

Environmental Healing Through the Use of Nature and the Built Space

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By

Siv DeBoom

Miami University

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Chair _____

(Mary Rogero)

Reader _____

(John Reynolds)

Reader _____

(John Humphries)

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Siv DeBoom

Miami University

Abstract:

Integrative medicine and nature-based healing are effective ways to help those who are suffering medically to recover faster and more efficiently by utilizing the built, natural, and medical environments. Nature-based healing (NBT) is important because it allows patients to recuperate in an environment different from a hospital. Staying in a hospital too long can damage health because of increased exposure to disease, as well as damage the psyche affecting a person's overall well-being. Because we have an impact on the environment, can nature and the built environment simultaneously work as a system to improve our wellbeing?

By understanding the historical relationship between humans and nature and the principles of systemic thinking, this paper explores the relationship between humans, Mother Earth and alternative ways of healing. To demonstrate the integration of the built environment and nature two case studies using nature as a healing tool and how designers can design a retreat for healing are analyzed and discussed. In conclusion, patients who are chronically ill or suffer from acute conditions would benefit from spending time in a natural retreat to promote healing. Hospitals are designed to treat patients. The idea of how using architecture that not only embraces nature but works in tandem with nature's systems to positively affect our wellbeing will be explored.

Introduction:

Being healthy or "well" has many meanings: from living a healthy and active lifestyle to

actual physical medical health to mental health. Our lives depend on balance of our physiology and our emotional well-being. The concept of *salutogenesis* was developed by Dr. Antonovsky in 1979¹. Antonovsky studied hospital patients, and his research suggested that our bodies heal at different rates depending on where a person recovers. Salutogenesis is the focus of health contra disease. By using salutogenesis as well as the concept of *integrated medicine*, how can architects best design an environment with wellbeing in mind?

The natural environment, specifically the forest, has a direct impact on healing and wellbeing. The relationship between man and Earth is a long and complicated one. How we as humans respect and understand our Mother Earth is critical to proper healing design. How can nature and the built environment work simultaneously as a system to not only improve wellbeing but to support wellbeing through our human life cycle?

Being sick with chronic illness, cancer, or any other disease takes a toll on both patients and their families. The research examines how the built environment in nature can provide a retreat space for those with illness to heal. Questions of how nature can promote healing and how architectural spaces contribute to healing is examined with evidence of United Kingdom based Maggie Centres, and therapeutic gardens in Denmark, as well as historical data addressing how nature has long been used for recovery.

¹Aron, Antonovsky. *Health, Stress, and Coping*. 1st ed. The Jossey-Bass Social and Behavioral

Science Series: (Jossey-Bass Publishers, 1979), 123.

History and Terminology:

The definition of health has changed many times over the years, from defining a state of lack of illness to a state of overall wellbeing that encompasses more than just physical health. Health incorporates all bodily systems such as physical, mental, and emotional. The new term for this overall state of health is *wellbeing*.

Terms both relating to nature as well as medicine are discussed. For clarity, *nature* is the all-encompassing referral to plants, animals, landscape, or other naturally created elements. *Environment* refers to conditions of a person or animal. The term *natural environment* refers to surrounding nature.

There have been numerous health-related pandemics over the years including the current, COVID-19 or Corona Virus. Others include leprosy, the plague, current and past influenza strains, and tuberculosis. With Tuberculosis, also known as the white plague, the thinking about architecture in relation to nature and sickness changed². Tuberculosis or TB wreaked its havoc from about 1870 to 1930³. At the time, germ theory was not known. Doctors treated patients by sending them away to remote treatment hospitals called *sanatoriums* that had dry fresh air. Sanatoriums were built in cold climates like Colorado, Oregon, and Finland, with the thinking that cold air was good for treating and clearing the lungs⁴. These sanatoriums were designed around the idea that exposure to cold fresh air mixed with sunshine and nature, had healing powers.

Although we now know that fresh air is no replacement for modern medicine and antibiotics, the idea that nature, fresh air, and sunshine have healing powers still holds true. Paimio Sanatorium in Finland is one of the most well-known and still existing sanatoriums. Paimio along with many other sanatoriums advanced the design of hospital and healthcare architecture, with small details being designed to further patients, doctors, and nurse's safety. Examples include specialty door latches, no/low splash sinks, radiant heated ceilings, and open-air balconies⁵. See figures 1-3 below of Paimio

Sanatorium featuring open-air balconies and patient rooms.



