Out from Under: Wellness Design and Alternative Therapies for Anxiety and Depression

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OUT FROM UNDER
Wellness Design and Alternative Therapies for Anxiety and Depression
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WELLNESS
The spaces we inhabit should support mental and physical wellbeing. With human-centered design and knowledge of how users interact with space, interiors can contribute to good health and positive user experiences.

NATURE
Interaction with nature is known to benefit mental and physical health. Design influenced by nature not only supports our wellbeing, but also provides us with a meaningful connection to the natural landscape and promotes sustainable behavior.

CREATIVITY
Design should not only be a product of creativity, but it should also have the ability to inspire those who interact with it. When we stay in touch with our imagination, our work reflects growth and discovery.

BALANCE
Interiors should reflect a sense of balance with the unification of beauty and function. Balanced design considers both the visual outcome and the user experience.

PLACE
Our work should strive to serve the community and respect the environment. With an understanding of context, including the landscape, history and local culture, design can benefit the environment we inhabit.

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METHODOLOGY
Research for this study includes therapies for anxiety and depression less commonly practiced in the U.S. and interviews with professionals who administer these services. Research also includes precedent studies of facilities that provide non-traditional therapy, like Espai CEL in Spain and Peter Zumthor’s Thermal Vals in Switzerland that offer thermal baths. Interviews with interior designers who specialize in facilities for mental health will help to inform the design-specific strategies applied in therapeutic spaces. Literature that supports the research includes articles from journals, such as Environment and Behavior, Journal of Interior Design, and Building and Environment, that analyze interior elements like lighting, form, and color specifically within the context of mental health and mood.

RESULTS
Wellness design promotes mental health, physical health, sustainability, and environmental responsibility. Therapeutic spaces can approach these ideals using active design that encourages movement, connection to a larger sense of community, individual comfort, bringing the outdoor environment indoors, and personalizable spaces that cultivate empowerment and instrumentality in users undergoing a time that can be vulnerable and stressful (Renzi, 2018). The project implements these principles while offering alternative therapies like flotation therapy, balneotherapy, physical meditation, and interaction with nature.

CONCLUSIONS
This research will support the exploration of a facility that combines design for mental health with alternative therapies. The project is not associated physically or conceptually with traditional treatment facilities, as they are not fit for every individual with anxiety or depression. With the adaptive reuse of a late-19th century Gothic Revival building, the project sits within a natural landscape near a river, close in proximity to the local city center. Non-traditional programming and wellness design strategies allow the space to serve as a restorative sanctuary, set apart from the stresses of day-to-day life.

MOTIVATION
Mental health refers to a person’s condition in terms of psychological and emotional wellbeing, and it is a topic that has seen increasing worldwide attention each year. In the United States, one in five people experience mental illness, and one in twenty have a mental illness that is considered to be serious, negatively impacting their quality of life. People with serious mental illnesses are nearly twice as likely to develop cardiovascular and metabolic diseases than the general population, informing the relationship between mental and physical health (Mental health, n.d.). Additionally, the COVID-19 pandemic and its repercussions has caused an increase in anxiety and depression symptoms for many. Commonly available mental health services in the U.S. include counseling, psychiatric rehabilitation, psychotherapy, support groups, skill building and peer support. However in 2019, only 44.8% of U.S. adults with mental illness received treatment (Mental health, n.d.). This may be a result of factors such as accessibility, education, cost, stigma, or reluctance to pursue traditional treatment.

ISSUE
In recent years, mental health and wellness has been a topic of rising importance in the field of interior design. However, there is limited design-specific literature and research that thoroughly demonstrates the effects of the built environment on anxiety and depression. There are also a limited number of existing projects that combine strategies of wellness design with non-traditional treatment, with the goal of helping people who are not comfortable seeking traditional psychological or psychiatric care. Design can address these issues, and add perspective on the relationship between interior and mental health, by exploring an inclusive and therapeutic environment for individuals who would benefit from alternative treatment.
Social Anxiety Disorder, or social phobia, is characterized by intense anxiety or fear of being judged, negatively evaluated, or rejected in a social or performance situation. People with this disorder may worry about acting or appearing visibly anxious, which might include blushing or stumbling over words, or being viewed as “stupid, awkward, or boring.” Because of these worries, they often avoid social situations or situations involving a performance, and when faced with these situations, they experience debilitating anxiety and distress. Similar to GAD, social anxiety disorder can also cause physical symptoms like rapid heart rate, nausea, sweating, and attacks when confronting feared situations. This disorder can heavily impact quality of life, as symptoms may be so extreme that they disrupt daily life and routines, occupational performance, academic performance, and social life. Subsequently, individuals with social anxiety disorder have a significantly more difficult time completing school, securing jobs, and creating and maintaining friendships and romantic relationships. Social anxiety disorder affects approximately 15 million adults in the United States, and is the second most commonly diagnosed anxiety disorder following specific phobias (Social Anxiety Disorder, 2021).

The most commonly diagnosed type of depressive disorder is Major Depressive Disorder, and it is characterized by an overwhelming feeling of sadness or loss of interest and pleasure in most usual activities. Other symptoms of Major Depressive Disorder include change in appetite, insomnia or hypersomnia, psychomotor agitation, constant fatigue, feelings of worthlessness or excessive and inappropriate guilt, recurrent thoughts of death and suicidal ideation, and cognitive difficulties such as diminished ability to think, concentrate, and make decisions. This disorder affects 17.3 million adults in the United States, and is the leading cause of disability in the U.S. among people ages 15 to 44 (Depression, 2021).

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TRADITIONAL TREATMENT

There are a number of treatment options commonly available in the United States for those who struggle with anxiety or depression, to include supportive and interpersonal therapy, cognitive behavioral treatment (CBT), and medication. However, in the case of GAD, 30-60% of patients do not achieve remission through these standard treatment strategies of pharmacotherapy and psychotherapy. In one randomized study of 164 patients with GAD treated with pharmacotherapy, remission was as low as 15%. Additionally, individuals with GAD or social anxiety disorder may not even seek this type of care that is administrated in psychiatric settings due to discomfort, social anxieties or perceived stigma (Hoge, 2003).

ALTERNATIVE TREATMENT

Because of the unfortunate stigma and negative associations that surround the pursuit of traditional treatment, alternative therapies are important to consider for people dealing with anxiety or depression. Many insurance companies are beginning to accept claims for non-traditional therapies like acupuncture. However, while many spa facilities offer these types of treatments, traditional hospitals typically avoid investing in these types of facilities (Raimondi, 2004). There are a number of alternative treatment methods that can become a primary part of a treatment plan for those with anxiety or depression. Some less common treatments that have proven to relieve symptoms of anxiety and depression include mindfulness meditation, physical meditation like yoga or breathing exercises, art therapy, balneotherapy, flotation therapy, and interaction with nature. Balneotherapy has been traditionally used as a treatment for physical conditions, but it has also been found to reduce symptoms of anxiety and depression, and the subsequent cardiovascular or gastrointestinal conditions that may result from having related disorders. Balneotherapy involves immersion in a bath of hot or cold water, massage through moving water, relaxation, or stimulation, with a combination of mineral waters which may consist of silica, sulfur, selenium or radium (Balneotherapy, 2021).

In a 2021 study, researchers aimed to determine the psychological benefits of balneotherapy for patients with anxiety and depression. An intervention program at a spa in Aragon, Spain consisted of a series of balneological treatments: thermal bath, thermal shower, mud, and a one-and-a-half hour massage. Researchers found that in the group that received these treatments, along with a group that received additional psychoeducational sessions, depressive symptoms and anxiety decreased significantly. They also determined that optimal results were achieved by participating in a minimum of ten sessions occurring over at least ten days, and a standard effective treatment program could include ten to twenty-one sessions over a two to three week span (Karagülle, 2021).

