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| revitalize |



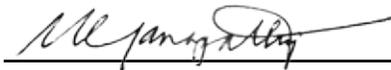
FAITH IN A SUSTAINABLE FUTURE IS  
NOT ABOUT REHABILITATING A BODY

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

By

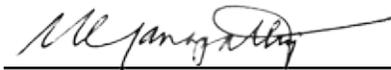
Rebecca Johnson

In Partial Fulfillment of the Requirements  
for the Degree of  
Master of Architecture



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Primary Thesis Advisor



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Thesis Committee Chair

May 2015  
Fargo, North Dakota

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It is often said that the value and meaning of a civilization can be documented from the record it leaves in the form of architecture, and that the true measure of the compassion and civility of a society lies in how well it treats its frail older people. (Regnier 1994, p.vii)

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| thesis proposal |

# | abstract |

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The abstract of this project is to study the connection between the human body (mind, body, and soul) and the built environment. This connection is made evident by the historic preservation and adaptation of a building formerly known and functioning as the State School of the Feebleminded in Grafton, ND, into a culturally based elder care living facility. A metaphor exists as a relationship between the effects that time has on a human being, comparable to similar effects that can be observed in a structure, i.e. loss of integrity, fear of being forgotten, providing a service or quality that has grown to be unappreciated or unacknowledged. This thesis will be informed by the benefits of preserving and adapting an existing structure, while providing physical and spiritual renewal for both humans and the built environment.

## | key words |

renewal - culture -preservation - adaptation

# | problem statement

---

Can the **revitalization** of a building also **rehabilitate** the users of the space?

# | narrative |

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Aging is inevitable, and for many people, assisted living will eventually become a necessity. Steve Yoder states in the Fiscal Times that as our iconic generation of baby boomers ages, the need for nursing homes has risen. Yoder predicts that the number of 85-year-olds will increase 50% in the next fifteen years. According to the Alzheimer's Association, by 2030, 7.7 million individuals 65 and older will suffer from Alzheimer's (Yoder, Fiscal Times, 2014). Because a greater percentage of the population will be older, one can easily draw the conclusion that there will be a greater need for facilities providing around the clock care.

Many economic and political roadblocks have created the struggle in developing new care facilities and supporting the existing ones. The current recession allows states to pull funding and grants that were crucial to nursing home construction. Additional difficulty in funding can be attributed to Medicaid and Medicare. Governmental programs aimed at assisting in financing the inevitable increases in medical costs that come with aging. In reality, these programs have decreased the revenue of elder care facilities, making it difficult to sustain financially. Without these programs, many of our elderly, family, and neighbors are

unable to afford the cost of live-in care facilities. My goal with this project is to design and create a building that is sustainable and functional and comfortable for years to come, without incurring initial startup costs that are oppressively high.

People often dread staying in a nursing home or hospital. That can be mitigated by designing these facilities as homes rather than institutions. Long hallways, fluorescent lights, and rooms divided by curtain panels institutionalize a building that should allow people to feel comfortable and provide a healing environment. These are design strategies of the past. To increase the healing properties of nursing homes and hospitals, we should make changes to the overall standard of living that these residences provide. An elder care facility should not only offer personalized care, but also personalization through options. These options should include the ability for residents to hang pictures, change linens, and surround themselves with their own possessions. Ten years ago, I began training to become a Certified Nurses Assistant, and have worked full or part-time as a C. N. A. since then. My time spent caring for the elderly has sparked a passion for the design of nursing home facilities. With my parents reaching the

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Designing an elder care facility in Grafton, ND will provide a place where small town and rural community members can age, in an environment that they trust. There are many merits to living in a small community, which is why elders would rather remain in the society that they already know.

Many of the people and family who make up the population of a small town have been there for their entire life. These people have borne witness to the passing of time and its reflecting in the people, technology, structures. One could draw a relationship between the aging of individuals and the simultaneous aging of the built environment. The preservation and adaptive use of the Grafton State School of the Feebleminded will support this metaphor. While this rehabilitation serves the individual, the renewal of this structure will be a contributing factor in allowing the heritage of this small community to remain recognized. History, significance, integrity, and soul will not be forgotten, in both the structure and the individual. I believe Philip Stafford is successful at describing the relationship.

“My contribution was to tender some thoughts about the relationship between the preservation of place and the preservation of community memory. In many ways, they are an identity. Place is the concrete expression of community memory and old people are its vessel, or, perhaps I have that backwards. It reads both ways because it is an identity. In any case, preservation of place is more likely to occur when it retains a presence in community memory. Buildings that fall into history without those personal connections to our current lives are more at risk for destruction unless, perhaps, they exude some extraordinary beauty or character, or are associated distantly with an officially recognized event or person. The position of older people in a community as holders of memory valorizes their role when other sources of status have diminished.” (Stafford, “Preserving People- Preserving Place,” 2014)



Figure 2.0 northeast perspective

# | project typology |

---

Basic Care/ Assisted Living Facility

## | claim |

The benefits of preserving and adapting an existing structure, provides physical and spiritual renewal for both humans and the built environment.

## | typological precedents |

It is important to observe projects with typological similarities in order to gather pertinent information, based on the architectural type. This thesis project of a Basic Care Living Facility, is related to all types of nursing homes (assisted and independent), hospitals, apartments, dormitories, hotels, rehabilitation centers, etc. By studying these typologies, I will be able to provide a facility that successfully encompasses all desired qualities.

# | typological research |

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case studies

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**1** Kittson Memorial Nursing Home  
secured memory care unit

**2** Borg Pioneer Memorial Home  
basic care facility

**3** St. Anthony Hospital  
hospital

# | typological research |



Figure 3.0 kittson- main entrance

# | Kittson Memorial Nursing Home |

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## | architect |

original: unknown  
remodel: EAPC

## | location |

Hallock, MN

## | typology |

secured memory care unit

## | year completed |

original: 1968  
remodel: 2008

## | major program elements |

dining room  
laundry  
kitchenette  
living room (2)  
bedrooms  
nurses station  
bathing and toilet

Kittson Memorial Nursing Home is divided into three different progressions of elder care living. The lower level contains an independent living facility and an assisted living facility. The upper level and topic of this case study is a secured memory care unit, specialized in the care for dementia and Alzheimer's patients, built in 1968.

This case study was chosen because it is a good example of institutional work in a rural community. I have spent a lot of time in this nursing home as a certified nursing assistant since 2005. Analysis and observation was conducted as well as an interview with the administrator, Cindy Urbaniak. It was important to receive direct feedback from individuals who interact with the space on a daily basis. The following design recommendations were established through a conversation with Mrs. Urbaniak in order to better understand elder care facility design based on the Kittson Memorial Nursing Home.

There were many improvements that could be made to the space that would create a better and more efficient environment for residents and workers. A desired improvement to the memory care unit is additional space in the dining room. With the tables, chairs, recliners and wheel chairs of the residents- it can get to be tight quarters for staff to get around, or for residents to leave the dining room as they wish. Resident

rooms could be updated. More and more nursing homes are being constructed to be single rooms with private bathrooms. That would be desirable by residents and family members, as well as the staff, who would appreciate the privacy for cares and additional space.

Residents and their families are encouraged to bring in familiar items for the residents room. This is especially important for the memory care unit, as we know that any routine or residential change can exacerbate confusion. Residents can hang any picture or photos in their rooms, and are allowed to bring in favorite blankets or a chair. Unfortunately there is limited space in the rooms and if they have a room mate, even less space. Families are encouraged to make the room as homey as possible for the resident.

The nursing home makes great strides to try and involve the residents with the community and intermix with residents from the other facilities. Visitors are encouraged to come and go as they please, with approval of a nurse. There are a number of planned activities that bring the community into the nursing home. Most of these activities are down in the lower level dining room (more space) but upper level residents are encouraged and brought down to the lower level. The nursing home hosts "Friday

---

Night Live,” with entertainment groups who come in on an almost weekly basis. The facility works hard to involve all service organizations to help with activities, as well as schools, dance groups, churches, etc.

The nursing home is preparing itself for the future by brainstorming possible ways to adapt to the changing generations that it houses. The current direction is to move to an all private room facility. They foresee considering redesign towards a community set up and less institutionalized. This would involve smaller dining rooms and more family, home cooked meal preparations. This facility provides an outdoor patio that is enjoyed by residents and staff on warm days.

Elder care living facilities hold privacy and dignity to utmost importance. Design plays a large role in providing for these qualities. The

Kittson Memorial Nursing home uses fabric curtains suspended from the ceiling, window coverings, and closed doors as a way to conceal. When residents are in their room with staff, doors are shut. If a roommate is in the room at that time, the curtain will be utilized as well as the door. Bathrooms are used privately and aids wait outside until the resident summons for help. The nursing home has to follow very tight guidelines for dignity of residents, practiced by how you speak with residents in public areas or in front of other residents.

Kittson Memorial Nursing Home’s entire facility is licensed as a 70 bed nursing home. There are sometimes circumstances where they move residents back and forth between the upper and lower level. Typically the upper level occupies 25 residents in the secured memory care unit and 45 residents in the lower level.



Figure 3.1 kittson- resident patio

# | graphic analysis |

| floor plan |

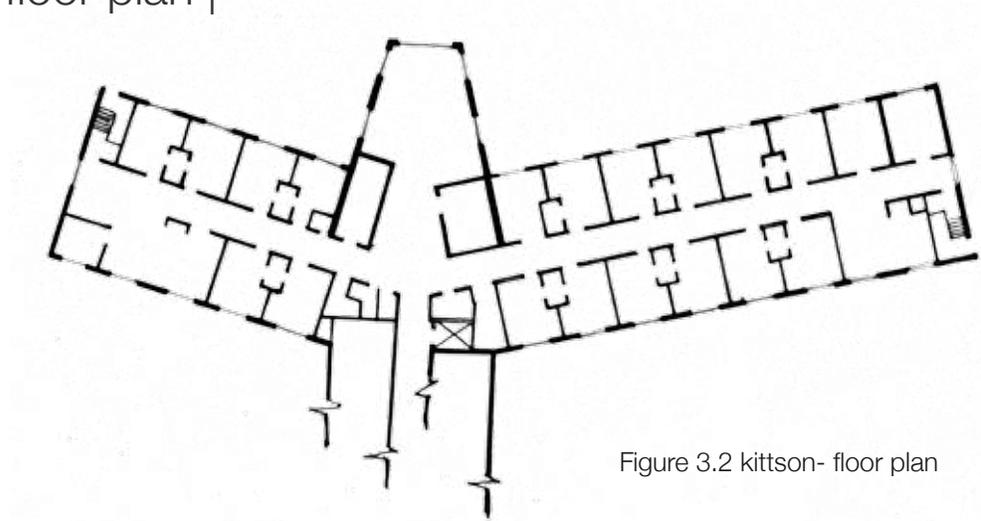


Figure 3.2 kittson- floor plan

| circulation |

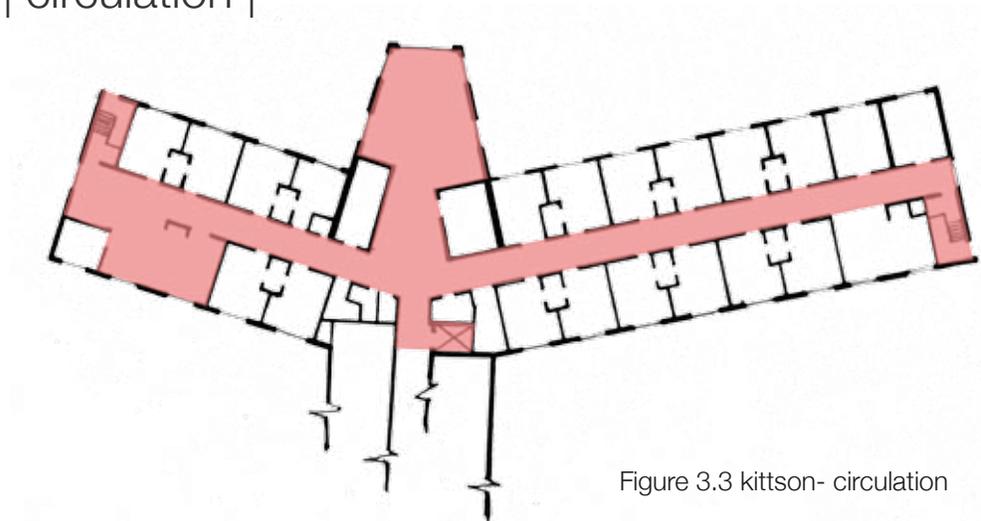


Figure 3.3 kittson- circulation

| geometry |

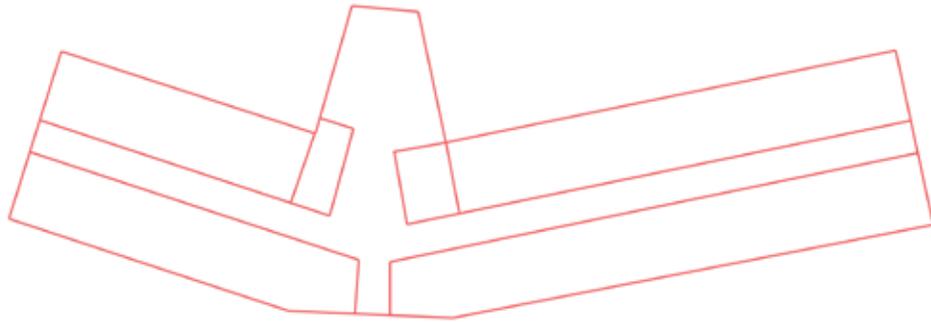


Figure 3.4 kittson- geometry

| hierarchy |

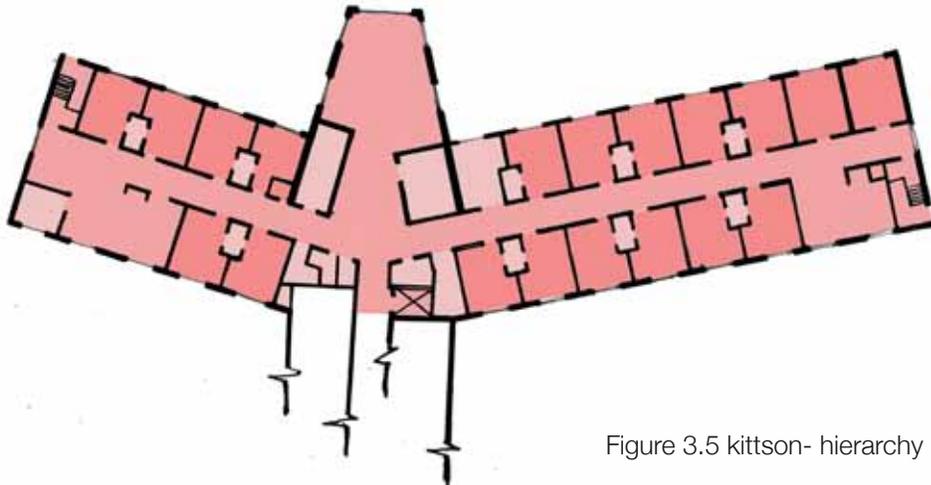


Figure 3.5 kittson- hierarchy

# | typological research |



Figure 4.0 borg- exterior perspective

# | Borg Pioneer Memorial Home |

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| location |

Mountain, ND

| typology |

basic care living facility

| year completed |

1948

| major program elements |

dining room  
laundry  
kitchenette  
living room  
bedrooms  
nurses station  
bathing and toilet  
activities room  
kitchen

---

The Borg Pioneer Memorial Home is a basic care facility that provides live in care, as well as a place for the local elders to participate in activities. This case study was selected because it is a good representation of institutional work in a rural community. This facility is the focal point in the small town of Mountain. It is sponsored by the founding churches in the area. This sponsorship is extremely important because it invests the community.

This facility shares many similar program elements with other elder care facilities. These spaces are mandatory and typically carry the same design features. Both this facility and the Kittson Memorial Nursing Home have large dining rooms with large span windows to let in natural light. Residents use these spaces all throughout the day as a gathering space. A stone patio was also included in the remodel as an addition to the existing gazebo that is utilized as outdoor space.

The design of the dining room seems to have more integrated spaces for additional activities. While I visited this case study, a member of the activities staff was setting up a flower arranging class for the residents. These flowers were to be used as table centerpieces, which is a great opportunity to allow residents to influence their space. The resident's rooms and bathrooms vary in design from the Hallock nursing home. The Borg Memorial home has residents living on three floors. Currently each person has their own private room amounting to an occupancy of 43. The facility has the ability for four rooms to be occupied with two individuals. Borg also relies on more shared toilet rooms, however, the toilet rooms are equipped with showers, resulting in less toilets per resident and more showers per resident. This could be credited to the independence of the residents in the Borg Memorial home, versus the assistance required of residents living in the Kittson Memorial nursing home.

Way finding is much more difficult within the Borg Memorial home. The dining hall and residence halls are virtually two separate buildings that are connected by a circulation core with a staircase and an elevator. The nurses station is located up a half level from the ground at the rear (north) side of the building. When I arrived at the site, I was unsure of where to park and where I could enter.

The structure of the old portion of the Borg nursing home with all the residences is made from concrete masonry block construction. This material has withstood time and proves it's integrity. The older part also has three sets of stairs acting as additional load bearing elements.

The Borg Memorial home is slowly working on updating the residential side of the facility. The halls are white and sterile and very institutional. The architects did a great job blending the exterior facade of the new and old structures, however, the interior spaces reveal a gap in the generations that they were both created.