Figure 1: Paimio Sanatorium in Finland



Figure 2: View of the open-air patient deck.



Figure 3: Paimio Sanatorium surrounded by forest.

Preventorium were another classification of treatment centers designed to fight Tuberculosis. Preventorium were designed for prevention and protection of vulnerable populations such as children who already had a chronic illness or disease that placed them at increased risk of contracting Tuberculosis⁶. During development of preventorium, other

² Zouvelekis, Helen. "Design Blog." *Spacesmith*, Spacesmith, 1 Apr. 2020.

³ IBID

⁴ Kleinschmid, H. E. "What Is a Preventorium?"

⁵ Gregory, Alice. "In Search of Lost Time in Europe's Sanatoriums." *The New York Times*, The New York Times, 19 Feb. 2018.

⁶ Kleinschmid, H. E. "What Is a Preventorium?"

solutions such as fresh air schools came about to battle TB. Sanatoriums and preventoriums, although they are no longer used today as medical treatments, play an important role in improvements of the medical and architecture fields. Their development advanced the overall building health in regards specifically to airflow and daylight.

Systems Thinking and Medical Terminology:

The medical ecologist Rene Dubos says that the key to human health is through nature⁷. The environment is part of a bigger system, which is all-encompassing and interconnected. This idea is thought of as a *systemic approach*.

The systemic approach is based on a network of relationships and connections between all parts of life. This can also be called *systems* or *systemic thinking*⁸. The systems way of thinking was part of a scientific paradigm that due to achievements in the scientific community, there was a shift from mechanistic, (a parts vs whole way of thinking) to ecological thinking or, (emphasis on whole organism) way of thinking in the 12th century. In the 21st century, the shift is still being shaped from the world being looked at like a machine to more of an interconnected network of forces: a *holistic worldview* or *ecological worldview*, looking at the world as a whole rather than a collection of parts. Furthering the idea of an ecological worldview, there are two subcategories, *shallow and deep ecology*. Shallow ecology is a human-centered view where humans are ranked higher than nature and 'use' nature for their advantage. Deep ecology is an earth-centered view that combines humans and nature in an interconnected way where humans are only a part of an overall system and nature and humans are one⁹. With this view of deep ecology and a systems perspective, we can acknowledge

⁷ Borasi, Giovanna, Mirko Zardini, and Margaret Campbell. *Imperfect Health: the Medicalization of Architecture*. Montréal: Canadian centre for architecture, 2012, 21.

⁸ Capra, Fritjof, and Pier Luigi. Luisi. *The Systems View of Life: A Unifying Vision*. Cambridge: Cambridge University Press, 2018, 9

⁹ Capra, Fritjof, and Pier Luigi. Luisi. *The Systems View of Life: A Unifying Vision*. Cambridge: Cambridge University Press, 2018, 11.

that by understanding nature we can better understand health¹⁰.

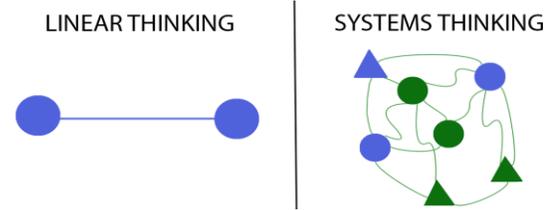


Figure 4: Systems Diagram

Traditional medicine uses what's known as a *biomedical model* in the field of medicine. The biomedical model is the foundation and basis of modern medicine. With this approach, it's common that both doctors and researchers treat disease rather than understand why it occurs¹¹. Using an approach to medicine that is systemic is more in line with the overall definition of health and wellbeing. The systemic approach considers every single bodily cell, the body as a whole, the mind, and one's environment into consideration when treating. This line of thinking is not currently a part of traditional medicine¹². Using systemic thinking rather than traditional thinking, scientists may be able to better understand healing. When using traditional linear thinking in healthcare, complexity and root cause of a disease can often be overlooked or missed.

With this view of health, we must acknowledge that health is not a constant state of perfect wellbeing but rather a state of wellbeing that fluctuates and becomes off-balance occasionally. Health can be described as "A state of well-being, resulting from a dynamic balance that involves physical and psychological aspects of organism, as well as its interaction with its natural and social environment."¹³ As humans, we need to be constantly adapting to our surroundings to stay in balance or in a state of wellbeing. Organisms self-heal to reestablish balance with what's known as a self-balancing

¹⁰ Capra, Fritjof, and Pier Luigi. Luisi. *The Systems View of Life: A Unifying Vision*. Cambridge: Cambridge University Press, 2018, 111.