Similarly, float therapy, or flotation-restricted environmental-stimulation therapy (REST), is a method of therapy where a user is immersed in a sound- and light-proof, enclosed reservoir known as the sensory deprivation tank, is a large, round bath-like structure that provides users with just enough space to fully extend their limbs while occupying the space if desired. The float chamber also features a user-operated lid to provide users with the choice to leave the chamber open during a flotation session or to close the lid for full immersion. A user-operated LED light also allows users to turn the light on or off at any point throughout the duration of the flotation session. The float chamber is filled with water with an extremely high Epsom salt concentration that is heated to skin temperature. The high concentration of salt in the water allows the body to effortlessly float, which results in the shutdown of external environmental stimuli produced by the body.
by light, sound and touch. This sensory deprivation allows users to achieve deep relaxation and the subsequent positive effects on emotional health, including reduction of stress and reduction of blood pressure (Morsenna, 2020).

In a 2005 study, researchers found that Flotation REST has positive outcomes relating to physiology, well-being and performance, and that it appeared to be more effective than other stress-reduction techniques that do not include the sensory deprivation associated with REST. Flotation REST was also found to decrease levels in cortisol, which has been linked to higher levels of exhaustion. Additionally, the effects of REST on well-being were enhanced through repeated exposure, and more sessions taken over a longer period of time are likely to give better results (Dierendörfer, 2005).

In a 2019 study, researchers found that Flotation REST provided a significantly greater perceived sleep quality for participants suffering from stress-related issues causing sleep disturbance. Participants reported feelings of deeper sleep, fewer awakenings during the night, and a sense of wellness design with non-traditional treatment programs, with the goal of improving mental health. A 2021 study proposed that the top-down processing that occurs in a typical treadmill, nature condition: walking on a treadmill with simulated nature scene, and perturbation condition: walking on a treadmill with a simulated nature scene while performing top-down processing. Researchers found that the nature condition produced significant improvement in directed attention performance compared to the control and perturbation conditions after a 10-minute walk (Cosan, 2021).

DESIGN ISSUE
In recent years, mental health and wellness has been a topic of rising importance within the field of interior design. However, there is limited research exploring an inclusive and therapeutic environment for individuals who would have a positive, enjoyable sensory experience. Each bath, featuring reserve tanks to be used for their restorative properties and the well-being of its users. The architects focused on creating a captivating space where users can compensate for a lack of natural light in the interior. In an environment indoors, and personalizable spaces that cultivate empowerment and instrumentality in users undergoing a time that can improve their feeling vulnerable and stressed (Rens, 2018). A personalized space might emphasize flexibility and functionality with custom furniture, for example, that can serve multiple purposes so that users are able to adjust elements within the space to fit their personal comfort and needs.

DESIGN FOR MENTAL HEALTH
Wellness design utilizes interior elements that promote mental health, physical health, sustainability, and environmental responsibility. Therapeutic spaces can approach these ideals using active design that encourages movement, connection to a larger sense of community, individual comfort, bringing the outdoor environment indoors, and personalizable spaces that cultivate empowerment and instrumentality in users undergoing a time that can improve their feeling vulnerable and stressed (Rens, 2018). A personalized space might emphasize flexibility and functionality with custom furniture, for example, that can serve multiple purposes so that users are able to adjust elements within the space to fit their personal comfort and needs.

In recent years, mental health and wellness has been a topic of rising importance within the field of interior design. However, there is limited research exploring an inclusive and therapeutic environment for individuals who would have a positive, enjoyable sensory experience. Each bath, featuring reserve tanks to be used for their restorative properties and the well-being of its users. The architects focused on creating a captivating space where users can compensate for a lack of natural light in the interior. In an environment indoors, and personalizable spaces that cultivate empowerment and instrumentality in users undergoing a time that can improve their feeling vulnerable and stressed (Rens, 2018). A personalized space might emphasize flexibility and functionality with custom furniture, for example, that can serve multiple purposes so that users are able to adjust elements within the space to fit their personal comfort and needs.

PRECEDENTS
Although there are limited projects that combine the use of alternative therapies with design for anxiety and depression, there are existing spaces that can help to inform either programming or design strategies specific to improving mental health. The Thermal Vals in Switzerland are part of a hotel and spa built over the only thermal springs in Switzerland’s Graubünden Canton. Designed by Swiss architect Peter Zumthor and completed in 1990, the facility is known for offering a sensory experience that contrasts moments of heat and cold, and light and shadow, and highlights the distinct materiality used in the project: The building sits alone in a natural landscape, as it is partially built into a hillock and covered by a grass roof. It was constructed with thick walls of local stone, with recessed windows that reveal the building’s structure (Frearson, 2016). The architect was guided by “the fascination for the mystic qualities of a world of stone within the mountain, for darkness and light, for light reflections on the water or in the steam saturated air, pleasure in the unique acoustics of the bubbling water in a world of stone, for feeling of warmth in mind and skin. (And the fragrance of water)” With these notions, the space provides room for the body to thoroughly rest (The Théme Vals / Peter Zumthor, 2009).

Espai CEL is a thermal bath facility built in 2019 and designed by Spanish architect Arquitectura projectes arquitectònics. It is located within the pre-existing building of the Hotel Balneario Termas Victoria of Caldas de Montbui, Barcelona, Spain. The 250-year-old building was also historically used for thermal baths, as it provided thermal water and cooled thermal water reserve tanks to be used for their restorative properties and the well-being of its users. The architects focused on creating a captivating space where users would have a positive, enjoyable sensory experience. Each bath, featuring...
unique and individual characteristics, is different from the next, but all serve the same purpose of providing relaxation and the medicinal properties of the thousand-year-old thermal mineral water (Espai cel, 2020). The project relies on a neutral color palette and limited materiality to help showcase some of the building's historical properties. The architects left the majority of the original stone walls uncovered, and introduced recognizable contemporary elements to the space that do not interfere with the integrity of the original building (Arquetipus, 2019). The treatment of the interior helps to provide a relaxing and therapeutic environment to benefit user experience while preserving the footprint of the historical periods that the space has experienced over time. Hospital Nova is a 1.2-million-square-foot medical facility located in southern Finland. It was designed by JKMM Architects, in collaboration with medical professionals as well as EGM Architecten, a healthcare-specialist firm, and construction was completed in January of 2021. Hospital Nova is innovative for the way it employs a combination of nature and art to create an “un-hospitalike” atmosphere for its patients. To the same effect, many of the areas within the hospital are shared spaces, eliminating the type of hierarchy that is typical of standard medical facilities. For example, hot desks and consultation rooms are shared between doctors for the same patient, while preserving the footprint of the historical periods that the space has experienced over time. The Pump House originally served to provide water to the City of Richmond, Virginia, by preserving its use as a natural water source. The Pump House also housed social events pitched to the economic and social leaders of the community (Stoddard, 2019). The Pump House received an addition to its west side in 1905 to expand and accommodate new pumps that aimed to provide the capacity needed for emergency use. In 1924, the Pump House was vacated when a new hydroelectric plant was built on the east end of the property. The City of Richmond slated the Pump House for demolition in the 1950s, but instead, the Presbyterian Church bought it for a dollar in 1956. In 2002, it was listed on the National Register of Historic Places (NRHP) (History of the Pump House, n.d.). PROPOSAL AND CONCLUSIONS This research supports the exploration of a facility that combines design for mental health with alternative therapies. The project is not associated physically or conceptually with traditional treatment facilities, as those environments are not suitable or preferable for all who struggle with anxiety or depression. The facility will house program areas to include a waiting area, reception and check-in, consultation rooms to determine a treatment program, balneotherapy and flotation therapy areas, locker rooms and changing areas, showers, group and individual physical meditation spaces, a retail space and a small cafe. Staff areas include a break room, a copy room, a meeting or conference room, and individual areas for privacy. With non-traditional therapies, design strategies for mental health, and a site with a natural landscape, space serves as a sanctuary, set apart from the stresses of day-to-day life.
PROGRAM SUMMARY

INDIVIDUAL HYDROTHERAPY
The individual hydrotherapy rooms are meant to provide a sensory-deprivation experience, with limited external stimuli including light and sound. Each room is outfitted with a flotation chamber, which is filled with water with a high concentration of salt that allows users to float effortlessly during treatment. During treatment, users are able to control light and sound, and choose whether to close the lid of the chamber or to keep it open.

INDIVIDUAL MEDITATION
The individual meditation rooms can be occupied individually or with a practitioner. Each of the four individual meditation rooms has two sliding glass walls that can be opened up for a closer connection to the natural environment. The ceiling feature in these rooms acts as a screen that highlights the transition between the entrance and the therapy space.

