ENVIRONMENTAL MEDICINE: HEALING THROUGH CREATIVE PROCESS

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By

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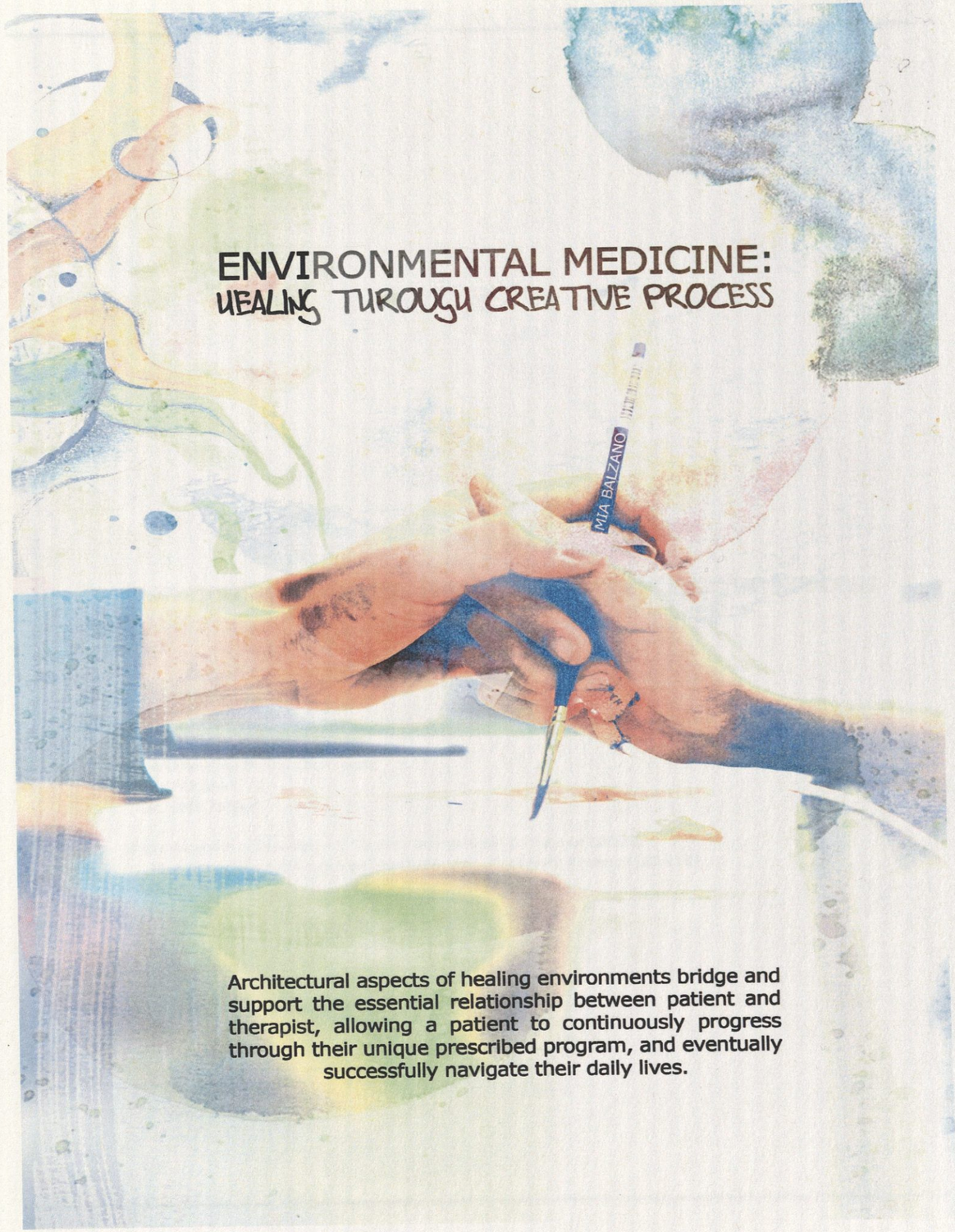
Advisor _____
Katherine Setser

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John Humphries

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In loving memory of my grandmother,
Jean Domagala,
who inspired my research.

ENVIRONMENTAL MEDICINE:
HEALING THROUGH CREATIVE PROCESS



Architectural aspects of healing environments bridge and support the essential relationship between patient and therapist, allowing a patient to continuously progress through their unique prescribed program, and eventually successfully navigate their daily lives.

Environmental Medicine: Healing Through Creative Process

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Environmental Medicine: Healing Through Creative Process

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ABSTRACT

Art therapy is an effective method of helping people—not only to recover from an illness—but also to recognize how personal experiences affect oneself and others. Art therapy uses a combination of therapeutic reasoning and creative expression in order to decrease anxiety in an unconventional manner versus more traditional therapies including typical counseling or the use of medications. This hands-on approach helps those involved to better contextualize one's circumstance and environment through the immersion in the integrative, reparative and restorative process of making and creating which illustrates for the patient a process of release through expression. In this approach, the process takes precedent over the outcome, reinforcing the critical aspect of allowing one's intuition, connected to the subconscious and unconscious areas of our brain, to emerge what is invisible to us and make it visible.

As part of the foundation of art therapy, both patients and their therapists need appropriate environments to fully explore and leverage therapeutic processes. The patient requires an environment that empowers and encourages one to safely explore and examine uncomfortable emotions, memories, perhaps even traumatic experiences. This type of expression-based treatment differs from many other therapeutic approaches in that it strives to stimulate the image-based region of the brain, a part of the brain that arises early in one's development, and in which memories are contained. For those who struggle to communicate effectively through verbal other normative means, art therapy can be most effective—especially with adolescents, whose brains still have plasticity and have not fully developed. It is this researcher's hypothesis that supportive environments can assist patients in the articulation of difficult remembrances. Similarly, the art therapist's role in stimulating the memories of a patient requires an environment that helps to build and strengthen a trust-based rapport in order to most effectively assist the patient in acquiring the insight and skill necessary to successfully manage their behavior in the expanded environments that comprise their daily lives.

This paper explores the architectural aspects of adaptive healing environments that support the essential relationship between patient and therapist, and allows a patient to continuously progress through their unique prescribed program and eventually successfully navigate their daily lives. By fully understanding and documenting the atmospheric and phenomenal needs of both patient and therapist throughout the therapeutic process, the design of the architectural environment can be leveraged to augment the sensory and creative experiences central to a patient's healing path.

INTRODUCTION

"Art washes away from the soul the dust of every day life." –Pablo Picasso

Adjusting to unfamiliar places, being judged and bullied; overwhelmed by the excessive technological alerts and demanding agenda. I am not alone. Anxiety affects our health, the way we see our environment and how we carry out our daily lives; it affects our minds and our bodies. People with anxiety need a process of recovery that incorporates a whole body experience of mind, body and spirit. Art therapy is an untraditional approach with the primary function of substantiating experiences. This kind of therapy supports needs for mental, physical disabilities, health impairments, or even emotional or behavioral challenges. By creatively analyzing stressful remembrances, art therapy helps people understand their experiences: how they are affected by their experiences, and how their actions affect others. The art therapy process helps us become informed of our feelings and thoughts by allowing us to see experiences from other perspectives through the assistance of a therapist. So, how do healing environments best support the relationship between patient and therapist since their relationship impacts the both the creative and healing process? Therefore, this paper explores adaptive healing environments that support the relationship between the patient and the therapist, and allows the patient to progress in ways that help he or she best navigate their daily lives.

THE ORIGIN OF THERAPY

"It is art, and art only, that reveals us to ourselves." –Oscar Wilde

The fundamental ideas behind therapy derive from Sigmund Freud. According to Freud, therapy is not aimed to uncover unconscious behavior, rather to support the ego. The ego uses creative expression in order to foster an organization of thoughts; these thoughts that are organized by the ego are resilient to breaking down or needing to resort to defensive measures that cause stress.[1] This means that the ego has the ability to organize and understand experiences through the therapeutic process of making and creating. There are many kinds therapies and many more types of psychotherapy, but general therapies include by matter, by energy, by thought process, by creativity and by human interaction. Each of these general therapies needs to be used in combination with another in order to be successful. People respond differently to treatments, which is why it is important to individualize types of therapeutic processes through combinations of treatments. The combination of psychotherapy, the spoken word, and art therapy—using art as a medium of expression—allows for more opportunities of communication, leading to a higher level of understanding. Art therapy specifically depends upon the premise that creative processes allow for artistic self-expression, helping individuals become problem solvers, manage behavior, improve self-esteem, develop self-awareness and insight, manage stress, and develop interpersonal skills.[2] With the help of art therapy, individuals will be better acquainted with their thoughts, feelings, experiences, others, and themselves.

METHODOLOGY

"Study the science of art. Study the art of science. Develop your senses... Realize that everything connects to everything else." –Leonardo da Vinci

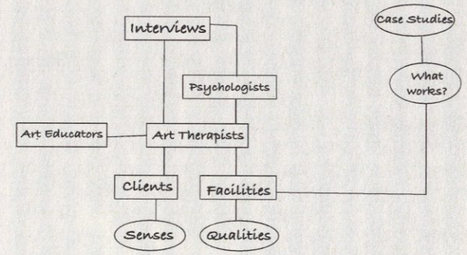


Figure 1. © This diagram describes the relationship between methodologies and subjects pertaining to Art Therapy.

Interviews and writings by art therapists, art educators and psychologists, and statistics from behavioral studies, create a collection of credible data used to design well-informed architecture of healing environments—an evidence-based design methodology, which is often used in healthcare design. By applying this methodology to the architectural design process of healthcare environments, architects may contribute to the art therapy process by designing sensory-enhancing spaces in which patients can express their symptoms, thoughts, feelings and troubles within the art therapy creative process. Furthermore, analyzing case studies utilizing evidence-based design processes will help inform successful

characteristics that should be implemented in future designs. However, not all case studies use evidence-based design. Therefore, by also looking at unsuccessful aspects to case studies in comparison to successful aspects in case studies, I am looking to find whether evidence-based design could improve the unsuccessful aspects of the case studies. Ultimately, studying these various methodologies will help me determine what types of environments positively impact the creative processes of the patients.

WHY ART THERAPY

> *"In art the hand can never execute anything higher than the heart can inspire."* –Ralph Waldo Emerson

Dealing with anxiety is difficult because your brain is constantly on high alert. Anxiety causes increased sensitivity and affects the lower regions of the brain. Unfortunately, the lower regions of the brain encompass one's survival instincts, which means anxiety inhibits one's ability to perform higher cognitive functions until the healing process begins.[3] Depending on ones age, particular types of therapy are more successful than others. Art therapy is particularly successful for adolescents because it uses creative therapeutic processes that exercise the image-based areas of the brain, which are the areas of the brain where memories are formed and they are the earliest developed areas of the brain. According to the National Clearinghouse on Families and Youth, artistic expression soothes the lower regions of the brain by helping people release mental tension through creative processes. These processes have the ability to raise awareness of the individual's physical and mental state. Awareness empowers the individual to address their situation, calm their fears and frustrations, and ultimately help the individual build resilience and a sense of safety.

Counselor Cathy Malchiodi, author of *Trauma-Informed Art Therapy and Trauma-Informed Expressive Arts Therapy*, and psychiatrist Bruce Perry, have discovered that the effects of trauma "can be reversed with therapies that rebuild the brain from the ground up," specifically with arts therapy.[4] Other advocates of creative arts therapies, including Nancy Gerber, the Director of the PhD Program in the Creative Arts Therapies at Drexel University, promotes expressive arts for trauma recovery, especially those who seek treatment at a young age. The age of treatment is important and popular to those of a younger age because therapy engages particular image-based areas of the brain that develop early in life. Unfortunately, younger people struggle with language and do not know how to talk with emotional intelligence; therefore, art therapy helps illustrate situations through images. The creation of these images, whether they release tension or describe the trauma, will ultimately help the patient heal.

For example, Syrian children have been traumatized by the civil war, and have fled for Lebanon, but some refugees were privileged to experience temporary relief with art. With this nationwide surge of 1.3 million refugees, schools struggle to accommodate the influx, resulting in a higher probability of recruitment into violent groups. Even those in schools face extreme cases of bullying, prejudice, and violence, where Syrian children feel depressed and traumatized. Anita Toutikian, a working artist and clinical psychologist, visits a mixed class of refugees and Lebanese students. In an interview she explains how she helps the students; she does not teach art or evaluate the problem of each child, but instead she leads the group through psychosocial support with art, therapeutic art.[5] This way she provides them "the opportunity to express themselves freely, without judgment, without evaluation of their work," assisting them with a chance to release trauma.[6] That day the children enjoyed themselves—a day without bulling, where they could be happy. As the class filed out, one boy practices his English on Toutikian and says "I love you," as he shakes her hand and adds "Nice to meet you," while walking away.[7] These positive effects of art therapy can occur in the most fundamental group sessions, where there is community working together through creative processes.

APPLICABLE TO ARCHITECTURE

The environment contributes to the holistic healing process. The architect becomes part of the treatment process, and architecture becomes part of the therapeutic process. Art therapists are the primary clients of the architects because the therapists determine how to conduct the creative processes carried out in the facility's space. This space differs from other conventional types of therapy because the clients describe their experiences by creating a representation of what their feelings and senses perceive. One's experience depends on sensual perception among other conditions. These senses could include the traditional senses of ophthalmoception (sight), audioception (sound), gustaoception (taste), olfacoception (smell) and tactiception (touch), but other senses could be affected such as balance, temperature, kinesthetic and pain.[8] Once these senses are identified and understood, feelings form to justify what was sensed. What is felt is then transformed into art.

