MAKING NATURE ACCESSIBLE: BUILDING AN ACCESSIBLE WELLNESS RETREAT WITHIN NATURE FOR PEOPLE WITH PHYSICAL DISABILITIES AND THEIR COMMUNITIES

Jenna Morell
Western Michigan University

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MAKING NATURE ACCESSIBLE

BUILDING AN ACCESSIBLE WELLNESS RETREAT WITHIN
NATURE FOR PEOPLE WITH PHYSICAL DISABILITIES
AND THEIR COMMUNITIES

JENNA MORELL, BACHELOR OF SCIENCE (BS) IN INTERIOR DESIGN, WESTERN MICHIGAN UNIVERSITY, 2022-2023
“The stigma attached to the disability community has harmed us – mentally and physically. I cannot speak for every person with a disability, but I am confident that the experience of this stigma – an experience that destroys one’s sense of identity and belonging – is universal” - Siren Nagakryie
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People with physical mobility issues are at heightened risk of detrimental impacts to their health caused by limited access to nature (5). By increasing physical accessibility to nature and outdoor recreation, people with physical mobility issues will have more opportunities to benefit from positive mental, physical, and emotional health impacts caused by these outdoor experiences and interactions, as well as gain opportunities to connect further with their communities (6).

**ABSTRACT STATEMENT**

Nature impacts our lives in such a way that it can be incredibly detrimental to our health and wellbeing to be away from nature (1). Nature helps us heal faster, relax more, and just generally lead a more well-rounded life (2). It provides an opportunity to feel the sun on our face, breathe fresh air, and get the exercise we need. When deprived of these experiences, our bodies truly suffer (1). People with physical mobility limitations suffer from mental health issues at a much higher rate (3), this issue is often exacerbated by the fact that much of the built environment does not consider the needs of people with physical mobility limitations (4).

This research focuses on the role that mental health plays in one's life, and how strategies can be implemented within nature to help people with physical limitations gain the access needed to achieve mental, physical, and emotional wellbeing. This project seeks to allow for barrier-free connection to nature as well as an accessible space to connect with friends and family. With the implementation of various strategies, this project sets a new standard for accessible indoor and outdoor spaces and brings to light a conversation about a brighter future for accessible design in everyday life.

**THESIS STATEMENT**

People with physical mobility issues are at heightened risk of detrimental impacts to their health caused by limited access to nature (5). By increasing physical accessibility to nature and outdoor recreation, people with physical mobility issues will have more opportunities to benefit from positive mental, physical, and emotional health impacts caused by these outdoor experiences and interactions, as well as gain opportunities to connect further with their communities (6).
Reserach Claims

Interacting with and experiencing nature improves mental health (7).

Lack of access to spaces, but nature in particular is

Improving strategies for information, physical access, and

Visibility within communities will be positive for people

Project Objectives

Create a safe and barrier-free space for people with

physical disabilities and their families through

safe walkways, effective lighting and signage, and

fully accessible interior spaces.

Create spaces that flow seamlessly with the

outdoors to provide maximum relaxation for users.

Foster community connection through

design and curation of

recreational and

relaxation activities.

Provide the opportunity to remove the

stigma around people

with disabilities and

improve self-esteem and
thoughtful design and
connections. I cannot speak for every person with a disability, but I am confident

that the experience of this stigma — an experience that destroys one’s sense of

identity and belonging — is universal." (8).

Why do people with disabilities statistically struggle with mental health at higher rates?

The reason attached to the disability community has bared out — mentally and

physically. I cannot speak for every person with a disability, but I am confident

that the experience of this stigma — an experience that destroys one’s sense of

identity and belonging — is universal." (8).

Layer 1: lack of relevant assistive technology — assistive, adaptive, and

rehabilitative devices

Layer 2: negative attitudes towards people with a disability,

Layer 3: services, systems and policies that are either nonexistent or that hinder the involvement of all people with a health condition in all areas of life.

Figure 4 displays the health disparity between disabled and non-disabled

people. These health factors impact more than just physical health, but mental and emotional health as well (3).

The health disparity in the United States is representative of fact that people with disabilities are continually

overlooked and underrepresented (9). These health impacts are the cause of

insufficient healthcare and bring to light the conversation of creating more

resources for improved overall wellness for people with disabilities.

Mental, Physical, and Emotional Barriers

The barriers that exist for people with disabilities and how that impacts daily

life.
NATURES IMPACT ON WELLNESS
WHAT ARE THE IMPACTS OF NATURE ON OUR MENTAL HEALTH, AND THEREFORE OUR IDENTITY?

HOW DOES LACK OF ACCESS TO NATURE MANIFEST INTO REAL-WORLD CONSEQUENCES?
There is ample evidence that interacting with nature provides a range of benefits, including physical and emotional well-being and a sense of belonging. And yet the people who need these benefits the most—those who are disabled or chronically ill—face the most barriers to accessing the outdoors (12).

WHY IS NATURE INACCESSIBLE?

ONE: There is a stigma against people with physical disabilities that they are not capable of accessing the outdoors (13).

TWO: There are a lot of unsafe environments for people with physical mobility limitations that make being in nature more difficult (12).

THREE: Often considerations for disability requirements are not as successful as they should be (12).

IMPORTANCE OF OUTDOOR EXERCISE FOR MENTAL HEALTH
Nature has a tremendous impact on mental health as well as our physical and emotional health. Spending at least 20 to 30 minutes a day in an outdoor space immersed in nature can help to maintain balance in the body, which helps to regulate stress (6). This does not include spending time in nature to exercise. Exercising in the outdoors has been proven to have a greater physical impact than exercising indoors (7).

WHY IS NATURE INACCESSIBLE?

Often considerations for disability requirements are not as successful as they should be (12).

There are a lot of unsafe environments for people with physical mobility limitations such as: community visibility and cooperation, peace and safety in nature (8). Doing activities in unpredictable environments such as nature (8) can mean many things depending on a future circumstance, resources and other factors.

Creating balance in life helps to maintain a sense of wellness. A balanced life can mean many things: interacting with nature, resources and other factors. Balance is achieved by doing things that make us feel happy and fulfilled. This includes work, fun, having a community of friends or family, participating in the community, being physically active, and relaxing (12).

The “Accessible Wellness Retreat” creates the opportunity for people with mobility limitations to discover what is out of balance in their lives, and possibly help to fill gaps that society generally doesn’t fulfill for people with physical mobility limitations (12).

Fig. 8 Benefits of Outdoor Exercise

Creating balance in life helps to maintain a sense of wellness. A balanced life can mean many things: interacting with nature, resources and other factors. Balance is achieved by doing things that make us feel happy and fulfilled. This includes work, fun, having a community of friends or family, participating in the community, being physically active, and relaxing (12).

Blue and green spaces provide opportunities for physical activity and the potential to reduce stress (14). Blue spaces can also have substantial impacts (14).

WHAT ARE GREEN AND BLUE SPACES?
Natural environments such as forests, parks, coasts, and rivers are examples of green and blue spaces. Their impacts on long and short term mental and physical outcomes has been shown to have noticeable impacts (14).

WHAT ARE THE IMPACTS OF NATURE ON OUR MENTAL HEALTH, AND THEREFORE OUR IDENTITY?

“According to research, natural environments have a positive impact on human health by reducing the time it takes to recover from stressful events, reducing mental fatigue, increasing social ties, and encouraging people to engage in more physical activities” (15).

