Healing Architecture: Engagement, Nature, Community

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HEALING ARCHITECTURE
Thesis Collaborative 2016 – 2017

Request for Approval of Project Book

Student's Full Name: Antonio DeWayne Hinson

Thesis Project Title: Healing Architecture: Engagement, Nature, Community

Thesis Summary:
My thesis focused on exploring death as a part of life rather than looking at death as a separate entity. I reframe a Cancer Center that engaged life as part of a community with nature rather than a hospice center that embraced death. In today's society, healthcare institutions are very isolated and disconnected from the public like gated communities. Most people I know do not like to go to hospitals if they can prevent it. I felt there needed to be a place where people with cancer could go that offered some respite from the conventional healthcare institutions. A place that put the interests of the patient first, a place where patients could get the practical, emotional and social support they needed. I envisioned a creative architectural design that focused on three concepts of engagement, nature and community that would transform healthcare settings into healing environments that improved patient outcomes and staff effectiveness.

Student Signature ___________________________ Date __________

Approved by:

Internal Advisor 1 ___________________________ Date __________

Internal Advisor 2 ___________________________ Date __________

Thesis Coordinator: Professor Liz Martin ___________________________ Date __________

Department Chair: Dr. Tony Rizzuto ___________________________ Date __________
DEDICATION

I would like to give an honor to God whom is head of my life and has blessed me with an amazing life. To my Mother, Mary Louise Hinson whom is no longer with me here on earth but is with me through spirit, who gave me unconditional love, taught me about life, God, respect for others and raised me to be the great man that I am today. To my Father, Phil Capice Hinson, a great man who taught me about the hard knocks of life, and showed me how to stand on my own two feet and fight for what you believe in I cannot thank you enough. To my Grandparents J.P. Ellerbe & Pansie Ellerbe, Linwood & Geneva Hinson whom imparted their wisdom in me and taught me the true value of family and peace of mind. To my brother and sisters, uncles, aunts, cousins and friends, I sincerely thank you for all of your support through the years on my quest to pursue my goals and endeavors. Everyone of you played an instrumental part in my life and I dedicate this to you. For anyone who has lost someone to cancer or any disease this is dedicated to you as well. I love each and every one of you. God bless you all.
ACKNOWLEDGEMENTS

I would like to thank Professor Saleh Uddin for motivating and challenging me to formulate my thesis statement and board in Thesis Prep. He gave me a lot of resources and helped me not to make my thesis so complex but to have fun with it and enjoy the process. To my thesis advisors, Professors Elizabeth Martin and Giovanni Loreto thank you for working with me and seeing the potential in my project to make it one that brings awareness to people with cancer and encourage healing in the midst of despair. I cannot thank you enough for your insight, reviews, discussions and critique for my thesis project. A special thanks to Dr. Humberto Reinoso for the valuable insight within the healthcare industry and for the Healing Spaces Book, by Esther M. Sternberg, M.D.
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Photo of the entrance to the Healing Garden at the Hospice Center my 92 year old Grandmother, Geneva Hinson was admitted to and discharged from due to her health improving.
THESIS STATEMENT

My thesis focuses on exploring death as a part of life rather than looking at death as a separate entity. I will be reframing a cancer center that engages life as part of a community with nature rather than a hospice center that embraces death.

In today’s society healthcare institutions are very isolated and disconnected from the public like gated communities. Most people I know including myself, don’t like to go to hospitals if they can prevent it. I feel there needs to be a place where people with cancer can go that offers some respite from the conventional healthcare institutions. A place that puts the interests of the patient first, a place where they can get the practical, emotional and social support they need. I believe with creative architectural design that focuses on three concepts; engagement, nature and community healthcare settings can be transformed into healing environments that improve patient outcomes and staff effectiveness.
OBJECTIVES

My goal is to design a cancer center that engages life as part of a community with nature rather than a hospice center that embraces death. I plan on establishing this objective by designing a Cancer Center that fuses these three concepts of engagement, nature and community together to provide a facility that will support and enhance the healing that takes place both physically and psychologically among people with Cancer.

My methods of research will examine these three concepts of engagement, nature and community through historical tracing related to case studies, articles, surveys and empirical data documented by researchers on (EBD) evidence-based design by the Center for Health Design.

Location will be one of the main drivers for the cancer center. I have chosen four different sites in Atlanta, Georgia and will assess them based on a set of site criteria: engagement, nature, community and accessibility. Once the assessment is complete I will choose a site for the proposed cancer center that encompasses the majority of the site criteria.
ABSTRACT

My thesis focuses on exploring death as a part of life rather than looking at death as a separate entity. I will be reframing a cancer center that engages life as part of a community with nature rather than a hospice center that embraces death. I don’t know about you guys, but for me this hits home. I have had quite a few family members and friends whom received that life-changing news that they have cancer in an institutional environment. To be hit with that type of news can be very overwhelming and devastating.

