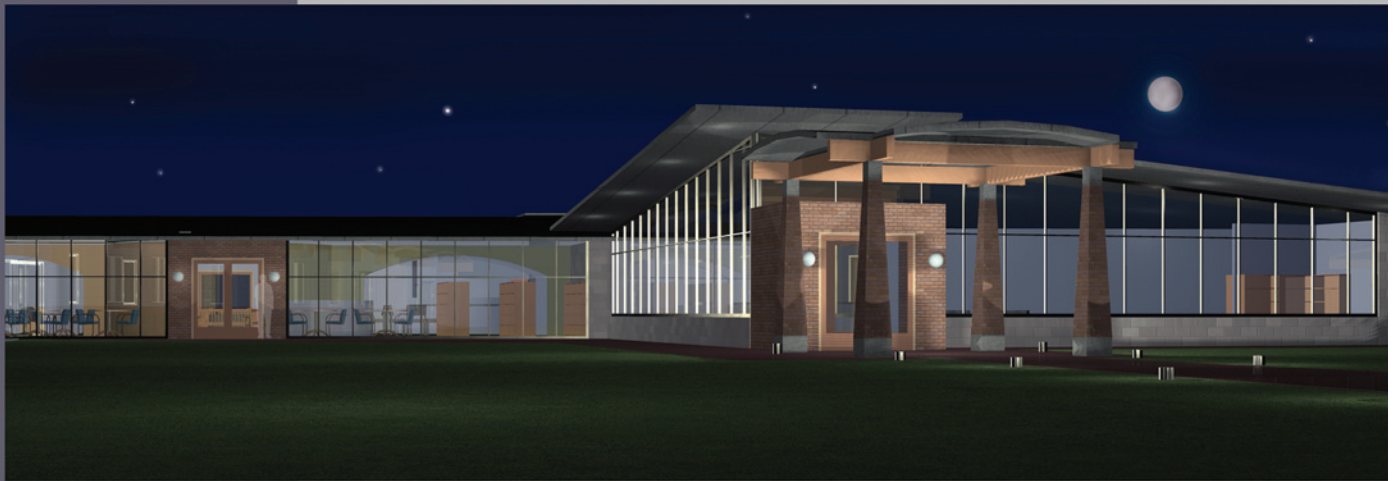


EMBRACED: A LIVING COMMUNITY FOR PEOPLE
WITH ALZHEIMER'S DISEASE
DULUTH, MN



“IT IS NOT THE YEARS IN YOUR LIFE, BUT THE LIFE IN YOUR YEARS
THAT COUNTS.”

-ADLAI STEVENSON

AN UNDERGRADUATE THESIS DESIGN BY: ANDREW DAHLQUIST

EMBRACED: A LIVING COMMUNITY FOR PEOPLE WITH ALZHEIMER'S DISEASE

A Design Thesis Submitted to the
Department of Architecture and Landscape Architecture
of North Dakota State University

By
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In Partial Fulfillment of the Requirements
for the Degree of
Bachelor of Architecture

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Fargo, North Dakota

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Thesis Abstract

--EMBRACED--
**A LIVING COMMUNITY FOR PEOPLE WITH
ALZHEIMER'S DISEASE**

Thesis Abstract

The project typology is a residential care/assisted living community. The project will examine and evaluate the process of spatial sequencing through the progression of human life and disease.

The project is located in Duluth, Minnesota, a city growing in age. Located on Skyline Parkway, a road filled with beautiful views and a natural beauty, the site offers a very calm and serene setting for the residents.

The project will cover just over 70,000 square feet on a lot approximately 300,00 square feet in size.

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Statement of Intent

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**A LIVING COMMUNITY FOR PEOPLE WITH
ALZHEIMER'S DISEASE**

Project Typology

The project typology is a residential care/assisted living facility.

Theoretical Premise

The thesis will examine the process of spatial sequencing through the progression of human life and disease. Design metaphors, analogies and or tectonics will be developed from the examination.

Project Justification

The success of developing a well-designed special care unit relies on the philosophy and dedication of the staff and their relationship to the residents. The environment provides a context to support the program, allowing the residents to live as long as possible and live with dignity.

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Proposal

The Narrative

Alzheimer's disease is the most common of dementia disorders, affecting as many as four million Americans. Alzheimer's disease, or AD, is a progressive, degenerative disease that attacks the brain and results in impaired memory, thinking and behavior. Alzheimer's disease is the fourth leading cause of death in adults, after heart disease, cancer and stroke. Alzheimer's is not judgmental as both men and women are affected almost equally.

Embraced: A Care & Giving Centre for People with Alzheimer's disease is a proposed environment for patients who suffer from Alzheimer's disease. Patients are given the opportunity to live as independently as possible within a safe and comfortable environment that becomes home to them. Because Alzheimer's is a disease that affects memory loss, physical design of living spaces is integral to a balanced life. Alzheimer's disease breaks up a person's intellectual functioning and judgment and eventually effects the day-to-day functioning of the afflicted patients. The disease is surprisingly common but often unrecognized or undiagnosed in its earlier stages. As a person develops Alzheimer's their short term memory dissipates with their long term memory shortly thereafter. By the latest stages of Alzheimer's, the patient most likely won't be able to recognize immediate family members or even themselves.

There are four main stages that victims with AD go through. I call these people victims because that is what I feel they are. They are victims to a horrible disease that currently has no remedy. As they go through life their identities are taken and ultimately the disease will take their lives. Through further examination of these four stages, design strategies and metaphors will be drawn to better understand Alzheimer's as a disease and as a design tool. It is not easy to place a patient with AD in a specific stage. However, symptoms seem to progress in a recognizable pattern, and these stages provide a framework for understanding the disease and are also the organization of the project. The facility is meant to be a 'care and giving facility,' not just an 'assisted-living' facility. The thesis will be expressed through multiple care functions combining them into one program or facility.

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Alzheimer's is the most widespread form of dementia and affects millions of Americans both directly and indirectly. It is projected that the number of Americans with Alzheimer's disease could more than quadruple to 16 million by mid-century. An estimated one in ten persons over the age 65 and nearly half of those 85 and older have Alzheimer's disease. Although Alzheimer's disease is not a normal part of aging, the risk of developing the illness rises with age and is becoming more prevalent each year. Current research from the National Institute of Aging indicates that the prevalence of Alzheimer's disease doubles every five years beyond age 65. As our population ages, the disease impacts a greater percentage of Americans. The number of people age 65 and older will more than double between 2000 and 2030 to 70.3 million or 20 percent of the U.S. population; likewise, those 85 and older will rise two-fold, to 8.9 million, according to the U.S. Census Bureau. The facility will be intended to house these persons affected by the disease. When Alzheimer's is discovered in people, the results have a dramatic influence on more than just the afflicted patient.

Approximately one to four family members act as caregivers for each individual with Alzheimer's disease. Caring for family members with AD is extremely taxing on a family and very time-consuming. It can also be a tough experience to witness first-hand. Creating a facility that helps give these patients the special attention they need is a formidable, yet reassuring solution for those families who simply cannot care for that family member.

The main goal of this project is not to ultimately find a cure for Alzheimer's, but to simply care for those who have been affected by this terrible disease both directly and indirectly. Understanding what Alzheimer's is, how it affects people, and how to improve life for a person with Alzheimer's through architecture is also an important goal for this project. Designing one overall solution is not conceivable either, but to create comfortable environments is a more likely aspiration. There is no one specific design that works for all settings or all residents; but much can be achieved by utilizing guidelines to develop creative approaches to meet the needs of residents with Alzheimer's disease.

User/Client Description

The facility will house multiple functions. The usage of the facility will be for both the affected patients and their partners and also will be used by practicing officials who specialize in Alzheimer's care. The care facility will be planned for a long-term care setting and is a process that begins with the development of a specific and sensitive need for care. The ideal environment that will be attempted to reach is designed to enhance care by creating a warm, bright, and cheerful 'homelike' atmosphere, and by including wandering spaces, special lighting designed to eliminate shadows and wall-coverings that serve as a reminder of a more home-like setting. Functionality is the key factor when developing a special care unit, and thus many if not all of the spaces need to be personalized to make them more comfortable for the users.

Other users of the facility include the administration and clinical parties. The administration will be responsible for organizing and setting up appointments with potential residents. Clinical workers will work in the specialized care units with the patients who require more attention and caring. There will also be a Research and Development unit within the facility that will conduct tests and assess current residents' status. The users of this unit will also provide any informational sessions that people not familiar with Alzheimer's may request.

The facility will be privately funded by an Alzheimer's organization that is based either in the state or from a national organization. A strong organization is the Alzheimer's Association which is a national organization and has a Minnesota-North Dakota chapter. The mission of the Alzheimer's Association of Minnesota-North Dakota is to improve the lives of all individuals, families and care partners throughout their journey with Alzheimer's and related diseases by providing leadership, support, education, advocacy and research. The facility will house about 80-90 residents with about 60-70 units. These units will be divided up into the three sections of the facility and the patients will be placed in a unit after an evaluation of their condition.

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Major Project Elements

The facility's major project elements are similar to those of a normal assisted living centre, with the exception of the specialized care units for the Alzheimer's patients. Here is a breakdown of the different types of units that are included within the facility and also all of the functions that coincide with that unit. The administration unit has multiple functions including the business and clerical offices, administration offices, records and admitting, volunteers' office and also a conference space. The clinical unit includes spaces for the reception area, a waiting area, examination and consultation space, medication lab and offices for psychiatry, neurology, therapy and counseling. Other spaces within the clinical unit include equipment rooms, meeting rooms and a delivery space. A smaller yet equally important unit is the education and research unit. This unit includes offices for a director, researchers and assistants. There will also be an area for clerical, computing and filing operations.

Although there is no cure for Alzheimer's as of yet, there are ways to slow its growth and the over-taking dominance of a person's brain. Thus, many of the residents are on medication and a pharmacy unit will be included within the facility. The pharmacy unit will include a reception and waiting room, drug information and conference center, and both preparation and storage services. A large portion of the facility will include spaces to keep the patients active and moving throughout the day. This unit will include a reception and nursing station, a lounge and a lobby. Recreational activity areas will have spaces for light activities, heavy activities, a physiotherapy gym, a daily living suite and a quiet room. A pool for water activities may also be included. A greenhouse will also be included for a relaxation area.

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The Nursing or Living unit will be the largest unit in the facility. This portion of the facility will include the living spaces. As mentioned earlier there will be multiple living areas depending on the patient's current status and their dependency on specialized care. There will be individual or one bedroom spaces and also two bedroom spaces. These spaces will be incorporated throughout all of the stages of the living spaces. Other spaces include day rooms, family visiting rooms, nursing room, bathing room, and meeting spaces. The food services unit will include a large dining room, food preparation area and also offices. There will also be a unit that will be considered a social or interactive unit. Spaces within this unit will include a music room, mini-cinema, library, chapel, solarium and a salon. These spaces are encouraging spaces to promote interaction between the residents. There will also be outdoor courtyards and gardens that will be enclosed for the users' safety. Throughout the entire facility, the spaces that will be used most frequently by the afflicted patients will be designed in a manner to appeal to all of their senses in an attempt to stimulate their minds.

Site Information

The Living Community will be built in Duluth, Minnesota. Duluth has an approximate population of 87,000; within a 30-mile radius, the population is 184,134. It is located at the westernmost tip of Lake Superior, halfway between Minneapolis/St. Paul and the Canadian border. Duluth covers about 43,607 acres or about 68 square miles along the Superior shore and inland. The altitude ranges from 605 feet (at Lake Superior's shoreline) to 1,485 feet above sea level. Duluth's terrain is very rocky and there are many bluffs and cliffs throughout the city. The city is actually built into a steep, rocky cliffside. It is highly regarded as one of the top Midwestern small cities, based on livability. Duluth was originally settled by the Sioux (Dakota) and Chippewa (Ojibwa) tribes. It was claimed for France in 1679 by Daniel Greysolon, Sieur du Lhut and was once home to more millionaires (per capita) than any other city in the world.

The city's industries include tourism, healthcare, financial/banking, mining, paper, communications, education and shipping. Tourism is a very strong economic impact for the city of Duluth. Approximately 3.5 million tourists visit Duluth each year accounting for \$400 million in economic growth. There are over 4,200 hotel rooms in the city with over 50 restaurants in the downtown area. There are also 23 city parks, sculpture gardens and rose gardens located throughout the city. The city's harbor welcomes over 1,000 ocean-going and Great Lakes freighters annually. Interlake cargoes of iron, coal and stone combine to make this the top volume port on the Great Lakes with a total of \$250 million in annual economic impact. Despite Duluth's industrial and shipping impact on the environment, 'State of the Air 2002' placed Duluth among the top ten metropolitan areas in the United States with the least smog pollution according to data released by the American Lung Association from EPA air quality index research.

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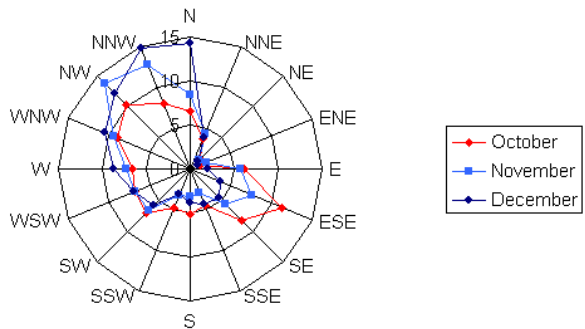
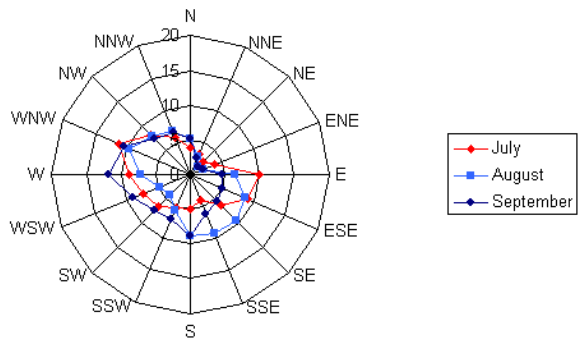
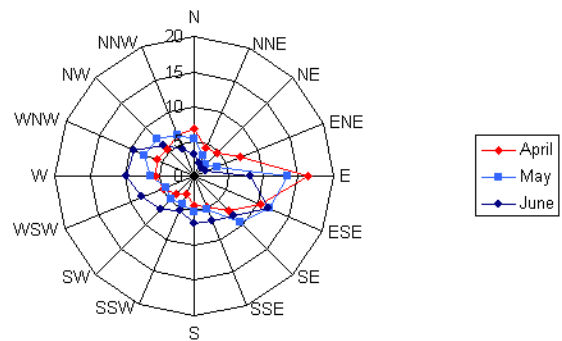
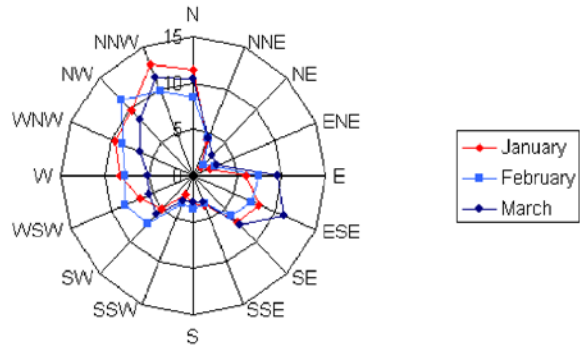
Duluth is also home to many higher education learning environments including the College of St. Scholastica, the University of Minnesota Duluth, Lake Superior Community College, Fond du Lac Community College and across the bay, the University of Wisconsin-Superior. With as many schools as there are in such a small city, it helps keep the city young and vibrant. Traditionally, the city is one of the older cities in the state. The physician population is over 4,000, meaning that one of every seven residents with a job is employed in healthcare. Duluth is also rated first in the United States for quality healthcare in communities of its size.

Being located right next to the largest freshwater lake in the world, Duluth tends to get a lot of precipitation. The annual precipitation for the area is about 30.0 inches with an annual snowfall of about 77.6 inches, much of which is from 'lake effect snow.' The temperature also reaches extreme highs and lows throughout the year. The average low temperature in January is about -2.2°F, while the average high temperature in July is about 77.1°F. The city sees about 77 days of sunshine per year and about 187 days out of the year are very cloudy or overcast.

The prevailing winds vary throughout the year, but at the same time stay constant overall. During the winter months, the wind comes mostly from the Northwest, while the wind comes from due West and due East in the spring and summer months.

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Seasonal Wind Roses



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The demographics for Duluth are pretty typical of most cities in northern Minnesota. The average age of residents in Duluth is 35.4 years old with about 51.7% of the population being female and 48.3% being male. About 15% of Duluth's population is over the age of 65. The average number of family members per family is about 2.8 people with the average household income of \$33,766. Approximately 92.7% of the city is of Caucasian decent and only 1.6% being of African American decent. Approximately 2.44% of the population is Native American and the remaining population is made up of Asian and Hispanic decent. There is a very strong ancestry relationship to Eastern European countries and Duluth; current Duluth ancestries are: German (23.5%), Norwegian (16.8%), Swedish (15.2%), Irish (10.6%), Polish (7.1%), and English (7.0%).

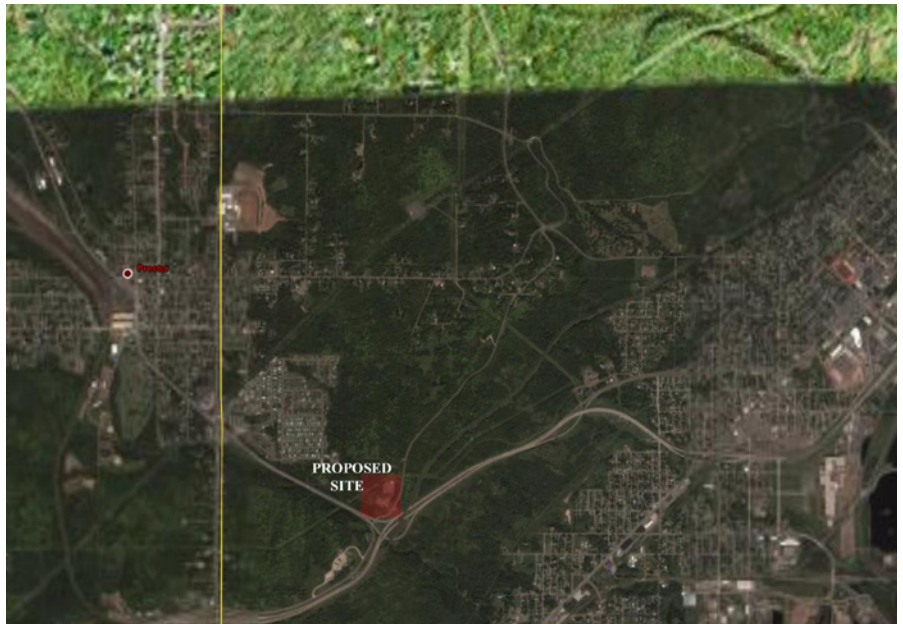
More specifically, the site is located along Skyline Parkway. Skyline Parkway is a 30-mile scenic road that runs east and west through the more rural portions of Duluth offering great views of the city and a beautiful natural environment. The specific site location is located at a busy intersection with Skyline Pkwy and Highway 2 converging at this point. The site is located just above I-94 and the height differential helps to act as a noise buffer, offering a more quiet and relaxing place to live. The site is located at 46° 45' N latitude and 92° 11' W longitude with an approximate elevation of 1,000 ft. above sea level. The site is fairly large and covered with a lot of brush, trees and natural vegetation. There is a natural slope heading south with a change in elevation of about 20 feet over the length of the entire plot of land which is about 600 feet. The southern most part of this land will be the main site used for the facility.