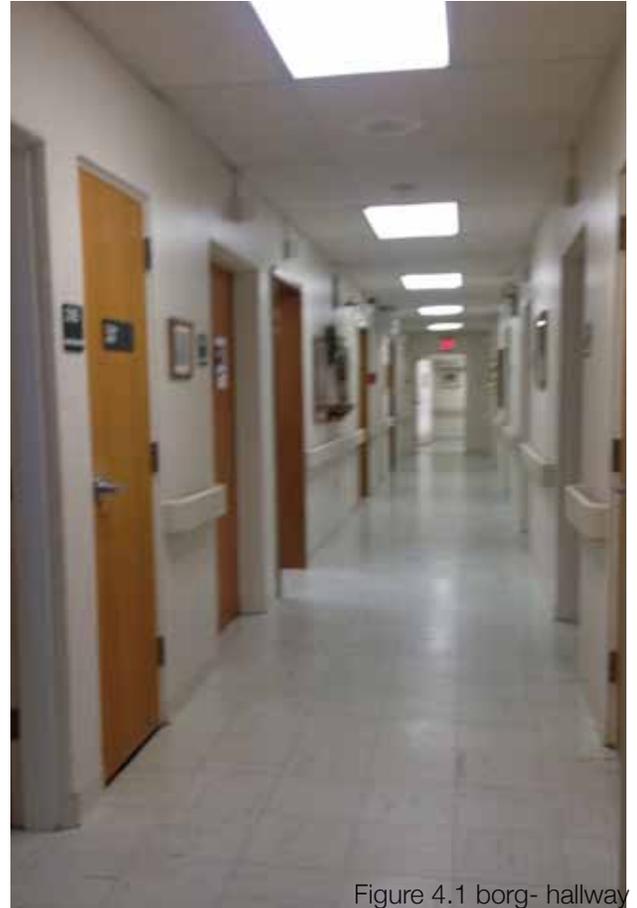


Figure 4.1 borg- hallway

# | graphic analysis |

| floor plan |



Figure 4.2 borg- floor plan

| circulation |



Figure 4.3 borg- circulation

| geometry |



Figure 4.4 borg- geometry

| hierarchy |

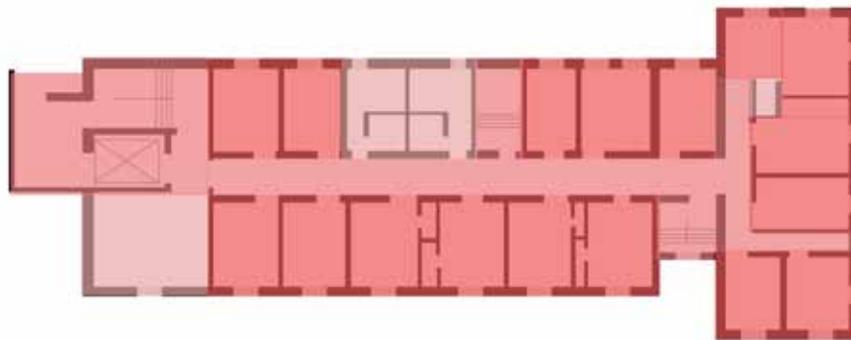


Figure 4.5 borg- hierarchy

# | typological research |

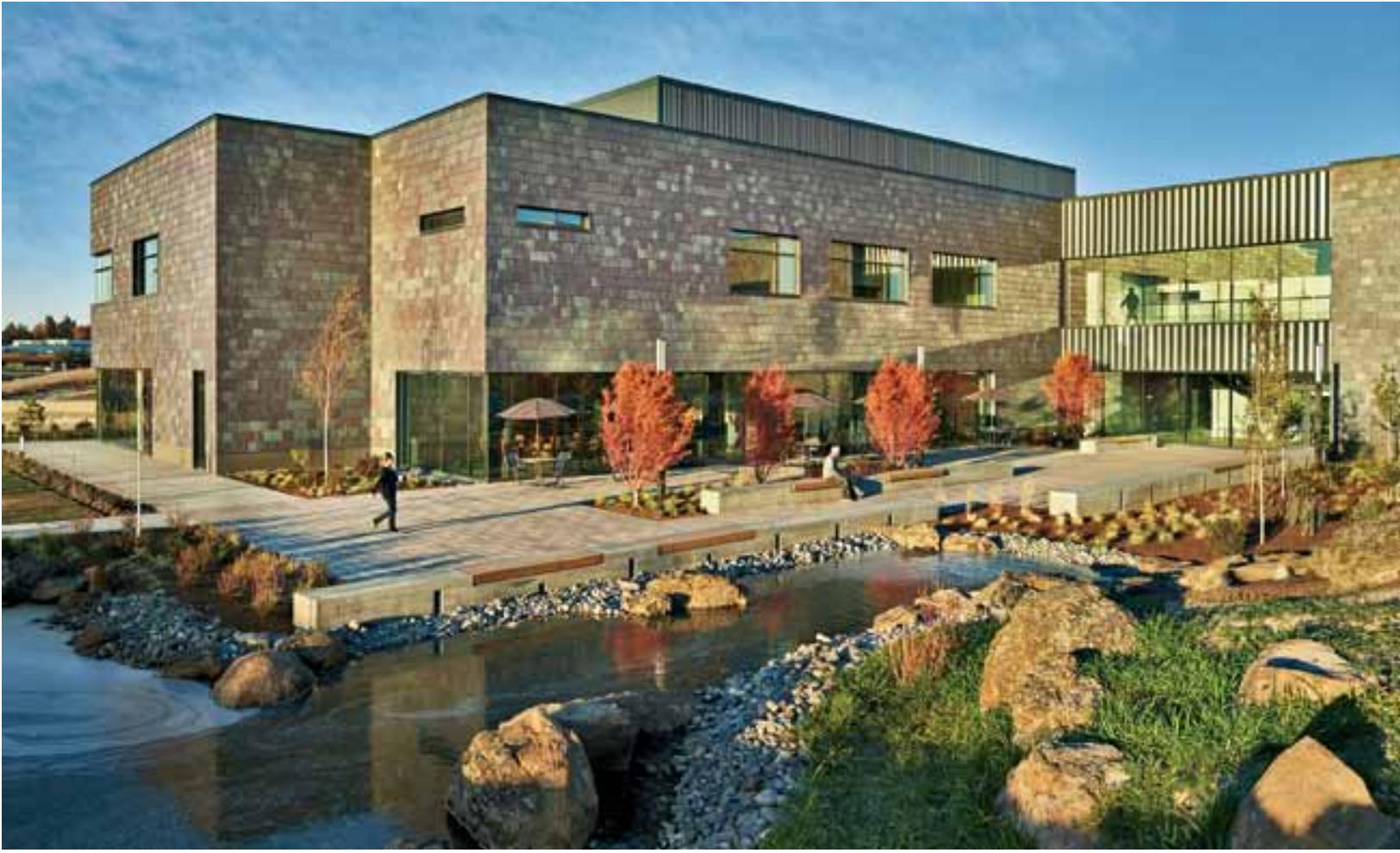


Figure 5.0 St. Anthony's- perspective

# | St. Anthony Hospital |

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| location |

Pendleton, OR

| typology |

hospital

| year completed |

2013

| major program elements |

emergency room  
pharmacy  
chapel  
gift/ coffee shop  
laboratory  
birth unit  
intensive care unit  
ambulance entrance  
healing garden

---

St. Anthony Hospital in Pendleton, Oregon is a great case study as fine architecture and good institutional work. The 105,200 square foot structure was designed to serve a variety of medical purposes with a minimal footprint in order to keep the costs down. This structure uses purple and green slate and metal panels on the exterior, with the intent of masking the size of the building by blending it with the landscape. This hospital is relevant to my design of the basic care facility because it acknowledges the history of the community, and provides a fresh face for the town's medical services.

The client for this project asked the architects to create a design that would provide easy way finding throughout the space. They also requested that all treatment facilities be located on one level. These design features aid in the overall circulation of the space.

This study showcases a contemporary architectural style, represented by straight lines and the use of materials. The interior reveals hierarchy by the volume of spaces. The main entrance features a double story atrium with tranquil views of the hospitals healing garden. Spaces become more modest in size in order to give a sense of privacy.

Natural light was an important feature that the architects focused on capturing in the design. Large spanning windows make spaces appear larger and allow users to enjoy the beautiful 90 acres of rolling hills.

This case study's origin is similar to the Borg Memorial Nursing Home. The original St. Anthony Hospital was founded by local nuns who raised money for the construction costs. The founding churches in Mountain, North Dakota gathered their resources to sponsor the nursing home, and continue to do so to this day.

## | St. Anthony Hospital |

The typology of the hospital is very similar to previous studies of elder care facilities. Both facilities serve the purpose of rehabilitating clients. The program elements differ because the hospital requires more specialized equipment and spaces for these to operate.

This design is holistic in its approach to honor the past, incorporate the environment, and provide a positive experience for its users. Local and native landscaping practices were used to showcase the communities vernacular.



Figure 5.1 St. Anthony's main entrance

# | graphic analysis |

| geometry |

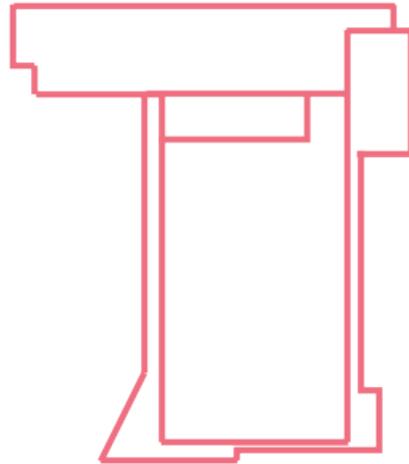


Figure 5.2 St. Anthony's- geometry

| natural light |

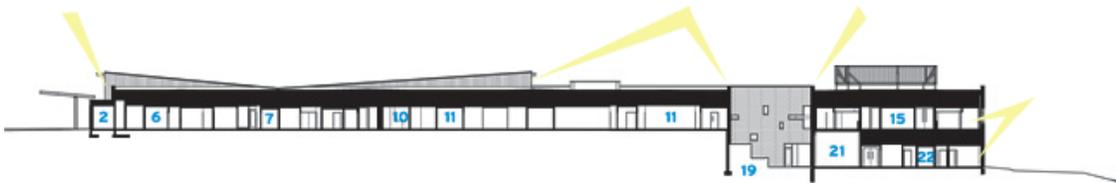


Figure 5.3 St. Anthony's- natural light

| floor plan |

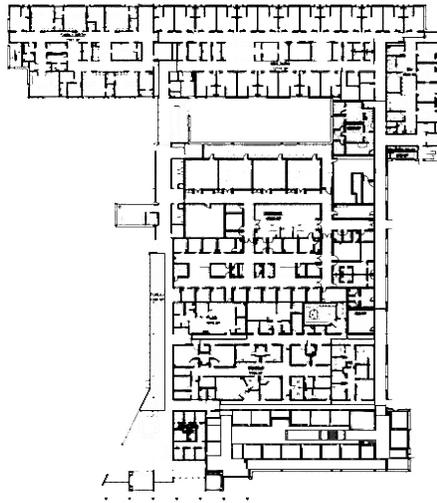


Figure 5.4 St. Anthony's- floor plan

| massing |



Figure 5.5 St. Anthony's- massing

# | typological summary |

---

The goal of this thesis is to state my theoretical premise, and create a work of architecture that supports that idea. The three case studies that were analyzed are the Kittson Memorial Nursing Home in Hallock, MN, the Borg Pioneer Memorial Home in Mountain, ND, and St. Anthony Hospital in Pendleton, OR. All three of these case studies are able focus on at least one project intent that was stated in my abstract.

A common element in all three designs was the spatial order and adjacencies. I chose to represent the hierarchy of spaces in terms of primary, secondary, and tertiary spaces, ranking them by their level of importance to the client. The primary spaces are the bedrooms, where the residents spend most of their time. The design of these spaces is crucial because it affects the cares that residents/patients receive, and the manner in which employees are able to conduct such cares.

The facilities in Pendleton, Hallock, and Mountain share a strong relevance with this thesis project. The client base intended for this thesis project and the environment in which it exists is very similar to all three studies. The thesis site, located in Grafton, ND, is a rural community filled with heritage. Pendleton is slightly larger than both Hallock and Mountain, but the community is supportive and is represented by incorporating local artifacts.

St. Anthony's Hospital has an obvious upper hand over Hallock and Mountain. The construction was completed within the last year, which has enabled the facility to incorporate state of the art technology and design standards. Both Borg Memorial and Kittson Memorial have recently undergone renovations, however, some technical issues have yet to be updated.

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All three projects that were researched and analyzed have provided meaningful insight to design a successful thesis while considering the health, safety, and welfare of all users. The largest commonality in all three studies is the intended typology. Concentration on improving the quality of life for residents and the efficiency of a workspace for the employees are two crucial standards for the design of a healthcare facility. Quality of life can be improved by incorporating gardens,

providing natural light, and allowing access to fresh air. Employees will benefit from the same design choices that improve the quality of life, by improving the environment where they work. Spaces with these design standards are directly associated with increasing working morale. This thesis will learn from the observations that were made in the case studies to provide a stable base of knowledge to draw from.

# | major project elements |

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## | public spaces |

- dining room
- activities room
- living rooms
- water closets
- parking
- library
- greenhouse

These spaces will be shared by residents, employees, and guests. The peak usage hours will fluctuate throughout the day as individuals choose to use the spaces. Rooms, such as the dining room, serve a variety of purposes by hosting chapel, entertainment, eating, visiting, large activities, etc.

## | semi-public spaces |

- kitchen
- laundry
- offices
- loading dock
- nurses station
- storage

The semi-public spaces are primarily used by employees, however, they are places that often see the most traffic for their scale. These spaces have prioritized users, and are typically accessed during shift works hours, with employees rotating three times every 24 hours.

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## | private spaces |

bathing rooms  
bedrooms  
water closets  
records  
medicine room

Noted spaces will be designed to allow privacy for the users of the spaces, as well as the contents which they possess. Acting as a residence, it is important to provide places that respect the users privacy and dignity.

## | functional spaces |

maintenance room  
mechanical room  
circulation  
janitorial closets

Functioning spaces are extremely important, and often times go unnoticed. The design of these spaces will be thoughtful, in terms of effectiveness, and aesthetics.

# | client description |

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## | owner |

The basic care living facility will be privately owned and sponsored by the city of Grafton, ND.

## | client |

The facility will be specially designed for employees, community members, and the elderly in a rural community. This structure will provide a place to work, live, and interact. Healthcare facilities are required to abide by many laws and codes. These regulations are designed to provide an improved health, safety and welfare of all users.

# | user description |

## | residents |

The facility's occupancy will fluctuate, based on need and the request for private or shared rooms. These users will have permanent residence with 24 hour usage. This facility will be basic care, so vehicles are permitted if the family and doctors allow the residents to drive. Physical restrictions will vary for each resident, however, basic care requires that all residents are able to transport themselves. Medical issues will also be judged on a case to case basis.

## | nursing staff |

There will always be at least one nurse on staff at all times; this number will depend on the resident occupancy. Nurses will work 12 hour rotations, while aids work 8 hour shifts. Parking will be provided for all employees. Space must be provided for the charting and storage required by all nursing staff.

## | additional staff |

janitorial staff  
dietary staff  
activities staff  
grounds keeper  
maintenance staff

These staff members will work specific shifts as their work is required. Typically only one member from each of the listed employees will be on shift at the same time, unless additional assistance is needed. Parking spaces will be provided by workers to utilize. Many small communities like to hire locals and individuals who are retired often seek out positions such as activities coordinator.

## | guests |

Visitors and family members will arrive during all different hours of the day. Most guests visit on weekends or throughout the week, during the late afternoon/ early evening. Parking will be provided near an entrance that provides easy way finding. There is no way of knowing a guest's medical condition or physical restrictions, however, the design should be considerate to a wide range of accessibility issues.

# | the site-macro |

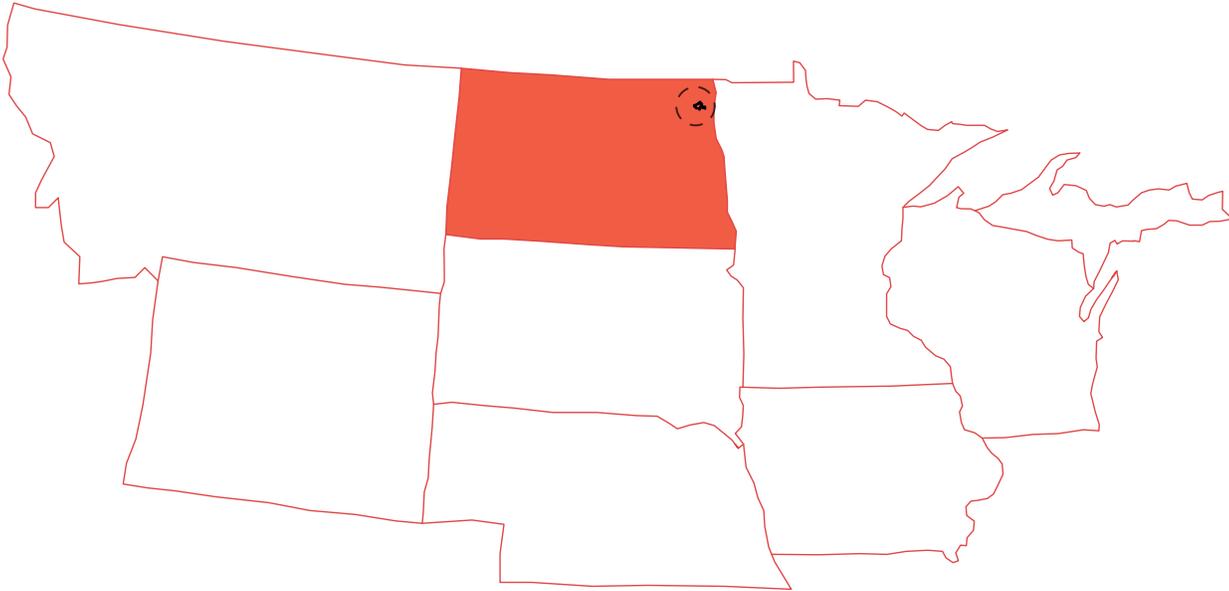


Figure 6.0 site- region

## | region |

North Dakota is one of the northernmost states in the midwestern part of the United States. It is neighbored by Minnesota to the east, South Dakota to the south, Montana to the west, and Canadian provinces Saskatchewan and Manitoba to the north. North Dakota is recognized for its frigid winter climate, oil extraction, and low density population.