¹¹ Capra, Fritjof, and Pier Luigi. Luisi. *The Systems View of Life: A Unifying Vision*. Cambridge: Cambridge University Press, 2018, 112.

¹² IBID

¹³ Capra, Fritjof, and Pier Luigi. Luisi. *The Systems View of Life: A Unifying Vision*. Cambridge: Cambridge University Press, 2018, 113. (Capra, 1982, p.323)

feedback loop, an example of how health is a systemic process¹⁴. So, when the body is out of balance it becomes ill and when balance is regained the body heals.

Diseases also have a huge physiological component to them. "A positive attitude will have a strong positive impact on the mind/body system and will often be able to reverse disease process, and even to heal severe biological disorders."¹⁵. The healing is due to what's known as a *placebo effect*. The placebo effect is a phenomenon that occurs in the brain that is biological as well as psychological and usually follows some sort of treatment or verbal cue. It's important to acknowledge that the placebo effect alone is not a treatment for illness, but rather can be used in conjunction with medical treatment to impact a patient's healing and or experience. The placebo effect can be powerful causing patients to experience pain decrease, stress reduction, or even completely eliminating physical symptoms¹⁶. Any kind of placebo treatment can be used to induce the effect on a patient. This could include using talk therapy, seeing a nutritionist or spending time in nature. In the past, this way of thinking was called *holistic* or *alternative*. In today's terminology, it is considered to be *integrative medicine*, and can be defined as, "...a healing-oriented approach that attempts to combine the best of conventional and alternative, or 'complementary,' therapies."¹⁷.

Integrative medicine is already widely popular in Europe in Germany, Norway, Denmark, and Sweden using it as a common treatment that is covered by insurance companies. In the United States, we have two very different systems of health care, mainstream biomedical care that is covered by insurance and the private alternative system¹⁸. An ideal system would combine both traditional and integrative systems into one umbrella covered by all insurance companies. If we turn our current healthcare environments into more of a healing and restorative environment, we could create a better environment for self-healing and treatment.

Case Study 1: Danish Healing Forest Garden Nacadia

The Danish Healing Forest Garden at Nacadia was designed with inspiration and research from a Swedish project called Alnarp Rehabilitation Garden. Both projects were focused on providing a Nature Based Therapy program or NBT for short. NBT is a salutogenic approach to helping patients overcome illness. Nacadia was developed by landscape architect Ulrika Stigsdotter in 2007-2009 working alongside a team of other landscape architects, doctors, architects, therapists, and psychologists¹⁹. The site is 2.5 acres in Horsholm Arboretum, 40 acres north of Copenhagen. The arboretum has a collection with the most plants and shrubs in all of Scandinavia. The site has an appearance of a forest due to all the plants and shrubs but can also be described as a garden setting. The site also houses a greenhouse and small shelter for patient therapy sessions. Nacadia's goal is to connect physical environment (garden and forest) to humans suffering from illness. The landscape is designed to be layered and create a feeling of a traditional interior space that consists of a floor, walls, and a roof by totally surrounding the patient with nature. The concept of totally immersing in nature is what supports the healing process.



Figure 7: Path at The Healing Forest Garden Nacadia

¹⁴ Capra, Fritjof, and Pier Luigi. Luisi. *The Systems View of Life: A Unifying Vision*. Cambridge: Cambridge University Press, 2018, 115.

¹⁵ IBID

¹⁶ IBID

¹⁷ Capra, Fritjof, and Pier Luigi. Luisi. *The Systems View of Life: A Unifying Vision*.

Cambridge: Cambridge University Press, 2018, 115.

¹⁸ IBID

¹⁹ Related Illness at the Danish Healing Forest Garden Nacadia." *Journal of Therapeutic Horticulture* 20 (2010): 34-51.

Research has shown repeatedly that those suffering from stress and illness prefer to be in natural environments that provide a feeling of retreat, and peace which is what NBT provides. Identical findings were present at this project's predecessor in Sweden. Patients often spent time alone contemplating in the gardens throughout the duration of therapy²⁰. The goal of NBT is to improve and assist in recovery using integrated medicine. NBT at Nacadia has three main parts: sensory experiences, horticultural activities, and nature-based stories²¹.