The site is very important and is a key area for public access, natural beauty and views. It is important for the patients to feel they are in a safe place and a place that will make them feel comfortable. If the site were located downtown, many of the inhabitants may feel nervous or apprehensive. However, with the site being located in a more natural setting, the inhabitants have the opportunity to embrace nature and experience the outdoors without feeling nervous or scared. The site, enveloped in a rather deeply wooded area, offers a quiet and pristine feel also allowing the residents to possibly see many animals including deer and moose that often wander through Duluth's neighborhoods.

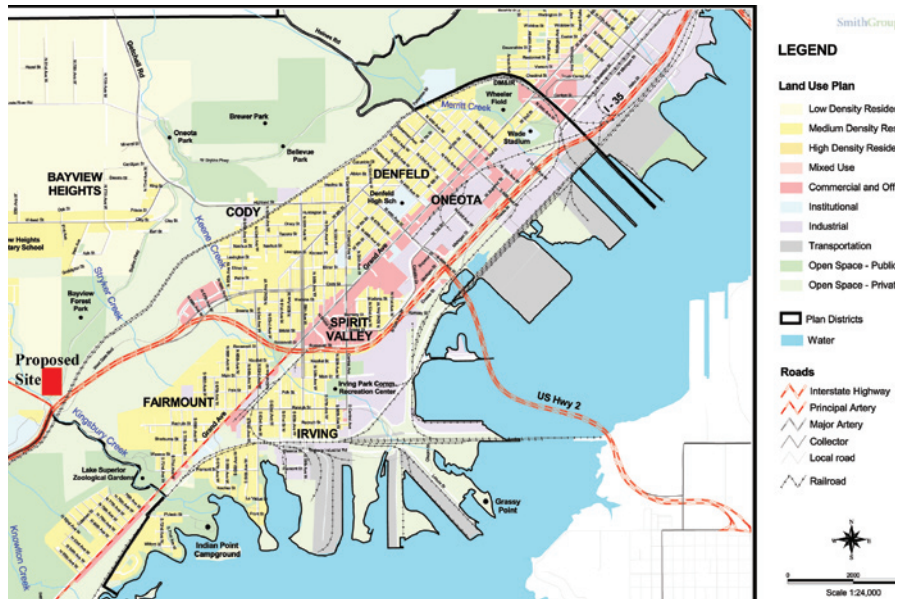
The site is currently land that is classified as 'industrial' according to the Duluth City Council. The site is currently being used as a small storage space for a tractor and a small amount of iron. Surrounding the site is more unused land and a hiking trail. The site is also fairly close to some medium and high-density residential units. Local trails are also nearby to the site offering an outdoor experience to those residents who will be permitted to leave the facility with others. The site is also completely surrounded by the streets that carve out this interesting piece of land. From the entrance of the site, views of the harbor and neighboring Wisconsin forests are visible.

Physical aspects that are currently unknown about the site at this point are the types of vegetation, geology, soils, hydrology and also the history of the site and its immediate surroundings. Upon further research and development of this site, these physical aspects of the site will become available.

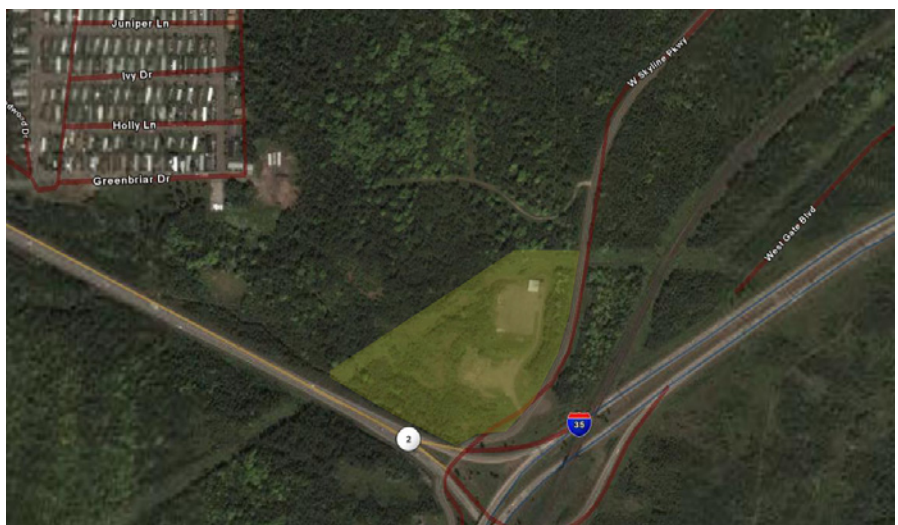
Site Maps



City of Duluth



Duluth current land use



Proposed Site

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Site Images & Views

Site Entrance



Looking West



Looking North



View to the East



View to the Southeast



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View to the Southwest



Natural Eastern Boundary



Northern Site



Eastern Boundary-Skyline Blvd.



Southwest Boundary-Hwy 2



Project Emphasis

Creating safe and habitable spaces is a major focus for this project. Beyond that there are other aspects that the project will focus on. Alzheimer's is a very strange disease and there is not a lot of knowledge available when it comes to how this disease is developed and continues to break down a person's brain and functioning skills. This project will attempt to examine and understand the inner workings of Alzheimer's disease and its processes. What is known about Alzheimer's is that it attacks a person's memory very hard and quickly. Names, dates and places first start to be forgotten. Soon it becomes faces and simple things like what a person was doing at that time. Eventually, just about everything is wiped from their memory and the person becomes so dependent on full-time supervision, they can't survive without it. Simple tasks that are often taken for granted like getting dressed, combing their hair, eating and brushing their teeth all become tasks that take a great deal of time and concentration. A focus of this project is to try and slow this process down. Creating spaces that may offer childhood memories or places that may remind them of places they knew when they were young is crucial for this project.

Another examination that will occur in this project is the development of a Clinical facility. On-site diagnosis, treatment and help will offer a complete environment for the residents and their loved ones. The development of this portion coincides with the rest of the facility in a way that it offers comfort and stability for the residents knowing they are in a complete facility that can take full care of them at all times.

A Plan for Proceeding

The approach that will be taken from here on out will be a mixed method approach. There will be both quantitative and qualitative data research involved throughout the research process. It is a personal goal to learn as much about Alzheimer's as possible throughout this project. Using the knowledge I gain from the research and the knowledge from other sources, designing a facility that encompasses all of these goals and more will become much more easy.

The qualitative data will include information about causes, preventable measures and current medication resource of Alzheimer's. Current case studies will be examined and analyzed to depict current strategies that are being used in this design for this type of healthcare unit. Intensive research through books, archives and journals will provide and in depth look at Alzheimer's as a disease. Interviews with experts on Alzheimer's and people who work with these patients daily will provide invaluable information that could not be obtained from books, but only from personal experience. Any personal or direct observation of this type of facility will also prove invaluable.

The quantitative data will mostly come from current periodicals that offer real-life statistics that ground the seriousness and relevance of this project. Other data that may be gathered and become useful includes the results from tests and measurements conducted on people with Alzheimer's. These results may show the effects of certain design criteria or may have a direct correlation to criteria that should be met throughout the design process. These results will further help to understand the overall nature of Alzheimer's and how it can be tamed through design.

The design methodology for the facility will be derived from both graphic analysis and a language based analysis. The graphic analyses will illustrate matrices and organizational charts that support or reject ideas for the involvement of the users with the spaces within the facility. This type of interaction methodology provides a good understanding of the necessities within a program and its overall direction. Graphic analysis helps play a key role in the understanding of spatial relationships. Spatial relationships are very important in this type of project since the users will be having so much contact with other users of the space and also the care givers. The language based methodology will most likely be based from phenomenology. With the nation growing in age and so many people approaching their 60's, or just before Alzheimer's usually appears, from the baby-boomer generation; assisted-living facilities are becoming more and more prevalent and through the examination of these spaces and the events that have led up to this time, viable conclusions can be reached for designing a facility of this nature. These facilities are becoming very useful and are changing the attitude and perception of what a 'nursing-home' used to be.

To visualize and create as many design ideas, methods and processes throughout the project, and to also incorporate all of them into one design that will create a unifying whole, there will be a lot of documentation along the design process. Rip and tear models, 3D modeling tools and sketches will be very important pieces to the entire design process, not just the preliminary design phase. Note taking will also be used to explore the design process and the deeper meaning behind Alzheimer's.

**Proposed Schedule
of Work**

- Week 1 (Oct. 31-Nov. 6): Finalize Site analysis
Meet with primary-1
- Week 2 (Nov. 7-Nov. 13): Case Study research
- Week 3 (Nov. 14-Nov. 20): Case Study analysis
Meet with primary-1
- Week 4 (Nov. 21-Nov. 27): Program Draft due
- Week 5 (Nov. 28-Dec. 4): Finalize Program and analysis
Meet with primary-1
- Week 6 (Dec. 5-Dec. 11): Final Program due
- Week 7 (Dec. 12-Dec. 18): Winter Break-Continue research
- Weeks 8-11 (Dec. 19-Jan. 8): Winter Break-Continue research
Meet with primary-1
- Week 12 (Jan. 9-Jan. 15): Begin Schematic design
- Week 13 (Jan. 16-Jan. 22): Schematic design
Meet with primary-2
- Week 14 (Jan. 23-Jan. 29): Organizational layout of spaces
- Week 15 (Jan. 30-Feb. 5): Organizational layout
Meet with primary-2
- Week 16 (Feb. 6-Feb. 12): Site design
- Week 17 (Feb. 13-Feb. 19): Structural
Meet with primary-2
- Week 18 (Feb. 20-Feb. 26): Structural
- Week 19 (Feb. 27-Mar. 5): Interior development
Meet with primary-3
- Week 20 (Mar. 6-Mar. 12): Interior development
- Week 21 (Mar. 13-Mar. 19): Spring Break-Look for job in NY
Meet with primary-3
- Week 22 (Mar. 20-Mar. 26): Façade and exterior development
- Week 23 (Mar. 27-Apr. 2): Begin production drawings
Meet with primary-3
- Week 24 (Apr. 3-Apr. 9): Production drawings
- Week 25 (Apr. 10-Apr. 16): Finish production drawings
Meet with primary-3
- Week 26 (Apr. 17-Apr. 23): Finalize boards
Meet with primary-3
- Week 27 (Apr. 24-Apr. 30): Thesis Exhibit-Begin Book
- Week 28 (May 1-May 6): Thesis Reviews-Continue Book
Meet with primary-1
- Week 29 (May 7-May 11): Finalize Thesis Book-Graduate

Goal	Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Site Analysis		■																												
Case Study Research			■																											
Finalize Program				■																										
Continue Research					■																									
Schematic Design						■																								
Spatial Organization							■																							
Site Design								■																						
Structural									■																					
Interior Development										■																				
Spring Break																														
Exterior Development																														
Production Drawings																														
Finalize Boards																														
Thesis Book																														

Previous Studio Experience

Second Year:

Fall-Milt Yergens:

Creating a Wall
The Bistro

Spring-Bakr Aly Ahmed:

A Centre for Children
Edinburg, North Dakota-Trinity Lutheran Church
Addition
NDSU Hotel

Third Year:

Fall-Mohamed Elnahas:

A Linking Bridge
Art Center
Moorhead Cultural Center-Romkey Park

Spring-Steve Martens:

Fluid Motion Centre
Confluence Masonry Building

Fourth Year:

Fall-Harold Jenkins:

The Forum, Rome research
Role of the Block
Christopher Alexander research
St. Paul research booklet
St. Paul W 7th St. Urban Design

Spring-Darryl Booker:

San Francisco Hybrid Highrise Design
NDSU Downtown-Marvin Windows

Fifth Year:

Fall-Ganapathy Mahalingam:

On the Verge of Echoes
Rivulets of Equal Fathom
Volumes of Heat
The Space of Visual Desire
Nestling in the Mother

THEORETICAL PREMISE RESEARCH

Architectural Sociology

Does the designed environment have an effect on the individual experiencing it? What is the relationship between the environment and the individual? Architectural sociology approaches these questions in examining how architectural forms both influence and react to sociocultural phenomena. Buildings are a large part of everyone's world and the interaction and human experience that takes place within these structures is a study that is strongly overlooked.

For some architects there are major gaps and disconnects in the process of creating humanized spaces for people and in creating meaningful places for organizations. By spreading the knowledge of this emerging field and educate sociologists and architects on the benefits of working together, we can better connect people to their designed environments and encourage interaction among the users. The ultimate realization of this field is to realize that the person in the building is just as important as the building itself.

Architectural sociology is the application of social theory and methods to the architectural design process. It provides quantitative and qualitative research tools to anticipate how designs impact people on a variety of levels. Much of today's emphasis is put on aesthetic appeal and in the images often shown in magazines, there are very few images of the users in the building. Does this mean that architects are only concerned about their designs as works of art? Is there a limited interest in the human response to their designs? Architectural sociology addresses the purpose of architecture as it relates to our society.

In practice, architectural sociology builds upon social design theory and uses research methods such as survey research, Internet research, interviewing, field observation, secondary data sources and modest measures. By observing people in their natural setting, they can provide clues for the architect on how social interaction occurs in various settings. Many strong areas to focus on include classrooms, meeting rooms, office spaces and pedestrian walkways. In all of these settings, human interaction is key to the success of the spaces design. Good designs allow these users to interact freely and provides an undisturbed setting that allows the users to carry on with their usual patterns. Poor designs discourage interaction and may make the users feel uneasy. Sociology informs architecture in all phases of the design process, including the pre-design and programming, design, construction and post-construction phases.

A particular area of interest on this topic is that of senior design concerns. By engaging studies that review data on the social characteristics of a community and gauge future growth patterns, a conceived plan can be achieved. As designers, we must see the potential impacts of our design decisions on the seniors before it is even constructed, including how the space can support social interaction. In this way, sociology, in considering the individuals within the social setting, enhances the architectural process.

Architecture and sociology will continue to inform each other. Architectural sociology will remain viable because it addresses questions such as what the buildings we construct say about us as a society. Sociology has a huge contribution to make to a new way of thinking in architecture and sociology will also further expand upon some of its theories as a result of this work.

Architecture, Patterns and Mathematics

As architecture has overcome a dramatic change over the past two decades or so, so has its relationship with mathematics. Today more than ever, there is less emphasis on the foundation and use of mathematics in architecture. Architecture students are no longer required to have a mathematical background. This is a reoccurring theme throughout much of our society, as there has been a dramatic decrease in interest in mathematics among students in general. This is however; rather ironic considering the digital movement architecture is now moving towards. With such a deep base of technological advances in the design world, much of the mathematics used to develop the current software is the only mathematics often involved throughout the design process.

Mathematics is a science of patterns, and the presence or absence of patterns in our surroundings influences how easily we are able to grasp concepts that rely on patterns. Some of the most pure designs and patterns are influenced by mathematical phenomena found in nature. We know that our surroundings influence not only the way we think, but also our intellectual development. If we are raised in a world that does not rely on mathematics or patterns, are we depriving ourselves of the ability to generate pure forms and patterns? Does this anti-mathematical society decrease our ability to grasp mathematical concepts within the realm of design? Although the answer might not be visible, it is easy to see the effects of a pattern-less environment on the human mind.

The mind perceives connections and interrelations between concepts and ideas, then links them together. Mathematical theories explain the relations among patterns that arise within ordered, logical structures. Architectural patterns represent one of the few primary contacts with mathematics. Tilings and visual patterns are a 'visible tip' of mathematics. Oriental carpets and floor pavements in Western architecture are also visible types of mathematical rules for organizing complexity.

A strong supporter of patterns in architectural design is Christopher Alexander. By collecting architectural and urban solutions and putting them into the 'Pattern Language,' he has provoked a new type of architecture; one that relies almost solely on patterns. Alexandrine patterns represent solutions repeated in time and space, and are thus similar to visual patterns transposed into other dimensions. Creating a focus on lighting, entrances and privacy, Alexander has scribed a new order in which a design becomes more important through its usability rather than through its visual appeal.

Although patterns may not be entirely visible through a plan, perceivable patterns on building facades, walls and pavements act as links to the floor plan pattern. Symmetries on a building's plan are not always observable, even if the structure is of an open plan. A user has to reconstruct a building's plan in the mind; it is perceived intellectually and establishes visual patterns which have the strongest emotional impact when they are immediately accessible.

Mathematics is a science of patterns. Architecture and mathematics have gone their own ways throughout time; but the ideas that are related to the two subjects can influence our everyday life and way of thinking to a remarkable extent. In a time when mathematics is becoming less popular, it is having a tremendous effect on the design world and must be utilized to fully appropriate a useful design.

Morphology and Design

Architectural design is interrelated with morphology. Morphology is the study of pattern and form and is crucial to design because it constitutes an essential part of its body of coherent knowledge. An attempt to expand the research capabilities was introduced through Space Syntax, which has evolved as a theory and a design method by Bill Hillier. The aim was to explore how space syntax can make a contribution to architectural research and design. Comparing the relationships between existing buildings and their effects on the users are key types of research involved in Morphology. Morphology can take place throughout the design as spaces begin to evolve and carry on significance to the building's type. This type of design can be coined as 'strategic design choices.'

Strategic design choices describe the way in which a designer's solution space begins to evolve along an underlying morphological trajectory at a very early stage in the design process. In the case of an urban project this might be a decision to extend and build on the existing street grid or to interrupt and distort it. In an elderly housing project, this could be a choice between two elementary spatial gestures like enclosure or exposure and integrating shared amenities with people's individual flats or to separate them. This strategy can also be incorporated into high rise design by designing an open, fluid interior or one that is subdivided and compartmentalized. Having selected a morphological trajectory, the designer can allow the consequences to emerge as the design evolves in response to site-specific, environmental, structural and programmatic constraints.

A thorough study was conducted on the relationships within a healthcare facility and more specifically the relationships between older people within sheltered housing. The relationships studied included: doctors, nurses, therapists and receptionists and their patients; patients while they were waiting to see the doctor; and the different categories of health care professionals who made up the community team. In the case of sheltered housing, the older people's flats are formally analogous to the doctors' surgeries and the communal areas to the waiting areas. As with health centers, different strategies for organizing the building emerge out of the way in which these functions are related together. The design choices emphasize different strategies for the inhabitants and staff. These relationships help distinguish priorities within the facility and how the users interact and respond to their surroundings.

The creative interplay of intellect and intuition is considered in relation to how morphology can help to clarify strategic design choices early on in the design process. The importance of briefing and evaluation are also stressed as essential ingredients that will enable space syntax to fully demonstrate its ability to create intelligent spatial relationships.

There are three main issues that must be fully understood in order to promote an architecture that is well-mannered, organized and collaborates around morphology. The first issue is defining the client as the ordinary user of the building. The second being engaging in evidence based research and lastly developing an ethical framework for design. Once these components are reached Spatial Syntax and morphology can be achieved through architecture.

Phenomenology, Place and Architecture

Phenomenology is the interpretive study of human experiences. The aim is to examine and clarify human situations, events, meanings and experiences 'as they spontaneously occur in the course of everyday life.' This definition however is considered very vague; as it is believed there are as many styles of phenomenology as there are phenomenologists. For architects, research emphases relate to the nature of environmental behavior and experience, especially in terms of the built environment. Particular interest for architects include: why places are important for people and how architecture and environmental design can be a vehicle for place making. There are many aspects within phenomenology but the aspects that will be touched upon include: lifeworld, place and home.

