UNIFYING DIMENSIONS

AN ARCHITECTURAL STUDY ABOUT THE COHESION OF ELEMENTS & RESPONSES IN ADAPTIVE REUSE.

UNIFYING | DIMENSIONS

AN ARCHITECTURAL STUDY
ABOUT THE COHESION OF ELEMENTS & RESPONSES
IN ADAPTIVE REUSE.

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

By

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

Primary Thesis Advisor

Thesis Committee Chair

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Fargo, North Dakota

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Figure 1 // Fort Snelling Buildings 17 & 18

Thesis Abstract

The practice of adaptive reuse can completely transform the way people interact with and perceive an existing building. However, is there a way to interweave the past with the present, perhaps by analyzing the building's previous and current interrelationship responses in addition to paying respect to its identity features (structure, formality, space usage, and materials)? How does a designer respect and highlight building history and provide new, functional uses for its spaces? This project located in southwest St. Paul demonstrates how idle, historic Fort Snelling barracks can be transformed into multi-use establishments. Barrack Building #18 will contain an international hostel and rentable event spaces that focus on preserving the building's integrity and emphasizing the surrounding essence of the site.

How can a building renovation use its element of history and time to enhance new building opportunities? How do we translate meaning and this history into new work without succumbing to convenient designing, leading to even further reduction in the historical value? Misinterpretations through our design strategies can result from failing to generate a connection that originates from the building's current state of condition. As designers, we need to recognize what already exists, physically, but also the ties to the previous, present, and future interrelationships. This provides the multiple dimensions needed when working with historic buildings. This is important as cities continue to age and the concept of adaptive transformation becomes more demand driven. If we approach project proposals thoughtfully, we can restore and preserve what is already begging for attention, and in return gain new functions and purpose while appreciating our history.

The Project Typology (building typology)

The Fort Snelling International Hostel & Event Center is a multi-use facility that was established through adaptive reuse practices and embraces the historic past of the site with its new renovations. By providing new purposes for the previously vacant building, individuals visiting Minnesota from all over the world have a place to rest and rejuvenate while also given a good location to start exploring the Twin Cities. Rentable spaces within Barracks Building #18 also accomodate events such as private parties, wedding receptions, small concerts, banquets, and company conventions.

Chateau de Miranda

Figure 2 // Chateau Front

The castle is located in Celles, Belgium and was built in 1866. It was used as an orphanage after WWII and then as a facility for summer camps for children until 1980. It has stood abandoned since 1991 with many floors and structural systems intact. However, disintegration has slowly taken a grasp over the castle and some areas have weakened and collapsed. Today the building still remains abandoned but stands as a prime example of how weathering, aging, and negligence affect a historic structure. (Baker, 2013).

This case study is similar to the other studies in the sense that it is a structure that visibly shows its deteriorating history. From crumbling ornamental decoration and wall paper peeling, to the grand staircase that once portrayed elegance but now resembles shattered beauty. Chateau de Miranda is different than the other studies in the way that I used it to better understand the poetics involved with disintegration. I visually studied the process of losing cohesion or strength on different scales within this case study. Whether it was looking at a specific joint connection, two rooms spatially connected through a collapsed floor, or absorbing the whole aura I photographed what I thought expressed poetic aging.

Figures 3 & 4 // Collapsed Floors

Environmental Response

Vegetation has claimed the castle as its host, latching its intrusive vines everywhere from the window frame mullions to the numerous tower spires. The fire that happened in 1995 claimed a decent portion of the roof on the 4th floor. Now that room is exposed to the natural environment and tree sprouts and seedlings were seen to have be growing. From personal experience with this building it was obvious that the exterior was built to last, with despite the added vegetation and empty windows, little deterioration existed.

Social Response

The current interior state of Chateau Miranda is the result of natural weathering as well but is also the result from its social encounters. Two specific types of individuals have encounters with the castle with one being urban explorers who desire to experience the not usually seen components of the man-made environment. The other is destructive individuals who instead of observing the current state of a building, vandalize and depreciate the buildings existence even further. Chateau Miranda has been a victim of vandalism shortly after its official abandonment in 1991. From the burning of the roof, graffiti tags, the destruction of the main staircase handrail, remains of small ground fires inside the building, and scattered beer cans, the castle has taken a brutal beating due to its destructive visitors.

Cultural Response

The castle was built in 1866, during the time period of when Neo-Gothic architecture was prevalent. In this time, Chateau de Miranda blended with its surrounding countryside landscape and the other castle within viewing distance, Chateau de Veves. The neighboring castle, also owned by the Liedekerke de Beaufort family, serves to be more of an exceptional example of 15th century military architecture. However both do have architectural elements that represent common French Neo Gothic architectural elements such as original medieval principles of pointed window frames and rib-vaulting in multiple rooms and hallways. In the castle's current state of eerie abandonment and overgrowth, it coexists well with the wild woods that encloses it.

Political Response

The interior of Chateau de Miranda is in such an extreme state of despair. In some rooms on the ground level parts of the fourth floor are visible. Complete rooms and hallways have fallen through, leaving doors and frames as symbols to now inaccessible spaces. Having climbed unstable staircases and balancing on wood planks which reflect the fragile state of floor structure, I myself consider exploring the castle to be unsafe. The same family that has always owned it does not want to sell it to the city, but are looking into gaining permission for full demolition. There is an international petition started by the Belgian community to bring attention to the Wallon government explaining how demolition is not necessary and how restoration could be beneficial to the area.

Figure 5 // Chateau Grand Staircase

Chateau de Miranda's staircase reveals dominant characteristics of the castle's interior

Structure - The intricate, repetitive columns articulate where circulation between the staircase and hallway begins

Natural Lighting - Without artifical lighting even possible, it is apparent that natural daylighting affects the perception of volume in extravagant spaces such shown

The top plan serves as an example to how circulation must not always be restricted to hallways. It shows a circulation diagram demonstrating how movement is implied through use-space. Also it is easy to see how the plan has actually been reflected along the 'y' axis, making the building symmetrical when it come to floor formation.

In the lower plan it is visible to see that not only was symmetry implemented for the building design, but also for the landscaping. Fromt he round-about driveway, to the pool placement in the east side.