Unlike other therapies, this transformation process does not require words. Words can be a barrier to one's thoughts and feelings. So, by using art as a medium, there are less cultural and developmental barriers such as language, age, or disability. Ultimately, architecture will support the relationship between the patient and the therapist through its physical enhancement to the therapeutic process. Evidence of successful design enhancements can be shown through case studies and statistics, improving patients' quality of life through the location of the therapy center, use of materials, and flexibility of the program.

CASE STUDIES

Erie County Behavioral Healthcare in Buffalo, New York, was finished on January 16, 2014. It is a 36,000 Square-foot facility off of Erie County Medical Center, designed by Kideney Architects, P.C., Prime Architect; architecture+, Associate Architect. This $25 million Behavioral Healthcare Center of Excellence at Erie County Medical Center (ECMC) is a comprehensive psychiatric emergency program (CPEP) with outpatient areas, and inpatient facilities.[9] Its design serves to mental health clients in Western New York, which serves similar clients to those of an Art Therapy facility. The center expands ECMC's current emergency behavioral health facilities from 6,500 to 18,000 square feet.[10] Some of the programming differs from art therapy centers by including elements such as the ECMC's current 18 detoxification beds and 20 inpatient chemical dependency rehabilitation beds.[11] Even though these features may be beyond the scope of a typical art therapy facility, it is important to understand that the need for these kinds of features are determined by the level of client need in the area. This facility was needed so much so that the state was able to contribute $15 million in order to allow this project to happen.[12] Other important design strategies were also used to improve the quality of the environment at this medical center.

Some of the other design strategies used to improve the quality of the environment include light, air quality, and the facility's educational connection to the community. The terraces funnel beautiful views, ventilation, and natural light into the rooms of the facility, allowing aspects of the outdoors diffuse inside. Plants are also located throughout the spaces, cleaning the air quality of the spaces. Since the ECMC is the regional center for trauma, burn care, behavioral health services, transplantation, and rehabilitation, it has a great educational opportunity for the college students in nearby universities including the University at Buffalo. Its educational component encourages dedicated ECMC physicians, dentists and pharmacists to be faculty members of the university and/or members of a private practice plan so that students can get experience within a function practice outside of the university.[13] This component of the ECMC not only helps educate those who are interested in the field of healthcare, but also educate the community to help lessen the severity of behavioral needs such as drug addiction. This aspect of the facility emits beyond the building's walls and affects the people in the area, which is an aspect that is important to any community and should be implemented in every healthcare center.

The D'Youville center for advanced therapy designed by Levi + Wong design associates, Inc., completed construction February 2012. The 54,000 square-foot rehabilitation and therapy center in concord, Massachusetts cost $11,000,000. The firm who built this center believes the power of design can improve the quality of life in the communities where we live and work. This multifunctional firm illustrates their multifaceted abilities through the broad spectrum of treatment facilitated in the D'Youville center for advanced therapy (DCAT). DCAT was able to join forces with the New England rehabilitations hospital satellite at Lowell in order to integrate their services into a

two-story center. This change provides short-term physical and acute care rehabilitative and hospice services in one place to aid caring for seniors and update to current healthcare technologies to further encourage healthy activities, social interaction, and rehabilitation in the various types of designed spaces.[14] The transformed spaces intensify the positive, sensorial connection to the healing environment.



Figure 2. © The diagram above describes the process of a client's response to a therapeutic environment and embracement of such a facility.

The location and materials play an important role to the design. The location is important to the design due to the client need and its topographical venue. The hillside is an important feature in the healing process because it emphasizes different spaces through a variation of levels. Materials also reinforce the hopeful nature of the healing process.[15] The palette is a combination of raw and engineered materials that contrast with the usual institutional palette. The cut stone, maple wall panels, and glass synthesis reflects a New England-style modernist interpretation, which reflects the intended, positive tone of the design.

Another theme to the design is the connection to nature through lines of sight. The designers chose to address transparency between the flexible interior space and the surrounding environment of the site through implied massed pavilions, open glazing, and a large entry lobby. These features help with visibility and way finding throughout the center, aiding one's sense of orientation by diversifying the spatial language between the public programmatic elements and the private circulation. Other programmatic elements include the activity areas, the nondenominational chapel, and a quiet courtyard terrace. All of these elements diversify the center's program and allow the patients to feel spiritually connected to their temporary home. As for the residential and clinical side of the center, there is a mixture of private, semi-private and bariatric rooms to assist a wide range of therapeutic care. Each room is customized for quality, independent client care where the large windows, personal storage, refined color palette, and large bathroom create a home-like feel.

This case study goes beyond fixtures, color palette and location; it reflects the individualistic and group support of the healing process while celebrating the natural qualities of one's environment. It defies the sterile, cookie-cutter, repetitious institutions that create unimaginative spaces. Instead, it expresses a synthesis of interior to exterior experiences that blur the border of defined spaces. The design of the D'Youville Center integrates many facets of the therapy realm into an inspirational, contemporary facility. Therapy centers do not need to be completely specialized, but may have a few areas of specialization. As for the design, creative control is apparently more flexible than other parts of the medical field because these spaces have a different kind of occupant. The occupants are not restricted to a large boxed building due to their needs; instead it has massed areas of interest for the diversity of healing needs of the patients—which is also better for the client because it increases their comfort level.

The Seattle Children's Hospital has a project called Building Hope, which was completed in April 2013, for the Cancer, Critical and Emergency Care Expansion in Seattle, Washington. ZGF Architects LLP and Joan Wellman & Associates Inc. designed the 330,000-square-ft expansion project costing $136.32 million. Before this firm's renovation, the Seattle Children's behavioral unit operated at 100 percent capacity for a couple of years, which highlights the hospital's need to expand.[16] Even the Director of Psychiatry and Behavioral Medicine at Seattle Children's Hospital, Debra Gumbardo, states they "had to turn children who needed help away because we didn't have enough beds. At any given time we had 10 to 20 children on our waiting list," which means they were combating with a problem that outnumbered their resources.[17]

The driving factor for the design of the expansion was the clients' needs, since the mental health issues in children in the area have exponentially increased. Space was also a limitation to those who were, indeed, able to occupy the hospital. Oftentimes patients who needed to pace to calm themselves, used public spaces outside of designated therapy room, which is disruptive to the healing process of not only themselves, but to others as well.[18] With a need for expansion due to overcrowding, and the inefficient utilization of existing spaces, Seattle Children's hired some consultants for planning the extension.



Figure 3. © Each floor of Building Hope offers families "quiet rooms" to relax and unwind without the interruption of the facility's intercom system.

Consultants and designers were able to plan out their spatial needs by looking at data from the existing facility.[19] This way the hospital was able to see which spaces showed more or less traffic in comparison with other areas of the facility. It also shows the changing client needs. Some data showed the autistic patients had the highest need for supervised isolation, which is why they designed comfort rooms in the renovation.[20] This hospital reacted to the needs of the community, so the program was specific to the area. Some of the program includes forty-one private client rooms, comfort rooms, an intensive care unit, pharmacy, clinical laboratory, central stores, outpatient services, radiology, and surgical rooms. The types of spaces are just as important as the names of the spaces. Simple changes in names of spaces, such as calling seclusion rooms "comfort rooms", gave clients a place to pace or de-escalate on their own, but feel safe—not jailed.[21]

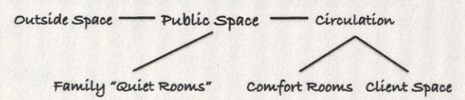


Figure 4. ©This diagrams highlights the programmatic transitions of space within the renovation.

The design of this building benefits the long-term goals of the facility. By using their method of evidence-based designing, the results of their studies assisted the material selection process. All materials were tested to be safe for the staff and clients, which helped with the durability, but also contributed to the nature themed spaces. Curved edges, natural light and materials worked together in a gestalt method[22] in order to give shapelier features to the spaces and make the space feel less institutional.[23] Like the prior case study, this renovation unveiled some important design strategies that contribute to the healing process, including fluid spatial transitions to allow for diversity and privacy of individual functions, but also incorporating a creative, positive environment through non-angular spaces and natural material selections.

There are some specific changes in the renovation that helped transform the facility. This case study, like the one prior, illustrates the importance of material selection. In this specific case study, the materials of the spaces needed more testing than anticipated due to the outbursts of destructive activity of some clients who have the ability to fully function. Therefore, the occupants of the spaces influenced the specificity of the materials' durability. Like the qualities of materials, many other details are important to create comforting interior spaces. Simply changing a name of a space can make a space feel less confronting or demeaning to the client. These small changes impacted the environment of the hospital greatly, and these are design ideas that should affect other hospitals with similar occupants.

These case studies illustrate the power of evidence-based design. They unveil problematic elements of existing spaces and the transform those issues to develop positively impacting healing environments. By applying the positively impacting design concepts, as well as avoiding poor design aspects exemplified by these case studies, a successful art therapy center will be able to be designed—as long as the center relates to the topographical features of the site location, materials, clients, and has an educational community engagement.

CONCLUSION

Art Therapy can take place in the most basic of spaces, but the program of the facility is determined by the needs of the community. Architecture can help stimulate the patient through the creative process and specialize to certain kinds of trauma. Therapy centers do not need to be completely specialized, but may have a few areas of specialization. The level of security and types of care units in a facility is also determined by the severity of the community's problems. Therefore the location of the center and type of people in the community will promote the program for the facility.

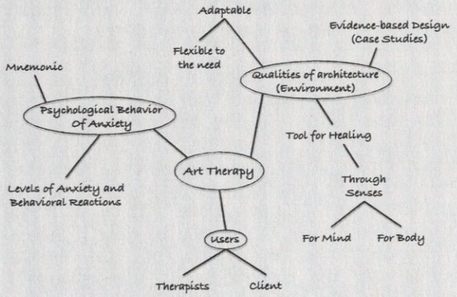


Figure 5. © The diagram above describes the process of a client's response to a therapeutic environment and embracement of such a facility.

As for the design, creative control is apparently more flexible than other parts of the medical field because these spaces have a different kind of occupant and outcome. The occupants are not restricted to a large boxed building due to their needs; instead massed areas of interest provide various healing strategies for the patients—which is also better for the patient because it increases their comfort level. Variation encourages change and stimulants in order to jump-start creative thinking. Variation also provides differing levels of intimacy for the client's comfort. Architecture, the built environment, plays a key role in the way psychologists, therapists, researchers and clients interact.

The design and construction of the therapeutic environment is a key component of how patients can safely express their needs toward self-awareness. This means the architect becomes part of the treatment process, and architecture becomes part of the therapeutic process since they develop the environment that raises awareness of the client's physical and mental state. Awareness empowers the individual to address their situation, calm their fears and frustrations, and ultimately help the individual build resilience and a sense of safety. Since therapy is a whole body experience, it is necessary for the built environment to reflect a neutral or positive nature where individuals feel safe in this kind of uncomfortable situation. People with stress need a place for recovery—a whole body experience—an experience that engages the mind and all of the senses. There needs to be a place to assist life's daily struggles where one is understood and can release energy physically through an outlet of expression—creative expression.

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[21] Ibid.

[22] Gestalt psychology or gestaltism is a theory of mind. It describes the capability of one's brain to generate whole forms by breaking up of elements from the entirety of a situation into the pieces and parts of what it really is. www.businessdictionary.com

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Addendum

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WRITTEN THESIS TO DESIGN TRANSITION

The inception of this project is founded on my simultaneous love of art and the desire for a healthier lifestyle, which has pushed my architectural research beyond traditional notions of therapeutic interventions. This research, in essence, is an exploration into what I would classify as an architectural intervention of a healing environment. On a fundamental level, this design reflects the nature of the industrial past and developing future through urban planning across the area, applied local neighborhood development, and individual user experience inside of the therapy center.

The biggest unknowns in the beginning were the dimensions and limits of this 'healing environment' as well as typology of the project. The scale of the project would swell and contract based on complimentary program features that could influence the experience of users in the facility and the area. Art therapy is a relatively young therapeutic discipline that can take place in a variety of different settings; therefore the most appropriate setting for the location of the center was crucial.

Demographics and resources were essential to the location of the design. Location was based off of the demographic need instead of acceptance and viability for this type of therapy. The underlying nature of the project was not to create a vacation spot to escape from one's everyday life, but to create a safe environment promoting different perspectives of one's everyday life through the reflective nature of the creative process.

DESIGN REVIEW REFLECTION

In reflection of my final thesis review, there are five main components that contributed to the development of my project.

Structure: The backbone of the building is based off of a grid system, which supports the adjustable gallery panels and promotes the adaptability of a museum typology. This grid also resembles the industrial qualities of the surrounding area, in addition to structurally serving as a flexible system for the program. It acts as a blank canvas, drawing in the community to a safe facility where they can seek help in navigating their daily lives.

Program: The division and separation of spaces for safety, privacy, transparency, and flow of circulation was essential to the narrative of a user's experience whether they be using the facility as a child participating in an after school art therapy session or a community member enjoying the peaceful nature of the indoor garden inside of the public gallery.

Site Context: The form of the building is greatly influenced by the site context, maximizing northern daylight for the gallery and southern daylight for working. Metaphorically, the shape provokes a 'new direction' by physically facing the program elements towards the north. The north is where most commercial areas have developed, and to the south is where residential areas have developed, facing the gallery towards the public areas and the therapy spaces towards the more private area of the site. The chosen site is appropriate due to needs of the people in the area.

Bridge/Transition: Layers of therapy are necessary for long-term natural results. A reflecting pool, reminding one to reflect in order to move forward, buffers the transition from public to private space. The indoor garden bridging the public and private spaces also creates a weather permitting, safe place, connecting people to nature in a peaceful manner.

