

activate healing

the role of architecture in health spaces

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for grandpa g

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Architecture has the unique ability of being able to have a direct effect on the way people feel within a space. This idea is never more evident than in the design of healthcare spaces. Healthcare spaces are charged with housing humans in some of our most physically and emotionally sensitive states. They are spaces which must balance the functional necessities of physical healing with the spiritual and emotional sensitivities of mental wellbeing and the overall healing process. This thesis will explore what the role of architecture is in the healing process. It attempts to break down typical stereotypes of healing spaces as well as of the individuals receiving care within them. It promotes design that has a careful understanding of its user and acts to address their particular attributes and challenges. "Activate Healing" sets out to show that architecture can play an advocating role in healing by being an active, supportive, and inspiring contributor.

abstract.

thesis.

“It is perhaps when our lives are at their most problematic that we are likely to be most receptive to beautiful things. Our downhearted moments provide architecture and art with their best openings, for it is at such times that our hunger for their qualities will be at its height.” —Alan Botton – *The Architecture of Happiness*

Introduction

Healthcare spaces have the unique role of supporting humans in some of our most emotionally sensitive states. Though the architecture of a healthcare space is not likely the most immediate element thought of by those who occupy it, it has the ability to directly affect healing and has the responsibility to support health and wellbeing.

This thesis will attempt to contribute a design that serves a population in need of conscious design. Healthcare design has evolved greatly due to standards of care and technological advances, yet it seems to be complacent with designs that are content to simply house and attempt to conceal the equipment used in healing treatment processes. Can an architecture exist that does not only house practices of healing but also plays an active role in improving the process of healing?

*This thesis will combine the ideas of architecture's affects on mood and subsequently, mood's affects on healing to ask: **Can architecture play an advocating role in healing?** Is architecture capable of adding a layer to the process of healing by promoting mental and spiritual wellness to, in turn, promote physical health and*

well-being? Essentially, can a space help people to heal simply because of its sensitivity to the needs or desires those who inhabit it?

Healing Spaces

The discussion of healing spaces must begin with a categorization of different types of healing spaces. Existing healing spaces can often be distinguished as one of two types, spaces that have been designed for healing or spaces that have healing qualities.

Spaces with healing qualities are those spaces that boast a healing atmosphere, offering a certain sense of emotion varying from peace and calmness to joy and life. These types of places are those that reach humans on an emotional level to promote mental wellbeing as a catalyst to physical wellbeing. These types of spaces may include churches, spas and personal homes.

On the other hand, spaces designed for healing are those that have been designed specifically for healing to take place effectively within them and function efficiently to allow for practices and procedures of healing to occur. Spaces such as these are generally intended to promote an improved physical state, yet are not necessarily in tune with the mental or emotional needs of those who occupy them. These types of spaces, including hospitals, physician offices, and rehabilitation centers, often carry with them a sense of sterilization, coldness and depersonalization, and typically give occupants feelings of discomfort and unhealthiness regardless of their actual

health condition. These spaces, architecturally speaking, do little or nothing to reach out to their occupants on an emotional level.

The question of the role of architecture in promoting healing requires studying and developing ways in which healthcare spaces can promote the ideals of both of these types of spaces to become places of mental and physical healing while being technologically supported with the equipment and care regimes needed to sustain and improve health.

When considering healing spaces, typical design aspirations call for the space to reflect feelings of peace, calmness, serenity and the like. While these types of atmospheres are conducive to relaxing and subsequently improved healing, these are not the only atmospheric conditions that can improve healing through mood. For many individuals, active participation in commonplace events restores joyful aspirations and leads to feelings of fulfillment. A space that encourages its occupants to feel energized and happy can do more to improve or alter their mood than one that creates a quiet mood.

The mood or emotional state of a person can greatly affect their ability to heal. Stress and depression can cause an increase in blood pressure, anxiety, digestive problems, impaired memory and weakened immunity. Negative feelings can also cause healing times to be increased. By contrast, having a positive mood can help people heal more quickly and with fewer complications. It can also result in an increase in energy. A positive mood can trigger anti-aging and anti-stress hormones and allow for more harmonious electric activity around the heart

and brain which allows the organs to function more effectively.¹

Variables including lighting, materials and scale can have a positive or negative effect on those experiencing a space. These factors can be altered to affect a person's mood or mental state positively. In *"The Architecture of Happiness,"* Botton discusses the architectural factors can affect the emotion of people for a number of reasons. One is that the features remind us of human characteristics we associate with people we know. Features that remind us of people we love will make us feel similar to the way that person would make us feel. Likewise, we would have distaste for features that remind us of people we may not necessarily care for. An additional theory Botton discusses is the idea that architecture possesses moral messages, and we respond to those that align with our own values.² The ability of architecture to alter or affect the mood of an individual is directly related to components within it that spark memory or contain a certain sense of value that people find appealing. Values including honesty and understanding can be expressed through design and its use of form and materiality. These qualities of a space can affect what we feel we can believe. "We require places where the values outside of us encourage and enforce the aspirations within us."³

Space Activators

Often when we think about those receiving care in a healthcare facility, we immediately picture older adults or children. These generalizations

are common but do not take into account the unique circumstance of all individuals receiving care. Healthcare providers and designers alike often overlook a middle range of patients when they develop care plans and spatial designs.

One would not necessarily suppose that young adults and older adults take part in the same leisure activities nor that they live within identical social or financial circumstances. Biological differences between older and young adults as well as the difference in stages of life cause these age groups to have different goals, different needs, and a different sense of "normalcy". Why then is it accepted that all individuals who are beyond the stage of childhood are assumed to have the same goals, needs, and sense of "normalcy" in terms of the ways they heal and the spaces in which they heal?

Normalcy, in this sense, is not attempting to take on a psychological definition. Traditional ideas of normalcy would define it as being simply free of defect, while normalcy's more contemporary counterpart would define it as sharing the human condition with a given consideration to variety⁴The normalcy spoken of here, rather, intends to speak of the average conventions of one's group and does not aim to suggest a hierarchy within these conventions ⁵For example, normalcy in broad terms for a young adult would include active socialization, rapid intellectual and emotional growth, desires for increased independence, and establishing ideals and beliefs.

For individuals of all ages, a cancer diagnosis comes with an overwhelming wave of emotion. The core of these emotions is typically composed of varying levels of fear, uncertainty, sadness,

and stress.⁶ The emotions experienced by cancer patients and those that are closest to them can be described as a speeding tapestry of high points of hope and meaning intermingled with valleys of grief and self-consciousness threaded together among plateaus of overpowering emotional void. The emotional journey of those affected by cancer does not end with the final treatment or even declared remission or cure. Those whose lives have been touched by cancer are faced with enduring uncertainty as to the state of their future health, recurrence of their cancer, persisting side effects, and hindered body image. Among the many struggles survivors and supporters face, the presence of real life must also be acknowledged. While facing the disease, priorities must be re-aligned to appropriately fit the limitations, both physical and emotional, that prevent lives to be lived in the same way they were prior to diagnosis.

Individuals facing the emotional toll of cancer take on increasingly more challenges when they are at a pivotal point in their lives comprised of its own struggles. Adolescent and young adult individuals, numbering 72,000, make up 4.5% of the total number of people in the United States who are diagnosed with cancer each year.⁷ The National Cancer Institute defines the adolescent and young adult group as being cancer patients between the ages of fifteen and thirty-nine.⁸ This particular group has been overlooked by both the healthcare practice and healthcare design communities.

Adolescents and young adults boast the worst statistics in terms of improvement in survival rates.⁹ Healthcare researchers predict this data to be the result of various factors including a major issue

with the actual care provided to these patients. The majority of these adolescents and young adults are receiving care that does not address their unique biological state. Typically the care they receive will be the same regimen as older adults, often over twice their age, who have a much different health profile as well as general world experience. Alternatively, and statistically more successfully, this group will receive treatment that has been developed for pediatric medicine. Though these care plans have proved adequate in many situations, a real improvement in adolescent and young adult survivorship will require an examination of the differences in needs between this transitional group and their older and younger counterparts.

In addition to special health needs, adolescents and young adults who have been diagnosed with cancer have social needs that are not necessarily pertinent to other age groups. Adolescents and young adults are at a pivotal period within their education or career. High school and college level education is becoming more vital now than ever before. Individuals undergoing cancer treatments will be disadvantaged by their lack of time and energy needed to focus on study efforts. Likewise, this group will be at the forefront of their career path. This is the time in which they are choosing the path that will be the best fit for them and are beginning to develop the skills and knowledge vital to becoming successful in the later years of their career work. Adolescents and young adults are also at a unique time in their lives in terms of their relationships with others. In many different ways, this group is undergoing changing relationships. They are striving to become more independent, both in lifestyle and finances. This can be one of the most difficult changes, as these

individuals may struggle to adjust to their increased fiscal burdens and more limited physical abilities. For these individuals, relationships are also being formed and altered among friends and potential significant others. For those that are undergoing cancer treatment, it can be difficult to socialize as they would otherwise be able to. Relationships of this nature can also become strained as people often do not know how to react and interact with those experiencing a hardship, such as cancer. An additional issue experienced primarily by young adults is the concern of difficulties starting or raising a family. Lessened energy and time spent in treatment can hinder the ability of an individual to care for their family. Treatments can also cause fertility and birth issues in those planning on beginning a family in the future.¹⁰

While much can be said for intergenerational experiences in which patients of varying ages can benefit from sharing and healing together, opportunities from relationships between individuals with similar interests, status and experiences cannot be ignored. Being surrounded by others who share and truly understand the special circumstance of an adolescent or young adult can help these individuals feel less isolated because of their health. Placing them in an environment in which they feel out of place due to their age, only increases feelings of seclusion that may come with a cancer diagnosis. In addition to the medical repercussions of being treated with the same regimen as children or older adults, psychosocially, these associations can have an adverse effect on the temperament and psychological state of the adolescents and young adults experiencing them.

Site Selection

In order to choose a site that would not only support a project of this nature, but would also add to the integrity of the project and be benefitted from hosting the project, a set of specific criteria was set up. The site needed to be urban to boost the level of energy and activity within the space. Due to this factor alone, an urban space outweighs the benefits that a rural or suburban site might bring by allowing for less of a traditionally thought of “healing” atmosphere in which the architecture being created would have full responsibility for the atmosphere of the space created rather than be allowed to rely on the sense of the surroundings of the architecture.

In terms of demographics, the place should have a large number of occupants in the age group that falls within the National Cancer Institute's Adolescents and Young Adult group. A project dedicated to this age group would not be able to develop successfully in a place whose population would not benefit from its services. The project should also be within the boundaries of a city with a relatively young population to allow for an ease of accessibility for the patients traveling to the site.

Due to the nature of the proposed project, the place must also be in close proximity to major healthcare institutions and clinics. Logistically, these known organizations would help inform their adolescent and young adult patients about the options and services offered in the project. In terms of location, it is vital that the patrons of the proposed project do not have to travel extensively in order to reach it. Keeping it within

close proximity to a wide number of hospitals and clinics allows for easier collaboration between the project and established healthcare centers.