“Research has shown that green spaces can help to reduce stress and increase happiness, which can have a positive impact on mental health. Green spaces have been shown to have a calming effect on the mind and can help to reduce anxiety and depression (16).”

“Research has also linked exposure to nature to improved mental health outcomes, such as reduced stress and increased feelings of well-being (16).”

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WHICH GREEN AND BLUE SPACES ARE MOST BENEFICIAL?
Research has shown that out of all spaces tested: parks, gardens, grasslands, forests, that the most successful green spaces are as far as improving short term mental health issues such as seasonal affective disorder, are forests and parks. Participants of the study reacted positively the most to those spaces. As far as blue spaces, they were found to be just as beneficial for seasonal affective disorder, though the impact was much higher with long term exposure rather than short term presence to blue spaces (15).

Fig. 9 Dimensions of Wellness

Fig. 10 Green Space in a Park

Fig. 11 Blue Space on the Beach

Fig. 12 Green and Blue Spaces

WHAT ARE BLUE AND GREEN SPACES?
Green spaces are natural areas such as forests, parks, coasts, and rivers. Blue spaces are bodies of water such as lakes, ponds, and oceans. Both types of spaces provide opportunities for physical activity and the potential to reduce stress (14). Blue spaces can also have substantial impacts (14).

HOW CAN BLUE AND GREEN SPACES BENEFIT MENTAL HEALTH?
Research has shown that exposure to nature has a positive effect on mental health, reducing symptoms of depression and anxiety (16). Blue spaces, such as lakes and oceans, can help to reduce stress and increase happiness, which can have a positive impact on mental health (16).

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Research has shown that exposure to nature has a positive effect on mental health, reducing symptoms of depression and anxiety (16). Blue spaces, such as lakes and oceans, can help to reduce stress and increase happiness, which can have a positive impact on mental health (16).
ECOTHERAPY VS. BEING OUTDOORS

Being in nature, whether actively engaging in ecotherapy or simply spending time outside, offers many mental health benefits. The difference between Eco Therapy and simply being outdoors is the structured time devoted to mental health. It often involves targeted interventions done to achieve a specific goal (17).

ECO THERAPY & TRADITIONAL THERAPY

Eco Therapy does not have to be used in place of important remedies for mental health treatment such as medication and traditional talk therapy. It can be used in union with those things to create further balance and provide people with strategies to take ownership of their health and wellness (18).

ALTERNATIVE THERAPIES

CONSERVATION

One activity that has been shown to help people connect to not only the planet, but those around them is conservation. Some examples of this type of activity are cleaning up trash, planting trees, and even beekeeping (16).

OUTDOOR EXCERCISE

Exercising outdoors has been proven to be especially beneficial for mental health as well as physical. The benefits increase when this exercise is also outdoors (17).

ANIMAL THERAPY

Animal assisted therapy is when one or more animals are introduced into the healing process, usually to decrease agitation or anxiety. Animal therapy can be beneficial addition to add to group therapy and standing exercise (18).
MAAYAN ZIV
BARRIER-FREE TRAVEL FOR ALL ADVOCATE

Maayan Ziv is a Canadian accessibility advocate, she is passionate about creating a more accessible world and "shaking up the status quo." The biggest piece of Maayan’s advocacy is the creation of the app AccessNow which aims to spread information and equip everyone with the knowledge they need to navigate a world that is not built for people with disabilities. Maayan hopes that as people like her continue to advocate for accessibility, that the world will begin to consider people with disabilities on a much deeper level in the built environment.

Ziv talks about how there is a huge portion of people who have disabilities and want to travel, and how much that desire is hindered by the current state of the travel industry. Ziv calls for action on the part of "leadership" to create more accessibility in the built environment (20).

ABOUT MAAYAN’S ADVOCACY

The world isn’t designed for everyone in mind. Millions of places all around the world are still inaccessible to people with disabilities. That’s why we’re building a movement that celebrates access by connecting people to inclusive, welcoming places for all (21).

ACCESSIBILITY FOR ALL

"About a billion people, or 15 percent of the world’s population, live with disabilities, and in countries where the life expectancy is over 70 years, people generally spend an average of eight years of their life living with a disability. Yet, much of the world is still built for a narrow traveler profile" (20).

EXAMPLE OF ACCESSIBILITY RATINGS IN BATTLE CREEK, MI

AccessNow allows people to search restaurants, parks, hotels, and more to learn more about how accessible these spaces are, and allow people more freedom and peace of mind. The app also allows people to rate places they have been based on specific elements of accessibility such as handrails, ramps, and more (21).

EVIRONMENT’S IMPACT ON DISABILITY

“My disability exists not because I use a wheelchair, but because the broader environment isn’t accessible” – Stella Young

ACCESSIBLE
PARTIALLY ACCESSIBLE
MISSION

THE NARROW TRAVELER PROFILE

"Most of the world’s population live with disabilities, and in countries where the life expectancy is over 70 years, people generally spend an average of eight years of their life living with a disability. Yet, much of the world is still built for a narrow traveler profile." (20)

UTILIZING ACCESSNOW

Somehow, people go to northeast restaurants, parks, hotels, and more to learn more about how accessible these spaces are, and allow people more freedom and peace of mind. The app also allows people to rate places they have been based on specific elements of accessibility such as handrails, ramps, and more (21).

GRIT FREEDOM CHAIR

WHAT IS THE GRIT FREEDOM CHAIR

The GRIT Freedom chair emphasizes the importance of gaining independence for a life that feels like one’s own. While creating the Freedom Chair, CEOs Tish Scolink and her team thought that the main user group would be adventure seekers, people who spend much of their time in the rugged wild. This ultimately was not the case. She has found through observation and personal interaction with customers that the biggest user group of the GRIT Freedom Chair is the older individual looking for a sense of normalcy in their everyday life in terms of accessibility, as well as younger people looking to have normal lives compared to their peers (22).

GRIT Freedom Chair: 3.0

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USERS OF THE GRIT FREEDOM CHAIR

Individual Stories That Make Our Life-Changing Experiences With The GRIT Freedom Chair

Family time

“I got to work my daughter’s side and navigate the neighborhood. My wife and kids love the independence it gives me. The Freedom Chair allows me to stay outside more.”

-Rob C.

We were so thrilled with the introduction of the GRIT Juniper that I knew exactly the right moment. The idea of movement enable us to do that.”

-I am very active in my community...

“I am very active in my community... I’ve opened up opportunities for others to have this kind of an experience. As someone who loves the outdoors, this book is easily going to be my most used hiking guide. I believe that giving disabled individuals the power to make their own decisions and help increase visibility for disabled hikers (23).

SIREN NAGAKYRIE

Siren Nagakyrie has become a leading advocate and expert voice in making the outdoors more inclusive and accessible for the disabled community and others that are underrepresented. “For me, the kind of information I need to be able to decide if I should attempt a trail, it doesn’t exist,” Siren said. “There’s a bit here and there and all over. I would spend hours researching a single hike. Then, I would get there and it wouldn’t be accurate.” This is an issue that Siren has publicly communicated on the Washington Trails Association website (22).

According to reviews many hikers have found this information invaluable to their experiences. “As someone who loves the outdoors, this book is easily going to be my most used hiking guide. I believe that giving disabled individuals the power to make their own decisions and help increase visibility for disabled hikers (23).

