Children's Hospice: A Place to Stay, A Place to Play

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Children’s Hospice:
A Place to Stay, A Place to Play

by

Madalyn Faye Lillie

A Thesis Submitted in Partial Fulfillment of the
Requirement for the Degree of Master of Architecture

Department of Architecture

College: Golisano Institute for Sustainability

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Rochester, NY

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Abstract

Children diagnosed with terminal illness most often receive end-of-life care in a traditional hospital setting or at home due to the dearth of children’s hospices in the United States. Children hospices provide an environment that not only is aesthetically designed for children, but also is attentive to the specific physical and emotional needs of their special patients and their families. The purpose of this thesis is to define a model of children’s hospice that integrates the successful features of similar hospitals throughout the United States and adapts them to the writer’s home region in upstate New York. To accomplish this goal, the writer analyzes the features of existing children’s hospice centers as well as prominent children’s hospitals nationwide and examines their strengths and weaknesses to determine the ideal environment for a children’s hospice center.
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1.0 - Introduction

Families of children diagnosed with a terminal illness may or may not have the means to help their children live out the rest of their lives in the comfort of their homes or in home-like environments. Even for those who do have this ability, their terminally ill children often require medical attention and hospitalization. However, children need not receive end-of-life care in a traditional hospital setting. Hospice centers, where medical care is provided in a home-like environment, are becoming an alternative to hospitalization. Few pediatric hospice centers exist in the United States; most hospice centers are elderly-focused and provide in-home hospice as well as palliative care. Although young people have access to in-home hospice and palliative care, there are few hospice facilities specifically for children and young adults.

In determining hospice care availability for young people, one must first define “hospice center.” For the purposes of this paper, hospice center is defined as an end-of-life center for people with six months or less to live. Hospice centers are traditionally associated with older adults, not children. As of 2015, only two children’s hospice centers are situated in the United States: The George Mark Children’s House located in San Leandro, California and the TMC Children’s Hospice located in Tucson, Arizona.1,2

1 Ken Sommer (Director of Advancement, George Mark Children’s House) in discussion of George Mark Children’s House), in discussion with the author, September 2015.

2 “Children’s Hospice,” Tucson Medical Center, accessed September 19, 2015,
According to the Finger Lakes Region Profile, a region of nine New York state counties, between 2009 and 2011 375 children passed away, 204 as a result of terminal illnesses.\(^3\) This data indicates a gap in children’s hospice care and demonstrates that a children’s hospice center in the Finger Lakes region would be beneficial. In addition, Rochester, New York is home to Golisano Children’s Hospital, the region’s only children’s hospital. As a result, children and their families, as well as the Golisano Children’s Hospital medical community, would all be best served with a children’s hospice center.

In considering how to design a children’s hospice center, I set out to answer several questions:

- What is the present situation of health structures for terminally ill children?
- Where in Rochester, NY would a new project of a Children’s Hospice Center be beneficial?
- Where should the new center be situated?
- Which features of United States hospice centers would be best to incorporate into this design?
- What additional features would define the space so that families would be willing to bring their children?

The goal of this study is that this typology of a children’s hospice will become more definitive, with features that will make the space more inviting and comforting for children in their last stages of life and their families. This research will also inform future architects and architectural designers when presented with this typology to design. They will be further aided with a program of compiled data to help guide them.

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http://www.tmcaz.com/childrenshospice

through the types of amenities that the facility should have along with site amenities that are preferred. Overall, this facility would make an excellent addition to the Rochester, New York area to work in conjunction with the Golisano Children’s Hospital.
2.0 - Problem Statement

In considering how to design a children’s hospice center, I asked my primary question:

After researching the present situation of health structures for terminally ill children, where would a new project of a Children’s Hospice Center be beneficial in Rochester, NY?

I was guided by several sub questions:

- Where should the new center be situated?
- Which features of United States hospice centers would be best to incorporate into this design?
- What additional features would define the space so that families would be willing to bring their children?
3.0 - Literature Review
Literature Review

This literature review of three thesis documents and several articles was conducted to investigate the dearth of children’s hospice centers. Literature relating to this topic is sparse, and this thesis can help fill the gap as a necessary resource.

The need for children’s hospice centers is demonstrated in Lynn Stokes’ paper, “Hospice: A Caring Environment for Families to Live through a Critical Time.” Stokes stated, “Currently, in the United States, there are no free-standing children’s hospices in existence.”4 Stokes’ thesis is similar to this paper’s proposed research and design with the exception of Stokes collaborating with St. John’s Hospital in Maryland.5 Stokes’ thesis also identifies the need for further analysis and research of children’s hospice facilities outside of the United States and demonstrates that further research is needed to locate more children’s hospice centers or to determine why so few exist.

By contrast, “Hospice House,” by Stephanie L. Millet focuses on the design of a hospice for elderly people and how to improve the model of hospice care.5 Millet’s thesis lacks sufficient data explaining how she achieved her model, thus emphasizing the need to acquire additional information and background for improving hospice


“Hospice: A Place for the Dying,” by Monica M. Becher, examines both children’s and elderly hospice care as the writer focuses on how this care helps patients die with dignity. She discusses the need for blurred lines between home-like and hospital-like spaces while also integrating nature. Becher stated, “No matter how home-like a hospice strives to be, it will never be home to its dying residents.” This shows that as well-designed a space may be with the comforts of home, it cannot change how the patient feels. Becher also explains the need for a therapeutic environment to increase the patient’s quality of life. She stated, “The hospice should not feel overwhelming to its residents and visitors, in that the building mass should be as small as possible.” This means that the building does not have to be extravagant; the smaller the better. In addition to the therapeutic environment, Becher also explains that the building should be easily navigable. Each piece of aforementioned research provides implicit information to enhance this thesis and also emphasizes the importance of case studies to enhance the center’s design.

The theses above inform the reader on hospice design. The next articles relate to

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hospice management and care. “Confronting Death: Perceptions of a Good Death in Adults with Lung Cancer”, by Travonia Hughes, et al. and “Palliative Care: Clinical Practice Guidelines in Oncology”, by Michael H. Levy, et al., focus on the process of moving into hospice care centers. These articles bring attention to the fact that each person goes through the hospice experience in different ways, and each person has their own plan that the doctors and nurses make for them.\textsuperscript{7,8} In addition to respecting these individualized plans, nurses and doctors also focus on keeping the patients comfortable.

