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The Design of a Psychiatric Residential Treatment Facility in Wheelwright, Kentucky Serving Adolescent Males

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I am a senior in the College of Design, School of Interior Design and a 2010 recipient of the Maurice A. Clay Award as outstanding graduating senior of the College of Design.

I plan to look for career opportunities in the field of commercial and residential interior design, focusing on projects that are service minded, positively impacting communities, and improving the quality of life for others. I hope that this submission will give readers an understanding of how our interior spaces shape lives and add value to an individual.

I, along with four other classmates, have been working on the design of this psychiatric treatment facility, each coming up with individual designs, while collaborating and sharing information and research at the same time. My faculty mentor has provided invaluable guidance through the design process, facilitating discussion of design problem solving, and encouraging creative thinking. My faculty mentor has been there every step of the way and has watched my project develop from beginning to end.

While going to school, I have worked 2 years as an intern at a local commercial interior design firm and furniture dealership. I also serve in the church I attend through teaching children. My hobbies include song-writing, oil painting, and creating original music compositions.

The Design of a Psychiatric Residential Treatment Facility in Wheelwright, Kentucky Serving Adolescent Males

Abstract

During the spring semester of 2010, I have been working on the design of a psychiatric residential treatment facility in Wheelwright, Kentucky as part of the requirements for ID 659, Interior Design Graduate Studio. I am a senior, but was allowed permission to enroll in this class because of my interest in research-based design. The facility will offer therapy services in a home environment for seven adolescents between the ages of ten and seventeen. This paper describes the process that I followed throughout the design process and the specific issues that were addressed in the final solution. The design process involves programming that consists of research on the project type, the establishment of goals and objectives, gathering of relevant information, identification of strategies, space requirements, as well as creating a concept that leads to design development. The following explains how these processes come together to form a design solution unique to the services and mission of Mountain Comprehensive Care Center, an organization providing behavioral healthcare in Eastern Kentucky.
Introduction

Interior designers methodically apply innovative and functional solutions to create spaces that add value to the quality of life of the users. The solutions are based on both research-based evidence and creative thinking. The design solutions are answers to design issues presented by a client, and successful solutions include consideration of four critical issues: function, behavior, symbolism, and design composition. Building codes, regulations, and standards for each specific type of space or user group are also considered in the implementation of design solutions. Issues identified in the design process are identified through research, programming, analysis, and strong communication between the designer and client. Research and programming is integrated into the creative process, forming a concept for the space. The objective is to meet the needs of the client and produce a satisfying space successful to their mission and goals.

I am a senior in the School of Interior Design, but this semester I have had the pleasure of being enrolled in the Graduate Interior Design studio. The mission of the Graduate Studio is to engage in community outreach projects that benefit the state of Kentucky and that provide a higher quality of life for disadvantaged Kentucky residents. The studio aims to apply life-changing concepts to human environments that enhance healing, restoration, and growth. The work of the studio is carried out under an initiative of the School of Interior Design called Environments + Wellness + Design.

This semester we have been working on the design of a psychiatric residential treatment facility (PRTF) (Department of Health and Human Services) for adolescents in Wheelwright, Kentucky. The project involved the analysis and design of this facility to be located within an existing structure in Wheelwright. The structure is a very large home that was originally built as a boarding home for black coal miners that came to Wheelwright to work in the coal mines in the 1940's.

Defining the Project and Context

Alfreda Rhea, a long-time resident of Wheelwright, contacted the Mountain Comprehensive Care Center (MCCC) with the offer of deeding the house to MCCC if it could be converted into a home with the primary purpose of helping children of the area. MCCC is a service provider of behavioral healthcare in Prestonsburg, Kentucky. The offer of the house came at a very opportune time because MCCC had just been approved by the Commonwealth of Kentucky to provide therapeutic foster care for children.

Wheelwright is a small town in southern Floyd County that was established in 1916 by the Elk Horn Coal Company. The coal companies that came to Wheelwright and to Eastern Kentucky recruited miners from all over the world. Inland Steel came to Wheelwright at a time when streets were unpaved and homes had outhouses. At one time, Wheelwright was considered to be a model coal camp, and many resources were invested to attract quality workers. At its peak in the 1940’s, Wheelwright had a theater, golf course, bowling alley, and swimming pool, and hundreds of houses owned and well-maintained by the coal company. By the 1960’s, deep-mining in this area began to decline, and this began the decline of towns such as Wheelwright (Eastern Kentucky Coal Fields).

