITECTURE

## LUNG CANCER RESEARCH AND TREATMENT CENTER

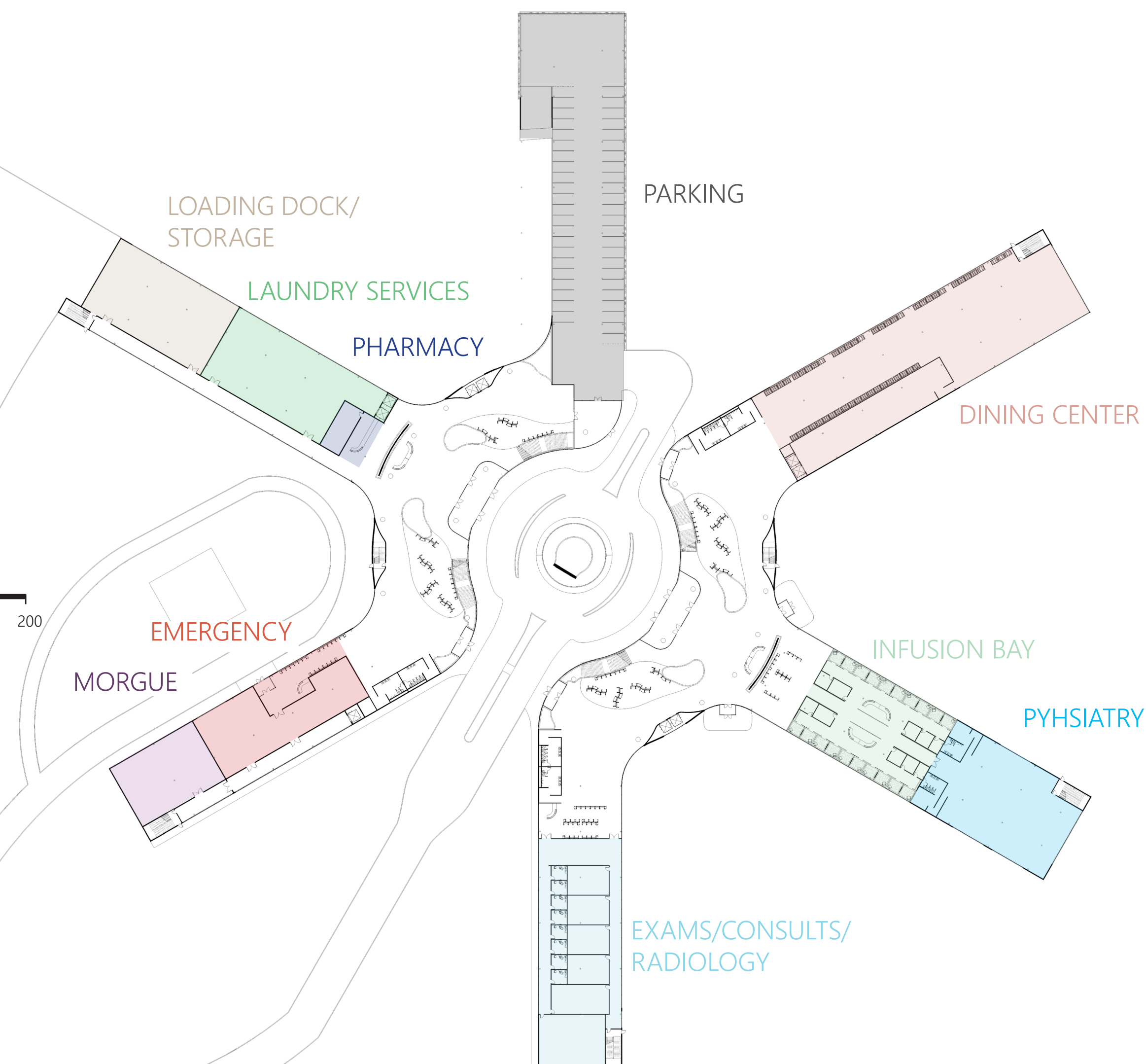