Circulation: The accessibility of the site is strong according to bus, bike, and other traffic patterns. It is also near a main highway, which is ideal because the therapy center is not supposed to 'Band-Aid' the problems of the users' everyday stresses. Instead, the therapy center is intended to help heal the stresses from the inside out by using the context of the everyday to teach people how to deal with the everyday. The pattern of circulation metaphorically represents the continuous nature of the healing and art therapy process. The circulatory patterns allows for different perspectives of spaces, acting as a transition to create a fluid indoor-outdoor experience.

CONCLUSION

During the final review, two major concerns arose. One of the concerns was the site choice, where the reviewer did not agree with the selection. The aim was to base the project in the area of the greatest need, versus finding a bare site with a potential for a full-out garden typology, which was the reviewer's suggestion. The research led to a more enclosed facility for the safety and privacy of the users in the Kentucky area, the area of the greatest demographic need.

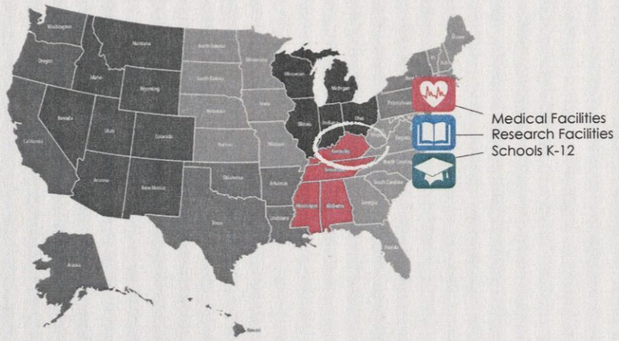
As an individual with experience in interior design, I agree that there could be more development in the details of the interior. The natural bridging elements such as the landscape and interior garden could have a stronger presence in the design by being more apparent throughout the building/site. In addition to these changes, artificial lighting design and graphic representation of the panels for the gallery would have benefitted the final product of the design.

Regardless of the outcome as a 'product', I am still interested in the process and development of this project. For the future, I see myself using what I have learned from this project's process and applying it to future research in professional employment.

Demographics and Site Research

Demographics

PERCENT OF POPULATION ON MENTAL HEALTH MEDICATIONS BY REGION



Population and Income

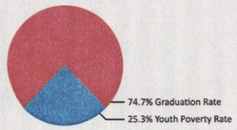
Population Louisville: 742,172
Male Population: 356,242
Female Population: 385,930



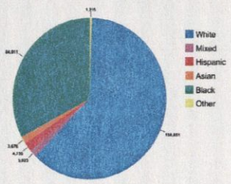
Population in Families Living in Louisville: 452,273
Population Under 18 years: 137,409
Population 18 years and over: 314,864

Estimated Median Household Income:
Louisville: $34,714
KY: $43,399

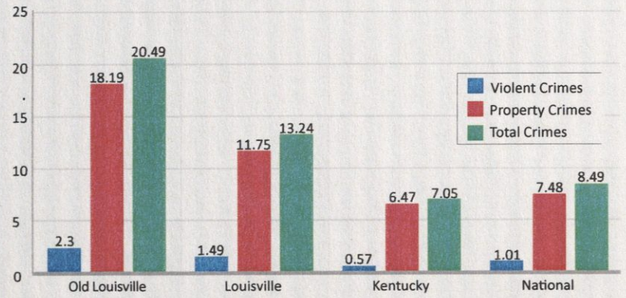
Graduation vs Poverty



Race in Louisville, KY



Daily Crime (per 100,000 people)



Site Research

Location







Large Cities Near Louisville, KY*

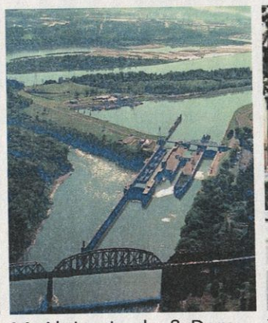
Lexington-Fayette, KY	1 hr 15 min	78 mi
Cincinnati, OH	1 hr 30 min	100 mi
Indianapolis, IN	1 hr 45 min	114 mi
Nashville, TN	2 hr 30 min	176 mi
Columbus, OH	3 hr 10 min	206 mi
Fort Wayne, IN	3 hr 30 min	233 mi
Saint Louis, MO	3 hr 40 min	260 mi
Chicago, IL	4 hr 30 min	295 mi
Toledo, OH	4 hr 30 min	302 mi

*Large cities include the ability to fly into a major airport and have a population of at least 200,000. Time estimates are based off of Google Maps without traffic.

Transportation



International Airport



McAlpine Locks & Dam



Toonerville II Trolley

Summary:
Originally, when the city was founded, the river was the primary means of transportation. Once railroads where built, they became and remain a heavily used source of transportation. Now Louisville's transportation is primarily based on automobiles. Air cargo has also rose in popularity. Other modes of public transportation include buses, chartered vans, and motorized trolleys. The city has a plan for the future to promote utilitarian and recreational bicycling.

Neighborhood Context


The Ohio River


Churchill Downs Race


4TH Street Live


Louisville State Park

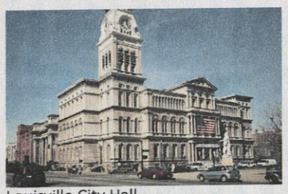

Louisville Art


Waterfront Park

Existing Programs:
Kentucky embraces many different types of entertainment from being the home of the Derby, to their late night talents along 4th Street Live, to the design-focused exhibitions and art programs.

Site Amenities Including:
- Kentucky Art Therapy Association
- University of Louisville teaches Art Therapy
- U of L also has a Child Development Research Center
- Kosair Children's Hospital is near the site which supports Behavioral Pediatric Care
- Addiction Care Center
- Calming Waterfronts and Parks

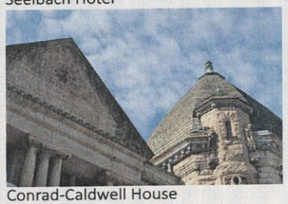
Man-made Features


Louisville City Hall


Seelbach Hotel


Humana Building


The Green Building

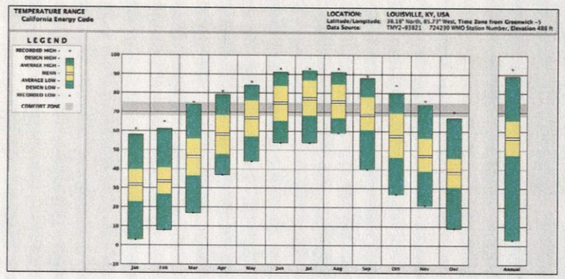

Conrad-Caldwell House

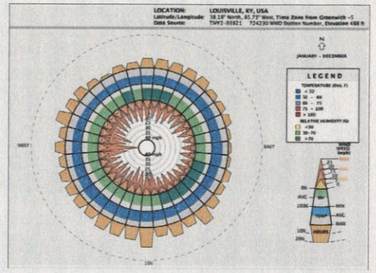
Features:
Louisville, KY contains many different types of architecture and materials. This district, although in decay, can be revitalized and reflect the historic architecture it once was, or blend with the other types of architecture location throughout Louisville (see images).

Scales and roof forms vary dependent upon each district located in Louisville. Many materials used including historic stone, brick, and plaster in combination with more modern materials such as glass and steel.

Other Structures in Louisville:
- Aegon Tower - formerly Providian
- LG&E Building
- National City Bank Tower
- Levy Building
- Clagg Tower

Climate





Dry Bulb Temperature (Avg Monthly)	31	33	46	58	66	74	77	75	68	57	47	38	degrees F
Dew Point Temperature (Avg Monthly)	22	23	32	45	55	61	65	65	60	46	37	25	degrees F
Relative Humidity (Avg Monthly)	69	68	60	64	69	66	68	73	76	71	70	62	percent

Summary:
Average temperatures and heat index temperatures are the highest from May to September (700F-840F). Maximum heat index temperature can be up to 1200F with a minimum temperature of 00F. According to the average temperature, all months have an average temperature above freezing. Average wind speeds stay relatively constant throughout the year ranging from 4MPH to 7MPH. Maximum wind speeds are at their highest from November to April and range from 13MPH to 16MPH. The average monthly precipitation averages around 4 inches per month where April and August through October have the tendency to receive the most amount of precipitation per day.

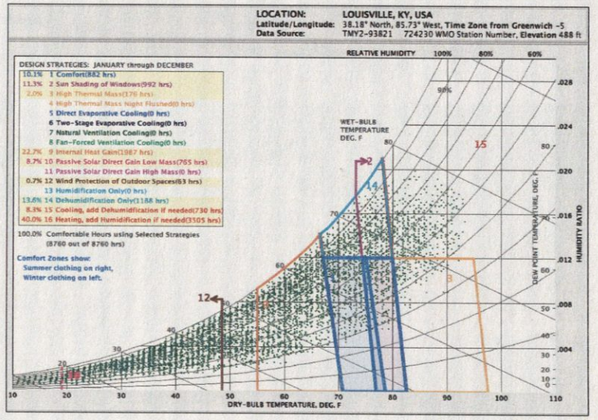
Design Strategies

In this climate, air conditioning will always be needed, but limiting overheating in the building's design will help.

For passive solar heating- most of the glass will need to face the south to maximize winter sun exposure, but design must have overhang to fully shade during the summer. Include double pane high performance glazing (Low-E) on W, N, and E, but clear on the S for maximum solar gain.

Materials to help with winter daytime solar gain and summer nighttime cooling: tiles, slate, wood, and stone.

Occupant comfort will increase with extra insulation, insulating blinds, heavy draperies, and/or operable windows that have overhangs.



Zoning



- Special
- Business/Office
- Commercial
- Industrial
- Residential
- Selected Site

Crime Rate



- Lowest
- Second Lowest
- Second Highest
- Highest
- Selected Site

Income (per families with children)



- Lowest
- Second Lowest
- Second Highest
- Highest
- Selected Site

Existing Site Perspective



Louisville, Kentucky



Site Selection

Site Analysis

Site Selection



- Buildings
- Roads
- Highway
- Site Property

Bus Routes and Stops



- Buildings
- Roads
- Highway
- Site Property
- Bus Routes
- Bus Stops

Walkable Distances and Destinations



Circulation Density



Sound Density



Access to Site



Design Process and Analysis

Emotional Inspiration

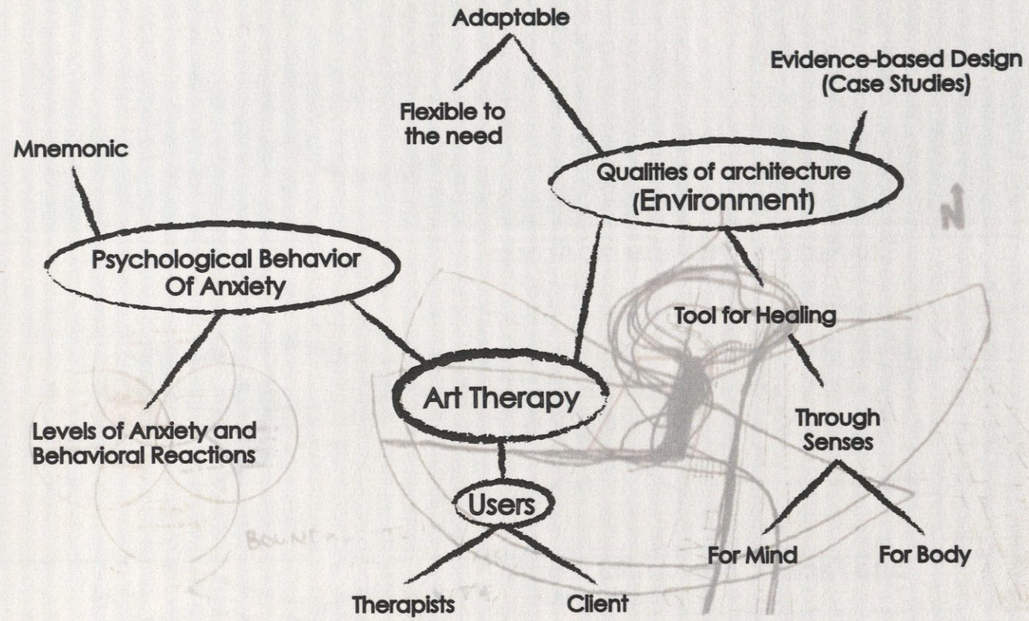







Original Paintings by Mia Balzano

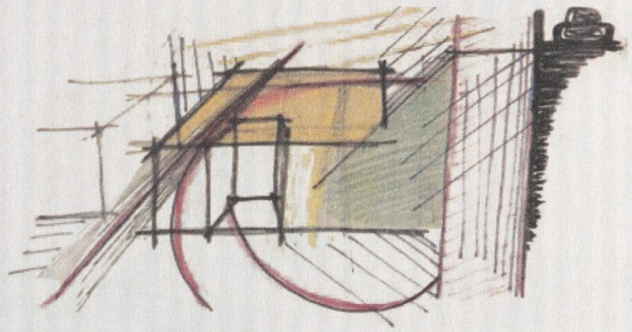
Design Considerations



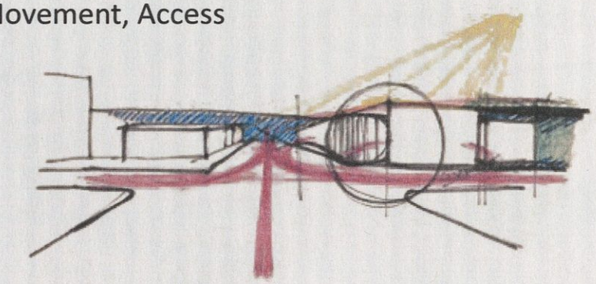
[FLOW: is the positive mental state of operation in which a person performing an activity is fully immersed; also known as "in the zone."]

in flow, the emotions are not just contained and channeled, but positive, energized, and aligned with the tak at hand.