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EFFECTIVE SIGNAGE FOR EVERY DISABILITY
EFFECTIVE SIGNAGE TO PROVIDE ADEQUATE INFORMATION TO EVERYONE

CASE STUDIES: ACCESSIBLE SITE FEATURES

APPLYING THE SPOON METHOD IN ASYLUM LAKE TRAIL

- Spoon Rating: Three spoons
- Type: Loop trail
- Distance: 2.9
- Elevation Gain: 784’
- Max Grade: 101’
- Max Cross-Slope: Unknown
- Typical Width: 4 feet
- Typical Surfacing: Natural, pavement

Trail Users: Hikers
Season/Schedule: Open all season
Water Availability: None
Accessibility: Accessible portable toilet
Dog-Friendly: Yes, on leash
Cell Phone Reception: Yes
Nearest Town: Kalamazoo
Land Manager: Western Michigan University
Pass/Entry Fee: None

Fig. 21 Photograph of Asylum Lake Trail in Kalamazoo, MI
Fig. 22 Restroom Signage Axonometric Diagram to Show Elements
Fig. 23 Restroom Signage Elements for Effective Signage

24. TransitBy Jonathan Paul Katz (Guest Contributor) February 25, 2020

Text on signs should be large enough to accommodate people with visual and cognitive disabilities.
INTERLOCHEN STATE PARK
PRECEDENT STUDY

SITE CONTEXT
Located just 15 miles southwest of Traverse City, and approximately 277 miles north of Ann Arbor, Interlochen State Park is situated between two well-known fishing and swimming lakes: Green Lake and Duck Lake. The park is home to over 1,000 acres, and it is a popular destination for paddling, fishing, swimming, and much more (27).

NOTED ACCESSIBLE FEATURES:
- Paddling
- Bathroom Facilities
- Beach Wheelchair

OTHER FEATURES:
- Picnic Tables
- Cabin and Tent Lots

Located just 15 miles southwest of Traverse City, and approximately 187 acres, Interlochen State Park is situated between two well-known fishing and swimming lakes: Green Lake and Duck Lake. The park is home to camping, paddling, fishing, swimming and much more (27).

There are many campsites just like this one that provide beautiful scenery, recreational activities, and many have elements of accessibility. This means that while it is possible for physically disabled people to go camping, there are very few truly accessible experiences that allow for a stress-free travel experience (27).

REFLECTION

Fig. 24 Interlochen Map Pulling out Accessible and Inaccessible Locations

Fig. 25 Interlochen Accessible Kayak Launch

Fig. 26 Interlochen Campsite, Forest and Lake


BELIEVED HOTEL PLAYA MUJERES, MEXICO
PRECEDENT STUDY

SITE CONTEXT
Beloved Playa Mujeres sits perched on a pristine white sand beach overlooking the island of Isla Mujeres on the horizon. Wellness surrounds you with stunning coastal views in a serene natural paradise, and with in-out walks you’ll enjoy a truly unforgettable experience. This means that while it is possible to physically disabled people to go camping, there are very few truly accessible experiences that allow for a stress-free travel experience (27).

NOTED ACCESSIBLE FEATURES:
- Accessible Pool
- Ramps
- Hotel Rooms
- Fully Accessible Beach

OTHER FEATURES:
- Picnic Tables
- Cabin and Tent Lots

This resort features accessible elements such as wheelchair ramps, a wheelchair accessible pool, and accessible hotel rooms upon request. These are elements that need to be considered in a truly accessible wellness retreat and are great examples of accessible design being luxurious. The features are subtle and remain beautiful (28).

REFLECTION

Fig. 27 Beloved Hotel Playa Mujeres Resort Map

Fig. 28 Beloved Isla Mujeres Pool

Fig. 29 Beloved Isla Mujeres Beach Ramp


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Fig. 29 Beloved Isla Mujeres Beach Ramp


This resort features accessible elements such as wheelchair ramps, a wheelchair accessible pool, and accessible hotel rooms upon request. These are elements that need to be considered in a truly accessible wellness retreat and are great examples of accessible design being luxurious. The features are subtle and remain beautiful (28).
Spending quality time in nature has been proven to improve overall wellbeing. The voices of accessibility advocates make it clear that the measures are not yet effective enough to provide the access that is necessary for wellbeing and life balance. There are countless barriers that prevent those with disabilities from accessing nature. It is the goal of this Accessible Wellness Retreat to set new standards for improved access to recreation and nature. Implementing elements of research from the impacts of blue and green spaces and Eco-Therapy strategies, and all that we know about the barriers to nature, these recreational and relaxation amenities were chosen with the idea that each one of them would be beneficial for mental, emotional, and social wellbeing.
IMPLEMENTING SAFE RECREATIONAL SPACES
IMPLEMENTING RECREATIONAL ACTIVITIES THAT ARE INCLUSIVE FOR ALL WITH SAFE ADAPTIVE PRACTICES

MEDITATION

WHAT ARE THE HEALTH BENEFITS?

Meditation provides triple benefits to mental health which has been proven to be a lengthy attention span. One study found that people who listened to a meditation tape experienced improved attention and awareness while completing a task compared with those in a control group. Meditation has also shown to reduce symptoms of anxiety and depression, as well as improve memory and, overall, physical and mental health (37). There are certain practices for meditation such as the "tau", where a person would sit at a cross-legged position on a floor. However, it is then even more important in meditation that a person would sit in a position that is comfortable, relaxing, and that breathing is not difficult (36).

HOW WILL IT BE MADE ACCESSIBLE?

Meditation is generally accessible to everyone. It can be done from virtually any location and requires little to no equipment. There are certain practices for meditation such as the "tau", where a person would sit at a cross-legged position on a floor. However, it is then even more important in meditation that a person would sit in a position that is comfortable, relaxing, and that breathing is not difficult (36).

SWIMMING

WHAT ARE THE HEALTH BENEFITS?

Swimming builds endurance, muscle strength and cardiovascular fitness. It can also be a relaxing and powerful form of exercise. One of the most important ways that swimming is beneficial is that it is a low impact form of exercise for people who experience pain in their bodies but still want to exercise (31).

HOW WILL IT BE MADE ACCESSIBLE?

Accessible swimming pools are essential for the practice of this sport as some users need extra support to move into the water. Often times they do not have the mobility or the equipment to make it possible for them to enter the water. Some adaptations can be made to ensure that the pool is accessible such as an arm board or a floating bench. Additionally, fitness belts and other equipment provided with pool structures can enjoins, walls and stairs. And, swimmers with blindness or visual impairment are warned of the distance they are from the wall so that they can make turns with accuracy and safety (33).

KAYAKING & CANOEING

WHAT ARE THE HEALTH BENEFITS?

Kayaking provides physical activity. Improved cardiovascular fitness. Increased muscle strength, particularly in the back, arms, shoulders and chest, from moving the paddle. Increased torso and leg strength, as the strength to power a canoe or kayak comes mainly from raising the torso and applying pressure with your leg (31).

HOW WILL IT BE MADE ACCESSIBLE?

Accessible kayak launches will make it possible for people with more intense mobility issues to participate in kayaking. Some of the features that make the best launches ADA-accessible is a 1:12-slope aluminum gangway adjacent to composite-decking boat slide, handrail along the perimeter, 16” high loading bollards, and 12” high loading bollards (34).

GARDENING

WHAT ARE THE HEALTH BENEFITS?