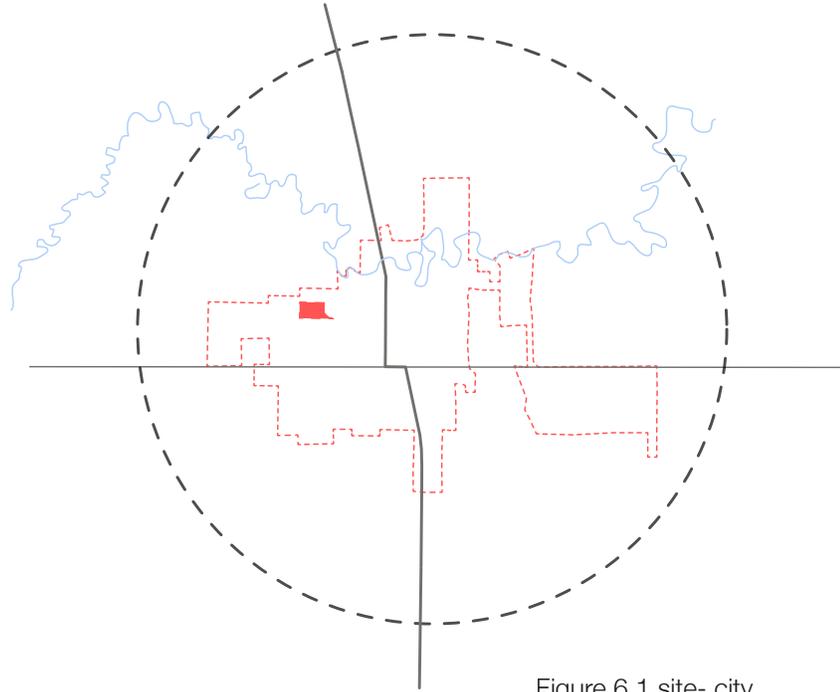


Figure 6.1 site- city

## | city |

Settlers began arriving to the area 1878, and within a year, the settlement built its first structure. This structure served as the post office, which drew in more travelers and led to the growth of the settlement. In 1882, Grafton, ND became a recognized town. Since then, the city's growth and economic stability can be mainly attributed to the agriculturalists.

Grafton, the county seat, has a population of 4,516 (2000 census), a little less than half of the population of Walsh county, where the city resides. The city is divided into four sections by highway 81 running north and south, and county road 17 stretching east to west. The city is located at the center of the Red River Valley and on the south side of the Park River. The site is located in the northwestern quadrant in the city of Grafton.

# | site information |

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## | address |

700 Sixth Street West Grafton, ND 58237

## | building names |

North A Building  
Hancock Place

## | site names |

North Dakota Institution for the Feeble Minded  
Grafton State School  
State Developmental Center at Grafton  
Developmental Center at Grafton  
Developmental Center at Westwood Park, Grafton

## | site area |

Approximately 29,500,000 sq. feet of potential space to be altered

# | the site-micro |

## | site |

The highlighted section as seen below defines a few of the most immediate campus buildings of the historic Grafton Institute for the Feeble-minded. The darker building represents the third Hancock building to be erected on site, and the structure that I have chosen to base my thesis project. The site and adjacent space provides primary views to the east and west. Directly east of the site is a large vacant lot that can be utilized for recreation. Tunnels run throughout the campus, allowing for safe travel between the structures at all times of the year. Proximity to certain services such as the hospital, mental health facility, and alternative housing support the appropriateness of the rehabilitation into an elder care facility.

Figure 6.2 site- context



■ campus buildings

■ site

▲ primary views

# | the site-views |



Figure 6.3 site- parking



Figure 6.4 site- lawn

These images offer a glance at the immediate context surrounding the Hancock (North A) Building. The panoramas have a better ability to illustrate the user's experience. This page captures the north, south, and west sides of the structure, focusing on adjacent structures, including the underground tunnel.



Figure 6.5 site- south



Figure 6.6 site- west



Figure 6.7 site- north

# | project emphasis |

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## | historical identification |

Allow the users to immerse themselves in the vernacular building traditions of the Midwest/ Great Plains.

## | adaptive reuse |

Find a creative design solution which will provide a new use for a building where the original purpose is no longer present.

## | metaphorical aspect |

Explore adaptive use rehabilitation as a metaphor for the process of human aging in terms of changes to the human body and spirit.

## | environmental issues |

Explore cold climate design strategies, use of regional building materials, sustainable architectural and landscape technologies, etc.



Figure 7.0 balcony

# | goals |

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## | academic |

My academic goals for this thesis project are put in place to maximize my efforts for research and expanding my own knowledge. Throughout my academic career, I have been allowed to discover my interests in the design world and expand my horizons in the architectural profession. I am going to take this thesis as an opportunity to learn about healthcare design and the historic integrity of existing structures. I will take full advantage of the knowledge of faculty members and additional information that is at my disposal. I rise to the challenge and anticipate striving for the goals I have made for myself as I further my knowledge and the academia of those who I can affect.

## | professional |

Professionalism can be accredited for the lasting respect that the field of architecture has proven to receive. This has been achieved by the continual efforts of patrons to further the understanding and knowledge within the field. I have placed goals for myself to create a thesis project that I can be proud of and provide evidence that I am a positive influence on the field of architecture. While at NDSU, I have acquired a passion for the studies of historic preservation and adaptive use projects. I have made extensive efforts to expand my understanding of both areas of expertise. I hope that I am able to continue these studies throughout my professional career and become a specialist on these topics.

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## | personal |

My personal goals are similar to my professional goals with additional passions driving me forward. I grew up in a small farming community, filled with heritage, history, family and friends in an area that I love. Rural communities are something that I hold dear, which is why I want to see them thrive. Architecture plays a large role in these communities, and I would like to use my knowledge to contribute.

Healthcare is also a passion of mine. I earned my certified nurses assistant license when I was 15 and have kept it active to this day. My experiences in the medical profession have allowed me to observe the effects an environment has on individuals. I hope to use this knowledge to provide efficient and noteworthy designs that positively affect the users.

# | plan for proceeding |

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## | research direction |

The research conducted for this project will be extensive and all encompassing. Since this thesis is focused on historic preservation and adaptive use, research began prior to selecting the structure and site. I conducted research to ensure that the structure would have the ability to fulfill the proposed project typology. Historical context will play a large role in the research of this thesis because it stands as the significance in the site selection and metaphorical aspect. Site analysis and program requirements will also be researched in order to gain more insight and strengthen my thesis. These topics will be further investigated using resources such as books, case studies, online sources, interviews with professionals, and newspaper articles.

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## | design methodology |

The design methodology utilized in this thesis will aid in the research and design process. I will implement a mixed method quantitative/ qualitative approach. The method of concurrent trans formative strategy will be guided by the theoretical premise and unifying idea. Quantitative and qualitative data will be gathered throughout the entire thesis process. I will analyze both graphics and texts to ensure the research is all encompassing. Research findings will also be presented both graphically and in written form to provide the most effective language. All data will be gathered by credible resources such as: direct observation, local surveys, archival searches, and direct interviews.

## | documenting the design process |

This thesis will be documented regularly at varying stages of research and the design process. All research will be gathered and made digital to show the progression of the design development. Final documentation will be assembled and made accessible to others through the North Dakota State University's online Institutional Repository System.

# | plan for proceeding cont. |

task	work days	dates
project documentation	123 days	1.13.15 - 5.15.15
context analysis	20 days	1.13.15 - 2.02.15
conceptual analysis	28 days	1.13.15 - 2.09.15
ECS passive analysis	13 days	1.20.15 - 2.02.15
ECS active analysis	13 days	1.27.15 - 2.09.15
digital model development	83 days	1.13.15 - 2.16.15
structural development	13 days	2.03.15 - 2.16.15
floor plan development	34 days	1.13.15 - 2.16.15
section development	21 days	2.03.15 - 2.23.15
envelope development	27 days	1.27.15 - 2.23.15
materials development	34 days	2.03.15 - 3.09.15
structural re-development	23 days	2.17.15 - 3.09.15
midterm reviews	7 days	3.09.15 - 3.15.15
project revisions	13 days	3.09.15 - 3.22.15
rendering/ artistic	20 days	3.23.15 - 4.12.15
preparation for presentations	34 days	3.23.15 - 4.26.15
presentation layout	23 days	3.30.15 - 4.22.15
CD of boards to thesis advisor	1 day	4.23.15
plotting and model building	13 days	4.13.15 - 4.26.15
exhibits installed on 5th floor	1 day	4.27.15
thesis exhibit	20 days	4.28.15 - 5.17.15
final thesis reviews	8 days	4.30.15 - 5.07.15
final thesis document due	1 day	5.15.15
commencement	1 day	5.16.15

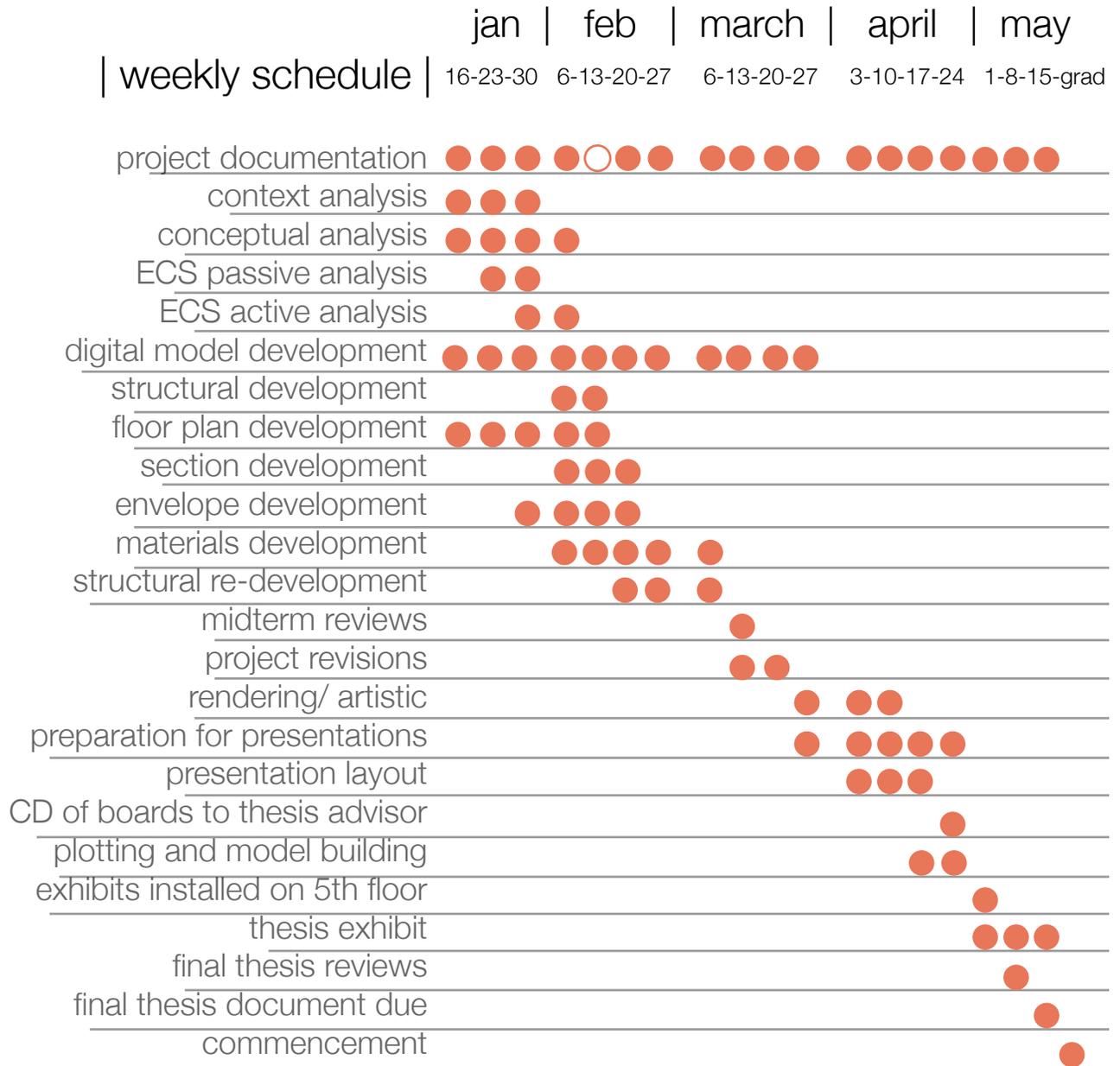


Figure 8.0 schedule

| thesis program |

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“Aging should be a continued stage of development and growth, rather than a period of decline.” (The Eden Alternative 2014)

# | theoretical premise research |

## | legacy, hope, and aging |

As this thesis studies the connection between the human body and the built environment, it will inform a holistic design, encouraging growth, renewal, integrity, and health in an aging rural community. Legacy, hope, and aging are evaluated as three critical elements in observing the aging rural community, consisting of people and structures. All three elements rely on the community members and the level of obligation that they possess to support and participate in said community.

A community can be created by any number of geographical, occupational, or ethnic combinations. Each of these communities is composed of a group of people and places, and each of these communities has specific traits and qualities that make it unique. They also have defining qualities that parallel those of their counterparts. In the case of the rural agricultural community, these elements are legacy and hope. However, because of recent advances in industrial agriculture that has allowed fewer farmers to manage more land, these communities are also linked by their increasingly advanced age. Separately, these three elements of rural agricultural

communities rely on community members to maintain their integrity. As any farmer would tell you, a well-tended crop yields a better harvest, and the same can be said for the small community. The greater the level of participation and volunteerism that is shown by community members, the better a community can honor its traditions and build on its hopes for renewed vibrancy.

Aging impacts both individuals and structures in a significant way. Both change, physically and spiritually, and the perception of them changes too. The life cycle of a human is similar to that of a building. For example, when a child is born, the baby holds much attention and intrigue; they are new and full of hope. You can't wait to watch them age. What will they do? Where will they go? As the child ages to middle life, some of those questions have been answered, and the child has grown into a person who may be well known to those around him/her. Sometimes, the person falls into a pattern of familiarity and is taken for granted. His/her defining traits are somewhat diminished, maybe by the veil of his/her career or family.

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However, as the person reaches advanced age, a shift in perception often shines through the muddy water of mid-life. The ideas and history of this person become a novelty, and are held dear by many. Their extraordinary link to the past is a torch of legacy, and the younger generation has the explicit responsibility to become the shepherd that passes it to the generations to come. This torch of legacy is the backbone of heritage, which allows us to maintain a semblance of what we were in the past, even if it's only temporary. People and places can remain "alive," physically or spiritually, by choosing to acknowledge their heritage and their legacy.

An architect can hope to pinpoint culture by observing the traditions and values within a community. Since the population is so low in rural communities, the success of a community is dependent on the support and advocacy of its members. Rural communities often consist of family-owned and operated businesses, such as the family farm, local lumberyard, hardware and grocery stores, etc. These businesses possess their own legacy, which has doubtless been

passed down through generations. These communities and their members thrive when the generations share values and traditions. Rural towns are very hopeful of their youth, and dependent on them to keep their community alive. By instilling a sense of their legacy in their youth, they can remain hopeful that their community (structures and members) can continue to age successfully.

There are many contributors to maintaining a healthy community filled with legacy and hope. The question is whether or not we are able to manage the legacy and control the change. Do we try to alter things based on the current norm, or do we continue with the common vernacular of design and lifestyle? We must be careful not to erase our past or negatively affect our heritage. This is relevant to both the individuals and buildings that are aging. We can be forced to watch things deteriorate because we are unable or unwilling to change. Plans should be executed in these small communities to promote hopefulness. Even if a building must be torn down, or a community member passes away, their legacy should continue by keeping vestiges of the past alive.

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## | individualized architecture |

Architecture has the ability to inform and affect the user on many levels. Architects play a critical role in shaping the qualities of our environments; they work in collaboration with clients to acknowledge and address their needs and ambitions, and they have the power to restore and promote solidarity, mental and physical health and are a source of happiness (Johnson, 2013). This research was conducted to support the idea that a structure can be personalized and possess the same qualities that an individual strives for. Metropolis magazine configured a list of ten qualities of good architecture that are strongly sought after: sustainability, accessibility, functionality, well made, emotionally resonant, enduring, socially beneficial, beautiful, ergonomic, and affordable (Pederson, 2009). By successfully providing these qualities, the space will connect body and architecture.

The number of older people is drastically increasing, and changes in how these people want to live their later years and their expectation of a higher quality of life, are creating the need for new care and housing options. As a result, new ideas about senior

care and housing have developed the idea that these environments are not healthcare facilities, but seniors' homes. Green Hill Retirement Community in West Orange, New Jersey dared to try a new model for elder care facilities (Tarkan, 2011). Four small houses called "Green Houses," were built near the existing facility. The homes have a front porch and back deck with tables and chairs. Each of these homes is able to house 10 residents in private bedrooms and baths. They are equipped with a large dining area, living room, and kitchen that residents are free to utilize. Two certified nursing assistants are assigned to each house, allowing the care to be much less rushed, offering individualized care and encouraging independence. Jane Larkin, 82, a resident at Green House and a retired teacher claimed, "There's more opportunity to be social here. We can get outdoors easily, and people like to visit more" (Tarkan, New York Times, 2011). Today's 80-year-olds are better educated, generally have more money than their predecessors, and expect to be physically and intellectually stimulated (Perkins, 2004).