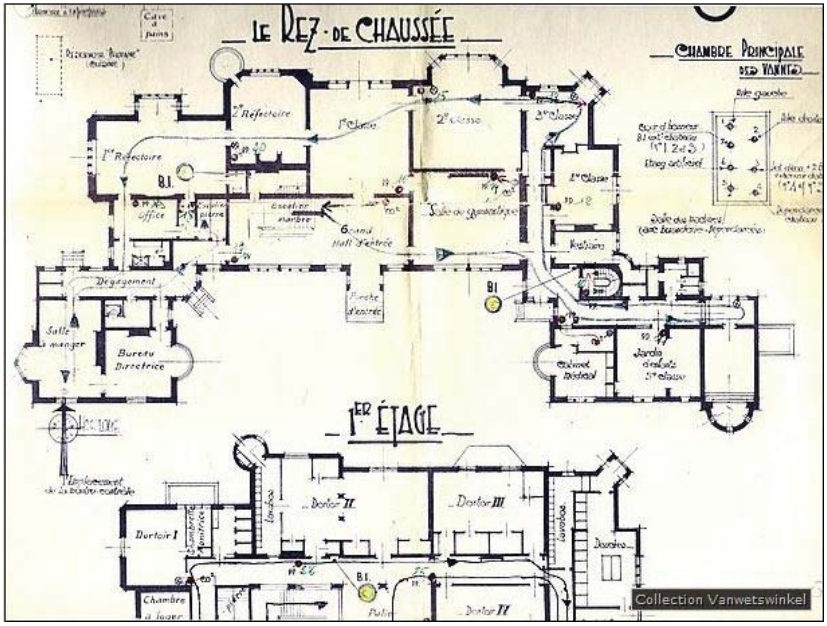


Figure 6 // Chateau Floor

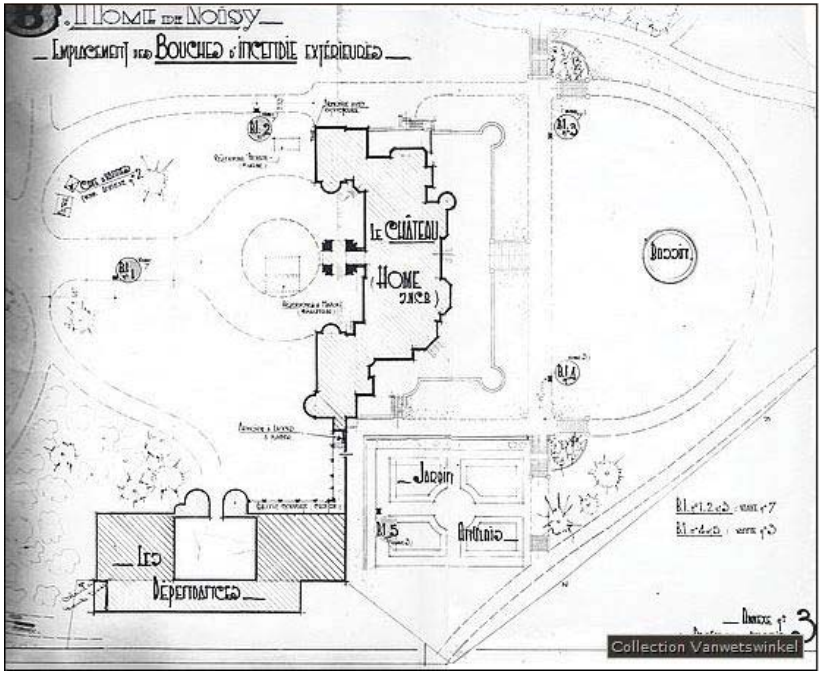


Figure 7 // Chateau Form

Figure 8 // Mill City Museum

Minneapolis was known as the “Flour Milling Capital of the World” or “Mill City” starting in 1880 and for an additional 50 years after. The original A Mill was built in 1874 experienced a flour dust explosion that claimed 18 lives and took the whole building down with it. After this catastrophe mills all over the world began installing dust collectors to prevent such an incident from being repeated. It was rebuilt in 1879 and made into the world’s largest and most advanced mill of its time. Originally built as two-separate milling units, the north unit was up and running by 1880 but the south was not completed until 1891. Another act of precaution went into designing the mill by adding a fire wall division which separated the north from the south saving the mill from complete demolition in 1928 when a fire ripped apart the mill, demanding again large-scale remodeling. Due to technology advances and changes in demand, the A mill closed in 1965. It was home to a few tenants and many homeless people when it started on fire once again in 1991. The Minnesota Historical Society converted the ruins into a museum and event center in 2003 (“Building History”, 2014).

This case study is similar to most other cases because it is a strong example of a successful, adaptive reuse project that safeguards a historical legacy. It keeps the historic ties to the Minneapolis community intact and embraces the cultural identity of the downtown Mississippi riverfront. The difference between this study and the others is that the historic portion of the building today is represented by its subtractive value. MSR architects did not try to replace what was destroyed by the fire; rather they highlighted how its history affected its physical state. Yes, contrasting glasswork was constructed in addition to restoring the floors. However, the way the glass façade was implicated it is as if the present function of the structure is rising from the ashes of the past. By contributing vitality and cultural continuity, this is a physical connection as well as symbolic one that executes how a crumbling form with a past can actually enrich and inform the community.

Environmental Response

The five-story glass curtain wall is located on the south side of the building and overlooks the Mississippi River. Maximizing its natural daylighting potential, the view out from the new addition provides people working in the office spaces a unique view of the ruin courtyard or the river if on a high enough level.

Social Response

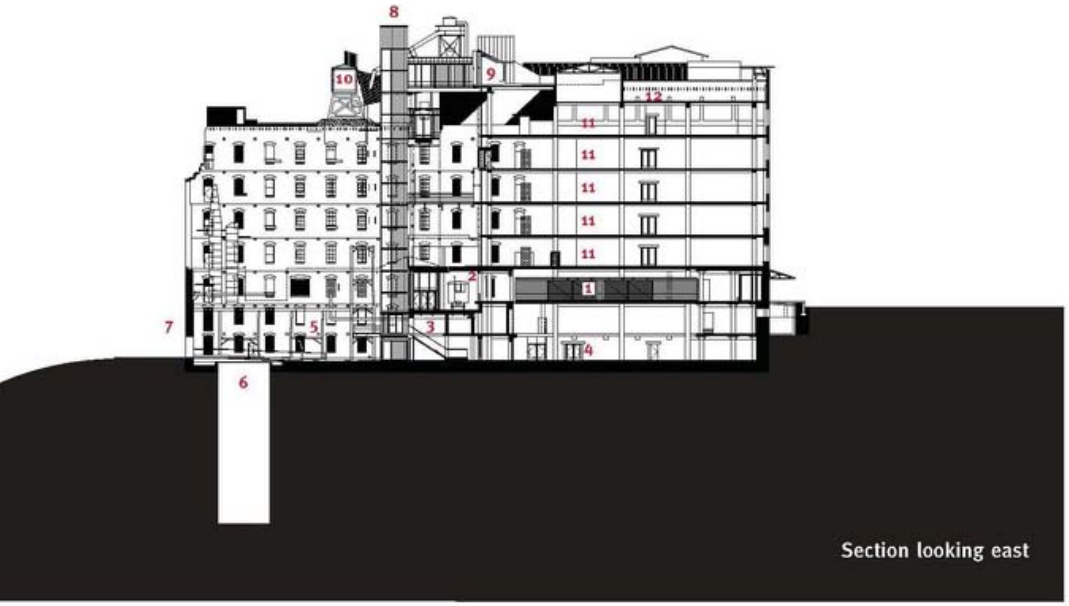
Regular admission to the museum includes a self-guided exhibit gallery, an informational movie titled “Minneapolis in 19 Minutes Flat”, a Flour Tower multimedia show, and a visit to the 9th floor Observation Deck that provides views out towards the Mississippi River and St. Anthony Falls. Weddings, receptions, business meetings/conferences can take place for individuals pursuing the rental of conference rooms, the ruin courtyard, and lobby spaces through D’Amico Catering. Overall the Mill City Museum building is very accommodating for a variety of age groups and events. It has static users who occupy the upper level offices as well as dynamic users who interact with the museum and rentable features.