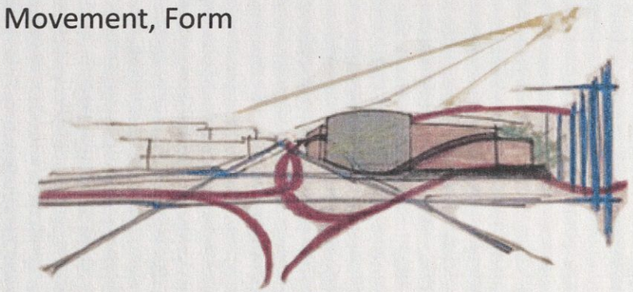
Site Factors



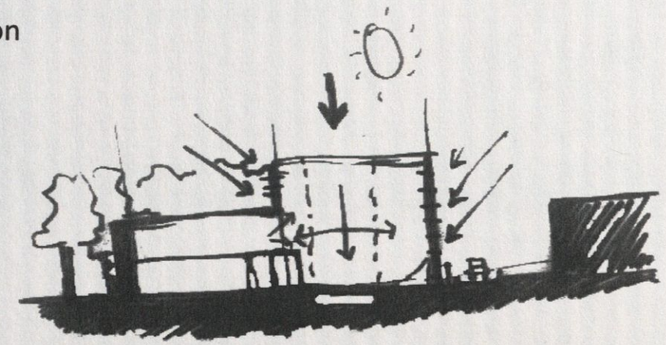
Site Factors, Movement, Access



Site Factors, Movement, Form

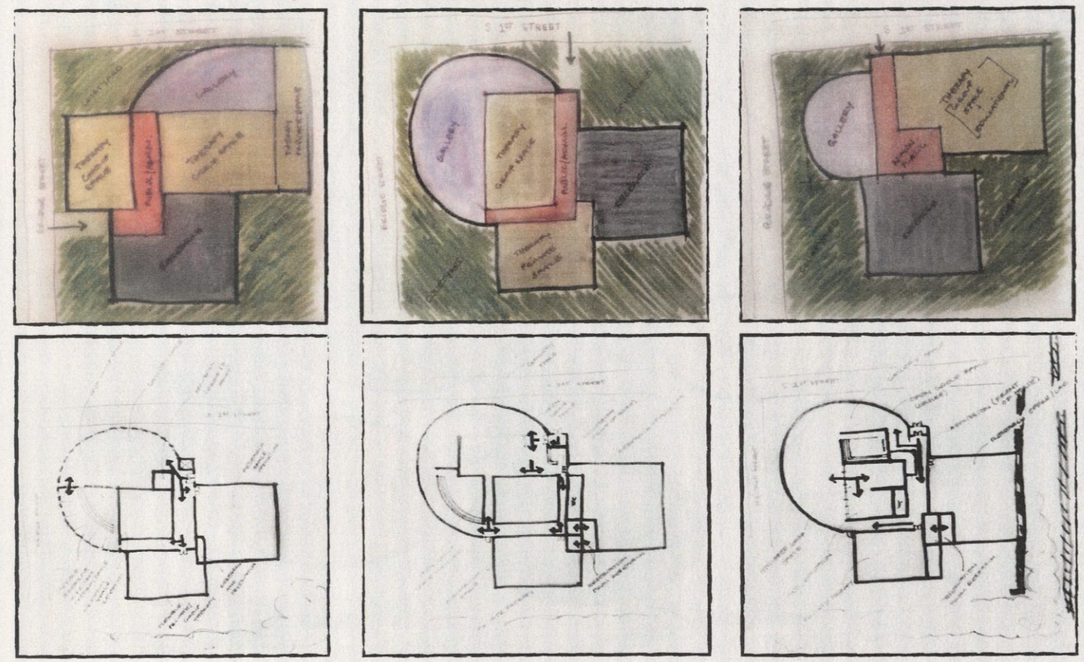


Light Section

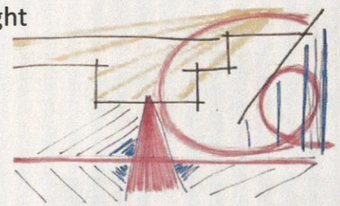


Programming Adjacencies

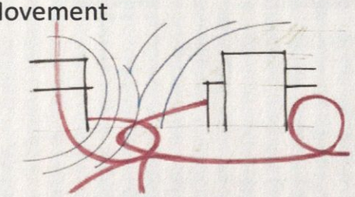
Based on Site Factors, Movement, Access and Form



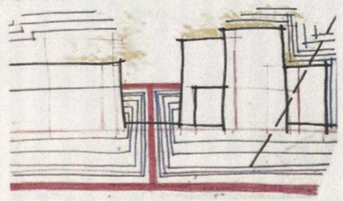
Light



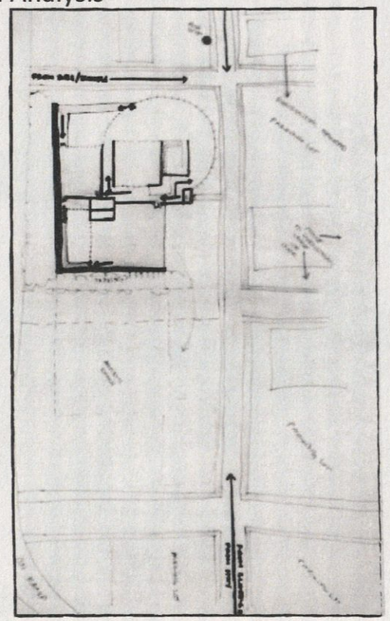
Movement



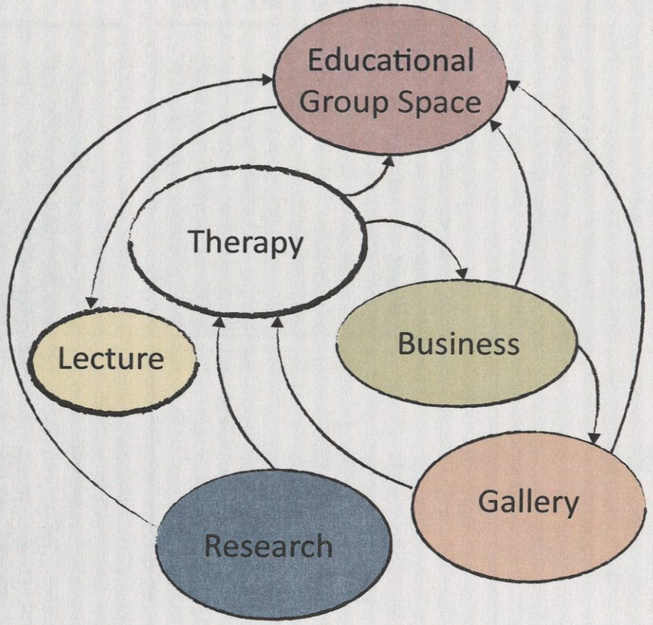
Repetition

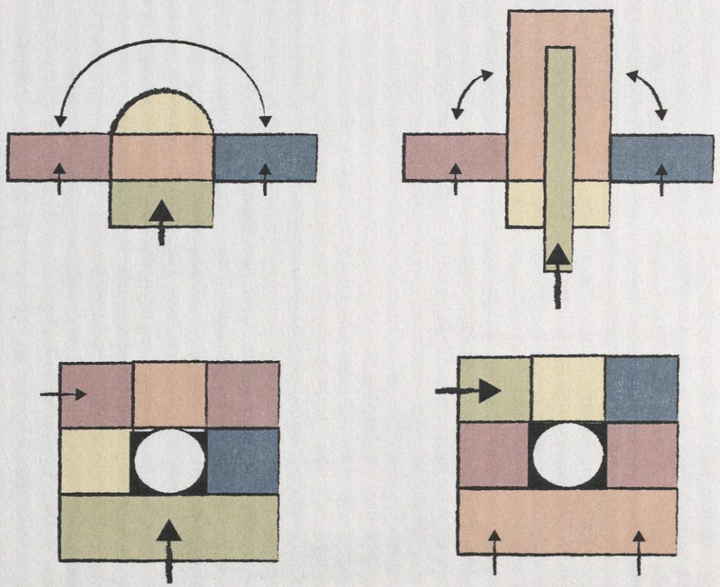


Plan Analysis

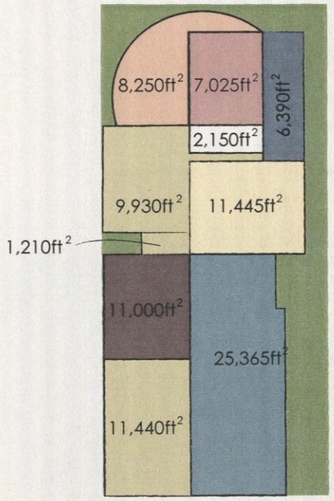


Programming Adjacencies

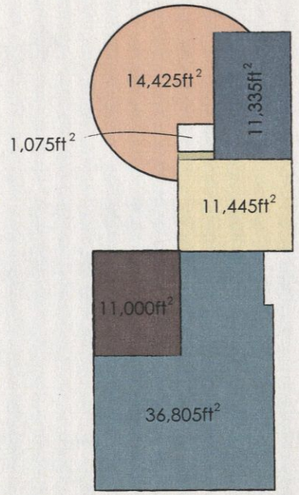




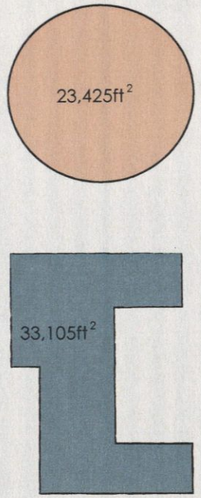
First Floor Programming Plan



Second Floor Programming Plan

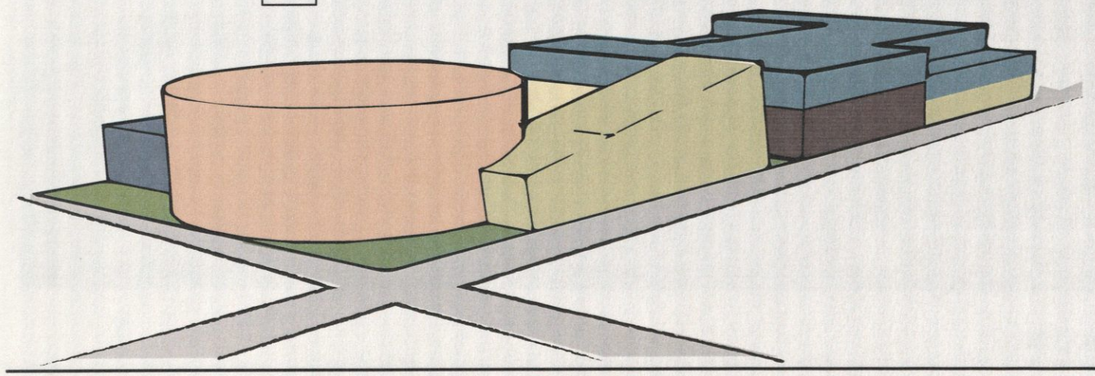


Third Floor Programming Plan



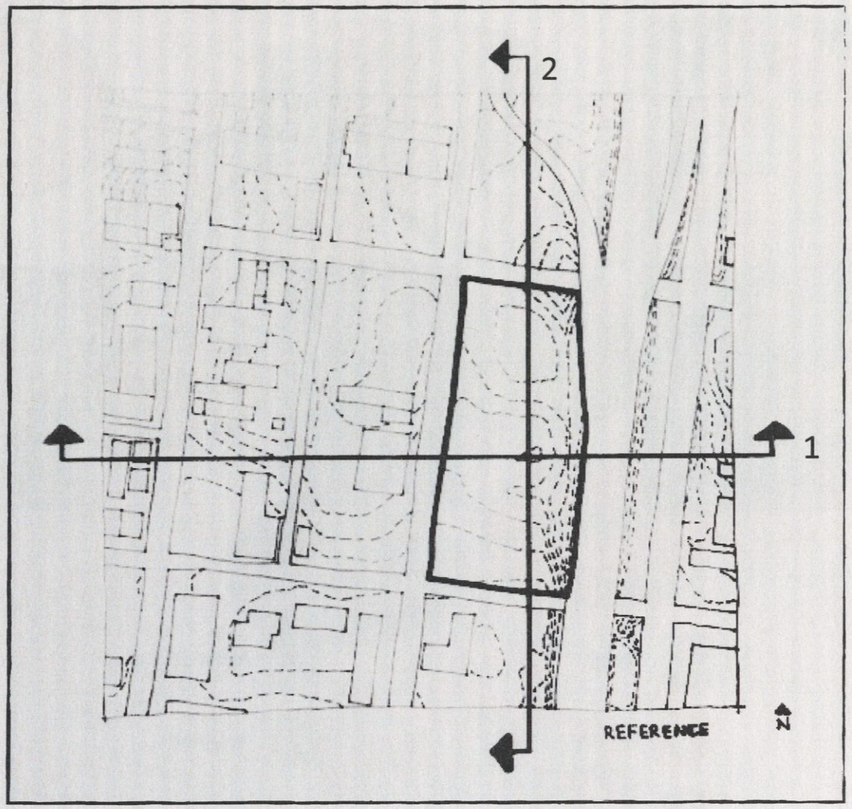


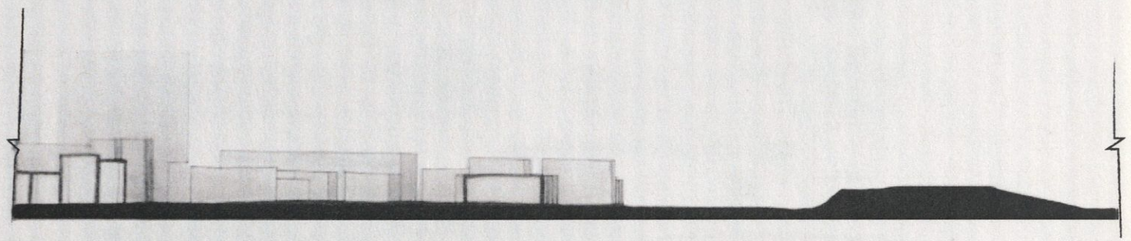
- Retail
- Gallery
- Educational Group Space
- Research
- Circulation and Water Closets
- Artist Space
- Business
- Lecture
- Green Space



