

Traumatic Brain Injury, TBI, is an injury that affects how the brain works. These injuries may impact individuals' behavior, mobility, memory, language, problem solving and empathy. TBI patients also tend to feel isolated because cognitive, physical, and social disabilities prevent them from engaging in their pre-injury activities in a normalized way. Depending on how severe one's injuries may be, one may recover from a traumatic brain injury. However, most will live with permanent effects from their injuries. Recovery at any level may involve years of relearning how to do daily tasks. Throughout a TBI survivor's recovery process, they will need substantial support to learn, live and work with their disability. Healthcare professionals along with community, family and friends can help the survivor regain confidence when returning to the outside world to live and work with their disability.

Through design, innovative rehabilitation methods are combined with connections to nature and community to create a holistic and supportive atmosphere for patients to recover from their traumas in this facility. A focus on overall community health and wellness is also provided to benefit a wider population and create space for interaction between TBI patients and the community to assist in breaking stigmas. TBI survivors, family, friends and the broader community will be able to interact and learn in an environment that encompasses whole body wellness.

SquareOne Rehabilitation and Wellness Center

The Effects Architecture has on treating TBI





(gym, pool, outdoor activities).

Create spaces for community interaction as part of the physical and mental journey. TBI patients tend to feel isolated because cognitive, physical and social disabilities prevent them from engaging in their pre-injury activities in a normalized way. Facility will include the community where individuals will learn how to interact with TBI patients,



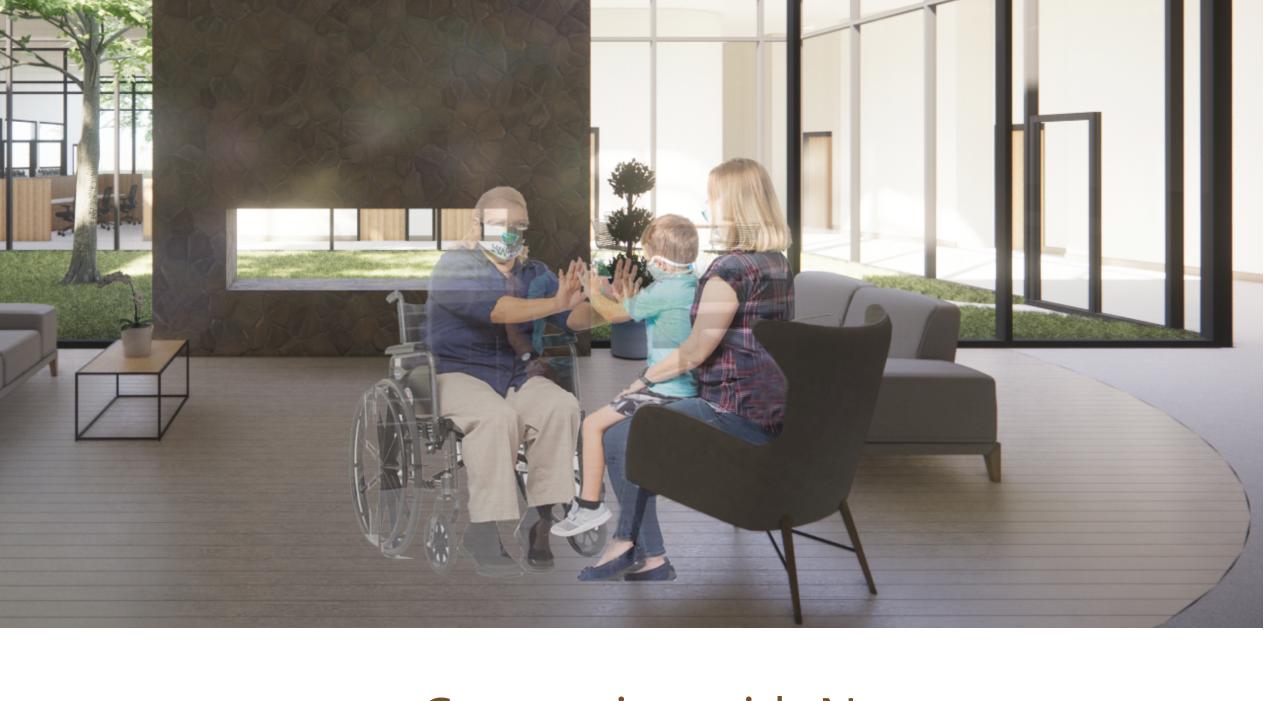
Innovation labs such as think & speak / arms & hands / legs & walking / strength & endurance will create space for TBI patients to recover from their traumas. Outdoor-based therapy (kayaking, fishing, swimming, ice fishing, hiking, biking, etc..) will help patients connect with nature to increase healing process.