The objective of MCCC is to provide a safe and nurturing environment for troubled children with mental health and behavioral problems. Residential treatment has become a more widely used method of treatment for adolescents with mental health disorders. A study conducted to determine the success of such programs concludes that 83% of youths improved after receiving the services of a residential treatment facility (Meltzer, 1999). As a growing method of intervention, placement in residential facilities is considered for seriously emotionally disturbed (SED) children (Lyons, 1998). These facilities integrate a child’s daily activities to encourage internal stability, achieve life skills, and master developmental tasks.

Through crisis stabilization, MCCC hopes to provide an environment for troubled children, which helps them make healthy choices regarding their lifestyles and behavior. The goal is for children to return home to lead productive, successful lives. The therapies offered will be primarily mental health and substance abuse counseling. The house should be designed to provide adequate space for these activities as well as to incorporate sustainable design practices and green initiatives in correlation with healthy environments. The design must also adhere to federal and state codes which govern the design of Psychiatric Residential Treatment Facilities.

This project is therefore very heavily focused on the needs of the users, and a prime objective is to create spaces that enhance the healing process. Evidence-based design is a concept that has revolutionized the way designers create healthcare environments because this approach has proven that it can bring wellness to the life of the individual.
Investigating and Researching Healthcare Design

An early part of the design process for the Wheelwright House involved research and investigations on current ideas and innovations in healthcare design. The Wellness Room is a concept developed by architect Earl Swensson (Miller, Swensson, 2002). This concept meets the challenges of creating facilities that focus on patient satisfaction and needs, as well as those of the medical staff. This approach to design focuses on patient satisfaction, proven therapies, and medical staff knowledge. It has enabled the creation of design solutions that integrate the latest technologies and provided adaptability through flexible furniture components and comforting settings through the elements of design such as light, color, and texture.

Wellness design was viewed as a necessary concept to integrate into the Wheelwright facility. According to Swensson, the first installation of the Wellness Room was in April 2000 at TriStar Health System's Contennial Medical Center. Here, they conducted a study to compare this type of room with traditional patient rooms. A research firm by the name of CEO Project, Inc., compared six patient rooms, two standard rooms, two upgraded, improved rooms, and two Wellness Rooms. After surveying patients, 80% of those who stayed in the Wellness Room would be likely to delay admission in order to continue their stay if given the option (Miller, et. al, 2002).

This contributed to an understanding of how this concept could be integrated in the Wheelwright project by providing individual male bedrooms, group therapy space planning, and the inclusion of quiet, restful areas within the home that incorporate soothing finishes and materials, and access to natural light.

Research on concepts of “lean design” also allowed the integration of new information and solutions into the house plan. Many companies have used the principles of lean design, because it supports the idea that providing a worker with everything he needs in close proximity to one another shortens distances between tasks, cuts down on repetitive motions, and uses time and resources more effectively. (Kobus, et. al.,2008). As applied to the Wheelwright project, medicine preparation, and areas of therapeutic staff operation were designed to minimize distance between prep stations, therapy rooms, and office resident files. Research on finishes applied in psychiatric treatment provided an understanding of constraints and possibilities. Psychiatric facilities should provide a comforting environment, but they should also protect patients from physical harm and self-induced injury. All fixtures, furniture, and finishes specified by the designer, should be tamper-proof and indestructible (Leibrock, 2000).

Understanding Mental Health and the Design Response

There are several causes for mental health problems among adolescents. Mental Health: A report of the Surgeon General, describes a landmark study showing families experiencing dysfunction, criminality, overcrowding, or psychopathology can prompt behavioral and personality disorders. Economic hardship can also increase a child’s risk of developing behavior disorders due to extra stress attained by the family (U.S. Public Health Service).