In today’s society healthcare institutions are very isolated and disconnected from the public like gated communities. Most people I know including myself, don’t like to go to hospitals if they can prevent it. I feel there needs to be a place where people with cancer can go that offers some respite from the conventional healthcare institutions. A place that puts the interests of the patient first, a place where they can get the practical, emotional and social support they need. I believe with creative architectural design that focuses on three concepts; engagement, nature and community healthcare settings can be transformed into healing environments that improve patient outcomes and staff effectiveness.

Engagement plays a major role for patient’s experience as to how they interact with healthcare professionals, family members, and communities. Providing a physical connection to nature with indoor and outdoor spaces can reduce stress and improve health outcomes and support the well-being of patients. Implementing a sense of community can establish social connections between cancer patients and non-cancer patients. This can be accomplished by facilities being close to parks/greenspaces, nature trails that encourage dialogue and activities like walking and biking.

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For my thesis, I am proposing a cancer center that will support and enhance the healing that takes place both physically and psychologically among people with cancer through a focus on engagement, nature and community because that is what life is about. For so many people there is life after cancer, even if that is a changed life.
In the book Healing Spaces: The Science of Place and Well-Being, Dr. Esther Sternberg claim physicians and nurses know that a patient's sudden interest in external things is the first sign that healing has begun. It is a turning point of your mind's awareness from a focus on your inner self to a focus on the outer world. I agree that when one's focus shifts from their own illness and pain to external things that alleviates stress and help them to feel more at ease. In researching this idea of Healing Architecture one prevalent question kept arising and that was can the spaces around us help us to heal?

In a much cited study, published in 1984 in the journal Science by environmental psychologist Roger Ulrich, a professor of Architecture at the Center for Healthcare Building Research at Chalmers University of Technology in Sweden. He is the most frequently cited researcher internationally in evidence-based healthcare design, was the first to use the standards of modern medical research with strict experimental controls and quantified health outcomes to demonstrate that having a visual connection to nature can sometimes speed healing from surgery, infections and other ailments.

Ulrich and his team examined the medical records of 46 patients men and women who were recovering from gallbladder surgery at a suburban Pennsylvania hospital from 1972-1981. All other things being equal, patients with bedside windows looking out on leafy trees healed, on average, a day faster, needed significantly less pain medication and had fewer postsurgical complications than patients who instead saw a brick wall similar to the image in (Figure 1 & Figure 2).

The idea of nature being an important part of healing has long before existed dating back to thousands of years ago to classical times with temples dedicated to Asclepius, the Greek God of healing were built far away from towns on hilltops overlooking the sea.

Clare Cooper Marcus a Professor Emerita of Architecture and Landscape Architecture at the University of California, Berkeley, and Principal of Healing Landscapes states that spending time interacting with nature in a well-designed garden won’t cure your cancer or heal a badly burned leg. But there is good evidence it can reduce your levels of pain and stress—and, by doing that, boost your immune system in ways that allow your own body and other treatments to help you heal.

What you can do in the garden can be as important as what you see according to Cooper Marcus. The results of "behavioral maps" tracking visitors' actions while in a garden suggested a need for private conversation areas; smooth, tree-lined paths that invite strolls but that will not trip wheelchairs or intravenous poles; lightweight furniture that can be tugged into the shade or sun; and naturalistic landscaping that lures birds, squirrels and other wildlife.
One finding, in particular, surprised Cooper Marcus and Landscape Architect Mar- 
ni Barnes. Stressed hospital employees accounted for as many visits to hospital 
gardens as stressed patients, and interviews confirmed that staffers depend on 
the greenery. “I feel like one of the Mole People,” an employee who works in the 
basement radiology department of a Berkeley, Calif., hospital told the researchers. 
She said she comes to sit amid the trees of the rooftop garden daily to relax and 
meditate. “It’s a big mental, emotional lift.” In an article written by Deborah Frank- 
lin on “How Hospital Gardens Help Patients Heal” Susan Rodiek of Texas A&M has 
looked at long-term care institutions. In her studies, published in 2009, of a ran-
dom sampling of 68 assisted-living facilities, Rodiek talked to 1,100 residents and 
430 employees.

“Older people,” she found, “need and benefit from outdoor space and greenery just 
as much as the younger people”, but the adults desired some different features. 
Middle-aged adults, for example, tended to look for peace and quiet in the garden, 
and older adults were more likely to seek stimulation. At one new senior residence 
Rodiek studied, the facility’s architect had created a lovely, secluded lawn and 
pond at the back of the apartment building. But every afternoon, the researchers 
noticed, at around the same time, the elderly residents dragged their lightweight 
aluminum chairs to the front of the building to be part of the community of com-
muters passing by. “You can only watch a pond for so long,” Rodiek says. “And a 
grass lawn doesn’t change much.”