Computer assisted rehabilitation will give patients outdoor experiences in winter months.



Spaces that accommodate staff. Designated areas for healthcare professionals to evaluate and develop plans for TBI patients. Space the accommodates the many types of therapy

CLINIC COMMUNITY GATHERING SPACE



Connection with Nature

The Facility will create many views of nature with private green spaces that will be only have access within the facility. Located along Lake Bemidji this facility will be able to use the lake for outdoor-based therapy and activities, and community activities.

FIRST FLOOR ATRIUM

Due to TBI patients' disabilities all elements in design will need to be accessible Being able to access all points within the facility will make patients feel more comfortable when moving throughout the facility.

COLOR

Green promotes healing. Brings balance and harmony to one's mind and body.

especially when undergoing deep tissue and bone cell work.

Warm colors are used for people to feel more relaxed and comfortable.

Blue is one of the most calming colors for healing, and as such, it is used to relieve pain,



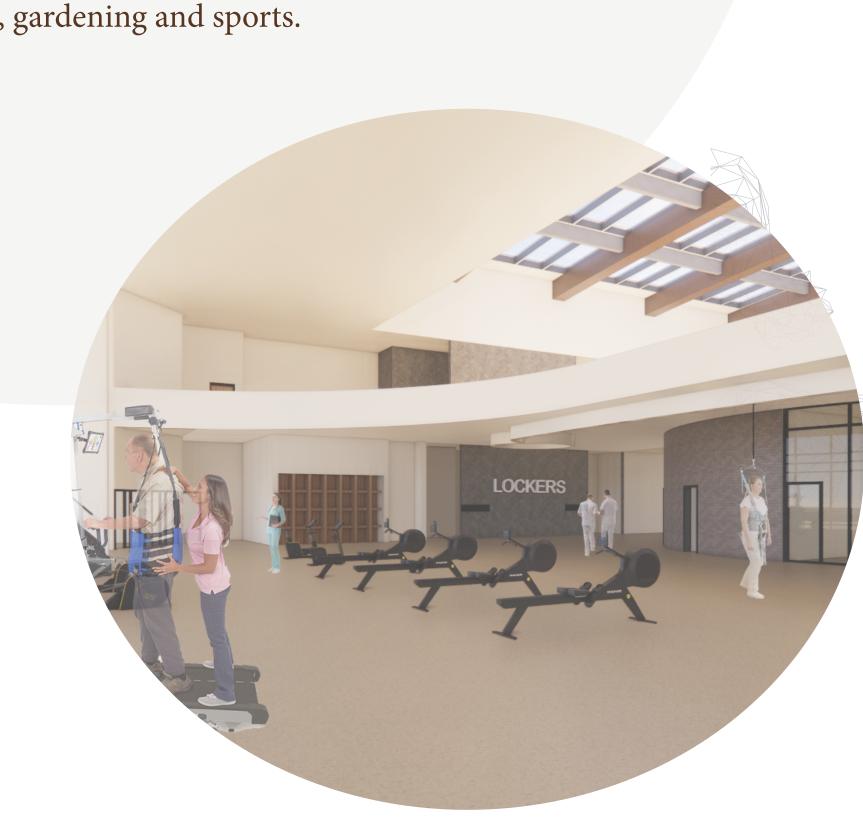
Innovative Therapy Labs

Think and Speak Labs will work on one's ability to think, reason, perceive, swallow, eat, talk and interact with others.