With consideration to the aforementioned criteria, the chosen backdrop for the project is the downtown area of Royal Oak, Michigan. Nearly half of the population of Royal Oak is within the ages of fifteen and thirty-nine.¹¹ Downtown Royal Oak, specifically the area along Main Street, is a thriving active district comprised primarily of retail and restaurant spaces. Inserting an adolescent and young adult healthcare project into an existing environment with this sense of energy will help keep the space active and allow for those utilizing the space to feel as though they are active participants in the downtown urban fabric.

Design Implementation

An architecture that promotes healing must house a program that is also supportive of a holistic view on health. The program developed within this thesis will be comprised of a healing center serving both as an infusion center and an educational support center for adolescent and young adult patients. The infusion center will allow for outpatient treatments in both community and private settings to conform to the most appropriate for type of interaction that best suits the social comfortability and health restrictions of each patient. In order to successfully infuse the program into its urban context, the project will also include retail space to help activate the site at the ground level and a small scale hotel space

to accommodate friends and family of patients as well as serve the general downtown area.

Projects of this nature are unnecessarily rare. Due to the research that has already been conducted proving that the environment a person finds themselves in can directly affect their mood, and that the mental disposition of an individual can assist in healthier well being, it should be essential that healthcare designers as well as healthcare workers, are constantly striving to combine these factors to create more conscious environments in which people can live, work and heal.

1. Botton, "The Architecture of Healing"
2. Botton, "The Architecture of Healing"
3. Botton, "The Architecture of Healing" 108
4. Kramer, Peter. "What Is Normal?"
5. dictionary.reference.com
6. Livestrong Foundation – livestrong.org
7. Seer Cancer Statistics
8. National Cancer Institute – www.cancer.gov
9. Survival rates of adolescents and young adults have increased at a rate of 0.1%, whereas the associate rate for children is 3.0% and 1.7% in older adults.
10. National Cancer Institute – www.cancer.gov
11. Per 2010 census data, Royal Oak's population is approximately 60,000. Approximately 25,000 of these people are between the ages of fifteen and thirty-nine.

programmatic studies.

below

*Maggie's Centre - London, designed by
Rogers Stirk Harbour + Partners*



Maggie's Cancer Caring Centres

Maggie's Cancer Caring Centres are a network of community based cancer support centers across the UK designed to give people affected by cancer access to high quality, evidence based, psychological, emotional, and informational support. Designers of these centers have included Richard Rogers, Rem Koolhaas, Zaha Hadid, and Frank Gehry.

"It's very difficult for people to go through experiences like this, and I wanted to create a building that would be calming a accommodating, and one that would be a fitting tribute to Maggie. I think it's an inviting building; I think people will want to come inside and spend time there, and I really hope that in some small way, it might contribute to a sense or rejuvenated vigor for moving forward and living life." - Frank Gehry

Maggie's Centres provide an example of emotional care and support spaces for individuals with cancer. Though the spaces are not age-specific, they offer demonstration of how thoughtful design can affect how people interact with one another.

below

Maggie's Centre - Dundee, designed by Frank Gehry



below

Kim's Place - Adolescent and Young
Adult Space



MD Anderson Cancer Center

MD Anderson Cancer Center is a comprehensive cancer center based out of Houston, Texas. The center is one of few healthcare centers in the country to have an Adolescent and Young Adult program. The program is housed within the children's hospital. The majority of spaces within this unit are catered toward children in both program and design. As an attempt to reach out to their adolescent and young adult patients, MD Anderson created a room in which patients between the ages of 15 and 25 could go to relax, hangout with one another and play games or listen to music. The space allows for adolescents and young adults to have a space within which they can be with people in their own age group who are experiencing similar situations.

While this study shows a successful example of space designed specifically for adolescents and young adults experiencing cancer, it does not necessarily attempt to enhance the way in which these individuals receive treatment or how they interact with people outside of their designated room.



right
*Pedi Dome - Child based programming
and design*

below
Google Office - Zurich



Google Offices

Google recognizes that the environment has an effect on the mood of their employees. Their offices worldwide are active, engaging, energizing spaces consisting of a combination of community spaces and private retreats. Each offices attempts to express the regional personality of its local surroundings.

Though this study is of a building typology much different than the one this project is proposing, it illustrates many of the same underpinning ideas. Primarily, the effects of a space on a person's mood, and how their mood can subsequently have an effect on their actions or behaviors.



below
Google Office - Dublin



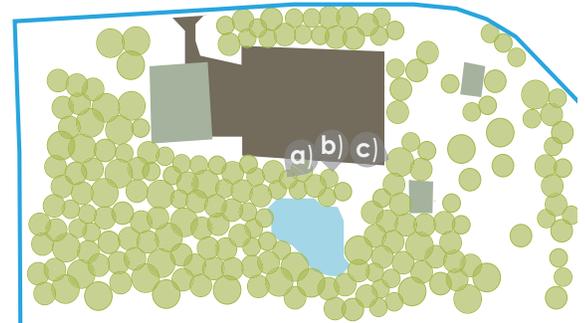
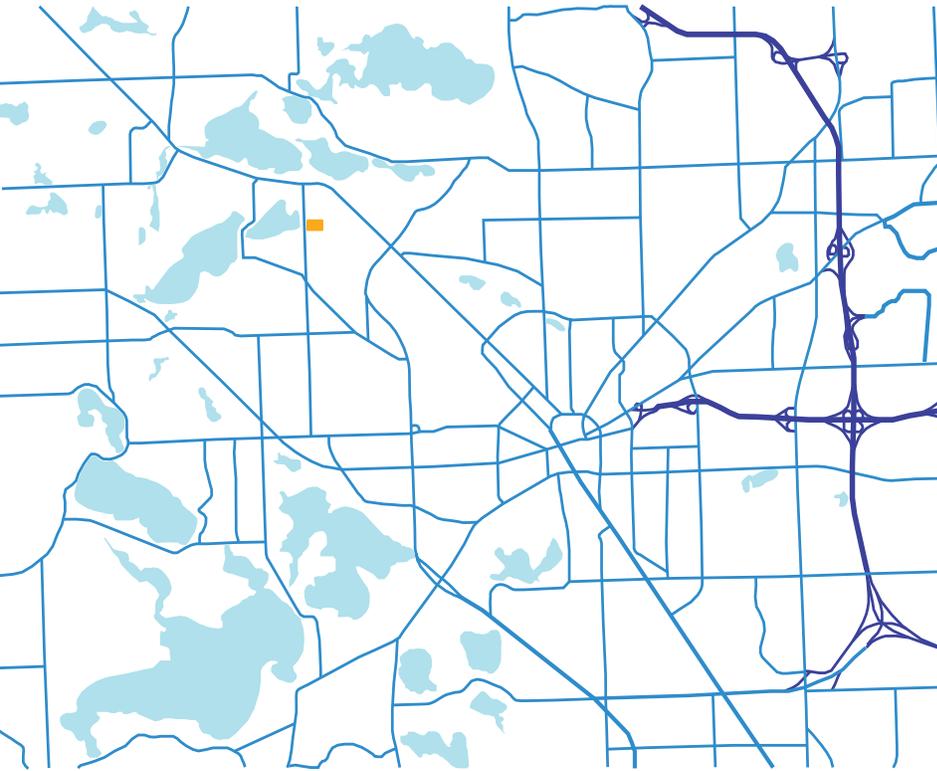
site.

site selection.

At the onset of the site selection process, a set of criteria was set up to ensure the chosen site would support the mission of the project. The site should be located in an active urban environment. The area surrounding the site should have a relatively young demographic to support the target age group of the project. The area should also be in close proximity to larger healthcare facilities to assist in clinical and promotional support.

In order to bring further validity to the proposal of an urban site for this healthcare facility, sites of varying types were explored and analyzed.

The two sites that remained the best options to host the project have very different qualities, one being a rural/suburban site and the other in an urban condition. While the rural/suburban site offered a peaceful serene setting boasting privacy and views of nature, it did not have a sense of energy or action that was deemed necessary to promote the intension of the project.



The site is located in Waterford, MI. It is located on the east edge of Scott Lake off of Scott Lake Road between Dixie Highway and Watkins Lake Road. The lot is currently occupied by the Pontiac Waterford Elks with two buildings and a covered pavilion. It is surrounded by fairly heavily wooded areas and includes a small pond. The site would provide the flexibility and limitations of a quiet, secluded environment.

a)
view southwest

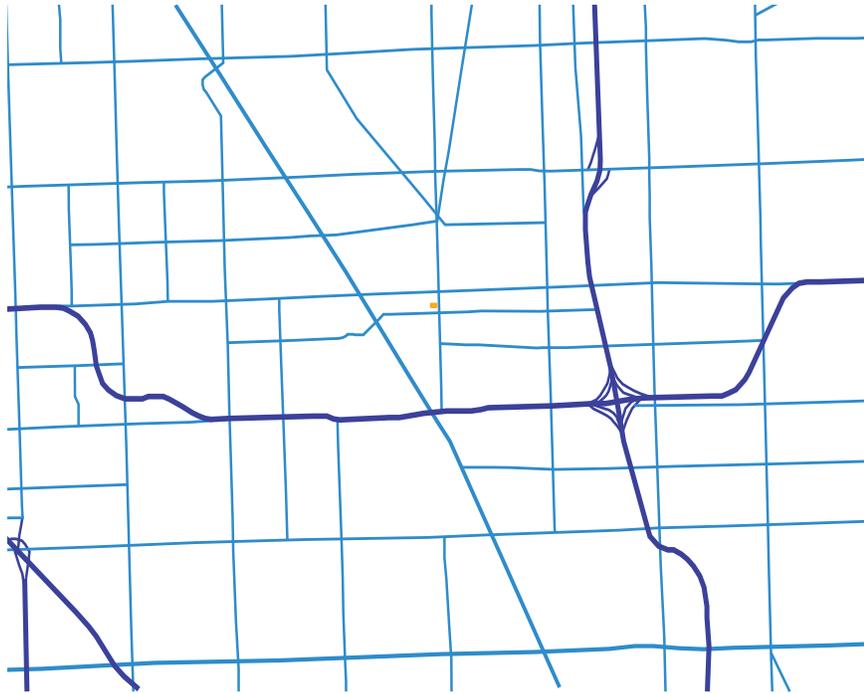


b)
view south

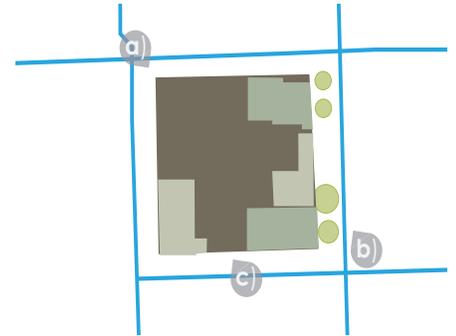


c)
view east





The site is located in Downtown Royal Oak, Michigan and comprises of the block between Second and Third Streets. The site currently contains two active buildings occupied by the Bright Ideas furniture store at the southeast corner and Charter One bank located at the northeast corner. There are also two vacant buildings on the site, one taking up the space between the active buildings on the east end of the site and the other located at the southwest corner. This site will provide the trials and benefits of an active urban environment.



a)
view southeast
from 2nd



b)
view northwest
from Main

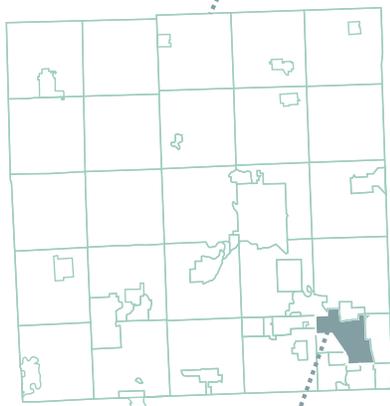
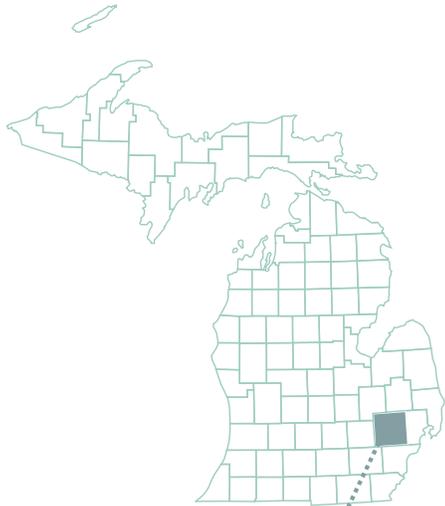


c)
view northwest
from 3rd



site investigation.