Gardening combines physical activity with exposure to nature and sunlight. Sunlight lowers blood pressure as well as increasing vitamin D levels in the body. The summer season also studies being done that gardening or "horticultural therapy" may be showing promise for improving memory and improving dementia. Gardening also provides a chance to use a moss-covered bag or sandbags in an outdoor setting. There are also studies that gardening or "horticultural therapy" may be showing promise for improving memory and improving dementia. Gardening also provides a chance to use a moss-covered bag or sandbags in an outdoor setting.

HOW WILL IT BE MADE ACCESSIBLE?

Many communities have parks that make acing the space difficult. Not every individual has access to the space or to the equipment, but instead, it can be made available in a space that can be used for a general health benefit (37). There is a wide range of trails that vary in difficulty and length. This makes hiking generally accessible. The most important part of understanding this is that ease of trail difficulty is providing hikers with information so that they can expect to make decisions regarding which trails are best for them (38).

Hiking provides a whole-body workout that can help strengthen muscles and bones, improve heart health, and improve balance (35). Hiking also provides unique opportunities to build stronger relationships. Hiking can often require planning and problem solving working together to navigate a varied terrain. How another decision to take part in your trail (38).

HOW WILL IT BE MADE ACCESSIBLE?

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BOATERS

WHAT ARE THE HEALTH BENEFITS?

Boaters can experience reduced stress and increased relaxation with the scent of water and the sound of waves. Sunlight lowers blood pressure and can reduce anger and stress. Boating also provides unique opportunities to build stronger relationships. Boaters can often require planning and problem solving working together to navigate a varied terrain. How another decision to take part in your boat (38).

HOW WILL IT BE MADE ACCESSIBLE?

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Presque Isle Park is one of the most visited sites in Marquette County. With ease of access, this 325-acre forested peninsula extends into the water offering visitors unparalleled views of Lake Superior. The park’s east end sits high atop sandstone cliffs carving in and out of the peninsula. Miles of hiking trails, including wheelchair accessible trails, stretch through Presque Isle’s central forest. The area possesses countless species of native plants, mammals, fish and birds. There is truly something for every nature lover in Presque Isle park (40).
SITE CONTEXT

PRESQUE ISLE AND MARQUETTE, MI CULTURAL AND SITE DETAILS

3D VIEW OF PRESQUE PENINSULA | LOCATIONS OF EXISTING SITES

PRESQUE ISLE BOG WALK
Below is a list of common species of Plants, Animals, and Fungi found on Presque Isle Bog Walk Trail. This index is built using observations from everyday people like you noting species in the Natural Atlas app when out on hikes (40).

PRESQUE ISLE PARK
Presque Isle Park is a 323-acre public park located in Marquette, Michigan, United States. The park is northwest of Marquette itself on an oval-shaped peninsula reaching out into Lake Superior, called the 'Island' locally (40).

PRESQUE ISLE COMMUNITY GARDEN
The Presque Isle Community Garden provides a site for promoting organic gardening, healthy eating, and education; while strengthening ties in our community. Volunteer opportunities available. Educational programs to serve the community. Share in the Harvest Festival. Sponsor youth gardening (40).

PRESQUE ISLE BOG WALK
PRESQUE ISLE PAVILION
PRESQUE ISLE COMMUNITY GARDEN
PRESQUE ISLE POPULATION STATISTICS

OVERALL POPULATION: 20,394
65 YEARS AND OLDER: 15.8% | WITH A DISABILITY, UNDER 65: 8.2% | VETERANS: 1,256

DAY IN THE LIFE DIAGRAM | WELLNESS ACTIVITIES

This day in the life diagram displays the diversity of users, and how each of them could use the spaces for their own wellness, and to experience nature in a barrier-free way.

COLOR KEY

Spaces that support occupational wellbeing
Spaces that support emotional wellbeing
Spaces that support physical wellbeing
Spaces that support social wellbeing

DAY IN THE LIFE EXPLAINED
This day in the life diagram displays the diversity of users, and how each of them could use the spaces for their own wellness, and to experience nature in a barrier-free way.

USER CONTEXT

PROGRAMMING

COLOR KEY

Spaces that support occupational wellbeing
Spaces that support emotional wellbeing
Spaces that support physical wellbeing
Spaces that support social wellbeing

DAY IN THE LIFE EXPLAINED
This day in the life diagram displays the diversity of users, and how each of them could use the spaces for their own wellness, and to experience nature in a barrier-free way.
NATURE INSPIRED BUILDING SHAPE

Taking inspiration from the unique natural rock formations in the Upper Peninsula of Michigan, the main communal spaces will reflect the environment’s organic beauty and blend the site more seamlessly into nature.

DAPPLED LIGHT

Reflecting the forest surrounding the site, bringing in dappled light through the design of the walls and ceilings will allow for an effortless feeling of nature while indoors.

CONNECTING KEY SPACES

While much of the wellness retreat will require walks around the site along accessible pathways, certain key spaces would benefit from being connected through indoor "bridges" that would not disrupt the natural environment below them, allowing for both ease of travel and seamless connection through nature.

INTUITIVE WAYFINDING

Wayfinding is a vital part of making the accessible wellness retreat safe and relaxing. Implementing wayfinding that reflects and integrates the surrounding nature allows for ease of use without disrupting the natural beauty of the environment.

DRAWING INSPIRATION FROM LANDSCAPE.

PROGRAMMING

ACCESSIBLE WELLNESS RETREAT | PRELIMINARY SITE PLAN

COLOR KEY

SYMBOL KEY

Flat Stone Paver Path
Boardwalk
Concrete Paved Path
Woodback

TOPOGRAPHICAL MAP | SITE LOCATION SPECIFIED

Fig. 40 Topographical Map
Fig. 41 Preliminary Site Map
Fig. 42 Palms Book State Park
Fig. 43 Hot Springs Inspired Restaurant
Fig. 44 Rock Formation
Fig. 45 Curved Glass Cloud Chapel
Fig. 46 Mackinac Bridge
Fig. 47 Nature Preserving Interior Bridge
Fig. 48 Sun Shining Through Trees
Fig. 49 Spa Hallway with Dappled Light

SITE DIAGRAM

PRELIMINARY

Flat Stone Paver Path
Boardwalk
Concrete Paved Path
Woodback

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31
CLIMATE

Upper Peninsula Peak Tourism

Summer is the best time to visit Michigan's Upper Peninsula, namely July and August. June and September are also good months, though less safe; the Upper Peninsula weather is extremely severe, with a high possibility of snow and very harsh meteorological conditions even during Spring and Autumn (32).

CLIMATE IMPACT

The weather on Presque Isle is best during the summer and early fall months. The weather tends to be quite severe in winter and even spring months. Given the aggressive nature of the Presque Isle climate at certain parts of the year, it would be best to focus the design and planning of the recreational wellness center on the more mild seasons. This means that the wellness center would be closed during the park’s highest snowfall conditions between December and March.

YEAR-ROUND CLIMATE | PRESQUE ISLE PENNINSULA

AVERAGE MONTHLY SNOWFALL AT PRESQUE ISLE

UPPER PENINSULA PEAK TOURISM

BIRDS-EYE VIEW OF PRESQUE ISLE

GEOLOGIC CONDITIONS

The geologic conditions on Presque Isle are complex, consisting mostly of sandstone and gravel. These conditions would be fairly tricky for use for people with physical disabilities. To create safer conditions, and expand the area for use, it would be best to use pathways with finely crushed stone, soil stabilizers, while implementing minimal concrete pathways where necessary. Secondary to all of these physical land considerations, off-road wheelchairs will be provided (43).