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An elder care facility should optimize each resident's privacy and dignity. With the changing number of residents who request private or public rooms, some spaces should be adaptable to both needs. If the tectonics of a structure are versatile, the form has the ability to define numerous variations of the space. The idea of spaces that mutate for the benefit of its users is referred to as responsive architecture. Ethan Marcotte wrote an article that defines the nature of this notion (Marcotte, 2010). "Recently, an emergent discipline called 'responsive architecture' has begun asking how physical spaces can respond to the presence of people passing through them. Through a combination of embedded robotics and tensile materials, architects are experimenting with art installations and wall structures that bend, flex, and expand as crowds approach them. Motion sensors can be paired with climate control systems to adjust a room's temperature and ambient lighting as it fills with people. Companies have already produced "smart glass technology" that can automatically

become opaque when a room's occupants reach a certain density threshold, giving them an additional layer of privacy," (Marcotte, Responsive Web Design, para. 8, 2011). Just one large space can be easily rearranged to act as a dining area, living room, activities room, or space to visit with guests. Modern design technologies have allowed us to define spaces without compromising aesthetics and function. Long gone are the days of fabric curtain panels dividing spaces, and one bathtub shared among 100 residents. More and more individuals are requesting private rooms or apartments and less sharing of space. A study of assisted living commissioned by the American Association of Retired Persons found that sharing a room with a stranger was the second greatest concern for women and third highest among men. Only four percent of respondents over 50 years old preferred a shared room (Perkins, 2004). Providing several separate sitting areas allow the resident to socialize in common areas, while creating opportunity for privacy with visitors and family.

Providing independence for elders is made achievable by the care they receive, activities in which they are able to participate, and services that they are offered. The dignity of the residents relies heavily on their level of independence. They should have the capability to make thoughtful decisions for themselves, and be able to act on them. A key issue in providing an individualized residence is that the occupant is offered any options. Some of these options may be: spatial layout, proximity to amenities, thermostat control, and decor. As seniors move into living facilities, they want more space for their furniture and personal belongings, to be arranged in ways that are familiar. This not only allows them to control the layout, but also gives them the opportunity to emphasize their individuality by how they design and decorate their homes. The option to personalize a space instantly elevates an area and industrial place of business to a home. As one's age becomes more advanced, sensitivity to changes in temperature increases, therefore, interior temperature should be controlled in order to improve personal comfort.

Personal comfort extends beyond the interior of the facility. To add interest and support for memory, senses should be stimulated

through the use of indoor and outdoor spaces. The goal is to create a connection between inside and outside through the use of transition spaces and addressing specific users' needs. Outdoor spaces adjacent to actively used public spaces will get more use and benefit from nearby staff. Spaces should be designed to engage all residents, and entertain their interests. Covered or screened porches that extend from the building are a great transition space while offering shelter, security and an experience for residents who are unable or don't want to go outside of the building. Residents, guests, and community members utilize paved patios to entertain and partake in various outdoor activities, like barbecues and exercise or therapy. Raised gardens are a great opportunity for the residents to participate in an activity that results with contributions that they can claim. Gardens have been credited with possessing therapeutic properties that can be recognized in aging adults (Griffing, 2014). Residents utilize fine motor skills as they plant seeds and paint flowerpots and signs for gardens. Gardening also provides a strong sense of involvement and pride in their work. A successful design will allow the independence of occupants to be reflected throughout their living space, inside and out.

40 million seniors in the United States  
10 million seniors in Rural America  
**25%** of seniors in the U.S.  
live in Rural America

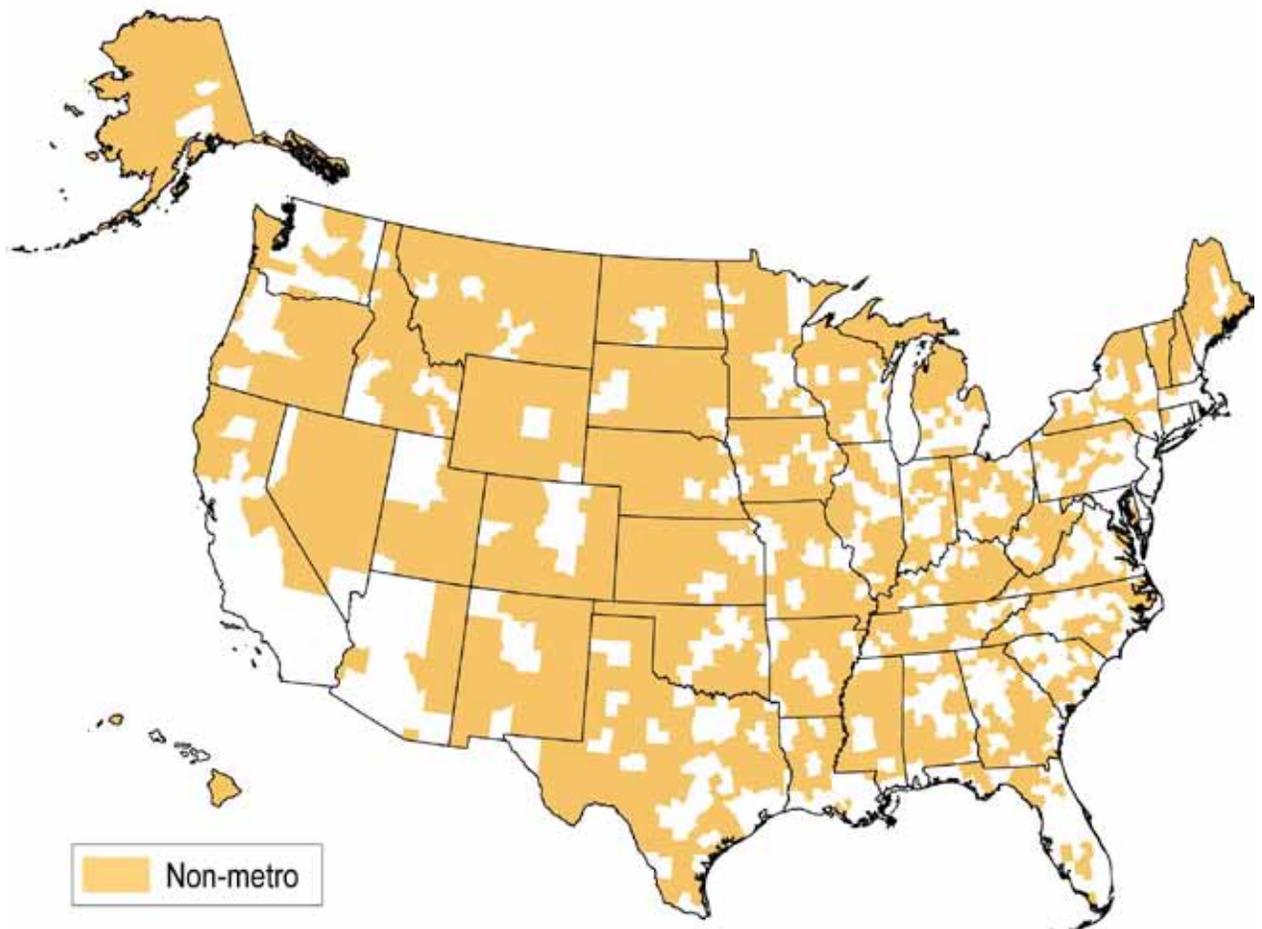


Figure 9.0 senior map

## | aging rural community |

Designing an elder care facility in Grafton, ND will provide a place where small town and rural community members can age, in an environment that they trust. There are many merits to living in a small community, which is why elders would rather remain in the society that they already know. Many of the people and families who populate small towns have been there for their entire lives. The majority of potential residents live, or have children who live, within five miles of the facility (Perkins, 2004). These people have borne witness to the passing of time and its reflection on people, technology, and structures.

Relationships are made evident by observing the effects of time on a human body (spiritually and physically), comparable to similar effects that can be observed in a structure. Simultaneous aging has the ability to share qualities such as loss of integrity and obsolescence. The preservation and adaptive use of the Grafton State School of the Feebleminded will support this metaphor.

While this rehabilitation serves the individual, the renewal of this structure will be a contributing factor in allowing the heritage of this small community to remain recognized. Many of the existing facilities serving the aged are becoming obsolete, and with the increasing demands and expectations of the elderly, these obsolete facilities will suffer. “One of the most common assignments for architects and interior designers is to overcome the physical factors creating obsolescence” (Perkins, 2004, pg. 130). A solution to the obsolescence could exist by making the facility more attractive and homelike with an interior face lift, or by offering building additions or larger apartments to increase the proportion of private rooms to shared rooms. Taking these steps to revitalize an existing structure will promote continued strength and hopefulness in the community, through rehabilitation. The history, significance, integrity, and soul will not be forgotten, in both the structure and the individual.

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Small towns allow people to establish camaraderie with each other and develop trust within the community; this trust leads to traditions, sponsorship, and support. During seasonal festivals, a large majority of the community members congregate to host county fairs, parades, tour of homes, and other events. These become heavily anticipated and community members donate their time to form committees in order to make the events develop into annual traditions. Small communities benefit when people take pride in their communities and promote its success. This can be done through sponsorship and support of local businesses, organizations, and community members. This sponsorship is practiced through fund raising events to fulfill many needs, such as improvements to an important local structure and benefits hosted for people suffering hardships. Individuals in rural communities are instilled with particular values, which affect their behaviors and

attitudes. People in these small communities create a culture that is formed by shared ideas. As the community members age, traditions and values are passed down through generations, allowing the community to flourish.

Rural communities are most often strategically placed settlements, functioning as an organized structure of space. Unlike urban areas, these rural communities have adapted to living on a less readily available surplus of goods. It is important to note that the goods that are not readily available are not typically necessities. Even so, many rural communities have dwindled into non-existence because of the loss of their goods and the number of residents required to sustain the basic necessary goods. As a rural community ages, it is important that its members continue providing these goods and services.

# | research summary |

The research of this thesis was conducted to investigate ideas that are complementary or related to the theoretical premise. There were three topics of research that were generated by the goals of the thesis: “legacy, hope, and aging,” “individualized architecture,” and “aging rural community.” It is intended that by studying the past, present and future of these notions, a holistic and cohesive design will be informed.

| legacy, hope, and aging |

“Legacy, hope, and aging” is dedicated to understanding the dynamics of a community, the hope that a community holds, and the effects that it has had by the legacies it leaves. Legacy and hope are comparable to heritage by the way they exist perpetually. The physical and spiritual nature of a being or object is altered by time. This statement qualifies for many beings and objects, but for the purpose of this thesis, this research refers to an elderly individual and a historic building. As a being or object reaches advanced age, its well-being can decline. The connection to the past provides a

unique significance. The significance of an older person and building is constructed by its connection to the past and by the legacy that has been acquired. This legacy is the backbone of heritage, which reminds us of what existed in the past. People and places can remain “alive,” physically or spiritually, by choosing to acknowledge their heritage and their legacy.

| individualized architecture |

It is stated that aging impacts both individuals and structures in a significant way. “Individualized Architecture” focuses on the fact that in most rural communities, the elderly will be looking to relocate to a place that will accommodate their declining health and fit their needs. When these individuals will be looking for a replacement to a once suitable home, they will be looking for a place that offers individualized care and encouraging independence. It is stated that by instilling a sense of their legacy in their youth, they can remain hopeful that their community (structures and members) can continue to age successfully.

With this being said, they want to live in a structure that gives them hope for the future but yet give them comfort of the similarity of their past. With designing and building of an elderly care facility, the options should be: spatial layout, proximity to amenities, thermostat control, and décor. Their new “home” should give them the option of being inside and outside. Having raised gardens gives elderly the chance to be outside and to claim their hard work and care for something.

| aging rural community |

“Aging Rural Community” focuses on the compilation of aging communities and what deems it successful. A community’s strength and success is a direct reflection of the collaborative efforts made by the members. Aristotle said it best when claiming, “the whole is greater than the sum of its parts.” A community must work together in order to persevere both physically and spiritually. Elderly individuals and structures rely on very similar types of care. The aging bodies require rehabilitation, life of both should be able to sustain, and the unique memory must be preserved.

Rural America is Older  
Than the Nation as a Whole  
Median Age

40 37

rural & small town areas    united states

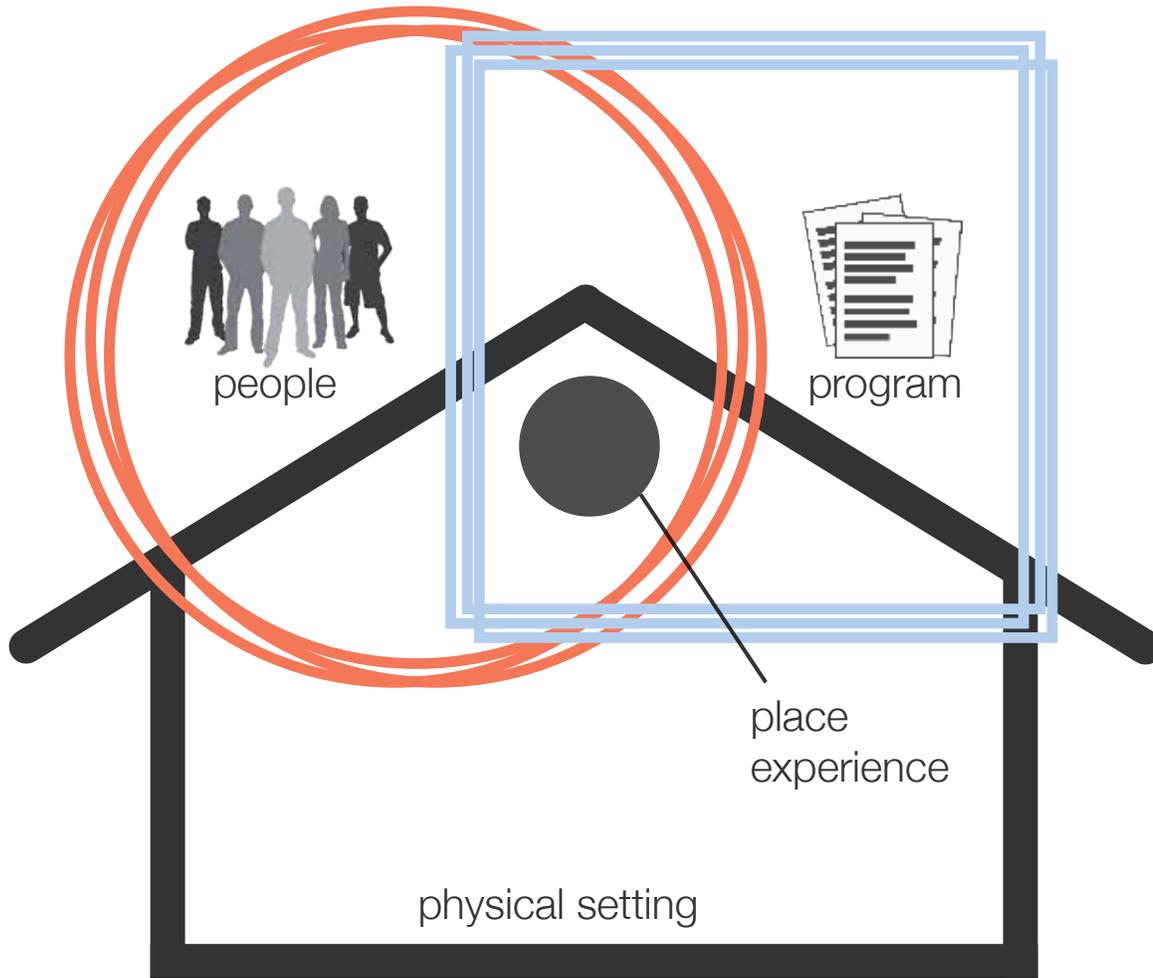


Figure 10.0 place

# | project justification |

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The demographic structure of the United States and other countries are experiencing dramatic changes. An estimated 22 percent of the population will be over the age of 65 by 2030, and the fastest growing cohort within this subgroup will be people over 75. Currently about 44.5 million people are over the age of 75; by 2050 they will number almost 50 million (NCHS, 2005). As the population ages, there are many societal challenges ensuring our infrastructures possess the ability to support the needs of older people enabling them to live healthy, independent, and productive lives. To address these challenges, we must rethink our conceptualizations of aging and redefine what it means to be “older” (Czaja, Sharit, 2009).

Rural communities rely heavily on the aging adults as a resource for knowledge, culture, and heritage. With the increasing number in senior adults, an increase in the number of live-in care facilities is essential. Through the establishment of rural elder care facilities, the elderly are able to participate in the continued development of the community that many identify with. Local people, structures, and culture contribute in developing an identity. The Grafton State School campus is one of the most notable architectural and historical features in Grafton, ND, a novelty to the northeastern part of the state. Rehabilitating the century old structures and adapting them for modern uses preserves the history of the small community.

By preserving and adapting the North A building into a basic care elderly living facility, I aim to provide a connection between the physical and spiritual rehabilitation of the human body and built environment. Achieving this will improve the integrity, community connectivity, heritage, independence, and health of both the structure and its occupants.

# | historical, social, cultural context |

## | history of grafton |

The city of Grafton was settled in the spring of 1878 when O.T. Gorder and M. Christianson located on the north side of the Park River. In the spring of 1879 Thomas E. Cooper, age 56, his wife and four grown children arrived to take up a permanent residence. In the fall of 1879, Nils Monson walked from Winnipeg with four companions to acquire homesteads, and on New Year's Eve, 1879 Gust Colsen arrived. Portions of the homesteads of these three early settlers formed the original town site of Grafton.

In 1879, Thomas Cooper established a post office as the first structure built on the Grafton site. He named the office after the county in New Hampshire where his wife's parents were from. Cooper secured the post office by traveling many miles to obtain the signatures of the settlers in the area. The first pioneer business places were located on the south bank of the river near a point where the Great Northern Bridge was later built. These included the first hotel, a small store, blacksmith shop, grocery store, and a general store.