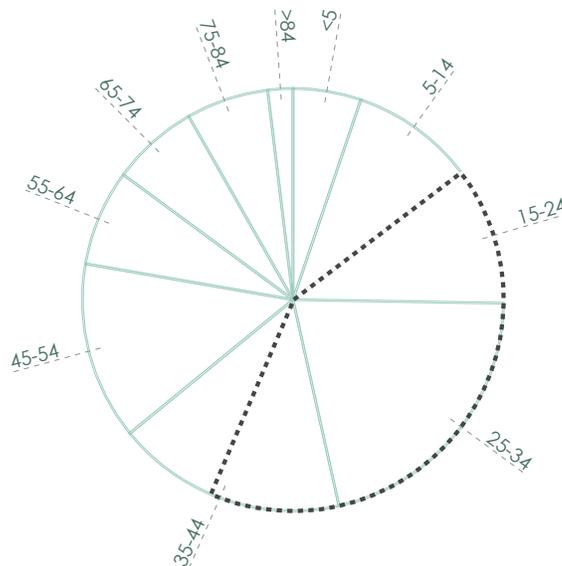
The downtown Royal Oak area was explored using a variety of methods including mapping, photographing, and diagramming. Through these studies, understandings of context and relationships between different aspects of the built environment, infrastructure, and public engagement were acquired. This knowledge was a necessary factor in both the programmatic and architectural design of the project as it allowed the design to reflect the needs of the site while expressing its own ideals.



Royal Oak is located in southeast Michigan in the southern part of Oakland County. The city has a population of nearly 60,000 people. Of this population, approximately 40 percent fall between the ages of 15 and 39. Royal Oak's downtown is an active vibrant area of thriving businesses and successful restaurants. The layout is supportive of pedestrian traffic with wide sidewalks and safe pedestrian crossings. On any given day, large amounts of people from both the city and surrounding areas can be seen walking, shopping, and eating downtown.

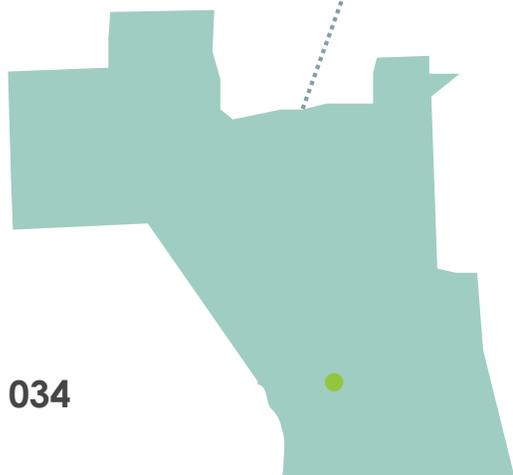
below

Of the 60,000 people living in Royal Oak, approximately 25,000 are between the ages of 15 and 39.



opposite

The image maps the location of a number of large healthcare providers that are within an approximate 20 mile radius of Royal Oak.



Beaumont Hospital - Royal Oak
3.7 mi

St. John Providence
5.8 mi

Karmanos Cancer Institute - Southfield
8 mi

Henry Ford Hospital - Detroit
12.4 mi

Karmanos Cancer Institute - Detroit
12.4 mi

Karmanos Cancer Institute - Farmington Hills
12.6 mi

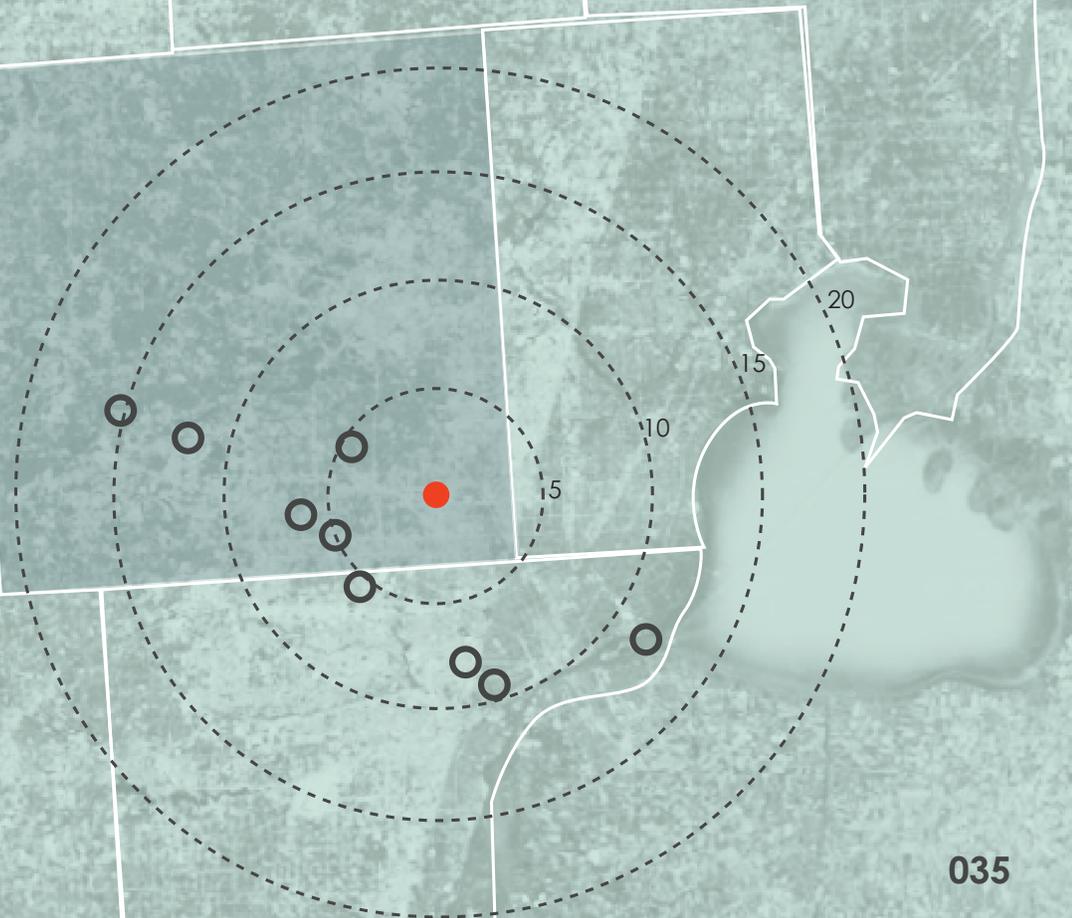
Beaumont Hospital - Troy
13.3 mi

Sinai Grace Hospital
13.9 mi

Karmanos Cancer Institute - Rochester Hills
14.7 mi

Henry Ford West Bloomfield
16.9 mi

Beaumont Hospital - Grosse Pointe
21.7 mi



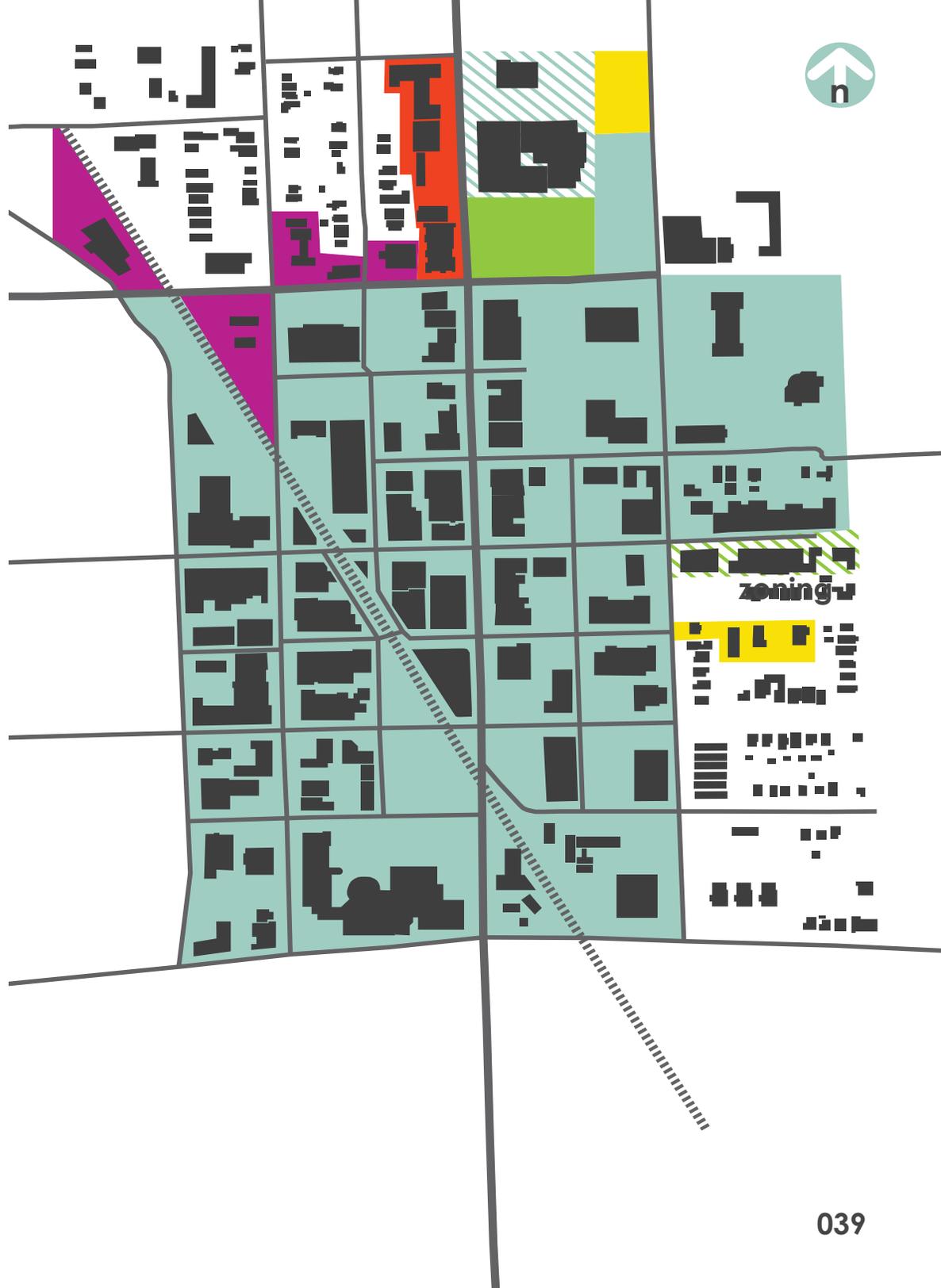
opposite

The figure ground shows downtown Royal Oak with the proposed site highlighted.