GROUP HYDROTHERAPY
Group hydrotherapy spaces, located at either end of individual hydrotherapy rooms, can be occupied by multiple users at a time. Windows in this space are treated with a translucent film to ensure that while light is filtered into the space, users also have adequate privacy from the exterior when occupying the space.

GROUP MEDITATION
The group meditation room also has two sliding glass walls, as well as a translucent partition to separate the entrance from the therapy space, bench seating for multiple users, wall-mounted storage, and light fixtures that reflect the open-air quality of the second level.

COUNSELING
Counseling rooms are used for individual meetings between patients and staff members. With informal furnishings and ample workspace and storage, the space promotes both comfort and productivity.

CHANGING AREA + LOCKER ROOM
Each of the two changing areas for the hydrotherapy spaces includes four individual changing rooms, one of which is accessible, adjacent lounge seating and personal locker storage, and two restrooms.

PRIVATE CONVERSATION
Adjacent to the meeting area and across from the café, the private conversation space is outfitted with two soundproof booths. This booth, with seating for one to four users, provides both staff and patients with a space to hold a private conversation or small meeting when needed.

CAFÉ
The café serves simple plates to staff and patients before or after administering or receiving treatment. With the continuation of the ceiling feature used in the lobby, this space presents intuitive wayfinding in a central location of the project. With a variety of seating options and types, the café accommodates a range of personal preferences.

RETAIL
The simple retail space within the lobby and near the main entrance offers a display of wellness products that patients may have encountered or utilized during treatment. With integrated, keyed storage below the primary display, this area provides ample space to house surplus product.

RECEPTION
The reception area is centrally located within the lobby, so that users are able to easily determine where to check-in for treatment or ask for assistance.

WAITING AREA
The waiting area includes a variety of seating options, including a modular lounge system that borders the perimeter of the space, and a central 360° bench, to provide users with comfort and choice in seat location while awaiting treatment.

STAFF LOUNGE
The staff lounge, outfitted with a variety of furniture types and arrangements, is a place where staff members can comfortably rest, eat or gather outside of working hours.

MEETING AREA
The meeting area is suitable for formal gatherings of staff members. With ergonomic conference seating, storage, and a digital display system for presentations, the meeting area is equipped to serve a range of meeting functions.
## Adjacency + Criteria Matrix

| INDIVIDUAL MEDITATION (4) | 200 | 0 | 0 | 0 | 0 | EXERCISE MATS, STORAGE |
| INDIVIDUAL HYDROTHERAPY (8) | 50 | 0 | 0 | 0 | 0 | FLOAT TANK, SHOWER, PERSONAL STORAGE |
| GROUP MEDITATION | 100 | 0 | 0 | 0 | 0 | EXERCISE MATS, STORAGE |
| COUNSELING (2) | 375 | 0 | 0 | 0 | 0 | PRIVATE OFFICE, GUEST SEATING, PERSONAL STORAGE |
| GROUP HYDROTHERAPY (2) | 200 | 0 | 0 | 0 | 0 | BATH, SHOWER, PERSONAL STORAGE |
| CHANGING AREA (2) | 250 | 0 | 0 | 0 | 0 | SHOWER, PRIVACY/SPACE DIVISION, KEYED PERSONAL STORAGE, LINENS |
| LOCKER ROOM (2) | 250 | 0 | 0 | 0 | 0 | |
| PRIVATE CONVERSATION (2) | 100 | 0 | 0 | 0 | 0 | SOUNDBOOTH |
| CAFÉ | 900 | 0 | 0 | 0 | 0 | KITCHEN EQUIPMENT, STORAGE, DINING FURNITURE, CASH/WRAP COUNTER |
| RETAIL | 300 | 0 | 0 | 0 | 0 | CASH/WRAP COUNTER, DISPLAY SHELVING |
| WAITING AREA | 225 | 0 | 0 | 0 | 0 | LOUNGE SEATING, WATER STATION, OCCASIONAL TABLES, WAYFINDING/SIGNAGE |
| LOBBY | 100 | 0 | 0 | 0 | 0 | WAYFINDING/SIGNAGE |
| RECEPTION | 75 | 0 | 0 | 0 | 0 | SIGNAGE, DUAL-HEIGHT COUNTER, TASK SEATING |
| STAFF LOUNGE | 600 | 0 | 0 | 0 | 0 | KITCHENETTE, LOUNGE SEATING, DINING FURNITURE, PERSONAL STORAGE |
| MEETING AREA | 240 | 0 | 0 | 0 | 0 | CONFERENCE TABLE + SEATING, PRESENTATION SPACE, PERSONAL STORAGE |
| COPY/MAIL ROOM | 100 | 0 | 0 | 0 | 0 | PRINTER, STORAGE FILES |
| MECHANICAL/ELECTRICAL | 200 | 0 | 0 | 0 | 0 | MECHANICAL/ELECTRICAL EQUIPMENT |
| RESTROOM (7) | 80 | 0 | 0 | 0 | 0 | TOILET, SINK + FAUCET |
| STORAGE | 200 | 0 | 0 | 0 | 0 | SHELVING, UTILITY SINK |

### Legend
- **High**
- **Medium**
- **Low**
- **Amenities**
- **Yes**
- **No**

### Criteria
- **Privacy**
- **Access**
- **View**
- **Accessibility**
- **Special Equipment**
- **FF&E + Notes**

### Area (SF)
- 200
- 100
- 75
- 600
- 225
- 100
- 250
The Therme Vals are part of a hotel and spa built over the only thermal springs in Switzerland’s Graubünden Canton region. Designed by Swiss architect Peter Zumthor and completed in 1996, the bath facility is known for offering a sensory experience of hot and cold, light and shadow, and marvelous materiality. The building is secluded, and lives within a natural landscape, as it is partially built into a hillside with the roof covered in grass. It was constructed using thick walls of local quartzite stone and recessed windows that reveal the building’s structure.

Zumthor was guided by “the fascination for the mystic qualities of a world of stone within the mountain, for darkness and light, for light reflections on the water or in the steam saturated air; pleasure in the unique acoustics of the bubbling water in a world of stone, a feeling of warm stones and naked skin, [and] the ritual of bathing.” (The Therme Vals / Peter Zumthor, 2009). With these notions, the space provides room for the body to experience thorough rest and relaxation while receiving the healing and restorative properties of the thermal mineral water.

SOURCES
OVERVIEW

Espai CEL is a thermal bath facility located within the pre-existing building of the Hotel Balneari Termes Victoria of Caldes de Montbui. The 250-year-old building was also historically used for thermal baths, as it provided thermal water and cooled thermal-water reserve tanks to be used for their restorative properties and the well-being of its users. The architects, arquetipus projectes arquitectònics, focused on creating a captivating space where users would have a positive, enjoyable sensory experience. Each bath, featuring unique and individual characteristics, is different from the next, but all serve the same purpose of providing relaxation and the medicinal properties of the thousand-year-old thermal mineral water. The project uses a neutral color palette and limited materials to help showcase some of the building’s historical features. The architects left the majority of the original stone walls uncovered, and introduce recognizable contemporary elements that do not interfere with the original building. The treatment of the interior helps to provide a relaxing and therapeutic environment while preserving the footprint of the historical periods that the space has experienced.

FIG 1. This photograph shows the interior of one of the thermal baths. There is no natural daylight that reaches this area, but instead artificial light is provided near the steps to the bath and underwater in the bath itself. The walls are left untreated to showcase the building’s history.

FIG 2. Section drawings show the relationship between the individual baths. These drawings help give a sense of scale and human proportions as they relate to the baths. With the range in size and shape, each bath provides a unique experience to the user. User preference may depend on comfort level, desired level of privacy, or desired amount of space.

FIG 3. This interior photograph demonstrates how contemporary materials are introduced into the historic building. Large transparent glass panes provide a barrier for the stairway leading to the bath without disrupting the integrity of the original structure.