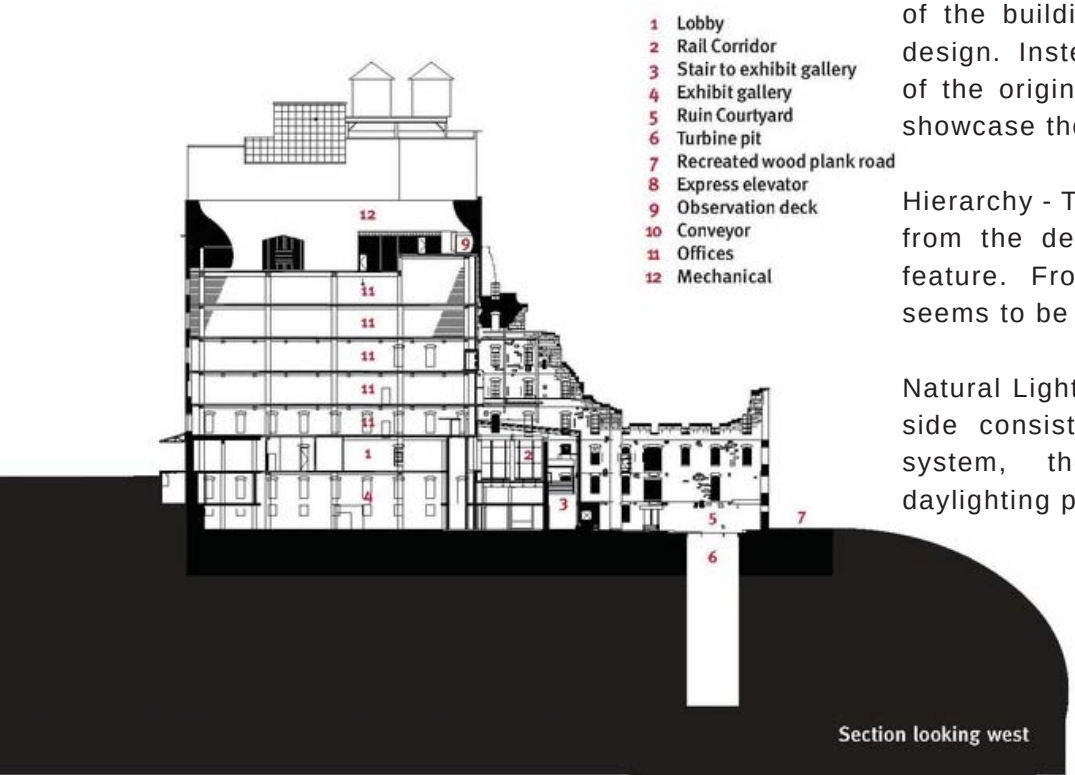
Cultural Response

The Mill City Museum Building responds to its surrounding site of both industrial history, and modern design. The steel, brick and wood combine to create a contemporary, industrial space that preserves the building's integrity. It meshes with its surroundings and even contributes to the area's sense of place by displaying its history and encouraging the public to experience and interact with it. By offering an observation deck the building establishes its place along the river by providing spectacular views of its surrounding neighborhood.

Political Response

The Mill City Museum represents a movement all large cities should consider as their boarders are expanding. It signifies that even the most physically damaged forms can still contribute to the cities identity by expressing where the city has originated from. There will always be the debate of whether to clean the slate of a site and build from scratch or to invest in extensive renovations. I think Minneapolis would agree that MSR took the appropriate approach with the Minnesota Historical Society to showcase the cultural benefits of investing in the restoration of such a monumental time period.





Additive & Subtractive - The historic part of the building is an example of subtractive design. Instead of restoring the complete form of the original mill, the architects decided to showcase the mill's history.

Hierarchy - The express elevator is an element from the design that stands as a dominant feature. From outside the building, it visually seems to be breaking out from the old ruins.

Natural Light- Since basically the whole south side consists of a sleek, glass curtainwall system, the building recieves maximu daylighting potential.

Figure 10 // Mill City Glass Facade

Renaissance Hall

Figure 11 // Renaissance Hall

Renaissance Hall has hosted multiple different building functions within the past hundred years. It began in 1903 as the Robb-Lawrence Company which consisted of manufacturers' agents of agricultural tools. The building hosted space for the Hall-Robertson Wholesale Hardware Company as well which continued up until 1912 even though Robb-Lawrence went bankrupt in 1905. Stone – Ordean – Wells, a wholesale grocery occupied the building for 9 years starting in 1913 and Northern School Supply Company actually moved in as well in 1914 but they themselves didn't own the building until 1920. A few other local companies filled the building between years 1920-1997. In 2000 demolition plans were announced and Doug Burgum purchased the building and it was transformed into Renaissance hall which now holds the North Dakota State University's Visual Arts department, studios and classrooms for the Architecture department, and Tri-College University offices. (NDSU Archives, 2004).

Renaissance Hall is similar to other case studies in that it too is a building whose structure hasn't evolved drastically over time, but yet has housed many different functions. Since its existence the building has jumped around typologies ranging from industrial use to commercial use to educational use and yet we as students can look up from our desks and see the original floor joists and beams. It is different than the other studies with just how many varying occupancies it has had.