Arms and Hands will work on recovering and strengthening complex hand skills such as turning a key, picking up a pen, putting on a sweater.

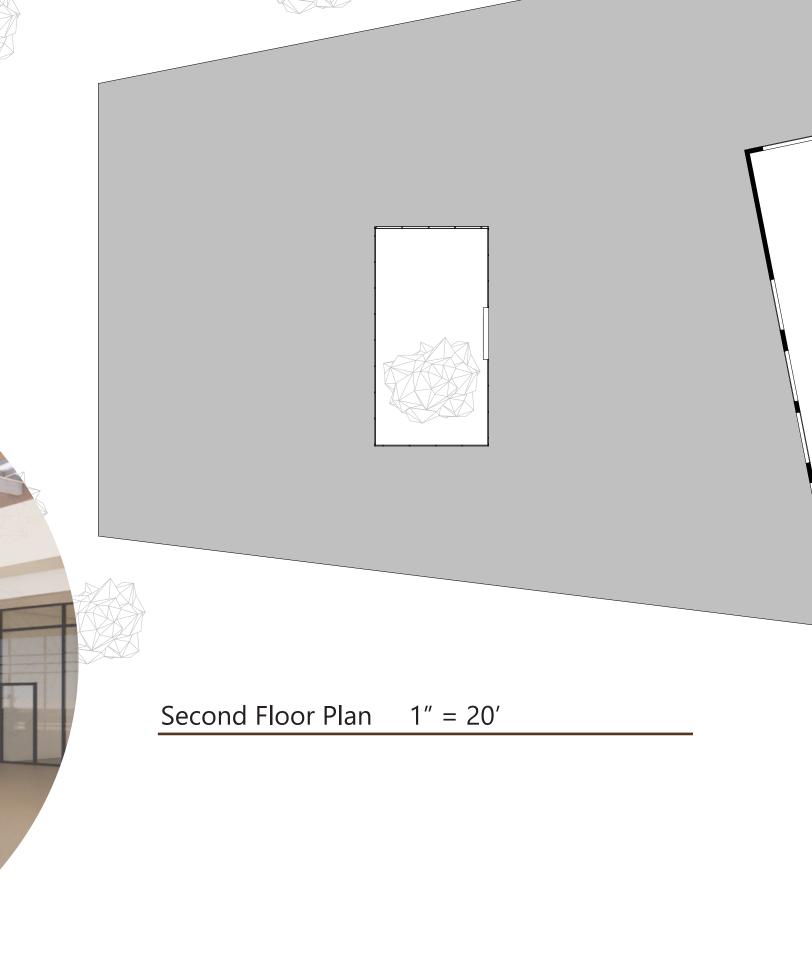
Legs and Walking will focus on advanced trunk, pelvic and leg function along with movement and balance.