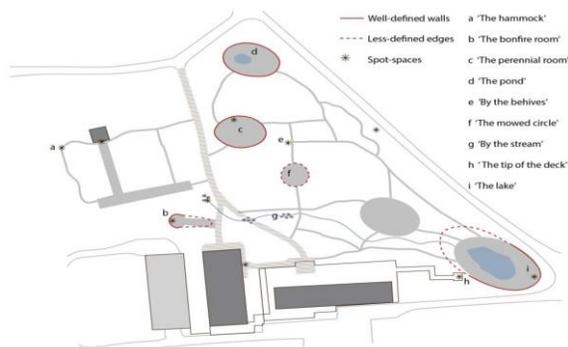


Figure 5: Nacadia Map

Being immersed in nature involves all kinds of sensory experiences from the smell of fresh air and flowers to birds chirping and trees swaying, to feeling warmth from the rays of sunshine. Sensory experiences provide awareness of the body and the notion of presence which is the idea of mindfulness. Sensory experiences are shown to provide relaxation to the nervous system and the brain²². The patient's relaxation can then be used in conjunction with other therapies like psychology to promote wellness.

Nacadia also uses horticultural activities as a NBT to provide patients with a feeling of meaningfulness, change, and reward. Derived from occupational therapy and working with your hands and plants allows for an additional sensory kind of experience. Therapists at Nacadia use these activities as a chance to converse with their patients while they are immersed in a positive activity²³. It should be mentioned that other activities can be used and tailored as a treatment for patients. One might

imagine nature walks, crafts, bonfires, cooking, yoga or any other activities patients might have an interest in.

Nature-based stories and symbols are the next categories of NBT at Nacadia. The goal is for the patient to connect nature and its systems to their own life and applicable experiences, acknowledging that like nature everything is connected. NBT uses poems, stories, and symbolism to inspire connections between person and nature²⁴. Doing this allows patients to gain insight and knowledge over their struggles of illness.

Nacadia is a part of a traditional medical clinic that has referred patients to the garden center for treatment²⁵. While Nacadia is a program specifically designed for patients suffering from chronic stress, a program similar in design could be applied to generally ill patients. While therapy may not be well-suited for everyone, many sick patients would benefit from spending time surrounded by nature with the ability to relax away from traditional medical settings. Even those who suffer from allergies would be able to attend a program like this if designed correctly. Knowledge of trees, shrubs, and plants are crucial to the design and wellbeing of said patients.

Case Study 2: Maggie Centre in Oxford

Maggie Keswick Jencks Cancer Caring Centre is a charity center in the UK that provides free support for cancer patients across the country. Maggie Keswick Jencks, or Maggie was the founder of the Maggie Centre. She was a known gardener with a publication on Chinese gardens as well as a practicing designer who completed many interior design projects during her life. Maggie was diagnosed with breast cancer at age 47 and again diagnosed at 52 and given three months to live. Maggie and her husband Charles Jencks (a landscape designer, architectural historian, and author) were forced to process this life-changing news in a "windowless

²⁰ Related Illness at the Danish Healing Forest Garden Nacadia." *Journal of Therapeutic Horticulture* 20 (2010): 34-51.

²¹ IBID

²² IBID

²³ IBID

²⁴ Related Illness at the Danish Healing Forest Garden Nacadia." *Journal of Therapeutic Horticulture* 20 (2010): 34-51.

²⁵ Related Illness at the Danish Healing Forest Garden Nacadia." *Journal of Therapeutic Horticulture* 20 (2010): 34-51.

corridor"²⁶. From this personal experience that Maggie and Charles decided something needed to change in the hospital industry, specifically regarding cancer. Their goal to create a space that was inherently positive where not only patients, but their families could go to process, heal, and learn about options for getting help.

Maggie came to terms with her illness and found much-needed insight to move forward with her life. Both she and her husband realized that alternative treatment options available were too complicated to navigate on their own. "However good the treatment is, there is very little hospital time for the mental stress that comes with cancer, and that can be as hard to bear as the illness itself"²⁷. With little to no resources to be found, Maggie took it upon herself to change that, thus the idea of Maggie Centre was born. The centers offer support for "information, psychological support, advice on nutrition, exercise and relaxation therapies". The first centre was opened near Western General in Edinburgh²⁸.