In an effort to ensure the wellbeing of the patient and all involved in their care, many hospice centers utilize a set of guidelines. In their article, Levy et al. produced a diagram seen in figure 1, identifying a map of a patient’s treatment path.\textsuperscript{9} The map begins with the screening process, where intake coordinators decide the severity of the patient’s condition. The next step is assessment, where the doctors and nurses determine the efficacy of certain therapies and also learn the patient’s own treatment plan. The assessment helps to estimate life expectancy, which then helps to decide if there are interventions to extend life. Coordinators continue to assess and reassess the

\begin{footnotes}
\item[9] Levy, et al., “Palliative Care.”
\end{footnotes}
patient for as long as the patient lives. When the patient’s life ends, coordinators provide support, not only for the patient’s family but also for the patient’s health-care team.
PALLIATIVE CARE OVERVIEW

SCREENING

- Uncontrolled symptoms or Moderate to severe distress related to cancer diagnosis and cancer therapy or Serious comorbid physical and psychosocial conditions or Life expectancy < 12 mo or Patient/family concerns about course of disease and decision-making or Patient/family requests palliative care

ASSessment

- Present
  - Benefit/risks of anticancer therapy
  - Symptoms
  - Psychosocial or spiritual distress
  - Personal goals/expectations
  - Educational and informational needs
  - Cultural factors affecting care
  - Criteria for early consultation with palliative care specialist

- Not present
  - Inform patients and families of role and benefits of palliative care services
    - Discuss anticipation and prevention of symptoms
    - Rescreen at next visit

ESTIMATED LIFE EXPECTANCY

- Years
  - Year to months
- Months to weeks
- Weeks to days (dying patient)

Ongoing reassessment

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*Management of any patient with positive screening requires a care plan developed by an interdisciplinary team of physicians, nurses, mental health professionals, and chaplains.

*Oncologists should integrate palliative care into general oncology care for patients who meet screening criteria. Consultation/collaboration with a palliative care specialist/hospice team is recommended for patients with more complex issues.

Clinical trials: The NCCN believes that the best management for any cancer patient is in a clinical trial. Participation in clinical trials is especially encouraged. All recommendations are category 2A unless otherwise noted.

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Palliative Care Version 1:2009

PALLIATIVE CARE INTERVENTIONSa

Ongoing reassessment

- Anticancer therapy
- Appropriate treatment of comorbid physical and psychosocial conditions
- Promote coordination of care
- Symptom management
- Advance care planning
- Psychosocial and spiritual support
- Culturally appropriate care
- Resource management/social support
- Consultation with palliative care specialist
- Hospice referral
- Response to request to withdraw or withhold life-sustaining treatment
- Response to request for physician-assisted suicide and euthanasia
- Care of imminently dying patient
- Palliative sedation

REASSESSMENT

Satisfactory:
- Patient satisfied with response to anticancer therapy
- Adequate pain and symptom control
- Reduction of patient/family distress
- Acceptable sense of control
- Relief of caregiver burden
- Strengthened relationships
- Optimized quality of life
- Personal growth and enhanced meaning

Death (a "good death")

Unsatisfactory

- Intensify palliative care efforts
- Consult or refer to specialized palliative care services or hospice

Ongoing reassessment

AFTER DEATH INTERVENTIONS

For family and caregivers:
- Immediate after-death care
- Bereavement support
- Cancer risk assessment and modification
For health care team:
- General support
- After-death support

aOncologists should integrate palliative care into general oncology care for patients who meet screening criteria. Consultation/collaboration with a palliative care specialist/hospice team is recommended for patients with more complex issues.

Figure 1: Path of Care
Figure 1 described the screening process to determine the necessity of palliative care. Figure 2 describes the process of providing palliative care once it has been decided. The diagram begins with the patient’s life expectancy and, depending on the patient’s condition, determines the process of discussing and introducing hospice care. Reassessment may occur more frequently in this diagram as the patient’s condition changes.

The diagrams in the Levy et al. article are representative of the life of a terminally ill cancer patient. Reassessment occurs when the patient’s condition worsens or improves. The reassessment then helps to keep the patients comfortable and on their chosen path. As a result, no two people will go through the exact same situation or take the same path; there will always be differences in how their lives progress.
Palliative Care Version 1:2009

ADVANCE CARE PLANNING

ESTIMATED LIFE EXPECTANCY

INTRODUCTION

Years

- Discuss palliative care options, including hospice
- Consider introducing palliative care team
- Assess for decision-making capacity and need for surrogate decision maker
- Elicit personal values and preferences for end of life care and congruence with values and preferences of family and health care team
- Provide information about advance directive and encourage exploration of DNR option
- Encourage the patient to discuss wishes with family
- Encourage designation of health care proxy, medical power of attorney, durable power of attorney, or patient surrogate for health care
- Inquire about desire for organ donation and/or autopsy
- Explore fears about dying and address anxiety

Year to months

Months to weeks

- Determine patient and family preferences for the location of patient’s death
- Confirm and ensure complete documentation of advance care directives including cardiopulmonary resuscitation (CPR), mechanical ventilation, artificial nutrition/hydration, blood products, antibiotics, dialysis
- Ensure advance care directives are available to all caregivers regardless of treatment setting
- Seek resolution of conflict between patient and family goals and wishes
- Explore fears about dying and provide emotional support
- Discuss desire for organ donation and/or autopsy

Weeks to days (dying patient)

- Ensure advance care directives are available to all caregivers regardless of treatment setting
- Implement and ensure compliance with advance care directive
- Clarify patient’s decision regarding CPR
- Consider ethics, social work, or chaplaincy consultation to assist in conflict resolution when patient, family, and/or professional team do not agree on benefit/utility of interventions
- Confirm desire for organ donation and/or autopsy

Clinical trials: The NCCN believes that the best management for any cancer patient is in a clinical trial. Participation in clinical trials is especially encouraged. All recommendations are category 2A unless otherwise noted.

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Figure 2: Path of Care
In addition to considering hospice design and patient assessment, researchers also examine the challenges of choosing home hospice care. “Hospice and the Spatial Paradoxes of Terminal Care,” by Michael Brown discusses the effects on a hospice patient spending the last moments of his life in his home and demonstrates this choice had its own set of associated positive and negative circumstances. Brown explains that being at home in the last stages of life changes the home atmosphere. This makes it harder for the patient to be in his home because his environment is not what he is accustomed to. This paper shows the benefits of a hospice center in that patients do not have to make architectural changes to their homes to accommodate their medical needs.

“Hospice Care for Children,” edited by Ann Armstrong-Dailey and Sarah Zarbock, focuses on meeting the unique needs of children and family members in hospice centers. Some of the features they recommend include a body outline tool and specific types of therapy and play rooms.

The body outline tool is a graphic used in examination rooms in which there is an outline of a body along with three different colors chosen by doctors. Those colors

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represent amounts of pain. The patient puts a color on the part of the body that is hurting using the color that represents the pain.\textsuperscript{11}

Therapy rooms, such as those for art and music, help the patient stay comfortable.\textsuperscript{11} Playrooms keep the child’s mind occupied. The text suggests that play medical equipment helps to ease a child’s mind and should therefore be considered for the playroom.\textsuperscript{11} This book is helpful as it focuses on children and hospice where the other sources do not.