Lifeworld refers to the unstated context, tenor and pace of daily life to which normally people give no reflective attention. The lifeworld includes both the routine and the unusual, the mundane and the surprising. Typically, human beings do not make their experiences in the lifeworld an object of conscious awareness. Rather, these experiences just happen, and people do not consider how they happened or why they happened. There is no more thought put into these experiences other than that of what happened. The 'natural attitude' is the term by which the phenomenologist identifies the corresponding inner situation whereby the person takes the everyday world for granted and assumes it to be only what it is. In this mode of attention and awareness, people accept the lifeworld unquestioningly and rarely consider that it might be otherwise. This concept emulates that people's understanding of the world is that we are immersed in a world that normally unfolds automatically.

One significant dimension of the lifeworld is the human experience of place, which continues to be a major focus of phenomenological research. It has been said by the philosopher Casey that 'place, by virtue of its unencompassability by anything other than itself, is at once the limit and the condition of all that exists. Place serves as the condition of all existing things. To be is to be in place.' Casey emphasizes that place is a central ontological structure of being-in-the-world partly because of our existence as embodied beings. The physical form of the human body provides us all within our own place and recognizes our bodily movements, gestures and routines.

Another important aspect of the lifeworld is home. Home is another way in which the situation of people immersed in the world is often expressed existentially. Home has many different meanings and orientation. Studies that have been conducted in the past have found that home can mean family or language. Returning to a place you have not been in a long time can trigger memories of 'home.' Referring back to a language that has not been used in many years can trigger memories of 'home.' 'At home people always speak to each other in a particular way; an accent comes from somewhere else; when away from home we hear the sound of words.' (Phenomenologist Winning).

As with lifeworld and place, home as an experience presupposes and sustains a taken-for-granted involvement between person and world. This bond is largely unself-conscious, and the phenomenological aim is to make that tacit-ness explicit and thereby understand it.



At&T Building
Philip Johnson



Portland Building
Michael Graves

Post-Modernism

Post-modern architecture is a counter reaction to the strict and almost universal Modernism of the mid-20th century. It reintroduces elements from historical building styles, although usually without their high level of detail. Common features include columns, pyramids, arches, obelisks, unusual or attention-getting shapes and roof lines, and combinations of stone and glass on the façade. The movement largely has been a reaction to the orthodoxy, austerity and formal absolutism of the International Style.

Classic examples of modern architecture are the Lever House and the Seagram Building in commercial space, and the architecture of Frank Lloyd Wright or the Bauhaus movement in. Post-modern architecture has also been described as 'neo-eclectic,' where references and ornament have returned to the façade, replacing the aggressively unornamented Modern styles. The contrast between Modernism and Post-modernism is very strong and one usually chooses one side or the other. Modernist architects regard Post-modern buildings as vulgar and loaded with pointless extras. Post-modern architects often regard Modern spaces as soulless and bland. The basic aesthetic differences reach down to the level of the tectonicity of architecture, with Modernism rooted in the desire to reduce the amount of material and cost of a structure, and standardize its construction. Post-modernism seeks exuberance in the use of building techniques, angles and references.

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The late 1960s saw a number of changes in attitudes towards Modernism. The cause of these changes included: the free speech movement, student protests, the Vietnam War and Women's Liberation. These accounts forced a change in direction and called for increased awareness of a user's needs. This also led to a call for flexibility in urban and architectural design. New design solutions for tall buildings and minimal living spaces based on technology were molding the Post-modern movement. At the same time there increasingly became a renewed interest in history. Historic preservation became a noble cause. The trend for architects now was to use obvious historical references in their work to create an awareness of the decentralized Modernism movement that had seen the loss of architecture's associative imagery.

Post-modern architecture also concerns the exploration of industrial materials. Creating facades that represent old style architecture and materials that are untraditional and strong in appeal was the new architecture. Post-modern architecture is a critique of Modernism in its revival of historicist detail. Towards the end of what would commonly be seen as the modern era, no one style emerged from Post-modernism. Many sizes and styles of buildings were created keeping in mind the resonance of historical importance and impact.

Today, Post-modernism is a thing of the past although some of the ideas within the movement are kept alive today. Going back to incorporating simple forms such as columns, pyramids and arches are still a common imagery in architecture. Historical Preservation is still a large issue today and is becoming more important in our society as we stretch further into the 21st century. As our country approaches 250 years old, it has become very important to help preserve those buildings that have served an important role in our country's history. Post-modernism emerged during harsh times and has opened our eyes to a revived style of architecture.

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Parc de la Villette
Bernard Tschumi

Deconstructivism within Architecture

The recent development in architecture that is called Deconstruction or Deconstructivism is characterized by drawings, models or structures that emphasize simultaneity and complexity in both the spaces and the forms. The basic elements of architecture are dismantled and the building may seem to have no visual logic. One of the driving forces in the architecture of Deconstruction is the intention of the architect to emphasize the element of time in spatial compositions. One way this is done is through compositions that employ simultaneous systems overlaid in a singular space. It is also accomplished by using forms that are dynamic rather than static. Deconstruction ideas are borrowed from the French philosopher Jacques Derrida.

Deconstructivism became popular in 1988 after a writing by Coop Himmelblau drew much attention. “We don’t want architecture to exclude everything that is disquieting. We want architecture to have more... Architecture should be cavernous, fiery, smooth, hard, angular, brutal, round, colorful, obscene, voluptuous, dreamy, alluring, repelling, wet, dry and throbbing.” (Himmelblau 1988). This phrase taken from his writing describes an architecture that is not subtle or reassuring but rather disquieting. Other architects that shared Himmelblau’s views at the time included Bernard Tschumi, Peter Eisenman, Frank Gehry, Rem Koolhaas and Daniel Libeskind. These architects were/are the leaders of Deconstructivism and have been inspired by the uncanny in their efforts to incite discomfort and unease in their designs.



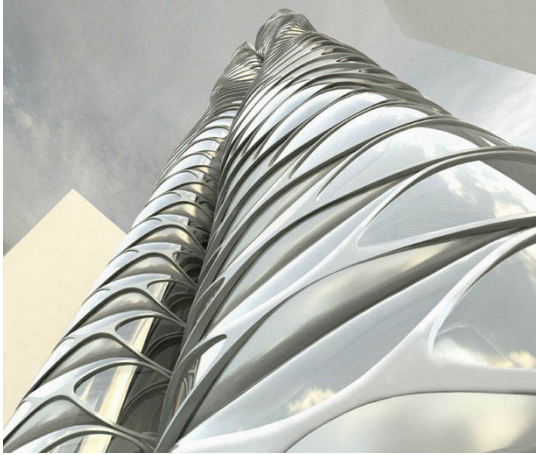
Vienna Rooftop
Coop Himmelblau

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An example of this Deconstructivism is best summarized through Bernard Tschumi's representation of a park through his design of the Parc de la Villette in Paris. He countered the belief that a park is a place where one forgets the city with his interpretation of an 'urban park.' This park was a radical break with tradition as the architect moved drastically away from modernist functionalism. The driving force behind this design can be traced to his 1987 article where he revealed his idea of pleasure in architecture: "My pleasure has never surfaced in looking at buildings, at the 'great works' of the history or present of architecture, but rather in dismantling them." The Parc de la Villette design leaves behind all functionalist ideas and is strictly expressed through the pleasure principle of the architect himself.

Himmelblau is another Deconstructionist that tries to take the theoretical and practical stance of anti-humanism. He attempts this through re-emphasising the bodily experiential aspect of architecture. In the past, the body has been viewed as a source of unity and harmony, whereas Himmelblau views the body as an instance of division, disruption and disintegration. This idea is carried through to the user of the building as he attempts to make the users feel like they are 'placed under threat.' His rooftop remodeling in Vienna is a strong case for this 'body threatening' idealism. A chaotic explosion of lines, it is a strong representation of what the framing of Deconstructivism looks like.

Although it may seem many of these forms are uninspired and illogical, there are underlying principles within this movement that link the ideas, forms, colors and proposed feelings of the buildings. Deconstructivism is a type of architecture that is indirectly related to the majority of what we've seen in the past and at the same time offers an inspiring kind of design solutions.



Residential Tower
Ali Rahim



Guggenheim Museum Bilbao
Frank Gehry

Contemporary & Digital Techniques in Architecture

Today more than ever the digital world is more prevalent in our lives than has ever been seen before. Almost everything we use in a day to day basis has made the shift to digital. Gone are the days of the rotary telephone and the old-style clocks, which told time with two hands and twelve numbers arranged in a circle. Technology has changed and improved our world in so many ways it's hard to imagine a life without all of our technology. This technological shift has also taken part in many professions, architecture included.

This digital revolution is affecting the way we produce drawings and also the way we think about design. Hand drawings and renderings are a thing of the past, yet when you come across one, it has an awe-inspiring ability and beauty to take you in and bring you to a place of the past. Now computer drawings and renderings can be shot out at an amazing rate. Though, is this really a good thing? Has technology embraced architecture so much that we've forgotten our roots and the very fundamentals of design? Or, has architecture embraced technology so much that we've been able to expand our ideas and design spaces and architectural forms that otherwise could not be?

As mentioned earlier, the computer is a subject that draws both praise and debate in the design world. The computer has made it easy to expand our knowledge and create new innovations and inventions. At the same time the computer also makes it hard for us to fall back on the traditional aspects of design and makes us focus more on what the future will bring in terms of digital media. It presents a wide spread of approaches, from architects who incorporate the computer's techniques into their working methods in a more efficient or explanatory way, to practices that are based on the belief that the computer will dramatically change the nature of architecture, in terms of the design process, as well as on the levels of organization and experience. Digital architecture is a way that can help designers better understand and connect the many attempts to establish the computer's role in architecture; it can help make us aware of the many opportunities that exist between and behind design approaches.

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As technology expands its grasp over the 21st Century, so does the information that has become so readily available to us. Information has become one of the most useful tools to a designer, as nearly any project in the world can be easily accessed through the internet. This link has caused us to replace traditional means of mobility with involuntary modes of research. Architecture has freed itself in a way that anything can easily be created through technology, but at the same time, we've limited ourselves to mostly experiencing architecture through a screen. This available information however, has allowed us to transform the nature and intent of architectural thinking and creativity, as digital technologies establish the links between organic and inorganic, real and unreal and lead designers down a path to creating innovative and pure forms.

Together, computers and the information age can work hand in hand to help architecture take its next step into the design world. Many architects including Frank Gehry, Daniel Libeskind, Toyo Ito and Ali Rahim have been influential users of these newly developed technologies. These designers use programs to generate pure forms that are organized and arranged in ways that express the building's nature that has never been conceived before.

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Milwaukee Art Museum
Santiago Calatrava



Burj al Arab Hotel in Dubai
Tom Wright

Sources of Architectural Form

Form: shape, figure, appearance and structure; all of these terms describe what form is. Natural, anthropometrics, culture and geometry are four terms that demonstrate how form is achieved or more specifically, are true sources of architectural form. When discussing the process of creating forms, form is achieved in many ways; however, there seems to be a few inspirations that dominate over others. These inspirations are the language to suggest, create and analyze many architectural forms.

Built forms can be some of the most awe-inspiring features in the world. Form is achieved through many sources, but I will touch on 4 of the very basic, yet influential inspirations for creating forms. To start, natural sources are one of the most prevalent motivations used in the design world. Countless forms have been designed after studying natural aspects of our environment. The airplane was formed and designed after studying the flight of birds. Studying trees and their structural properties have allowed us to 'reach to the sky' through skyscraper design. Spider webs, beaver dams and aquatic creatures have also been natural sources of form in the design world.

Design is also heavily derived from anthropometrics, or the study of human measurement. Anthropometrics is concerned with the measurement of the size and proportions of the human body, as well as parameters such as reach and visual range capabilities. Anthropometrics is present in nearly all things we use every day, from the height and location of light switches to chair angles and proportions. Anthropometrics is an underlying design source for automobiles and equipment for personal spaces. Comfort and durability are the driving forces for anthropometrics. On a larger scale, designing large spaces and links, anthropometrics is used for creating comfortable spaces and forms that are user-friendly.

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Culture is powerfully linked to architectural form. A culture's attitudes, opinions and feelings can all influence form. Design can reflect how a culture communicates and feels about their surroundings. A culture's history or heritage can be expressed through architectural forms. For a culture, a building isn't just a building, it envelops everything they believe and stand for.

The final source of architectural form that seems to be integrated into a lot of designs is geometry. Geometry can be closely linked to nature. The structures and geometry of nature have been evolving for billions of years, yet only the strongest geometrical forms have survived. Like natural sources, geometric shapes can be found in many natural forms and creatures. A strong example is that of the seashell. The seashell is one geometric form that has survived throughout time and can be justified by a simple mathematical equation. Exploring mathematical tools to create geometric shapes such as domes and pyramids, allow us to implement design parameters and create unique architectural forms.

The case could be made that architectural form can come from any source or inspiration. People find inspirations in different places and in different ways. However, I feel that natural, anthropometrics, culture and geometry are four very strong sources of architectural form and can be a strong influence in any design project.

Structuralism

Structuralism is an approach that grew to become one of the most widely used methods of analyzing language, culture, philosophy of mathematics and society in the second half of the 20th century. Structuralism seeks to explore the inter-relationships (the 'structures') through which meaning is produced within a culture. A secondary use of structuralism has recently been seen in the philosophy of mathematics. According to structural theory, meaning within a culture is produced and reproduced through various practices, phenomena and activities which serve as systems of signification. Structuralist architects view design as a process of searching for basic, underlying structures. Within a highly structured or ordered framework, Structuralists often attempt to instill innovation and complexity.

Structuralism in mathematics is the study of what structures say a mathematical object is, and how the ontology of these structures should be understood. Through these mathematical relationships structuralism notes that much of our imaginative world is structured of and structured by, binary oppositions (hot/cold, culture/nature); these oppositions structure meaning, and one can describe fields of cultural thought by describing the binary sets which compose them. Structuralism introduces the idea of the 'subject', as opposed to the idea of the individual as a stable indivisible ego. The term 'subject' foregrounds the relationship between ethnology, psychoanalysis, and semiotics. It helps us to conceive of human reality as a construction, as the product of signifying activities which are both culturally specific and generally unconscious.

Structuralism is a very broad subject and can be used to define structures as a whole in many different ways. Analyzing the subjects that make up our character such as our language and culture will help us define what effects specific types of architecture has on thoughts. Structuralism can be used to study ourselves as beings and the structure that makes up bodies and the routines they go through each day. This brings us to the study of our own realities. Our knowledge of 'reality' is not only coded but also conventional, that is, structured by and through conventions, made up of signs and signifying practices. This is known as "the social construction of reality."

The study of mimesis, that is, of the representation of reality, becomes two things: first it becomes the study of naturalization, of the way in which reality effects are created and the way in which we create a sense of reality and meaning from texts; secondly, it becomes the study of conventions of meaning in texts. The conception of the constructed subject opens up the borders between the conscious and the unconscious. The unconscious itself is not some strange, impenetrable realm of private meaning but is constructed through the sign-systems and through the repressions of the culture.

These viewpoints are important because they allow us to open up our minds and view everything from literature, cultures, people and structures as holistic ideas and reach deep into the very meanings of how they relate to one another. When dealing with architecture, structuralism is important in the way that it can help express structure as an architectural form. Structure is often an underlying principle within a design solution, but Structuralism can help analyze a building's purpose through its structure.

Psychological Impacts on Architecture

The psychology of architecture studies how architectural styles reflect the needs and preferences of people and how different designs mold and shape our behaviors. A proper investigation of cultural, social and personal needs of potential inmates is required before an acceptable design can be made. An effective design should maximize freedom of behavior, mobility and flexibility. Some of the other considerations are possible use and misuse of space and contrasting needs of privacy and socialization.

Training people for effective space utilization and follow-up studies of the effectiveness of various types of designs are necessary. Knowledge of modern points of view regarding how an office, school or hospital should function is essential while preparing a design for the purpose. A detailed knowledge of the kinds of activities and programs and patterns of human interaction that are expected to take place in the type of building is necessary for successful architectural design.

Psychology has a great deal of application in town planning. Studies on how the community works, the psychological needs of the people and their likes and dislikes should be considered while planning the growth of towns and urban centers. Since the environment shapes and limits behavior, proper planning to ensure maximum satisfaction, efficiency and growth is essential. Studies have shown that closeness to elements of nature such as pools, plants and trees makes people more relaxed. Therefore, one of the main considerations of city planners and architects is how to incorporate elements of nature in their designs. It is very common to see streets lined with trees or plazas featuring large waterfalls or pools of water. It is no surprise either that these areas become popular places of congregation throughout the day.

As psychology has its effects on architecture, this is inversely true when discussing the effects architecture and spatial configuration have on psychology. The environments we create can have a positive or negative effect on our psyches. It has been hypothesized that environment influences behavior at several levels. Immediate behavior is a function of the settings in which it occurs. The arrangement of furniture in a room influences the way in which people in the room interact. The arrangement can influence or force interaction and at the same time create a comfortable atmosphere.

Mental illnesses can also be associated with the design of urban areas. Instinctual behavior patterns seem to break down under artificial and overpopulated urban conditions. The incidence of mental illness increases with urbanization. The highest incidence of schizophrenia is at the center of cities. Other psychological issues related to cities include rising crime rates, spousal violence, divorce and illegitimacy. It should also be noted that these characteristics are the direct cause of cities, but are topics that need to be dealt with while concerning urban design.

Psychology and architecture are two ideas that are directly linked and can work together to create better environments. Taking into consideration the behavioral needs and responses of people is a crucial aspect of psychology within architecture. Designing buildings and urban-scapes requires attention and detail to many subjects including the realm of psychology.

SUMMARY & APPLICATION

THEORETICAL PREMISE RESEARCH

Summary

The Theoretical Premise Research has led to many new ideas and conclusions for designing an Alzheimer's facility. The most useful topic was Architectural Sociology. This topic was very influential for this project and offers a lot of reasoning that can be applied to the design. Architectural Sociology is an aspect that I had already considered when thinking about the direction I wanted this project to go in. Creating spaces that are interpretive and dynamic is important especially when these spaces have a social link to them, as many of the spaces within an Alzheimer's facility do.

Psychological Impacts on Architecture is also a topic that is strongly linked to Alzheimer's and architecture. Many designs have an impact on the psychology of people and the way they perceive things or objects. Alzheimer's is strongly associated with psychology and is one of the leading motives for why people believe this disease exists.

Overall, the topics are very unique and all offer different views on extremely different topics. Whether its structuralism, post-modernism or phenomenology, architecture is influenced by many factors and these topics can help to bridge gaps that are often left void when designing spaces that have an underlying purpose.

Application

The knowledge gained from the Theoretical research will prove invaluable as ideas start to filter into the process of my design. I took the most out of Sociology and Psychology and therefore, I would like to implement these topics as strongly as possible within the design. These topics will also help me understand how architecture can shape lives for people who are surrendered to the will of the people that care for them. How can these topics help utilize and create a better standard for living for people with Alzheimer's? This is the main goal that will be examined in order to solve the design problem.