Several studies have found that social support from nurses, families, and significant 
others reduces patient stress, improves patients’ physiological outcomes, and has 
a positive influence on both patients and family members. (Kaunonen et al., 1999; 
Koivula, Tarkka et al., 2002; McMurray, 1998; Tarkka et al., 2003). Researchers in Fin-
lund examined the impact of in-hospital social support on coronary artery bypass 
grafting patients’ preoperative fear and anxiety, using the survey data collected 
from 193 inpatients. They found that when the amount of social support was high, 
patients ex- perienced lower levels of fear and anxiety. (Koivula, Paunonen-ilmo-
nen, Tarkka, & Laiappala, 2002).

In Ulrich’s Article “Effects of Healthcare Environmental Design”, social support refers 
to emotional support and tangible assistance that a person receives from others. 
Much research has shown across a wide variety of situations that persons who re-
ceive higher social support generally experience less stress and have better health 
than those who are more socially isolated (Shumaker and Czajkowski, 1994). Stud-
ies of several different categories of patients have indicated that social support 
improves.
Examples of the many possible design approaches for increasing social support for patients include providing the following features to encourage and support the presence of family and friends: comfortable waiting areas with movable seating; convenient access to food, telephones, and rest rooms; attractive gardens with sitting areas that facilitate socializing with patients; and convenient overnight accommodations (Ulrich, 1991, 2000b). Design approaches for fostering healthful social support for employees include, for instance, providing pleasant gardens that facilitate social interaction among staff (Marcus and Barnes, 1999), and comfortable break areas with flexible movable seating.

In the nineteenth century, hospitals began to incorporate large windows and skylights for the sake of visibility, although before powered electric light sources, it was done to help patients heal. Clinics and hospitals were designed to utilize the available sunlight with large windows facing south and by incorporating a solarium at the end of each ward. The presumed pain reduction mechanism for daylight is different than for nature. Sunlight exposure increases levels of serotonin, a neurotransmitter known to inhibit pain pathways. Walch and colleagues (2005) conducted a well-controlled prospective study of the effects of daylight on pain in patients undergoing spinal surgeries, who were admitted postoperatively to rooms either on the bright or shaded side of a surgical ward. Patients in the bright rooms were exposed to 46% greater sunlight intensity than those assigned to the more shaded rooms. Findings indicated that patients in rooms with more sunlight reported less pain and stress, and took 22% less analgesic medications, resulting in a 21% reduction in medication costs. It should be mentioned that the shaded patient rooms—and associated heightened pain—resulted when a new building was constructed and blocked sunlight from reaching this side of the facility.

Roger Ulrich devoted his career to applying the principles he discovered to healthcare design while also advising architects and designers. In an interview Ulrich stated that he had seen many new hospitals in the 1970s and 1980s that were functionally efficient but designed in ways that seemed oblivious to the emotional needs of patients. He systematically studied each element that could account for his study like artwork or images that encourage healing, light and sound.

From the efforts of Roger Ulrich grew a field known today as evidence-based design. Evidence-based design (EBD) is the process of basing decisions about the built environment on credible research to achieve the best possible outcomes. It also evaluates the health benefits of architectural features in hospitals. Around the country today many projects have provided evidence gathered to determine whether or not such design innovations benefit patients, their families, and hospital staff, and if they reduce healthcare costs by speeding up the recovery rate and reducing complications and medical error rates. This type of research has been ground-breaking in providing architecture that maximizes healing. It is now widely recognized that well-designed physical settings play an important role in making healthcare settings less risky and stressful, promoting more healing for patients, and providing better places for staff to work.
The design is an iconic building, as the small individual houses are interconnected by a sculptural roof structure like Japanese Origami. The building is enriched by the close relation to the surrounding landscape consisting of an inner courtyard, several terraces and themed gardens. The building creates a comforting scale for the individual.

I like the way this case study incorporates the notion of treatment, healing and nature within the courtyard space. The skylights are also a great feature that capture the natural daylight and blend well with the natural materials that create a calm inviting interior within the Cancer Center.
CASE STUDY - 1
CENTER OF CANCER AND HEALTH
NORD ARCHITECTS, 2011
COPENHAGEN, DENMARK

Section AA

Section BB

June 21, 12PM Noon
March/Sept, 12PM Noon
December, 12PM Noon
Maggie's Centres are places that follow the ideas about cancer care, originally laid out by Maggie Keswick Jencks. She was married to American architect and writer Charles Jencks. Maggie lived with terminal cancer for two years, and during that time she used her knowledge and experience to create a blueprint for a new type of care. Care based around the places that let people with cancer feel in control and not part of a production line; care that recognises the importance of reassuring spaces when people are feeling vulnerable; and care that never allows people to “lose the joy of living in the fear of dying”, as she put it. She died in 1995 but her ideas live on today in the Centres that bear her name.

The building is designed as a sequence of interconnected L-shaped figures in plan that create clearly distinguished areas – an arrangement that minimises the need for corridors and hallways and allows the rooms to flow. The plan has been organised for the spaces to feel casual, almost carefree, allowing one to feel at ease and at home, part of an empathetic community of people.