These resources help to demonstrate the need for a children’s hospice care facility in the Finger Lakes region and also describe how to create a great design that will help lessen the burdens of all the children and their families. The children’s hospice design will incorporate main features from each source that will enhance the design and will also add modern tools to help calm children in their new environment. The playroom offers children a space to play with therapeutic support while the body outline tool helps the doctors understand the child’s pain levels. The articles also expressed how this a hospice facility will not replace the person’s home or destroy the good memories of their home. They also expressed that each patient goes through the process differently from someone else. There is no direct path to how life will proceed when they enter a hospice center.
4.0 - Case Studies
Children’s Hospice Centers

This study investigated TMC Children’s Hospice in Tucson, Arizona and George Mark Children’s House in San Leandro, California, the only two children’s hospice centers in the United States, as shown in blue in figure 3, as well as children’s hospitals that perform hospice services. These children’s hospitals, as shown in figure 4, include: Boston’s Children’s Hospital in Boston, Massachusetts, Cincinnati Children’s Hospital Medical Center in Cincinnati, Ohio, Golisano Children’s Hospital in Rochester, NY, and Riley Hospital in Indianapolis, Indiana.
The location and number of children’s hospice centers demonstrates the dearth of these centers in the United States and point to a need for a children’s hospice in the Rochester, New York area, especially when coupled with the well-known children’s hospital in the area.

In examining these centers and hospitals, I was inspired by, and incorporated into my new facility design some of their amenities, such as using red wagons to pull children instead of wheelchairs to push them and providing beds for the parents in their children’s rooms. All of these spaces serve as the design aspect to this thesis.
TMC Children’s Hospice

TMC Children’s Hospice, located in Tucson, Arizona, has 16 patient rooms, which is considered a reasonable size. The hospice provides additional “family room” space for overnight visits.\textsuperscript{12}

At this facility, the design goal is to provide a welcoming, inviting space for children and their families. The welcoming design begins outside the building. Figure 5 shows the main entrance, which is brightly colored and inviting for children. The waiting room in figure 6 is yet another inviting space for families to greet their loved ones. This inviting design continues in the patient rooms, each of which connects to an outdoor patio. Children have the opportunity to design the theme of their room.\textsuperscript{12} With this, the hospice allows children

to feel that the space is their own.

To complement the welcoming design, TMC provides supportive amenities for children, families, and guests, such as a chapel and the “TMC Labyrinth & Garden.”
George Mark Children’s House

George Mark Children’s House is located in San Leandro, California. This facility is 15,000 square feet and is located across five acres of land. The House maintains eight patient beds, serving patients from birth to 21 years of age. George Mark Children’s House provides hospice, transitional, and respite care, with hospice patients making up 20 percent of the care in the facility.\textsuperscript{13} As part of the hospice care, George Mark Children’s House provides bereavement care in the form of “counseling, home visits, support groups and participation in events held at George Mark for as long as a family desires.”\textsuperscript{14}

Transitional care is provided for children who must remain hospitalized due to specialized treatments. While the child is


at the House, parents learn how to care for their child’s medical needs so that they “feel more confident about caring for their child and managing issues that arise when they return home.”¹⁵

Providing full-time care for a child’s medical needs sometimes takes a toll on parents. Respite care, which serves the majority of children at George Mark Children’s House, allows parents to leave their children in a safe space while they “recharge and spend much-needed time on their own or with other siblings.”¹⁶

Each of the seven 108 square-foot bedrooms is decorated with a different theme and includes both a bed for the patient and a daybed for the parents. The rooms, as shown in figure 7, have panels that discreetly cover the oxygen and suction hook ups. In the eighth “teen-focused” room, the space for the day bed is replaced with a computer and sound system.¹⁷ As seen in figure 8, each room has an outside patio leading to a garden space, and a tile wall in figure 9 serves as a remembrance wall for all of the children who have been in the facility. One patient room serves as a zero containment room for children who cannot be in contact with other people. Meals are prepared by a chef in “Ruth’s Cafe” and served three times a day; families have the

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option of eating together in a large dining area.\textsuperscript{18}

George Mark Children’s House offers rooming options beyond the daybed for parents. Families can also stay in a suite, which has a bedroom, sitting room and kitchen. In addition, children may room with their pets, or the pet can stay in the on-site kennel provided by the facility.\textsuperscript{19}

Beyond rooming, George Mark Children’s House offers a variety of amenities. The aquatics facility is equipped with therapeutic tubs to provide children some pain relief, and the outdoor play area as seen in figure 10 has a playground for children. The facility has no visiting hours; family and friends can visit whenever is convenient for them.\textsuperscript{19}


\textsuperscript{19} Ken Sommer (Director of Advancement, George Mark Children’s House) in discussion of George Mark Children’s House, in discussion with the author, September 2015.
Isaiah House

The hospice center located in Rochester, New York is not a children’s hospice, but a child roomed there for the first time in 2015. As seen in figure 11, Isaiah House looks like a home from the exterior and is situated on a residential city street. The only distinguishing feature is a small sign on the door that says “Isaiah House”. This facility is a non-regulated hospice center; it is considered a comfort care facility. A non-regulated facility means that there are no formal visiting hours and patients can behave as they would in their own home, such as having a beer with dinner. When I visited this facility in September 2015, I observed a home-like atmosphere; it felt like a place that someone would want to be when they are in the last stages of their life. To operate, Isaiah House depends upon donations, volunteers, and collaborations with other hospice agencies so that they can accept patients without health insurance or family support. In keeping with their non-regulated philosophy, the facility maintains a large kitchen where families can cook and eat together as they would at home.

Figure 11: Isaiah House Rendering

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20 Kristin Catalano (RN, Director, Isaiah House) in discussion with the author, September 2015.
Table 1 compares the facilities examined for this paper and demonstrates that each offers a range of amenities. Of those, only a few are shared across the board. Based on these case studies, the facility design for this thesis will offer a broader range of amenities. Patios will locate off of each room, and rooms will include space and furniture to accommodate overnight guests, and visitors may enter and leave the
facility at any time. The facility will also house a chapel, courtyard, large dining room, aquatics facility, and a zero containment room. The exterior of the building will maintain a welcoming residential appearance.
In-home Hospice Care

In-home hospice centers for children are more common than hospice centers due to lack of access to children’s hospice facilities. In-home hospice programs provide families with support groups and 24/7 access to in-home nurse visitations. Several in-home hospice programs are established throughout the United States. Among those are Essential Care for Children in Buffalo, New York; Children’s Hospital in St. Louis, Missouri; Sunset Hospice Inc. in Los Angeles, California; and StarShine Hospice in Cincinnati, Ohio.

Located within Cincinnati Children’s Hospital, StarShine Hospice provides in-home comfort to children who have six months or less to live. To accomplish this, they collaborate with the Pediatric Palliative and Comfort Care team (PACT) at Cincinnati Children’s Hospital. PACT helps coordinate medical care by providing a medical team, assisting in making medical decisions, providing pain and symptom management and recommending supportive therapies.