The census of the year 2000, from the U.S. Census Bureau reports that median income for a household in the city of Wheelwright was $14,808, and the median income for a family was $20,625. Around 36.8% of families and 40.0% of the Wheelwright population were below the poverty line, including 47.0% of those under the age of 18 (U.S. Census Bureau). Stress-related mental health problems in response to economic hardship and distress in families increase the potential for acts of violence and depression among parents, thus leading to poor care-giving and risky behavior practices among adolescents. (Zahn-Waxler, Klimes-Dougan, Slattery, 1990).

Federal legislation that applies to children's psychiatric residential treatment centers also provides specific rules for methods of restraint used to...
control violent behavior. This legislation provides very specific design guidelines for these types of spaces: “Under the Conditions of Participation for psychiatric residential treatment facilities providing inpatient psychiatric services to individuals under 21 under the Medicaid program, all resident children and youth now have the right to be free from restraint or seclusion as means of coercion, discipline, convenience or retaliation” (Bazelon Center; inappropriate citation). Seclusion areas must only be used during an emergency situation. In applying this information, a designer must provide areas for children who become violent and also consider how the interior environment could potentially deter the outbreak of violent behavior.

Response to these statistics calls for spaces that bring healing and growth, as well as encourages the formation of solid, healthy relationships. Research has proven that a child living in a setting that seeks to establish community has a higher rate for improvement than those who live in more secluded environments (Levy, Z., 1996). Children need a growth-supportive community that limits messages of negativity and instead maximizes messages of possibility. This calls for the designer to create a planned environment in contrast to planned activities, giving the child a choice in their experience, rather than forcing obedience.

Utilizing the Strategic Facilities and Planning Process

During design development, the studio also communicated with the staff of the MCCC on a regular basis asking questions and establishing the major programming objectives. We asked questions often seen in the Strategic Facilities and Planning (SFP) process. The SFP process consists of understanding, analyzing, planning, and acting (International Facility Management Association; inappropriate citation). As design students, we sought to gain information on the client’s philosophy and objectives, the functional relationships between administration, services, and the community, facility space requirements, existing conditions, and the potential for growth. The issues that came from this aspect of research were the importance of sustainability, adherence to codes, understanding of social and physical contexts, safety, wellness, adaptability, public versus private space, and a focus on community. Through SFP, we sought to develop a functional and flexible plan based on the client’s unique situation and specific conditions. By using these analytical techniques, we were able to explore a range of possibilities for the space based on existing conditions and new opportunities.

Schematic and Conceptual Design Phases

Once these programmatic requirements were identified, we began schematic design that involves brainstorming, making rough sketches, and creating diagrammatical relationships between the information gathered and translating that to design opportunities in the built environment. This is followed by conceptual design development, bridging evidence, form, function, and aesthetics into one, thereby creating a final package for the client that expresses the solution to their project.

My design solution focused on providing unique spaces that would give the best possible experience for residents who come from very difficult situations, as well as promote Mountain Comprehensive Care’s foster care services so that this project might encourage the receipt of additional funding for projects that arise in the future. The result called for a home that comforts users with soft, but durable textures, subtle color, and easy flow of space. The use of natural light, visual connections to the landscape, color and a manipulation of space to create a pleasant uplift to the occupants were integrated into a cohesive design solution. A vision of how the house was to function was developed early, focusing on the user’s daily schedule and personal responsibilities within the house. When space planning, it was necessary to address interactions between male adolescents and plan for opportunities in which they could engage in community. A stream
of words geared to a researched and psychological design response narrowed into three, becoming the core of my design solution: heal, grow and become. These three words became the core concept of my design and were translated into three-dimensional space diagrams driven by program requirements from the user. These three words work together, creating programs that often overlap. They may also operate individually, to define an area of program, unique to itself and separate from others.

In healing, the child needs views to the outside in an open atmosphere. The child also needs areas of intimate, private space. The design addresses this through personal spaces, such as a bedroom. It is also addressed with a therapy room that can be used for individual sessions, significant as a separate place of recovery.

In growing, just as a plant needs space, light, and flexibility, there are spaces within the home that offer each of these things. Community spaces on the first level transform from eating area, to lounge, to places to do homework, create, play games, chat on the back porch, or play outside. An open landing on the second floor creates new community within the living core. Here, a glass curtain wall overlooks the first floor and enables a child upstairs to see when their housemate comes home or when a guest arrives. The design of this wall also enables light to filtrate upstairs, brings second level monitoring capabilities for staff, and establishes a cohesive relationship between the once separate two floors.