In 1881, Walsh County was formed, from the northern two tiers of townships in Grand Forks County and the southern two tiers of Pembina County. During 1881, members of the community applied and were approved for the incorporation of the village of Grafton. That same year, Grafton was designated as county seat of Walsh County.

The railroad was a very important factor in the growth of the area and the town. During the year following December of 1881, the population increased from 400 to 1,500 people in Grafton. In 1883, the village became a city, and Stewart Carincross was elected as Grafton's first mayor.

The population of Grafton is approximately 4,516 (2000 Census). Grafton covers roughly 3.04 sq. miles of land area. Grafton is 12 miles west from the Red River of the North and on the border of its tributary, the Park River. Grafton is the county seat of Walsh County and the center of the far famed Red River Valley.



Figure 11.0 street 1



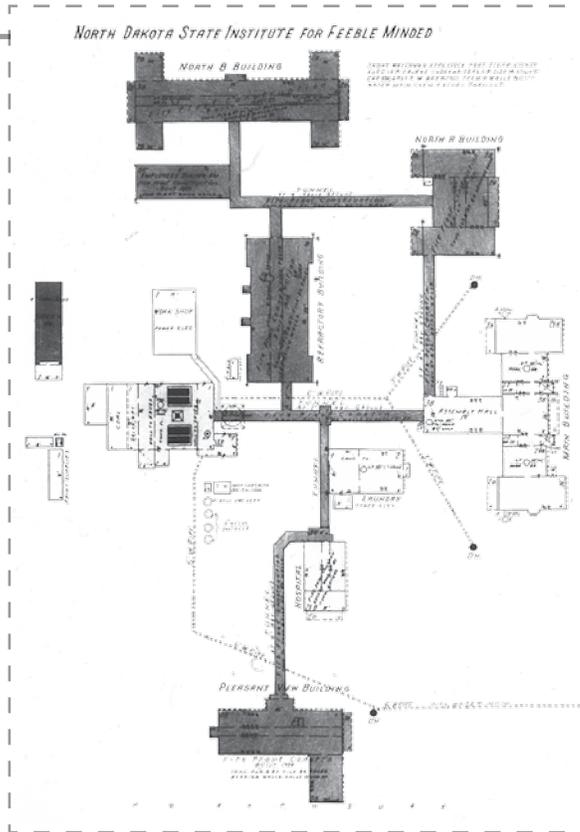
Figure 11.1 street 2



Figure 11.2 street 3



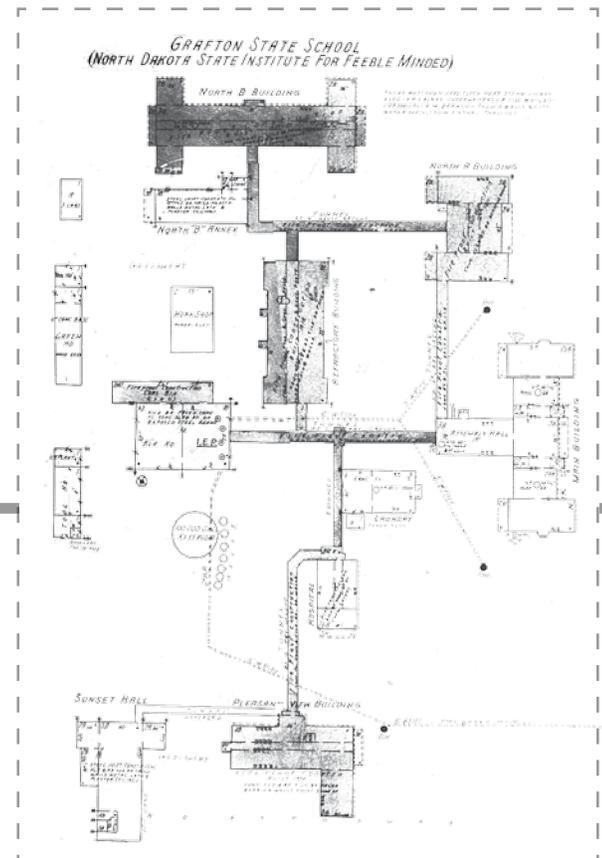
Figure 12.3 sanborn 4



October 1918



Figure 12.4 sanborn 5



January 1929

Figure 12.5 sanborn 6

These five Sanborn Fire Insurance maps show the development of the Grafton Institute of the Feeble-minded within a 25-year time span. Sanborn maps were designed to assist fire insurance agents in determining the degree of hazard associated with a particular property and therefore show the size, shape, and construction of dwellings, commercial buildings, and factories as well as fire walls, locations of windows and doors, sprinkler systems, and types of roofs (Ristow, 2014).

In 1889, the North Dakota State Constitution approved the plan for construction of an institution originally known as the School for the Feeble-minded. A Board of Trustees, consisted of five members appointed by the Governor, governed the School. This board selected a president, secretary and treasurer and appointed a superintendent. In 1903 a parcel of land near Grafton, ND was purchased from the U.S. government with the intent of providing custodial care, education, and training for North Dakota's "mentally retarded" residents. On April 27, 1903, the board advertised for bids for the completion of the building. Due to the high prices of material and labor during the building season of 1903, the building was unable to be completed until mid-December of that year. Due to the depletion of the maintenance fund, the board held off opening the institution until May of 1904. Grafton State School (known as Life

Skills and Transitional Center) continues as a residential and training facility for the intellectually disabled who cannot derive greater benefit from other community-based programs offered in the state. The school has provided a broad range of special education, medical, rehabilitation, social, psychological, and evaluation services in addition to residential care.

The school opened to the first applicant on May 2, 1904. Due to the growth in student population, Grafton State School was in need of additional housing and the Legislature appropriated money for renovation of a section of the facility at San Haven State Hospital at Dunseith. By the first of November 1904, the institution had admitted seventy-seven individuals, consisting of forty-seven males and twenty-eight females.



Figure 13.0 rear



Figure 13.1 postcard 1



Figure 13.2 postcard 2

In the 1933 the Institution for the Feeble-Minded, was renamed to Grafton State School to recognize the training emphasis at the facility. In 1967 the Legislature more clearly defined the mission of the School and changed the term “feeble minded” with “mentally deficient.” Students were provided educational opportunities depending on their abilities. Like most facilities in the United States for people with developmental disabilities, the Grafton State School reached its peak population in the late 1960s. At that time, about 1,300 people were served per day through the San Haven and Grafton locations. Admissions decreased and population levels began to fall when special educational services became available in school districts starting in the late 1960s, early 1970’s.

In 1982 the North Dakota Association for Retarded Citizens filed a lawsuit in Federal District Court to deinstitutionalize students and establish residential treatment centers within North Dakota communities. The San Haven location closed in 1989,

and the state has significantly expanded opportunities for people with developmental disabilities to live, work and participate in their home communities. Students were placed in community facilities and homes or transferred to Grafton State School. Due to the change in mission, the Grafton State School became known as the State Developmental Center at Grafton on July 1, 1989. From 1989 to the present, the Grafton State School changed names three times. In 1995 the State Developmental Center at Grafton became the State Developmental Center at Westwood Park, and finally in 2013 Legislation changed the name of the Developmental Center at Westwood Park, Grafton, to the Life Skills and Transition Center.

Today, the Life Skills and Transition Center serves 86 individuals on-site by providing specialized service and acting as a safety net for people whose needs exceed community resources. The center employs about 375 people (Bonham, 2013).

The 1800's saw major changes both for humanity and seniors specifically. Governments began realizing they had an obligation to ensure that destitute seniors had somewhere to live. "Workhouses" and "poorhouses" were built for seniors with no means and no family to take them in. "A revolution in how we understand the elderly, the biology of aging, the specific needs of elderly, and the role of the government in caring for the vulnerable means we are now growing older in an entirely new world" (Gordon, 2014).

Philadelphia was one of the first cities recorded providing specialized care and institutions for the disabled and the elderly. The Quaker community in Philadelphia founded the Friends' Almshouse in 1713. Poorhouses flourished in the coming decades and housed all the "deserving" poor, from orphans, to the mentally ill, to

the disabled. In 1817 the Indigent Widows' and Single Women's Society, or "the Widows' Asylum," was one of the first homes dedicated to the elderly. In 1844 these homes stated that the facility was for individuals who lived "in the more refined walks of life" (Gordon, 2014). These homes were oppressively institutional and the care for seniors was based on the efficiency instead of the quality in which it was performed.

In the 20th century, aging was first recognized as a social issue in the U.S. Advanced age was classified as an ailment different from sickness, old age, and poverty. "Gerontology" and "geriatrics" were both coined within the first decade of the century (Anderson, 2013). Around 1910, Massachusetts conducted the first major survey on the economic situation of the elderly.

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In 1950, many officials hoped Social Security would empty the poorhouses. But the elderly who were physically or mentally unable to care for themselves moved to new, private institutions. Amendments that increased funding increasing the number of nursing home beds from 260,000 in 1954 to around half a million in 1965. That same year, Medicare and Medicaid came into law. Medicaid enabled the elderly to afford long-term care. Between 1960 and 1976, nursing home beds increased 302 percent (Gordon, 2014). Medicaid funds increased monitoring by Congress, which resulted in new standards being set in place in 1968. These standards included 24 hour nursing services, building codes and supervision by a full-time registered nurse. Facilities unable

to operate by these standards were closed, leaving more Medicaid funds for hospital style homes.

Park Place in Portland, Oregon, the first nationally recognized assisted living facility, opened its doors in 1981. This facility was considered a more compassionate alternative to nursing homes. Assisted living communities provide intermediate care for those who don't require the full cares of a nursing home, but cannot live independently. The population of these facilities increased drastically by offering greater privacy, independence, and a less institutional feel. They are now home to around 1 million Americans.

“Historic Preservation applies the measures necessary to sustain the existing form, integrity, and materials of a historic property. Preservation work generally focuses on the ongoing maintenance and repair of historic features and materials rather than extensive replacement and new construction” (AIAS Handbook, 2000, ed.13). In 1889, the first state historic preservation group in the country, the Association for the Preservation of Virginia Antiquities was founded in Richmond, Virginia. In response, small groups began developing historic preservation laws in states like South Carolina and Louisiana. The preservation of historic places became recognized nationally in 1949 with the establishment of a National Trust for Historic Preservation. The organization aimed to protect structures providing leadership, advocacy, and education, and also wanted to “save America’s diverse historic places and revitalize communities” (Briney, 2014).

Both the National Trust and the preservation movement entered a new phase with the 1966 passage of the National Historic Preservation Act. The act provided federal

funding to support for the Trust’s work. The Preservation Services Fund was created in 1969 to provide financial assistance to local preservation projects. These funding groups were the catalysts required to support and enable historic preservation projects. Small organizations specializing in preservation began developing across the county. In 1980, the National Main Street Center emphasized preservation as a tool for revitalizing traditional business districts, and by 1994, Community Partners was founded to promote preservation in historic residential neighborhoods. Other special programs were created to focus on rural preservation (1979), heritage tourism (1989) and statewide organization development (1994).

Today, the National Trust employs 300 staff members at the headquarters in Washington, D.C., nationwide field offices, and historic sites in 15 states. With 750,000 members and supporters, the National Trust has become the organization its founders envisioned: the vigorous leader of an expansive movement that is changing the face of America (History of National Trust, 2014).

# | historical analysis |

The historical, social, and cultural research has been compiled to support the context of the theoretical premise. The theoretical premise emphasizes four main ideas: renewal, culture, preservation, and adaptation. A thorough understanding of the context must exist in order to create a holistic design solution for the preservation of the Grafton State School and adaptation into an elder care facility.

Research conducted on the city of Grafton's history highlights the significance of the city and develops an understanding of the rural community and its culture. The site development of the Grafton Institute of the Feebleminded was progressive and resulted in new structures and adaptive reuse of the existing. Discovering the social context of the institution informs choices that will be made, as it is adapted into an elder care facility. Preservation and renewal of an existing structure will rehabilitate the heritage of the community and provide a place that promotes rehabilitation for elderly occupants. Since the establishment of these institutions, elder care facilities have significantly progressed and are continually driving forward to provide homes for the elderly instead of institutions.

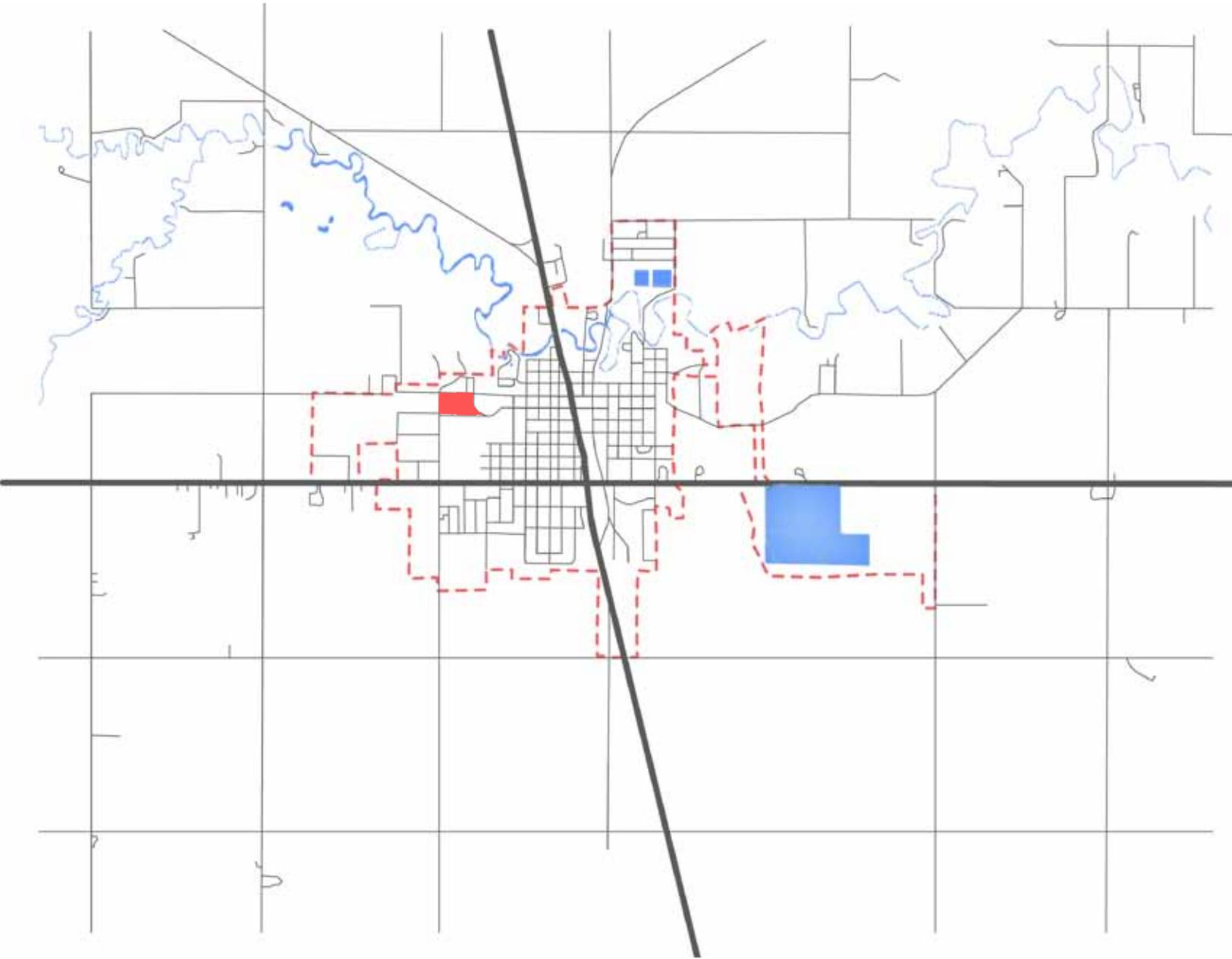


Figure 14.0 large site

# | site analysis |

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# | site narrative |

I have visited my site on numerous occasions, and the experience of arriving, resulting in the anticipated reveal of the site, always made the trip worthwhile. After taking my exit on interstate and heading straight west on highway 17, I see a sign for Grafton reading 10 miles. On a summer afternoon, the road has few travelers. The majority of the vehicles belong to farmers, who are moving equipment between fields and checking their crops. As I near town, a crop-spraying airplane flies perpendicular to the road, landing on the south side of the highway at the Grafton Municipal Airport. It is already evident that agriculture is an important trade of the community.

When entering Grafton on highway 17 from the east, I drive over two sets of railroad tracks. Directly east of these are many stores providing goods and services, including a grocery store, pharmacy, gas station, and car service station. The proximity of these stores to the railroad makes me believe that the railroad was supplying goods to the city at one time. During only one of my trips to Grafton, I had to stop and wait for a train to pass. It was traveling slowly through town, but it still blew the whistle while passing. Noise from the train is the only prominent sound.



Figure 15.0 grafton

The town turns residential for a brief moment until I turn north on Main Street. Store facades and urban infill lots hug the sidewalks. Some structures are decorated with ornate brickwork and appear to be very old, while others seem to have been constructed as quickly and inexpensive as possible. The Strand movie theater is an interesting architectural piece on Main Avenue. A bright yellow awning with marquee signage attracts attention to the 1940's representation of Modern Architecture.



Figure 15.1 grafton 2

The site for this thesis is located on the far northwest corner of town. When I turn off of Main Avenue, heading west on 6th Street, my view is obstructed by a manmade dirt dike. The road curves to the left, following the path of the dike, and gradually, my view of the site becomes clear. An expansive, grass covered lawn stretches between the road and the Grafton State School campus. The dramatic entrance emphasizes the grandness of the large masonry structures within their context.