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21 “StarShine Hospice and Palliative Care”, Cincinnati Children’s Hospital Medical Center, accessed September 9, 2015, https://www.cincinnatichildrens.org/service/p/palliative-care/starshine-hospice

22 “Pediatric Palliative and Comfort Care Team,” Cincinnati Children’s Hospital Medical Center, accessed September 9, 2015, https://www.cincinnatichildrens.org/service/p/palliative-care/pact
Children Hospitals

Cincinnati Children’s Hospital houses the StarShine Hospice and Palliative Care program.\(^\text{23}\) The exterior of the Children’s Hospital includes a lot of fenestration and some color as seen in figure 12. The hospital is a large facility with 598 patient beds in addition to 59 beds in their Level IV Infant Intensive Care Unit. Cincinnati Children’s was ranked 3\(^{\text{rd}}\) among all Honor Roll hospitals in 2014 in U.S. News and World Report patient survey of best children’s hospitals.\(^\text{24}\)

\(^{23}\) “Cincinnati Children’s”, Cincinnati Children’s Hospital Medical Center, accessed September 9, 2015, https://www.cincinnatichildrens.org/service/p/palliative-care

Boston Children’s Hospital in Massachusetts is a fairly large, prominent hospital. This facility has 392 patient beds and for newborns through 21 years of age. The hospital admits around 25,000 patients each year. Figure 13 shows children’s rooms that are brightly colored with a substantial amount of natural light. Both bright colors and natural light help to improve the patient’s emotional well-being. Natural light also decreases dependence on artificial lighting. The room is coupled with a couch for family members. Boston Children’s Hospital is the “primary teaching hospital of Harvard Medical School” and was ranked 1st in seven out of ten pediatric specialties by U.S. News in 2016.

Figure 13: Boston’s Children’s Hospital Patient Room

Warren Jagger Photography

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Golisano Children’s Hospital is part of Strong Memorial Hospital in Rochester, New York. Strong Memorial is the largest children’s hospital in the Western New York area. As of this writing, Golisano Children’s Hospital was putting the finishing touches on their new hospital addition, which adds 245,000 square feet, and includes 52 private rooms in addition to at least 60 beds in the NICU. Where before the patient rooms were painted in stark white colors, the new bedrooms are very bright and colorful. The new rooms were also designed with patient privacy and care in mind. Figure 14 shows patterned glass windows rather than walls separating the room from the hall, allowing nurses to check on patients without entering the room and disturbing them. This new facility design incorporates themes of Rochester, New York such as meadows and parks, and the top two floors of the eight-story building include a children’s play-deck.

Golisano also houses a small “home-like” space on-site with seven private rooms for families down the hall from the ICU. The hospital provides this feature so that

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families can be in very close proximity to their children. For families who are unable to stay in the private rooms, Golisano Children’s Hospital partners with the Ronald McDonald House. RMH contains separate rooms for each family as well as large gathering spaces such as a kitchen and living room.

Riley Hospital for Children is a nine-story medical center in Indianapolis, Indiana. Each floor has a specific theme, such as savannahs and parks. Families entering the hospital will find red wagons, such as the one in figure 15 for pulling their children as opposed to pushing them in wheelchairs. Riley Hospital sees 30,000 trauma patients each year. For those admitted, each has their own private room equipped with a pullout bed and an additional television for family members.

Each hospital described above demonstrates designs and/or amenities that I plan to incorporate into my children’s hospice center design. Although this building will be an institution, it will reflect a colorful, cheerful, and homelike atmosphere in

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both the exterior and interior spaces. Differently-themed bedrooms will include space for furniture to accommodate overnight guests, and I will allot play space so that children can interact with each other. These designs and amenities will make the transition into this facility less stressful and more personal.

Charlie, a comatose patient in the show Red Band Society said, "Everyone thinks that when you go to a hospital, life stops. But it's just the opposite. Life starts."32 This quote forms the basis for my hospice center design: children do not enter a hospice center with the idea that their lives will end. Therefore, their time spent in the hospice center should be filled with pleasant activities and opportunities to create happy memories.

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How Colors and Daylight Affect Children

As the case studies have shown, colors and natural light are both necessary and crucial features for a children’s facility. According to “Natural Light and Education: The Benefits of Daylighting for Schools and Colleges,” by the Bristolite Team, daylight not only helps students focus better but also keeps them healthier. In addition, using natural daylight decreases the amount of electricity needed in the building.\(^{33}\) This is a great attribute that should be in any design. In a children’s hospice center, children’s health may not improve, but natural daylight can help to energize them.

The substantial energy savings of natural daylight cannot be ignored. In “The Benefits of Natural Light,” Kevin Van Den Wymelenberg explained that, “Electric lighting in buildings consumes more than 15 percent of all electricity generated in the United States.”\(^{34}\) That is a substantial amount of energy just for lighting. Van Den Wymelenberg describes a technique called “daylight sensors.” He stated that, “Spaces outfitted with daylight-sensing controls can reduce the energy used for electric lighting by 20 percent to 60 percent…”\(^{34}\) The use of daylight sensors would help my proposed facility reduce its electrical lighting demand as well as reduce electricity expenses.


While natural lighting can help energize young patients, color can positively impact children in multiple ways. Summer Baltzer stated that “color has the ability to inspire, excite, soothe, heal and even agitate. This is particularly true for children, who can be extra sensitive to color's impact. So the importance of picking out just the right color for a young child’s room shouldn't be underestimated.” With so many different spaces in my proposed facility, color is a key ingredient to make children comfortable in each space. Blue is very calming to children. “Blue decreases feelings of anxiety and aggression…” This color would help children in any part of the facility, but would be great in places that may seem scary to them at first, such as their hospice bedroom. Blue would also work well in exam rooms. Soft or dark greens are also soothing colors for children. Because green may also improve children’s reading speed and comprehension, it may work best in facility spaces dedicated to reading and learning. Yellow represents motivation and happiness and may work well in the proposed facility’s main entry area. Purple is a color that expresses royalty, ambitiousness and creativity as well as inspiring compassion. Purple might be used anywhere in the proposed facility.

5.0 - Theory and Methods
Introduction

As noted in chapter 1, George Mark Children’s House in San Leandro, California and TMC Children’s Hospice in Tucson, Arizona are the only two children’s hospices in the United States. The dearth of children’s hospice centers is concerning given that over 200 children pass away annually from illnesses in the Finger Lakes region and demonstrates the efficacy of a children’s hospice center. Children’s hospices offer the most specialized comfort and medical services when they are supported by prominent children’s hospitals, and the Finger Lakes region is home to Golisano Children’s Hospital. Both institutions would benefit each other.

My vision for a children’s hospice center in the Finger Lakes region concentrates on home-like spaces and play areas, and I chose this design based on my examination of the features of other centers of care: children’s hospice, standard hospice, and children’s hospitals. The proposed building will combine a residential feel, both inside and out, with the necessary medical interventions maintained subtly within. Outside, the building’s features maintain a residential appearance to blend in with its surroundings. Inside, children reside in private, individually-themed rooms with additional furniture to accommodate overnight family. Medical equipment is stored behind closed spaces so as not to agitate children and to maintain the home-like environment. Play areas, both inside and outdoors, offer features of home that encourage activity. The goal of my proposed children’s hospice center is to provide children with medically-supported
end-of-life care in a comforting, supportive facility with the same benefits of home.
Site Selection

The two major criteria for any hospice center should be proximity to both emergency medical services and also recreational services. For my children’s hospice site, I chose Rochester, NY due to my familiarity with the region and also due to Strong Memorial Hospital, home to the top-ranked Golisano Children’s Hospital. Building a relationship between a children’s hospice and a nationally-known children’s hospital brings peace of mind to families; they would be more willing to utilize the hospice center knowing its connection and proximity to the hospital.