SOURCES

OVERVIEW

Hospital Nova is a 1.2-million-square-foot medical facility located in southern Finland. It was designed by JKMM Architects, in collaboration with medical professionals as well as EGM Architecten, a healthcare-specialist firm, and construction was completed in January of 2021. Hospital Nova is innovative for the way it employs a combination of nature and art to create an “un-hospital-like” atmosphere for its patients. To the same effect, many of the areas within the hospital are shared spaces, eliminating the type of hierarchy that is typical of standard medical facilities. For example, hot desks and consultation rooms are shared between doctors for the same patient, and the cafeteria is shared by patients, visitors and hospital staff. Many of the natural elements in the hospital are inspired by Finland’s expansive flora and fauna, and an aquatic theme is carried throughout the atrium, cafeteria, auditorium, seating and children’s areas. Notes of Light, a light-reflective installation by Tiina Pyykkönen, provides visual interest at the ceiling plane with a pattern that looks to three nearby lakes.

SOURCES

FIG 1. This interior photograph of one of the open atrium spaces demonstrates some of the nature-inspired elements used in the hospital. Small decorative pendant lights dropped from the third level ceiling at a variety of heights represent local flora, and additional decorative pendants that sit closer to the ceiling represent water with curved forms.

FIG 2. This photograph, taken on the second level of the building, provides a closer look at the water-inspired decorative lighting, as well as the translucent screening that provides privacy to a portion of the open hallway.

FIG 3. Patient areas are individually distinguished by different pieces of art inspired by nature.
The Byrd Park Pump House, although seemingly isolated, is centrally located at the intersection of several nationally registered historic districts within the City of Richmond. The following districts and sites have been listed by the National Register of Historic Places (NRHP): New Pump House Historic Site (listed 2002), James River and Kanawha Canal Historic District (listed 1971), Carillon Neighborhood Historic District (listed 2016), Virginia War Memorial Carillon (“The Carillon” Historic Site (listed 1994), Byrd Park Historic District (listed 2016), and Maymont Historic District & Site (listed 1971). Close in proximity to each of these historic places, the building site lies on the north bank of the James River in Byrd Park, also known as William Byrd Park. The site was once considered part of the outskirts of the city, but became more integrated as the Byrd Park and Carillon neighborhoods began developing (Jnooth, 2019).

Byrd Park, originally named New Reservoir Park, was established in 1875 when the City of Richmond began the creation of a new municipal waterworks system. The reservoir was constructed between 1875 and 1888 at a site that was chosen upriver west of the city in 1874. In 1907, New Reservoir Park was renamed to (William) Byrd Park, and by 1914, plans had begun to construct two additional reservoirs: Shield’s Lake and Swann Lake (Byrd Park, 2021). In 2016, the park was listed on the National Register of Historic Places.

Currently, Byrd Park and its surrounding areas are mostly residential, with centrally located public spaces including the lakes and the green park areas that have walking paths and public parking spaces. Bordering the park itself is a residential neighborhood that features densely packed houses and other dwelling units, right streets that, in some areas, form a series of loops, and public sidewalks. The park is also well known for several nearby landmarks, including the Virginia War Memorial Carillon, Dogwood Dell Amphitheater, Maymont Park, the city reservoir, and the James River.
The Byrd Park Pump House was constructed in 1883 under the supervision of civil engineer, Wilfred E. Cutshaw. The Pump House was designed in the Gothic Revival style, featuring solid granite construction, steep gabled slate roofs, and thin, tall windows with pointed arches (Pump House Park, 2013). The Pump House originally served to provide water to the City of Richmond, drawing water from the James River, Kanawha Canal, and Pump House Canal, and pumping it up to the reservoir. With its open-air second level ballroom overlooking the Kanawha Canal, the Pump House also housed social events pitched to the economic and social leaders of the community (Stoddard, 2019). The Pump House received an addition to its west side in 1905 to expand and accommodate new pumps that aimed to provide the capacity needed for emergency use. In 1924, the Pump House was vacated when a new hydroelectric plant was built on the east end of the property. The City of Richmond slated the Pump House for demolition in the 1950s, but instead, the Presbyterian Church bought it for a dollar in 1956. In 2002, it was listed on the National Register of Historic Places (NRHP) (History of the Pump House, n.d.).
EXISTING BUILDING: EXTERIOR

Kanawha Canal + South Facade

Pump House Canal + North Facade

South Facade

South Facade

North Facade

View from across Kanawha Canal

South Entrance + Canal Bridge

West Facade

View of Canal from West Entrance

Exterior Stairs + West Entrance

View of South Entrance from Bridge

Kanawha Canal + South Facade

View from across Kanawha Canal
The concept for this project is the idea of taking a deep breath, a part of an essential function of the human body. Physically, breath can be represented by a cyclical expansion and compression, or intake and release. Visually, these notions can inform the design of a space with moments of compression or expansion, circulation patterns, positive and negative space, FF&E and material selection, and form language throughout.

This project is an exploration of a facility that combines design for mental health with the implementation of alternative therapies. It is not associated physically or conceptually with traditional treatment facilities, as these institutional spaces are not fit for every individual with anxiety or depression. Non-traditional programming, close proximity to nature, and wellness design strategies allow the space to serve as a restorative sanctuary, set apart from the stresses of day-to-day life.
WATERCOLORS derived from site plan and plan diagrams

DIGITAL CONCEPT DIAGRAM layering form language

CONCEPT DIAGRAMS exploring expressions of expansion and compression
CONCEPT MODELS
exploration of cyclical expansion and compression + positive and negative space

WALL OF CONCEPT
conceptual development pin-up presentation
FINAL BLOCK PLAN

BLOCK PLAN 4 - LEVEL 1
'W=11'-0"'

ENTRY

Nythus Area
Nurture Area
Lobby
Retail

CAFE

BLOCK PLAN 4 - LEVEL 2
'W=11'-0"

Nythus Area
Nurture Area
Lobby
Retail

CAFE

DESIGN DEVELOPMENT

PROCESS SKETCH
changing area

PROCESS SKETCH
meditation area walls

PROCESS SKETCH
lobby ceiling feature
REFLECTED CEILING PLANS

LEGEND
- DOWNLIGHT, Pendant
- DOWNLIGHT, Recessed
- LINEAR PENDANT, Slat
- SCIONE, Palms
- SCIONE, Quadra Ice
- DOWNLIGHT, Quadra Ice
- CHANDELIER, Palma
- PENDANT, Algoritmus
- PENDANT, Akova
- PENDANT, Algorithm
- DOWNLIGHT, Viaggio
- PENDANT, Delta
- CHANDELIER, Helix
- Ceiling Height, A.F.

CEILING DETAIL

Asymmetrical density pattern for arrangement of individual elements. 3/32" equals one true scale of 1". unclad aluminum.
The lobby, including a reception area, waiting area and retail space, presents a grand ceiling feature that illustrates the concept with curvilinear forms varying in placement and height. This ceiling element is carried through multiple spaces in the facility.
2. **CAFÉ**

The café serves simple plates to staff and patients before or after administering or receiving treatment. With the continuation of the ceiling feature used in the lobby, this space presents intuitive wayfinding in a central location of the project. With a variety of seating options and types, the café accommodates a range of personal preferences.

- **Materials and Furniture:**
  - **Scandinavian Spaces, Jaks:** dining table
  - **Allemuir, Mollie:** dining chair
  - **Vibia, Halo Jewel:** pendant light fixture
  - **Pioneer Millworks, Pure Oak:** millwork
  - **Kriskadecor, Kriska:** anodized aluminum drapery
  - **LEVEL 1 3form, Varia Capiz:** translucent privacy screen
  - **Scandinavian Spaces, Pixel:** moss wall
  - **Coverings, Etc., Eco-Cem:** polished concrete flooring
  - **Allermuir, Mollie:** dining chair
  - **Pioneer Millworks, Pure Oak:** millwork
  - **Kriskadecor, Kriska:** anodized aluminum drapery
  - **LEVEL 1 3form, Varia Capiz:** translucent privacy screen
  - **Scandinavian Spaces, Pixel:** moss wall
  - **Coverings, Etc., Eco-Cem:** polished concrete flooring
3. CHANGING AREA

Each of the two changing areas for the hydrotherapy spaces includes four individual changing rooms, one of which is accessible, adjacent lounge seating and personal locker storage, and two accessible restrooms.
4. GROUP HYDROTHERAPY

Group hydrotherapy spaces, located at either end of individual hydrotherapy rooms, can be occupied by multiple users at a time. Windows in this space are treated with a translucent film to ensure that users have adequate privacy when occupying the space.