Downtown Royal Oak and the surrounding neighborhoods are primarily zoned as central business. This zone, which includes the project site allows for businesses and offices whose operating characteristics do not adversely affect adjacent residential areas; produce a low volume of traffic, and are located in buildings which are architecturally compatible with the surrounding area. Permitted uses include office buildings, medical offices, banks, or public buildings or spaces.

-  Central Business
-  Neighborhood Business
-  One Family - Large Lot
-  General Business
-  Special Redevelopment
-  Planned Unit Development
-  Mixed Use - Two
-  Residential



zoning

There are many transportation options in the city of Royal Oak. The downtown area is served by SMART Bus services with routes running throughout the city as well as to and from the surrounding suburbs. An Amtrak station sits just west of Main Street in the downtown area. Downtown Royal Oak is also a pedestrian friendly area allowing those who live nearby to walk to and within the area.

-  Bus Route 730/740 10-12 Mile Crosstown
-  Bus Route 430 Main Street
-  Bus Route 450/460 Woodward Local
-  Bus Route 465 Auburn Hills Limited
-  Amtrak Midwest
-  Bus Stop
-  Train Stop
-  Proposed Site



transportation

For those who are required to access downtown Royal Oak by private vehicle, there is an abundance of public parking street side, in public lots, and in public garages. The site has a public lot on two of its four sides, allowing for ample space for visitors to the building.

 Public Parking
 Public Parking Garage



public parking





above
east view of Main Street from 11 Mile to 6th Street

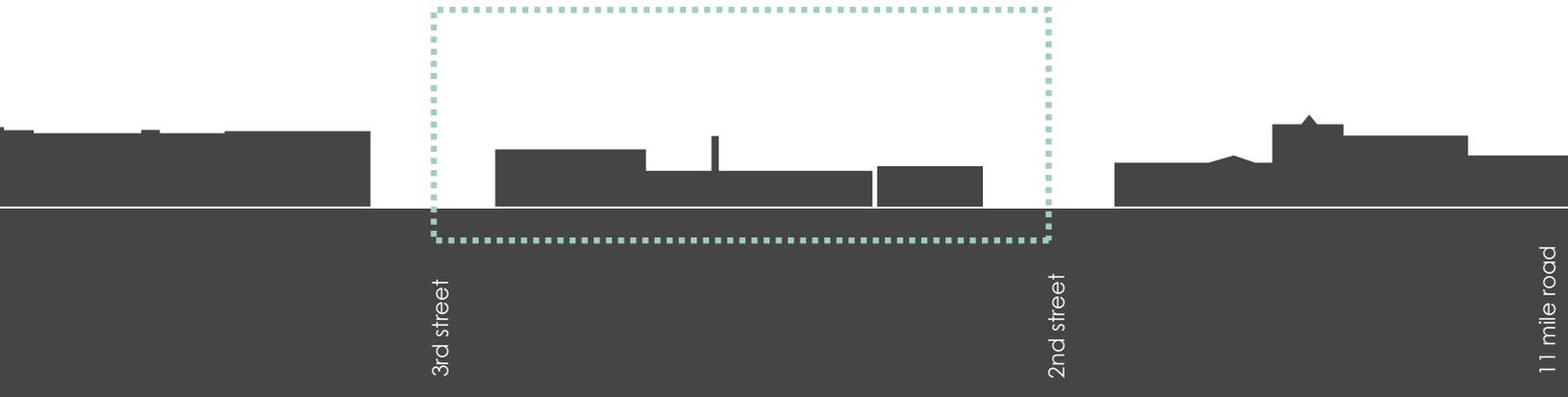


above
west view of Main Street from 6th Street to 11 Mile
045





above
east Main Street elevation study



above
west Main Street elevation study
project site highlighted

11 mile road



2nd street



3rd street



6th street



5th street



4th street



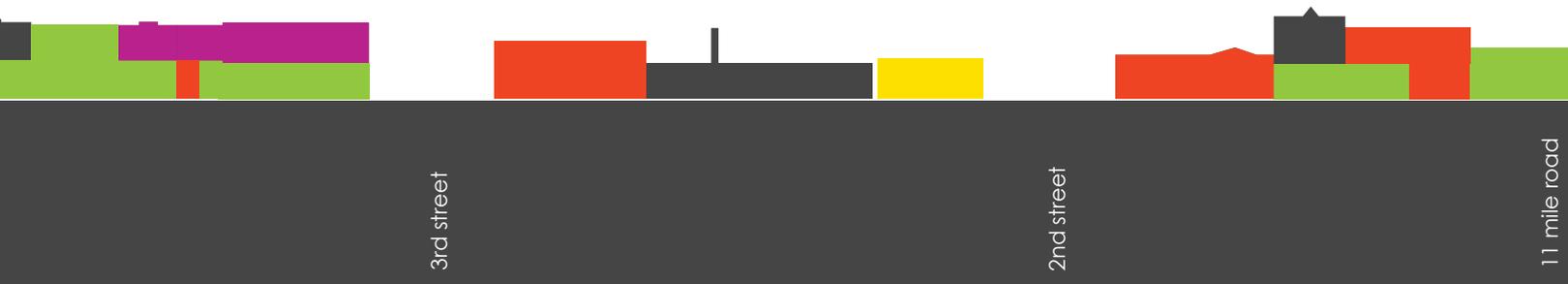


4th street

5th street

6th street

above
east Main Street elevation typology study



3rd street

2nd street

11 mile road

above
west Main Street elevation typology study

opposite

The images illustrate the styles and typologies of structures that can be currently found on and around the site.



site strategy

The design for the site was approached with a sense of priority to determine which spaces would most appropriately occupy which areas of the site. Consideration was given to site factors including views, frequency of pedestrian traffic, and parking conditions. These factors were matched with programmatic needs of design to create a basic strategy for the general placement of each project component within the site.

The design for this project is a mixed use space which will include three main components. A strategy to approach the site was set up using criteria to place each of these components within the site.

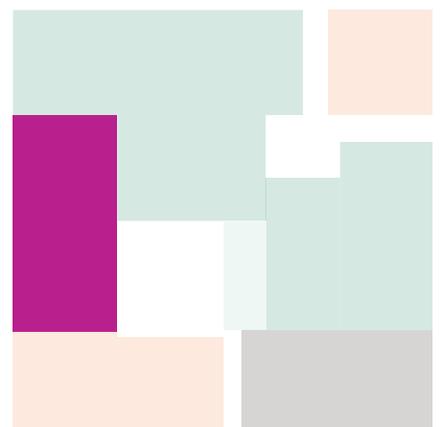
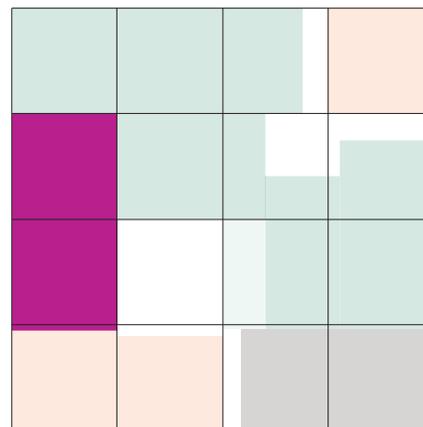
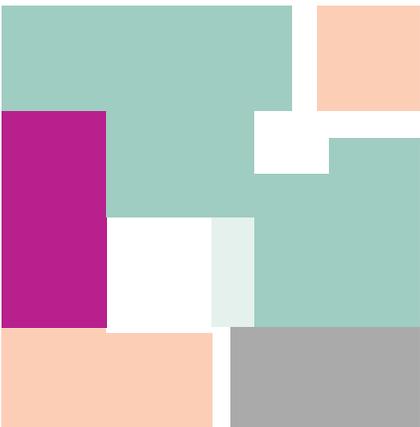
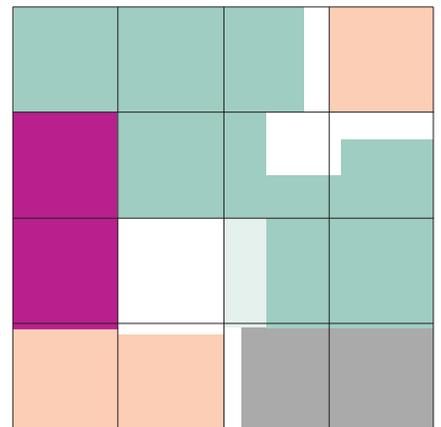
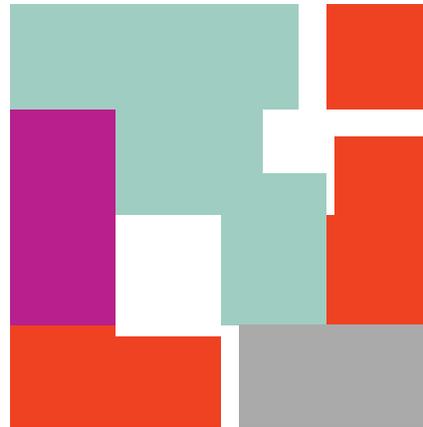
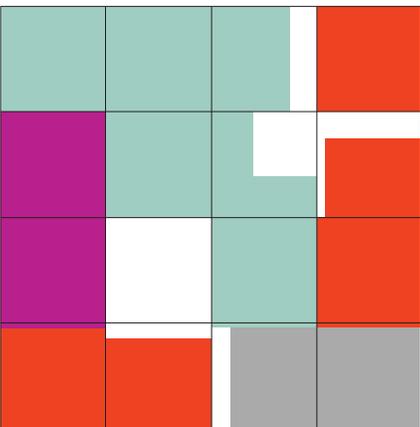
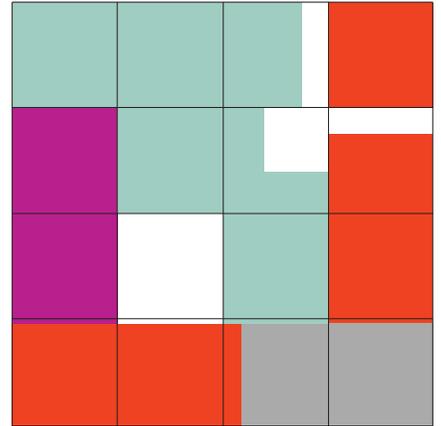
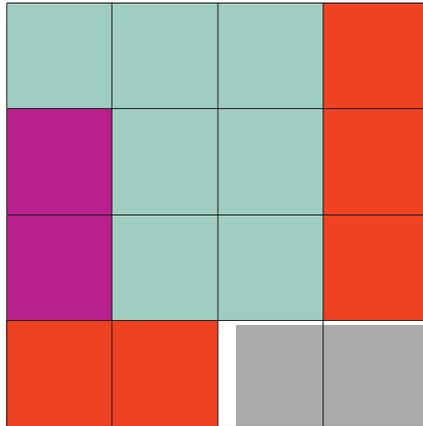
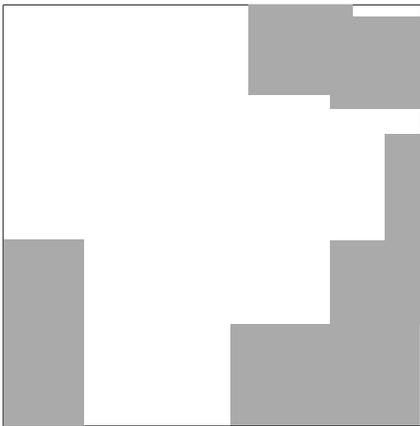
The Royal Oak Adolescent and Young Adult Cancer Center required a main entrance off of Main Street to serve the primary foot traffic into the building as well as serve as the center's face to the street. An entrance off of 2nd Street was also necessary to accommodate vehicular drop off space. In order to best take advantage of the center's context, the cancer center must have views over the most prominently active areas, mainly 2nd and Main streets. The center must also be located in such a position as to allow for an outdoor courtyard.