Located in a natural setting, like a pavilion in the woods, the building is both introverted and extroverted: each space has a relationship either to the internal courtyard or to the surrounding woodland and greenery, while certain moments provide views of Glasgow beyond.

This case study inspired me immensely to design a Cancer Center by providing a place that promotes healing with establishing visual connections to nature throughout the building and providing practical and social support for Cancer patients.
The design for the addition is based on a simple expansion diagram. A continuous reading room wraps the existing library on all sides, transforming it into a forward-looking, community-centered place. Each new elevation opens up to a different public constituency: neighborhoods to the west, the post office to the north, downtown to the east and a new plaza to the south. The new terra cotta facade is solid in areas where book collections need to be protected, employing long, narrow horizontal apertures to bring daylight into reading areas. Each corner is designed with floor-to-ceiling curtain walls that reveal glimpses of unique public amenities, including children’s cubby areas, teen gaming zones, small meeting spaces, and a coffee bar in the main lobby. This project is similar to mine in the aspect of site context and involves a library. In regards to materiality, I plan on using similar terra cotta metal panels within my cancer center as well along with concrete and glass.
CASE STUDY - 4
KUNSTHAUS BREGENZ
PETER ZUMTHOR, 1997
BREGENZ, KARL-TIZIAN-PLATZ

The art museum sits within an urban context near the lake shore. The building is made of steel, glass and a molded mass of stone cast concrete that gives the interior of the building with texture and spatial composition. From the outside, the building looks like a lamp. It absorbs the changing light of the sky or the foggy lake, it reflects light and color and gives an indication of its inner life according to the viewing angle, the light of day and time… “Peter Zumthor.

The facade consists of etched glass shingles with several functions: they lend the building's main body lightness with their transparency, insulate against cold and heat and form an essential part of the lighting arrangement for the building. The incoming light is refracted for the first time on the facade before entering the interior.

The facade was designed as a self-supporting construction, completely independent from the actual building. Steel framework elements make up the construction which supports the glass shingles on the outside as well as the glasswork on the inside of the structure. In this way it covers the completely free-standing concrete building like a double casing. Between the outer and inner glasswork there is a 90-centimetre wide light pit that makes it possible to direct daylight to the first subterranean level. This gap is equipped with cleaning lifts used for the servicing and maintenance of the building. In addition, it accommodates the lighting installation which illuminates the Kunsthaus during the night.

From this project I plan on incorporating the idea of an exterior glass facade for the community center program in my project. I like the idea of how the glass wall reflects light and color and creates a sense of life which is what I want to encourage.
L.B. Landry High School occupies an important place in the city’s history – part of the reason for its accelerated rebuilding. The school was founded in 1938 as the first public high school on the west bank of the city that African-American residents could attend and only the second black high school established in Orleans Parish.

The 236,000 square foot building serves a student population of over 900 students and contains a 1000-seat competition gymnasium, a 250-seat auxiliary gym and a 650-seat auditorium. Additional performing arts spaces include classroom and rehearsal spaces for dance, choir, band and art as well as a black box theatre.

The design establishes academic ‘houses’ for each grade level provided within two classroom wings. The organization of these wings creates a central courtyard for outdoor gatherings space focused around a mature magnolia tree that existed on the site of the previous school. The program also includes a media center/library as well as a health clinic, both of which are designed to provide after hours access to the general public for use as a community resource.

The building incorporates numerous sustainable design strategies, with a LEED for Schools Silver certification anticipated. Many of these, including a stormwater management system and photovoltaic energy harvesting system, were designed as highly visible, didactic elements of the project for use as teaching tools for faculty and students.

This project is relevant to my thesis because it contains the aspect of community and engagement, which is what I want to implement into the Cancer Center design by having a Community Center and Library that is open to the general public to create a learning environment that fosters dialogue between the patient and non-patient.
HISTORICAL TRACING TIMELINE

1800s Therapeutic Pessimism - Most Americans give birth, endure illness, and undergo surgeries at home. Medical tools fit easily into a doctor’s little black bag, and diagnoses are based more on instinct than on science. Most people sent to the hospital exit through the morgue. Doctors frequently move between patients and procedures without washing their hands.

1860 Nightingale Wards - St. Thomas’ Hospital in London where Florence Nightingale establishes the first secular nursing school, utilizes a pavilion system with dimensions based on the cubic feet of air deemed necessary for each patient. The pavilion hospital hugely influences hospital design for the next 50 years.

1865 Hospitals Emerge - The American hospital as we know it today emerges around the time of the civil war. Patients with similar health problems are segregated into wards, marking the beginning of specialty care. The first children’s hospital opens in Philadelphia in 1855 and enforces strict visiting hours for parents.


1900s Growth in Hospitals - Many hospitals trace their origins to this period. Hospitals become safer and more sterile with interiors composed predominately of non-porous easy to disinfect surfaces. While these surfaces help prevent the spread of infection, the overall effect is cold and noisy.