LEVEL 1

4. GROUP HYDROTHERAPY

5. COUNSELING

Counseling rooms are used for individual meetings between patients and staff members. With informal furnishings and ample workspace and storage, the space promotes both comfort and productivity.

LEVEL 2

4. GROUP HYDROTHERAPY

LEVEL 1

5. COUNSELING

LEVEL 2

Benjamin Moore
Iron Mountain ceiling paint

Tile Bar, Portmore Ceramic wall tile

Vibia, Algorithm pendant light fixture

Counseling rooms are used for individual meetings between patients and staff members. With informal furnishings and ample workspace and storage, the space promotes both comfort and productivity.

LEVEL 2

5. COUNSELING

LEVEL 2

Benjamin Moore
Rolling Hills wall paint

Knoll, Platner coffee table

Vibia, Algorithm pendant light fixture

Naughtone, Fiji guest sofa

Benjamin Moore

Counseling rooms are used for individual meetings between patients and staff members. With informal furnishings and ample workspace and storage, the space promotes both comfort and productivity.

LEVEL 2

5. COUNSELING

LEVEL 2

Benjamin Moore

Counseling rooms are used for individual meetings between patients and staff members. With informal furnishings and ample workspace and storage, the space promotes both comfort and productivity.

LEVEL 2

5. COUNSELING

LEVEL 2

Benjamin Moore
6. INDIVIDUAL MEDITATION

Each of the four individual meditation rooms has sliding glass walls that can be opened up for a closer connection to the natural environment. The ceiling feature in these rooms acts as a screen that highlights the transition between the entrance and the therapy space.

- **LEVEL 2**

- **Studio TK, Dip**
  - bench seating

- **Tech Lighting, Vaggeio**
  - flush-mount light fixture

- **Knoll, Maya Lin Stones**
  - elevated seat/surface

- **Howarth, Cloud**
  - wall-mounted storage

- **Krisa decor, Krisa**
  - anodized aluminum drapery

- **Pioneer Millworks, White Oak**
  - wood paneling

- **Benjamin Moore**
  - Rolling Hills wall paint

- **Coverings, Etc., Eco-Cem**
  - polished concrete flooring

- **Benjamin Moore**
  - Rolling Hills wall paint
The group meditation room also has two sliding glass walls, as well as a translucent partition to separate the entrance from the therapy space, bench seating for multiple users, wall-mounted storage, and light fixtures that reflect the open-air quality of the second level.

7. LEVEL 2

- **Group Meditation**

```
- Haworth, Cloud (wall-mounted storage)
- Coalesse, Together (bench seating)
- Tech Lighting, Akova (flush-mount light fixture)
- 3form, Vana Haiku (translucent partition)
- Benrimon, Eco-Cem (polished concrete flooring)
- Pioneer Millworks, White Oak (wood paneling)
- Benjamin Moore, Rolling Hills (wall paint)
- Rich Brilliant Willing, Delta (pendant light fixture)
```
The staff lounge, outfitted with a variety of furniture types and arrangements, is a place where staff members can comfortably rest, eat or gather outside of working hours.
<table>
<thead>
<tr>
<th>MANUFACTURER</th>
<th>PRODUCT</th>
<th>DESCRIPTION</th>
<th>LINK</th>
<th>LOCATION</th>
<th>SUSTAINABILITY</th>
<th>RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Davis</td>
<td>Q6, Q6-1</td>
<td>60° outside curve boxed bench, fully upholstered</td>
<td><a href="https://www.davisfurniture.com/products/q6">https://www.davisfurniture.com/products/q6</a></td>
<td>Level 1, waiting area</td>
<td>BIFMA Level 1</td>
<td>These waiting area bench seats form a full circle around the prominent ceiling feature in the lobby, offering 360° seating and close proximity to the architectural elements within the space.</td>
</tr>
<tr>
<td>Herman Miller</td>
<td>Module Lounge</td>
<td>modular lounge system with cushions, fully upholstered</td>
<td><a href="https://www.hermanmiller.com/products/seating/lounge-seating/module-lounge-seating/">https://www.hermanmiller.com/products/seating/lounge-seating/module-lounge-seating/</a></td>
<td>Level 1, waiting area</td>
<td>N/A</td>
<td>This modular lounge system allows for a customizable arrangement of seating; individual seats border the perimeter of the waiting area, providing users with comfort and variety in choice of seat location.</td>
</tr>
<tr>
<td>Geiger</td>
<td>Bumper Chair</td>
<td>conference chair with 5-star base, fully upholstered</td>
<td><a href="https://www.hermanmiller.com/products/seating/office-chairs/bumper-chair/">https://www.hermanmiller.com/products/seating/office-chairs/bumper-chair/</a></td>
<td>Level 1, reception</td>
<td>Indoor Advantage Gold - Furniture</td>
<td>This executive task chair sits behind the reception desk to enhance the wellbeing of the staff while they are working, as its design offers comfort while supporting productivity.</td>
</tr>
<tr>
<td>Scandinavian Spaces</td>
<td>Ribbon</td>
<td>ottoman with cushioning and braided appearance, fully upholstered with black lacquered wooden feet</td>
<td><a href="https://www.scandinavianspaces.com/products/ribbon">https://www.scandinavianspaces.com/products/ribbon</a></td>
<td>Level 1, retail</td>
<td>N/A</td>
<td>This ottoman is placed centrally within the retail space, offering a moment of rest to users and guests while browsing displayed product.</td>
</tr>
<tr>
<td>C-5 MEETING CHAIR</td>
<td>C-6 DINING CHAIR</td>
<td>C-7 DINING STOOL</td>
<td>C-8 CHANGING CHAIR</td>
<td></td>
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</tr>
<tr>
<td><strong>MANUFACTURER</strong></td>
<td>Knoll</td>
<td>Allermuir</td>
<td>Coalesse</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PRODUCT</strong></td>
<td>Saarinen Executive Chair</td>
<td>Mollie</td>
<td>Joel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DESCRIPTION</strong></td>
<td>executive conference chair with 5-star base; fully upholstered</td>
<td>four-leg dining chair with wood frame, wood legs, and upholstered seat and back</td>
<td>lounge chair with swivel base; fully upholstered</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LOCATION</strong></td>
<td>Level 1, meeting area</td>
<td>Level 1, café; Level 2, staff lounge</td>
<td>Level 1, changing area</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SUSTAINABILITY</strong></td>
<td>Certified Clean Air GOLD</td>
<td>SCS Indoor Advantage™ Gold Certified</td>
<td>SCS Indoor Advantage™ Gold Certified</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RATIONALE</strong></td>
<td>This executive conference chair occupies the meeting area. Its mobility allows for variety in seating arrangement to accommodate a range of tasks, and its curvilinear form provides both comfort to the user and a visual connection to other elements within the project.</td>
<td>The simple design of this chair displays both classic and contemporary elements, with rounded forms that relate to the project's concept and a solid structure that nods to that of the building.</td>
<td>Each changing room is furnished with this lounge chair to give users a place upon which to rest garments or sit while changing in and out of clothing and footwear.</td>
<td></td>
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</tr>
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<td></td>
</tr>
</tbody>
</table>
C-9 CHANGING AREA SOFA

**MANUFACTURER** Steelcase/West Elm

**PRODUCT** Work Belle

**DESCRIPTION** cushioned 3-seat sofa; armless; fully upholstered

**LINK** https://www.steelcase.com/brands/partners/west-elm/

**LOCATION** Level 1, changing area

**SUSTAINABILITY** SCS Indoor Advantage Gold - Furniture

**RATIONALE** This sofa, located close to the individual changing rooms, serves as a shared space for users to rest while awaiting treatment or after finishing treatment. The repetition of the curvilinear forms nods to the dynamic quality of water, which is largely utilized and emphasized in this area of the project.