Figure 15.2 grafton 3

The immediate site and building are on the northeastern corner of the State School campus. The site and it's context allow me to imagine the interaction between the buildings when they originally operated as parts of a whole. Architecturally, the site remains cohesive, but typologically, many of the buildings have changed.

Figure 15.3 grafton 4



The value of this site is defined by the history, typology, and location. This thesis focuses on rehabilitating and preserving the historical North A building on the Grafton State School campus. Originally, this structure served as an institution for individuals with developmental disabilities. Adapting this structure into a basic care elder care facility will utilize the same typology as initially intended. An additional emphasis of this thesis is creating a structure that provides support of the rural community and it's elders. As a result of the rehabilitation of the site, the elderly occupants will simultaneously experience a renewal of their mind, body, and spirit.

# | views |

The views from the site reveal an abundant amount of information. Vegetation can be viewed in every direction. A majority of the site and campus is covered in grass, with brief interruptions for sidewalks to pass. Trees, ranging in age and species, are spread throughout the lawn. Distinctive masonry structures can be seen when looking north, south, and west, of the primary site. Each building was part of the original State School campus, and all but one is serving a function today. The proximity of buildings to each other varies. Conveniently, underground tunnels were constructed to connect the campus buildings. These tunnels are still utilized and can be identified by the raised ground.



Figure 16.0 view 1



Figure 16.1 view 2



Figure 16.2 view 3



Figure 16.3 view 4



Figure 16.4 view 5

# | built features |



Figure 17.0 features 1

The map above shows an overhead view of the built features on the site, and their relationship to each other. The colored figures are structures that currently exist on the historic campus for the Institution of the Feebleminded. Call out images illustrate the authentic structures that served as facilities for the institute. Image “a” is a photo of the Life Skills and Transitional Center, which is located on the exact site of the demolished Main Building (the first facility built on the campus in 1903). Image “b” is the structure being utilized for this thesis, originally referred to as the North A building. This building served as dormitories for residents and staff. “C” shows a recent picture of the refectory. This building was converted to storage in 1970 after a new food service plant was built on the south side of the campus. The structure is now vacant. Image “d,” referred to as the North B building, was constructed to serve as a dormitory, to reduce overcrowding in North A. This structure has been converted into apartments. “E” is an important built feature, serving as clerestory lighting into the underground tunnels that connect the buildings on campus. Image “f” shows Midway Hall, the institution’s first hospital, which opened in 1910. This structure remains intact and provides services for the N.D. Department of Human Services.



Figure 17.1 features 2



Figure 17.4 features 5



Figure 17.2 features 3



Figure 17.5 features 6



Figure 17.3 features 4



Figure 17.6 features 7

## | site character |

Due to the nature of the site being historic, changes and consistencies have been documented can be observed throughout the passing of time. Changes to the site have been minimal, with little to no new developments since the Institute was in operation. As was just stated in the “built feature” section, a large percentage of the original buildings have been preserved. The rehabilitation of these structures has revitalized the site and improved the overall atmosphere. Deterioration to the site has been minimal and is carefully avoided.



Figure 18.0 character

## | light quality |

The quality of light on the site changes throughout the day and differs by location on site, due to the position of the sun. The buildings on site do not exceed 4 stories tall, which prevents towering shadows on adjacent spaces. Shadows that are cast, are only able to reach nearby structures after the sun has just risen, and for a period of time before it sets. The utilization of passive solar strategies has already been recorded in the institution’s history. Within the one year of the first buildings construction, a request was placed to add sun porches to the west side of the Main Building. These porches were to expose patients to natural sunlight.



Figure 18.1 light

## | distress |

The site has experienced very little noticeable distress. The image to the right documents a window in an unfinished segment of an underground tunnel. The refractory is the most obvious example of distress on the site. Doors are locked with chains and windows are boarded up with plywood. Fortunately, the brickwork is in such great condition, so the distress of the building remains micro in terms of its effect on the site.



Figure 18.2 distress

## | human characteristics |

Adapting two structures into apartments, has improved the activity level on site. Many residents have porches or balconies attached to their apartments, which improves the observed interaction with the outdoors. Personal furniture is arranged on the outdoor spaces, promoting usability and the signs of human use. During one of my visits, an elderly woman was caring for the flowers along the entrance of her apartment building.



Figure 18.3 characteristics

# | site reconnaissance |



Figure 19.0 site



Figure 19.1 site 1



Figure 19.5 site 5



Figure 19.2 site 2



Figure 19.6 site 6



Figure 19.3 site 3



Figure 19.7 site 7



Figure 19.4 site 4



Figure 19.8 site 8



Figure 20.0 site



Figure 20.4 site 4



Figure 20.1 site 1



Figure 20.5 site 5



Figure 20.2 site 2



Figure 20.6 site 6



Figure 20.3 site 3



Figure 20.7 site 7

# | site reconnaissance |

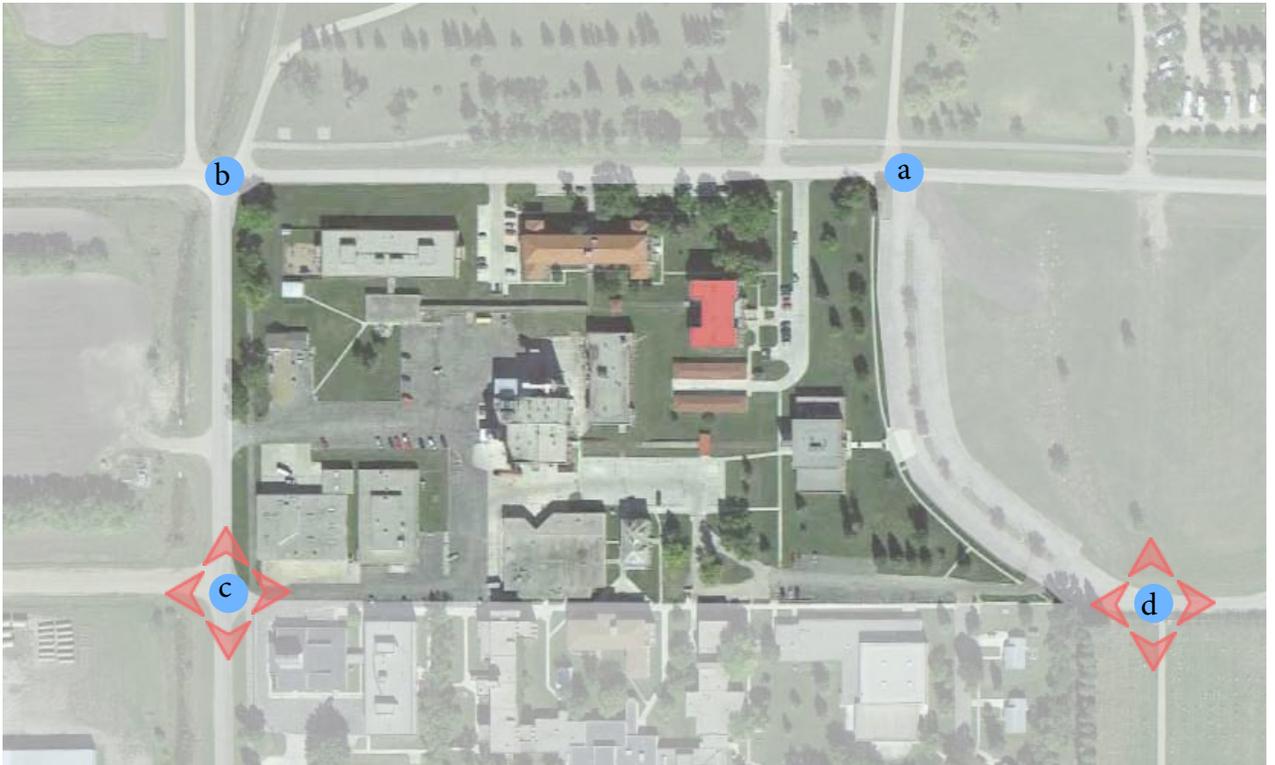
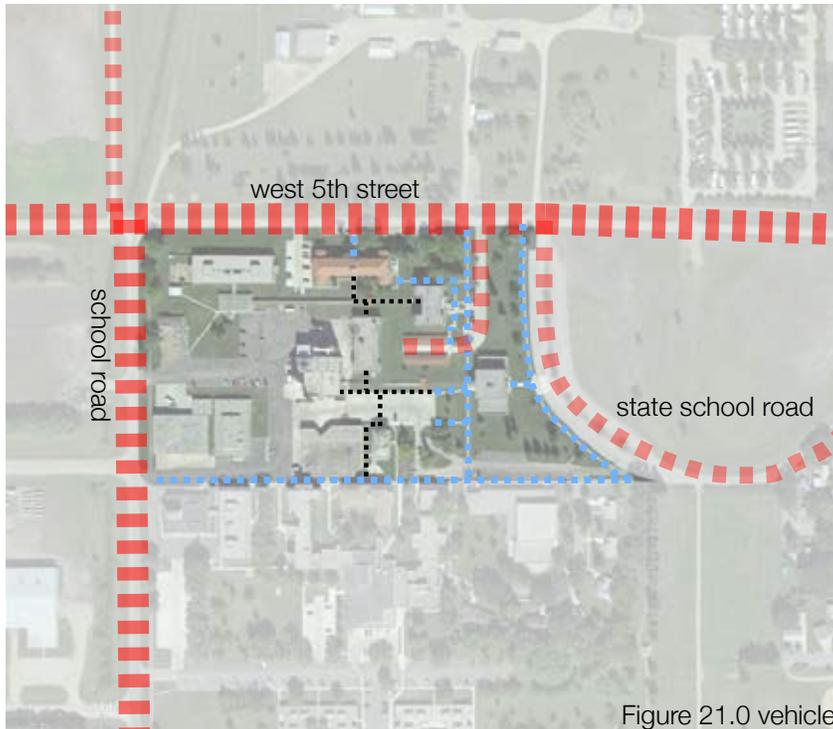


Figure 20.8 site 8

# | vehicle and pedestrian traffic |



- ■ ■ moderate vehicle traffic
- ■ ■ low vehicle traffic
- ..... pedestrian path
- ..... underground tunnel

This site is tucked into a corner of town and typically remains quiet during the day. During my site visits, the most vehicle traffic would turn off of West 5th Street into the campground just northeast of the site. The camping facilities were full and there was heavy pedestrian and vehicle traffic moving around the grounds. Visitors would wander across the road into the empty grass lot adjacent to the site. While observing the site, I only saw a few of the apartment residents coming and going from their cars. It should be noted that there are two forms of pedestrian walkways; underground tunnels that connect most buildings and outdoor sidewalks. The tunnels are most often utilized during poor weather, and to efficiently transport goods and materials.



Figure 22.0 noise

The noise level on site is an important concern that is addressed in order to provide the best design solution for an elder care facility. The mission is to create a home for seniors to live in, instead of an institution for them to occupy. Elders, who are looking for a home, may be deterred from the site by unwanted noise and sound pollution. Due to the site's location and frequency of traffic, the space does not experience undesirable noise.

# | topographic survey |

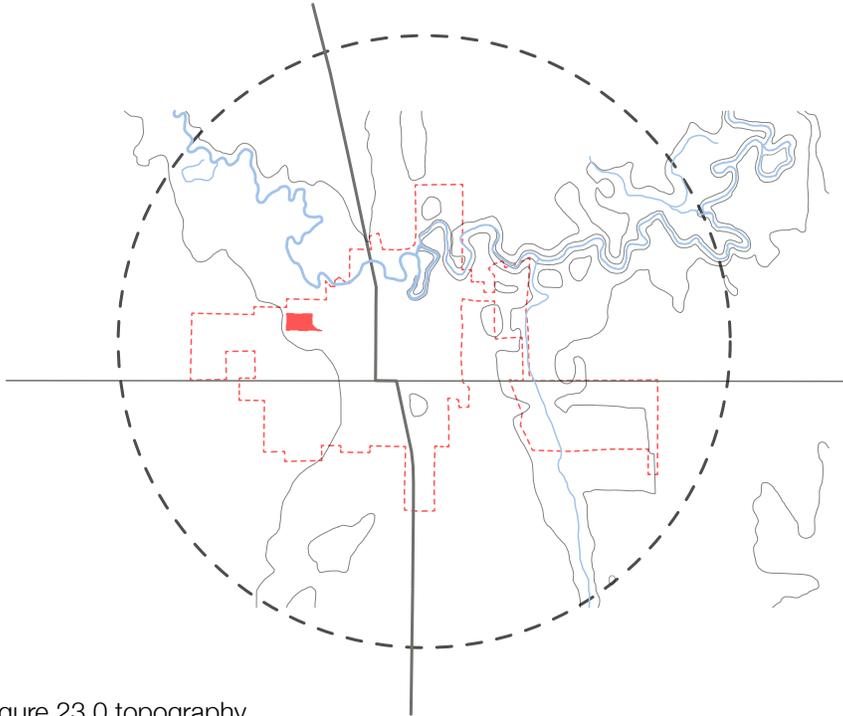


Figure 23.0 topography

The elevation of Grafton is recorded as 834 feet above sea level. The mild topography in the area affects the views, erosion, and usability. As can be seen by the gray lines in the diagram, the majority of the topography changes occur alongside the path of the Park River. Many rivers in the Red River Valley have provided farmers with the opportunity to ditch their fields and create a more efficient method of drainage to rid excess water. The views are nearly unending because of the gradual and minimal change in elevation. The flat land can become a hindrance to farmers because the strong Midwestern winds cause soil erosion. The Grafton area lacks the rolling hills and change in topography that could potentially decrease the severity of soil erosion. Farmers try to prevent this by planting shelterbelts (rows of trees) between fields, and seeding a cover crop.

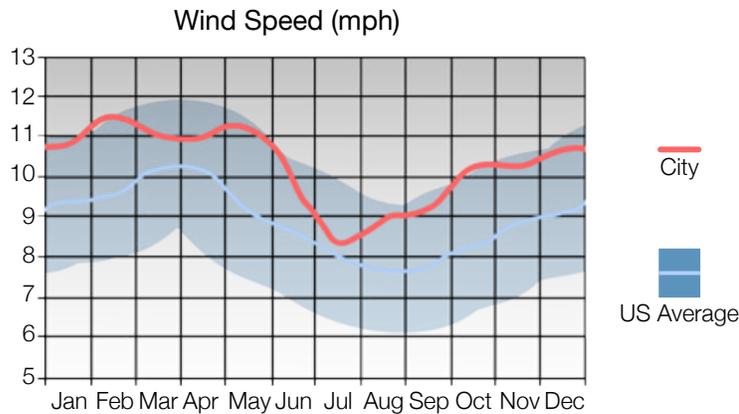


Figure 24.0 wind 1

| annual wind direction |

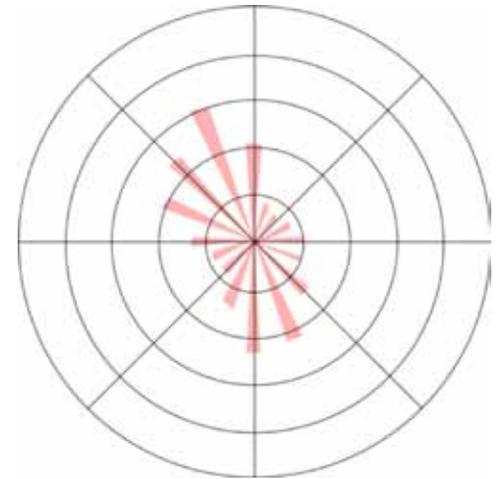


Figure 24.1 wind 2

The Red River Valley is well known for the flat Midwestern plains and strong winds. The site for this thesis is located on the northeastern edge of the historic Grafton State School campus. The wind rose diagram represents the average annual wind direction in the city of Grafton. It should be noted that the most prominent winds come from the northwest and the southeast. Depending on wind speeds the adjacent campus buildings have the ability to block or reduce a majority of the strong winds.

# | utilities |



Figure 25.0 utilities 1



Figure 25.1 utilities 2



Figure 25.2 utilities 3

Utilities on site include clean water, electric, and storm water drains. Storm drains for this site were first documented for the public on the early 1900 Sanborn Insurance maps for the city of Grafton. Most of the original storm drains are still in use, while others had to be relocated. Fire hydrants have also been placed on site. The top right picture shows the fire hydrant approximately twenty feet away from the southwestern corner of the North A building. Established utilities will reduce cost, however, existing utilities will require locating, and special considerations to avoid any obstruction with design. Electric utilities have been buried throughout the site, and are marked periodically by pedestals and transformer boxes.