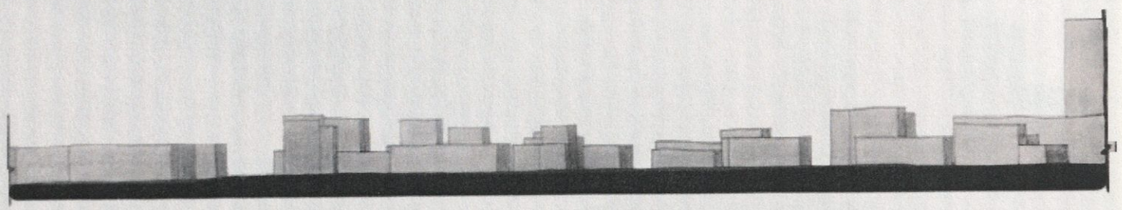
Site Plan and Section

Not to Scale



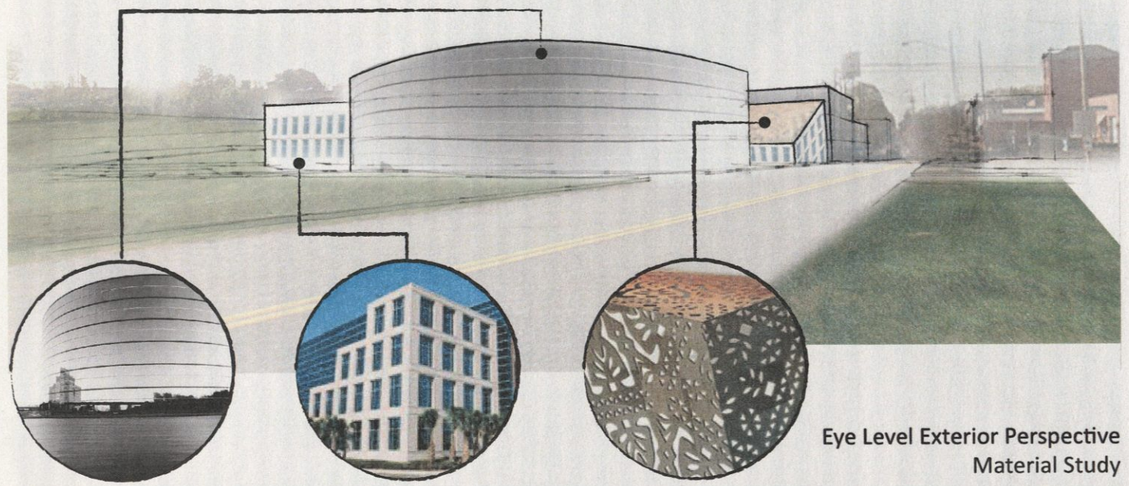


Section 1

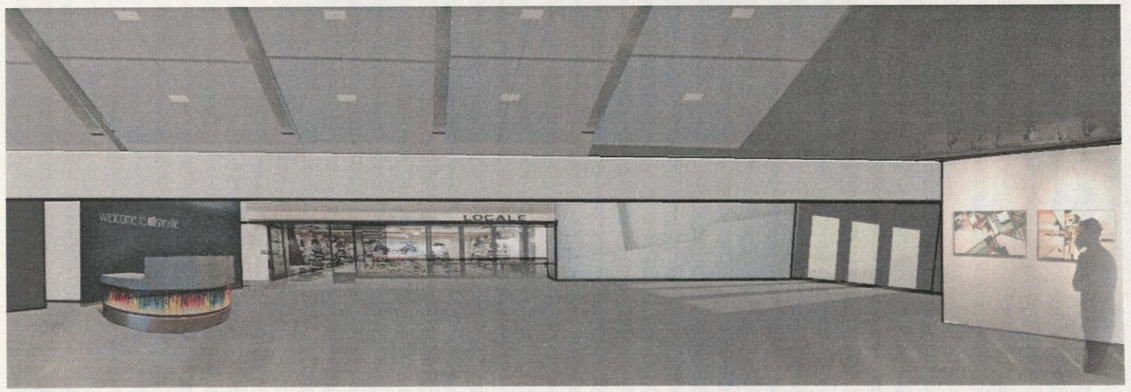


Section 2

Perspectives



Eye Level Exterior Perspective
Material Study

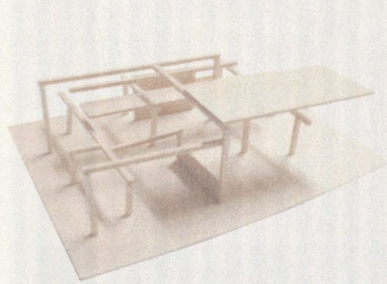


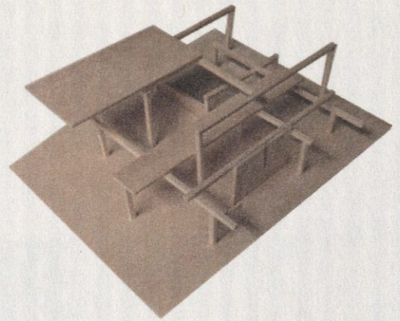
Eye Level Interior Perspective

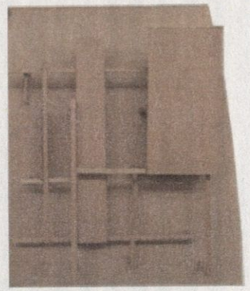
Site Model

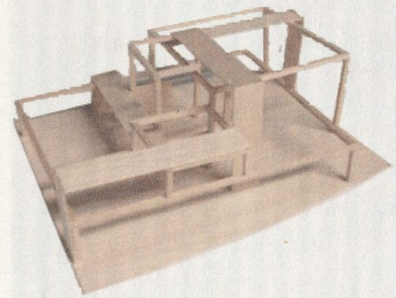


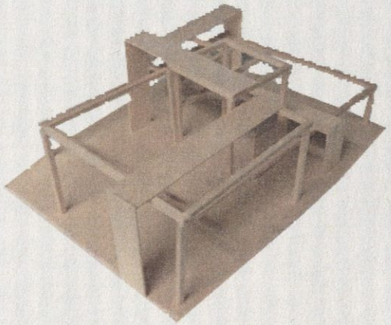
Concept Models

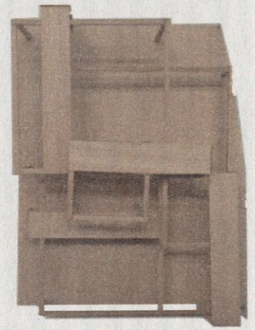


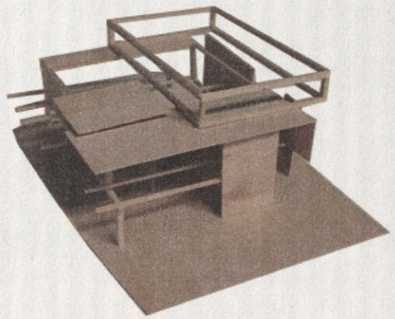










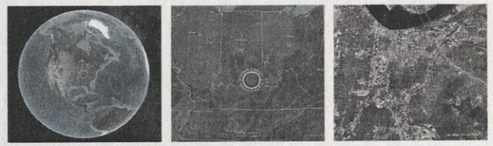




Site Plan Analysis

Not to Scale

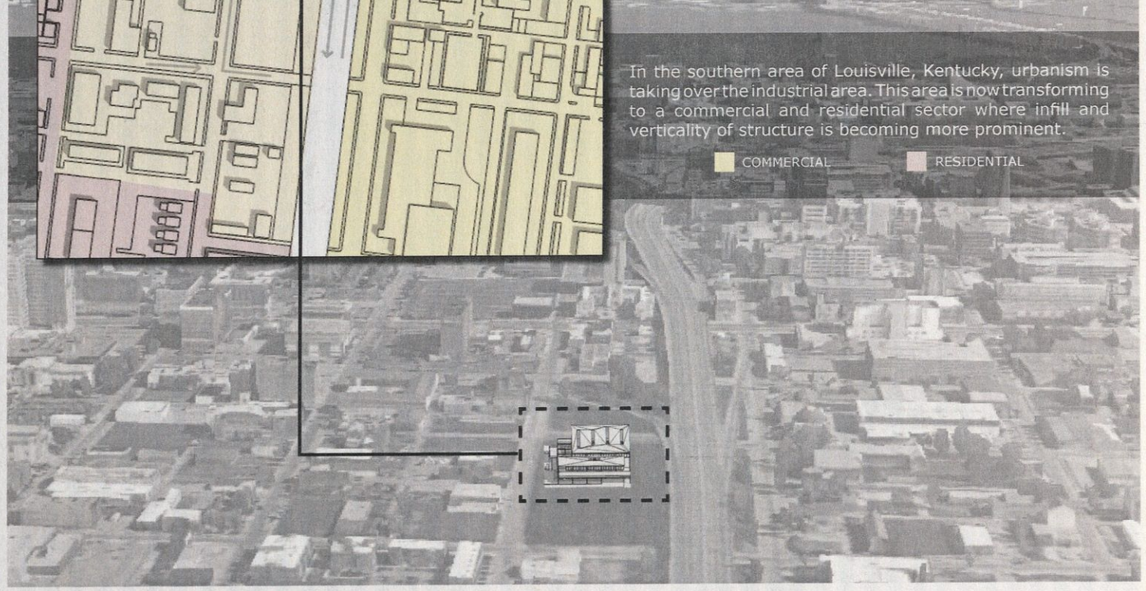




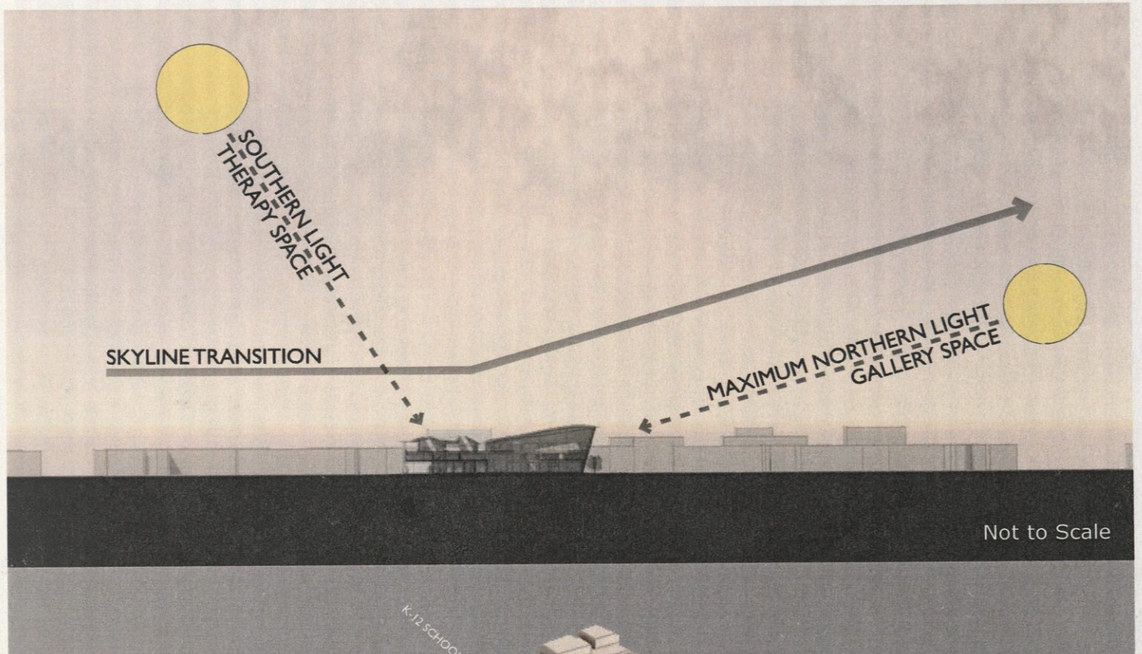


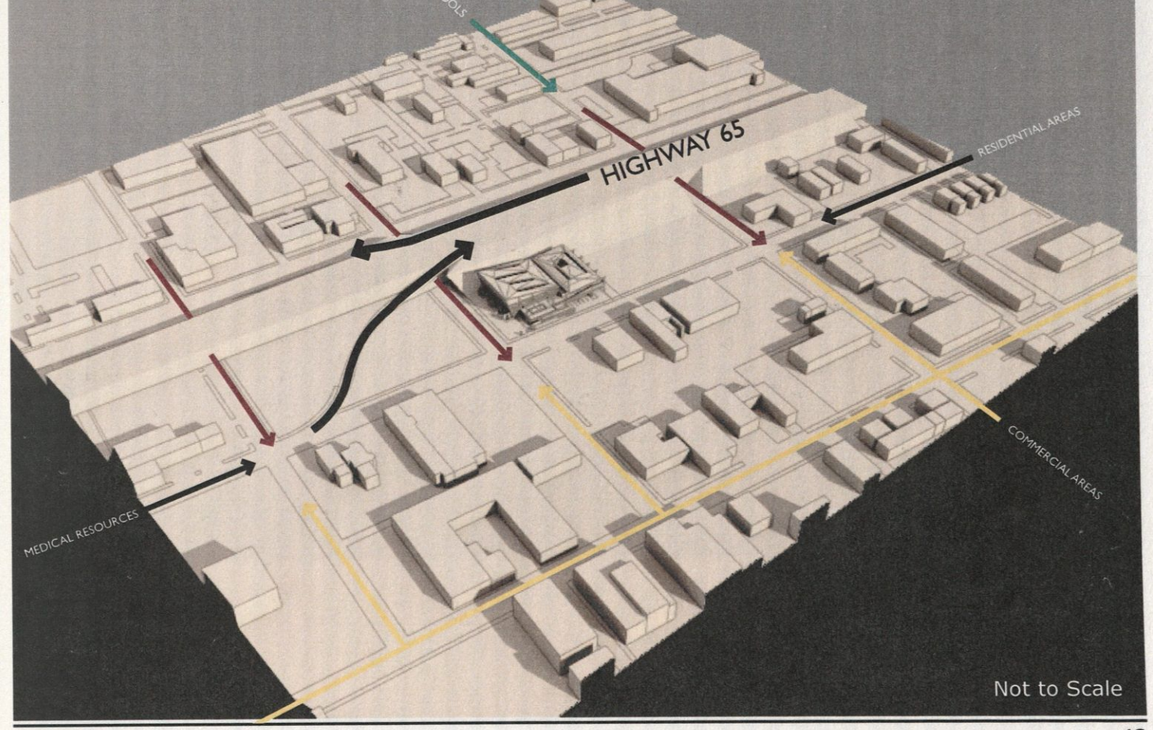
In the southern area of Louisville, Kentucky, urbanism is taking over the industrial area. This area is now transforming to a commercial and residential sector where infill and verticality of structure is becoming more prominent.