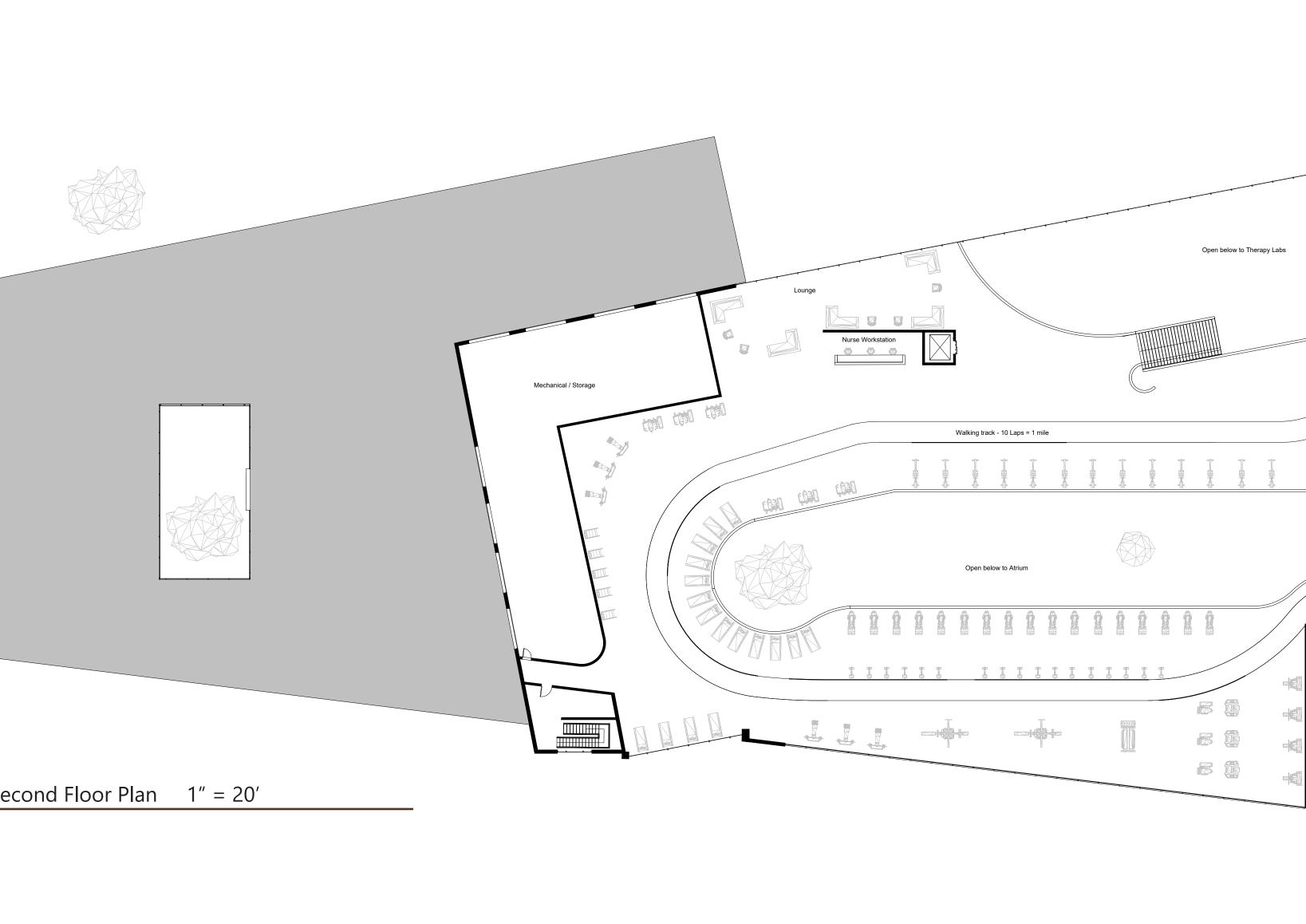
Strength and endurance will focus on high level activities of daily living such as cooking, dressing, gardening and sports.