Case Studies

WELLSTEAD OF ROGERS

ROGERS, MINNESOTA

Introduction

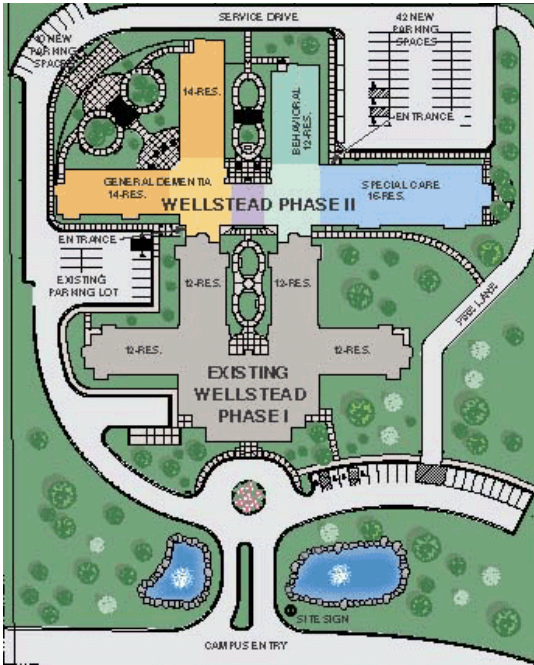
The Wellstead of Rogers is a specialty Assisted Living Residence and was developed in 1998 in response to a consumer demand for excellence in 'Memory Care' for individuals with Alzheimer's Disease or other memory impairments. The facility is located in Rogers, Minnesota on a beautiful 20-acre 'aging in place' campus. Only individuals with a diagnosis of dementia or other memory impairments will be considered for admission. The Wellstead is residential in appearance and function. Care for all four stages of dementia and Alzheimer's are provided at this campus.

Program

The master plan for this campus development incorporates four phases of construction for dementia and Alzheimer's care. Phase I encompasses a 48 resident facility. Phase II construction provides 56 additional resident beds, which includes a 28 resident early stage household, a 12 resident 'behavioral' household and a 16 resident late stage/hospice household. Phase III construction will include an additional 120 dementia and Alzheimer's beds for general dementia, behavioral and late/stage hospice residents. Phase IV construction will offer independent senior apartments and a general assisted living facility to complete this 'aging in place' campus.

Approximately six acres of this 20-acre campus were utilized for Phase I and Phase II construction. Three large secured courtyards with spacious patios, walking paths, flower/vegetable gardens and a barbecue grill are included in the first two stages.

Phase I of the facility includes all of the administrative offices for the 20-acre dementia and Alzheimer's campus and are located at the entrance of the facility. Two 24-resident dementia and Alzheimer's households are incorporated into the Phase I facility. A large secured courtyard with patio, walking paths, flower gardens and barbecue grill are all elements to the design.



Site Plan



Front Entry

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WELLSTEAD OF ROGERS

Phase II construction includes three separate dementia and Alzheimer's households for 56 additional residents. A 28 resident 'early stage' household with a spacious secured exterior courtyard is available for those demented residents who have the highest level of independence and function. A 12 resident special care household, with a secured exterior courtyard, is available for residents who have a combined diagnosis of dementia and behavioral problems. A 16 resident late stage/hospice household is available for residents in Stage 3 of Alzheimer's or those demented residents needing hospice care.



Phase II Layout



Dementia Commons

One of the households is a special care/behavioral household. This structured 12 resident household is designed for demented residents who also have behavioral problems. Many of these residents cannot obtain placement at any nursing home or dementia/Alzheimer's specific care facility because of their behavioral issues. These residents need a more structured and secure environment. Sometimes the only residence option for these individuals is a mental institution or a locked cell with padded walls. We do not believe these options allow these individuals to live with pride or dignity, and we do not believe the quality of life these options provide is acceptable. Therefore, The Wellstead is one of the first dementia and Alzheimer's-specific facility to provide a protective environment for these demented residents, allowing them to live with pride and dignity and a greatly increased quality of life.

The last household is for those residents who are in the latest stages of the disease. This household was specifically designed for demented residents in Stage 3 (last stage) of this devastating disease. This household will also provide the care requirements for demented residents on hospice. Residents of this household will normally require care provider assistance for all of the activities of daily living (often referred to as "total resident care"). The life expectancy of these residents may range from 1-12 months. Many of the features provided in this household were primarily designed for the benefit of family members because the resident's disease may have advanced beyond his or her ability to appreciate these amenities. Our objective is to make this household upbeat and visitor friendly, which will result in greater visitations from family members. The resident to care provider ratio in this late stage/hospice household may be 3 or 4-to-1.

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WELLSTEAD OF ROGERS



Community Center



Sunroom & Den

As visitors enter this household from the lobby, they pass by the residents' "life skills" kitchen where staff and volunteers bake cookies, cakes and/or bread on a daily basis. Adjacent to the center-island is the residents' dining area, which includes dining tables that accommodate two to four residents. The staff nursing station is centrally located to provide visibility throughout the entire household. The Central Park includes a vaulted ceiling with a 24-foot long skylight for enhanced natural lighting.

Eight resident rooms (for a total of 16 residents) are located on each side of the central core (parkway) of this household. The residents' rooms are designed to resemble houses along a parkway or boulevard. Each resident's bedroom (home) has a cedar shake shingled roof, bay and side windows and a mailbox. The interior of these bedrooms is spacious and designed to accommodate additional medical equipment. A common bathroom is located at the back of every two bedrooms so two residents share one bathroom.

For all three 'households,' all resident bedrooms are private and spacious (268 or 288sf) and include a bathroom with shower. Each bedroom includes a large picture window, carpeted floors and a dual nurse call system. Construction for some of these households required the approval of a special construction classification (I-construction rating). This approval provided thicker walls with greater insulation for enhanced noise reduction, windows without cranks to prevent opening, and blinds incorporated within the windows; and other safety features and benefits.

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WELLSTEAD OF ROGERS

Analysis

This facility much like others provides special Alzheimer's care within a unique and separate environment. There are different households for the residents that are in each stage of the disease which helps to differentiate between the residents that need a lot of care and ones that don't need as much.

This facility is unique in many ways. First of all, it is a program that is currently still in the growing stages. When all said and done the facility will include 4 different phases and be one of the most complete Alzheimer's facilities in the country. It is a high class design that incorporates many aspects that help and encourage the residents to live a peaceful and dignified life. Another aspect within this facility that is unique is its layout. Each household is an entity to the entire facility. Each is treated as an actual 'home.' The residents share common spaces such as dining rooms, kitchens, living rooms and unique spaces like town squares, beauty parlors and ice cream shops. Each resident has their own room which acts as their own personal space. Another interesting aspect to the facility is its ability to function almost as a 'city.' Everyday needs are provided for within each household or facility including the outdoor gardens which provides a peaceful environment.

The facility is located near a residential community and next to the major traffic arteries of I-94 and highway 101. The 20-acre site fits well within its environment and context. It is one of the few Alzheimer's facilities located in the Twin Cities and is a very successful design.

The facility shows how incorporating the theme of 'home' really works well for this type of facility. Offering all the amenities and services within the building helps the residents effectively live within their community without worrying about leaving or needing other services. Creating a home environment and incorporating activities that usually require travel is a unique design approach to satisfying the residents' needs.



Icecream Parlor



Townsquare

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CORINNE DOLAN ALZHEIMER'S CENTER

CHARDON, OHIO

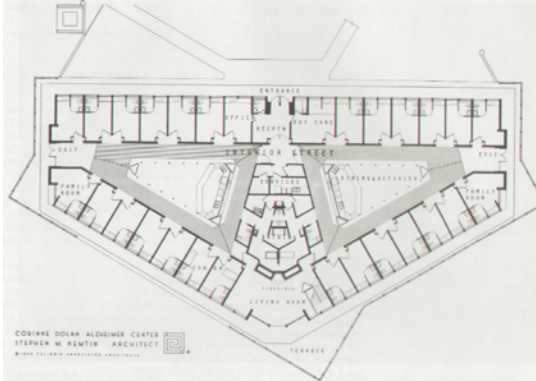
Introduction

Heather Hill is a facility in Chardon, Ohio that encompasses a complete living experience on its campus. The campus includes long-term housing options, short-term rehabilitation centers, a specialty hospital and a living center for patients with Alzheimer's. More specifically, the Corinne Dolan Alzheimer's Center is the facility in which houses patients with Alzheimer's.

Based on philosophy and research centered around person-centered care that supports the individual resident needs by analyzing the needs and desires of the person rather than being defined only by a medical diagnosis. This program includes a clinical process whereby Heather Hill memory specialists are able to discern, record, and monitor the quality of life indicators on an individual basis enhancing and preserving each resident's personhood.

Program

The facilities and environments for memory care residents are developed through research that analyzes the human behavioral needs of residents suffering from a memory loss diagnosis and then surrounding these needs with supportive and user-friendly environmental design. Some of these design innovations that have been copied worldwide include, curio cueing cabinets outside every resident's room so that meaningful resident and family treasures can be displayed to help individual residents find their room, as well as, provide them a feeling of familiarity in a home style environment. Continuous well-defined walkways offer residents opportunities to promenade throughout their community neighborhood while maintaining visual assurance that they are not lost when they are trying to find their room, utilize their bathroom, or see the friendly faces of nurturing staff and neighbors.



Floor Plan



Common Area

EMBRACED

CORINNE DOLAN ALZHEIMER'S CENTER



Bedroom



Personal Entrance

Nourishment Centers have replaced the traditional sterile nursing center providing opportunities for social interaction, ice cream socials, interacting with staff, resident neighbors, family members and visitors. Nourishment Centers have become focal points for neighborhood socialization. There are Nourishment Centers for every 12-15 residents. Resident accommodations are all private so residents and families have their own private space, as well as, semi-private socialization areas. Private accommodations have been found to help increase the quality of life of residents and family members by providing families and residents an opportunity for adequate space to bring their own treasured possessions and furnishings. Private accommodations decrease the opportunity for other residents to go through possessions other than their own. Private rooms also eliminate the anxiety and stress of living in the same room with a stranger.

The memory care facilities at Heather Hill provide higher levels of natural light; specific colors chosen to enhance a sense of harmony for residents and families. Subtle architectural designs in windows and details are incorporated to help residents know that this is their specific home by providing unique architectural shapes informing the resident that this is a place that is familiar and distinctly theirs.

The Memory Care Continuum Program also incorporates equal attention to the design of the outside, as well as, the inside incorporating accessible therapeutic gardens, non-toxic plants, promenade paths, and walkways in a secured natural outdoor setting. The outdoor areas provide residents unique opportunities to enjoy nature during outdoor activities, socializing with other residents, staff, family, and friends.

The internationally renowned Memory Care Program at Heather Hill has a foundation based on years of research and experience. Heather Hill was one of the first memory care programs developed beginning in 1980. We were the first organization in the United States to incorporate Dementia Care Mapping as part of our person-centered care philosophy program.

EMBRACED

CORINNE DOLAN ALZHEIMER'S CENTER

This program developed and implemented in cooperation with Bradford University in England, involves clinical mapping of residents, staff interaction and feedback based on the mapping process; and individual resident care plans developed utilizing this process to foster continuity and maintenance of past life style interests.

The program process has the added benefit of providing Heather Hill employees the opportunity of understanding each resident's life history and the individual personal characteristics that are unique and special to their identify and quality of life. Heather Hill memory care specialists offer residents and families a consistency of personalized care in all of Heather Hill campus wide memory care facilities and programs.

The Memory Care Path Program is interdisciplinary, including team members from dietary, activities, social work, nursing, along with integrative therapy members; which includes dance movement, music, and art therapies. The Memory Care Path Program is reviewed on a regular basis by staff along with resident family members.

The Corinne Dolan Alzheimer Center reflects an environmental response to the special needs of individuals with Alzheimer's disease. Architect Stephen Nemtin of Taliesin Associated Architects, a subsidiary of The Frank Lloyd Wright Foundation of Scottsdale, Arizona, designed the building to maximize independence and improve the quality of life of the participants.

To promote freedom within a secure setting, a two-acre therapeutic park was developed in cooperation with The Holden Arboretum's Horticultural Therapy Department. Therapeutic gardens, park areas, and horticultural programming have been designed to meet the unique needs of Alzheimer patients.

Within the Center are two identical units, each serving 12 residents. Private rooms with picture windows offer each resident an ever-changing seasonal view of Heather Hill's rustic setting. Residents are encouraged to bring a piece of home with them by furnishing their own rooms. Each room opens onto a lofty interior brightened with natural light.



Therapeutic Garden

EMBRACED

CORINNE DOLAN ALZHEIMER'S CENTER

Adjacent to every doorway is an interior walking path. A secure outdoor walkway also surrounds the building. Both are designed to encourage exercise in a safe, controlled environment. Each residential unit focuses on a home activity center and gracious dining area. Participant program groups have access to a number of spaces for activities, including a craft studio.

The homelike plan of each unit is complemented by a cozy family room. In addition, a large living room with a fireplace and a breathtaking view of the surrounding landscape is a pleasant meeting place for families and participants.

Analysis

This case study is very responsive to the needs of the residents. All of the design aspects of the project are focused around the residents and their everyday well being. Social interaction is a key aspect to this facility and this interaction is encouraged through the residents, the staff and the residents' families or guests. A homelike environment is also a major aspect to the design process as the design is noninstitutional, and it is also not 'residential' in its appearance. The facility's location allows the residents to feel comfortable in a serene setting and go outside to enjoy nature. The simple plan allows for easy access to amenities within the facility and permits the users to wander freely in a safe environment. Being one of the first specifically designed Alzheimer's facilities in the country makes this a ground-breaking design and at the same time has remained one of the best facilities for people with Alzheimer's.



EMBRACED

WOODSIDE PLACE

OAKMONT, PENNSYLVANIA

Introduction

Woodside Place has become a national model for environmental design and programmatic care. The building places great importance on the physical environment as an integral part of an appropriate care program for people with Alzheimer's disease. The Woodside Place design process offers numerous insights into how management, operational and care goals were included in design concepts and then translated into the actual building components. A major goal was to remove all institutional routines, allowing residents, to the greatest practical extent, to choose when to eat, bathe and go outdoors.

Program

Woodside Place is composed of three houses, each home to twelve people. The houses are physically connected to a central common area. The building is sited in a three-acre, secure, wandering garden, in which each house has a private courtyard. Each house has eight private rooms with half baths, two couples' rooms, a living/dining room, a kitchen and a residential bathroom and shower. The common area contains a great room as its centerpiece, with sitting areas, craft room, music room and entertainment room. The central building also has a kitchen for meal preparation plus storage, mechanical and administrative areas. On the exterior, the building is composed of several residential-sized volumes that conceal its overall size of 23,000 square feet and has gabled roofs and horizontal siding. The interior design borrows from Shaker and other simple residential motifs, using wood trim, bead-board paneling, decorative fixtures and recessed lighting. The carpet, the wood-grain sheet vinyl and the wall covering were selected to add to residential warmth and comfort.



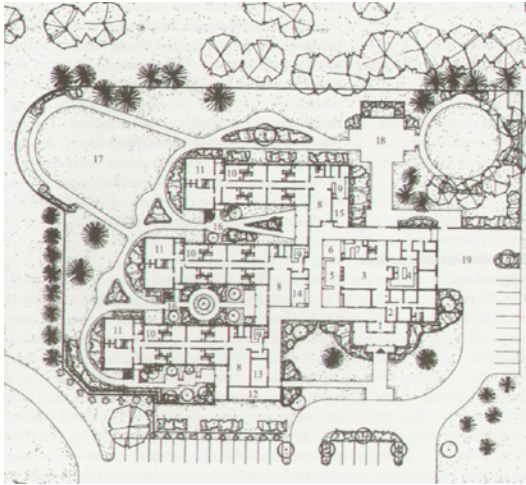
Aerial View



Courtyard

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WOODSIDE PLACE



Site Plan



Kitchen

The facility acknowledges nine design issues: privacy and community, flexible rhythms and patterns, small group size, caregiver and family relationships, engaged wandering, alternative way finding systems, independence with security, focused and appropriate stimulation, and residential qualities. From the use of these design metaphors, research was conducted to see how the residents interacted with their spaces and their neighbors.

Here residents freely socialize among houses, forming friendships and associations. They use common areas of the building as if they are front porches or a town square. Each house developed its own character around the personalities, backgrounds and cultures of its residents and care attendants. The kitchen in each house became the social center and tends to be the locus of homemaking and other domestic activities. The common areas accommodate other public behaviors, such as social walking, watching and visiting.

The research at Woodside Place confirms the desirability of a high proportion of single rooms with private bathrooms. Residents in single rooms have the option of being alone in their bedrooms, but they choose to spend less than 10% of their day there. In general, they frequent spaces occupied by others, such as the main corridor and spaces overlooking circulation areas. More socializing occurs in the main corridor than elsewhere in the facility and thus becomes a primary design component.

The three houses of Woodside Place are a major organizing feature of the facility, a frame of references for staff and visitors. The residents identify with their houses, and some even exert territorial control over their house by trying to keep 'outsiders' from entering. Some people with dementia are sometimes overwhelmed or distracted by large numbers of people or large spaces. Small group spaces, both inside and outside the houses, provide for a variety of small group activities and keep anxiety levels to a minimum for most residents.

EMBRACED



Commons

WOODSIDE PLACE

Wandering; that is movement without apparent purpose, is a common behavior among people with Alzheimer's. Since there is little known about wandering and its physiological reasons for this behavior, it cannot be erased or eliminated. Thus, the facility channels this behavior into an appropriate activity, which must be considered safe by the staff and satisfying to the residents. The environment enhances walking in both interior and exterior places and provides 'familiar' cues to the residents so as to re-establish the residents' place within the facility. Most facilities strongly endorse loop walking paths to eliminate dead ends, which can lead to frustration. Woodside Place integrates rooms into the wandering paths in order to provide activity spaces as destinations for socializing. Wandering is therefore integrated into everyday life.

Analysis

This case study shows many innovative and leading design ideas that are not fully incorporated in other facilities with the same nature. The nine design criteria are underlying design principles the facility uses to create an inviting and secure place. The facilities concept of creating small groups seems to be a viable reason for incorporating three small houses into the overall scheme of the design. It helps to establish a 'home-like' setting with familiar spaces and people.

The domestic qualities of the environment are particularly important for people with Alzheimer's. A residential environment does not replicate an individual's home but rather maintains connections to that which is familiar and comfortable. A residential environment requires careful attention to an overall design and details.

Introduction

Copper Ridge is a continuum-of-care setting for people with Alzheimer's disease in Sykesville, Maryland. It offers adult day care, sixty assisted-living units and sixty-six nursing care beds. Developed by Episcopal Health Ministries to the Aging, the project was meant to provide a noninstitutional alternative to the traditional nursing home while offering a range of support services. The assisted-living unit was conceptualized as three houses, each with two wings of ten rooms, for a total of sixty rooms, surrounding a courtyard and shared public spaces.



Aerial View

Program

Copper Ridge, with sixty residents, tests the outer boundaries of size and is exploring ways to create two separate environments (for forty and twenty residents) in its assisted-living unit. With the joined wings within the facility, it becomes possible for the staff to share responsibilities between these wings. The concept of organizing the building as houses (or wings), with a common activity area, is supported by the research in the way it reinforces public and private zones and allows residents to choose to participate or to withdraw from the community aspects of group living. Refinements in Copper Ridge focus primarily on rethinking activity spaces and where they are located. Copper Ridge's design is different compared to some of the others in the way that its courtyards are connected to the wandering gardens. This 'non-linkage' in other facilities has become a significant missed opportunity in the design of the designated wandering paths.



Entry Lobby

The design at Copper Ridge did take some new design aspects into consideration. The design of residents' rooms was refined to introduce residential amenities, such as wainscot and built-in window seats. The window seat uses minimum floor area and adds seating for visitors, storage and a homelike feature to the rooms. Lighting and furniture were selected to meet the functional criteria and contribute to the residential ambience. Each room is introduced to personal touches, from floor coverings to wall furnishings. The rooms also borrowed the idea of incorporating familiar images or items at the outside entrance to each room to help guide the residents to their own spaces.

EMBRACED

COPPER RIDGE

Copper Ridge provides staff lounge spaces outside of the active resident areas of the building in order to provide a noninstitutional setting. The overall quality and quantity of resident to staff interaction is significantly enhanced by allowing for unstructured activities in which staff lead 'normal' activities within the houses. Dens are provided between houses to provide space for unstructured events.