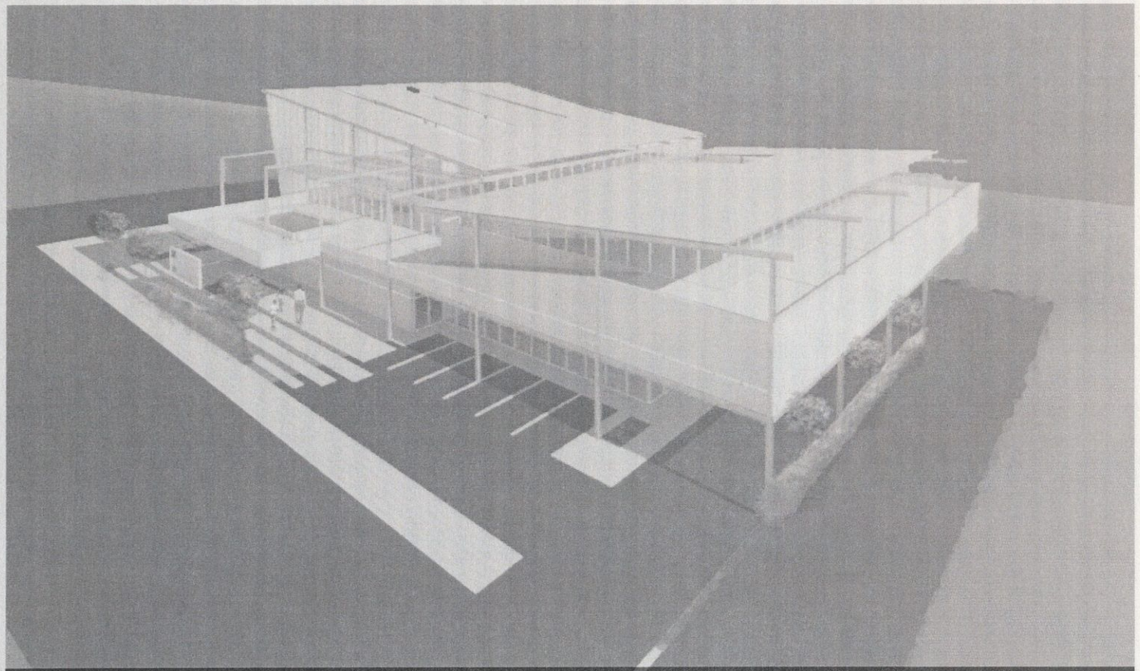
COMMERCIAL RESIDENTIAL



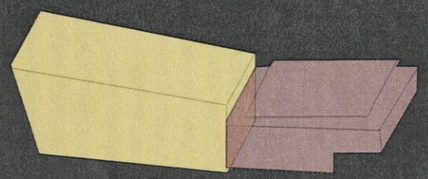
Site Analysis





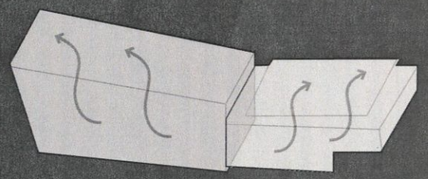


MASSING

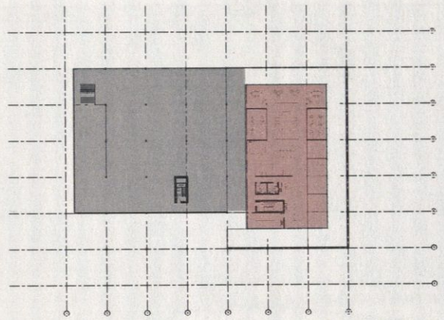


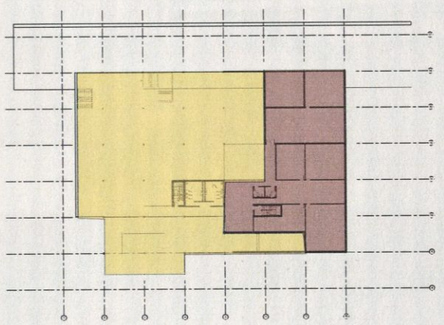
Massing is divided into public and private where the public area sits north of the site towards the commercial zone and the private sits to the south towards the residential zone.

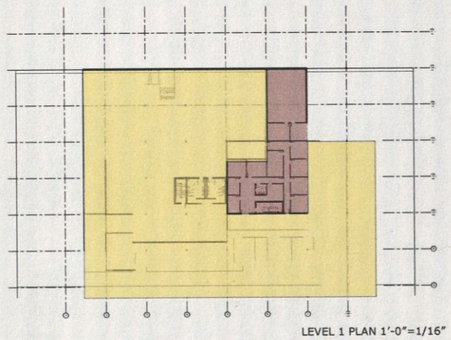
NATURAL VENTILATION

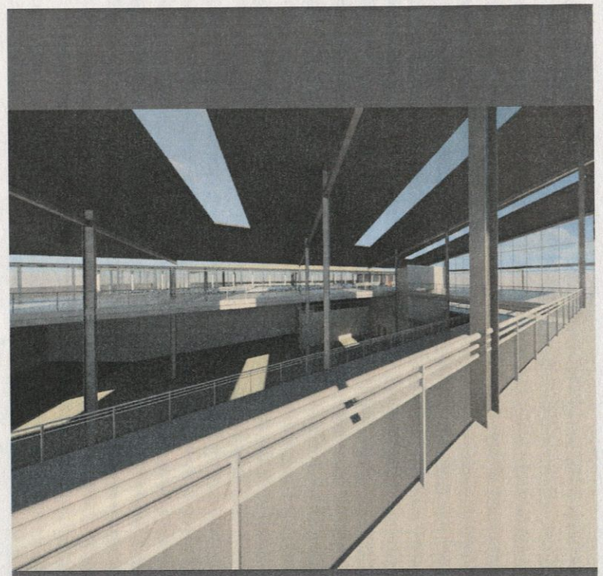


Operable skylights in both the museum and office areas allow daylight to penetrate into the spaces, but are also utilized for natural ventilation.

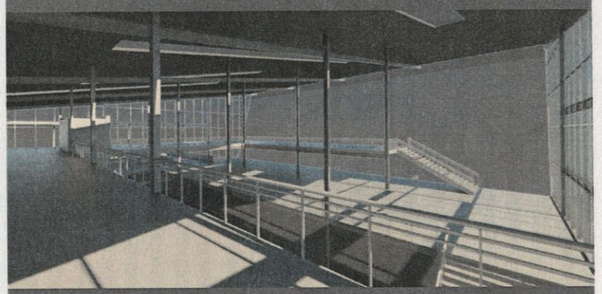






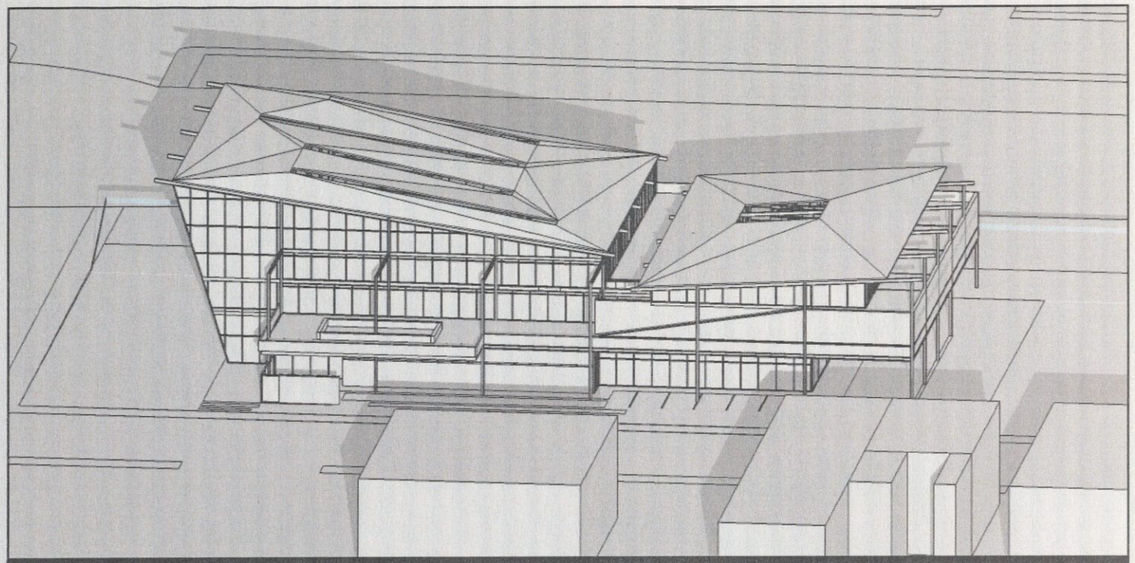


3RD LEVEL LOOKING SOUTH



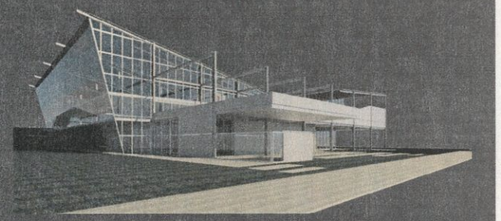
3RD LEVEL LOOKING NORTH

Light Analysis

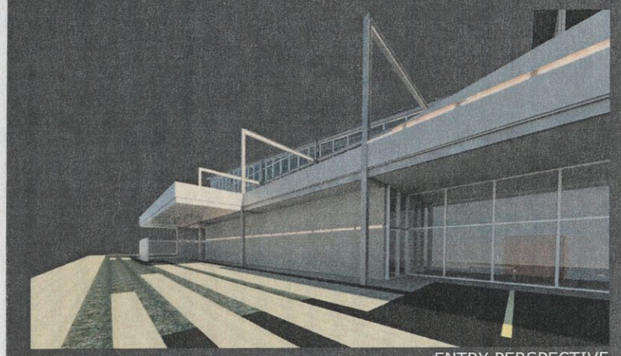


LIGHTING AND STRUCTURE

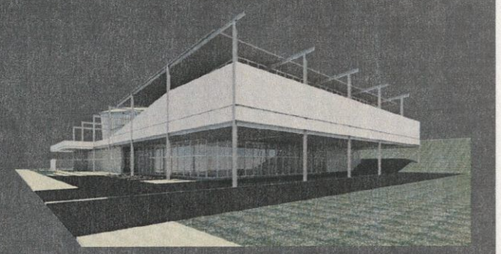
Repetitious lighting creates a sense of scale, but also mimicks the exposed structure. This creates a sense of reveal and layering, which metaphorically relates to the personal experience of the art therapy that takes place inside of this building.