1917 American College of Surgeons - Predecessor agency to the Joint Commission on Accreditation of Healthcare Organizations. They develop the Minimum Standard for Hospitals. Requirements fill a single page, and on-site hospital inspections follow soon after.

1930s-1950s Penicillin & Signs of Resistance - The first antibiotics are prescribed. There is evidence of antibiotic resistance, however, many new antibiotics are being developed to combat them.

1970s Growing Complacency - Prior to the 1970s, physicians and nurses are trained not to touch surfaces such as doorknobs, cabinets, and curtains after they have scrubbed and gloved. Overtime these behaviors no longer seem necessary due to the effectiveness of antibiotics.

1946-1964 Baby Boom - 76 million babies are born, accounting for 25% of the population. The sheer numbers of this generation will have lasting impacts on healing environments.

1965 Medicaid and Medicare - Congress enacts Medicaid and Medicare to provide healthcare to the poor and elderly. These programs enable patients to apply to hospitals of their own choosing, but does not resolve what experts begin to call the “plight of the public hospital.”

1967 Hospice Care - The first modern hospice, St. Christopher’s Hospice is established in a London suburb. On Death and Dying a book based on more than 500 interviews with dying patients is published in 1969 and is an international bestseller. Hospice care gains momentum as Baby Boomers care for elderly parents.

1970s Institutional Design - Healthcare design is referred to as institutional design. Primary drivers of hospital design are medical disciplines (cardiology, surgery) and functions (emergency wards, intensive care units, radiology labs). Medical equipment and its required supportive infrastructure greatly influence the planning and design of healthcare facilities. Radiology often is the only air-conditioned department because the equipment cannot tolerate the summer heat.

1978 Planetree - A negative hospital experience causes Angelica Thieriot to imagine a new, more holistic model of care. She founds Planetree to personalize and humanize the healthcare experience. In 1985, the California Pacific Medical Center in San Francisco successfully applies the patient-centered philosophy to a 13-bed medical-surgical unit, becoming the first Planetree model hospital.

1980s A New Birthing Experience - Women give birth in labor and delivery suites as opposed to operating rooms. Many hospitals undergo renovations to create more home-like environments that encourage participation from the father and extended family. Hospitals compete heavily for this market segment because women make most healthcare decisions for their families. For the first time, facility upgrades respond not only to the needs of medical practitioners and emerging technology, but also to the demands and desires of the healthcare consumer.

1985 Press Ganey - Dr. Irwin Press develops a survey to measure patient satisfaction to improve performance. Co-founder Dr. Rod Ganey, PhD, applies his expertise in research and statistical analysis and survey methodology.

1986 Picker Institute - Harvey and Jean Picker recognize that the technological and scientific advances in healthcare have begun to overshadow the most basic concerns and comforts of patients. They found the organization to promote a patient-centered approach to care.

1988 Symposium on Healthcare Interior Design - The symposium promotes a broad perspective inclusive of patients, family members, and caregivers and focuses on how the design of the built environment impacts clinical outcomes. Today we now know it as the Healthcare Design Expo & Conference, an annual conference attended by thousands in the field of architecture, design, and facility management. (Elizabeth Oshana, CAMA 2017)
HISTORICAL TRACING TIMELINE

1980-90s Grand Lobbies - Hospital lobbies incorporate hospitality-inspired design features such as atriums, fountains, and grand pianos. These spaces are intended to establish a positive first impression but this level of attention typically does not extend into patient care areas.

1990s Complementary Medicine and the Brain - There is a greater demand for complementary and alternative medicine; at the same time, "soft sciences" gain credibility in the medical field due to improved imaging technologies.

1991 The Art of Healing - Surge in hospital art programs as money is reserved or raised exclusively for the purchase of art.

1992 The Institute for Patient- and Family-Centered Care - Promotes the active involvement of patients and family throughout the entire care process.

1993 The Center for Health Design - The Center for Health Design advances best practices and empowers healthcare leaders with quality research that demonstrates the value of design to improve health outcomes. Through design research, education, and advocacy, The Center leads the way in transforming healthcare design.

1993 Through the Patients' Eyes - Focus-group driven study conducted by the Picker Institute determines what matters most to consumers of healthcare. Eight dimensions of care are identified including Respect for patients' values, preferences and expressed needs; Coordination and integration of care; Emotional support and alleviation of fear and anxiety; Involvement of patient and family; Information, communication and education; Physical comfort; Continuity and transition; and Access to care.

1996 HIPAA - The Health Insurance Portability and Accountability Act increases patient privacy, speech, and confidentiality.

1999 To Err is Human - IOM publishes the landmark report To Err is Human: Building a Safer Health System increasing public awareness about the number of preventable medical errors that commonly occur in hospitals.

2000 Crossing the Quality Chasm - IOM publishes Crossing the Quality Chasm: A New Health System for the 21st Century, promoting safe, timely, equitable, efficient, effective, and patient-centered care.