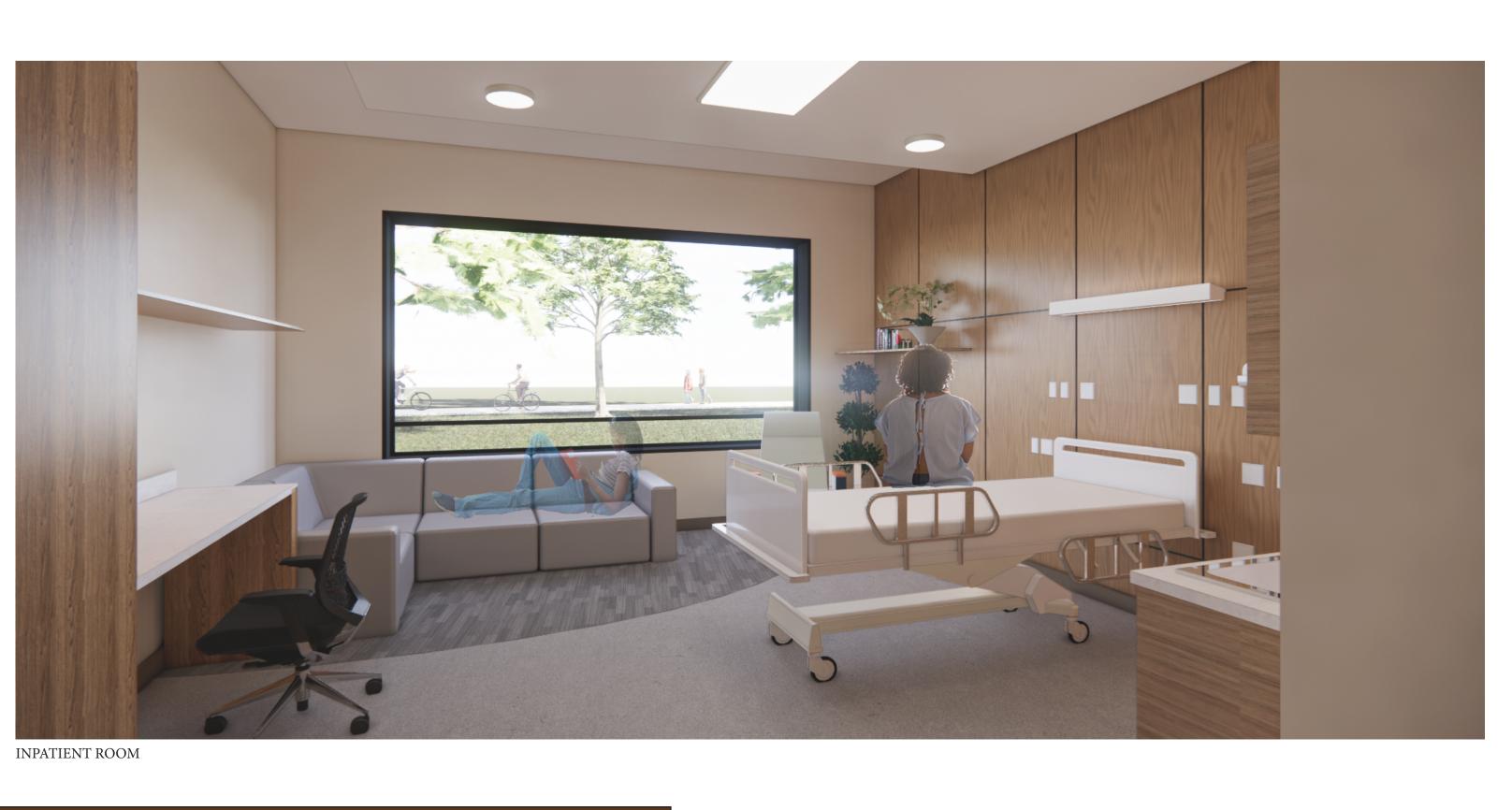


Users of the facility will be able to access the Paul Bunyan State Trail that runs though the site. The trail will be used for outdoor therapies.

Connection with nature will help improve mental and physical healing







USER GROUP

· Unaware of impairments, disabilities and safety risks.

· Verbal expressions are appropriate in highly familiar and structured situations.

Consistently follows simple directions.