The Maggie Centre helps patients manage their stresses from treatment to diagnosis. They help not only patients but their affected families as well. Maggie writes, " Seeing the suffering of my husband, mother and teenage children affected me physically"²⁹. The diagram below explains goals of the treatment center.

HEALING NETWORK

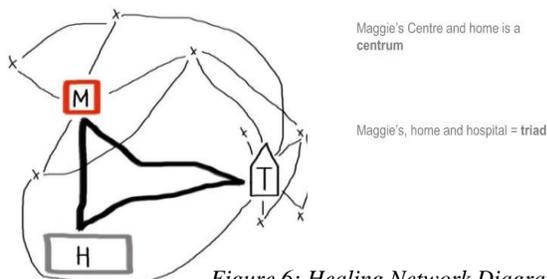


Figure 6: Healing Network Diagram

Maggie was introduced to strategies to help her and her family cope through use of yoga, and counseling. Nutrition is another important aspect of the Maggie Centre. Maggie acknowledged that it was her chemotherapy that put her into remission not yoga and mindful eating, but those are strategies she used to aid her through her cancer journey. Her involvement in her own treatment was through diet, exercise, and attitude and was something she could have control over which is shown to have powerful psychological and placebo-like effects.³⁰

Maggie grew up in Hong Kong which also influenced her thinking of western medicine. She started to practice Qigong (breathing and meditation exercises) as well as reflexology and aromatherapy. Maggie also learned the importance of the mind and attitude during her battle. In her book she writes about Stephan Jay Gould who says, "...attitude matters in fighting cancer, suspecting that mental states may feedback upon the immune system"³¹. Both body and mind are part of a natural ecosystem and if one portion gets out of whack it impacts all other systems. Maggie's own experiences taught her that hospitals are not patient friendly. They produce anxiety, fear of pain, and ill-designed interior environments for waiting. Ideas for a more inclusive environment include better lights, a relaxing view of nature, privacy to mourn, supplies for tea, or coffee³².

²⁶ Keswick, Maggie, and Marcia Blakenham. *A View from the Front Line*. Edinburgh: publisher not identified, 2007.

²⁷ Keswick, Maggie, and Marcia Blakenham. *A View from the Front Line*. Edinburgh: publisher not identified, 2007, 2.

²⁸ Keswick, Maggie, and Marcia Blakenham. *A View from the Front Line*. Edinburgh: publisher not identified, 2007, 4.

²⁹ Keswick, Maggie, and Marcia Blakenham. *A View from the Front Line*. Edinburgh: publisher not identified, 2007, 13.

³⁰ Keswick, Maggie, and Marcia Blakenham. *A View from the Front Line*. Edinburgh: publisher not identified, 2007, 14-15.

³¹ Keswick, Maggie, and Marcia Blakenham. *A View from the Front Line*. Edinburgh: publisher not identified, 2007, 19,

³² Keswick, Maggie, and Marcia Blakenham. *A View from the Front Line*. Edinburgh: publisher not identified, 2007, 21.

The Maggie Centre provides all architects, landscape designers, interior designers a design brief on the Centre's requirements. To ensure that all Maggie Centre's have the same founding principles that Maggie and Charles so carefully designed based on their experience. All Centres are designed by different architects and landscape architects making them unique in design but united in intention (what do you think of these additions to your sentence?). The design goal was to make the building feel more home-like than hospital-like. In the design brief, (a sort of blueprint or formula) building goals and aesthetics are given. They suggest that architects and landscape architects work together from start to finish on the project which allows for merging of interior and exterior spaces, both built and natural. The landscape architects are advised to use scent, sight, sun, rain, privacy, and cycles of life and death to design landscapes³³. The brief talks about creating as many opportunities for people to view nature and coax them to spend time outside in nature. The discussion of interior spaces and places of gathering and privacy is also critical. The outline of spatial requirements is listed individually for the entrance sequence, welcome area, office, kitchen, computer desk, notice board, library, sitting rooms, consultation rooms, toilets, retreat, views, and even parking. The goal is to create a domestic feel rather than an institutional feel³⁴.

The Maggie Center Oxford at Churchill Hospital Campus is an ideal example of a building understanding and respecting the environment around it. The Maggie Center in Oxford sits just about a two-minute walk away from the main hospital. The location of the centre itself can be described as sustainable. It is in a dense woodland area that uses existing trees for shelter from southern sun as well as wind. The firm that designed the Maggie Centre Oxford, WilkinsonEyre, used solar shading studies to determine the percentage of glazing versus solid wall panels in the design as well as to ensure that the roof had enough overhang for shading purposes. The building structure materials are, almost all, manufactured with sustainable timber. The roof is made of copper,

a material that is known to self-weather as well as is recyclable after its intended use is over³⁵.