In order to “become” one needs personal space, areas to reflect, and opportunities of responsibility. The design addresses this through adequate bedroom space for each individual equipped with furniture they can call their own. Responsibilities include gathering personal laundry and linens each week and the potential of contributing to a community garden on the plot of land behind the home. While activity in the home is staff-monitored and well-organized, these new programs for space now create safe areas in which the users have choices in their experiences in the house; a sense of freedom to enjoy home as they choose.

The residents of this facility need a welcoming, non-institutional feeling of home. This is done through the design elements that move throughout the interior spaces. This includes the color palette on the walls and furnishings, multiple locations for displaying artwork from the residents, subtle fun in colors and patterns, as well as through the form and function of furniture that
is young and adaptable in its aesthetic. Sustainable solutions for furniture upholstery are applied through fabrics that are Greenguard certified, as well as fabric and furniture selections that are comprised of recycled materials. A welcoming atmosphere is also achieved through the restoration of existing hardwood floors, keeping the integrity, locality, and character of the house. This also models the sustainable design practice of reuse.

To equalize the intimidation that the boys might feel when entering this new environment, the game and recreation area has been placed close to the entrance. This will bring harmony and comfort to the new residents, and will create the idea of a new place that they might know and enjoy as 10-17 year olds. As an alternative to this concept, the group therapy room has been positioned in a secluded and private area.

The existing spaces were disconnected from, and did not provide views of, the outside environment’s green space. Also, it was not advantaged to receive maximum sunlight for an area that already has decreased amounts of sunlight due to its position in the mountains. My design solution addresses this issue through passive solar design initiatives, another avenue of designing sustainably. The removal of existing walls and expansion of windows on the south and west side of the house will allow light infiltration as well as higher indoor air quality and air circulation through the space through clerestory windows. While most light throughout the day will appear indirect, heat and light from the sun can be controlled by a moveable panel system consisting of fabric that possesses solar properties. It is also controlled through the installation of Low-E insulated glass windows that will replace all existing windows. To enable light to the second level, without the use of electricity, the project has a defining element; a light well that dramatically expresses the home’s ability to now connect to its immediate environment. This detail in the architecture is again representational of the concept word, “become,” and expresses an individual’s freedom to transform. It is a sensible, symbolic response to the program requirements.

Through research, dedication to life-safety issues, and conceptual design, the Wheelwright house hopes to bring a design solution that meets the user’s needs, while successfully addressing and resolving issues unique to the Mountain Comprehensive Care Center’s mission for the space. The renovation of this building will energize this once prosperous mountain community and
provide a renewed sense of pride for area residents. A project of this magnitude often serves as a catalyst for other community changing developments that inspire a “can do” attitude among citizens. Hopefully, our design inspiration will inspire greater involvement in a number of ways, just as a first step leads to a great journey: that being a life well lived.

**Works Cited**


I would like to thank my professor Joe Rey-Barreau for encouraging design projects that stretch my design thinking skills, bring value to my home state of Kentucky, as well as encourage me to design ethically and responsibly. I also give much credit to my design studio classmates. They have been a knowledgeable and enjoyable team to work with this semester and our collaboration on design reviews was of much value in improving my final solution. I would also like to thank Mountain Comprehensive Care Center for their confidence and dedication to this project.
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The Wheelwright House:

1. Site plan
2. The town of Wheelwright, Kentucky
3. The proposal design

First Floor Plan
Scale: 1/8" = 1'

Second Floor Plan
Scale: 1/8" = 1'

Front Exterior Elevation

Side Exterior Elevation

Interior View of the Living Space

Kitchen View into the Living Space

Bedroom

Dining and Multi-purpose Area

Living and Multi-purpose Area

1. Bedroom
2. Dayroom
3. Living and multi-purpose area
4. Kitchen
5. Kitchen view into the living space
6. Dayroom
7. Garden
8. Play area

Section B
Scale: 1/4" = 1'

Section A
Scale: 1/4" = 1'

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