LEED Version 2.1 Registered Project Checklist

NDSU Downtown
Fargo, North Dakota

Yes	?	No			
8		6	**Sustainable Sites**		14 Points
Y			Prereq 1	**Erosion & Sedimentation Control**	Required
1			Credit 1	**Site Selection**	1
1			Credit 2	**Development Density**	1
		1	Credit 3	**Brownfield Redevelopment**	1
1			Credit 4.1	**Alternative Transportation**, Public Transportation Access	1
1			Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	1
		1	Credit 4.3	**Alternative Transportation**, Alternative Fuel Vehicles	1
1			Credit 4.4	**Alternative Transportation**, Parking Capacity and Carpooling	1
		1	Credit 5.1	**Reduced Site Disturbance**, Protect or Restore Open Space	1
1			Credit 5.2	**Reduced Site Disturbance**, Development Footprint	1
		1	Credit 6.1	**Stormwater Management**, Rate and Quantity	1
		1	Credit 6.2	**Stormwater Management**, Treatment	1
1			Credit 7.1	**Landscape & Exterior Design to Reduce Heat Islands**, Non-Roof	1
		1	Credit 7.2	**Landscape & Exterior Design to Reduce Heat Islands**, Roof	1
1			Credit 8	**Light Pollution Reduction**	1

Yes	?	No			
1		4	**Water Efficiency**		5 Points
1			Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%	1
		1	Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation	1
		1	Credit 2	**Innovative Wastewater Technologies**	1
		1	Credit 3.1	**Water Use Reduction**, 20% Reduction	1
		1	Credit 3.2	**Water Use Reduction**, 30% Reduction	1

Yes	?	No			
4		6	**Energy & Atmosphere**		17 Points
Y			Prereq 1	**Fundamental Building Systems Commissioning**	Required
Y			Prereq 2	**Minimum Energy Performance**	Required
Y			Prereq 3	**CFC Reduction in HVAC&R Equipment**	Required
3			Credit 1	**Optimize Energy Performance**	1 to 10
		1	Credit 2.1	**Renewable Energy**, 5%	1
		1	Credit 2.2	**Renewable Energy**, 10%	1
		1	Credit 2.3	**Renewable Energy**, 20%	1
		1	Credit 3	**Additional Commissioning**	1
1			Credit 4	**Ozone Depletion**	1
		1	Credit 5	**Measurement & Verification**	1
		1	Credit 6	**Green Power**	1

Yes	?	No			
4		10	**Materials & Resources**		13 Points
Y			Prereq 1	**Storage & Collection of Recyclables**	Required
1			Credit 1.1	**Building Reuse**, Maintain 75% of Existing Shell	1
		1	Credit 1.2	**Building Reuse**, Maintain 100% of Shell	1
		1	Credit 1.3	**Building Reuse**, Maintain 100% Shell & 50% Non-Shell	1
1			Credit 2.1	**Construction Waste Management**, Divert 50%	1
1			Credit 2.2	**Construction Waste Management**, Divert 75%	1
		1	Credit 3.1	**Resource Reuse**, Specify 5%	1
		1	Credit 3.2	**Resource Reuse**, Specify 10%	1
		1	Credit 4.1	**Recycled Content**, Specify 5% (post-consumer + ½ post-industrial)	1
		1	Credit 4.2	**Recycled Content**, Specify 10% (post-consumer + ½ post-industrial)	1
1			Credit 5.1	**Local/Regional Materials**, 20% Manufactured Locally	1
		1	Credit 5.2	**Local/Regional Materials**, of 20% Above, 50% Harvested Locally	1
		1	Credit 6	**Rapidly Renewable Materials**	1
		1	Credit 7	**Certified Wood**	1
Yes	?	No			
5		10	**Indoor Environmental Quality**		15 Points
Y			Prereq 1	**Minimum IAQ Performance**	Required
Y			Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**	Required
		1	Credit 1	**Carbon Dioxide** (CO_2) **Monitoring**	1
		1	Credit 2	**Ventilation Effectiveness**	1
		1	Credit 3.1	**Construction IAQ Management Plan**, During Construction	1
		1	Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy	1
		1	Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants	1
1			Credit 4.2	**Low-Emitting Materials**, Paints	1
1			Credit 4.3	**Low-Emitting Materials**, Carpet	1
		1	Credit 4.4	**Low-Emitting Materials**, Composite Wood & Agrifiber	1
1			Credit 5	**Indoor Chemical & Pollutant Source Control**	1
		1	Credit 6.1	**Controllability of Systems**, Perimeter	1
		1	Credit 6.2	**Controllability of Systems**, Non-Perimeter	1
1			Credit 7.1	**Thermal Comfort**, Comply with ASHRAE 55-1992	1
		1	Credit 7.2	**Thermal Comfort**, Permanent Monitoring System	1
		1	Credit 8.1	**Daylight & Views**, Daylight 75% of Spaces	1
1			Credit 8.2	**Daylight & Views**, Views for 90% of Spaces	1
Yes	?	No			
5			**Innovation & Design Process**		5 Points
1			Credit 1.1	**Innovation in Design**: Maximize Open Space 40% for Urban Sites	1
1			Credit 1.2	**Innovation in Design**: 95% Construction Waste Management	1
1			Credit 1.3	**Innovation in Design**: Local/Regional Materials 40%	1
1			Credit 1.4	**Innovation in Design**: Educational Sustainable Program	1
1			Credit 2	**LEED™ Accredited Professional**	1
Yes	?	No			
27		36	**Project Totals** (pre-certification estimates)		69 Points

Certified 26-32 points **Silver** 33-38 points **Gold** 39-51 points **Platinum** 52-69 points

Figures 12 & 13 // NDSU LEED

Environmental Response

Renaissance Hall was the first LEED certified facility in North Dakota. The following insert includes quotes from credible Professor Ganapathy Mahlingamfrom when interviewed by the Prairie Business Magazine in 2011.

> The average increase in cost for LEED certified buildings is $2.50 per square foot. However, Mahalingam adds that the savings will wind up at $6.50 per square foot. Mahalingam says the owners will see immediate savings, but those savings also depend on size of building, type of building, and the systems incorporated in the building. He also states that it is important to remember that LEED certification is saying that the architects have used sound design practices when designing the building. "What has changed is the accountability for performance for the buildings beyond cost, construction, and safety," he explains." (Van Ormer, 2011)

This highlights on an emphasis of this thesis project showing that when a building achieves LEED certification, the designer is not only thinking about the present day benefits but is also planning for the building's future with the potential of breaking the cycle of returning to early, preventable vacancy.