2000 Superbugs - Around the world, resistance to commonly used antibiotics increases. According to the CDC, the cost of treating hospital-acquired infections is estimated to be $5 billion per year. By 2002, approximately 1 of every 22 hospitalized patients acquire an infection.

2002 HCAHPS Survey - Medicare & Medicaid Services develop the first national, standardized, and publicly reported patient satisfaction survey.


2003 Perception & Quality - Research links patients' perceptions of the quality of care delivered to aspects of the experience that they can understand including overall aesthetics.

2004 IOM 100,000 Lives Campaign - Over 3,000 hospitals pledge to adopt six safety initiatives to reduce instances of medical harm. Two years later, IOM builds on the program's success launching the 5 Million Lives Campaign.

2008 A Review of the Research Literature on Evidence-based Healthcare Design - A report that builds on a literature review conducted by researchers in 2004. The report surveys and evaluates the scientific research on evidence-based healthcare design and extracts its implications for designing better and safer hospitals.

2006 Private Rooms - Private rooms become the standard of care for medical/surgical and postpartum nursing units in general hospitals as stated in the AIA & FGI Guidelines for Design and Construction of Health Care Facilities.

2007 HCAHPS & Reimbursements - Medicare & Medicaid reimbursements are contingent on reporting of HCAHPS data. The Hospital Compare website allows the public to view hospitals' survey scores.

2008 Pay-For-Performance - Medicare and Medicaid no longer reimburse for "Never Events."

2009 Zagat for Healthcare - Editors of the Zagat restaurant guides ask people to post reviews of their doctors and rate them in categories like trust and communication. The reviews are introduced online to millions of WellPoint's Blue Cross plan members across the country.

2010 Affordable Care Act - The Affordable Care Act is signed into law by President Barack Obama reforming healthcare in America with the aim to increase the quality, availability, and affordability of private and public health insurance to over 44 million uninsured Americans.

2011 Pay-For-Reporting - Medicare and Medicaid require hospitals to participate in the Center for Disease Control's National Healthcare Safety Network, a secure, internet-based system for monitoring healthcare-associated events such as infections. Happy Birthday Boomers - The first of the baby boomers turn 65 years old.

2015 Star Ratings - The Hospital Compare website adds star ratings to help consumers digest survey results more quickly and highlight facilities who demonstrate excellence. (Elizabeth Oshana, CAMA 2017)
The vicinity map of Atlanta, Georgia contains the approximated locations of the four (4) various sites I have chosen to perform site assessments based on a set of site criteria to determine which one best suits the location for the newly proposed Cancer Center.
Engagement
To occupy, attract, participate or involve someone or something. Engagement plays a major role for patient’s experience as to how they interact with healthcare professionals, family members, and communities.

Nature
The physical world and everything in it (such as plants, animals, mountains, oceans, stars, etc.). Providing a physical connection to nature with indoor and outdoor spaces can reduce stress and improve health outcomes and support the well-being of patients.

Community
A group of people living in the same place or having a particular characteristic in common. Implementing a sense of community can establish social connections between cancer patients and non-cancer patients. This can be accomplished by facilities being close to parks/greenspaces, nature trails that encourage dialogue and activities like walking and biking.
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**SITE ASSESSMENT MATRIX**
Site 1 is located in Atlanta, Georgia at the corner of Peachtree Street and North Avenue North East. The site is situated in an urban setting in the Midtown area. The site slopes down from the west to the east. Some of the site adjacencies consist of the Bank of America Tower, the North Presbyterian Church, the Georgian Terrace Hotel, Fox Theater, restaurants and a few mixed-use developments. The Marta Rail Station and Highway 85/75 is in close proximity to the site as well.

The visual form diagrams are inspired by the well-known architect, Kevin Roche. This depicts a visual form of the area as seen in the field from my perspective.
SITE ASSESSMENT - 1
(FIGURE GROUND DIAGRAM)

This figure ground diagram illustrates how dense the buildings are in Site 1 which is very characteristic of urban areas where things are more compact.
Site 1 Connectivity Diagram illustrates the road infrastructure. The grid pattern of streets is very characteristic of the city environment.
Site 1 hardly contains any natural elements as shown in the nature diagram. It just contains one park known as the renaissance park.
Site 1 primarily consists of a majority of commercial and mixed use developments. About a fourth of that is residential property, and one area on the historical register which is the Fox Theater.
Site 1 contains a decent amount of community areas from single family residences and a few apartment complexes and condominiums.
Site 1 contains a few engagement areas such as Renaissance Park, Marta Rail Stations, Fox Theater, and the Atlanta Civic Center.
SITE ASSESSMENT - 1
(COMPOSITE DIAGRAM)