Communication systems can often be an issue within these types of facilities. Traditional nurse call systems do not serve this population well and are not warranted. Communication systems, however, are useful for staff to reach others and can be simply accommodated through traditional house phone systems with local paging options or more sophisticated pager systems and cellular phones. Security systems that notify staff when someone has left a specific area can be useful, but the first line of defense is an appropriately planned environment. Copper Ridge uses the concept that unlocked exits should lead to other safe, secure areas (inside or outside). Minimizing the number of doors that need to be locked and alarmed was an important design decision. Another important aspect is that the entrance is screened from view for the residents. This allows the visitors to enter and visit the administrative area before entering residents' domain. Screening the view and pulling activity generators away from major entrances simplify security systems.



Site Plan



Sun Room

EMBRACED

Analysis

The design of this facility is the most encompassing of the case studies thus far. The design concepts all revolve around the use of the residents and how they interact with each design element. Integrating the gardens, activity spaces and wandering paths were innovative design concepts that have proven to work quite well and help create a strong contrast along this path. The incorporation of separate gardens also enhances the effect of social interaction. The advances and techniques in security are different in this project than in others. Secure outdoor space is a highly important idea that is used in all designs for elderly living. Communication is always an important aspect to life and especially in assisted living care.

Its important to create spaces that don't limit the residents to the types and amount of activity that can be done throughout the day. Offering plenty of options and varying the types of activities provides life and interaction throughout the facility. Common rooms and activity spaces help with this interaction among both the residents and the staff and also among the residents and family members.

The project fits well within the context of the site and also fits socially as the elderly demographic added approximately 9,000 people in a 113,000 person community at the turn of the millennium. The added care is useful for many people who are now becoming dependent on this type of care.

THE ESSA FLORY CENTER

LANCASTER COUNTY, PENNSYLVANIA

Introduction

The Essa Flory Hospice Center, is Pennsylvania's only freestanding hospice. The Center is redefining the way we care for people during the last days of their lives. Owned and operated by Hospice of Lancaster County, this 32,000 square-foot Center combines two, one-story patient care wings with a two-story administration area. The Center is the base for the organizations county-wide care operations.

Program

The Hospice Center was designed and built around a unique concept - that terminally ill patients deserve a place, which looks and feels like "home" when being at home isn't feasible. A first view of the Center offers hints of home. Its peaked-roof profile and stucco-like walls with dark trim are reminiscent of a pastoral country estate familiar in Lancaster County's agrarian setting. The two patient wings, each with six patient homes, are the centerpiece of the Hospice. All patient homes have the same essential elements: a bedroom, bath, solarium and a private patio. Each group of six shares a living room, and kitchen/dining area. Yet each patient's home has its own personality. Varying combinations of 12 colors, 18 carpet designs and 32 wallpaper patterns individualize every room.

Each wing was positioned to give every bedroom and solarium maximum exposure to the comforting rays of the sun throughout the year. All patios have slatted trellises to diminish harshness, yet still let sunlight penetrate into the rooms throughout the day. Wide French doors allow beds to be wheeled to the patio so bed-confined patients can be taken outside. The loggia, a hallway that connects the patient wings and administration building, serves as a calming patient and family passage area. Its tall windows, painted with large spring flowers, embrace an outdoor courtyard. A softly bubbling fountain adds its voice to this serene setting, where patients and families may use an adjacent meditation chapel or the resource library.



Garden and Entrance



Natural Light Screening

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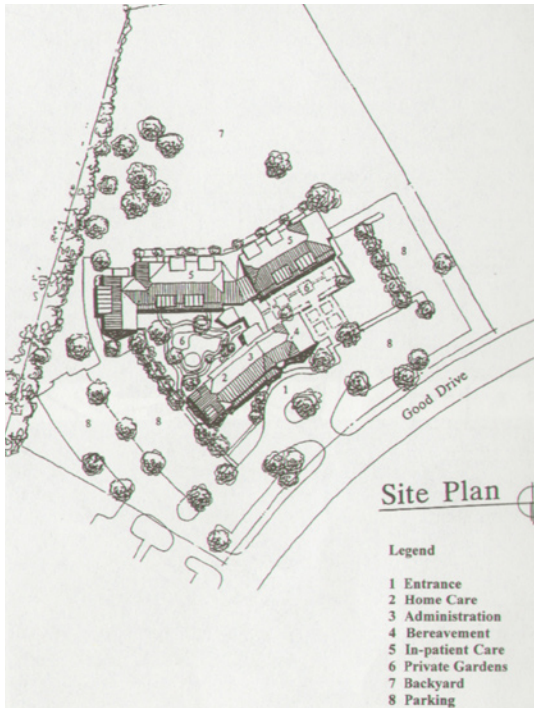
THE ESSA FLORY CENTER

Like other designs that have been looked at, the building was stressed not to emit any qualities of a nursing home, characterized as an environment driven by codes and regulations. It was meant to be a place of contemplation and companionship, a place of light and warmth, a place of love and hope, a place of peace, music, memories and laughter. This building type is much different than the others in the way that the average length of stay for the inpatient unit was to be approximately ten days. Thus, the design needed to be blissful 365 days a year and forget about the changing of seasons.

Hospice is a model of care designed to support the physical, psychosocial and spiritual needs of people at the end of their lives. Its goal is to allow the dying process to unfold with a minimum of discomfort while maintaining the individual's dignity and quality of life. The goal of 'look like, act like and feel like home' was the basis for the project and was established at the onset of the design solution.

Although patient rooms are arranged in a linear format, they are accessed by a sequence of spaces that link one public area to another in an unconventional manner. Through variations in width, height, lighting level and floor material, the corridor becomes seamless and virtually invisible. Much like a residence, the corridor or hall connects a series of rooms unobtrusively, providing views and daylight into internal spaces. In each patient room, an environment was created to accommodate various activities in a number of configurations controlled by the occupant, including solitude, receiving guests, having intimate discussions, dining, sleeping, viewing the outdoors and accessing a private terrace. Views from the bed were carefully considered as to how light enters the room.

The rooms are oriented and trellised to provide direct sunlight when it is more pleasant and to avoid harsh afternoon glare. Each of the two clusters of six rooms share a country kitchen, a living room and bathing area. Like others, the shared spaces were designed to encourage interaction between families, caring staff and the patient.



Site Plan

EMBRACED

THE ESSA FLORY CENTER

Analysis

The Essa Flory Center challenges the very notion of assisted living as a building type and, instead, holds the promise that caring environments can be built within the framework of universal design parameters. Architecture is something we feel. It is the fusion of art and engineering. Good design takes time and patience. This project type takes on a quite different approach to caring design. The later stages of Alzheimer's are a very serious time for the patient and their families. Taking this time seriously and meeting special needs within the design are crucial to making the last couple of weeks special.

The project can be a sensitive subject for many but a good design can help people cope with the actual happenings taking place within the facility. Inventing creative design solutions help natural processes seem a little less painful. The expansion of assisted living has led to multiple models of service delivery that have been developed to meet the special care needs of specific groups of residents, this case being a special type of residents. However, the numerous variations share a similar philosophy.

The design of this facility is a simple combination of planning and orchestrating the purposes of each space. Taking into affect, the personal accounts of the patients, the design effectively uses simple design elements. Incorporating daylighting and pleasant views are elements to a design that can make a world of difference. Also using public and private spaces in a linked matrix or pattern offers the patients to be close to loved ones while at the same time embracing their security and privacy.



Bedroom Entrance

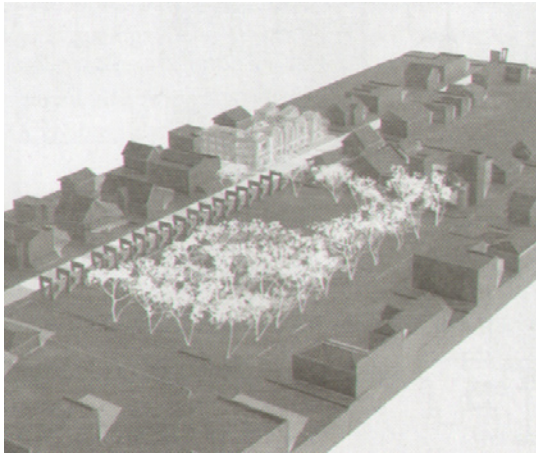
EMBRACED

CORVALLIS ASSISTED LIVING

CORVALLIS, OREGON

Introduction

The following project is a study of the spaces within the complex and the effects of their arrangements, rather than a study of the personal uses of each space. This project is located in Corvallis, Oregon (population 50,000), which is roughly 50 miles south of Portland, nestled between the foothills of the Coast Range and the west bank of the Willamette River. The four-to-six-story historical brick and stone downtown rests at the edge of the river. Eight blocks directly west of downtown, and connected to the town's center by Madison Street, is Oregon State University. Corvallis Assisted Living's site is along the south edge of Madison Street, two blocks west of downtown and diagonally adjacent to the main city park.



Site Context Model

Program

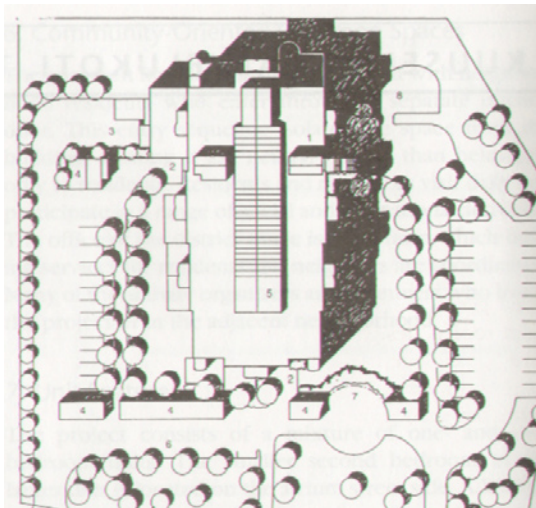
The building itself is approximately 27,000 square feet and is organized to form a south facing courtyard. A larger building wing to the east, facing the city, houses the larger program pieces while bays of two resident apartments are articulated along the north and west facades. A strong corner piece, which houses a public and resident-shared coffee house, addresses the park. Shared spaces include a dining/living room, den, library, breakfast room, activity kitchen, staff office and retreat.

Community-Integrated Sites:

Careful study yielded the chosen site near the heart of the community. Corvallis is located along the main pedestrian avenue, directly adjacent to the main city park and within a short walking distance to the shops and restaurants of the city, the public library, civic center, four churches and a major university.

Personalized Entry:

Apartment entries occur in setbacks from the corridor which act as entry porches looking out to the south-facing courtyard beyond. This affords the placement of small tables and chairs, plants or other personal items.



Site Plan

EMBRACED

CORVALLIS ASSISTED LIVING

Deconstructed Corridors:

The single-loaded corridor is flooded with natural light, due to extensive glazing looking into the courtyard. The brick walls of apartment bays carry through the corridor, creating a pleasing rhythm of masonry spaces along the circulation route. These two conditions transform a typical linear and enclosed corridor into an 'outdoor' room.

Clear Thresholds

The thick and heavy masonry walls of the living bays create clear and powerful thresholds in a number of different places and architectural situations throughout the building. As residents move through the corridor, crossing masonry walls create a rhythm which announces apartment, porches, alcoves and entries.

Separate Living and Sleeping Areas

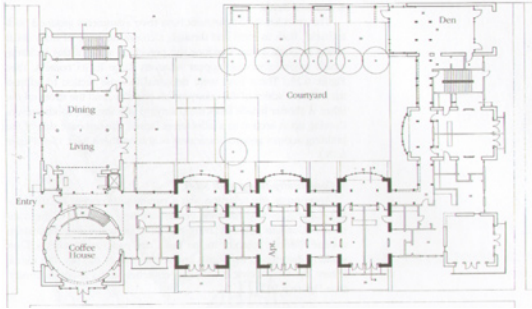
Each resident apartment includes either an ample bedroom alcove or a separate bedroom. The sleeping alcove is separated from the living area by a partial wood 'screen wall' with windows. This affords easy access and adaptable visual connection between the two areas, while maintaining the necessary privacy.

Backyard Realm

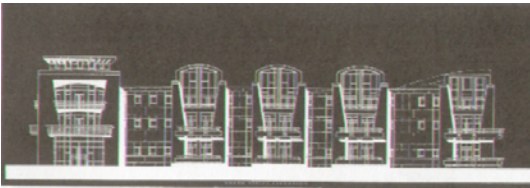
The south-facing, enclosed courtyard provides an outdoor space for residents and visitors to gather and socialize or engage in gardening, outdoor dining or walking.

Private Outdoor Space

Each apartment includes a small yet comfortable terrace off of the living rooms. This accommodates residents who wish to enjoy the outdoors privately and affords casual activity such as sitting and watching the activity of the street and park.



Floor Plan



Elevations

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CORVALLIS ASSISTED LIVING

Useful Kitchenette

Every apartment includes a small, fully equipped kitchenette. This includes a refrigerator, stove, sink, cabinets and counter space. This allows capable residents to prepare and cook meals on their own without relying on the staff to prepare each meal.

Responsive Elements and Hardware

Cabinets, window seats, shelving and other work and rest surfaces were designed to be responsive to residents' diminished abilities to stoop low, stretch far or reach high.

Purposeful Exterior Rooms

A number of themes relating to normal homelike activity were developed in the design of the courtyard in an effort to cue behavior and engagement. The west-facing dining terrace supports summer barbecues around umbrellaed tables. Raised planting beds allow for gardening.

Living Room Activity Spaces

The main space of this project is located at the heart of the facility, adjacent to the main horizontal and vertical circulation routes and near the entry. This room opens west to the courtyard through a series of French doors, becoming the most public and active space fully engaging the yard.

Analysis

This is a strong study that really shows the direct relationship between the indoor and outdoor spaces. This facility incorporated a few more design concepts such as personal balconies and publicly used shops located on the street edge. This study varied in relationship to the others because its design is strictly for elderly people, not just those with Alzheimer's or dementia.

As mentioned, the facility fits extremely well within its surroundings and seems to be a good fit for the urban city. Many of the buildings immediately surrounding the building are useful for the residents. Strongly integrating the usage of public spaces helps give this project a strong identity along with a history for caring for groups of people as individuals.

EMBRACED

KUUSELAN PALVELUKOTI TAMPERE, FINLAND

Introduction

Kuuselan Palvelukoti is an elderly home in Tampere, Finland. The facility houses 43 units with 8 dementia units included in the design. It is a four story housing complex with a large open atrium located in the center of the building. Opened in 1990, the facility uses a mixture of 43 one-bedroom units and 8 group home units, with the most common unit being approximately 500 square feet. Other amenities offered for the residents include a pool, sauna and restaurant.

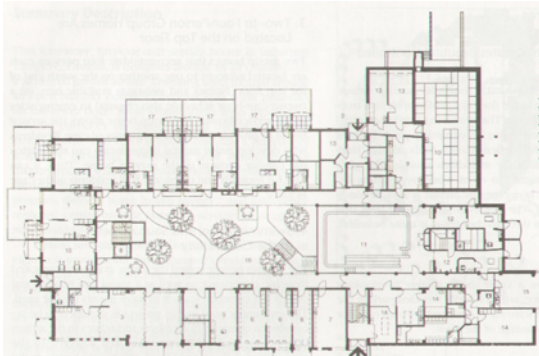
Program

This four story, fifty-one unit service house in suburban Tampere, Finland, is designed around an air-conditioned and heated garden atrium. Dwelling units located around an open balcony corridor overlook plant materials on the lower floor. Small group sitting areas attached to balcony corridors are thrust toward the center of the atrium space. Although not originally part of the overall design, an intriguing addition to this service house was an eight-unit group home for Alzheimer's residents located on the top floor at one end of the atrium.

This group home allows residents who experience major memory impairments to stay within the familiar context of the service house rather than be moved. The location at the top of a hill overlooking a lake is dramatic and beautiful. The restaurant is at one end of the building to capitalize on this view. The entry sequence to the project involves walking by social spaces, which are comfortable 'perches' that overlook the atrium and encourage residents to engage in informal conversations. A kiosk-like building located on this platform provides snacks. It is designed to resemble the traditional dark red, tin-roofed ice cream kiosk found in urban parks in Finland. This activity brings a touch of whimsy to the entry deck while providing a place to purchase snacks.



Entrance



Ground Floor Plan

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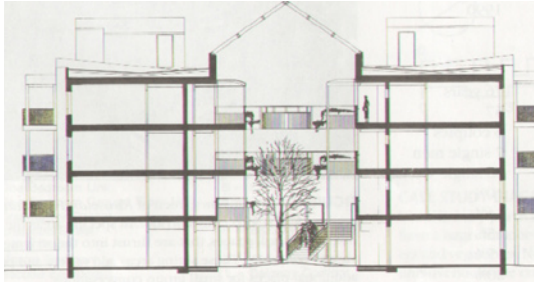
KUUSELAN PALVELUKOTI

Two thirds of the ground floor is a garden with lush tropical landscape materials. The remaining third is an activity platform located above a swimming pool, both of which overlook the garden. The glass atrium roof is designed to open when overheating becomes a problem; however, the atrium is also air-conditioned and heated.

The building is on a knoll above a lake, overlooking downtown Tampere, with a heavily wooded park in the foreground. The restaurant was designed with an outdoor patio that takes advantage of the view. Incorporating these views throughout the facility is an important part to creating a peaceful and enjoyable living center.

Two group homes that accommodate four persons each are located adjacent to one another on the south end of the top floor. The group home allows the service house to provide additional continuity of care. Residents who develop major mental impairments can stay within the familiar context of the service house. Thus, it can care for mentally and physically frail residents as they age in place.

The Finnish people regard the sauna as a therapeutic and hygienic experience as well as a social and recreational one. It is a common feature in most homes for the aged. The swimming pool in this project is designed to be accessible to community members and relates to the atrium in a unique and clever way. Located adjacent to the atrium garden floor, light-level differences between the atrium and the enclosed pool during the day make the pool too dark to see into from the atrium.



Section



Interior Garden

EMBRACED

KUUSELAN PALVELUKOTI

Tables and chairs located adjacent to the entry door overlook the garden below and offer an enchanting area to socialize. Located in the center of the atrium, it receives a full complement of morning and afternoon sunlight. The building is designed to provide services to project residents as well as to older people living in the community. The restaurant and swimming pool are the most substantial shared amenities, but the lower floor contains occupational and physical therapy, barber and beauty shops, a crafts and ceramics studio and a video room.

A small greenhouse window above the kitchen sink projects into the balcony corridor, providing a view of the atrium. Each unit has a door bell and mailbox to clarify its identity as a front door. Residents can personalize their unit by installing their own light fixtures, replacing floor and wall coverings and bringing their own furnishings. Kitchens are L-shaped and designed to be adaptable.

Analysis

The site plays a very important role in this community. The site offers views and relationships to the residents that have not been present in other cases previously looked at. The incorporation of an interior garden is also a fascinating design element seeming how most elder care facilities focused more on the outdoor aspect of green living spaces. With the open atrium in the center of the building, each floor becomes an entity of the building's character rather than limiting the character to a floor-by-floor basis.

Including spaces that are shared by both the public and the residents is an interesting design decision, however, I don't believe this would be successful in most facilities of this nature. The separation between private domain and public realm, most times need to be separate as stated before because of increased anxiety levels.



Interior Garden

EMBRACED

JAN VAN DER PLOEG
ROTTERDAM, NETHERLANDS

Introduction

The design characteristics of Jan van der Ploeg are very similar to that of Kuuselan Palvelukoti. It is a seventy-nine unit garden atrium composed of 67 one-bedroom units and 12 two-bedroom units. The setting is in an urban context in downtown Rotterdam, Netherlands. The study is an interesting use of elderly care design, natural elements and also a housing block all incorporated into one design. The facility opened in 1988 and is still a fully functional steunpunt design project.