I chose sites first by examining open land around two Rochester, NY hospitals: Highland and Strong. Both are situated in tight urban spaces with little land available on which to build. Unity Hospital, located in the town of Greece just outside Rochester, had open land near the Erie Canal. Ultimately, I chose between properties in the cities of Brighton and Greece. Both locations were in close proximity to hospitals, grocery stores, and recreational services. The yellow hexagons in figure 16 represent the

Figure 16: Map of Rochester, NY with Hospital and Potential Site Locations
locations of two hospitals, Golisano and Unity, while the red circles represent potential hospice center sites. Site A in figure 17 is located in Brighton across the street from the Top’s Brighton Plaza, which also houses a supermarket, restaurants, and other shops. Site B in figure 18 is also located in Brighton alongside Interstate 390 and would be in close proximity to other medical facilities such as the URMC Pain Treatment Center, Cornerstone Eye Associates, and VA Outpatient Clinic. This site would have views to a pond, which helps to create a calm, serene environment, but would have noise and pollution from Interstate 390. The two locations in Brighton are close to Golisano Children’s Hospital, but they are both green spaces; building on this land would reduce necessary green space in the city and could lead to
environmental damage, including destroying animal habitats. Site C in figure 19 is located near Unity Hospital on Ridgeway Avenue in Greece. This property had been used until 2012 as an apple farm. Currently, the property is overgrown, run down, and no longer holds agricultural value. Building a hospice care facility on part of the property and revitalizing the rest of the property with trees and other landscaping would improve the property’s appearance and improve the environment. This property also backs up to the Erie Canal, providing a serene view for patients, staff, and visitors.

I evaluated each location for their advantages and disadvantages as seen in table 2. I compared the advantages and disadvantages of the different properties using a matrix with several criteria: topography, amenities, vegetation, and proximity to emergency to medical services. I determined the topography score by measuring the distance between topography lines. The closer the lines, the steeper the topography. This project needs a site that has a small slope for drainage, but a flatter site is necessary.
so that the building is easily accessible. I measured proximity to amenities by observing the quality and quantity of stores within a two-mile radius. The vegetation score was based on tree density; the goal is to limit the number of trees that must be felled to build the site. Therefore, a higher vegetation score meant one could build without disturbing the surrounding land. I determined the proximity to emergency services score by calculating the number of miles from the proposed site to an emergency room. The closer to the emergency room, the higher the score. The point system that was used for this matrix was 1-5, with 1 being the worst and 5 being the best. Each category received a score and the site with the highest total number of points was the chosen site. I chose Site C due to its higher ratings for topography and vegetation.

<table>
<thead>
<tr>
<th></th>
<th>Site C – Ridgeway Ave</th>
<th>Site A – South Clinton Ave</th>
<th>Site B – Westfall Rd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topography</td>
<td>5</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Proximity to Amenities</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Vegetation</td>
<td>4</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Proximity to Emergency Services</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td>11</td>
<td>16</td>
</tr>
</tbody>
</table>

Table 2: Site Advantages and Disadvantages
Site Analysis - Physical Analysis

Site C, Ridgeway Avenue, is directly oriented north and south. As a result, the building will be oriented so that patient rooms receive ample sunlight from the east and west. Site C was previously an apple farm with many trees still standing on the property. There are also very large trees at the edge of the property near the Erie Canal. These trees by code will remain in their current location to help prevent erosion and to retain the original topography. Other trees on the site will be removed, as necessary for the building.

The topography of this site is mostly flat but as it gets closer to the Erie Canal it slopes more for drainage. Figure 20 shows the topography of the land. Having a site that is mostly flat makes it easier to develop an accessible building.

The utilities connections of the site itself are unknown but the residential neighborhoods and other buildings on the street demonstrate that utilities do exist. As seen in figure 21, Ridgeway Avenue is also in between two roads lined primarily with houses. The homes themselves are spaced
apart, allowing for a quiet neighborhood.

Figure 21: Site C neighborhood
Figure 22: Site C, Cultural Factors
Site Analysis - Cultural Factors

As figure 22 shows, the site along Ridgeway Avenue consists of unused farmland and residential neighborhoods. This is ideal for the proposed building because the property will be secluded, allowing for the development of a serene environment. The property itself will be located on just a small parcel of the land. This will help maintain space between the buildings that are adjacent to the site. There is no hazardous dumping around this site, and the Erie Canal requires that all buildings are set back at least 100 feet from the Canal.

Site Analysis - Zoning/Regulatory Factors

The proposed site for the children’s hospice center is located in Greece, a town in Monroe County. The parcel of land is on Ridgeway Avenue between Elmgrove Road and Manitou Road. This property is in the Flexible Office/Industrial District, and part of the site overlaps with the Canal Corridor Overlay District. Figure 23 shows a color-coded map of different districts; the Flexible Office/Industrial District is represented with turquoise with a gray diagonal stripe overlay. This district has many purposes: making proper use of the land, ensuring cooperative use of land and water, and

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preserving “existing vegetation and natural features... [and preventing] erosion, sedimentation and drainage problems both during and after construction.”

Maintaining the existing vegetation is also one of the main purposes in the Canal Corridor Overlay District. The proposed design will support those goals by incorporating land revitalization through the addition of vegetative features such as trees, bushes, and flowers.

The Flexible Office/Industrial District allows for the development of daycare centers or school-aged children centers. Although a children’s hospice is unlike a daycare center, both have similar facilities such as a play room, art room, and an outdoor playground. Therefore, developers for the children’s hospice center would need to apply for special permit uses, which then would have to be approved by the board of the town of Greece.

Table 3 describes developmental regulations on setbacks for the Canal Corridor Overlay District. For Non-Residential districts the minimum setback of the principal building and accessory buildings is 50 feet away from the Erie Canal and the buildings should be 150 feet away from the high water mark of the Erie Canal. The maximum height of the principal building is 35 feet and the maximum height of an accessory building is 17 feet. Docks are permitted on the site, but no more than one boat per

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building. In addition, parking lots are to be set back at least 100 feet of the canal.\textsuperscript{36}