Site 1 Composite Diagram is an interpretation of the site features along with the walking radius that relates to the site’s accessibility to the surrounding areas.
Site 2 is located in College Park, Georgia. The site is set in a rural area. It is flanked by the beautiful Lake Frances and a natural tree line in the distance. The context consists of single family homes, a warehouse, fire station and the Seaborn Elementary School. You get a sense of a small quiet town feel when there in person. The Marta bus transit has stops along the south and north east end of the site.
SITE ASSESSMENT - 2
(FIGURE GROUND DIAGRAM)

Indicated in the figure ground diagram the major buildings are more spread out in this rural area and the residential areas are more dense.
In Site 2 the Connectivity Diagram illustrates three roads that border the site which is Roosevelt Highway to the South, South Fulton Parkway to the North and Stonewall Tell Road to the West. The rest are minor roads that lead into subdivisions for residences.
In the Nature Diagram for Site 2 there is one major water body known as Lake Frances. Beyond Lake Frances you have views into the natural tree line that surround the lake as well.
SITE ASSESSMENT - 2
(LAND USAGE DIAGRAM)

Around Site 2 the land usage consists primarily of residential development and mixed use development.
Community is very prevalent on Site 2, possibly more than any other site.
For Site 2 the Engagement areas consist of Lake Frances where one can go to reflect and meditate and the Seaborn Elementary School which will always attract and connect to people.
SITE ASSESSMENT - 2
(COMPOSITE DIAGRAM)

Site 2 Composite Diagram indicates the connection to Lake Frances, the tree buffer zone, the warehouse and Seaborn Elementary School through views. All of the places range within a 3-10 minute walking radius=•.
Site 3 is located in Atlanta, Georgia at the corner of North Ave. NE and Somerset Terrace North East. It is also across the street from the Ponce City Market, the old “Murder Kroger” and the Historic Fourth Ward Park and the Beltline. This site is also within the city of Midtown. It is in a very vibrant area that feels alive and well. There always seems to be a great amount of people circulating through this area throughout the day whereas that use to not exist when the Ponce City Market was once City Hall.
SITE ASSESSMENT - 3
(FIGURE GROUND DIAGRAM)

Site 3 Indicates the denseness and compactness of the building footprints which is typical within the city context.
SITE ASSESSMENT - 3
(CONNECTIVITY DIAGRAM)

Site 3 Connectivity Diagram is gridlike along the outskirts but more organic near the center. Freedom Parkway is the major road that runs along the east side.
Site 3 contains the Historic Fourth Ward Park, and a few green spaces and a tree buffer zone along the east side.
Site 3 land usage primarily consists of mixed use developments with a fourth of the area being residential development.
Community makes up about a fourth of the area in Site 3 with its single family residences, apartments and condominiums.
Site 3 contains decent amount of engagement areas like the Historic Fourth Ward Park which contains green space, seating areas, trails, a pond and a skate park. It also has the beltline. The Atlanta BeltLine has transformed the city with a combination of rail, trail, greenspace, housing and art. It connects to 45 intown neighborhoods. The beauty of the Atlanta BeltLine is a living, breathing part of the community; not simply a means of getting somewhere, but a destination unto itself.
Site 3 Composite Diagram indicates the views that could potentially be utilized to engage and create that sense of community with the connection things like the Beltline, Historic Fourth Ward Park, Ponce City Market and the Atlanta Skyline. Everything is within a 3-5 minute walking radius in this area.
Site 4 is conveniently located right off of Highway 400 at the corner of the Glenridge Connector and Meridian Mark Road in Atlanta, Georgia. The site consists of gently sloping land and sits on a wooded lot that provides a buffer to Highway 400. It is also near a lot of world class medical facilities such as Northside Hospital, Children’s Healthcare of Atlanta at Scottish Rite and St. Joseph’s Hospital.

Aerial photo of Site 4.
Site 4 figure ground diagram is less dense and more campus oriented to the specific medical facility.
Site 4 has convenient access to Highway 285 along the West corridor. The secondary roads like Glenridge Connector, Paces Ferry and Peachtree Dunwoody provide access to the various hospital campuses surrounding the site.
Site 4 contains a few areas that consist of trees along the south end.
The majority land usage of Site 4 consists of Office Institutional, about one fourth of that is residential. Mixed use development also represents a small portion of the land usage.
The areas of community are mainly represented on the various hospital campuses.
Engagement is represented by a small amount within Site 4. There is a Marta Rail Station that provides access to the various hospital campuses.
Site 4 Composite Diagram indicates the views to the different hospital campuses and accessibility to them by the Marta Rail Station. Everything is within a 5-10 minute walking radius.
I chose Site 3 for the proposed Cancer Center. It is located at the corner of North Ave. North East and Somerset Terrace North East. This site was selected because it contains a lot of key factors that can support the Cancer Center’s mission to provide a healing environment and encourage life. For starters the site is adjacent to Atlanta’s Historic Fourth Ward Park which starts in Atlanta’s Old Fourth Ward behind Ponce City Market and stretches South to Freedom Parkway and the Carter Center. The central amenity of the park is a large stormwater retention pond.