Figure 7: Maggie Centre at Oxford, UK

The building was also designed using a closed-loop ground source heat pump to provide energy that is renewable to the building as well as hot water. Natural ventilation is also addressed in every room of the building. Lighting was also taken into consideration with the use of LED lights with lowered light in the evening to limit disruption to nearby wildlife³⁶.

The Maggie Centre at Oxford has a unique timber structure that is built at a domestic scale to provide the feeling of at home comfort. The layout uses complex geometries that create internal spaces for refuge that are filled with light³⁷. The building layout was also made to keep existing trees on site and not damage their root system by raising the building off the ground in nine splayed glulam columns that screw into the foundation³⁸. Another unique feature of the building was extensive use of onsite bespoke building elements. This is partly because of the building's location and partly due

³³ Keswick, Maggie. "Maggie's Architecture and Landscape Brief," PDF, n.d, NP.

³⁴ IBID

³⁵ "Maggie's Oxford Centre, Oxford, Oxfordshire." *Inspirational Timber Case Studies*.

³⁶ IBID

³⁷ "Maggie's Oxford Centre, Oxford, Oxfordshire." *Inspirational Timber Case Studies*.

³⁸ IBID

to the need for an expedited construction process.



Figure 8: Below Maggie Centre

To better understand how successful the Maggie Center is at creating a healing environment, Kevin Lynch's "The Image of the City" system of elements is used to measure optimal success. In *The Image of the City*, Lynch proposes five elements that include; path, edge, district, node, and landmark. A path being the "lifeline of a garden" as well as a line an observer takes. Edge is the outside limit or boundary and can be indicated by various physical elements like a fence, end of a pattern, walkway, wall etc. Districts are areas within boundaries that are places of meaning with a strong identity. Examples could include a garden dedicated to working the earth or a firepit for story-telling. Nodes are gathering places or intersections. They could be seen as a series of benches of gathering, or point at which two paths intersect. Landmark is a "point of reference" is a symbolic feature that stands out and could be represented as a large oak tree or a statue with water flowing from the middle of the garden.

The Maggie Centre at Oxford has a path/elevated bridge that leads to the main building entrance. The edge condition at Maggie Centre is a forested area defined by surrounding roads and the Churchill Hospital Campus. The district at Maggie Centre can be described as the area below the building where meetings and congregation can occur. The kitchen and dining area at the Centre of the building are the project's nodes. Due to the building shape, this is the point at which you must access to get to other wings of the building. There is no defining landmark in the building or surrounding

landscape, which is where the project could improve upon. By having a defining landmark, guests of the Centre would be able to focus on something positive with good associated memories of hard times. Overall, Maggie Centre is a very successful example of patient friendly building conditions but could have improved site conditions.

Spatial Requirements for Healing and Comfort:

Allergies are one way that both built environments and natural environments have a negative effect on people. Allergies or "hay fever" have been around quite some time. In the natural environment, allergies often occur when a plant, tree or shrub species is overplanted. In nature, there are specific plants that can be used that also are not known allergens. They are based on the OPALS scale, or Ogren Plant Allergy Scale³⁹. Plants that are still high on the scale can be used, just in lower quantities. In the built environment, if a building is not sealed off enough from outside, pollutants, mold, and other allergens can infiltrate and cause allergy issues. In-home materials, products, and pets can also wreak havoc to those with allergies or disease. Many materials that are used in homes can cause ill-effects on humans that occupy them. Carpets, new furniture, wall coverings, paint, and many other materials are often loaded with VOC's (volatile organic compounds) that off-gas into the air. This can contribute to what's known as "sick building syndrome".⁴⁰ Sick building syndrome is when a person becomes ill due to ruling out other causes. Sick building syndrome can happen for a variety of reasons but could be part of, a reaction or irritation to VOC's, toxic mold, other chemicals and pollutants, allergies, and many other triggers. It is critical that we seal our buildings as tight as possible and provide a strong ventilation and filtration system to keep everyone healthy. Buildings should not be designed for the special population that is sick and have allergies, buildings should be designed tight as a standard of design for everyone's health and wellness. While buildings and nature don't work together, using an understanding of natural forces that

³⁹ Borasi, Giovanna, Mirko Zardini, and Margaret Campbell. *Imperfect Health: the Medicalization of Architecture*. Montréal: Canadian centre for architecture, 2012, 49.