SLOPE CONSIDERATIONS

Steep slopes greater than ten percent present severe difficulties for development, likely to cause issues with soil movement and slides. To avoid this, it is best to develop only areas with less than 10 percent elevation. When designing running slopes, which may be necessary in some areas for exercise, 5 percent elevation with shorter segments to accommodate resting intervals may be best. The maximum length of segments will depend on the slope percentage (44).

BUILDING A FIRM AND STABLE SURFACE

A firm surface does not always have to mean using concrete and asphalt. There are many other alternatives that allow for maintaining a natural look and feel to the outdoor space. Sands can be treated with stabilizers without drastically changing appearance. There are also clay and other materials that can be used to create a stable surface including crushed rock, hard rock, and overblown material that is compacted to 3-4 inch layers. (44).


## Spatial Requirements: Presque Isle Oasis

### Visitors Center
- **Occupancy classification:** Assembly group A-3
- **Soft approx.:** 2,000 - 3,000
- **Max capacity:**
- **Approximate space dimensions:**
  - Lobby: 900 sq ft
  - Equipment storage: 500 sq ft
  - Visitors desk: 300 sq ft
  - Washing center: 200 - 300 sq ft
- **Accessibility Features:**
  - Open floor plan
  - Sufficient equipment storage
  - Effective lighting and signage within

### Yoga & Meditation Studio
- **Occupancy classification:** Residential group R-3
- **Sqft:** 25 x 30 = 600
- **Max capacity:** 20 people
- **Accessibility Features:**
  - Open floor plan
  - Sufficient equipment storage

### Pool House
- **Occupancy classification:** Residential group R-3
- **Sqft: approx. 753
- **Max capacity:**
- **Approximate space dimensions:**
  - Entryway: 9 x 4
  - Kitchen: 10 x 4
  - Bedrooms (2): 10 x 10
  - Living room: 16 x 17
  - Porch: wrap-around
- **Accessibility Features:**
  - Wheelchair accessible
  - Transfer systems

### Restrooms
- **Occupancy classification:** Residential group R-3
- **Sqft:** approx. 451
- **Capacity:** 2-3 people
- **Number of restrooms:** 6

### Parking Lot
- **Type:** Single occupancy
- **Number of parking spaces:** 6

### Gardening Center
- **Occupancy classification:** Assembly group A-3
- **Sqft:** 600
- **Number of gardens:** 2
- **Max capacity:** 15-20 people

### Bonfire Pits
- **Capacity:** 9-10 people per fire pit
- **Number of fire pits:** 4-5
- **Size:** 44” inside diameter
- **Egress:** 44” x 44” on all sides of fire pit

### Plumbing Requirements
- 1 bathroom per dwelling unit

### Code Considerations:
- **Small Cabin**
  - **Occupancy classification:** Residential group R-3
  - **Sqft:** approx. 753
  - **Max capacity:**
  - **Approximate space dimensions:**
    - Entryway: 9 x 4
    - Kitchen: 10 x 4
    - Bedrooms (2): 10 x 10
    - Living room: 16 x 17
    - Porch: wrap-around
- **Accessibility Features:**
  - Wheelchair accessible
  - Transfer systems

- **Large Cabin**
  - **Occupancy classification:** Residential group R-3
  - **Overall dimensions:** 2,000-3,000 sq ft
  - **Max capacity:**
  - **Approximate space dimensions:**
    - Lobby: 150 sq ft
    - Equipment storage: 100 sq ft
    - Wheelchair storage: 200 sq ft
    - Employee break: 150 sq ft
    - Visitors desk: 80 sq ft
    - Gardening center: 200-300 sq ft
  - **Plumbing Requirements:** 1 restroom, 1 drinking fountain required

### Code Considerations:
- **Building:**
  - **Occupancy classification:** Residential group R-3
  - **Max capacity:**
  - **Approximate space dimensions:**
    - Visitors desk: 80 sq ft
    - Gardening center: 200-300 sq ft
  - **Accessibility Features:**
    - Transfer systems
    - Elevators

### Code Considerations:
- **Overall:**
  - **Occupancy classification:** Residential group R-3
  - **Max capacity:**
  - **Approximate space dimensions:**
    - Visitors desk: 80 sq ft
    - Gardening center: 200-300 sq ft
  - **Accessibility Features:**
    - Transfer systems
    - Elevators
**FUNCTIONALITY OF BONFIRE PITS**

Bonfire pits are great places to relax and connect with those around us. Whether they are people close to us or not. The focus with this space is to create a safe and accommodating environment to enjoy at any time of the day. Whether it be to cook food or just enjoy the fire, there is room for everyone.

**ELEMENTS OF SAFETY**
- concrete paved walkway
- wayfinding lighting
- wayfinding signage

**FUNCTIONALITY OF BONFIRE PITS**
- Capacity: 9-10 people per fire pit
- Number of bonfire pits: 4-5
- Size: 48” inside diameter
- Egress: 48” x 48” on all sides of a fire pit

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**ELEMENTS OF CONNECTIVITY**
- inviting seating and allotted wheelchair space

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**FUNCTIONALITY OF BONFIRE PITS**
- Size: 44” inside diameter
- Egress: 48” x 48” on all sides of a fire pit

**Dimensions of Bonfire Pits**: to be determined

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**FUNCTIONALITY OF GARDENING CENTER**

With direct adjacency to the visitor’s center, this gardening center will be a place for guests to interact with one another and nature even on days the weather is not conducive to hiking or having bonfires. The garden will host many different species of plants in raised plant boxes that make it easy for anyone in a wheelchair to easily inspect or care for the plants if they choose. Taking care of a garden on one’s own or as part of a community has proven to be positive for mental health and is included as a part of the visitor’s center to be another resource for community connection.

**TYPE OF GARDENING**

The type of garden featured is known as a “therapy garden.” Simple plants such as herbs, fruits and vegetables, and flowers will be planted in an effort to make the gardening more interactive as guests will be encouraged to harvest the food and flowers grown.

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**ELEMENTS OF SAFETY**
- concrete paved walkway
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INITIAL INTERVENTION

The cabins and other recreational spaces which are spread throughout the map are connected with paved pathways which are wide enough for an even surface to operate a wheelchair, and help to eliminate water pooling in the pathways.

SECONDARY INTERVENTION

To accommodate for those who may still need extra support in the rough terrain of the site, all-terrain wheelchairs will be provided, rented out of the visitors center, with safe and secure storage for personal wheelchairs.
Gardening combines physical activity with exposure to nature and sunlight. Sunlight lowers blood pressure as well as increasing vitamin D levels in the summer. There are studies being done that gardening or “horticultural therapy” may be showing promise for improving memory and even dementia. Gardening is also proven to be a mood booster and can increase self-esteem and lower anxiety. The gardening center is made accessible through custom-made wheelchair accessible garden beds, that allow users to comfortably gather no matter their physical ability.

Fishing is an activity that allows for users to connect with nature in a peaceful way either alone or with others. Fishing is generally already accessible, occasionally accompanied with equipment for people with physical disabilities that pertain to the use of their arms. This fishing dock features an accessible slope for stable ground surrounding a more rugged exterior environment. This allows users to participate in fishing the pond with ease.

Kayaking and canoeing allows for improved cardiovascular fitness, increased muscle strength, particularly in the back, arms, shoulders, and chest, from moving the paddle. It also is a great way for people to stay active and have fun. Kayaking and canoeing can be adapted by providing a safe entry to the lakeside, and accessible kayak and canoe accessible launch that allows for users to safely and effectively exit their wheelchairs and enter a canoe or kayak.