Social Response

A physical disconnection exists between the NDSU main campus and its downtown campus; however the departments located in Renaissance Hall make efforts to reach out to its community of students and Fargo locals. A gallery space located on the ground level invites supporters of art students and other artists to visit displayed exhibits. The building also responds well to the needs of faculty and students. With 24 hours card access, these users can come and go as they please which is a privilege as it is known other universities do not grant this accommodation. The building also provides numerous break-out spaces where groups and teachers can hold discussions or meetings. Key access is not required for these rooms and these smaller separate rooms as well as the varying open studios offer opportunities for a change in the work environment.

Cultural Response

Downtown Fargo is home to multiple art galleries, pubs, record stores, and places to eat. It also has a theater and many individual shops. This artistic vibe draws many students and suburban citizens into the downtown areas especially on weekends. By having the Architecture and Visual Arts programs located right on NP Avenue, it draws the younger crowd into downtown even when it is not the weekend. I personally have chosen to live right downtown in Cityscapes Plaza apartments for the past 3 years because it was convenient for school and I liked the downtown cultural atmosphere whether it was the weekend or a Monday. Culturally, since Renaissance Hall was built after the city's fire in 1893 and has remained intact with little alterations since, it visually blends in with the old downtown context. And like mentioned before, it encourages a stronger relationship between local businesses and students.

Political Response

The segment below reads the financial timeline Renaissance Hall followed shortly after Doug Burgum purchased the building and explains how involved and supportive the city of Fargo was for this bold act:

"In March of 2001, the Fargo Renaissance Zone Authority approved a five-year property and tax exception for the building and in December, Doug Burgum, through the Kilbourne Design Group, donated the building to the NDSU Development Foundation. In addition, Burgum donated $1.5 million, with another $5 million coming from the Development Foundation, and the City of Fargo pledged $400K in federal grant funds." (NDSU Archives, 2004).

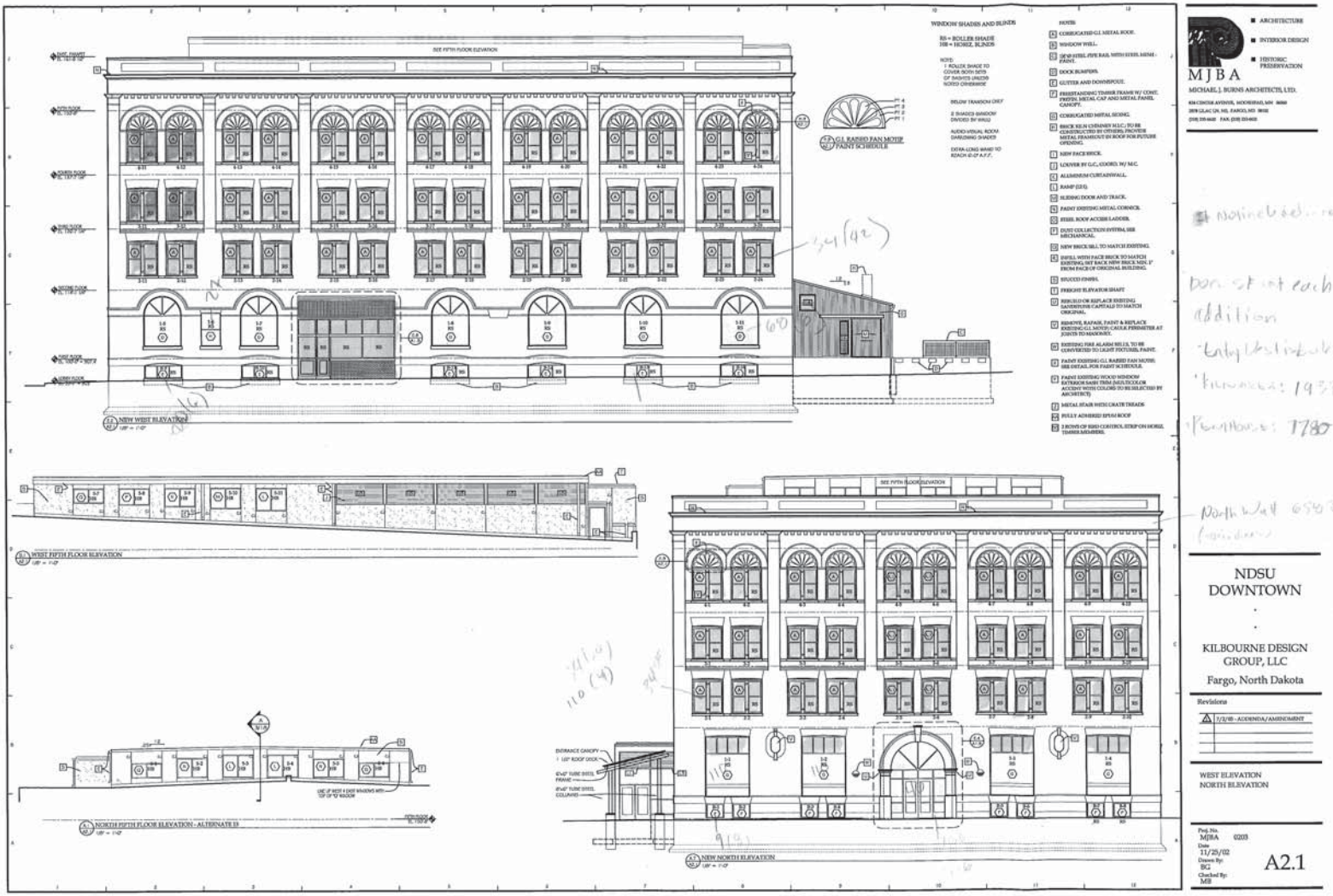


Figure 14 // Renaissance Elevations

- Repetition in design
- Repetition in geometry
- Natural Lighting
- Symmetry & Balance to facade design