⁴⁰ Borasi, Giovanna, Mirko Zardini, and Margaret Campbell. *Imperfect Health: the Medicalization of Architecture*. Montréal: Canadian centre for architecture, 2012, 108.

occur we can better design by anticipating and adapting.

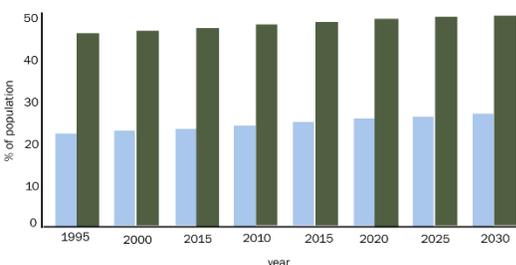
Summation of Information and Concluding Remarks:

By using a combination of a natural setting such as a forest, park or garden, and combining it with the idea of integrative medicine and with the use of a healthy, adaptive and comfortable built environment; those suffering from any form of malaise will find, healing, relaxation, and comfort through the environment, both inside and outside. The Bill Fisch Forest Stewardship and Education Centre demonstrates just how important it is to look at technical, environmental, and site conditions of a building to design a building that functions as a healthy ecosystem. The Danish Healing Forest Garden Nacadia demonstrates healing power that nature can have on humans. Spending time in a natural setting provides relaxation and a stress-free environment to work on healing the body and mind. The Maggie Centre shows how the built environment influences people. The aesthetic qualities a building has, an interaction with inside and outside spaces, and opportunity for public and private settings can all be felt and seen. Using a systematic approach to design, we can help heal and prevent illness in our built and natural environments.

Addendum: Design Proposal & Reflection

Inspired by a family member that suffers from a chronic illness, for my design I was interested in how to incorporate other holistic treatments into the lives of people that are ill to help improve their overall wellbeing. With more and more people developing and suffering from chronic diseases, especially since COVID, the importance of designing for wellbeing has increased.

Percentage of the Population With Chronic Diseases



I chose to design a health support facility for a small group of people to come and spend time at the facility and the property. The facility is private while the grounds are available to the public to walk through. The building is used as a retreat center in conjunction with the local hospital system. Patients will be referred by their doctors or prescribed to attend classes focused on wellness activities like yoga, meditation, cooking classes, book clubs, nature walks all with the goal to reduce stress so better healing may take place. This type of facility is based off my research on precedents and organizations such as The Ronald McDonald House Charities and the Maggie Centre's. It is inclusive to all types of ill patients, as this is not a medical treatment facility, but rather a support facility that works with the patient and the hospital to develop an integrative treatment plan. Users who are referred may have cancer, autoimmune diseases, stress related, or heart related illnesses.

Nature has a direct impact on healing and wellbeing. Spending time even just sitting outside having a cup of tea or walking on a trail is proven to significantly reduce the stress hormone cortisol, lowering blood pressure, muscle tension and adverse brain activity. The importance of this research is critical to the health and wellness of our Earthly population. Being sick with chronic illness, cancer, or any other disease takes a toll on both the patients and their families. My design examines how the built environment in nature can provide a retreat space for those with illness to come and work on healing.



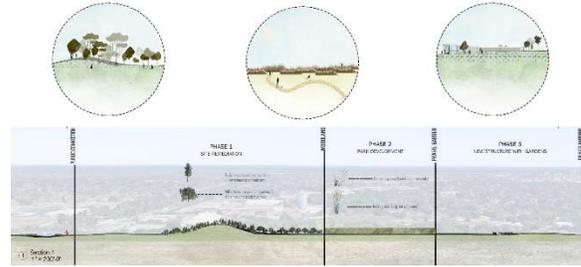
My site is located in Evanston, Illinois which is 13 miles north of Chicago. Evanston has a population of around 75,000 and is home to the well-known University as well as hospital system, Northwestern. It sits on Lake Michigan and is located in Cook County. Evanston

consists mostly of white non-hispanic populations, followed by black and Asian populations. My site is known as James park and is situated approximately 2 miles west of Lake Michigan.