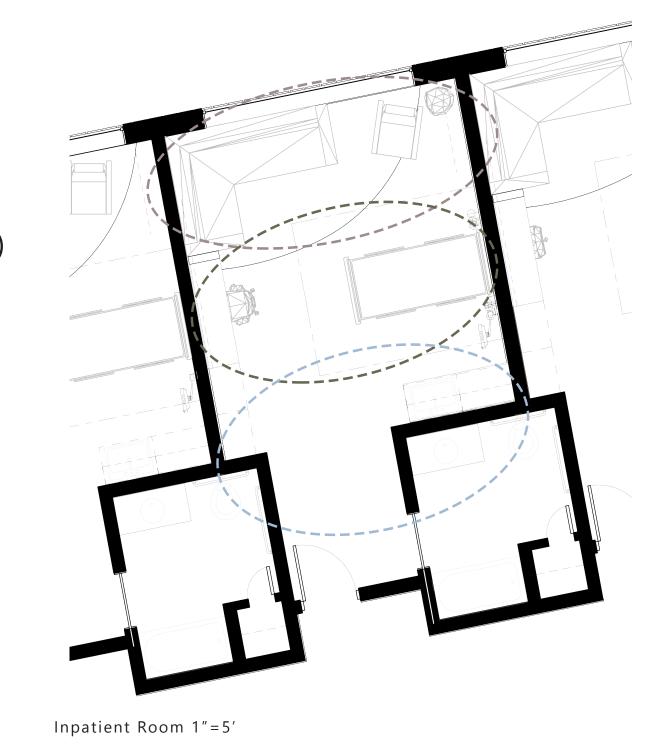
TBI Survivors, family members and the community

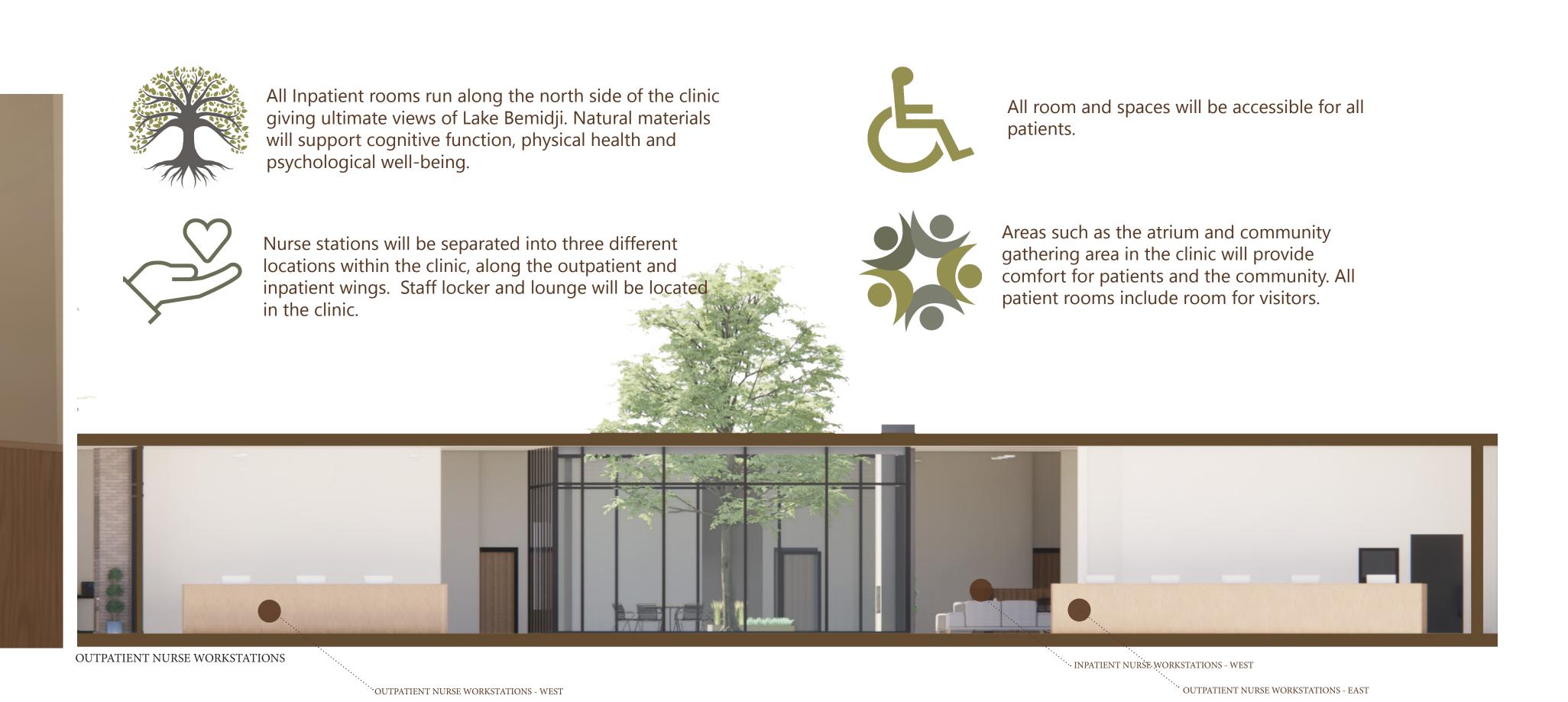
This facility will serve cognitive TBI levels: VI (Confused, Appropriate: Moderate Assistance) – X(Purposeful, Appropriate: Modified Independent)