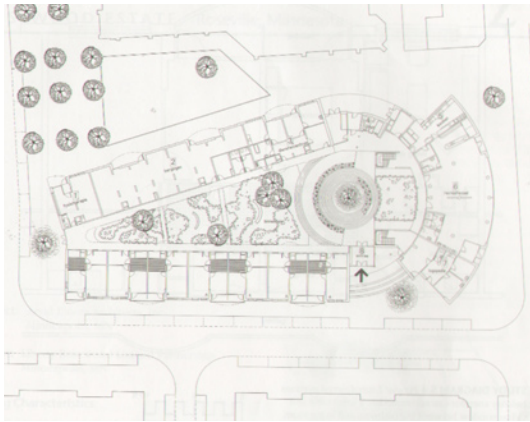
Program

This seventy-nine unit garden atrium conforms to an unusual site in an urban renewal district of Rotterdam. The four-story building has a triangular-shaped plan and is covered by a glass atrium with a curved seven-story housing block at the southeast end. This is a steunpunt, or point of support, project, which provides services such as nursing, home help and meals to housing residents as well as to older people living in the surrounding neighborhood. An interesting note is that the project was reviewed by a local committee of neighborhood residents that provided significant input to the architectural program and met periodically during the design process to discuss refinements.

The second floor to the facility houses a grocery store and volunteers from the project donate their time to managing this space and assist a local social service agency in managing a luncheon program located on the ground floor. The large atrium provides a protected place for activities and plants. The single-loaded balcony corridors that link units are curved and wide enough to accommodate a small table and chairs that extend each unit's territory into the atrium. Flowers in planter boxes attached to balcony rails give the atrium a lively, colorful garden-like character.



Aerial View

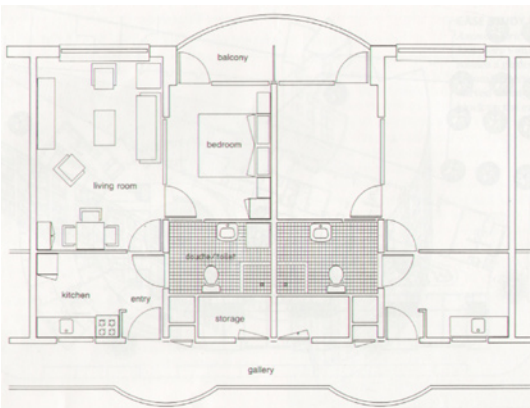


Site Plan

EMBRACED



Atrium



Personal Unit

The four-story garden atrium provides excellent daylighting to the center of the project. A paved portion of the atrium near the entry accommodates chairs and tables, making it a pleasant and inviting place for residents to meet and pass the time of day. The atrium plan is shaped like a raindrop with a narrow triangular garden at one end and a larger semi-circular patio space at the other end. Dwelling units on all sides of the atrium are connected by a single-loaded balcony corridor with a width of four feet, but a curved edge provides an additional 1.5 feet at each entry door to accommodate for the placement of personal items. The atrium is ventilated in the summer by twelve large panels mounted near the center of the glass skylight. Thermostatically controlled dampers on the second floor supply makeup air when roof ventilators are open.

Jan van der Ploeg offers services to project residents and older people in the neighborhood. Personal care services provided keep residents independent and encourage aging in place. A multipurpose room and warm-up kitchen on the first floor provide meals for some residents of the building and some people from the surrounding neighborhood. A bar is open in the afternoon to provide snacks and drinks for those residents who stay and play cards or socialize with their fellow residents.

The site is located in an urban renewal district in an area of mixed land use. It is adjacent to shops, schools, a large park and a church. Designed to be self-contained, the project complements the surrounding context.

Because of the atrium, dwelling units receive light from two sides. A large kitchen window faces the atrium, bringing light into the unit. Exterior walls have floor-to-ceiling glass that allows ample daylight into the bedroom and living room. A relatively large glass window connects the bedroom with the living room, allowing light to flow between the two rooms. The Dutch commonly use clear glass transoms above interior doors to allow borrowed light to reach interior rooms. Bathrooms are designed with the elderly users' best interests in mind while there are several locations for emergency call buttons located throughout each floor and each unit.

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Analysis

Similar to Kuuselan Palvelukoti, this facility responds to the needs of the residents through interior gardens and healing processes. The largest difference between this project and others is that the program extends beyond the building's walls. It was a major design concern of the neighborhood residents to include some sort of care for those not living within the facility, but still within a close range. This extended care is an interesting aspect but might only be useful in a large or 'downtown' setting.

Each unit's features responds to the needs of natural light and the ability to make one's space their own. With natural light pouring in from both sides of the living spaces, each unit develops a comfortable feeling without so much emphasis on light fixtures and pieces that shouldn't be used during the day anyway. The extended corridor and balcony spaces help with circulation and also with creating more personal spaces for each resident.

The building's unusual configuration also creates an attractive plaza on the northwest corner adjacent to the church. The building entry on the southeast corner is reinforced by a recessed plaza and offers viable street access. These small outdoor environments offer places for those who can go outside to relax and enjoy the outdoor experience of their local neighborhood.

SUMMARY & APPLICATION

CASE STUDIES

Summary

The listed case studies have become an invaluable tool to learn about the inner-workings of elderly homes, Alzheimer's facilities specifically. The study of these homes helps to understand what special requirements need to be implemented to offer a fully advantageous life for those with Alzheimer's. Designers have been improving the lives of many people who choose to live their last few years within an assisted living facility. There have been many guidelines set for designing facilities for people with Alzheimer's.

Creating spaces that are sensitive to the user's sensors is important to create a special environment. Elements such as lighting, patterns, colors, textures, corridors, pathways and even scents have become integral guidelines to establishing a sense of home for the users. Along with these elements, special care settings need to be achieved for the individuals to become comfortable within a new setting. The case studies showed simple ways in which these elements can be achieved. At times though, elements within the case studies did not achieve the sense of 'home.' Incorporating public spaces most times is not a beneficial attribute for the users and may cause them to become very apprehensive.

The case studies have also provided an outline for appropriate square footages for the overall design of the facility and also for the design of each individual space. The case studies revealed an interesting link between public and personal spaces for each stage of Alzheimer's. As the disease becomes more serious, the more personal space is needed and therefore, more public space is emphasized for the individuals in the earlier stages of the disease.

Application

The case studies provided a deep and thorough understanding of issues concerning the design of Alzheimer's disease. The knowledge gained will be applied throughout the design process and utilized to create a conscience design, sensitive to the users and their needs. By studying the successful attributes and the unsuccessful attributes to each case study, the design will be sensitive to these aspects. The importance of these case studies will be demonstrated through the design of my facility.

Common attributes that were present within the majority of the case studies included separate areas for each stage of Alzheimer's, the sharing of public spaces such as kitchens, dining rooms, social rooms and circulation or wandering paths. These elements were often included to encourage interaction between the residents and also the staff, who ultimately become a staple within the fabric of the facility. Atriums or interior gardens were also a design element incorporated into a few of the case studies. These spaces allow the residents to enjoy plenty of natural daylighting and offers a quiet and serene setting.

There were also a few differences in the designs of each facility. Location was a large difference, as some of the facilities were located in downtown/urban environments while other were located in less populated and quieter areas. Scale was also a major difference for these projects. One project was simply a very small, 32,000 square foot, single-story project; while others ranged into the 100,000 square foot range with multiple levels. The size of the facility needs to be based on the amount it is needed within a community. Designing a facility like this in with the intention of maximizing the allowable space will not be useful in a setting where the majority of the population is young.

HISTORICAL CONTEXT PROGRAM

History

Duluth is a city rich with history. Originally settled by the Sioux and Chippewa, it was taken over by French explorers and claimed for France in 1679. With a dominating lumber and iron boom that took place in the late 1800's the city took off. Duluth was once home to the most millionaires per capita than any other city in the country and today has many old mansions dotting the landscape.

With the opening of the canal at Sault Ste. Marie in 1855, Duluth was joined to the Atlantic Ocean by a highway of water. Jay Cooke, a Philadelphia land speculator, saw the value of this area just after the Civil War and constructed the Lake Superior and Mississippi Railroad and the Northern Pacific Railroads with their terminus at Duluth. With these routes open, Duluth was ready to boom. The 1855 opening of the canal at Sault Ste. Marie and the recently announced coming of the railroads made Duluth the only port with access to the Atlantic and Pacific Oceans. The lumber industry, railroads and mining were all growing so quickly that the influx of workers could hardly keep up with demand.

In 1869-1870 Duluth was the fastest growing city in the country and was expected to surpass Chicago in size in only a few short years. When Jay Cooke picked Duluth as the terminus of the Northern Pacific Railroad and the Lake Superior and Mississippi Railroad, Duluth's Future appeared very prosperous. Unfortunately, Jay Cooke's empire crumbled and the stock market crashed in 1873 and Duluth almost disappeared from the map.

By the late 1870's, with the continued boom in Lumber and Mining and with the railroads completed, Duluth again bloomed. By the turn of the century, there were almost 100,000 inhabitants, and it was again a thriving community.

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Culture

As the intersection of Highway 61 to Canada, I35 to Minneapolis, Highway 2 to North Dakota and the Great Lakes to the world, Duluth culture is pulled by international/urban and backwoods/blue-collar influences simultaneously. Duluth has established itself as its own entity through its culture. The city takes great pride in its Scandinavian and German heritages and can be seen nearly everywhere within the city.

Duluth is mostly comprised of Caucasian influences, with African American and Hispanic mixed in. The city is host to many events each year including the annual Grandma's Marathon and the Bayfront Blues Festival. The city also is a large center for arts and music. The DECC, located along the Superior Bay offers a great experience and location for many concerts each year. Duluth is also home to the Duluth Symphony Orchestra which tours the country each year. The Tweed Museum of Art, located on the campus of the University of Minnesota Duluth, is also a popular place for artists to show off their work.

Downtown and Canal Park are the heart and sole of Duluth's culture. The city's center is filled with rich history and provides a unique setting and views of Canal Park, located just below Downtown. Canal Park offers a 'big city' feel in a small city town. Artists and street performers often fill the streets during the summer and offer entertainment to the millions of visitors Duluth receives each year. The city also provides an abundance of restaurants, art and sculptural gardens throughout the city.

Winter is also a large part of the Duluth culture. Duluth offers great skiing for both downhill and cross-country and also provides many snowmobiling trails. Both offer great views of the natural and built environments that make up Duluth.

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Economics & Industry

Although the city isn't as booming as it once was, it is still a national leader in providing natural resources. Duluth is a city that revolves around its tourism, healthcare, financial/banking, mining, paper production, communications technologies, education and shipping as its primary industries. The city's harbor welcomes over 1,000 ocean-going and Great Lakes freighters annually. Some of the freighters that enter the harbor are the largest ships to ever travel the Great Lakes and all of the oceans, stretching over 1,000 feet long.

The Seaway Port Authority of Duluth provides a foreign trade zone and economic development services. Interlake cargoes of iron, grain, coal and stone combine to make this the top volume port on the Great Lakes with a total of \$250 million in annual economic impact. Duluth has a museum devoted to the local nautical heritage, and has the world's only freshwater aquarium, the Great Lakes Aquarium.

Duluth is home to many Universities and Technical Colleges, making it a leader in education throughout the upper midwest. Schools include the College of St. Scholastica, the University of Minnesota Duluth, Lake Superior Community College, Fond du Lac Community College and across the bay, the University of Wisconsin-Superior.

Duluth is also a leader in healthcare. It is the regional medical center for the surrounding states and provinces. The physician population is well over 400 occupations; making up one of every seven residents is employed in healthcare. Duluth is also rated first in the United State for quality healthcare in communities of its size.

Tourism is also a large contributor to the city's economic status. 3.5 million tourists visit Duluth each year accounting for a \$400 million economic impact. There are 4,200 hotel rooms located within the city and over 50 restaurants in the downtown area alone.

PROJECT GOALS PROGRAM

Goals

Creating a successful project depends largely on the amount and quality of information gathered and analyzed. Through the Theoretical Premise Research and analyzing the multiple case studies, goals can be made for a successful design. There are many issues that need to be faced when creating a facility of this kind. Personal goals to be met include creating a project I feel is special to myself and possibly to others who have any sort of experience with Alzheimer's Disease. Establishing and utilizing the many guidelines for designing for Alzheimer's is also something that I feel needs to be accomplished on multiple levels.

When concerning the programmatic elements, there are also key issues that are important to the design and the goals. Designing spaces that fit personal qualifications should be considered along with spaces that influence interaction and provide a home-like setting. Visual sensory design elements are also a must within this design project. Responding to the users special needs for lighting, circulation and colors for distinguishing certain areas of the facility are goals that need to be met.

I would also like this project to represent and symbolize a type of architecture that is not commonly found in the design of Alzheimer's facilities. Most designs that have been done in the past, including the presented case studies, are always very static and monolithic. They represent one form and one type of architecture. I do not want this project to emulate those characteristics. This project needs to have pure forms that at the same time provide function for the residents. Bridging this gap will be a challenge within itself but is crucial to creating a unique facility that responds to its nature. These forms will attempt to symbolize the path one takes while being effected by Alzheimer's. Creating unique, functional and symbolic spaces is the primary goal for the justification of this project.

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Site Analysis

SITE ANALYSIS QUALITATIVE ASPECTS

Site

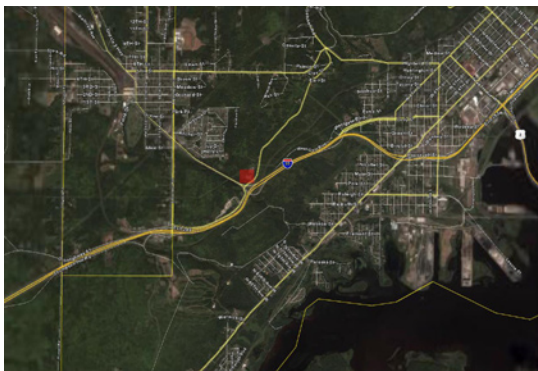
The chosen site has strong characteristics that were similar to some of the case studies researched. The site is semi-secluded, tucked back into a dense patch of forest and at the same time is open to major transportation arteries and gorgeous views. The site offers residents the opportunity to experience nature in a safe environment and provides access to easily reachable shops and stores for personal care products.

The designed facility will be located atop a steep cliff, set back about 300 feet. This gap is filled with I-35, Highway 2 and an exempt railroad line. The site is very large totaling almost 300,000 square feet. The facility will lie on the southern most tip of the site and have access to Skyline Blvd. which runs adjacent to it. The site being located at an elevation of about 1,050 feet above sea level, is approximately 500 feet above the harbor which is located about a mile away. This dramatic slope offers great surrounding views of the thick forests and the St. Louis River, that empties confluences with Lake Superior. The site itself is on a slight slope; sloping down towards the harbor. This slope is also very crucial when designing for water runoff and positioning the facility in a meaning full manner to maximize its potential.

The site is immediately surrounded by forest on the north and west sides with a large berm on the east side acting as a natural boundary. Just to the northwest of the site, about a quarter mile, is where the residential community begins. This community is setup on a grid very similar to most residential grid patterns. Below the site, near the river's edge is another grid system of both commercial and residential spaces. This grid stretches northeast along I-35 and the boundary of the above lying cliff and runs into downtown Duluth. This topography provides a special relationship to the site in the way that the cliff acts as a boundary and separates the zones and at the same time links the zones with intriguing views and transportation routes.



St. Louis River & Forestry



Grid Relationship & Context

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SITE ANALYSIS

QUALITATIVE ASPECTS

As mentioned, the topography of the land is very common throughout Duluth and over time, adaptations have been made to accommodate for these steep slopes. The slopes have often been compared to that of San Francisco, as many homes and buildings have been built on these slopes and have taken on that old Victorian style of architecture. The urban spaces that make up these hills and grids have their own unique characteristics about them with many of the homes being close to or over 100 years old. Many of Duluth's neighborhoods have been revitalized and restored to an acceptable quality.

The site provides plenty of natural daylighting as there are no site restraints on the amount of light received. Duluth offers warm summer days and cool nights as the sun sets over the bluffs, creating long shadows that will encompass the site in the evening. The vegetation that covers most of Duluth includes Tallgrass prairie and prairie wetlands. Like most of northern Minnesota, Duluth is covered in dense Coniferous forest. These forests are dominated by sugar maple, basswood, yellow birch, red oak, white pine, northern white cedar and balsam fir. These types of trees are mainly restricted to rich, morainic soils where fire frequencies were low. This deep combination of trees and forests offer great fall enjoyment for the people of Duluth. The colors of the environment are very vibrant and lively during the late fall weeks. The area is also home to a lot of natural wildlife including bears and moose.

The site is located just south of an area that has a lot of wetlands. These wetlands are located at the highest elevation in Duluth and have been restricting builders to build on those sites. The harbor and St. Louis River below provide a great view and also clean water for the city. The water drains from Lake Superior into the St. Louis River. The area surrounding this confluence is also dense forests and vegetation. Throughout the area, there are many streams that run down the slope and feed into the harbor. These streams have been utilized to provide public spaces in many cases and small waterfalls are visible along these paths.



Duluth Topography

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SITE ANALYSIS QUALITATIVE ASPECTS

Wind is an element that plays a key role in this site. Wind is very prevalent in Duluth. With the contrasting topography and elevations, the wind becomes much more common as you move up the slope. The wind is also present along the shores of Lake Superior. As seen in the wind diagrams earlier, the wind mostly comes out of the west and northwest. An observation can be made that when the seasons change, specifically in April and October, the wind often changes direction, coming strongly from the east. Lake Superior is a tremendous provider of wind throughout the year and also produces much of the cities precipitation, in the winter this is called 'lake effect' snow. More specifically to the site, the natural boundaries to the north and west bordered by the trees provide shelter from any harsh northern wind in the winter. In the summer, cool winds come rushing up the cliff's side and provide natural breezes approaching from the south end of the site.

Today the site is being used to house a small tractor and minor amounts of iron ore. Over 75% of the site is still natural with a small portion of the site being a paved lot and gravel road. The site also has two unnatural berms separating the natural landscape from the man-made landscape. The site is very serene and inactive. The trees are fully grown and seem to have been well maintained. The site has signs of natural erosion and growth. The downward slope of the site provides natural drainage and thus does not have a lot of standing water.

The site's overall character is one that has many telling characteristics and opportunities to be taken advantage of. Aspects such as views, lighting, water, wind and topography are all elements that will need to be harnessed for this facility to be successful. The natural setting is a prime location to offer the residents a place they can feel at home and safe.



Current Northern Site Usage

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SITE ANALYSIS QUANTITATIVE ASPECTS

Site

There are many issues when dealing with quantitative aspects that need to be dealt with carefully. Duluth's latitude is approximately 46.8 N. This results in a very low sun angle in the winter and a high sun angle in the summer. Direct sun rays are a design issue concerning the site with the northern boundary blocking any low sun angles during the winter. Duluth's sunny days comprise about 21% of the days throughout the year with about 33% of the days being very cloudy. These circumstances allow for a design that can take advantage of this situation and help reduce heating and cooling loads.

The site's soil is a topic that can be described as silty or clayey gravel. This type of soil is prevalent in grassland areas where water is present. This type of soil offers a good building foundation. As mentioned, there are areas north of the site that are standing wetlands, where the water table is above the landform. This particular area's watertable is located deep enough to avoid any foundation problems. The nearby cliff also offers an advantage to how this water table is effected, as much of the water drains perpendicular to this slope.