There are many benefits to sitting around a crackling fire including reduced blood pressure. Fire also helps us connect and helps to facilitate and support conversation with others. Bonfires help to create a relaxed environment that allows friends and family to create positive conversation and find common interests. This bonfire pit is made readily and accessible to all users, to provide further opportunity for connection while providing an even surface for circulation and essential wayfinding lighting for users.

RECREATIONAL & RELAXATION
IMPLEMENTED SITE ELEMENTS MADE ACCESSIBLE FOR ALL

ACCESSIBILITY CHECKLIST
STANDARDS THROUGHOUT INTERIOR AND EXTERIOR SITE ELEMENTS

PURPOSE OF CHECKLIST
This list will serve as a checklist for every interior space to assure that they are not only accessible, but thoughtfully designed for people with physical disabilities. Checking every box will ensure that every need is met.

GARDEN CENTER

FISHING POND

KAYAKING & CANOEING

BONFIRE PIT

ACCESSIBILITY CHECKLIST
- Designated soft surfaces to gather
- Wheelchair accessible tables for gathering
- Accessible informational signage for group activities

PHYSICAL WELLBEING
- Signage for safety while traveling on the site
- Safe slope distances
- Flat Guerrilla for wheelchair accessibility

EMOTIONAL WELLBEING
- Safe gathering spaces
- Seamless doorways for indoor/outdoor access
- Nature-inspired materiality
- Sensory-aided supported spaces

SOCIAL WELLBEING
- Designated soft surfaces to gather
- Wheelchair accessible tables for gathering
- Accessible informational signage for group activities

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GARDEN CENTER

FISHING POND

KAYAKING & CANOEING

BONFIRE PIT
A-FRAME CABINS

EXPLODED AXONOMETRIC DIAGRAM
CABIN ACCESSIBILITY FEATURES HIGHLIGHTED

This axonometric diagram is meant to highlight the constriction of the single-story design while also calling out the accessibility of the space.

1. OPEN COUNTERTOPS AND SINKS FOR KNEE SPACE
2. APPROPRIATE HEIGHT FURNITURE
3. DRESSING BENCH
4. COLLAPSABLE FRONT DOORS
5. DECK AND WHEELCHAIR RAMP
6. APPROPRIATE FLOOR SPACE
7. SEAMLESS ENTRY SHOWER
In designing these cabins, it was important to create a unique space that would allow anyone regardless of their physical abilities to relax, unwind, and feel connected with nature as well as the people around them. The single-story layout contains height appropriate countertops and sinks for wheelchair use and an allowance for leg room below. The furniture throughout the space is at the appropriate height for someone with mobility issues to easily get in and out of, as well as being distanced enough for wheelchair users to maneuver around. Pocket doors are used in place of regular swinging doors to create ease of use for wheelchair users. The doors along the front facade are also collapsible which serves a dual purpose of creating an effective indoor/outdoor space as well as making it simpler for wheelchair users to come in and out of the cabins. The space is designed with a combination of neutral and relaxing tones as well as an incorporation of colors you would not typically find in a cabin to create a sense of personality and uniqueness to the space. The use of natural light is combined with the use of materials with a natural look and feel to help achieve a sense of calm and relaxation.

BREAKDOWN OF SPACE
FUNCTIONALITY OF CABINS

CODE CONSIDERATIONS:
SMALL CABIN
Occupancy classification: residential group r-3
Sqft: approx. 451
Capacity: 2-3 people
Number of cabins: 6
Approximate space dimensions:
kitchen/dining: 13 x 10
bathroom: 9 x 11
bedroom: 10 x 11
living room: 16 x 17
porch: wrap around
Plumbing requirements: 1 bathroom per dwelling unit

CODE CONSIDERATIONS:
LARGE CABIN
Occupancy classification: residential group r-3
Sqft: approx 753
Capacity: 4-5 people
Number of cabins: 5
Approximate space dimensions:
entryway: 9 x 4
kitchen: 10 x 9
bathroom: 7‘4” x 12
bedrooms (2): 10 x 11
living room: 16 x 17
porch: wrap around
Plumbing requirements: 1 bathroom per dwelling unit

FUNCTIONALITY OF CABINS

RENDERED FLOOR PLAN
INTERIOR & EXTERIOR RENDERINGS

FLOOR PLAN KEY
1. KITCHEN
2. LIVING SPACE
3. HALLWAY
4. BATHROOM
5. BEDROOM
6. BEDROOM

PROGRAMMING INFORMATION FOR ALL CABINS ON SITE

SECTION & EXTERIOR RENDERINGS

RENDERED FLOOR PLAN
INTERIOR & EXTERIOR RENDERINGS

FLOOR PLAN KEY
1. KITCHEN
2. LIVING SPACE
3. HALLWAY
4. BATHROOM
5. BEDROOM
6. BEDROOM
INSPIRATION BOARD FOR A-FRAME CABINS

MATERIAL BOARD FOR A-FRAME CABINS

MATERIALITY IMPLEMENTED FOR THE A-FRAME CABINS
The A-Frame design is typically two floors, and not at all accessible to people with physical mobility issues. My goal in choosing the A-Frame was to alter the traditional design for my project to show that even traditionally inaccessible designs could be altered to fit the needs of everyone, and still maintain their beauty and uniqueness. Maintaining the A-frame allows for more natural light to shine through, and for the high ceilings to create a more airy space, even without the second level the space accommodates 2 bedrooms, a bathroom, and sufficient living and circulation space.
In designing these cabins, it was important to create a unique space that would allow anyone regardless of their physical abilities to relax, unwind, and feel connected with nature as well as the people around them.

The single-story layout contains height-appropriate countertops and sinks for wheelchair use and an allowance for leg room below. The furniture throughout the space is at the appropriate height for someone with mobility issues to easily get in and out of as well as being distanced enough for wheelchair users to maneuver around. Pocket doors are used in place of regular swinging doors to create ease of use for wheelchair users.

The doors along the front facade are also collapsible which serves a dual purpose of creating an effective indoor/outdoor space as well as making it simple for wheelchair users to come in and out of the cabin. The space is designed with a combination of neutral and relaxing tones as well as an incorporation of colors you would not typically find in a cabin to create a sense of personality and uniqueness to the space. The use of natural light in combination with the use of materials with a natural look and feel helps to achieve a sense of calm and relaxation.
VISITORS CENTER

FUNCTIONALITY OF VISITORS CENTER

The Visitors Center will serve as a space that emphasizes community. It will have set classes such as yoga and gardening, as well as space that encourages people to connect with those they know and those they do not on their own time. Visually, the space will emphasize the outer views of Lake Superior as well as the surrounding forest. The architecture of the building will encourage indoor/outdoor use of the space.

CODE INFORMATION

Occupancy classification: assembly group A-3

Sqft approx: 2,000–3,000

Max capacity:

Egress calculation: 0.3 sqft

approximate space dimensions:

Lobby: 150 sqft

Equipment storage: 100 sqft

Wheelchair storage: 200 sqft

Employee break: 150 sqft

Visitors desk: 80 sqft

Gardening center: 200–300 sqft

Plumbing Requirements: 1 restroom required, 1 drinking fountain required.