### Zoning Requirements

<table>
<thead>
<tr>
<th>Use/Occupancy: R-4, 5-16 residents; Children’s Hospice Center- 10 residents</th>
<th>Selection of Construction: Type IIB</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Building Height</strong></td>
<td><strong>Located- Town of Greece, NY</strong></td>
</tr>
<tr>
<td>Maximum 35ft</td>
<td>Zoning</td>
</tr>
<tr>
<td><strong>Accessory Building Height</strong></td>
<td>Article III- District Regulations</td>
</tr>
<tr>
<td>Maximum 17ft</td>
<td>211-20</td>
</tr>
<tr>
<td><strong>Parking</strong></td>
<td>Article V- Off Street Parking</td>
</tr>
<tr>
<td>5.0 Spaces Per 1,000SF</td>
<td>211-45</td>
</tr>
<tr>
<td><strong>Free Standing Signage</strong></td>
<td>Article VII- Signage</td>
</tr>
<tr>
<td>No higher than 20ft from grade</td>
<td>211-52</td>
</tr>
<tr>
<td>Shall be 15ft from right-of-way</td>
<td></td>
</tr>
<tr>
<td><strong>Setback</strong></td>
<td>Article III- District Regulations</td>
</tr>
<tr>
<td>Minimum of 50ft from Erie Canal</td>
<td>211-20</td>
</tr>
<tr>
<td>Maximum of 150ft from Erie Canal</td>
<td></td>
</tr>
<tr>
<td><strong>Parking Lot Setback</strong></td>
<td>Article III- District Regulations</td>
</tr>
<tr>
<td>No closer than 100ft of the Erie Canal</td>
<td>211-20</td>
</tr>
<tr>
<td><strong>Vegetative Buffer</strong></td>
<td>Article III- District Regulations</td>
</tr>
<tr>
<td>No existing vegetation within 100ft to the high water mark of Erie Canal can be removed</td>
<td>211-20</td>
</tr>
</tbody>
</table>

Table 3: Zoning Requirements

The International Building Code has requirements for building height, square footage and types of construction.\textsuperscript{37} These requirements depend upon the type of building occupancy that is being constructed or renovated. Some of those types include institutional, residential and assembly. The design for the children’s hospice facility is an R-4, which is a residential building. R-4 is described as a “Residential Group R-4

occupancy [that] shall include building structures, or portions thereof for more than five, but not more than 16 persons excluding staff, who reside on a 24-hour basis in a supervised residential environment and receive custodial care.” The proposed children’s hospice facility has only ten patient beds and therefore meets the occupancy requirements.

Within the R-4 group, all types of construction meet regulation standards. In the proposed facility, type IIIB was chosen because it has rigid requirements, making the building safer in the event of a fire. With type IIIB, exterior walls contain non-combustible materials, but the interior walls do not need to be non-combustible. Type IIIB holds a higher rating than the typical Type V wood construction found in most residential homes.

Table 4 lists building code requirements for the height requirements for R-4, type IIIB construction. Table 503.4 in the International building Code sets 75 feet is the maximum allowable height. The proposed building will be 14 feet in height. Table 504.4 sets the maximum number of stories for R-4, type IIIB construction at four. The proposed building will have one story. Finally, table 506.2 establishes the maximum building area for this type of facility at 64,000sf. The proposed building will be 6000sf.
### Building Code Requirements

**Use/ Occupancy:** R-4, 5-16 residents; Children’s Hospice Center- 10 residents  
**Selection of Construction:** Type IIB

<table>
<thead>
<tr>
<th></th>
<th>Required</th>
<th>Located- International Building Code</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Building Height</strong></td>
<td>75 feet</td>
<td>Table 503.4 Allowable Building Height in Feet Above Grade Plane</td>
</tr>
<tr>
<td><strong>Building Stories</strong></td>
<td>Maximum 4 stories</td>
<td>Table 504.4 Allowable Number of Stories Above Grade Plane</td>
</tr>
<tr>
<td><strong>Square Footage</strong></td>
<td>Maximum 64,000sf</td>
<td>Table 506.2 Allowable Area Factor in Square Feet</td>
</tr>
</tbody>
</table>

Table 4: Building Code Requirements
Architectural Program of Requirements

Location

This proposed children’s hospice center is intended as a space for children who require end-of-life care. The facility will maintain a welcoming atmosphere in a comfortable, home-like space. Families can visit the center knowing their children have access to vital medical care. In addition to medical services and a home-like environment, the facility will have the added benefit of being situated in a scenic location: the proposed building incorporates views of the Erie Canal and extends the space outside with a large patio that includes views of the Canal.

The location of this children’s hospice center on Ridgeway Avenue in Rochester, New York has many opportunities for development with very few constraints. The main constraint of the location is the approximately nine-mile distance between the proposed building in Greece and Golisano Children’s Hospital in Rochester, NY. However, the proposed building is less than one mile from Unity Hospital. Families can still feel secure knowing that should a situation arise, medical staff at Unity would be available.

The proposed facility has several opportunities:

- The building will occupy part of the property to allow for growth;
- The property overlooks views of the Erie Canal;
- As a ten bed facility, the building will be relatively small and intimate;
- The building design will incorporate outdoor space;
- The building design will include space for families to sleep in the room with their children.
- The town of Greece has many restaurants and shops within a ten mile radius;

**Design Concept**

In “Hospice and the Spatial Paradoxes of Terminal Care,” Brown discusses the need for hospice facilities to blur the lines between home and hospital settings. In a hospital, patients do not have a “central space.” Medical necessities, meals, recreation, and grooming are usually interwoven into a single space: the patient’s bed with attached bathroom. By contrast, in a home, the central spaces may be the living room and kitchen, which are separate from other spaces, such as bedrooms and bathrooms.

The proposed facility draws on this concept, shown in figure 24, by using “play spaces” as the core to separate the home wing with patient rooms from the hospital wing with medical rooms. The goal is to maintain the medical spaces at a distance to

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ease anxiety in children.

The programming of the facility itself is divided into private, semi-private and public spaces. Private rooms as shown in table 5 are spaces intended for patients and their families: patient’s bedroom and bathroom, interfaith chapel, examination room and therapeutic room. The patient bedrooms, with their own ADA accessible bathrooms, are intended as individualized home-like spaces for the patient and visiting family or friends. The interfaith chapel is for family and friends to reflect and pray. The examination room is for medical checkups and the therapeutic room is a space for children to relax in a large tub.
Semi-private spaces as shown in table 6 are spaces that are closed off to an extent, but also are open for visitors to observe. These spaces include the reading nooks, conference room, nurse’s station, and administration offices. The reading nooks are spaces for the patient to be able to go and read. The conference room is a meeting space for medical staff, facility staff, or families. The nurse’s station includes desks for the nurses, one of which is positioned toward the patient rooms to allow for maximum observation. The administration offices are for the staff department heads and include a

Private Rooms

<table>
<thead>
<tr>
<th>Room Name</th>
<th>Description</th>
<th>Number of Rooms</th>
<th>Square Footage</th>
<th>Total Square Footage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Room</td>
<td>All will have a bed for the patients and a bed for the family members to be able to stay right in the room.</td>
<td>10</td>
<td>120sf</td>
<td>1200sf</td>
</tr>
<tr>
<td>Patient Bathroom</td>
<td>All patients will have their own ADA bathroom.</td>
<td>10</td>
<td>50sf</td>
<td>500sf</td>
</tr>
<tr>
<td>Interfaith Chapel</td>
<td>A room that has a few pews for people to come in and be able to pray no matter what religion they are</td>
<td>1</td>
<td>300sf</td>
<td>300sf</td>
</tr>
<tr>
<td>Examination Room</td>
<td>A room that has an examination table and a table with a computer for the doctors and nurses to us. There will also be a color body outline tool.</td>
<td>2</td>
<td>100sf</td>
<td>200sf</td>
</tr>
<tr>
<td>Therapeutic Room</td>
<td>A room with two therapeutic tubs for children.</td>
<td>1</td>
<td>200sf</td>
<td>400sf</td>
</tr>
</tbody>
</table>

Table 5: Private Rooms
shared office for visiting doctors.