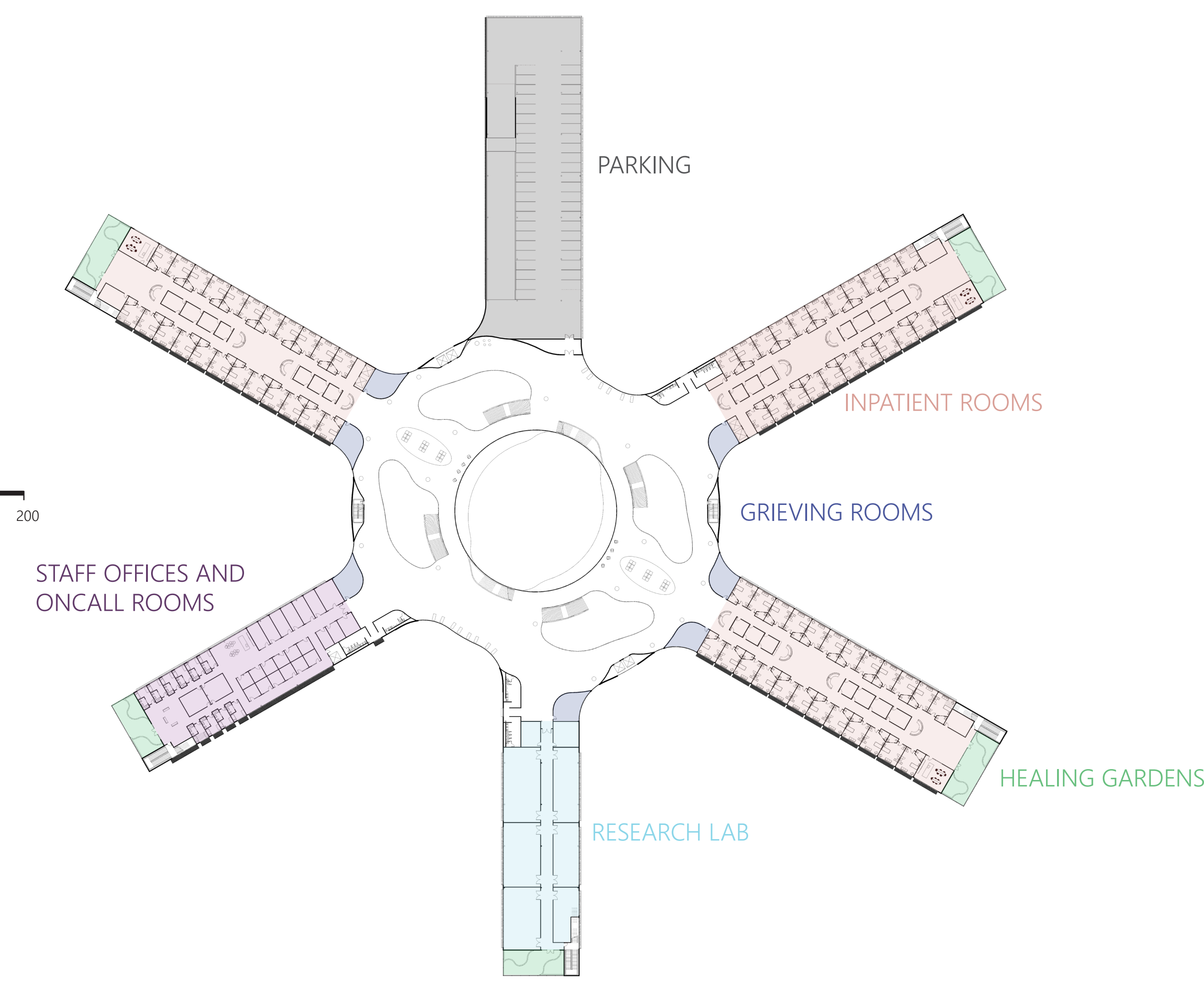
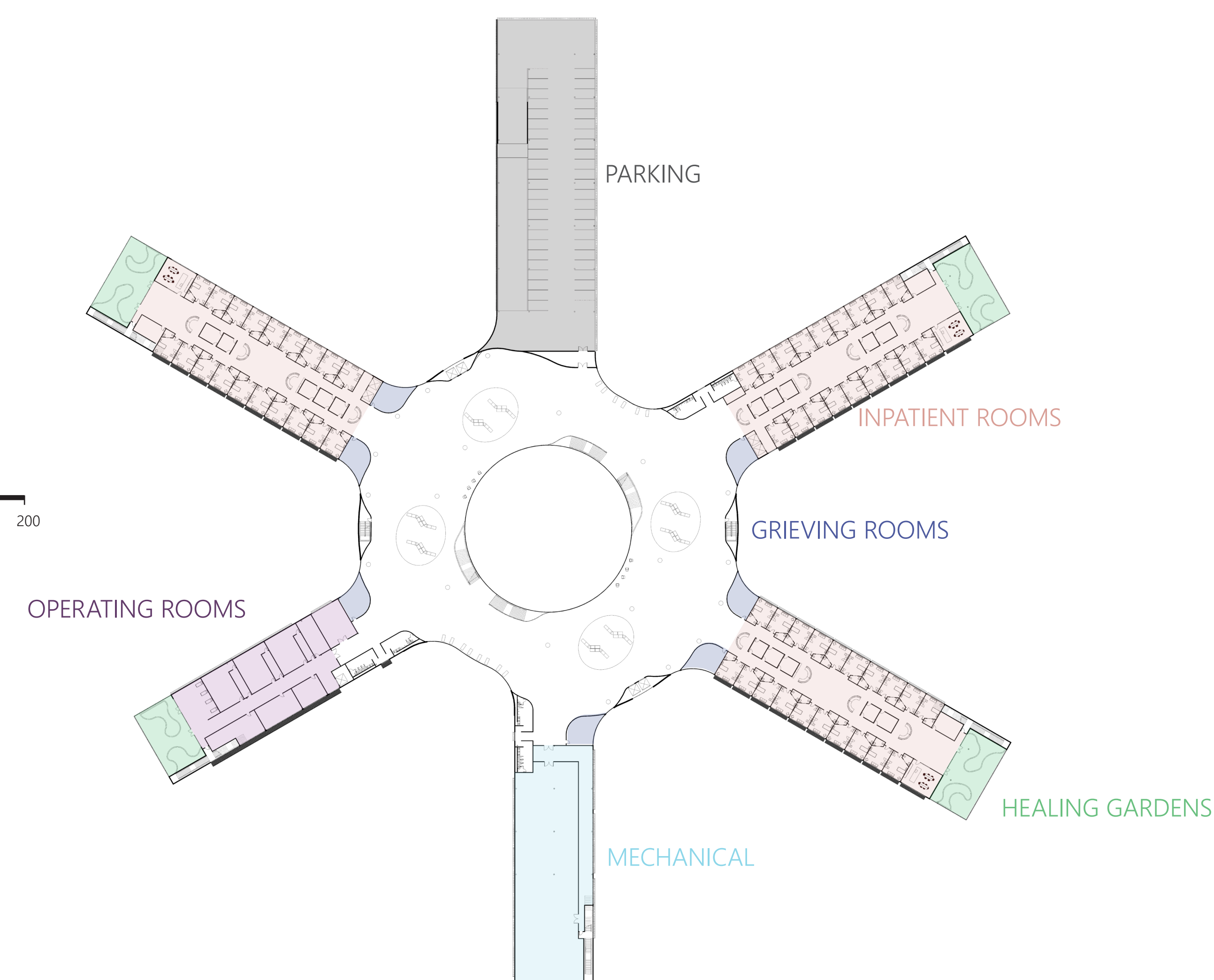