Traffic is not a large issue for the site as much of the vehicular traffic takes place adjacent to the site with the exception of Skyline Blvd., which is not overly busy. Skyline Blvd. is also a popular stretch of roadway that bikers and joggers often travel along; stopping at some of the rest points to take in the views. Pedestrian traffic also takes place along the many trails that wind through the rocky terrain and vegetation. These trails are also directly accessible to the site.

The site's overall slope is about 7% stretching from the northern most end to the southern most end. This slope is adequate for this type of building and will provide landscapes that may remain undisturbed and natural.

SITE ANALYSIS

QUANTITATIVE ASPECTS

While viewing all of the natural aspects of this site, each view provides a different type of terrain. To the north, the view provides a lot of vegetation with a gradually increasing slope to the north. To the east is a large berm with a patch of trees on it, providing the afore-mentioned boundary. To the south is a view of the river and the hills that slowly bleed into it. To the west is a large outcropping of hills with a lot of natural vegetation covering them.



View to North



View to East



View to South



View to West

This site analysis provides a basic understanding of the sites opportunities and constraints. It also provides a comprehensive base of knowledge that permits designers to fully analyze this area and the effects of its surrounding neighborhoods and communities.

To summarize, some of the opportunities that have arose during the research and analyzing process of the site include views, natural vegetation, nature as a form of entertainment, daylighting and wind conditions. Views will be a major aspect incorporated into the project and the use of the natural vegetation elements will be utilized for outdoor spaces. Access to hiking trails is also an opportunity that can enhance the living experience for the residents. Also maximizing the sun's potential and harnessing the wind's power are also opportunities that will be considered.

Some of the constraints of the site include the harsh boundary that is Skyline Blvd. This road is not an overly busy road, but at the same time is occupied more than an average road in comparison to the rest of the surrounding area. Noise may also be a constraint as I-35 runs close by to the site, although the extreme difference in height actually limits the amount of noise reaching the site.

By balancing these opportunities and constraints, a project that is well thought out will emerge.

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Program

**PROGRAM
SPATIAL REQUIREMENTS**

Program Allotments:

The square footages below underline the spatial allotment for the facility.

Total Area:	300,000sf
Total Building Area:	70,915
Parking Area:	48 spaces
Circulation:	9,000
Mechanical/Electrical:	1,000
Living Units:	23,680
Early Stage (40 residents)	9,680
Private (24 units)	6,480
Companion (8 units)	3,200
Middle Stage (32 residents)	7,520
Private (16 units)	4,320
Companion (8 units)	3,200
Late Stage (24 residents)	6,480
Private (24 units)	6,480
Entrance Lobby:	1,200
Reception Area:	1,100
Dining Rooms:	4,275
Public (3)	3,225
Private (3)	1,050
Living Rooms:	9,800
Early Stage	4,200
Middle Stage	3,500
Late Stage	2,100
Kitchen: (3)	1,500
Food Preparation: (3)	1,200

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**PROGRAM
SPATIAL REQUIREMENTS**

Accessory Spaces:	8,885	
Ice Cream Parlor		460
Theater Room		730
Chapel		485
Beauty Salon		350
Card Room (3)		1,050
Fitness Center		1,400
Sun Room (2)		2,000
Library		435
Convenience Store		475
Town Square		1,500
Administration:	2,850	
Staff Rooms		1,435
Nurse's Station (3)		525
Reception Desk		890
Support Spaces:		2,400
Secured Exterior Courtyards:		7,500
Laundry: (3)		400
Community Center:		900
Clinic:	2,725	
Offices (3)		1,275
Exam Rooms (4)		1,450

Living Units

Total Area: 23,680 sf

Aesthetic Requirements: Daylighting and privacy

Spatial Description:

The living units will be categorized into three main sectors. These sectors will define each of the three stages within the facility. The separation between the stages or wings is required to keep the residents living within their own reserved spaces.

Relationship:

The units will be arranged around the shared spaces. The living units arrangement will focus on interaction and physical activities. With easy access to all of the accessory spaces, the living units will offer a quiet retreat for those who need to rest.

Spatial Usage:

The units will be primarily used for sleeping and personal health care reasons. These spaces will become the residents' personal areas where privacy will be dominant over the existing public spaces located adjacent to the rooms.

Dining Rooms

Total Area: 4,275 sf

Aesthetic Requirements: Home-like feeling

Spatial Description:

The dining rooms are areas that will provide a meaningful place to gather and socialize for the residents. The space will allow for much natural day-lighting and offer views to the surrounding site. The space will be large enough to accommodate for all residents from each 'household.'

Relationship:

Each dining room, both public and private, will be located at the ends of each 'household.' This will establish a relationship to the other shared areas such as the living rooms and kitchens. The dining rooms will also relate to the individual needs of residents.

Spatial Usage:

The public dining rooms will be open to all residents from the respected household, while the private dining rooms will be set aside for special occasions such as family visits or birthday parties. The private rooms may also be used for small breakout spaces to hold card games or other similar activities.

Living Rooms

Total Area: 9,800 sf

Aesthetic Requirements: Home-like feeling

Spatial Description:

The living rooms play a crucial role in the life of the residents. These rooms will be full of character and color in an attempt to stimulate the mind. Personal interaction is encouraged here like all other public spaces through the facility. This room will be a space that offers life and tranquility.

Relationship:

The living rooms will be located near both the kitchens and dining rooms creating a linkage of spaces that form the core foundation of a home. The living rooms will be centrally located within each household to maximize its potential as a center for gathering and interaction.

Spatial Usage:

The public dining rooms will be open to all residents from the respected household, while the private dining rooms will be set aside for special occasions such as family visits or birthday parties. The private rooms may also be used for small breakout spaces to hold card games or other similar activities.

Entrance/Reception Lobby

Total Area: 2,300 sf

Aesthetic Requirements: Welcoming & a sense of home

Spatial Description:

This space will be located at the main entrance to the facility and will offer higher than average or vaulted ceilings. The space will be welcoming for both the residents and also guests that may be there for visits. This will also be the space designated for any informational requests that may be made.

Relationship:

The location of the space will be at the front door, main entrance located adjacent to the administration offices. It will also be a crucial element to keep separate from the households to avoid residents feeling violated or territorial. This seclusion will also prevent wanders from going outside unsupervised.

Spatial Usage:

The space will be mainly for guests who are visiting and waiting for their escorts to come get them. There will be seating areas located throughout this space and a hosts desk will be visible from the main entry. The residents may also use this transitional space as they enter and leave the facility, for those who are permitted.

Accessory Spaces

Total Area: 8,885sf

Aesthetic Requirements: Home feeling, entertainment

Spaces Included:

- Ice Cream Parlor
- Movie Cinema
- Non-demoninational Chapel
- Beauty Salon
- Card Room
- Day Spa
- Fitness Center
- Library
- Town Square

Spatial Description:

These spaces will all vary in scope, size and design. However, all will pertain to the needs of the residents and will be appealing spaces for them to congregate. The spaces will provide services that will prevent them having to leave the facility for what would usually be everyday chores.

Relationship:

These spaces will provide the backbone of the facility as much of the days activities and action will take place around these areas. They will be arranged in a fashion that will interchangeably relate the space's function to its location. The matrix of spaces will again, encourage interaction and activity.

Spatial Usage:

These spaces are designed with the intentions of providing the residents with extra care services that are not typically found in this type of community. These services make it easy for the residents to get everything they need very easily and offer a form of entertainment or leisure activity.

Circulation

Total Area: 9,000 sf

Aesthetic Requirements: Daylighting, colors, simple

Spatial Description:

This area of the program is a large portion and carries significance throughout the facility. These areas will allow the users a feeling of home and link the spaces in which are being used daily. Natural lighting and stimulating colors need to be emphasized in this portion of the design as it will be highly utilized.

Relationship:

The circulation paths will weave throughout the facility linking both the indoor spaces and the outdoor spaces with continuous walking paths, making sure the path never comes to a dead end. Easy access will be provided from these modes of circulation to the spaces that are used daily.

Spatial Usage:

The circulation paths will be used by everyone inhabiting the building, both visitors and residents. The use of these paths or circulation elements will allow wanderers to walk freely throughout the facility. The circulation will also be considered the core of the building.

Administration

Total Area: 2,850 sf

Aesthetic Requirements: Professional, welcoming

Spatial Description:

These rooms will offer the support staff to perform their daily tasks in an environment that is professional and designed specifically to their needs. These areas will also provide plenty of natural light and be the headquarters for the whole facility and its special care program.

Relationship:

These offices will be located near the entrance and reception area. The spaces will be comfortable for the users and will have important views of inside the facility so that they monitor all the activity that is taking place. These spaces will also be adjacent to much of the circulation.

Spatial Usage:

Guests or visitors as well as the residents may frequent the administration offices. Primarily, the offices will address the daily operations of the administrative needs, through the coordination of the needs of the residents.

Support Spaces

Total Area: 2,400sf

Aesthetic Requirements: Welcoming, colorful, comfort

Spatial Description:

These support spaces will be spaces that offer comfort and intimacy. They will be located within the inner core of the building and will not offer views to the outdoors or have an abundance of natural lighting. Creating a comfortable space is the key to these spaces, as there may be some grieving occurring.

Relationship:

The support spaces will be secluded from the majority of the other spaces to provide privacy for family members and friends. Its location will be closely linked to the administration offices to offer easy access to the support staff and secretaries.

Spatial Usage:

The use of this space will be to hold small formal meetings or intimate conversations that may be very dramatic or private. Seclusion is a must for these rooms and also a certain intimacy needs to be present within the design.

Clinic

Total Area: 2,725 sf

Aesthetic Requirements: Professional, non-static

Spaces Required:

Offices

Examination Room

Spatial Description:

These spaces are intended to further our knowledge on Alzheimer's Disease. This center will be run as a separate entity to the rest of the facility but will still run in correspondence to it. The center will be open 24-hours a day and will require special access keys to enter.

Relationship:

This area will be located at the end of the 3rd stage wing, as these residents will need the most attention. The special access and outstretched location of the center will allow the workers or researchers to perform their research without much disturbance, while the clinical portion may be fully operational.

Spatial Usage:

Residents will be on a routine to visit these specialists and get examined for health updates. These spaces will also be available in case of any emergency. The research portion of the center will be only accessible by certain workers and within the lab endless tests and research will be performed in order to find connections with Alzheimer's.

Courtyards

Total Area: 7,500 sf

Aesthetic Requirements: Inviting, shading elements, wandering paths, park environment

Spatial Description:

The courtyards will be secured at all times of the day and night and will offer an outdoor experience. Outdoor walking paths will be available for those who feel the need to stretch their legs and get some exercise while outdoors. The gardens will offer a peaceful setting for the residents.

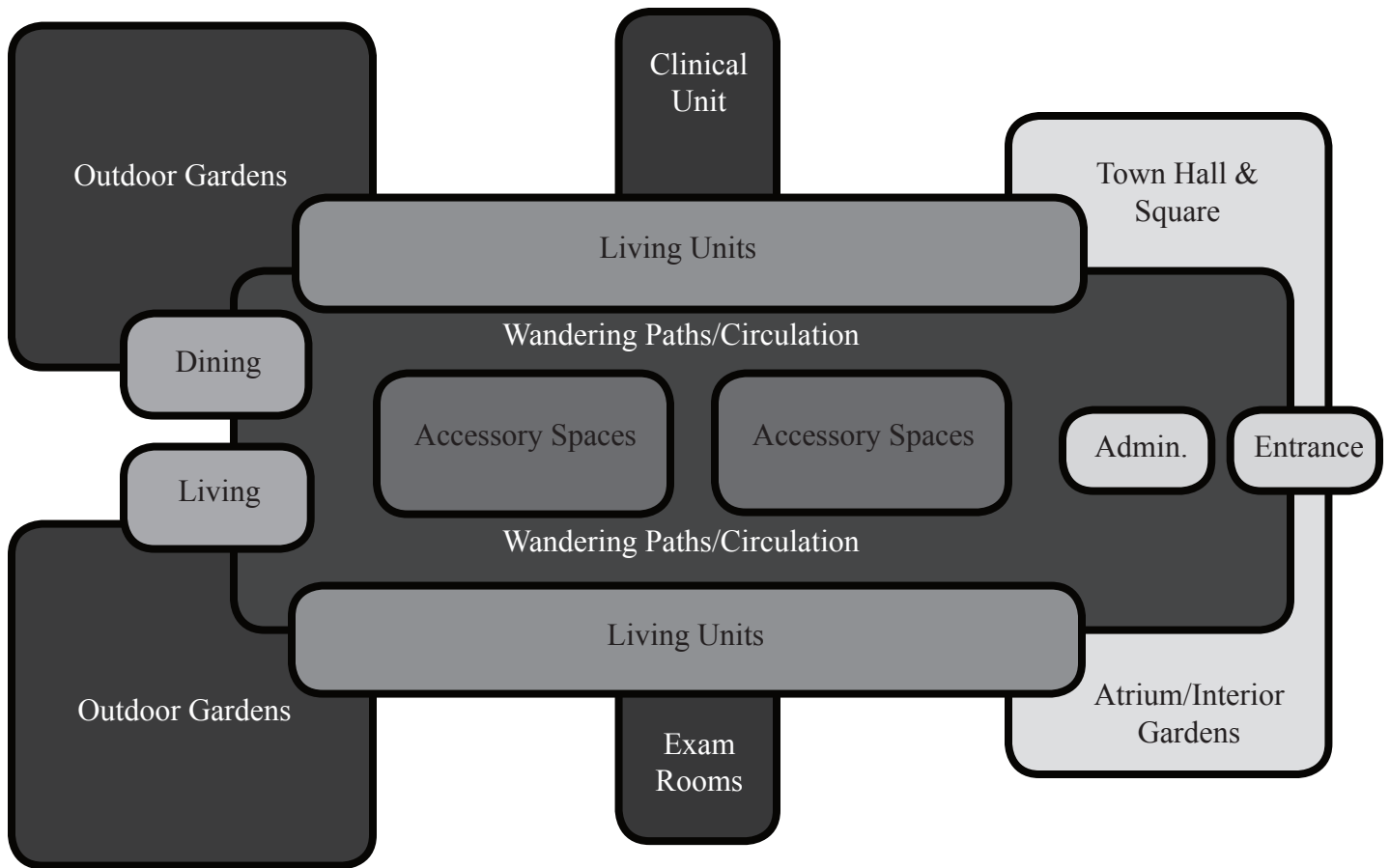
Relationship:

The gardens and walking paths will be connected to the matrix of paths that will be linking the indoors and outdoors together.

Spatial Usage:

All of the residents will be encouraged to go outside as these spaces will provide a social interaction gathering. Overhead umbrellas will be needed to protect some of the residents from the sun.

Typical Layout & Relationships for all 3 'Households'



BUDGET
PRELIMINARY ESTIMATE

Budget:

Summary of Costs:

The costs for the project include all drawings, services fees, planning and construction costs. Costs are figured from averages for materials and services provided within the region.

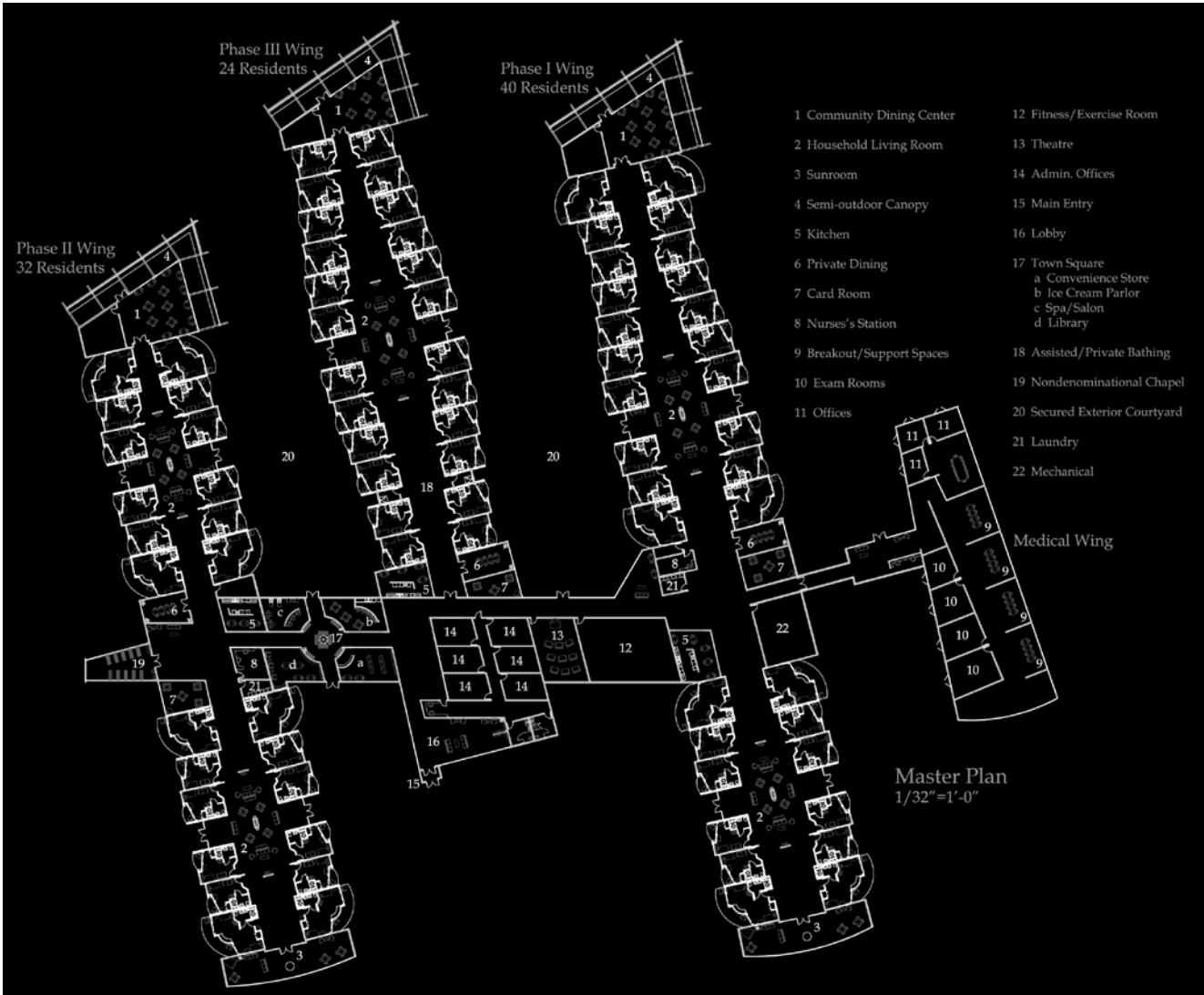
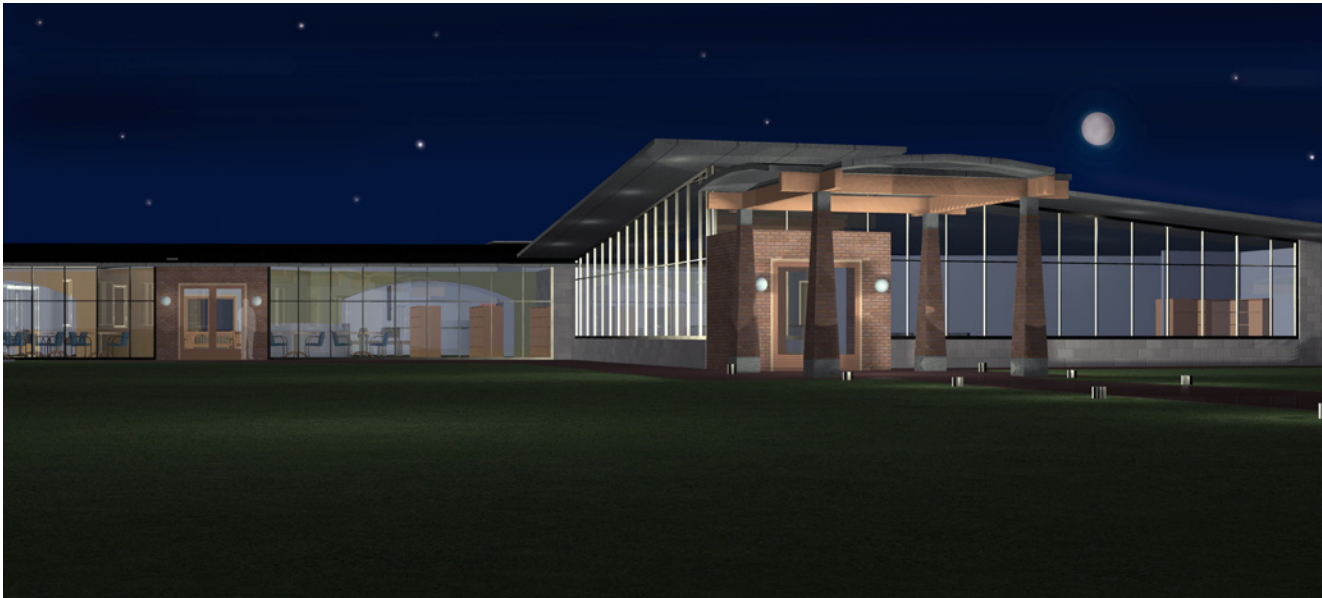
Total Cost: \$7,800,000