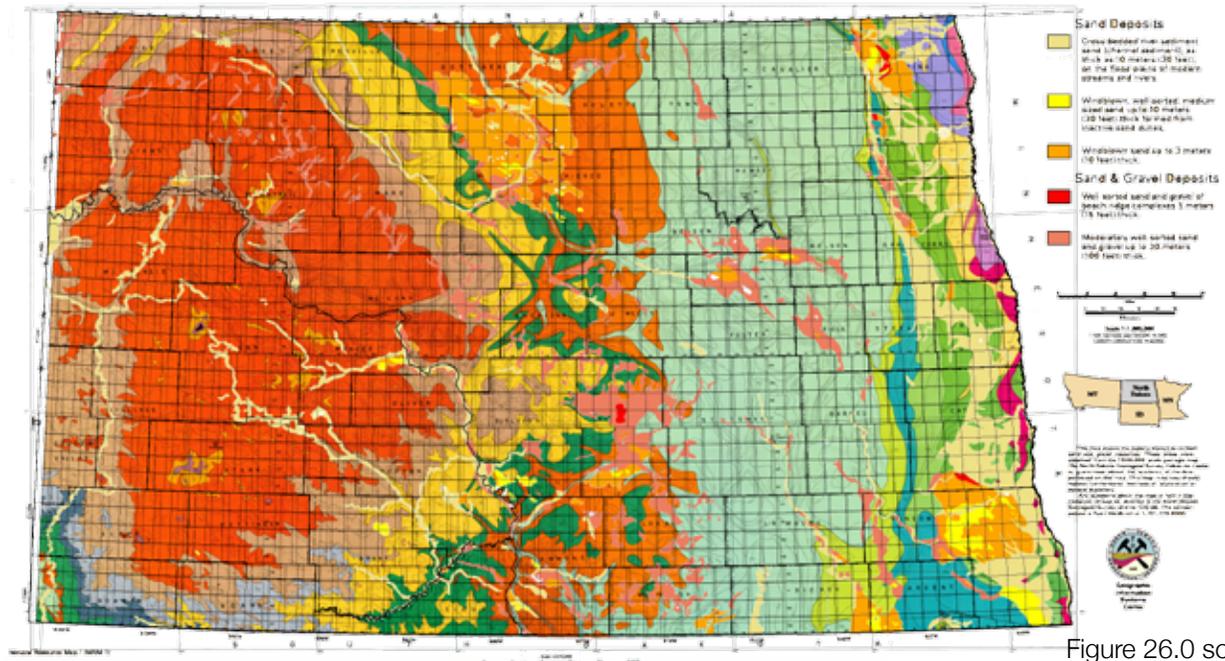
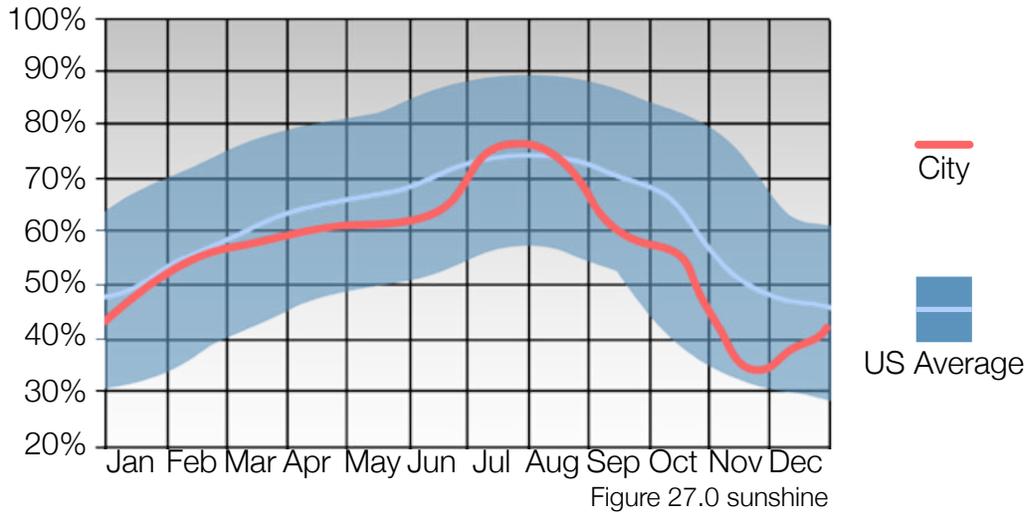


Figure 26.0 soil

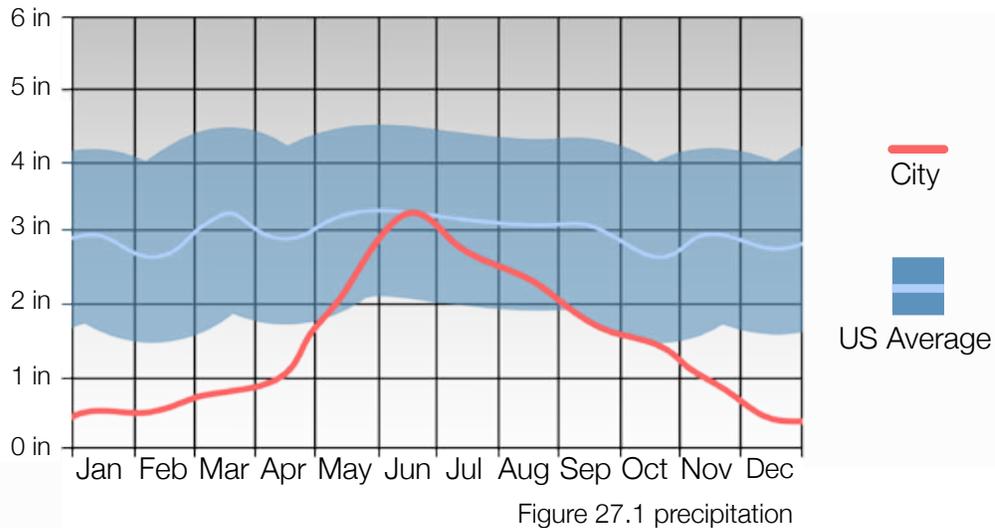
The soil of the valley is a rich black loam, varying in depth from eighteen inches to three feet, and rests upon very deep clay subsoil. The soil was developed over a length of time, resting under the cover of the tall prairie grasses that created a high content of organic matter. The soil in the Red River Valley is among the most productive soils on earth, according to a 1979 University of Minnesota Report (Hoffman 1979). The soil is perfect for raising fruits and vegetables including corn, grain, potatoes and sugar beets.

# | climate data |

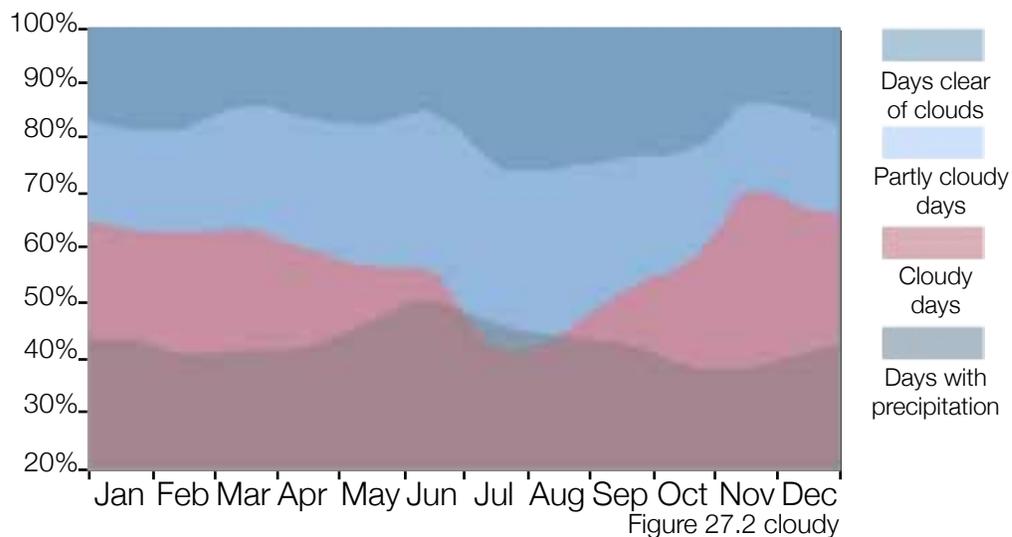
## Sunshine



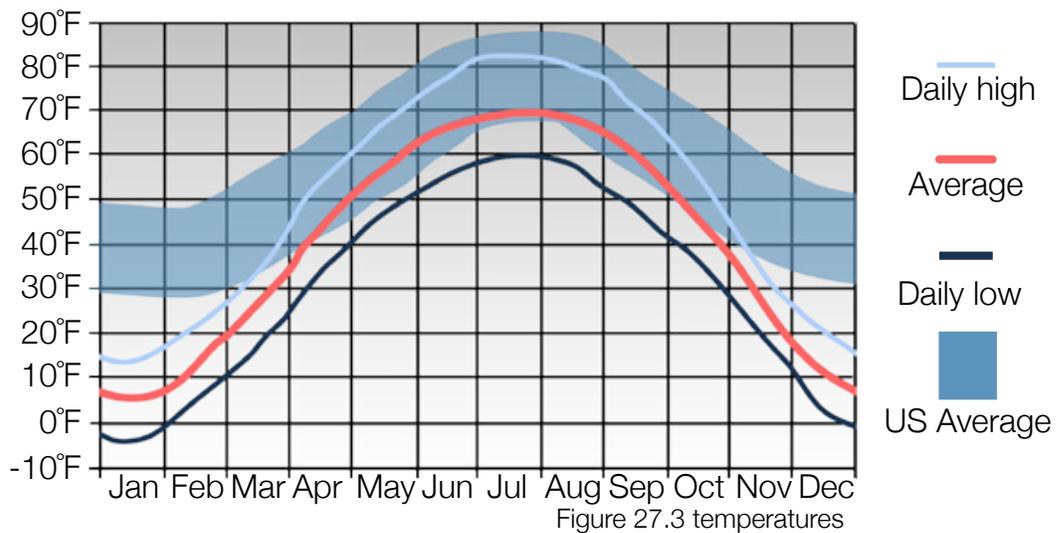
## Precipitation



### Cloudy



### Average Temperatures



# | building program |

---

space	area
dining	25-35/resident
lounge/activity/living room	20-35/resident
bathing	1 fixture per 15 residents
clean utility	1 per 15-20 residents
soiled utility	1 per 15 residents
clean linen	1 per 15 residents
nurses station and work area	250-500 sq. ft
medication room	1 per 15 residents
resident toilet near dining	recommended
public visitor toilet	recommended
staff toilet	required
resident toilet with bathing	1 per bathing unit
staff office	1-2 per unit for nursing supervisor
medical records/files	50 sq. ft
pantry	200 sq. ft
storage	100 sq. ft
janitors closet	40 sq. ft
mechanical/electrical/telephone	300 sq. ft
director's office	120 sq. ft
staff lounge	200 sq. ft

concept map

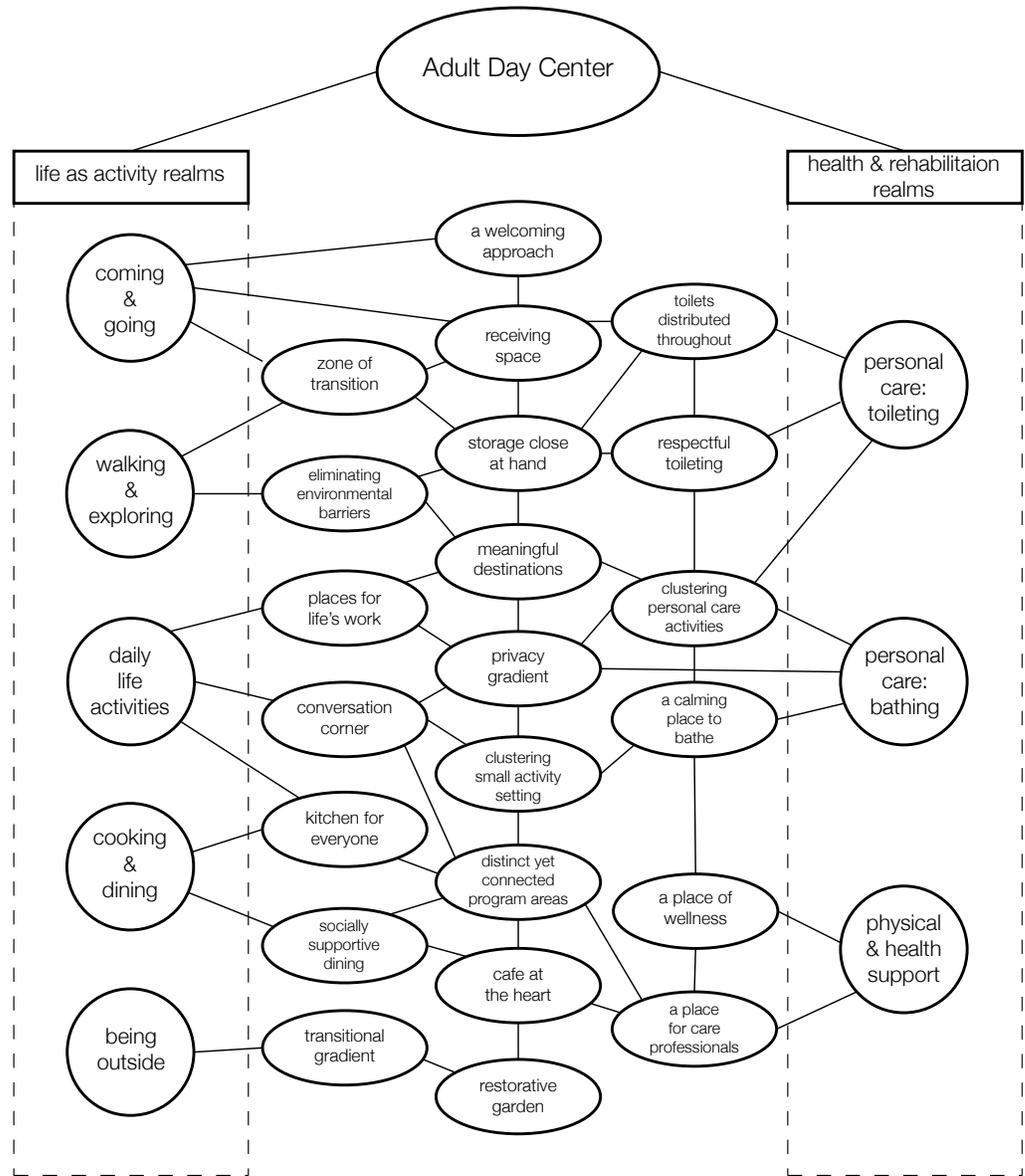


Figure 28.0 concept

| design solution |

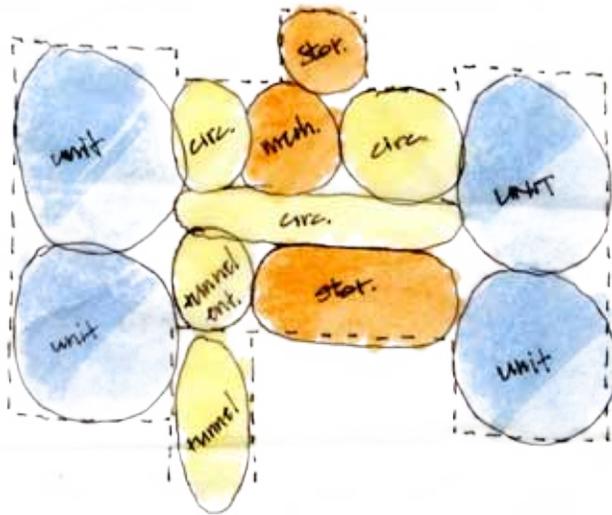
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“The wisdom and experience of older people is a resource of inestimable worth. recognizing and treasuring the contributions of older people is essential to the long-term flourishing of any society.”

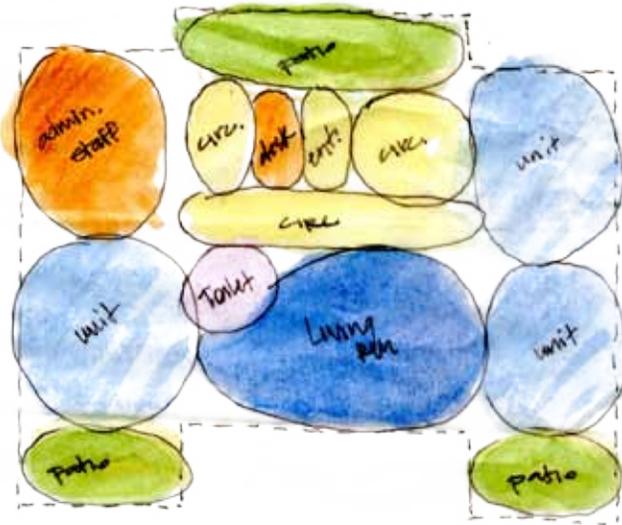
- Daisaku Ikeda

# | process documentation |



ground level

Figure 29.0 sketch



level one

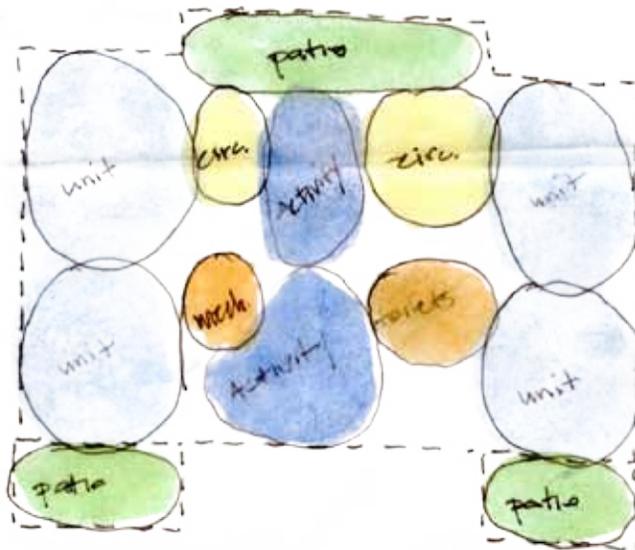
Figure 29.1 sketch

Utilizing a building on the National Register of Historic Places required a mindfulness and consideration to the existing structure. The diagrams on these pages represent a space planning exercise. These bubble diagrams were drawn as an overlay to the existing floor plans. By doing that, I was able to be sensitive to the existing structure and required systems. These diagrams were translated to a scaled digital model. Any revisions made were applied directly to the model as it progressed to its final form.



level two

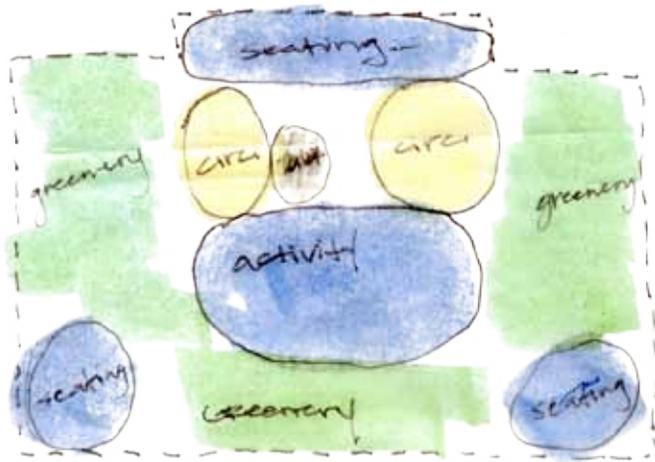
Figure 29.2 sketch



level three

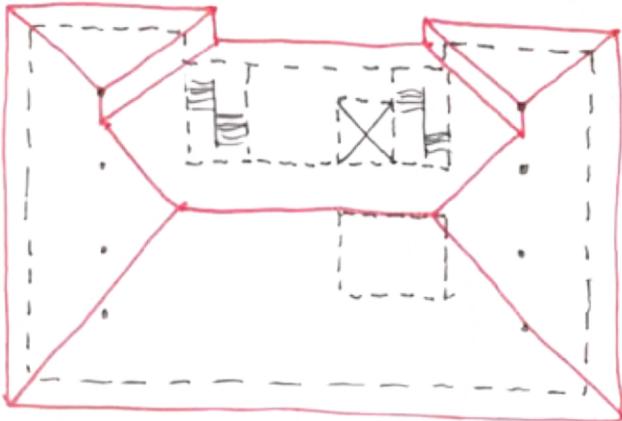
Figure 29.3 sketch

# | process documentation |



level four

Figure 29.4 sketch



roof plan

The fourth level and roof structure are additions to the existing structure. A ribbon window was attached to the existing parapet. The choice to specify a hipped roof was a decision that is empathetic to the architectural style of the building. The fourth level contains a greenhouse and community garden, activity room, storage, work space and restrooms.