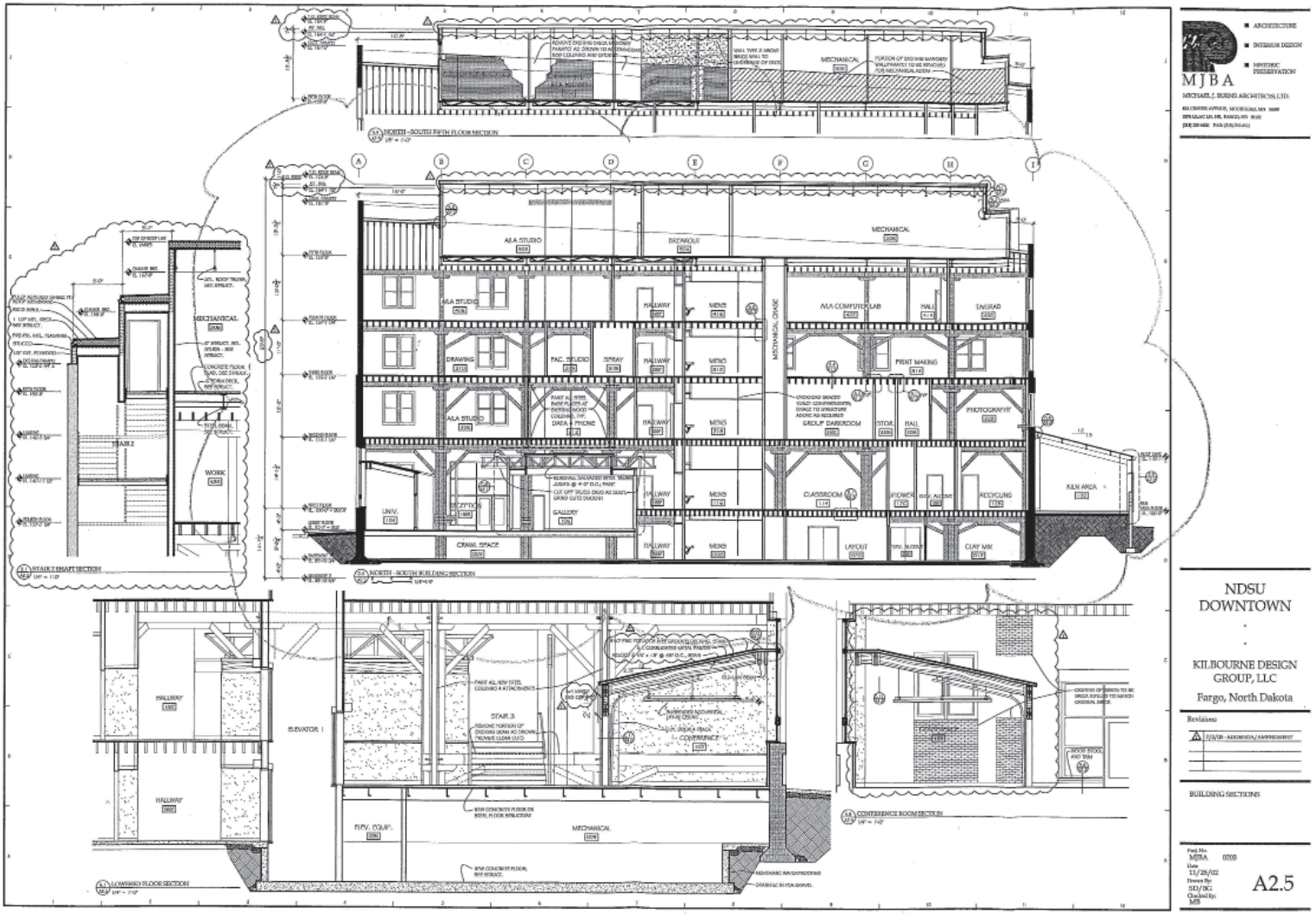


Figure 15 // Renaissance Section

- Hierarchy in exisiting wood columns
- Linnear circulation through levels, with centralized elevator circulation

Case Study Conclusion

From studying these three separate case studies I was able to observe the concept of adaptive reuse from a couple different perspectives. With Chateau de Miranda I interacted with spaces succumbing to deterioration caused by nature and people. I gained a greater understanding and appreciation for the tactile experiences that can be cultivated through preservation. As a visitor of the City Mill Museum, I experienced an active building constructed from adaptive reuse practices and was exposed to the importance of the color and material palette when connecting the past with the new. Lastly, with Renaissance Hall, I am the user and occupy this adaptive reuse building. Analyzing if it meets the needs of my current demands made me realize the variety of perceptions users have of a space and that these varieties are reflected from the ways people are interacting with a space. Overall, approaching each of these case studies with a different interaction intention provided me with greater knowledge on what is important to consider when contemplating an adaptive reuse project.

Project Elements // Hostel

Public

- Main Lobby
  (check-in desk,computer bar,
  coffee bar)
- Laundry Room (hostel guests)
- Self-serve Kitchen / Breakfast Bar
- Den / Social Pub / Rec. Room
- Men's & Women's Washrooms
- Shared Parking (hostel guests & staff)

Private (requires HID - ProxCard for access)

- Laundry Room (hostel staff only)
- Centralized Elevator
- Baggage Storage Room
- Dormitory Rooms
  (varieties: same-sex, mixed, private)
- Maintenance Room

Project Elements // Event Spaces

Public

- Coat Room
- Grand Room
- Long Bar
- Centralized Elevator
- Small Self-serve Kitchen
- Basement /
  Lower - level Washrooms
- Shared Parking
  (event attendees, staff)

Private (requires key/card access)

- Large Catering Kitchen & Storage
  (prep room/ refrigerator/ freezer)
- Loading Access
- Storage (table & chair storage/
  band equipment)
- Maintenance Room

User / Client Description

Hostel Staff & Management

Checks travelers in, provides information (transportation / historic / Twin Cities), cleans & prepares room for guests, provides 24/7 front desk services, helps set up & take down events taking place in the Grand Room.

Travelers / Guests

Socialize in den / rec room, occupy checked out room, shower, store baggage in storage or lockers, prepare/ store/ eat meals, gather information provided by the hostel, demand multiple means of transportation (bike rental, shuttle, taxi, light-rail, car), participate in hostel planned events.

Event Space Users

Demand supplies storage, may need temporary stage space, acceptable acoustics (little reverberation), access to kitchen space, access to bathrooms, access to coatroom, access to balcony facing the riverside, multiple means of access to the outside.

Maintenance

-Responsible for necessary repairs in both the hostel & event center buildings, helps set up/ take down events taking place in the Grand Room.

Catering Staff

Prepare and deliver food to events hosted in the Grand Room, but also to events located elsewhere in the city.