**Semi-Private Rooms**

<table>
<thead>
<tr>
<th>Room Name</th>
<th>Description</th>
<th>Number of Rooms</th>
<th>Square Footage</th>
<th>Total Square Footage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Nooks</td>
<td>A smaller room that contains beanbag chairs and couches for a more serene atmosphere. It will have bookshelves to hold the reading material.</td>
<td>4</td>
<td>50sf</td>
<td>200sf</td>
</tr>
<tr>
<td>Conference Room</td>
<td>Meeting room filled with a conference table, chairs, a projector and a screen.</td>
<td>1</td>
<td>100sf</td>
<td>100sf</td>
</tr>
<tr>
<td>Nurse’s Station</td>
<td>A centrally located station that includes a medicine cabinet, storage and laundry.</td>
<td>1</td>
<td>300sf</td>
<td>300sf</td>
</tr>
<tr>
<td>Administration</td>
<td>A room located by the entrance. This space has doctors offices, and human resources directors offices. A window is also placed adjacent to the waiting room for people to find out where their loved ones room is.</td>
<td>1</td>
<td>300sf</td>
<td>300sf</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total 900sf</td>
</tr>
</tbody>
</table>

Table 6: Semi-Private Rooms

As shown in table 7, public rooms, located in the building’s center, are open to everyone. These include the music room, play room, art room, waiting room, common bathroom, family dining room/kitchen, and the greenhouse. The music room has chairs and tables for patients along with different instruments to play. The waiting room is a large open space where families can inquire about their children. The common bathrooms are ADA accessible. The family dining room/ kitchen area allows families to eat and prepare meals together. The greenhouse maintains vegetables and fruits grown
for use in the facility.

**Public Rooms**

<table>
<thead>
<tr>
<th>Room Name</th>
<th>Description</th>
<th>Number of Rooms</th>
<th>Square Footage</th>
<th>Total Square Footage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Room</td>
<td>A colorful room that will have multiple musical items.</td>
<td>1</td>
<td>300sf</td>
<td>300sf</td>
</tr>
<tr>
<td>Art Room</td>
<td>Colorful room that includes craft tables and lots of storage to hold the craft supplies. There will also be pinup walls to hold the artwork and a small sink.</td>
<td>1</td>
<td>300sf</td>
<td>300sf</td>
</tr>
<tr>
<td>Play Room</td>
<td>A large room filled with multiple toys and tables to play games on. The flooring will be something soft so that the kids can be comfortable playing on the floor.</td>
<td>1</td>
<td>400sf</td>
<td>400sf</td>
</tr>
<tr>
<td>Waiting Room</td>
<td>A room located near the entrance that has seating.</td>
<td>1</td>
<td>200sf</td>
<td>200sf</td>
</tr>
<tr>
<td>Common Bathroom</td>
<td>A bathroom located centrally.</td>
<td>2</td>
<td>50sf</td>
<td>100sf</td>
</tr>
<tr>
<td>Family Dining Room/ Kitchen</td>
<td>A large room with tables for families to all be able to eat together. This will include the kitchen right in the space so they can cook if they would like.</td>
<td>1</td>
<td>400sf</td>
<td>400sf</td>
</tr>
<tr>
<td>Greenhouse</td>
<td>An outdoor place that attaches to the kitchen so that the food can be grown all year long and can be cooked in the kitchen</td>
<td>1</td>
<td>200sf</td>
<td>200sf</td>
</tr>
</tbody>
</table>

Table 7: Public Rooms
Space Requirements

The program of spaces for the proposed facility was based on information gathered from existing hospice centers in the United States as well as childhood mortality rates. As shown in figure 25, in 2011, 375 children between the ages of zero and fourteen passed away. 204, or 54 percent of these children succumbed due to an illness. To determine the number of patient rooms in the proposed facility, I divided the number of children who died from illness by the number of counties in the Finger Lakes region. Dividing 204 by 7 yields 29 needed rooms. The proposed facility would be the third facility in the United States. Therefore, I chose to begin with ten patient rooms with the understanding that the building could be expanded to accommodate more rooms should the need arise.

Each patient room in the proposed facility will have its own unique theme, although children will not design their own rooms as is done at TMC Children’s Hospice. Similar to TMC and George Mark Children’s House, rooms will be large enough to accommodate family members staying overnight.
Table 8 describes the design’s room placement. The black boxes represent rooms that must be adjacent to each other. Boxes with diagonal lines represent rooms that should be in close proximity to each other but not necessarily adjacent. The white boxes represent rooms that do not require close proximity, and the gray boxes represent rooms that utilize the extra space.

Figure 25: Leading Causes of Children’s Death in the Finger Lakes Region
On-site amenities

The proposed facility will host an on-site chapel similar to those in TMC Children’s Hospice and George Mark Children’s House. Although the proposed facility will not have a formal garden similar to those at TMC and George Mark, the building is situated on acreage that overlooks the picturesque and soothing Erie Canal.
Additionally, the proposed facility does not include a formal bereavement suite similar to the other children’s hospice centers, but it will have a conference room that can be used for that support. The proposed design includes a large family-style dining area. This design did not include a kennel, but there is space to add this space in the future should staff express a desire for one.
6.0 - Design
Site Design

As noted in chapter 5, the children’s hospice site design adheres to the zoning requirements for the Town of Greece’s NY Zoning Code, which requires maintenance of vegetation up to 100 feet away from the Erie Canal. To satisfy this, the building was set back from the canal as seen in figure 26. Figure 27 shows a section of the site and demonstrates the building’s placement with the land’s topography. As evidenced in the image, there is not much slope on this property until one moves closer to the Erie Canal.

Figure 26 also shows the winding driveway as it continues through the site leading into a drop-off loop outside the entry canopy of the building. This drop-off loop provides a space for cars to pull close to the entrance to drop off family members. Each side of the driveway includes a parking lot. The staff parking lot on the right leads to the driveway on the medical side of the building where patients can be transported in and out. Family members and friends use the parking lot on the left.

As seen in figure 28, the winding driveway lined with trees creates a meandering path toward the building that helps to slow visitors and encourages them to enjoy the views. The path also reduces heat island effect. When dark colored pavement such as asphalt absorbs the heat from the exposure to the sun throughout the day, it creates an area of higher temperatures. The shade from the trees aids in preventing this by shielding the dark pavement from the sun’s rays.

The large windows in figure 28 represent the public rooms; this idea comes from
the large windows that accompany homes with great rooms. The smaller, private rooms have windows similar to those in a bedroom. The windows that face the courtyard allow enough natural light to filter in due to the building’s U-shape.