BREKADOWN OF SPACE

CODE CONSIDERATIONS AND ADJACENCIES FOR VISITORS CENTER

COMMUNITY GATHERING 400 sqft

YOGA STUDIO 200 SQFT

GARDENING CENTER 200 SQFT

LOBBY 150 SQFT

BATHROOMS 80 SQFT

EQUIPMENT STORAGE 300 SQFT

WHEELCHAIR STORAGE 200 SQFT

VISITORS DESK 80 SQFT

BREAK ROOM 150 SQFT

SECONDARY ADJACENCY

EMPLOYEE

CONCRETE PAVED PATH

GUEST

EMPLOYEE & GUEST

VISITORS CENTER
INSPIRATION BOARD
INSPIRATION FOR THE COLOR & MATERIALITY OF THE VISITORS CENTER

MATERIAL BOARD
MATERIALITY IMPLEMENTED FOR THE VISITORS CENTER
This floor plan emphasizes connection to nature through: automatic sliding doors to exterior patios in three different locations, and an interior gardening facility that allows guests to be fully immersed in nature. The floor plan also features flexible gathering spaces throughout for gathering with others, and relaxing on their own after spending the day enjoying Presque Isle.

- **SOFT SEATING COVERSATION AREA**: Curved sofas are placed around the floor to create a cozy meeting space for users to gather around the fire.
- **GARDENING CENTER**: Gardening center is included inside the visitors center to provide another connection to nature in the interior environment. The space is protected with curved glass walls and automatic sliding door.
- **COMMUNITY TABLES**: Community tables provide a space for users to connect with others in any number of ways; caused in connection with the cafe.
- **EMPLOYEE LOUNGE**: Space provided for employees of Presque Isle Oasis to store their belongings and take breaks.
- **WHEELCHAIR STORAGE**: Safe and effective wheelchair storage for personal wheelchairs as well as rentable all-terrain wheelchairs.
- **CAFE**: Small cafe provided with self check-out for users to grab a snack while they spend time in the visitors center.
- **RECEPTION AREA**: Curved reception desk with provisions for wheelchair users as well as non-wheelchair users. The organic shape blends well into the space, and is central to the floor plan, obvious to users as they enter the space.
- **YOGA STUDIO**: Studio is provided for small classes in which users can sign up to take a class with a trained professional that is an expert in inclusive yoga practices.
- **RECEPTION AREA**: Curved reception desk with provisions for wheelchair users as well as non-wheelchair users. The organic shape blends well into the space, and is central to the floor plan, obvious to users as they enter the space.
- **CAFÉ SEATING**: Small glass tables and chairs line the front windows, allowing for users to enjoy the exterior view from inside the visitors center if they choose.
- **WHEELCHAIR STORAGE**: Safe and effective wheelchair storage for personal wheelchairs as well as rentable all-terrain wheelchairs.
- **RECEPTION AREA**: Curved reception desk with provisions for wheelchair users as well as non-wheelchair users. The organic shape blends well into the space, and is central to the floor plan, obvious to users as they enter the space.
- **CAFÉ SEATING**: Small glass tables and chairs line the front windows, allowing for users to enjoy the exterior view from inside the visitors center if they choose.
ACCESSIBILITY-INCLUSIVE FURNITURE PIECES

LOUNGE SEATING
Comfortable chair for users to relax next to the window.

SIDE TABLE
Marble side table to be placed next to lounge seating for users convenience.

CAFE SEATING
Fully upholstered seating at a 19" seat height that is light and easily moveable for flexible use.

CAFE SEATING
Wooden chair with upholstered seat at a 19" seat height that is light and easily moveable for flexible use.

LARGE COMMUNITY TABLE
Large community table implemented to encourage large group gathering with other users.

SMALL CAFE TABLE
Simple cafe for individual or small group seating implemented to enhance space for users individual reflection space.

RECEPTION DESK
Organically shaped reception desk that blends seamlessly into the space. Designed for accessibility with appropriate height adjustments for wheelchair users.

CURVED SOFA
Curved sectional with 19" seat height that provides a comfortable and soft space for users to enjoy the nearby fireplace with other users.

FURNITURE DETAILS EXPLAINED

1. LOUNGE SEATING
2. SIDE TABLE
3. CAFE SEATING
4. CAFE SEATING
5. LARGE COMMUNITY TABLE
6. SMALL CAFE TABLE
7. RECEPTION DESK
8. CURVED SOFA
COMMUNITY GATHERING SPACE ELEMENTS

Soft seating throughout the space as well as a floor to ceiling fireplace allows for a cozy conversation area, complete with a space dividing plant stand for separation from the automatic exterior sliding doors.

Fig. 83 Cafe and Community Details

Fig. 84 Community Soft Seating and Fireplace
CAFE
YOGA STUDIO
GARDEN CENTER
BACK PATIO
CUSTOM ACCESSIBILITY ELEMENTS

RETOURM SIGNAGE

DIRECTORY SIGNAGE

SIGNAGE CONTEXT
By creating custom signage, the site becomes instantly more cohesive and easier to navigate. With a campus of buildings and an emphasis on wayfinding and providing information for safe navigation, these signage examples provide an idea of what the signage might look like across the entire site, providing helpful information throughout.
These customized planter boxes allow for easy access for people in wheelchairs or mobility issues to garden with comfort and ease. They are created to blend seamlessly into the space and provide a rustic look. The boxes being customized also allows for flexibility and for the planter boxes to be moved when necessary to allow for more flexible community gathering spaces.
Reflecting on what I have learned from my project over the past year when I first selected my topic, I had chosen it based on a fundamental belief of my own that nature is healing, and that everyone should have access to interior as well as exterior environments that support their wellbeing. The main takeaway I have from the research and design of this project is how much more room there is for designers to put accessibility at the forefront of their designs without sacrificing luxury and comfort. “As designers have begun to understand the vast — and growing — demand for accessible living, the concept has evolved from a practical matter to a complex idea about beauty, equity and what it means to live well.” (Pingel, 2020). As design continues to evolve it is important for us to consider that designing for everyone creates beautiful and functional spaces with longevity for users.

For my independent study in my Senior year I completed a website to accompany my thesis project. Scan the QR Code or click the link to explore the Presque Isle Site map and its various elements.

https://jjf8131.wixsite.com/makingnatureacc
Fig. 1 Morell Jenna. Presque Isle Park Map. 2022. Digital Graphic. Western Michigan University.


Fig. 4 Morell Jenna. Displaying Correlation Between Disability and Serious Health Conditions. 2022. Digital Graphic. Western Michigan University.

Fig. 5 Morell Jenna. Artistic Representation of Layers of the Earth. 2022. Digital Graphic. Western Michigan University.

Fig. 6 Morell Jenna. Representation of Those with Visible Disabilities. 2022. Digital Graphic. Western Michigan University.

Fig. 7 Morell Jenna. Benefits of Outdoor Exercise. 2022. Digital Graphic. Western Michigan University.

Fig. 8 Morell Jenna. Representation of the disability community population in the U.S. 2022. Digital Graphic. Western Michigan University.

Fig. 9 Morell Jenna. Displaying Correlation Between Disability and Serious Health Conditions. 2022. Digital Graphic. Western Michigan University.

Fig. 10 Green Space in a Park. 50 Beach Quotes to Instantly Put You at Ease. 2022. Photograph. Good Housekeeping.

Fig. 11 Blue Space on the Beach. 2022. Photograph. Unsplash.