Level VI - Confused, Appropriate: Moderate Assistance · Inconsistently oriented to person, time and place. · Able to attend to highly familiar tasks in non-distracting environment for 30 minutes with · Remote memory has more depth and detail than recent memory. · Vague recognition of some staff. · Able to use assistive memory aide with maximum assistance. · Emerging awareness of appropriate response to self, family and basic needs. · Moderate assist to problem solve barriers to task completion. · Supervised for old learning (e.g. self care). · Shows carry over for relearned familiar tasks (e.g. self care). · Maximum assistance for new learning with little or nor carry over.

Level X - Purposeful, Appropriate: Modified Independent · Able to handle multiple tasks simultaneously in all environments but may require periodic · Able to independently procure, create and maintain own assistive memory devices. Independently initiates and carries out steps to complete familiar and unfamiliar personal, household, community, work and leisure tasks but may require more than usual amount of time and/or compensatory strategies to complete them. · Anticipates impact of impairments and disabilities on ability to complete daily living tasks and takes action to avoid problems before they occur but may require more than usual amount of time and/or compensatory strategies. · Able to independently think about consequences of decisions or actions but may require more than usual amount of time and/or compensatory strategies to select the appropriate decision or action. · Accurately estimates abilities and independently adjusts to task demands. Able to recognize the needs and feelings of others and automatically respond in appropriate · Periodic periods of depression may occur. Irritability and low frustration tolerance when sick, fatigued and/or under emotional stress.

· Social interaction behavior is consistently appropriate.