The Site also contains the Atlanta Beltline which is a sustainable redevelopment project that is transforming the city. It will ultimately connect 45 intown neighborhoods via a 22-mile loop of multi-use trails, modern streetcar, and parks – all based on railroad corridors that formerly encircled Atlanta. When completed, it will provide first and last mile connectivity for regional transportation initiatives and put Atlanta on a path to 21st century economic growth and sustainability.

The Atlanta BeltLine also supports affordable workforce housing, economic development, job creation, public health, streetscapes, public art, environmental clean-up, and historic preservation – all with an eye towards sustainability.

Ponce City Market breathes new life into the historic Sears, Roebuck & Co. building in Atlanta. The classic structure, which is the area’s largest adaptive reuse project, has been reinvented as a vibrant community hub housing the Central Food Hall, various shops, flats and offices, all while pointing back to the roots of its inception. The market infuses vigor and excitement into this historically-significant structure, located in one of Atlanta’s most cherished neighborhoods.

This site is engrained in a live, work and play neighborhood that is alive and well and I feel it contains a lot of opportunity to fuse together the concepts of nature, engagement and community.
SITE ANALYSIS

Site Analysis drawings done on sketch paper.
CONCEPT SKETCHES
PROGRAMMATIC STUDY MODELS

Hand-Cut Site Study Model.
These design schemes were all hand cut models that begin to define the general scope and conceptual design of the Cancer Center including scale and relationships between building components.

**Scheme 1** - Merges the idea of architecture within the landscape. The programmatic elements engage the site by providing a connection from the Historic Fourth Ward Park to the Atlanta Beltline by utilizing the buildings green roofs as a system of ramps. The open voids represent areas of program and glazing.

**Scheme 2** - Is based primarily on framing views and creating a sense of community through the use courtyard spaces weaved in around the Cancer Center. From views of the Historic Fourth Ward Park and the Atlanta Beltline, to views of the Atlanta City Skyline, Ponce City Market and the nearby residential neighborhood. The idea is as you circulate through the Cancer Center you can take in all of these different views from different vantage points of low and high elevations. The transition from the Cancer Center down to the Historic Fourth Ward park would be by a series of meandering ramps.

**Scheme 3** - Fuses all of the concepts of nature, engagement and community into one. The Cancer Center engages the site by creating a huge cantilever over the Atlanta Beltline so that whether someone is walking, running or bicycling you will have to engage with the cancer center. This will also help the patients as well stay focused on living by utilizing glazing elements along the cantilevered portion of the Cancer Center. Natural daylighting also plays a big part in the design with the addition of skylights and an atrium. There is also a Library and Community Center that engages the retaining wall and will be a great resource for learning and building strong connections within the community as they will all be open to the general public for use. Cues of nature permeate throughout the Cancer Center courtyards and plazas with reflection pools, a healing garden and community garden. Atop the Library is a greenroof that provides a great overview of the Historic Fourth Ward Park. The Cancer Center and Library/Community Center are connected by a vertical service core of elevators and stairs for easy access.
DESIGN SYNTHESIS

Scheme 3 - Was selected based on the fact that it is very representative of what I aimed to achieve by creating a healing environment that encompasses the elements of nature, engagement and community all in one.
DESIGN SYNTHESIS

Concept Rendering

Parti Diagram

Elevation/Section Studies
Medical Oncology Department layout within Cancer Center.

Cancer Center - First Floor
Material wise the Cancer Center, Library and Community Center contain concrete construction with a terracotta metal panel rainscreen system. The curtain wall system consists of a smoke grey low-e glazing with a charcoal grey spandrel panel.
Material wise the Cancer Center, Library and Community Center contain concrete construction with a terra cotta metal panel rain-screen system. The curtain wall system consists of a smoke grey low-e glazing with a charcoal grey spandrel panel.
3D MODEL PERSPECTIVES

ATLANTA BELTLINE PERSPECTIVE

MONUMENTAL STAIR IN LOBBY AREA

INTERNAL GARDEN - INPATIENT THERAPY
The final model for the Cancer Center, Library and Community Center was hand-crafted with basswood, balsa wood, corrugated cardboard, acetate and baby’s breath flowers.
REFLECTION

It has been quite a journey. Overall, I must say I enjoyed the process of gathering research and the design development, engaging with doctors, nurses and architects to provide me with much insight in developing a program for a Cancer Center that functions as a hybrid prototype of fusing the concepts of nature, engagement and community. For me this project was very dear because I have been impacted by family members and friends whom have battled with Cancer and are survivors of Cancer. I feel by implementing Cancer Centers like the one in my thesis, barriers that exist between patients and healthcare facilities due to them feeling like isolated gated communities can dissolve and more healing environments can be formed that can aid in reducing patients and staff stress levels and new relationships can be established by doctors, patients/non-patients and family members. This in turn will keep focus on the mission to encourage life and not death.
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