Figure 29.5 sketch



Figure 29.6 sketch

The image to the left is my layout design for the presentation boards. This layout informed my choices of detailed renderings, maps and diagrams. The strategy was to have my boards illustrate the story of my design and allow the viewer to imagine themselves interacting with the space. After editing the renderings, they begged for a new location where they could be more prominent.

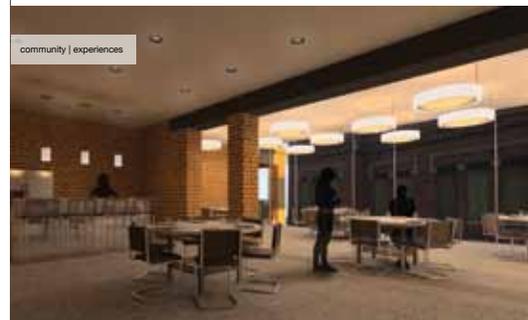
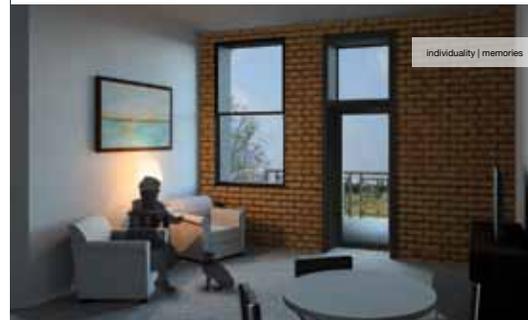


# | project solution |



Figure 30.0 final

# | project solution |



These perspective images were used to represent one space per floor. These spaces were critical in defining the parallels between a building and people. Key words were placed on each image to capture the defining qualities.

This page shows how the systems are integrated into this building as well as the revisions that were made to the existing floor plans. It was critical to show what was altered, because the building is on the National Register of Historic Places. The site map with tunnel diagram illustrates the institute campus, highlighting the Hancock Building, and showing its connections to other buildings.



Figure 30.2 final



Figure 30.3 final



North Elevation

East Elevation

ARCH 772 Design Thesis  
 Rebecca Johnson  
 Ganapathy Mahalingam  
 Revit | Photoshop

# | project solution |

Sections and elevations are a great way to show the scale of elements on or within the building. The order and proportions of this structure are critical to preserving the history. The sensitivity to these qualities can be seen by the placement of window mullions and proportions of the roof structure.



Figure 30.4 final

# | performance analysis |

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## response to the site

The site of my thesis project requires special considerations because it is a historic preservation project and is currently developed. My project is not just a single structure, but part of a campus owned by the State of North Dakota. The building, as well as parts of the immediate site are protected by the National Register of Historic Places. The footprint of the building changed slightly, which affected the site, however, it was done without impacting the flow around the building. From the primary views of the Hancock Building, the facade did not undergo any drastic changes. The new roof is the most obvious. Because the

changes were subtle, the viewers perception of the building will remain the same. The rear (west) facade of the building underwent the most alterations with an addition. The addition was curtain wall construction, which preserved the views of the surrounding site from the interior of the building.

This thesis differs from most. I am able to confirm the site conditions have been addressed because the building already exists. My design choices were made as a conscious decision to preserve the integrity of the building, and the surrounding site.

# | performance analysis |

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response to the typological research and program

The typology of my thesis project is a basic care, living facility for the elderly. The code for this typology and building size, requires only one handicap accessible unit. I challenged myself to ensure that every unit and floor of the building would be accessible. Due to the nature of my project as discussed on the previous page, I had to be extremely sensitive to any alterations to the existing building. The changes of the walls were either relocated or removed. This

needed to happen to provide spaces as written in the program. Floor plans with all corner units have been altered to make them accessible and adapt the building for uses such as a commercial kitchen, dining room, library, medical offices, laundry (clean and soiled) and activity rooms. The constraints were written and extensive as changes to the building were enforced by the National Register of Historic Places.

# | performance analysis |

response to goals and project emphasis

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The goals of this project were achieved by defining the parallels between the built environment and people while preserving and adapting the Grafton State School Hancock Building into an elder care facility. The theoretical premise was always kept on mind while making design decisions. During the preliminary brainstorming, I took time to write out the goals of the project and metaphors that could be executed

to achieve those goals. The large scale perspectives on the previous pages have keywords that document how the goal was accomplished. The image on the next page shows the entire presentation boards while hung in their final place. All images were selected carefully to display all information that was needed to support the project goals and emphasis.



Figure 31.0 boards

# | thesis appendix |

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“Architecture aims for eternity”  
- Christopher Wren

# | previous studio experience |

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| fall 2011 |

Instructor: Joan Vorderbruggen  
Tea House  
Minneapolis Rowing Club

| spring 2012 |

Instructor: Darryl Booker  
Dance Studio  
Dwelling  
Bird House

| fall 2012 |

Instructor: Steve Martens  
YMCA Gathering Place  
Funeral Home

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| spring 2013 |

Instructor: Milt Yergens  
Oil Interpretive Center  
Shoemaker Craft- Urban Infill

| fall 2013 |

Instructor: David Crutchfield  
High-Rise Commercial & Residential

| spring 2013 |

Instructor: Steve Martens  
Historic Preservation & Adaptive Use

| fall 2014 |

Instructor: Regin Schwaen  
Competition- Education & Recreation

# | personal identification |

“work smarter,  
not harder”  
-unknown



Figure 9.0 personal

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| address |

1654 370th St.  
Humboldt, MN 56731

| phone number |

218.379.3291

| email |

beckyjarch@gmail.com

| home town |

Humboldt, MN

# | references |

- Amadeo, K. (2014, January 1). Read Up on the History of US Recessions. Retrieved October 3, 2014.
- Tarkan, L. (2011, October 31). A Nursing Home Shrinks Until It Feels Like a Home. Retrieved October 7, 2014.
- Wall Street goes long on grannies. (2010, November 25). Retrieved October 9, 2014.
- Kittson Memorial History. (2014, January 1). Retrieved October 9, 2014.
- Grafton State School. (2013, January 1). Retrieved October 10, 2014.
- Kaelber, L. (2012, January 1). North Dakota. Retrieved October 10, 2014.
- Bonham, K. (2013, March 18). Grafton offers housing solution for western ND. Retrieved October 10, 2014.
- Vyzralek, F. (1996). North Dakota Institution for the Feeble Minded. National Register of Historic Places Nomination Form.
- Alexander, A. (2014, July 30). Aging in Cohousing- Why is this a Good Choice? Retrieved October 19, 2014.
- Snyder, A. (2010, January 1). Age-in-Community Neighborhoods: Bringing New Life to Aging. Retrieved October 9, 2014.
- Stafford, P. (2014, July 10). "Preserving People- Preserving Place." About the blog. Retrieved October 10, 2014.
- A Brief History of Grafton. (n.d.). Retrieved October 19, 2014.
- Walsh County, North Dakota . (2010, January 1). Retrieved October 19, 2014.
- Mirviss, L. (2014, May 1). St. Anthony Hospital. Retrieved October 13, 2014. [http://archrecord.construction.com/projects/Building\\_Types\\_Study/healthcare/2014/1405-St-Anthony-Hospital-ZGF-Architects.asp?bts=HC](http://archrecord.construction.com/projects/Building_Types_Study/healthcare/2014/1405-St-Anthony-Hospital-ZGF-Architects.asp?bts=HC)
- Yoder, S. (2012, January 26). Fiscal Times. KHN: Kaiser Health News. Retrieved October 9, 2014.
- "Hancock Place - Grafton, ND Property Photos - Metroplains Management." Hancock Place - Grafton, ND Property Photos - Metroplains Management. N.p., n.d. Web. 16 Sept. 2014.
- "Hancock Place at Grafton State School." Panoramio. Center for Heritage, 25 Mar. 2011. Web. 16 Sept. 2014.
- Bailey, E. (2010, August 17). Soil Types in North Dakota. Retrieved December 9, 2014, from [http://www.ehow.com/list\\_6875904\\_soil-types-north-dakota.html](http://www.ehow.com/list_6875904_soil-types-north-dakota.html)

"Hancock Place Apartments." Hancock Place Apartments. Metroplains Management Properties, n.d. Web. 16 Sept. 2014.

Olin, Ronald. "Digital Horizons : Item Viewer." Digital Horizons : Item Viewer. Crescent Photo, 2000. Web. 16 Sept. 2014.

Winningham, RG, and NL Pike. "A Cognitive Intervention To Enhance Institutionalized Older Adults' Social Support Networks And Decrease Loneliness." *Aging & Mental Health* 11.6 (2007): 716-721. CINAHL Complete. Web. 16 Sept. 2014.

Hughes, Elizabeth M. "Creating Functional Environments for Elder Care Facilities: By Planning Carefully, Checking Design Form and Function, Nurses and Clients Can Help Design Their Own Living/work Spaces." *Geriatric Nursing* 16.4 (1995): 172-76. Science Direct. Web. 16 Sept. 2014.

Patrick, Rebecca, Teresa Capetola, Mardie Townsend, and Lisa Hanna. "Incorporating Sustainability into Community-Based Healthcare Practice." *EcoHealth* 8.3 (2011): 277-89. ProQuest. Web. 17 Sept. 2014.

A Brief History of Grafton. (2014, January 1). Retrieved December 7, 2014, from [http://www.graftongov.com/index.asp?SEC=9DF75178-1727-467F-9742-F36732550FC4&Type=B\\_BASIC](http://www.graftongov.com/index.asp?SEC=9DF75178-1727-467F-9742-F36732550FC4&Type=B_BASIC)

Grafton, North Dakota. (2013, January 1). Retrieved December 7, 2014, from <http://www.city-data.com/city/Grafton-North-Dakota.html>

Grafton. (2013, January 1). Retrieved December 7, 2014, from <http://www.walshhistory.org/walsh-county-cities-and-towns/grafton/>

Bonham, K. (2013, September 12). Grafton facility has new name, evolving mission. Retrieved December 7, 2014, from <http://www.prairiebizmag.com/event/article/id/15936/>

Life Skills & Transition Center Accreditation, Certification, and Background information. (2010, January 1). Retrieved December 7, 2014, from <http://www.nd.gov/dhs/locations/developmental/accreditation/>

Archives - State Agencies - Developmental Center at Westwood Park. (2014, January 1). Retrieved December 7, 2014, from <http://history.nd.gov/archives/stateagencies/graftonstateschool.html>

First Biennial Report of the North Dakota Institution for Feeble Minded at Grafton (23rd ed., Vol. 1). (1904). Bismark, N.D.: Tribune, Printers and Binder.

Hoffman, W. (1979, May 1). Ancient Lake Agassiz and the Red River Valley. Retrieved December 9, 2014, from [http://www.mbbnet.umn.edu/hoff/hoff\\_agassiz.html](http://www.mbbnet.umn.edu/hoff/hoff_agassiz.html)

# | references |

Brosnan, Denis A., John P. Sanders, and R. Parker Stroble. "Application of Thermal Analysis in Preservation and Restoration of Historic Masonry Materials." *Journal of Thermal Analysis and Calorimetry* 113.2 (2013): 507-10. EBSCO Host. Web. 17 Sept. 2014.

Cutchin, Malcolm P. "The Process of Mediated Aging-in-place: A Theoretically and Empirically Based Model." *Social Science and Medicine* 57.6 (2003): 1077-090. ScienceDirect. Web. 17 Sept. 2014.

Renier, V.A., ed. 1994 *Assisted Living Housing for the Elderly: Design Innovations from the United States and Europe*. New York: Van Nostrand Reinhold.

KIRK Associates LLC. (2014, May 1). Retrieved December 5, 2014, from <http://www.kirkllc.com/projectpendleton.html>

About. (2014, January 1). Retrieved December 5, 2014, from <http://www.edenalt.org/about-the-eden-alternative/>

NCHS (National Center for Health Statistics). 2005. *Health, United States, 2005 with Chartbook on Trends in the Health of Americans*. Washington, D.C.: U.S. Government Printing Office.

Czaja, S., & Sharit, J. (2009, January 1). *Technologies for an Aging Population*. Retrieved December 6, 2014, from <https://www.nae.edu/Publications/Bridge/TechnologiesforanAgingPopulation/TheAgingofthePopulation.aspx>

Young-Ju, K. (2008, January 1). *Organism of options : A design strategy for flexible space*. Retrieved September 27, 2014, from <http://dspace.mit.edu/handle/1721.1/42081>

Perkins, B. (2010, August 11). *10 top design trends in senior living facilities*. Retrieved September 28, 2014, from <http://www.bdcnetwork.com/10-top-design-trends-senior-living-facilities>

Dispenza, K. (2011, August 15). *Twelve Things Every Designer Should Know about Today's Senior Housing*. Retrieved September 28, 2014, from <http://buildipedia.com/aec-pros/design-news/twelve-things-every-designer-should-know-about-todays-senior-housing>

Sloan, R. (2013, August 1). *Life Edited-Living Large In Small Spaces*. Retrieved September 27, 2014, from <http://randysloan.com/2013/08/01/life-edited-living-large-in-small-spaces/>

"Grafton." *Walsh County Historical Society*. N.p., n.d. Web. 26 Nov. 2014.

Alexander, Chhristopher. "The Timeless Way of Building Complete." *Google Drive*. Oxford University Press, n.d. Web. 26 Nov. 2014.

- Anderson, J. (2013, August 1). A History of Caring for Our Elders. Retrieved December 7, 2014, from <http://www.aplaceformom.com/blog/history-caring-for-elders-08-06-2013/>
- Gordon, C. (2014, February 25). Timeline: A history of elder care in America. Retrieved December 7, 2014, from <http://america.aljazeera.com/watch/shows/america-tonight/america-tonight-blog/2014/2/25/history-elderly-care.html>
- A Brief History of the National Trust. (2014, January 1). Retrieved December 7, 2014, from <http://www.preservationnation.org/who-we-are/history.html>
- Hazen, T. (2000, January 1). What is Historic Preservation? Retrieved December 7, 2014, from <http://www.angelfire.com/journal/millrestoration/preservation.html>
- Briney, A. (2014, January 1). Why Preserving Historic Landmarks is Important for Development. Retrieved December 7, 2014, from <http://geography.about.com/od/urbaneconomicgeography/a/historicpreserv.htm>
- Historic Preservation. (2000, January 1). Retrieved December 7, 2014, from <http://www.aia.org/aiaucmp/groups/aia/documents/pdf/aiab089252.pdf>
- Ristow, W. (2014, July 14). Introduction to the Sanborn Map Collection. Retrieved December 7, 2014, from <http://www.loc.gov/rr/geogmap/sanborn/san4a1.html>
- Johnson, K. (2013, June 11). Place and public health: The impact of architecture on wellbeing. Retrieved December 5, 2014, from <http://www.theguardian.com/sustainable-business/public-health-architecture-impact-wellbeing>
- Pederson, M. (2009, March 1). What is Good Design? Retrieved December 5, 2014, from <http://www.metropolismag.com/March-2009/What-is-Good-Design/>
- Tarkan, L. (2011, October 31). A Nursing Home Shrinks Until It Feels Like a Home. Retrieved December 5, 2014, from [http://www.nytimes.com/2011/11/01/health/shrinking-the-nursing-home-until-it-feels-like-a-home.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2011/11/01/health/shrinking-the-nursing-home-until-it-feels-like-a-home.html?pagewanted=all&_r=0)
- Griffing, A. (2014, June 4). Nursing Home Gardening Blossoms. Retrieved December 6, 2014, from <http://neshobademocrat.com/main.asp?SectionID=2&SubSectionID=297&ArticleID=32742>
- Joseph, A. (2006, August 1). Health Promotion by Design in Long-Term Care Settings. Retrieved December 6, 2014, from <https://www.healthdesign.org/chd/research/health-promotion-design-long-term-care-settings>
- Perkins, L. (2004). Building type basics for senior living. Hoboken, N.J.: John Wiley & Sons.
- Marcotte, E. (2010, May 25). Responsive Web Design. Retrieved December 6, 2014, from <http://alistapart.com/article/responsive-web-design>