C-10 INDIVIDUAL STONE

**MANUFACTURER** Knoll

**PRODUCT** Maya Lin Adult Stone

**DESCRIPTION** molded 100% recycled polyethylene stone; can be used as seat or side table; approved for outdoor use

**LINK** https://www.knoll.com/product/maya-lin-adult-stone

**LOCATION** Level 1, hydrotherapy; Level 2, meditation

**SUSTAINABILITY** Certified Clean Air GOLD

**RATIONALE** In the individual hydrotherapy rooms, this product can be used both as a seat and a surface on which to store personal items. In the individual meditation rooms, this product can be used to supplement exercises or practices that require an elevated seat or surface.

C-11 COUNSELING TASK

**MANUFACTURER** Coalesse

**PRODUCT** Massaud

**DESCRIPTION** upholstered task chair

**LINK** https://www.coalesse.com/products/seating/conference-chairs/massaud-conference/

**LOCATION** Level 2, counseling

**SUSTAINABILITY** SCS Indoor Advantage Gold - Furniture

**RATIONALE** This counseling room task chair is used by staff during and outside of treatment. User-controlled ergonomic functions allow each staff member to adjust the chair according to their preferences when occupying the counseling space.

C-12 COUNSELING GUEST

**MANUFACTURER** Naughtone

**PRODUCT** Fiji

**DESCRIPTION** guest sofa

**LINK** https://www.naughtone.com/us/products/fiji/

**LOCATION** SCS Indoor Advantage™ Gold Certified

**SUSTAINABILITY** SCS Indoor Advantage Gold - Furniture

**RATIONALE** This sofa is used in place of traditional guest seating in the counseling rooms in order to help users feel comfortable and to contribute to the non-institutional quality of the facility.
C-13 MEDITATION BENCH

MANUFACTURER: Studio TK
PRODUCT: Dip
DESCRIPTION: Sculptural bench with contoured seat; stainless steel
LINK: https://www.studiotk.com/products/dip-double-dip
LOCATION: Level 2, individual meditation
SUSTAINABILITY: LEED Credit MR 5 Regional Materials, LEED Credit MR 4 Recycled Content
RATIONALE: This bench is placed across from the entrances to each individual meditation space. It provides users with a place to sit while preparing for therapy and a surface upon which to rest personal items before they are stored in the adjacent wall-mounted storage unit.

C-14 MEDITATION BENCH

MANUFACTURER: Coalesse
PRODUCT: Together
DESCRIPTION: Straight bench with back, fully upholstered
LINK: https://www.coalesse.com/products/education-lounge-seating/together-bench/
LOCATION: Level 2, group meditation
SUSTAINABILITY: SCS Indoor Advantage™ Gold Certified
RATIONALE: This bench is placed on either side of the entrance to the group meditation space. It provides seating for multiple users to occupy at a time while preparing for therapy.

C-15 LOUNGE SOFA

MANUFACTURER: Steelcase/West Elm
PRODUCT: Mesa
DESCRIPTION: Sectional sofa
LINK: https://www.steelcase.com/products/sofas/west-elm-work-mesa-sectional/
LOCATION: Level 2, staff lounge
SUSTAINABILITY: SCS Indoor Advantage™ Gold Certified
RATIONALE: This sectional sofa is placed in the staff lounge to give staff a place to comfortably rest, eat or gather outside of working hours.

C-16 LOUNGE CHAIR

MANUFACTURER: Naughtone
PRODUCT: Fiji
DESCRIPTION: Lounge chair
LINK: https://www.naughtone.com/us/products/fiji/
LOCATION: Level 2, staff lounge
SUSTAINABILITY: SCS Indoor Advantage™ Gold Certified
RATIONALE: This lounge chair is placed in the staff lounge to give staff an additional lounge seating option.
<table>
<thead>
<tr>
<th>MANUFACTURER</th>
<th>PRODUCT</th>
<th>DESCRIPTION</th>
<th>LINK</th>
<th>LOCATION</th>
<th>RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFS</td>
<td>LeanTo</td>
<td>semi-private seat with tablet surface</td>
<td><a href="https://ofs.com/products/seating/lounge/leanto">https://ofs.com/products/seating/lounge/leanto</a></td>
<td>Level 2, elevator lobby</td>
<td>This semi-private seat is placed in the elevator corridor of the second level to provide users with a place to find a moment of privacy or perhaps a place to rest while waiting for another guest.</td>
</tr>
<tr>
<td>Steelcase/Blu Dot</td>
<td>Circula</td>
<td>round coffee table</td>
<td><a href="https://www.steelcase.com/products/occasional-tables/circula-tables/">https://www.steelcase.com/products/occasional-tables/circula-tables/</a></td>
<td>Level 1, waiting area</td>
<td>This large occasional table provides users with a place to rest their personal belongings while occupying the waiting area, enhancing the non-institutional quality of the environment as users are welcomed into the facility.</td>
</tr>
<tr>
<td>Allermuir</td>
<td>Sunda 1</td>
<td>round side table</td>
<td><a href="https://www.allermuir.com/us/products/tables-storage/sunda-1">https://www.allermuir.com/us/products/tables-storage/sunda-1</a></td>
<td>Level 1, waiting area</td>
<td>This small occasional table provides users with an additional surface to utilize while occupying the waiting area.</td>
</tr>
<tr>
<td>Knoll</td>
<td>Saarinen</td>
<td>oval conference table</td>
<td><a href="https://www.knoll.com/product/saarinen-dining-table-oval">https://www.knoll.com/product/saarinen-dining-table-oval</a></td>
<td>Level 1, meeting area</td>
<td>This conference table, placed centrally within the meeting area, serves as a host for formal gatherings for up to six staff members.</td>
</tr>
<tr>
<td>T-4 DINING TABLE</td>
<td>T-5 COFFEE TABLE</td>
<td>T-6 SIDE TABLE</td>
<td>T-7 OCCASIONAL TABLE</td>
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</tr>
<tr>
<td>Level 1, café</td>
<td>This round table, available in multiple sizes, provides a dining surface for both individual users and small groups of users occupying the café.</td>
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</tr>
<tr>
<td><strong>MANUFACTURER</strong></td>
<td><strong>PRODUCT</strong></td>
<td><strong>DESCRIPTION</strong></td>
<td><strong>LINK</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knoll</td>
<td>Platner</td>
<td>round coffee table with glass top</td>
<td><a href="https://www.knoll.com/product/platner-coffee-table">https://www.knoll.com/product/platner-coffee-table</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LOCATION</strong></td>
<td><strong>SUSTAINABILITY</strong></td>
<td><strong>RATIONALE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 2, staff lounge</td>
<td>SCS Indoor Advantage™ Gold Certified</td>
<td>This round coffee table is paired with a sectional lounge sofa in the staff lounge to provide staff members with a surface to hold personal items while seating.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MANUFACTURER</strong></td>
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<td><strong>RATIONALE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 1, changing area; Level 2, counseling</td>
<td>SCS Indoor Advantage™ Gold Certified</td>
<td>Each individual changing room is outfitted with this side table to give users a place to rest personal items while preparing for treatment. This side table is also placed adjacent to the guest seating in each counseling room so that patients have a place to store personal belongings while in session.</td>
<td></td>
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</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Level 2, staff lounge</td>
<td>The round coffee table is paired with individual soft seating in the staff lounge to provide staff members with an additional seating arrangement option.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
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<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Royal Spa</td>
<td>Float Pod</td>
<td>sensory-deprivation flotation chamber</td>
<td><a href="https://www.royalspa.com/float-tanks/float-pod/">https://www.royalspa.com/float-tanks/float-pod/</a></td>
<td>Level 1, individual hydrotherapy</td>
<td>This flotation chamber is the center of the individual hydrotherapy treatment. Each tank is filled with water with a high concentration of salt that allows users to float effortlessly during treatment. Users are able to control light and sound, and choose to close the lid or keep it open.</td>
</tr>
<tr>
<td>Framery Acoustics</td>
<td>Framery Q</td>
<td>soundproof space with seating + table for 1-4 users, painted sheet metal exterior with sound control laminated glass</td>
<td><a href="https://www.frameryacoustics.com/en/products/framy-q/">https://www.frameryacoustics.com/en/products/framy-q/</a></td>
<td>Level 1, private conversation</td>
<td>UL GREENGUARD certified This soundproof pod is centrally located within the project to provide both staff and patients with a space to hold a private conversation when needed.</td>
</tr>
<tr>
<td>NanoWall</td>
<td>Cero II</td>
<td>sliding glass partition</td>
<td><a href="https://www.nanawall.com/products/cero">https://www.nanawall.com/products/cero</a></td>
<td>Level 2, individual meditation, group meditation</td>
<td>The sliding glass wall system is placed on the north- and south-facing walls of each of the meditation rooms. Weather-permitting, these walls can be opened during meditation sessions to enhance the natural air and light in the space.</td>
</tr>
<tr>
<td>Peter Pepper</td>
<td>Curvilinear</td>
<td>fiberglass planter</td>
<td><a href="https://www.peterpepper.com/products/planters/fiberglass/R1">https://www.peterpepper.com/products/planters/fiberglass/R1</a></td>
<td>Level 1, waiting area</td>
<td>The planter is placed within the waiting area of the lobby to bring additional greenery into the space and contribute to the environment.</td>
</tr>
</tbody>
</table>
LIGHTING STRATEGY + FIXTURES
LIGHTING STRATEGY