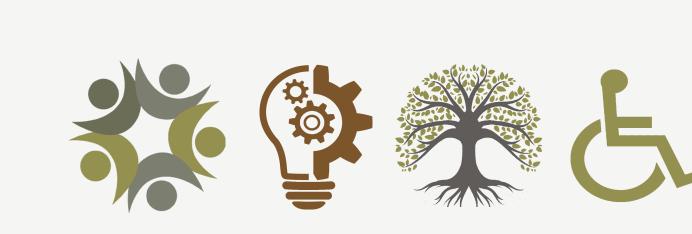




Location: Bemidji, Minnesota

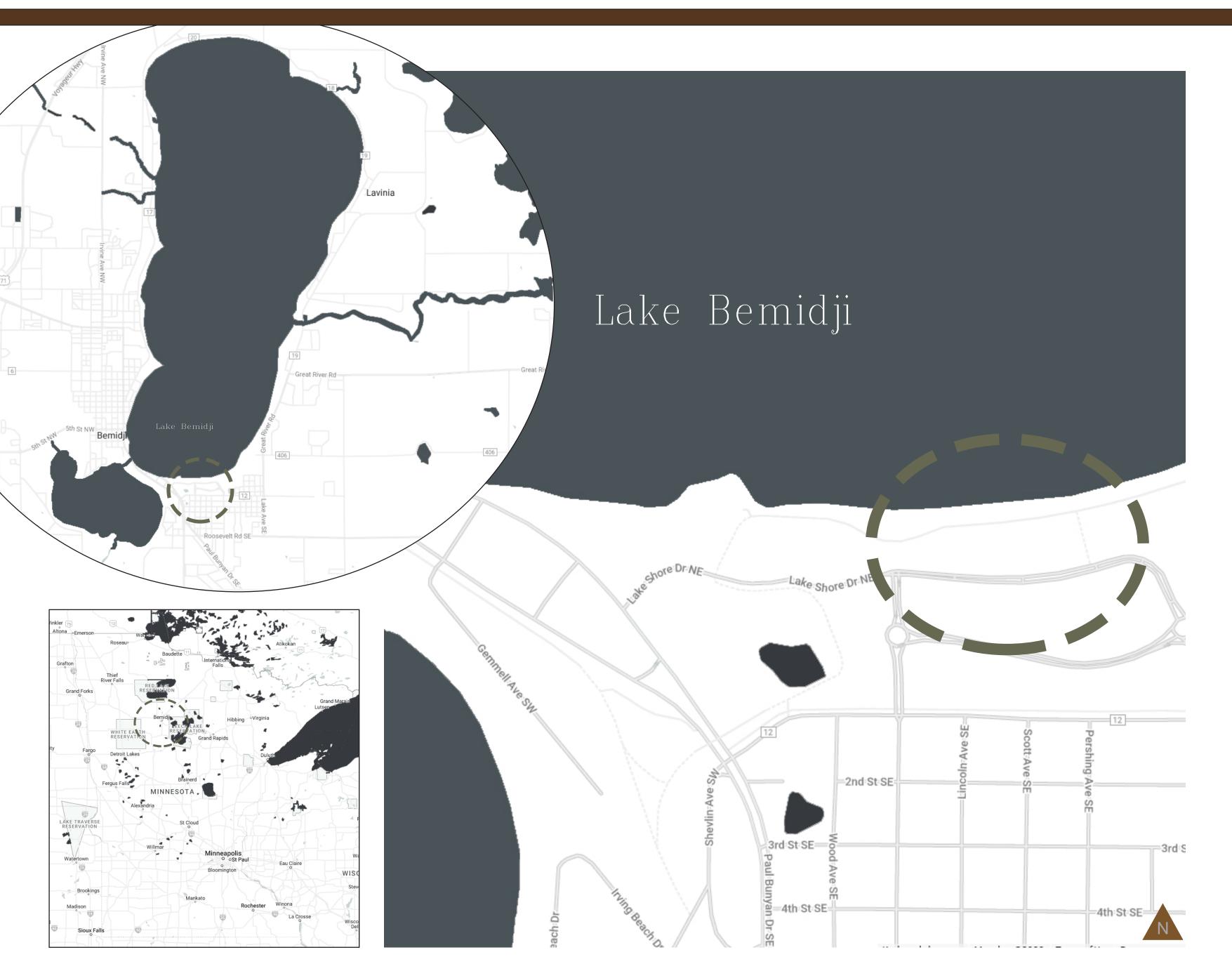
Lake Shore Dr NE (South Shore Park - Nymore Beach)

The site chosen for this thesis is located on the south end of Lake Bemidji in Minnesota. Locating this facility along the lake will provide multiple views of nature along with having access to outdoor based therapies. These outdoor therapies will include fishing, kayaking, biking, hiking along with winter activities such as snow shoeing, cross country skiing, and ice fishing. Keeping this facility within Bemidji will benefit patients, and the community when traveling to the facility.





• Lake Bemidji, Minnesota Lake Bemidji, Minnesota







Emma Dietrich - Professor Jennifer Brandel - Thesis Boards - Spring 2022