Cost per sf: \$110/sf

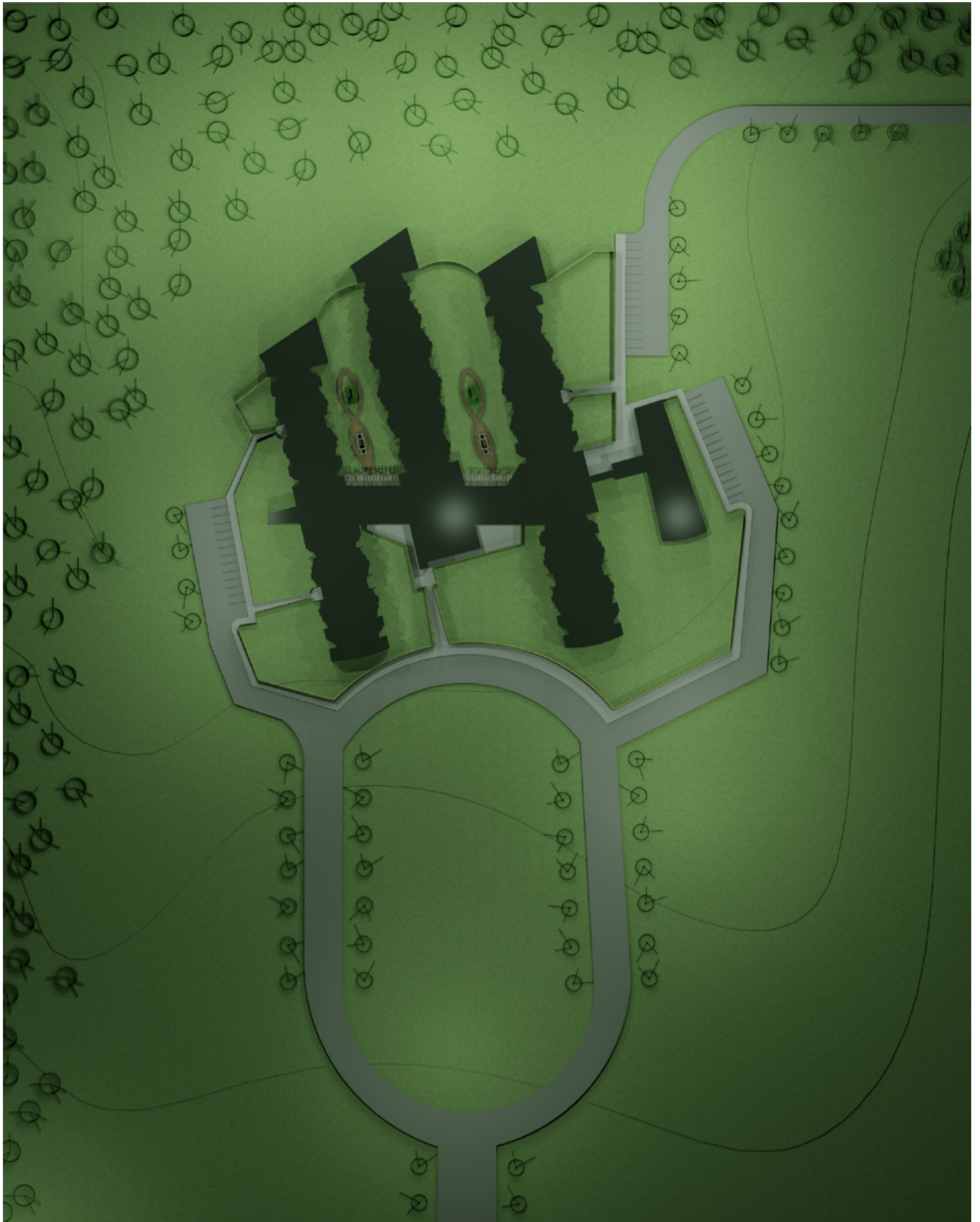
*Cost per square foot determined by average of buildings similar in scope and size bases on statistics from www.benchmarkgc.com.

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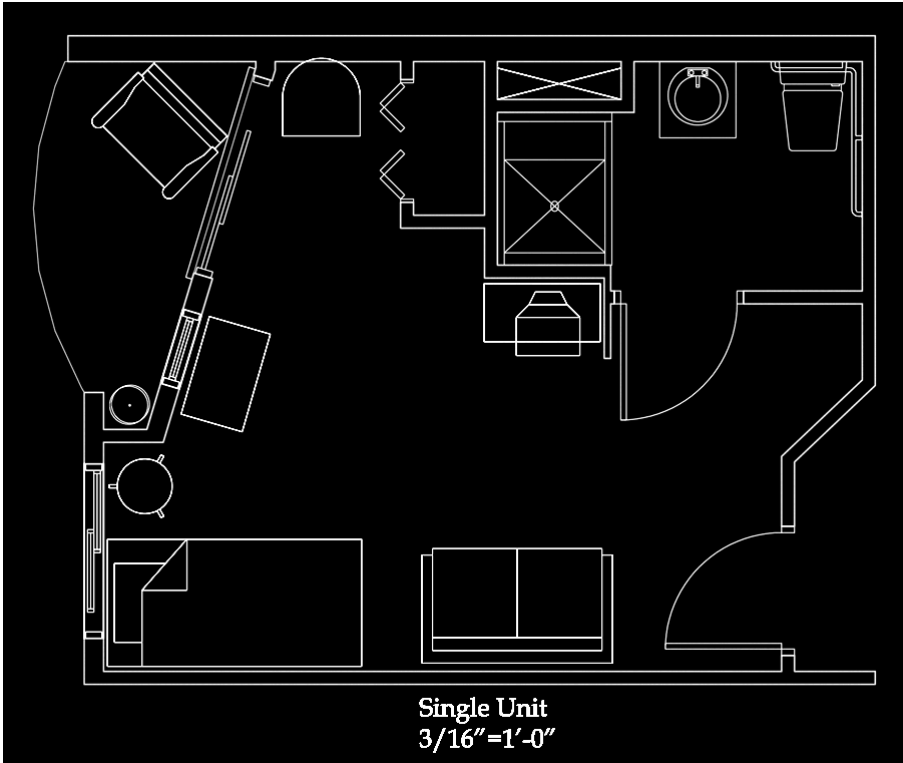
Design Documentation



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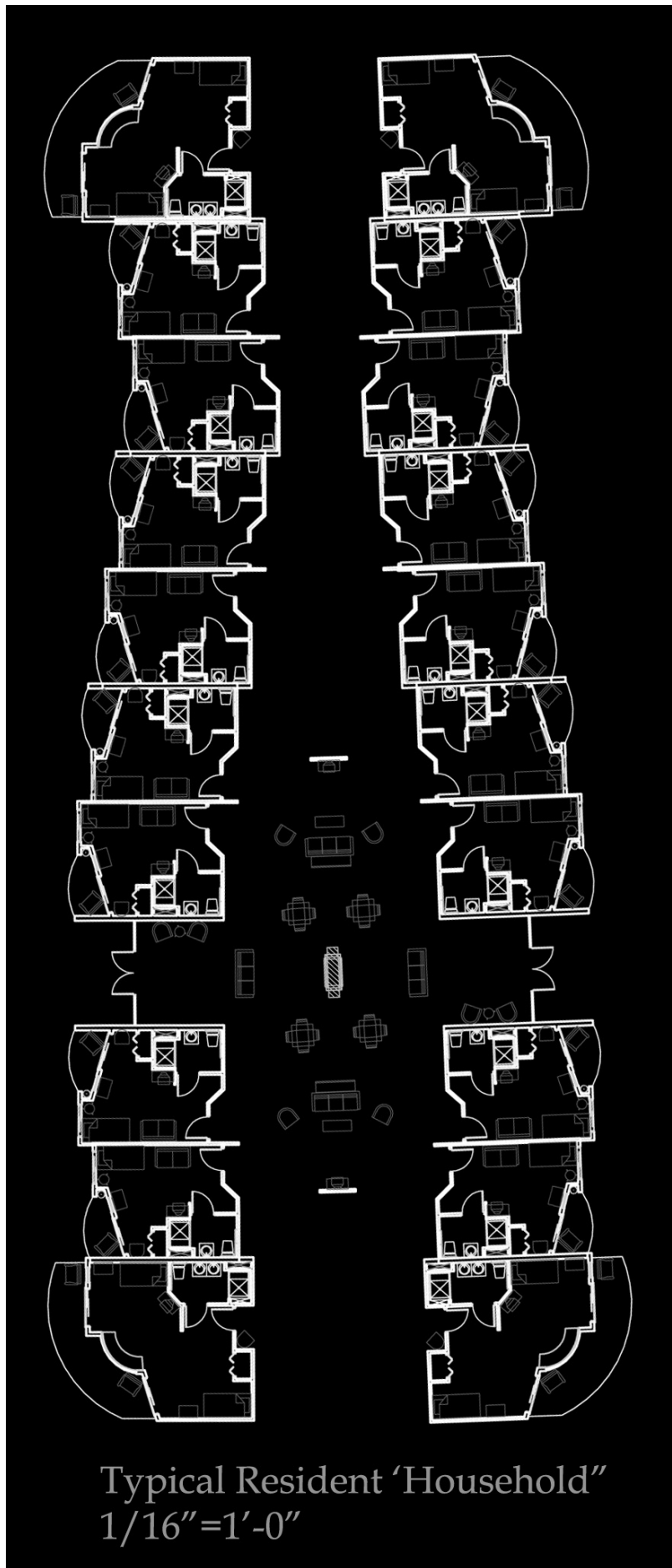
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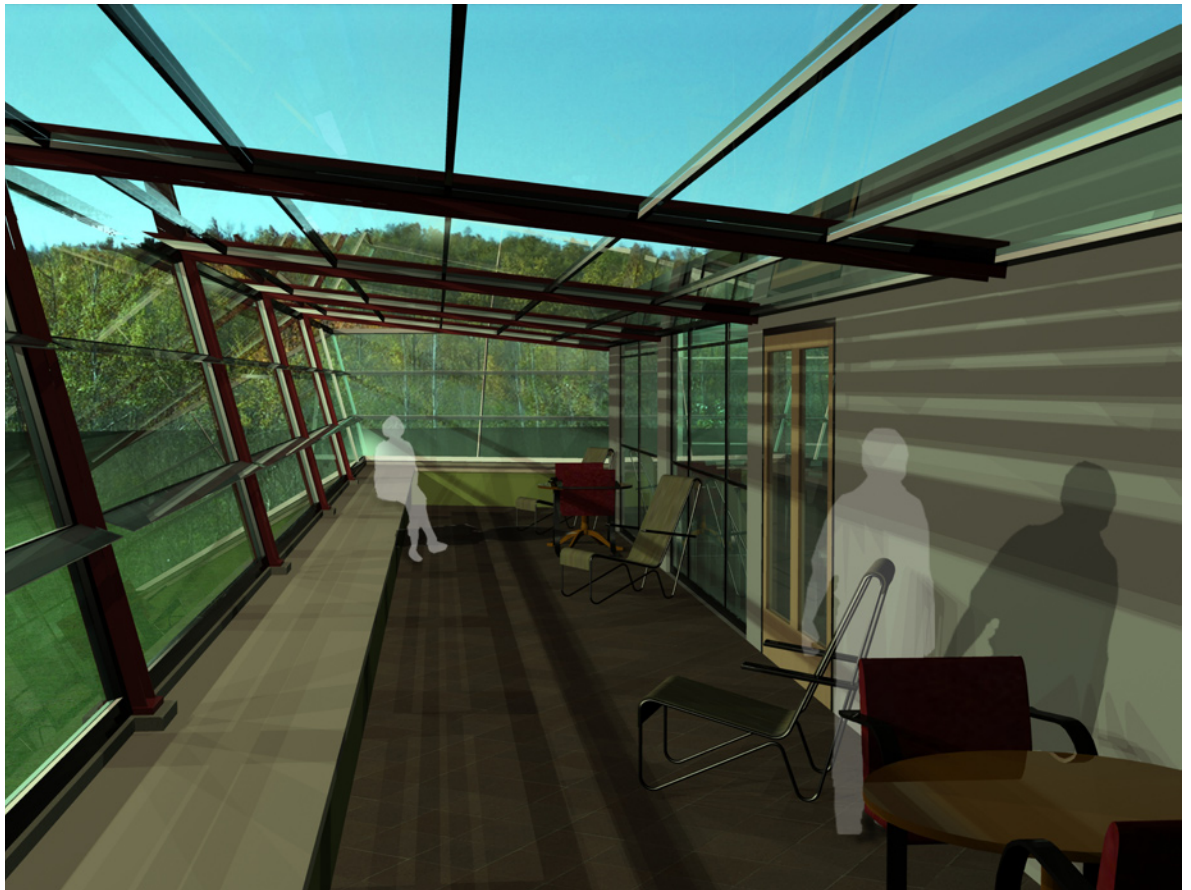


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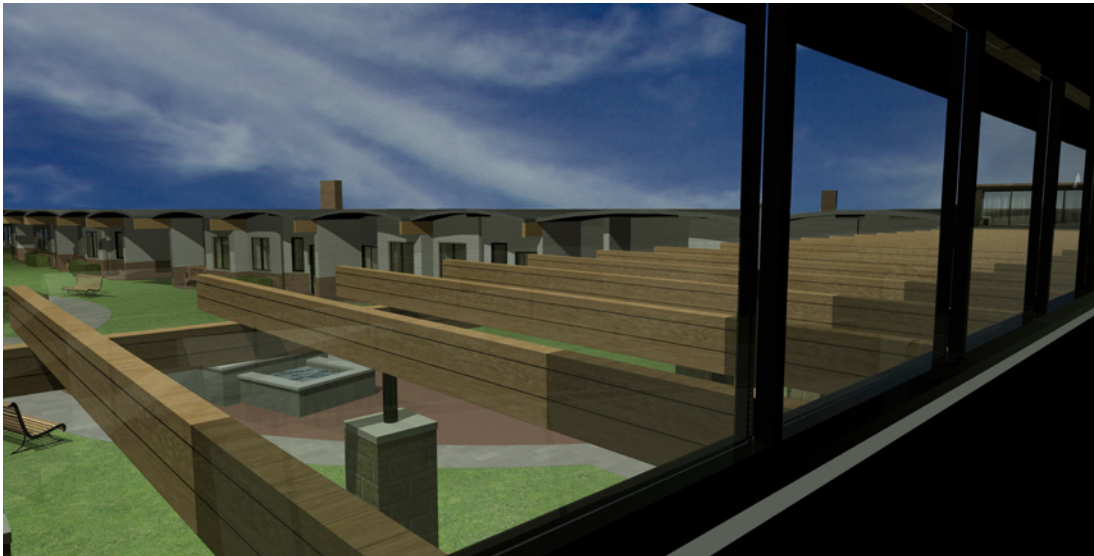


Typical Resident 'Household'
1/16" = 1'-0"

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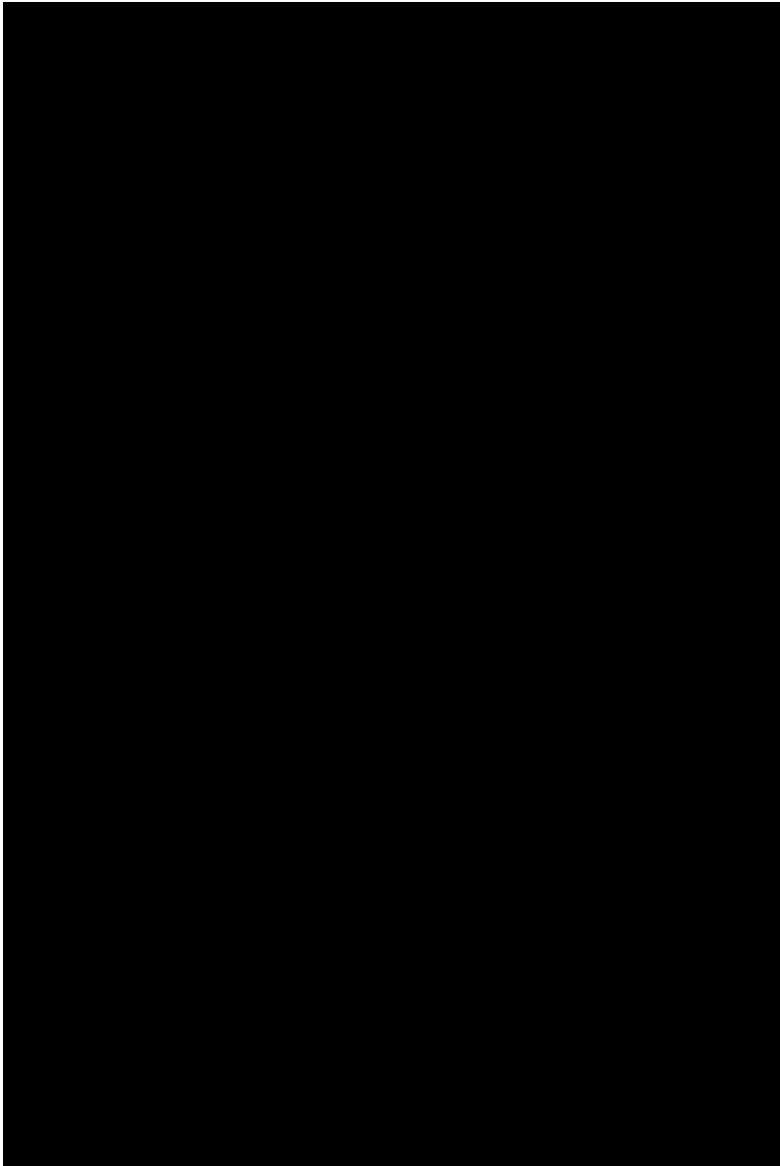
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Thank you to my family and friends for all their encouragement, guidance and support along the way. And a special thanks to my fiancée Amy, without you this wouldn't have been possible...Thank you Amy.

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