The **Retail Spaces** needed to have all entrances at ground level to allow for easy access from the surrounding sidewalks. The retail also needed to contribute to the successful urban condition of its surroundings by activating the site along its most populated street borders.

The **Hotel** was located further from the busiest side of the site to allow for a reduction in noise and light for those being accommodated there. In addition, this space did not need to rely on passerby traffic to generate business as strongly as other components on the site.

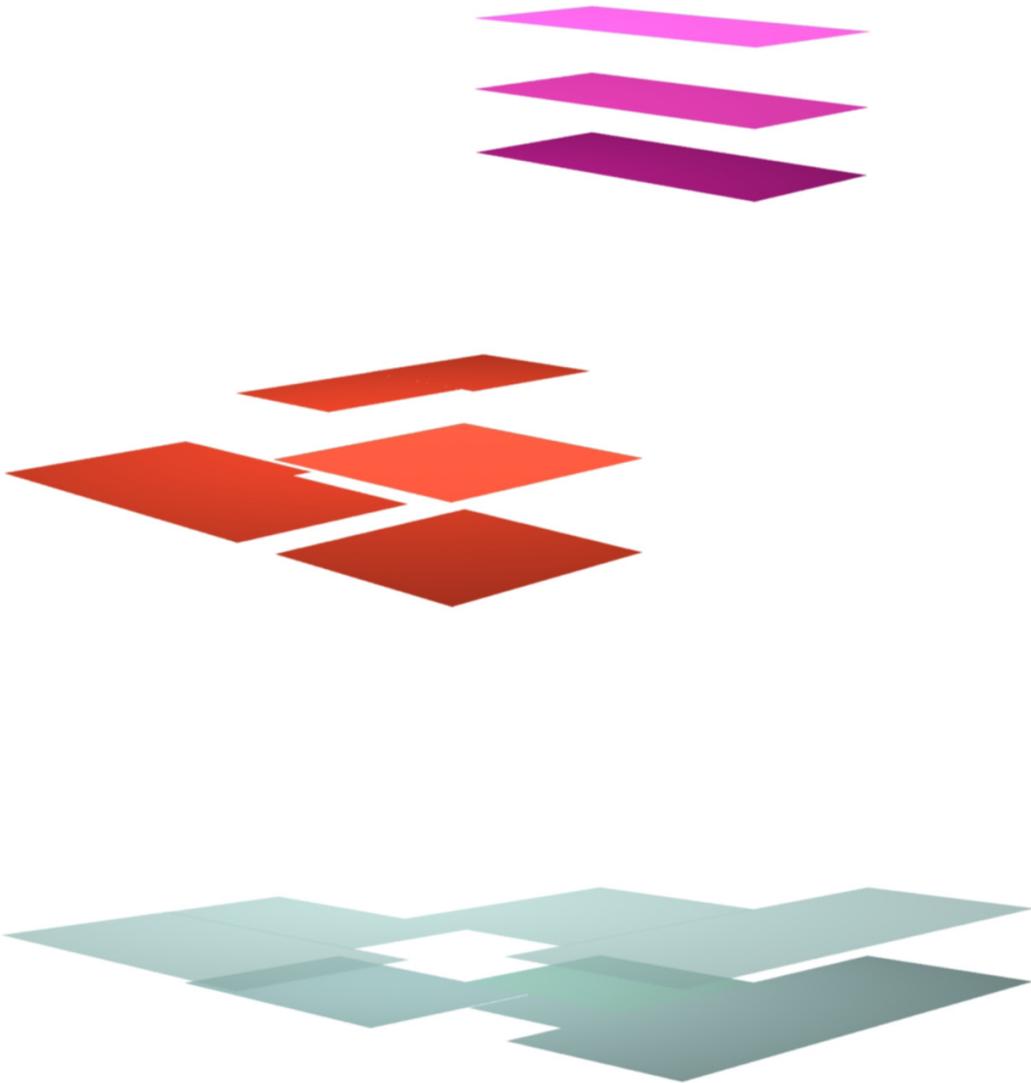
opposite

The plan diagrams demonstrate the site strategy planning process from existing conditions to developed strategy at three levels.



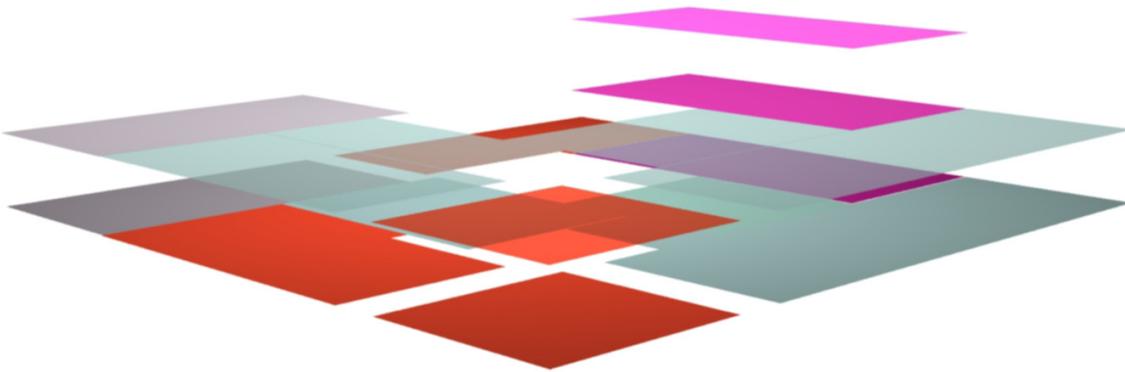
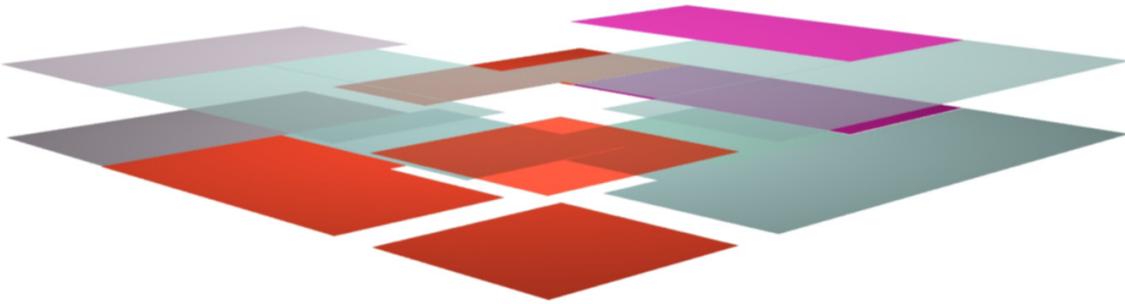
opposite

The 3D diagrams demonstrate the each programmatic component in terms of the horizontal and vertical space it was planning to occupy.



opposite

The 3D diagrams demonstrate the collaboration of each programmatic component at each of the design's three levels.

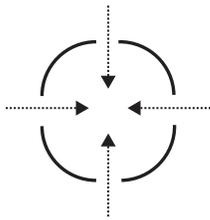


design.

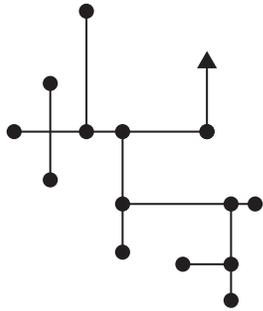
pre-design studies.

Before a design could be fully initiated, a series of studies were conducted to help ensure that the intension of the Royal Oak Adolescent and Young Adult Cancer Center was followed through in the design of the space. Examinations of light, color, and material combined with an investigation to understand the emotions of the user, informed the design process to begin to create a meaningful space.

“The mission of the Royal Oak Adolescent and Young Adult Cancer Center serves to improve the lives of adolescent and young adult cancer patients by providing **exceptional** medical and emotional support as well as **accessible** educational resources in a **positive, supportive, peer-centered community.**”



As a pre-design exercise, a step in strategic planning was utilized to begin to understand what characteristics the spaces within the center would embody. The Royal Oak Adolescent and Young Adult Cancer Center's mission was created as a means to express the role the center intends to play in the life of those affected by adolescent and young adult cancer.



Extracted from the mission statement were key words that most inclusively expressed the purpose of the center. These key expressions were further analyzed to find relative words that had particular spatial qualities inferred within them.