The Site | Buildings 17 & 18 Historic Rd, St. Paul

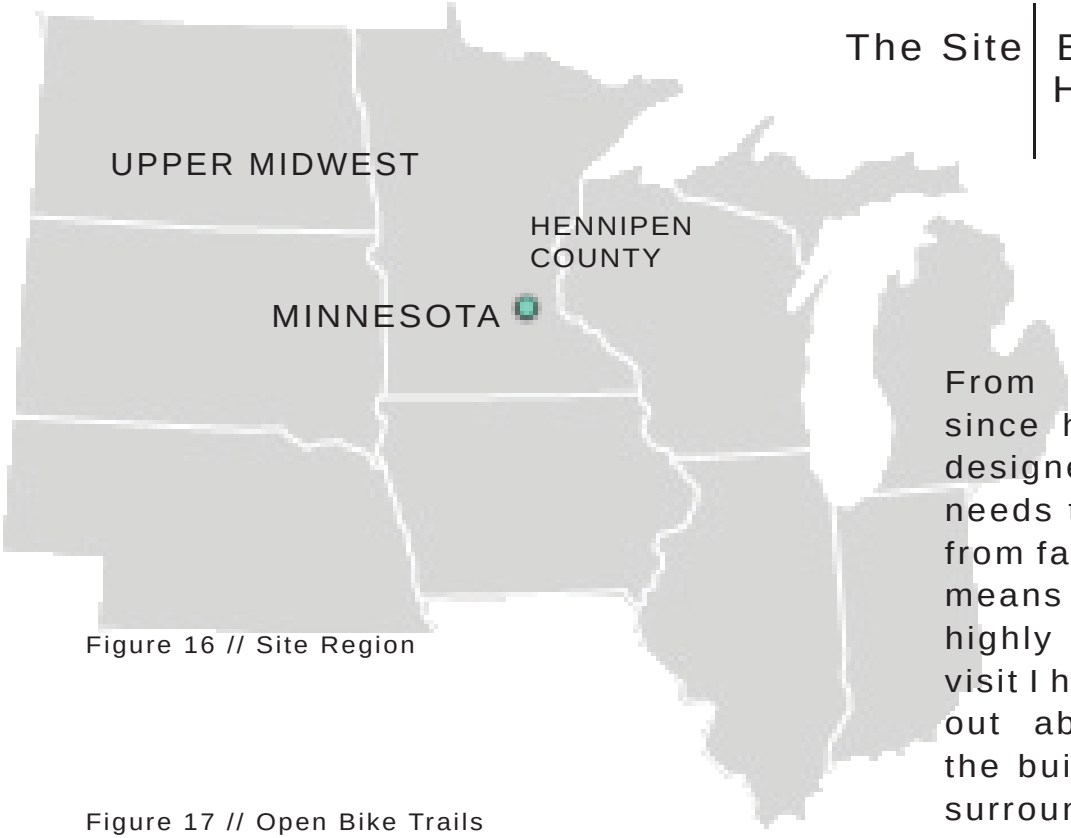
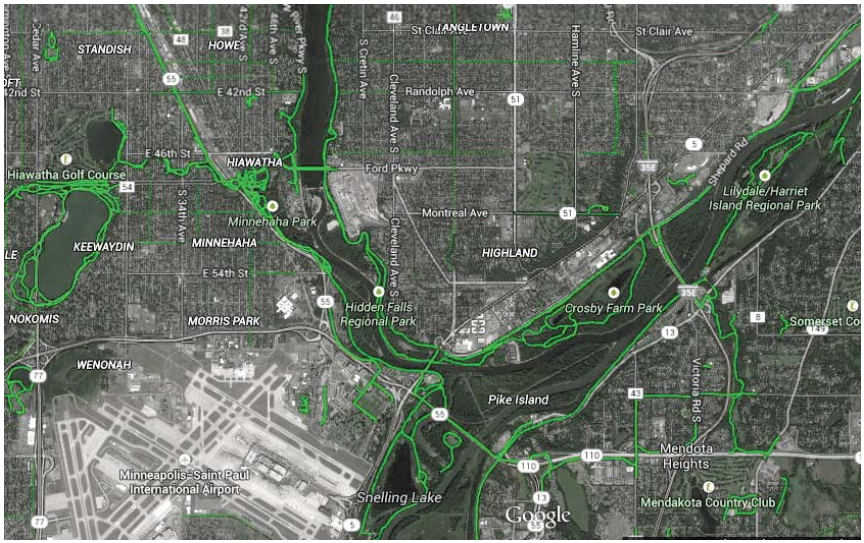


Figure 16 // Site Region

Figure 17 // Open Bike Trails



From personal observation, since hostels are specifically designed to accommodate the needs those who are traveling from farther distances, varying means of transportation are highly encouraged. At a site visit I had this summer I walked out about 10 minutes from the buildings to check out the surrounding neighborhood. To my surprise I saw many bicycle rental racks and eventually made it to the light rail which runs both north and southbound through the Twin Cities. Also with highway 55 within sight from the barracks makes the site is easily accessible.

Why this particular site?

I have designated barracks 17 & 18, as my structure for restoration and renovation. The barracks currently sit vacant and unoccupied on the grounds of the historic Fort Snelling military base in southweast St. Paul.