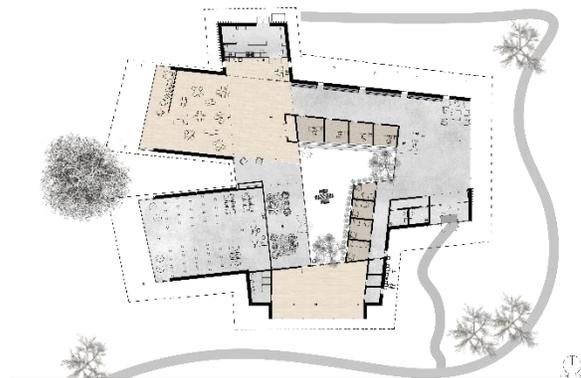
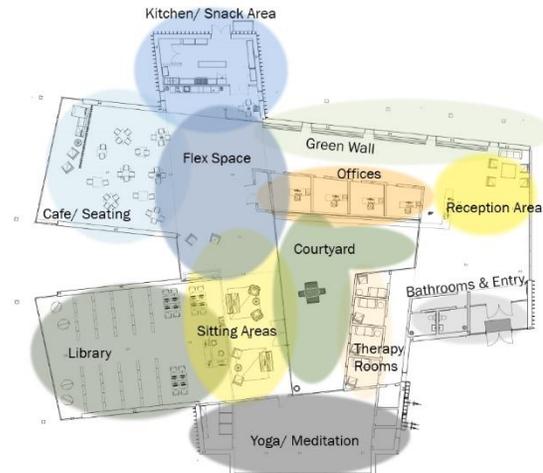


James park has plenty of nearby transportation including CTA bus stops, the Metra, and Divy rental bike locations making it ideal and accessible for people coming from Chicago and the suburbs. The site is located in a residential and commercial area close to the Skokie canal that is a continuation of the Chicago city grid. On the site there is an existing Elementary school, Senior center, and animal shelter, all three which are extremely vulnerable populations. The whole site is about 40 acres in size and used as a recreation field. It has a covered landfill in the south west corner that the locals call "Mt. Trashmore." Years ago, 1 block over was the former Skokie Gas plant. While the gas plant no longer exists, the cleanup of the site has recently come into question by the locals. The city of Evanston filed a lawsuit against the former gas plant and spent over 8 million dollars fighting to improve the conditions, and eventually had to drop the case due to monetary reasons. There have been significant amounts of methane gas detected as well as coal tar that have been discovered. The gas company has stated that there are no hazards to the community.

Due to the size and time, it would take to improve site conditions, I have broken it down into a three-phase plan. Starting with phase 1 being site remediation through the use of trees including poplar and willows that are known to absorb hydrocarbons, petrochemicals, and heavy metals in their root systems. Phase two is the development of the park as a prairie garden, which is very native to the northern Chicago area. Phase three is the structure itself with the use of supplemental gardens.



My building is around 14,000 square feet, keeping it at a more intimate and domestic scale. The program consists of lobby and reception, offices, green corridor, commercial and domestic kitchen spaces, cafe area, library, computer room, yoga and meditation room, sitting area, a flex space, and an interior courtyard. My design is inspired by creating and framing viewsheds out to the landscape.



Support Rooms



Exterior Perspectives



To keep my building healthy and sustainable, I have incorporated solar panels to offset the energy consumption as well as a rain catchment system that is used for a waterfall feature and other greywater tasks inside the building. I also have two green roofs to help with stormwater management and heat reduction.

My design uses viewsheds, changes in roof height, and the layering of inside and outside rooms to ensure there are always views of nature. The form has been inspired by maximizing exterior views, so I used a crisscross v shape using lines of extension that creates many user experiences such as scattered garden opportunities, journeys and junctions, as well as strong circulation throughout the building. Large roof overhangs have been implemented as well as external blinds to reduce unwanted sunlight.

Materials were also an important consideration for my design, so using materials that were healthy, sustainable, free of VOC's and recycled were essential in my design. The neutral material palette blends in with the colors found on my site.

The research and work that has gone into this project will be able to help me in the rest of my architectural career. With my passion and interest in healthcare and wellness, I think my skills would be well utilized at a firm that specializes in healthcare design. I think that with more time I could develop this project further and improve my floor plan and take some of the suggestions that the jurors had for my exaggerating my layering concept. I think that the thesis process has taught me that thesis never really ends, it is more of an interest that you constantly pursue and learn about for the rest of your life.





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