VIEW FROM PUBLIC PARKING



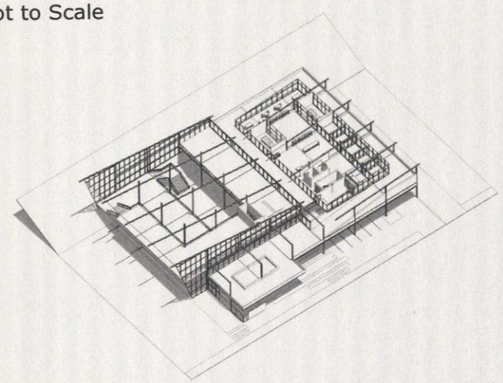
ENTRY PERSPECTIVE



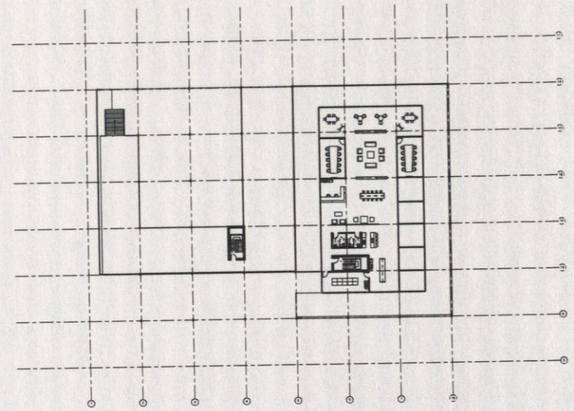
VIEW FROM RESIDENTIAL

Floor Plans

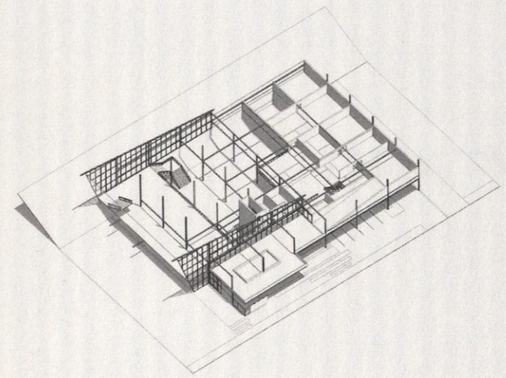
Not to Scale



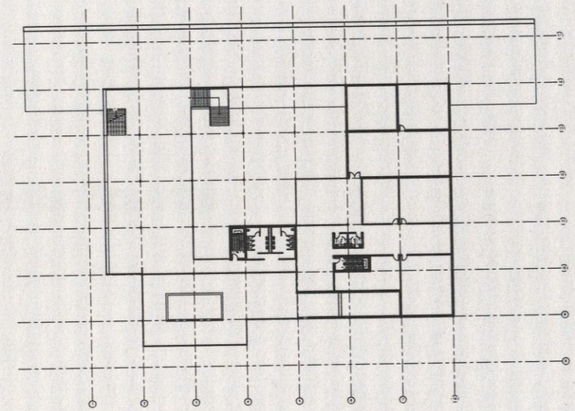
LEVEL 3 PLAN AXON WITHOUT ROOF



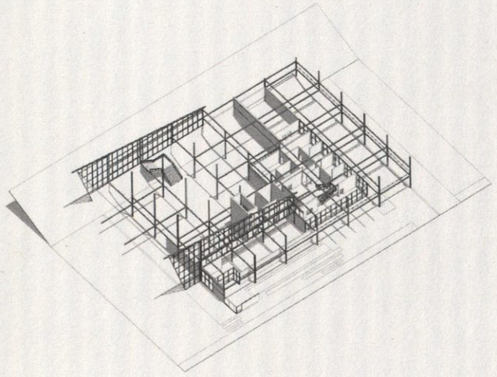
LEVEL 3 PLAN 1'-0"=1/16"



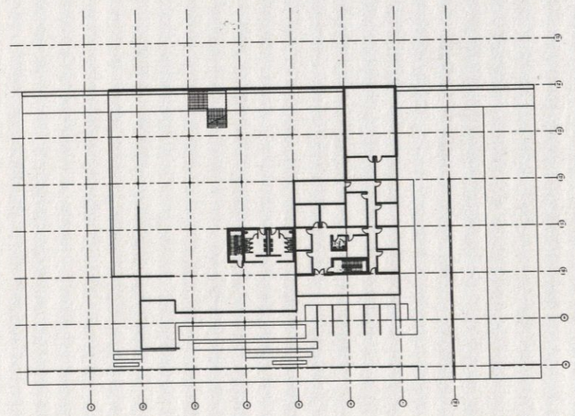
LEVEL 2 PLAN AXON WITHOUT ROOF



LEVEL 2 PLAN 1'-0"=1/16"

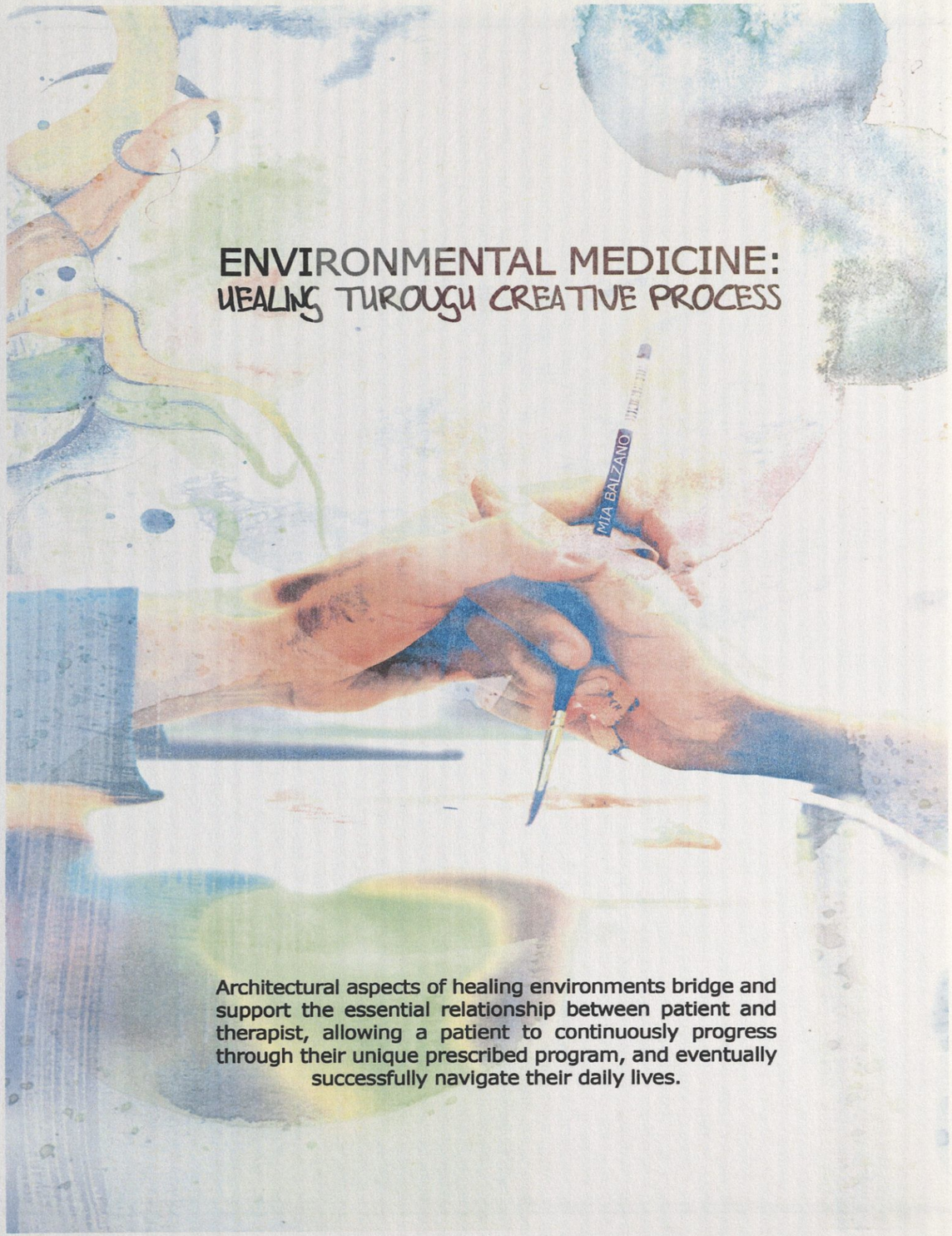


LEVEL 1 PLAN AXON WITHOUT ROOF



LEVEL 1 PLAN 1'-0"=1/16"

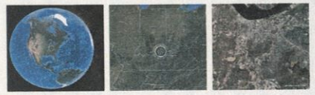
Final Thesis Boards



ENVIRONMENTAL MEDICINE:
HEALING THROUGH CREATIVE PROCESS

Architectural aspects of healing environments bridge and support the essential relationship between patient and therapist, allowing a patient to continuously progress through their unique prescribed program, and eventually successfully navigate their daily lives.

Site Research
Location



Large Cities Near Louisville, KY*

Lexington-Fayette, KY	1 hr 15 min	78 mi
Cincinnati, OH	1 hr 30 min	100 mi
Indianapolis, IN	1 hr 45 min	114 mi
Nashville, TN	2 hr 30 min	176 mi
Columbus, OH	3 hr 10 min	206 mi
Fort Wayne, IN	3 hr 30 min	233 mi
Saint Louis, MO	3 hr 40 min	260 mi
Chicago, IL	4 hr 30 min	295 mi
Toledo, OH	4 hr 30 min	302 mi

*Large cities include the ability to fly into a major airport and have a population of at least 200,000. Time estimates are based off of Google Maps without traffic.

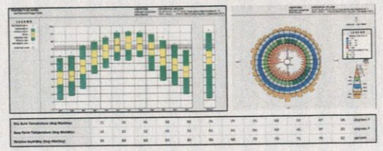
Neighborhood Context



Existing Programs:
Kentucky embraces many different types of entertainment from being the home of the Derby, to their late night talents along 4th Street Live, to the design-focused exhibitions and art programs.

Site Amenities Including:
- Kentucky Art Therapy Association
- University of Louisville teaches Art Therapy
- U of L also has a Child Development Research Center
- Kosair Children's Hospital is near the site which supports Behavioral Pediatric Care
- Addiction Care Center
- Calming Waterfronts and Parks

Climate



Summary:
Average temperatures and heat index temperatures are the highest from May to September (700F-840F). Maximum heat index temperature can be up to 1200F with a minimum temperature of 00F. According to the average temperature, all months have an average temperature above freezing. Average wind speeds stay relatively constant throughout the year ranging from 4MPH to 7MPH. Maximum wind speeds are at their highest from November to April and range from 13MPH to 16MPH. The average monthly precipitation averages around 4 inches per month where April and August through October have the tendency to receive the most amount of precipitation per day.

Transportation



International Airport | McAlpine Locks & Dam | Toonerville II Trolley

Summary:
Originally, when the city was founded, the river was the primary means of transportation. Once railroads where built, they became and remain a heavily used source of transportation. Now Louisville's transportation is primarily based on automobiles. Air cargo has also rose in popularity. Other modes of public transportation include buses, chartered vans, and motorized trolleys. The city has a plan for the future to promote utilitarian and recreational bicycling.

Man-made Features



Features:
Louisville, KY contains many different types of architecture and materials. This district, although in decay, can be revitalized and reflect the historic architecture it once was, or blend with the other types of architecture location throughout Louisville (see images).

Scales and roof forms vary dependent upon each district located in Louisville. Many materials used including historic stone, brick, and plaster in combination with more modern materials such as glass and steel.

Other Structures in Louisville:
- Aegon Tower - formerly Providian
- LG&E Building
- National City Bank Tower
- Levy Building
- Clagg Tower

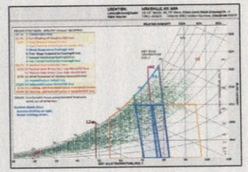
Design Strategies

In this climate, air conditioning will always be needed, but limiting overheating in the building's design will help.

For passive solar heating- most of the glass will need to face the south to maximize winter sun exposure, but design must have overhang to fully shade during the summer. Include double pane high performance glazing (Low-E) on W, N, and E, but clear on the S for maximum solar gain.

Materials to help with winter daytime solar gain and summer nighttime cooling: tiles, slate, wood, and stone.

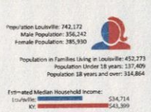
Occupant comfort will increase with extra insulation, insulating blinds, heavy draperies, and/or operable windows that have overhangs.



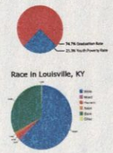
Demographics
PERCENT OF POPULATION ON MENTAL HEALTH MEDICATIONS BY REGION



Population and Income

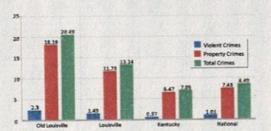


Graduation vs Poverty



Race in Louisville, KY

Daily Crime (per 100,000 people)



Existing Site Perspective



Site Selection



Zoning



Crime Rate



Income (per families with children)



Site Analysis
Site Selection



Walkable Distances and Destinations



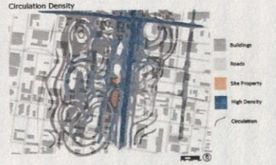
Sound Density



Bus Routes and Stops



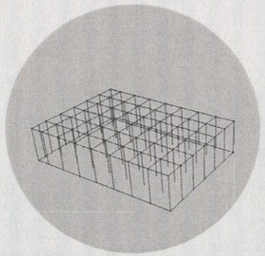
Circulation Density



Access to Site

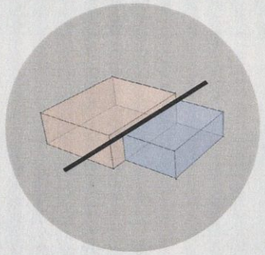


DEVELOPMENT DIAGRAMS



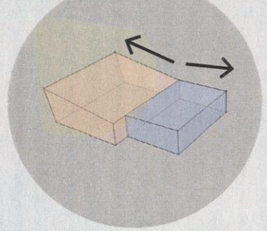
THE GRID

THE BUILDING'S GRID SERVES AS A STRUCTURAL GRID AS WELL AS THE FLEXIBLE GRID FOR THE PIN-UP OF ARTWORK IN THE GALLERY SPACE. THIS GRID UTILIZES ALL STRUCTURAL ASPECTS FOR THE BUILDING DESIGN AND FUNCTION.



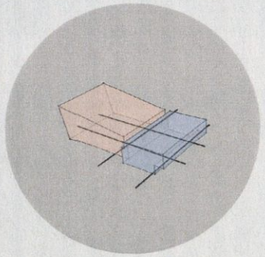
PUBLIC VS PRIVATE

SCALING AS WELL AS SEPARATING THE PERSONAL EXPERIENCES OF USERS ALLOW FOR A MORE COMFORTABLE HEALING CENTER.