Diagrams were then created that showed, in a basic linear form, how these words and ideas could be implemented in planning and in the understanding of relationships between spaces.

exceptional

thorough
efficient
quality
premier

accessible

barrier-free
relevant
convenient
organized

positive

uplifting
affirming
confident
compelling
inspiring

supportive

inclusive
friendly
educational
comprehensive
accepting

community

connections
open-spaces

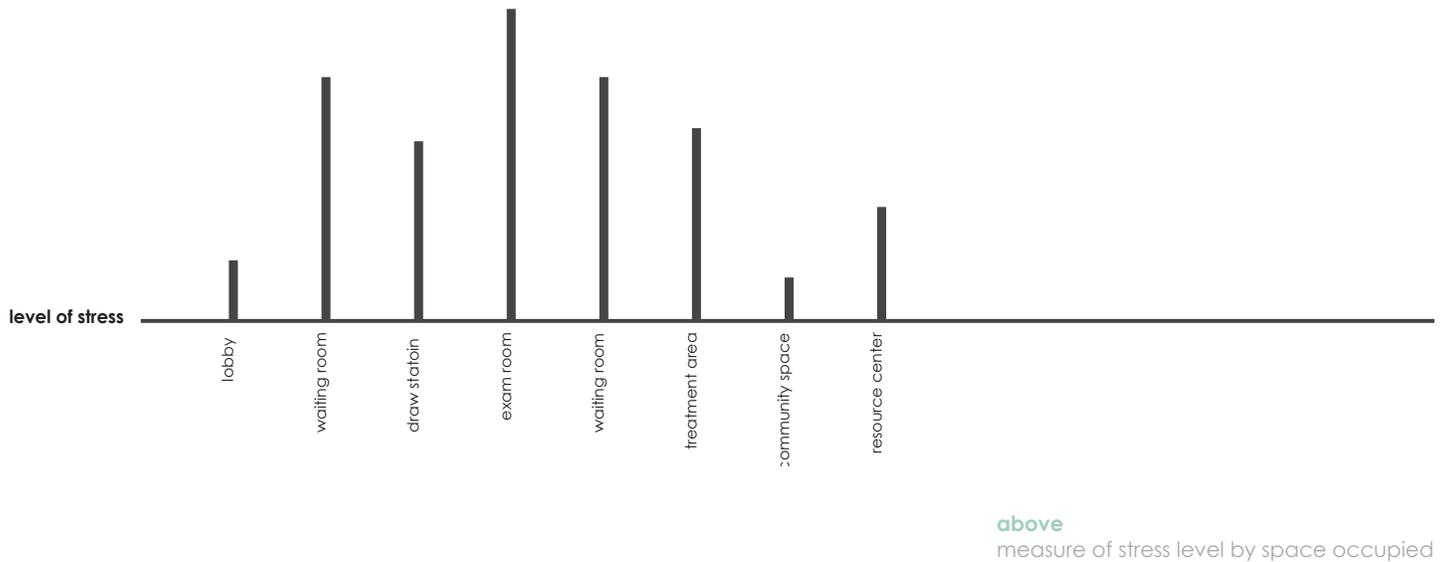
	illumination	Color
Gaiety	Higher levels of illumination. Smooth and stimulating changes.	Higher levels of color and movement. Smooth and stimulating changes.
Solemnity	Subdued patterns of light. Emphasis at dramatic points. Imperceptible changes.	Use sparingly, atmospheric effect.
Resfulness	Low brightness patterns. No visible light sources. Dark upper ceiling. Low wall brightness.	Subdued color.
Activity	Higher levels of illumination Proper local lighting for visual tasks	
Warmth		Colors at red end of the spectrum : Red, orange, yellow, amber, pink.
Coolness		Colors at cool end of spectrum : blue, green, magenta, violet.
Human Complexion		Light tints of red, pink, rose : improve human complexion Blue, purple, green : detract from the human complexion
Dramatize Object Color	Spotlight with same color light.	
Prevent Fatigue		Avoid use of intense red, blue, purple.

psychological effects of lighting conditions

	Hue	Contrast
Exciting	Bright Red Bright Orange	High
Stimulating	Red Orange	Moderate
Cheering	Light Orange Yellow Warm Gray	Moderate
Neutralizing	Gray White / Off-White	Low
Retiring	Cool Gray Light Green Light Blue	Low
Relaxing	Blue Green	Low
Subduing	Purple	Moderate
Depressing	Black	Low

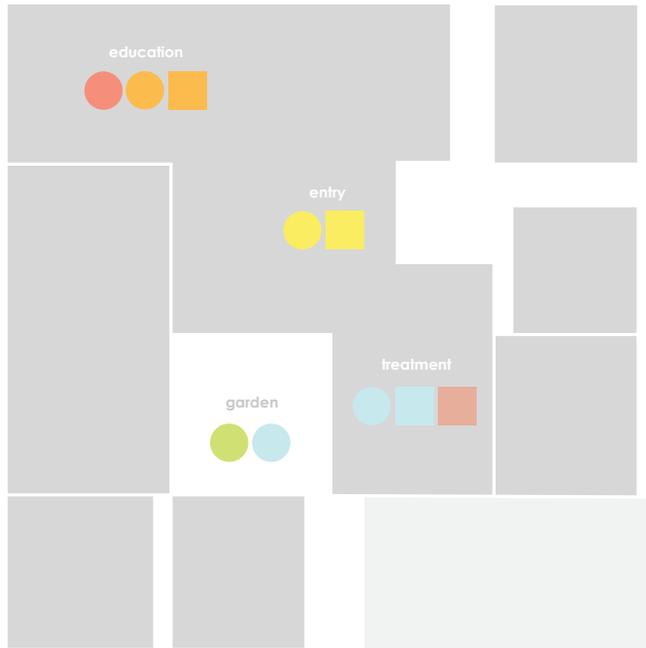
psychological effects of hue and contrast

A study of the psychological effects of light and color was used to give an understanding of how these factors can have an effect on the vibe or mood of a space and, in turn, on a person experiencing the space.



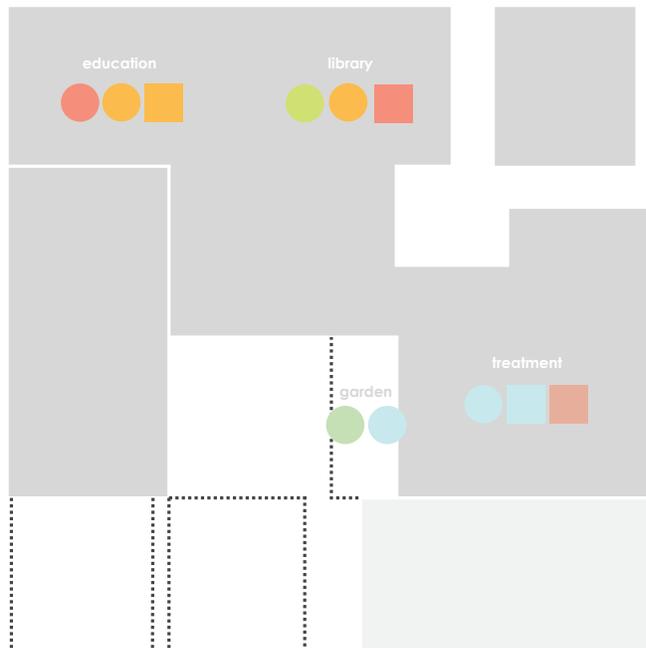
A study created to understand the levels of emotion being experienced by a visitor to the Royal Oak Adolescent and Young Adult Cancer Center shows the variance in stress a person may be undergoing in each different space. A consideration must be made for these varying levels of emotion when a multi-functional space is being designed.

The emotional study in combination with the light and color study were used to develop a floor plan strategy. This strategy looked at each individual space within the cancer center and analyzed them based on both the activity that would take place in the space and the emotions that would be felt by its occupants. These were mapped out using the light and color findings as a key.



first floor - plan strategy

□ Lighting	○ Color
Gaiety	Exciting
Solemnity	Stimulating
Restfulness	Cheering
Activity	Neutralizing
Warmth	Retiring
Coolness	Relaxing
Human Complexion	Subduing
Dramatize Object Color	Depressing
Prevent Fatigue	

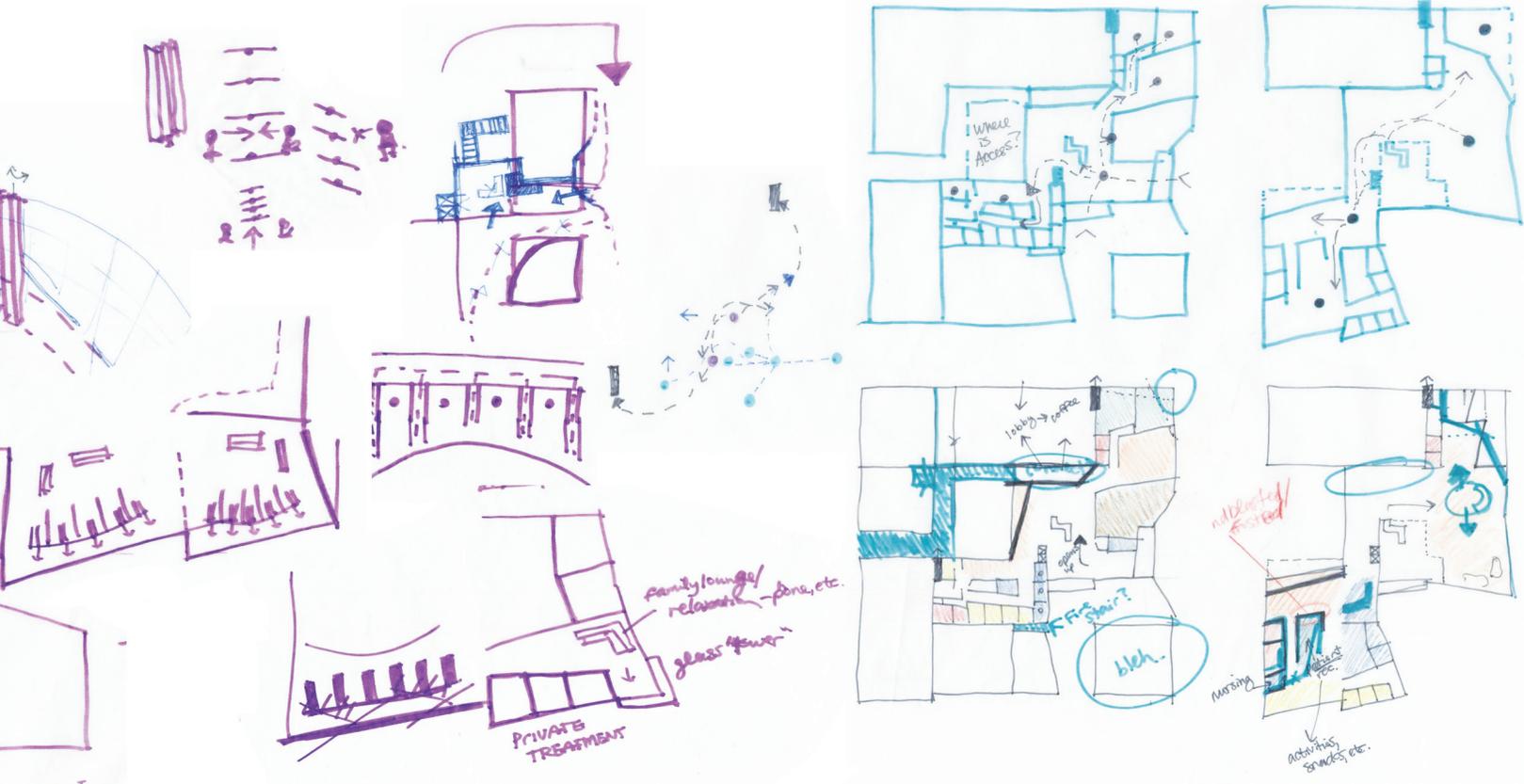


second floor - plan strategy

left and above
lighting and color floor plan strategies

below

a series of sketches illustrating design ideas and working process of planning design



final design.