### THESIS PREMISE

It can be hard to encompass a healthy mentality when cancer is a prevalent factor in your life. Cancer is one of the top leading causes of death. On average, 600,000 people die of cancer every year. One of the most common leading causes of cancer death is lung cancer, making up almost 25% of all cancer deaths. The number of people affected by cancer can multiply by ten or more when family members and caregivers are taken into consideration.

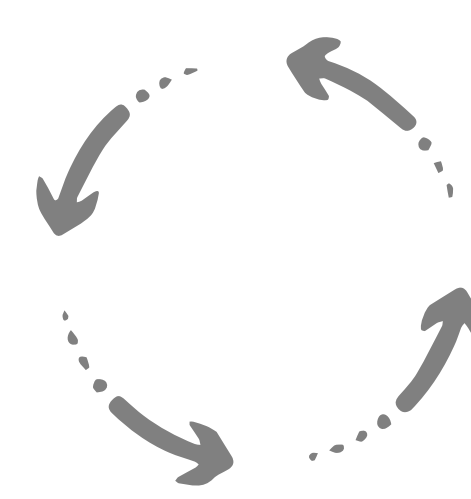
Cancer patients, their family support, and caregivers all undergo challenging circumstances when cancer comes knocking at the door. Being diagnosed with cancer is scary and often traumatizing. Not only do they have to undergo chemotherapy, surgery, and constant hospital visits, they have to be able to mentally prepare and handle this newfound life of theirs. Studies have shown that a person's mental health and social well-being can affect the success of treatment. Leaving room to wonder how mental health is being supported.

Architecture has the ability to create meaningful spaces. In this case, architecture is used to create a healing environment. Hospitals can engulf a sense of serenity and peacefulness, when designed accordingly. Exposure to nature also contributes to a sense of health and wellbeing. By incorporating natural design aesthetics, stress and anxiety is reduced while instilling positive emotions in patients, staff, and visitors. Providing a greater overall experience. This Lung Cancer Research and Treatment Center is designed through the eyes of the patient, the family members, and the caregivers.