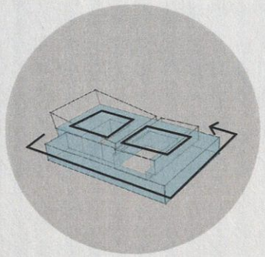
SITE CONTEXT

MAXIMIZING NORTHERN DAYLIGHT FOR THE GALLERY AND SOUTHERN DAYLIGHT FOR WORKING, HELPED INFORM THE SHAPE OF THE ROOF. METAPHORICALLY INSTILLING A "NEW DIRECTION", FACING NORTH, FOR THOSE WHO ARE WORKING IN THE PROGRAM.



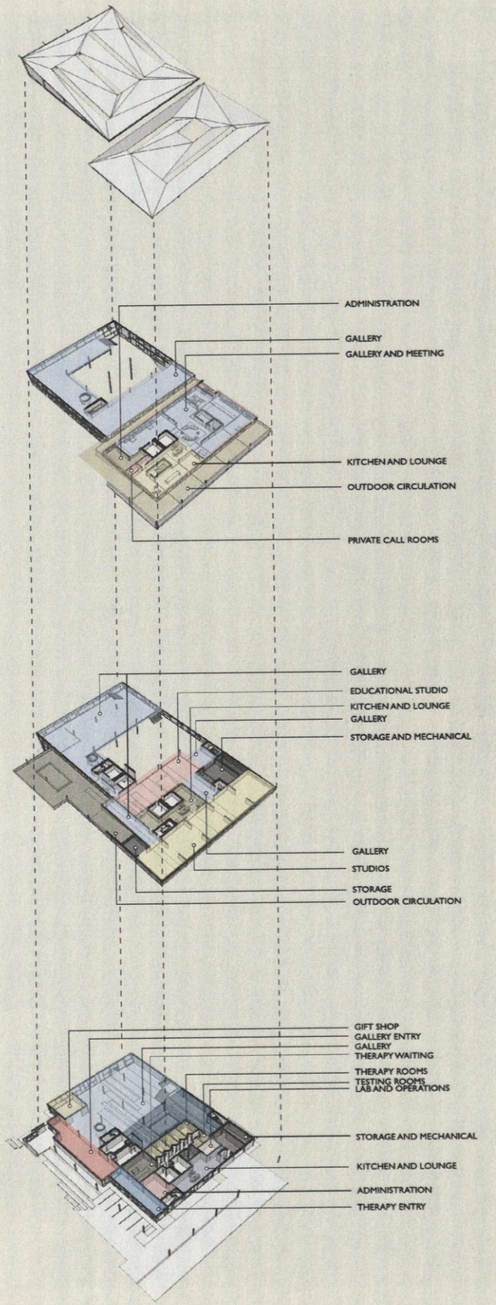
BRIDGE/TRANSITION

LAYERS OF THERAPY ARE NECESSARY FOR LONG-TERM, NATURAL RESULTS. THE CHANGE FROM PUBLIC TO PRIVATE IS BUFFERED BY A REFLECTING POOL.- REMINDING ONE TO REFLECT IN ORDER TO UNDERSTAND, LEARN, AND MOVE FORWARD.



CIRCULATION

METAPHORICALLY REPRESENTING THE CONTINUOUS PROCESS AND HEALING OF ART THERAPY, THE CIRCULATION ASSISTS WIITH TRANSITIONS AND ALLOWS FOR A FLUID INDOOR AND OUTDOOR EXPERIENCE.



EXPLODED AXON



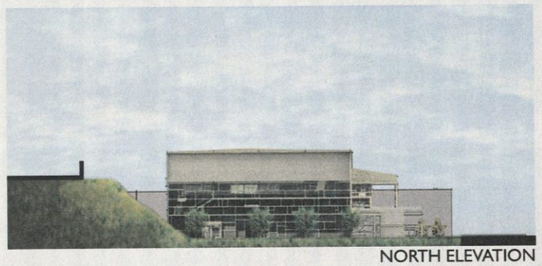
ELEVATIONS AT SCALE: 1/16"= 1'-0"



WEST ELEVATION



SOUTH ELEVATION

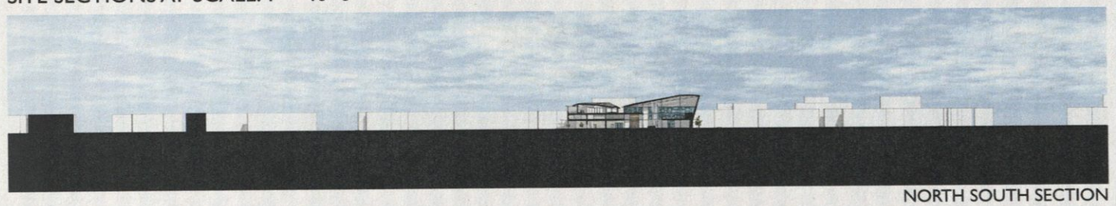


NORTH ELEVATION

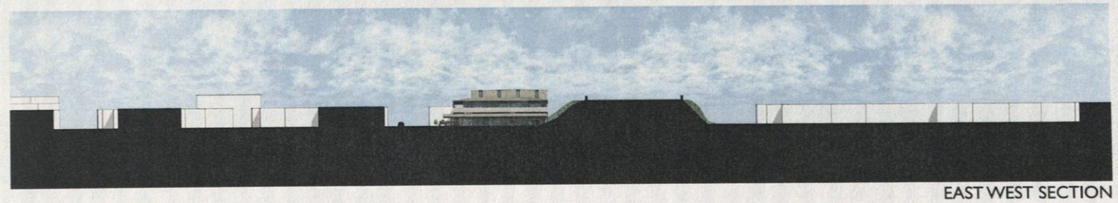


EAST ELEVATION

SITE SECTIONS AT SCALE: 1"= 40'-0"



NORTH SOUTH SECTION



EAST WEST SECTION



ENTRY PERSPECTIVE



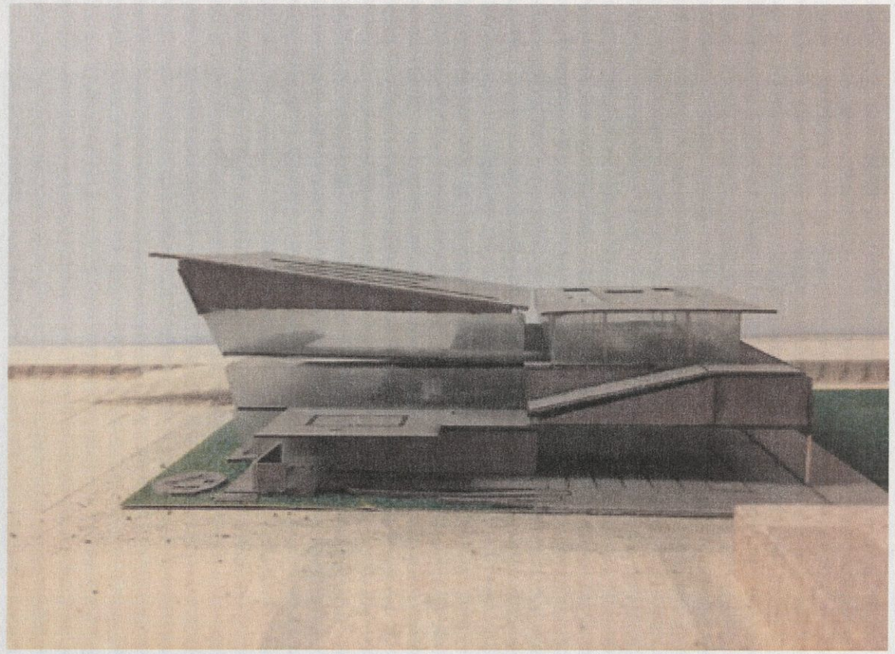
GALLERY/EDUCATIONAL STUDIO PERSPECTIVE

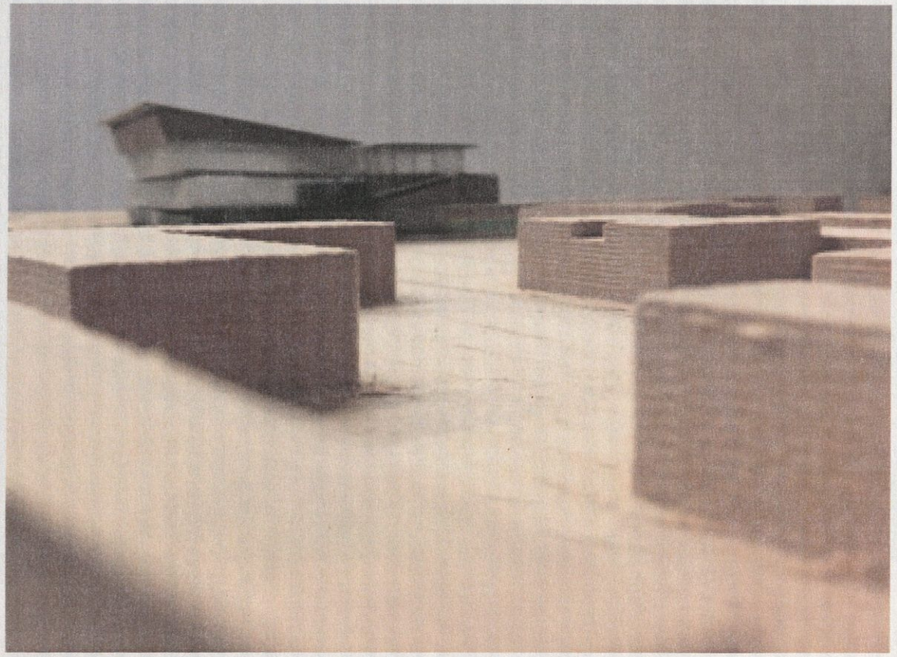


GALLERY PERSPECTIVE

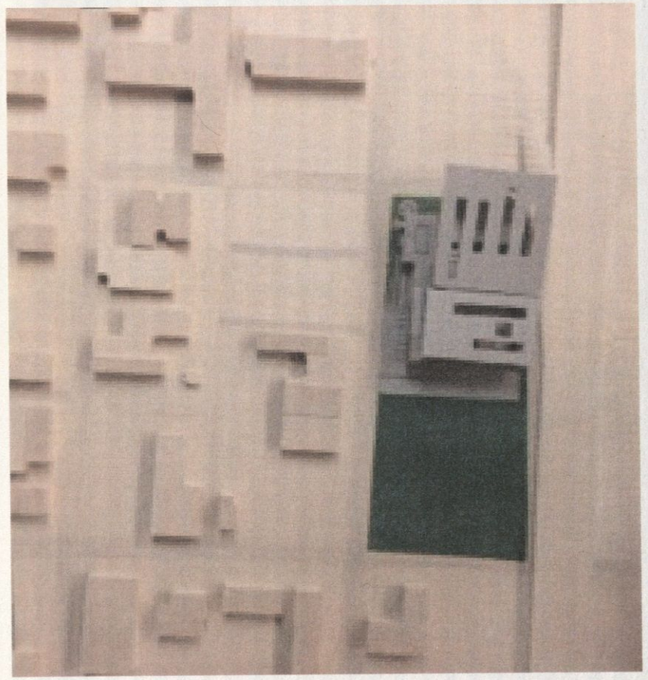


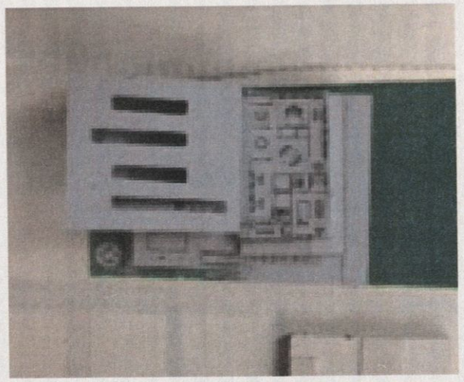
DROP OFF FROM BRECKINRIDGE PERSPECTIVE

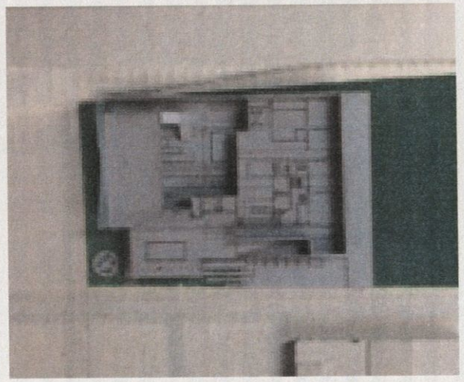


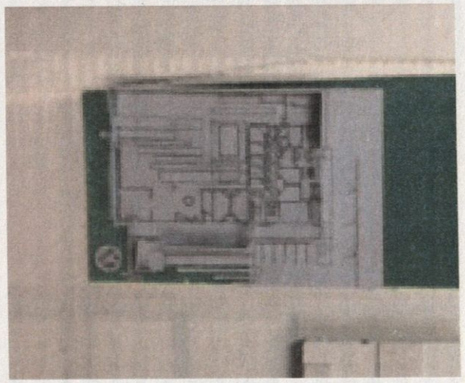


Final Model





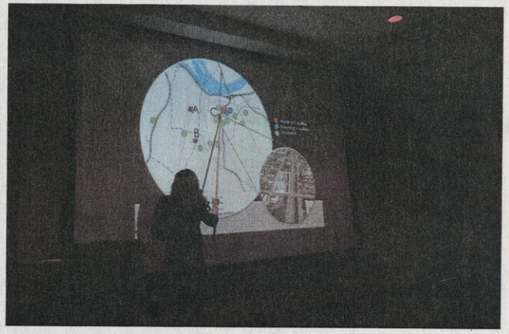




Presentation Photos

Symposium Presentation










Final Thesis Presentation





Thank you.