GENERAL
To enhance the concept, the amount of natural light and the quality of artificial light in the space will correspond to each moment of expansion or compression depending upon the program areas. As a non-traditional facility for mental health, the project’s lighting should contribute to an environment that feels natural, therapeutic and non-institutional.

Lighting will help users locate entrances, pathways, and key program areas. It is especially important to provide illumination along the hallway that leads to the entrance of the hydrotherapy spaces, as natural light is limited on the lower first level. Because the individual hydrotherapy rooms receive no natural light, each door will have illuminated signage and a corresponding room number. The areas that require lighting for productivity are the reception area, meeting area, café kitchen, and counseling rooms. Task lighting will also be needed in the retail space, café dining area, private conversation booths, changing areas, counseling, and the staff lounge. The individual hydrotherapy rooms present a unique challenge, as the flotation chambers are meant to provide a sensory deprivation experience with no external stimuli, including light. However, each room includes a shower (for patients to use before and/or after treatment) and personal storage that will need to be lit.

NATURAL
In general, the public spaces occupy areas in the building that receive a good amount of natural light, while many of the more private spaces occupy areas that receive less natural light. The hydrotherapy spaces are on the lower first level, which historically is where water interacted with the building, and the meditation spaces occupy the open-air portion of the second level. The areas that receive the most natural light are the individual meditation rooms and the group meditation room on the second level. Currently, much of the second level is directly exposed to the elements, and the meditation spaces can be opened up as well as the use of movable partitions. The lower first level receives the least amount of light, as the north facade does not have any windows. The hydrotherapy rooms fit well in this space because they do not require a high level of light; and the changing areas do receive some natural light that filters through the windows on the south facade.

The existing windows will mostly be left untreated, as their slim profile, in conjunction with the thick masonry structure of the building, partially limits the amount of light that enters the building and the availability of views from the interior out to the natural landscape. The group hydrotherapy areas on either side of the lower first level have four windows, which will be treated with a translucent film that permits natural light while blocking the view of the space from the exterior. All restrooms that have windows will receive the same treatment.

ARTIFICIAL
Artificial light will be used to enhance the therapeutic quality of the environment, provide visual interest, and invoke feelings of relaxation.

The double height spaces within the building pose a challenge for lighting solutions, as standard ambient light from the ceiling plane will not provide sufficient illumination when the availability of natural light is limited. Certain areas, like the meeting room and cafe, will utilize a lowered ceiling that can host additional lighting. Other areas, like the reception area, waiting area, and retail space, include reflective materials to help amplify the amount of light distributed within the space.
<table>
<thead>
<tr>
<th>Location</th>
<th>Manufacturer</th>
<th>Product</th>
<th>Description</th>
<th>Link</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1: hydrotherapy hall</td>
<td>Vibia</td>
<td>Quadra Ice</td>
<td>White optical glass diffuser held in place by four corner clips for a “floating in space” effect</td>
<td><a href="https://www.vibia.com/us/usa/collections-quadra-ice">https://www.vibia.com/us/usa/collections-quadra-ice</a></td>
<td>Level 1: hydrotherapy hall</td>
</tr>
<tr>
<td>Level 2: individual meditation, group meditation</td>
<td>Tech Lighting</td>
<td>Akova</td>
<td>Ceiling fixture with metal housing, smooth acrylic diffuser, and metal band</td>
<td><a href="https://www.techlighting.com/Products/Fixtures/Flush-Mounts/Akova-Flush-Mount">https://www.techlighting.com/Products/Fixtures/Flush-Mounts/Akova-Flush-Mount</a></td>
<td>Level 2: individual meditation, group meditation</td>
</tr>
<tr>
<td>Level 2: group meditation</td>
<td>Rich Brilliant Willing</td>
<td>Delta</td>
<td>Fixture with hybrid lampshade that combines the traditional box pleat with tapered openings</td>
<td><a href="https://richbrilliantwilling.com/collections/delta">https://richbrilliantwilling.com/collections/delta</a></td>
<td>Level 2: group meditation</td>
</tr>
<tr>
<td>Level 2: elevator corridor</td>
<td>Tech Lighting</td>
<td>Belterra</td>
<td>Light fixture inspired by the lotus flower</td>
<td><a href="https://www.techlighting.com/Products/Fixtures/Chandeliers/Belterra-48-Chandelier">https://www.techlighting.com/Products/Fixtures/Chandeliers/Belterra-48-Chandelier</a></td>
<td>Level 2: elevator corridor</td>
</tr>
<tr>
<td>MANUFACTURER</td>
<td>PRODUCT/FINISH</td>
<td>DESCRIPTION</td>
<td>APPLICATION</td>
<td>LINK</td>
<td>LOCATION</td>
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</tr>
<tr>
<td>Benjamin Moore</td>
<td>Aura Interior, Iron Mountain</td>
<td>satin finish</td>
<td>wall + ceiling paint</td>
<td><a href="https://www.benjaminmoore.com/en-us/paint-colors/color/2134-30/iron-mountain">https://www.benjaminmoore.com/en-us/paint-colors/color/2134-30/iron-mountain</a></td>
<td>Level 1; Level 2</td>
</tr>
<tr>
<td>Coverings Etc.</td>
<td>Eco-Cerm, Natural Grey</td>
<td>80% recycled Portland cement, fly ash and 20% recycled wood pulp</td>
<td>flooring</td>
<td><a href="https://www.coveringsetc.com/EcoCem">https://www.coveringsetc.com/EcoCem</a></td>
<td>Level 1; Level 2</td>
</tr>
<tr>
<td>Scandinavian Spaces</td>
<td>Pixel, Moss + Apple</td>
<td>2” x 2.4” moss squares, fire-resistant, hypoallergenic, and maintenance-free</td>
<td>acoustic wallcovering</td>
<td><a href="https://www.scandinavianspaces.com/products/pixel">https://www.scandinavianspaces.com/products/pixel</a></td>
<td>Level 1: lobby, café; Level 2</td>
</tr>
<tr>
<td>3form</td>
<td>Varia, Capiz, Full Straight</td>
<td>resin panels with decorative interlayer</td>
<td>partition</td>
<td><a href="https://www.3form.com/interlayers/capiz/full-straight">https://www.3form.com/interlayers/capiz/full-straight</a></td>
<td>Level 1: café, changing area</td>
</tr>
</tbody>
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<td>resin panels with decorative interlayer</td>
<td>partition</td>
<td><a href="https://www.3form.com/interlayers/capiz/full-straight">https://www.3form.com/interlayers/capiz/full-straight</a></td>
<td>Level 1: café, changing area</td>
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<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Pioneer Millworks</td>
<td>Raked Paneling, White Oak</td>
<td>applied texture milled into surface of wood, repeats in 1/4” grooves</td>
<td>wall + ceiling paneling</td>
<td><a href="https://pioneermillworks.com/product/raked-paneling">https://pioneermillworks.com/product/raked-paneling</a></td>
<td>Level 1: changing area; Level 2: meditation rooms</td>
</tr>
<tr>
<td>Benjamin Moore</td>
<td>Aura Interior, Cascade Mountains</td>
<td>satin finish</td>
<td>wall + ceiling</td>
<td><a href="https://www.benjaminmoore.com/en-us/paint-colors/color/862/cascade-mountains">https://www.benjaminmoore.com/en-us/paint-colors/color/862/cascade-mountains</a></td>
<td>Level 1: group hydrotherapy</td>
</tr>
<tr>
<td>Tile Bar</td>
<td>Portmore Ceramic, Aqua</td>
<td>glazed ceramic tile</td>
<td>wall tile</td>
<td><a href="https://www.tilebar.com/portmore-aqua-4x4-glazed-ceramic-tile.html">https://www.tilebar.com/portmore-aqua-4x4-glazed-ceramic-tile.html</a></td>
<td>Level 1: group hydrotherapy</td>
</tr>
<tr>
<td>3form</td>
<td>Varia, Haiku</td>
<td>resin panels with decorative interlayer</td>
<td>partition</td>
<td><a href="https://www.3-form.com/interlayers/haku/haku">https://www.3-form.com/interlayers/haku/haku</a></td>
<td>Level 2: group meditation</td>
</tr>
<tr>
<td>DesignTex</td>
<td>Alphabet, Pavement</td>
<td>100% vinyl, 1,000,000 double rubs</td>
<td>upholstery</td>
<td><a href="https://www.designtex.com/alphabet.html">https://www.designtex.com/alphabet.html</a></td>
<td>Level 1; Level 2</td>
</tr>
<tr>
<td>Flor</td>
<td>Down to Earth, Stone</td>
<td>19.7” × 19.7” tile squares</td>
<td>commercial area rug</td>
<td><a href="https://www.flor.com/area-rugs_carpet-tiles/solids/down-to-earth/21-1402.html">https://www.flor.com/area-rugs_carpet-tiles/solids/down-to-earth/21-1402.html</a></td>
<td>Level 1: meeting area; Level 2: counseling, staff lounge</td>
</tr>
<tr>
<td>Polycor</td>
<td>Granite, Bethel White</td>
<td>natural stone quarried in Bethel, VT</td>
<td>Countertops</td>
<td><a href="https://www.polycor.com/stone/granite/bethel-white/">https://www.polycor.com/stone/granite/bethel-white/</a></td>
<td>Level 1: reception, cafe, restrooms; Level 2: counseling, staff lounge, restrooms</td>
</tr>
</tbody>
</table>
As per section 2902, table 2902.1 of 2018 International Building Code, the minimum number of required plumbing fixtures for assembly facility:

<table>
<thead>
<tr>
<th>NO</th>
<th>CLASSIFICATION</th>
<th>WATER CLOSETS</th>
<th>LAVATORIES</th>
<th>DRINKING FOUNTAINS</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ASSEMBLY</td>
<td>Male: 1 per 75 for the first 1,500 and 1 per 120 for the remainder Female: 1 per 40 for the first 1,520 and 1 per 60 for the remainder</td>
<td>Male: 1 per 200 Female: 1 per 150</td>
<td>1 per 1,000</td>
<td>1 service sink</td>
</tr>
</tbody>
</table>

Based on the code above, the facility provides:

- 7 water closets
- 7 lavatories
- 1 drinking fountain
- 1 service sink
https://doi.org/10.1111/dmcn.13246


Captain, + exploring expressions of expansion and compression derived from site plan and parti diagrams.
1. WAITING + RECEPTION
The lobby, including a reception area, waiting area and retail space, presents a grand ceiling feature that illustrates the concept with curvilinear forms varying in placement and height. The ceiling element is carried through multiple spaces in the facility.

2. CAFÉ
With a variety of seating options and the continued ceiling feature, the café serves simple plates to staff and patients before or after treatment sessions.

3. CHANGING AREA
Each of the two changing areas for the hydrotherapy spaces includes four individual changing rooms, one of which is accessible, adjacent lounge seating and personal locker storage, and two restrooms.

4. GROUP HYDROTHERAPY
Group hydrotherapy spaces, located at either end of individual hydrotherapy rooms, can be occupied by multiple users at a time. Windows in this space are treated with a translucent film to ensure that users have adequate privacy when occupying the space.

5. INDIVIDUAL MEDITATION
Each of the four individual meditation rooms has two sliding glass walls that can be opened up for a closer connection to the natural environment. The ceiling feature in these rooms acts as a screen that highlights the transition between the entrance and the therapy space.

6. GROUP MEDITATION
The group meditation room also has two sliding glass walls, as well as a translucent partition to separate the entrance area from the therapy space, bench seating for multiple users, wall-mounted storage, and light fixtures that reflect the open-air quality of the second level.

7. STAFF LOUNGE
The staff lounge, outfitted with a variety of furniture types and arrangements, is a place where staff members can comfortably rest, eat or gather outside of working hours.

8. COUNSELING
Counseling rooms are used for individual meetings between patients and staff members. With informal furnishings and ample workspace and storage, the space promotes both comfort and productivity.
The defense for this thesis, held on May 6th of 2022, presented the opportunity to share the work I have developed over the past year with several of my professors – Roberto Ventura, Kristin Carleton, Dr. Sara Reed, Emily Smith, Lexy Holcombe, and Camden Whitehead. It was especially meaningful to share this work with them, because without the guidance, knowledge, insight and feedback that they have consistently provided me with over the past two years, this project would be incomplete.

The verbal presentation included the relevance of the topic of mental health, site information and building history, programming, conceptual development, schematic development, and finally, a walk-through of the floor plan and its corresponding perspective views. After completing the verbal presentation, the faculty and I began to discuss the implementation of the concept. It was helpful to consider a further exploration of how a user experiences the space as they walk through it. Which areas should invoke the sensation of breathing in versus breathing out? The concept was primarily implemented through the ceiling plane, with varying ceiling heights, forms and materials, but the concept could have had a stronger impact if it gave more evident direction in the design of other project elements. I was also prompted to reconsider the selection of the materiality for the metal ceiling drapery; perhaps the existing building calls for a material like stainless steel, as opposed to the anodized aluminum that was initially chosen for its lightweight and reflective qualities.

A suggestion was made to create a custom section drawing that cuts through the main circulation path of a typical user, so that we are able to follow the user’s movement through the space and better understand the overall experience from start to finish. Not only would the inclusion of this drawing help to further visualize the concept, but it would also add to our understanding of the changes in elevation that are present in the building’s first level. Because of these changes in elevation, it would also have been helpful to graphically emphasize the ramp that leads down into the hydrotherapy spaces so that the plan clearly reads as accessible.

The faculty also suggested that I incorporate a view or drawing that specifically highlights the individual hydrotherapy rooms. These spaces do occupy a significant amount of square footage in the facility, and a visual representation would help to describe this primary program area in terms of the layout, function, and the treatment process. As a treatment facility for anxiety and depression, the inclusion of the retail space was brought into question, as retail in the context of wellness is typically associated with spa facilities. Although it was not as thoroughly developed as other primary program areas within the project, I chose to include the retail space to offer wellness products or other products that users might encounter during treatment. It may have been beneficial to investigate alternative program areas that are more specific to mental health or that give more evident direction in the design of other project elements.

I was pleased to hear that the faculty appreciated my consideration for societal needs concerning mental health, and that this type of project would serve to benefit the community in a new way. The non-traditional programming, along with the non-institutional quality of the proposed facility, would help to diversely treat patients in this facility and help to diversely treat treatment options for those seeking mental health support. My studies in interior design, especially those related to this project, have developed my understanding of user needs in the built environment, the impact that thoughtful design can have, and the many considerations that are required to produce good design. The final design of this project reflects thoughtfulness, creativity and growth, and I am proud to have developed a space that challenges institutional standards while supporting healing and recovery.

REFLECTION

ACKNOWLEDGEMENTS

This journey would not be complete without —

My family, who offers all the support I could ever need
My friends, who continually provide me with encouragement
Alex, my partner and source of consolation
My studiomates, Emily Kalafian, Hallie Gillespie, Krisly Leitai, Stephanie Wilburn, Lisa Moon, Nishtha Chawla, and Patricia Lamb, who never fail to inspire me
My professors, whose guidance, insight, knowledge and feedback have helped me to realize my potential
Thank you.