### CIRCULATION AND SPATIAL PROGRAMMING

To reduce confusion and simplify circulation patterns, all patients, visitors, and staff enter the building through the central roundabout. They are directly brought to check-in/drop off, parking, and check-out/pickup. From this central location, the hospital branches out into "wings" that separate the different uses of the building. The first floor is separated into two portions, the first portion houses the check-in desk, dining center, and outpatient services while the second portion houses the check-out desk, emergency room, and morgue. Separating check-in from check-out reduces traffic disruption and keeps movement flowing through the building. The overall layout simplifies circulation patterns, reduces the building footprint, and increases natural daylight in all spaces throughout the building.







## DULUTH, MINNESOTA

The site is located Southwest of Fish Lake Reservoir in northern Minnesota. It is in a heavily wooded area with a large variety of deciduous and coniferous trees. The site provides a secluded and serene context while still being in close proximity to a large population.

- Approximately 20 minutes from the Duluth International Airport
- Approximately 30 minutes from Essentia Health Medical Center in Duluth

### FOREST BATHING - *Taking in the medicine or atmosphere of the forest*

When we are surrounded by nature, we turn off our worries and obsessive thinking. Breathing in forest air increases the level of natural killer cells in our blood. A Japanese study showed NK cells increase in activity by those who forest bathe. Our body uses these NK cells to combat infections and cancers. Plants and trees naturally emit a substance called phytoncide. Their antimicrobial properties influence immunity, improve sleep, lift mood and attention, and boost creativity. The affects of forest bathing alone can improve the emotional well-being of cancer patients, their families, and caregivers.



Second Floor



Healing Garden



Nurses Station



Grieving Room

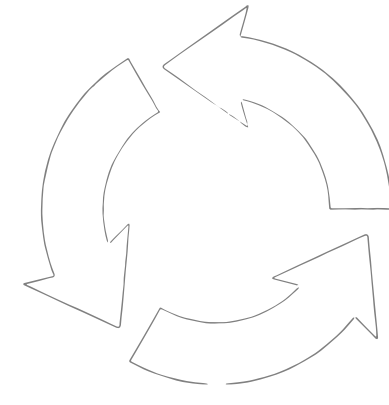


Staff Lounge



SITE PLAN

### THEESIS SOLUTION



#### Internal Wayfinding

Strategically programming the spaces in the building helps reduce the traffic footprint and increases productivity among the workers. The spatial program reduces confusion for patients and visitors, allowing for a more comfortable hospital experience. Architecture and interior elements provide direction with different colors and distinctive changes in appearance.



#### Nature

The use of indoor plants transforms the hospital stay. Plants promote healing, decrease stress, and are shown to increase productivity for the caregivers in the hospital as well. Plants also improve your overall sensory experience. Greenery provides privacy, comfort, and even aids in directing visitors through the hospital. The addition of water features help mask hospital sound as well.



#### Natural Design Elements

Research shows that incorporating organic materials, such as wood, into the built environment, can improve occupant comfort, reduce stress and contribute to improved health indicators. Along with using natural materials, increasing natural daylight throughout the building will improve the mood of patients, visitors, and staff. The use of natural design elements offer patients a comforting, supportive and healing environment.



PLANTERRA

**PLANTERRA** - *We believe a healthcare setting can also be a peaceful and calming place to recover.*

Planterra is a leading provider of interior landscape services and plant rentals serving corporate campuses of the Fortune 500, medical facilities, hospitality properties and premier retail destinations. Planterra works directly with the hospital and healthcare staff to understand their goals and the needs of those working within the building. Planterra is used throughout the building to provide therapeutic healing gardens.

#### Therapeutic Healing Gardens

Allergy-free indoor plants:

When installing healing gardens within a hospital setting, experts at Planterra use informed practices to ensure the plants chosen for any design are a safe, healthy addition to the environment. We offer allergy-free plant options that do not release airborne pollen.

Safe, sterile plant maintenance:

We use soil-less growing media in the live plants. Soil-less growing media allows plants to thrive in a sterilized, soil-less mixture, free of organic materials which could attract pests or mold. When it comes to watering, Planterra uses a self-contained technology called sub-irrigation. This system of water-wicking technology ensures that a precise amount of water will be supplied as the plants need it. When live plants are not an option, Planterra can install realistic replica plants to enhance the space. It also comes with a cleaning and dusting option to help maintain the sterility and safety of a medical environment.