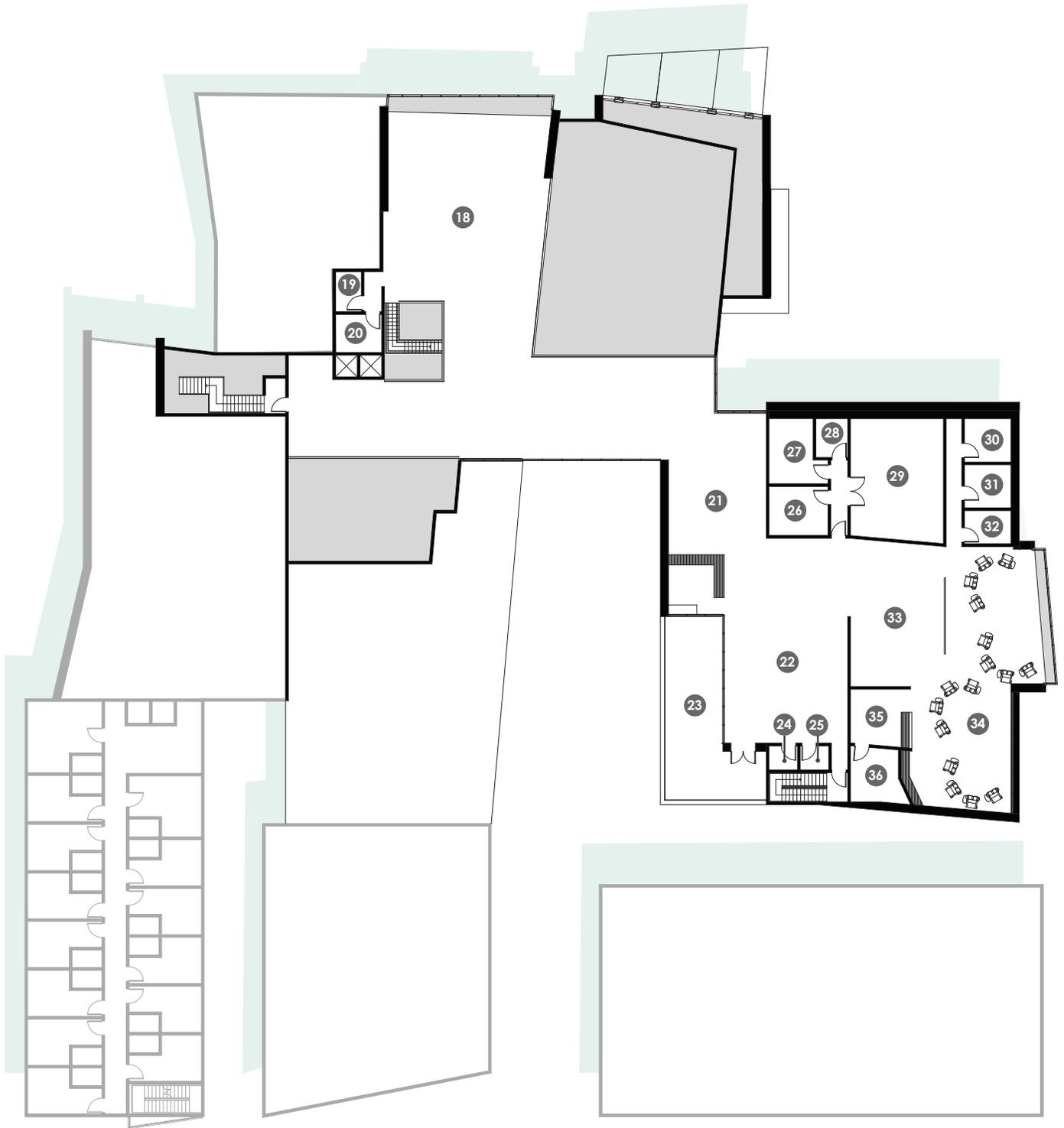
The final design of the Royal Oak Adolescent and Young Adult Cancer Center is a bright, open, active space. It is comprised of a community space that serves as a general gathering space for patients and visitors, two classrooms available for group meetings or educational sessions, and a resource center with a library of research materials. The center also laboratory services, physician examination spaces, and a community-based infusion treatment center. The center also has an outdoor courtyard space for walking, gathering, meditating.



- 1 reception / lobby
- 2 office
- 3 community room
- 4 education space
- 5 education space
- 6 toilet
- 7 toilet
- 8 waiting
- 9 office
- 10 blood draw station
- 11 laboratory
- 12 physician office
- 13 physician office
- 14 exam room
- 15 exam room
- 16 toilet
- 17 toilet

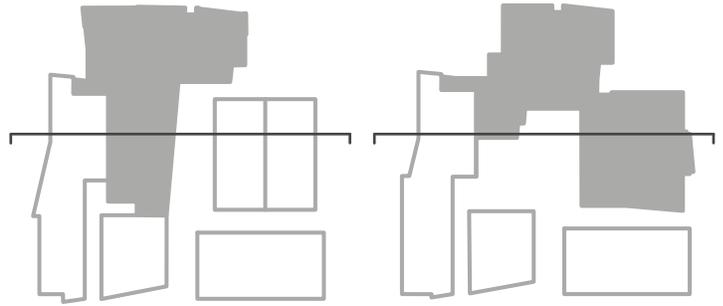


- 18 resource center
- 19 toilet
- 20 toilet
- 21 reception / waiting
- 22 family lounge
- 23 outdoor balcony
- 24 toilet
- 25 toilet
- 26 office
- 27 office
- 28 staff toilet
- 29 staff lounge / respite
- 30 private treatment
- 31 private treatment
- 32 toilet
- 33 patient lounge
- 34 treatment space
- 35 nurses station / medication prep
- 36 medication room



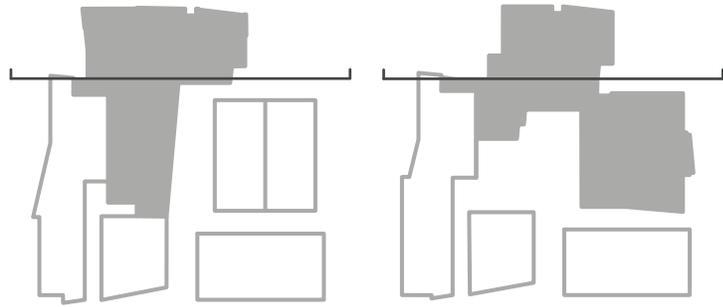
right

The section shown best illustrates the treatment area and the design elements used to create a space with an open view overlooking Main Street as well as wooden elements acting to activate the light coming into the space as well as bring a touch of natural warmth to the space.



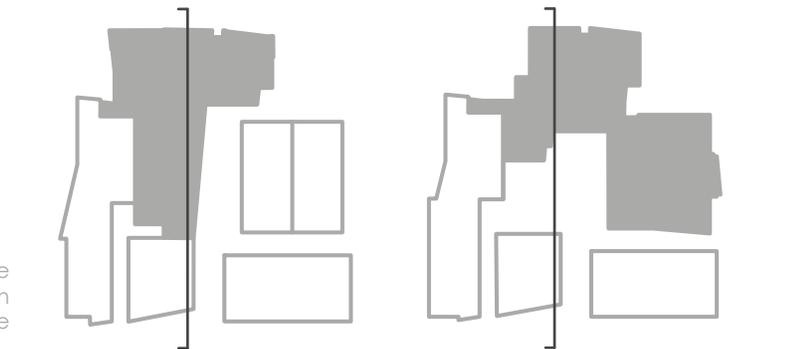
right

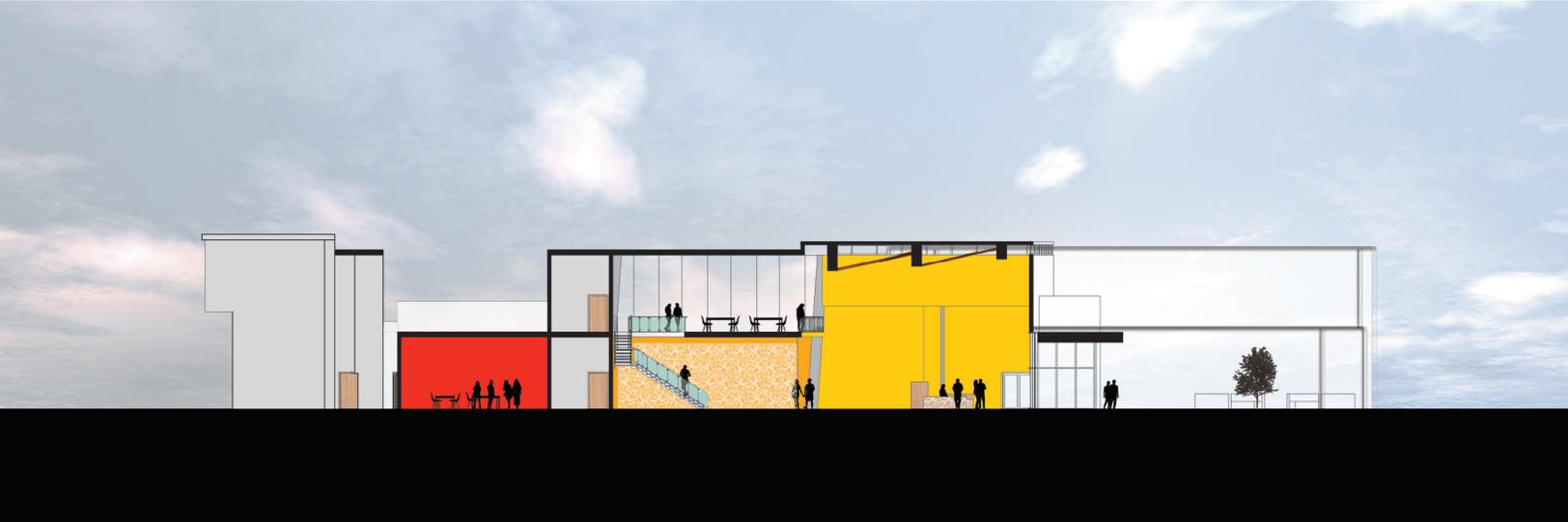
This section highlights the relationship between the lobby, community, and resource spaces. The bright, welcoming lobby opens up to the views seen from the resource center above and community space behind the translucent wall.