Fig. 12 Mi Pham. Little Girl Playing in the Sand. 2022. Photograph. Unsplash.

Fig. 13 Morell Jenna. Elements of Eco Therapy. 2022. Digital Graphic. Western Michigan University.


Fig. 15 Photography Portrait of Siren Nagakyrie. Siren Nagakyrie. 2022. Photograph. washingtontrails.org.

Fig. 16 Morell Jenna. Map of Battle Creek. Pulling out locations and the Accessibility. 2022. Digital Graphic. Western Michigan University.

Fig. 17 GRIT Freedom Chair with Special Features. 2022. Photograph. GRIT. https://www.gogrit.us/

Fig. 18 GRIT Customer Success Stories. Photograph. GRIT. https://www.gogrit.us/

Fig. 19 Morell Jenna. Interlochen Map Pulling out Accessible and Inaccessible Locations. 2022. Digital Graphic. Western Michigan University.

Fig. 20 Morell Jenna. Symbolic Representation of Siren’s Spoon Method. 2022. Digital Graphic. Western Michigan University.

Fig. 21 Morell Jenna. Photograph of Asylum Lake Trail in Kalamazoo, MI. 2022. Photograph. Western Michigan University.

Fig. 22 Morell Jenna. Restroom Signage Elements for Effective Signage. 2022. Digital Graphic. Western Michigan University.

Fig. 23 Morell Jenna. Restroom Signage Axonometric Diagram to Show Elements. 2022. Digital Graphic. Western Michigan University.

Fig. 24 Morell Jenna. Interlochen Map Pulling out Accessible and Inaccessible Locations. 2022. Digital Graphic. Western Michigan University.
Hello! My name is Jenna Morell and I am currently a fourth-year student at Western Michigan University in the Interior Design program. I am currently collecting research about the accessibility of interior and exterior environments, and their impacts on people’s mental health and wellbeing. My aim is to design a project that takes into careful consideration people with disabilities’ experiences and interactions with any and every aspect of their environments. My end goal for this project is to have collected as much detailed research as possible about how we can make nature more accessible, and how furthering this accessibility in outdoor spaces could have positive impacts on people’s mental health. After this research has been collected, I plan to design a wellness retreat to bring people closer to nature, using the research I have collected. If this project speaks to you, or anyone you know, please use the QR code on this slip of paper to take the online survey to help further my research!

JENNA MORELL
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QR CODE FOR ACCESSIBILITY SURVEY
CREATING CRITERIA

USING THE UNITED STATES ACCESS BOARDS GUIDE FOR THE BUILT ENVIRONMENT

MEASURE THE STABILITY OF THE GROUND

Using a rotational penetrometer to measure the stability of the ground

CLEAR TREAD WIDTH

Clear tread width (minimum of 36 inches) maintained for the entire length of the trail may be reduced by barriers. Where gates and barriers require turns, leave users room to make 90-degree and 180-degree turns.

LIMIT HEIGHT OF TREAD OBSTACLES

Where tread width is less than 50 inches, passing spaces must be provided in intervals of no more than 1,000 feet. Consider signage letting users know when the last opportunity to turn around is of passing space is more than 60 x 60.

TECHNICAL REQUIREMENTS FOR OPERABLE PARTS

(maps, brochures, free envelopes)
Clear ground space must be 36” by 48” for bile
Bike must be located a minimum of 7” and max of 48” above the ground surface.

TRAILHEAD INFORMATION AND SIGNS

Limit height of tread-obstacles
When trail is constructed of concrete, asphalt, or boards, tread obstacles cannot exceed 1 1/2 inch height.
When trail is constructed of other materials, the height limit is 2 inches.
Where possible, separate tread obstacles by at least 48 inches to allow mobility devices to completely clear one obstacle before confronting another.

CROSS SLOPE

Some slopes are necessary to provide drainage
When the trail surface is constructed of concrete, asphalt, or boards, the cross slope must be no steeper than 1:48 (2 percent)
When trails are made of other materials, slopes no steeper than 1:20 (5 percent)

APPLYING CRITERIA

USING THE CRITERIA I HAVE COLLECTED ABOVE TO PERSONALLY EVALUATE THE ENVIRONMENTS AROUND ME

The past few weeks I have been visiting natural environments around Kalamazoo and taking note of their accessibility access. What things are these parks, beaches, trails etc. doing right vs. what could be improved? I take the criteria I have collected from the United Access Board to access these environments.

OBSERVATION OF ASYLUM LAKE

One of the environments I have begun to observe is Asylum lake which is a fairly large park with many different trails which is open to the public and free to access. Many accessible routes within the park including dirt and paved paths with wide walkways and minimal ground disturbances. M1 number one suggestion to improve the accessibility in asylum lake is to increase signage and include detailed information about what the trail is like as well as indications on the map for most accessible trails within the park.
WHAT LED YOU TO CREATE THE GRIT FREEDOM CHAIR?

- Got funding abroad
- Engineering class
- Really capable outdoors, easy to repair and maintain
- Heard from wheelchair users, closer look at us market
- Gap in the market for general all-terrain
- Site experience
- Need for lower pricepoint

ARE THERE ANY WAYS YOU ARE SEEING THE FREEDOM CHAIR USED THAT YOU COULD HAVE NEVER ANTICIPATED?

- Use for work – studies – really constraining (using for science)
- Studies rocks and minerals – out in the field for a long period of time
- Camino de Santiago – rough terrain in Spain
- Traveling

WHAT ARE THE REACTIONS YOU OFTEN GET WHEN YOU TELL THEM ABOUT THE FREEDOM CHAIR?

- Impressed that something like this exists
- New part in facilities wanting their own chairs for people to use
- Parks and recreation interested and they want out – sign up to use
- Works in different states – they have a couple chairs for people to borrow

APPENDIX

WHAT IS THE MAIN DEMOGRAPHIC YOU ARE SEEING USE THE CHAIR, IF ANY?

- Less of a pattern than she thought there would be
- Adventure seekers way less of a main demographic
- All-terrain more – health insurance – everyday adventure – play with grandchildren

GRIT INTERVIEW

VISITORS CENTER BLOCKING AND MASSING DIAGRAMS
This floor plan shows the accessible features of the plan, with furniture blocks sketched in to show how the space could be most efficiently laid out.

LARGE CABIN ISOMETRIC FLOOR PLAN

This exterior is shown to display how the outdoor elements will interact with the indoors. The stackable electric powered doors that lead out onto the wrap-around deck, and the skylights that bring in extra light through the ceiling.

3D RENDERED EXTERIOR

36" MIN CLEARANCE BETWEEN FURNITURE

STACKABLE ELECTRIC POWERED EXTERIOR DOORS

SEAMLESS ENTRY SHOWER

INTERIOR POCKET DOORS

LIVING ROOM

BATHROOM

KITCHEN

DECK

COLOR BLOCKED FLOOR PLAN

COLOR CODE:

BLUE

CREATIVE

GREEN

EQUIPMENT

ORANGE

FURNITURE

COLOR CODE

RENDERED PERSPECTIVES

KITCHEN

BATHROOM
SITE MASSING DIAGRAM

PRELIMINARY SITE MASSING DIAGRAM

This site massing diagram displays how the site will function. The visitors center will be at the center of the site, as guests are strongly encouraged to take advantage of its amenities while staying there, the visitors center will be the main focal point of the site. Surrounding the site will be the guest cabins and the pool house. The site will also feature bonfire pits and kayak launches, those will be located further from the main site.