Figure 26: Site
Exterior Design

The exterior of the building shown in figure 29 was designed to look like a large house and blend in with the other buildings on the semi-residential street. The exterior materials all work to create the illusion of a home as opposed to a hospital. The roofline of the facility is a gable roof, which resemble a typical roof line of a house. The building’s siding uses lap siding, board, and batten siding, and the additional stone base. Blue- and gray-colored siding work to create a calming and inviting effect. The wood canopy in the entryway, as shown in Figure 30, continues this effect and acts as a contrast to the blue and gray siding. The canopy also extends to the edge of the driveway to shelter patients and visitors as they enter the building.

Figure 29 also shows how the U-shaped building and the resulting increased perimeter allows for more vegetation and garden space. The U-shape design with a courtyard in the center was a result of working within the confines of the zoning laws that restricted the building’s distance from the Erie Canal. The U-shape allows views of the Canal from every room. In addition to its views of the Canal, the U-shaped building design also allows for equal amounts of natural light in each of the patient rooms.

Bump outs on the exterior of the building between patient rooms shown in figure 31 add dynamic features to the façade and help separate the patios. The bump outs also translate to the roof design, acting as dormers to create a higher roof line. The taller roof lines allow for taller walls and windows, leading to more daylight in spaces that serve
as reading nooks.

The patient room patios connect to the courtyard and the playground as seen in figure 32. The playground is constructed with rubber mulch and the courtyard includes a patio constructed using permeable pavers, which allows for water to be absorbed back into the ground. Planting beds serve as privacy screens for patient rooms on the building’s east side while the greenhouse is located on the west side.

Figure 32 also shows the chapel, constructed with a stone façade and located in the back of the building to maintain the front’s residential appearance from the street.
Figure 27: Site Section

Figure 28: Main Entrance
Figure 29: Exterior View
Figure 30: Entryway
Figure 32: Site - Playground
Interior Design

This proposed children’s hospice design incorporates a soothing exterior along with calming and playful interior spaces to create a home-like feel. As shown in figure 33, the U-shape building has both physical and psychological functions. Physically, it creates a gathering space, provides views of the Canal to all patient room, and separates the hospital spaces from the play spaces. Psychologically, the separation of medical and play spaces helps decrease anxiety in the young patients. Within the entry spaces as shown in figures 33 and 35 is the waiting room, which resembles a large living room with comfortable seating and high ceilings. This waiting room links with a large administrative space, where staff members greet visitors and process patient information. The waiting room as shown in figure 33 also has views of the family dining room, exterior play spaces and the greenhouse. The result is a seamless view from inside the building to the exterior, to create an illusion of being outdoors.
Figure 34: Floor Plan
Figure 35: Waiting Area
The family dining room includes two dining room tables and a full kitchen. The dining tables encourage interaction and shared support amongst families. Families may choose to cook for themselves or enjoy food prepared by an on-site chef. A greenhouse located directly outside the family dining room provides fresh vegetables and fruits “from farm to table.”

The activity areas are located near the waiting room to act as a barrier between the home-like and medical spaces. The music and playroom are closest to the waiting area. The playroom is enclosed by a glass wall. Figure 37 shows that at 4’-0” the glass is colored to act as a privacy barrier for children. The playroom also opens to an outside patio that leads to the playground. Connecting these two spaces creates the impression of a seamless flow from interior to exterior. These spaces are farther away from the patient rooms to keep noise level at a minimum.

Figure 34 shows a floor plan of the home-like spaces on the building’s left side. The nurse’s station, painted purple to promote compassion, is an open space with a main desk at the end of the hallway to allow views of all of patient rooms in the corridor. The nurse’s station includes a laundry room, storage, and all necessary supplies.
As shown in figure 38, each patient room has its own theme such as Clifford or Curious George. The theme continues throughout the room but a main feature is the large mural above the bed’s headboard. These themes were chosen because they remain favorite children’s picture books due to their bright colors and universal themes. They provide the younger children with a comforting, cheerful atmosphere. The older children’s room may have themes incorporating oceans or sports.

Shown in figure 39, the patient rooms open to a patio so that each patient has a personal exterior space that they can enjoy. Figure 39 shows the rooms oriented east to west to allow for ample sunlight. Reading nooks or storage facilities constructed between the patient rooms provide an extra sound barrier, which is shown in Figure 37. The patient rooms incorporate uneven doors; a single door opens to allow traditional room entry while a smaller, secondary door allows access for medical equipment.
Figure 36: Building Section 2 through Patient Rooms to Play Ground

Figure 37: Building Section 3 through Medical Room to Patient Rooms
Figure 38: Patient Room Rendering
The circulation design in figure 40 demonstrates the successful delineation between the home and hospital sides of the building shown earlier in figure 21. The diagram in figure 40 shows how children will travel throughout the facility. The blue lines represent the circulation for play and the green lines represent the circulation for care.

As seen in figure 40, the right side of the building houses the medical-like spaces such as examination rooms and therapeutic tub rooms. Figure 41 shows the examination room, typical of a pediatrician’s office with an exam table and a counter with a sink for the doctor and nurses. This room is decorated with a lively graphic on the wall to make it welcoming.

The floor plan in figure 40 also shows the entrance/exit at the end of the hallway of the examination rooms. This door is intended for transporting from the facility children who have passed away. The chapel, located on the same side of the building, functions as a space for reflection and prayer as well as a funeral space.

The proposed facility as shown previously in figure 27 is capable of expansion since currently it occupies a small piece of the property, and this facility potentially can offer both transition and respite care. This design can serve as a reference for future facilities. By promoting it through publications, stories from patient families, and hospital associations, this proposed facility can become known and referenced in future
hospice designs as a basis for design and information in the United States and other countries in an attempt to improve much-needed children’s hospice care and children hospice centers.
7.0 - Conclusion
Within the United States only two children’s hospice centers exist. Sadly, the number of children who would benefit from these centers has risen. As more children require end-of-life care, there is a greater need for an end-of-life facility that combines the comforts of home with the medical needs of a hospital to accommodate these children and their families. In an effort to meet these needs, this thesis reviewed prominent children’s hospitals located around the eastern United States, focusing primarily on Golisano Children’s Hospital in Rochester, NY. With the dearth of children’s hospice centers in the eastern United States, the need for one is significant. Building a center in the Finger Lakes region and establishing a relationship with a children’s hospital such as Golisano would be greatly beneficial to all parties involved.

Deciding to build a children’s hospice facility is only the first step in meeting the needs of terminally-ill children and their families in the Finger Lakes region. The next step is to design a center with medical facilities that still exudes a welcoming atmosphere for children. The proposed building is a residential design situated in a residential area with on-site amenities that offer a home-like environment.

The interior was designed so that the children could enjoy the living and play spaces without the anxiety of viewing the necessary medical equipment and facilities. Amenities such as reading nooks with large windows for natural light and seating for comfortable lounging, as well as spaces for play, art, and music help to inspire creativity and provide children with therapeutic support. On-staff nurses ensure that
children’s medical needs are met and a house chef supports the children’s nutritional needs in their private rooms or in the family dining room. All these aspects combine to create the ideal children’s hospice; families can take comfort knowing their children will receive end-of-life care in a welcoming, home-like center with space to live and play and a medical staff supported by doctors at nearby hospitals.
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