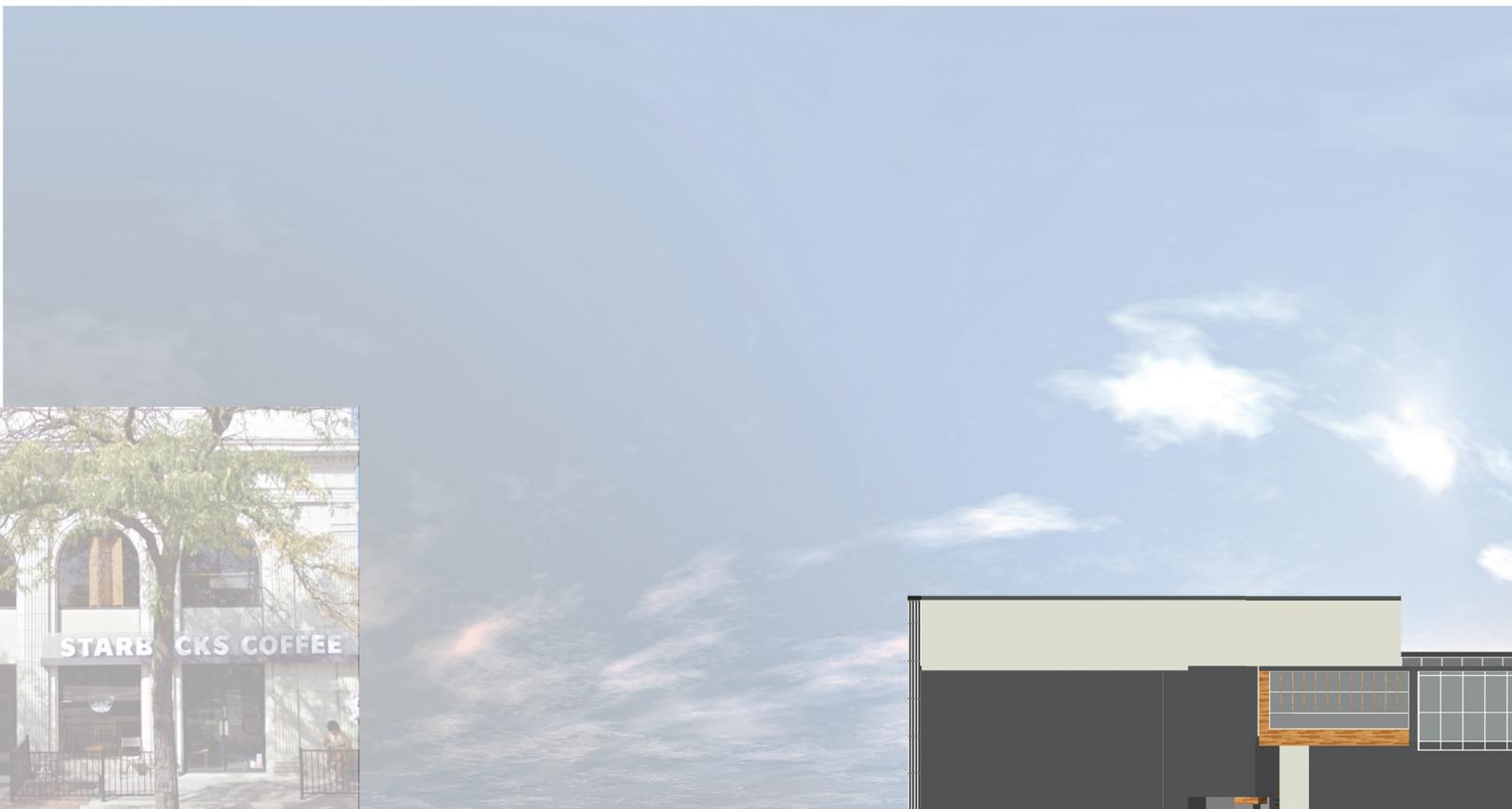


right

The exam rooms and physician offices are shown in this section as well as the open wall condition on the north end of the resource center and community space.



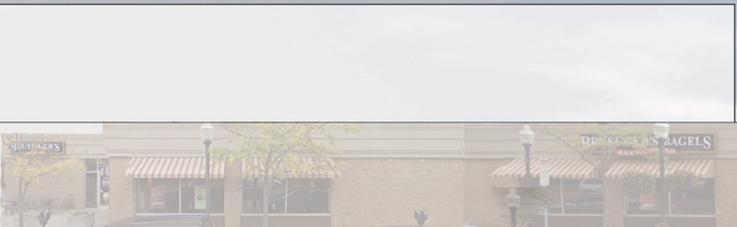




below

east elevation showing the treatment area
and main pedestrian entry





below

north elevation showing the resource center, community space, classrooms, and vehicular drop off entry





below
southeast perspective





southwest view



opposite
pedestrian entry off of Main Street

088

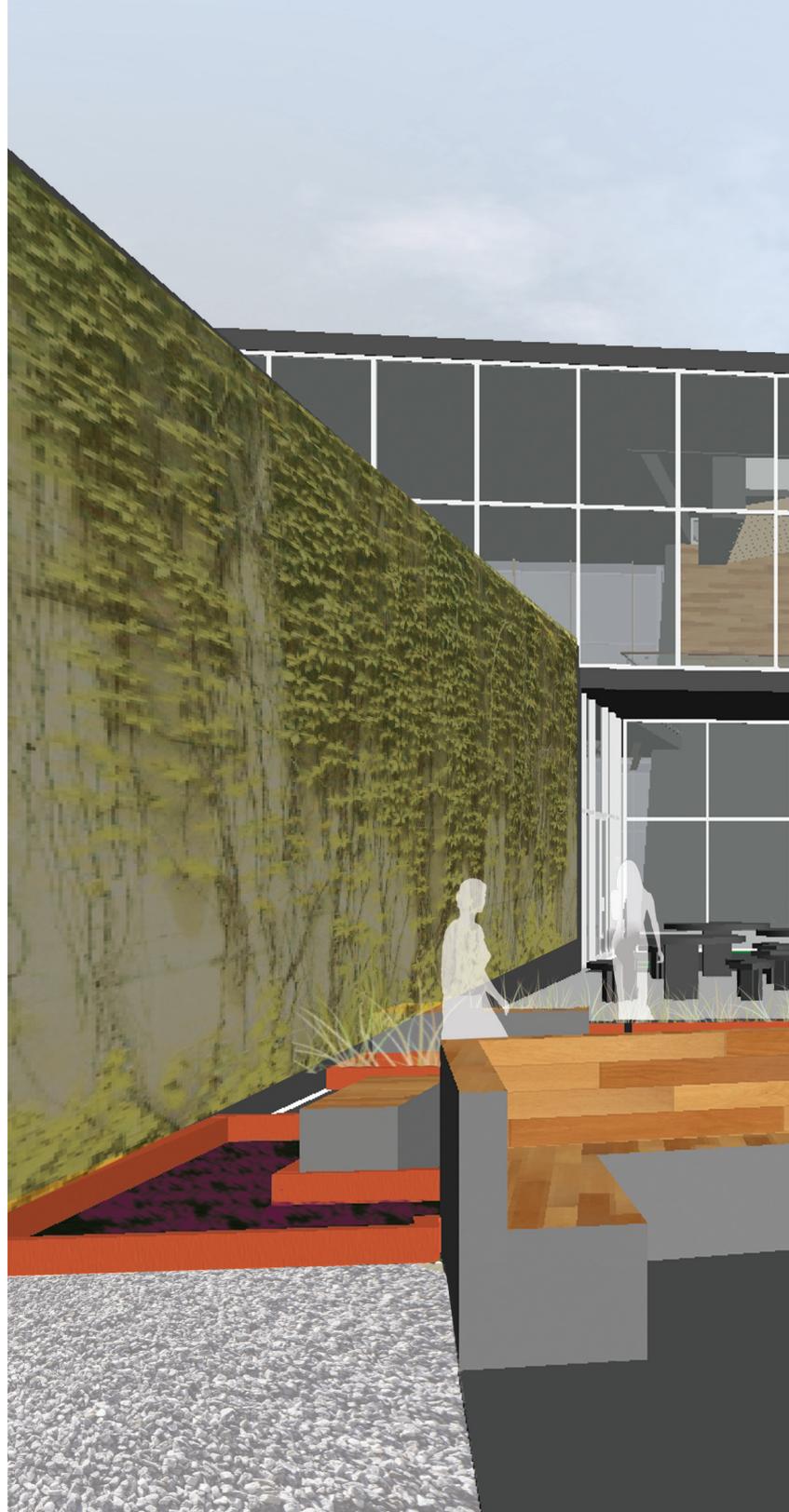




ROYAL OAK AYA CANCER CENTER

opposite
exterior courtyard retreat space

090





opposite
interior view from lobby





section perspective of treatment space



Royal Oak Adolescent & Young Adult Cancer Center

Our Mission

The mission of the Royal Oak Adolescent and Young Adult Cancer Center is to improve the lives of adolescent and young adult cancer patients by providing exceptional medical and emotional support as well as accessible educational resources in a positive, supportive, peer-centered community.

At the Royal Oak Adolescent and Young Adult Cancer Center, we specialize in the unique needs of individuals aged 15-39. We understand the unique physical and emotional needs of this age group and strive to serve as a beacon of life, strength, education, and advocacy.

Comprised of a staff of specialized Adolescent and Young Adult oncologists, nurses, and coaches, Our center is one of very few of its kind to offer emotional support, social activities, educational resources, and physical treatment.

Our community is located in the heart of vibrant downtown Royal Oak, Michigan. Placed within an area of successful retail and restaurant spaces, our center values the importance of social interaction and involvement in the healing process.

"I hate having to tell my friends that I can't go hang out with them because I just don't have the energy, or not being able to go places I would normally go because my blood counts are low. This cancer business really takes a toll on a person's social life!"

"Receiving treatment at the Royal Oak Adolescent and Young Adult Cancer Center reminds me of going out to the bar. You sit around with a bunch of people, some friends, some strangers, you all have your 'cocktails' and talk about life."

"I was in the middle of one of the happiest times of my life. I fulfilled my dream of marrying my best friend and was anxiously awaiting the arrival of our son when I received the news that would change my life forever."

"I initially began my treatments at a larger cancer center. No one else there truly seemed to understand my circumstance. They were sympathetic and tried to offer advice, but it was obvious that they had never experienced what I was going through first hand. Many that I spoke with had children or even grandchildren who were older than I am!"

"No one wants to have to make the kind of decisions that could alter their life forever, but having the ability to become as well informed as possible helps me to feel more secure about the decisions I do make. The resources available to me at the Royal Oak Adolescent and Young Adult Cancer Center have helped me understand my cancer and therefore feel more in control of my decisions and my body."

opposite
brochure design

right
visitor testimonials

final thoughts.



“In my world, the hero always defeats the villain, the boy always gets the girl, and cancer is no more” *Laura Ziskin*

This thesis was a journey for me in many ways. It served as a means for me to express my personal experience with cancer and the spaces and emotions I encountered as a result of my experiences. At times during this process, I became wrapped up in attempting to figure out what my role was in this process. Was I the designer? The advocate? The patient? Reflecting back on the work, I have realized that I played all three of these roles at different points and often played them all at once. I believe this was a vital component in the final outcome of the project. The value of the designer truly understanding what it is like to be the patient and advocating change for the elements of care that are not holistically supportive makes the project a success in my eyes.

My hope with this thesis was to introduce a fresh view on the way we typically design healthcare architecture. We must utilize the understanding that our healing environments must be supportive of both our physical and emotional wellbeing. This must extend beyond the assumption that the best atmosphere for healing is always one that is quiet, secluded, and tranquil. The healing process does not necessarily need to take place in a space removed from society and removed from the on goings of our life.

The work completed through this journey and the ideas and opinions that have resulted from my experiences will serve to inform my design work in the future, and will, I hope, inspire others to consider their designs through the eyes of those whose lives may be shaped by them.

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