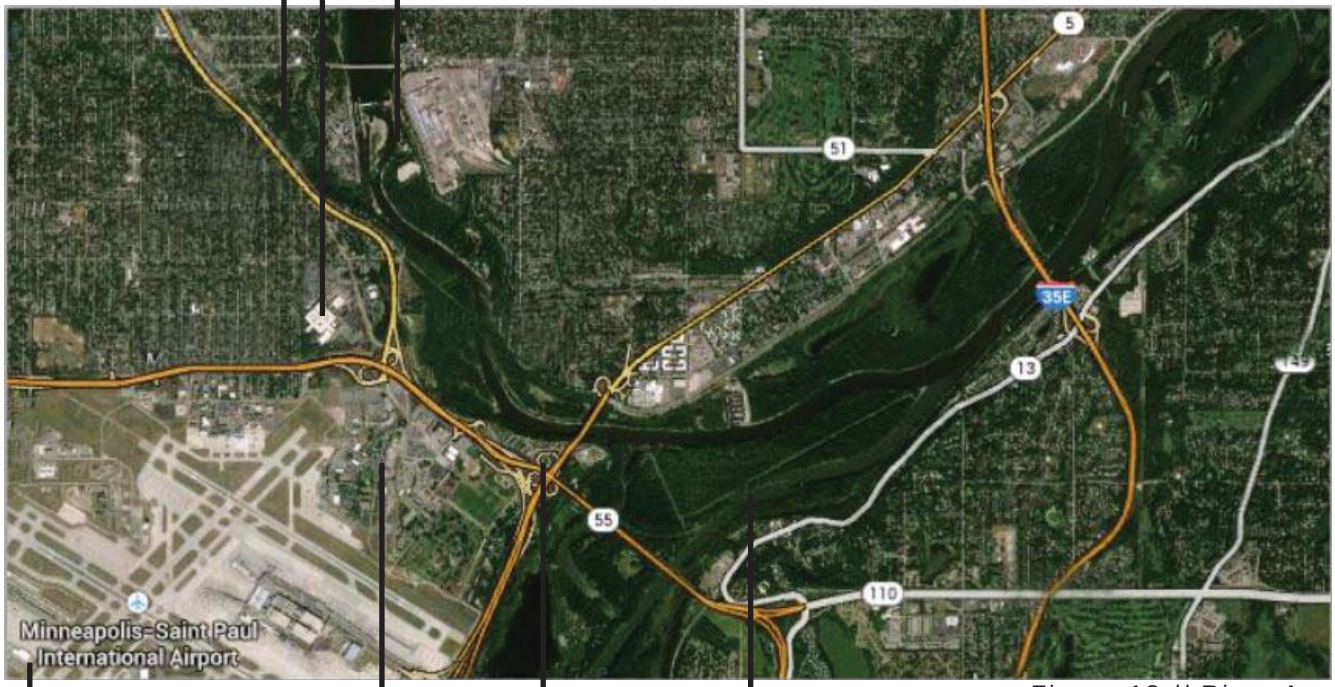


Figure 18 // River Area

Minnehaha Park

Minneapolis VA
Health Care System

Mississippi River

Minnesota River

Historic Fort Snelling

Northbound Light Rail to
Mpls-Target Field
Southbound Light Rail to
Mall of America

Minneapolis - St. Paul
International Airport

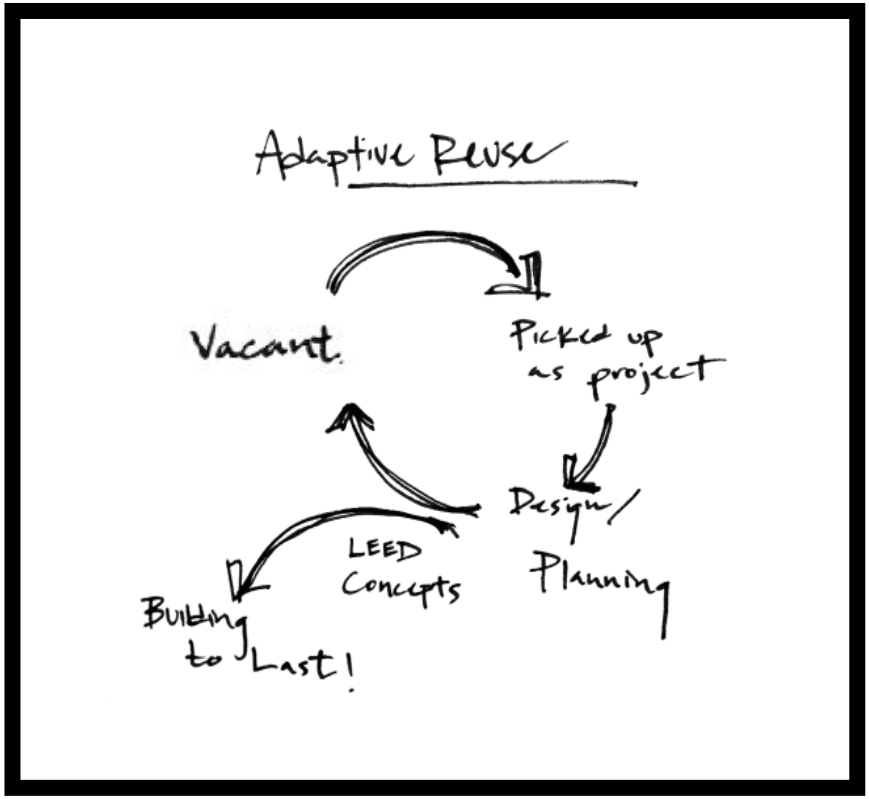


Figure 19 // Concept Sketch

Project Emphasis

This thesis project will focus on how additive & subtractive techniques of architectural design can work to establish and enrich the appreciation for these historic buildings. It could be phrased as “removing to add”. These strategies will highlight or compliment the notable visual and textural characteristics of the barracks buildings, illustrating what was of previous existence.

While integrating certain LEED strategies may seem intrusive to a building’s current essence, a goal of sustainable design as a whole is to create overall stronger buildings.Ones that surpass the years they were previously subjected to never see. An adaptive reuse project with LEED efforts or certification breaks the cycle the structure could fall back into if not built with durability in mind.

Goals of the Thesis Project

Academic Environment

An academic goal I want to achieve for this thesis project is to successfully showcase my strengthened knowledge in adaptive reuse and historic preservation methods via various graphic approaches. I want to enhance my 3D rendering skills in Revit, but also embrace my artistic abilities with drawings and sketches. Finding a way to fabricate both styles of graphic representation could provide a unique style for the way I visually present my interior and perspective shots. I am also interested in learning a new graphic program. One of my skill strengths is in Photoshop, however I am open to exploring new ways to graphically tune-up and represent my work. These academic goals, as well as pushing my design process extensively to be considered as a Peter F. Mackenzie Memorial Award Nominee, are the goals I am aiming to achieve.

Personal Environment

Although I have interest in working in Minneapolis, I have become very intrigued with the idea of possibly living and working overseas. Since studying abroad Spring Semester 2014, I have been considering the United Kingdom to further pursue ideas circulating the concept of restoration. I spent 3 months visiting and traveling through cities where, in some cases, adaptive reuse has been the only option for new construction in the city. No matter what state or country I start working in next summer, I know I want to work with a firm that emphasizes restoration and reuse work.

Professional Environment

Choosing an adaptive reuse project for my thesis typology will help me to continue relationships with firms I have current interest in. Having grown up close to Minneapolis, I have always had great interest in multi-use city design and urban dwelling design. I have a few connections within Minneapolis that do have an emphasis in historic preservation; however I am interested in doing any type of restoration work in general. Commercial and residential project types are what I have the most interest in. I will be sketching and drawing my ideas throughout this whole thesis process and documenting it well because sometimes it takes working off old ideas to generate and work out new concepts. I also find it interesting to track my progress from the beginning and just watch my thoughts evolve from a basic abstract sketch. I believe the more I document of this project the more it will benefit me when it comes time to reaching out to firms I have no current ties to. I am comfortable with reaching out to individuals of a firm I am interested in, but I am looking for a more meaningful connection and understanding with them. I am looking forward to learning more about the project proposal process and the first steps after its acceptance or rejection.

Research Direction

Research will be conducted to understand what building relationship responses (pre-remodel) are desired and carried through into the new design. Also hostel dormitory layouts, catering kitchen layouts, acoustics, Minnesota Historic preservation guidelines & suggestions, historical context, site analysis, and programmatic requirements will be researched.

Design Methodology

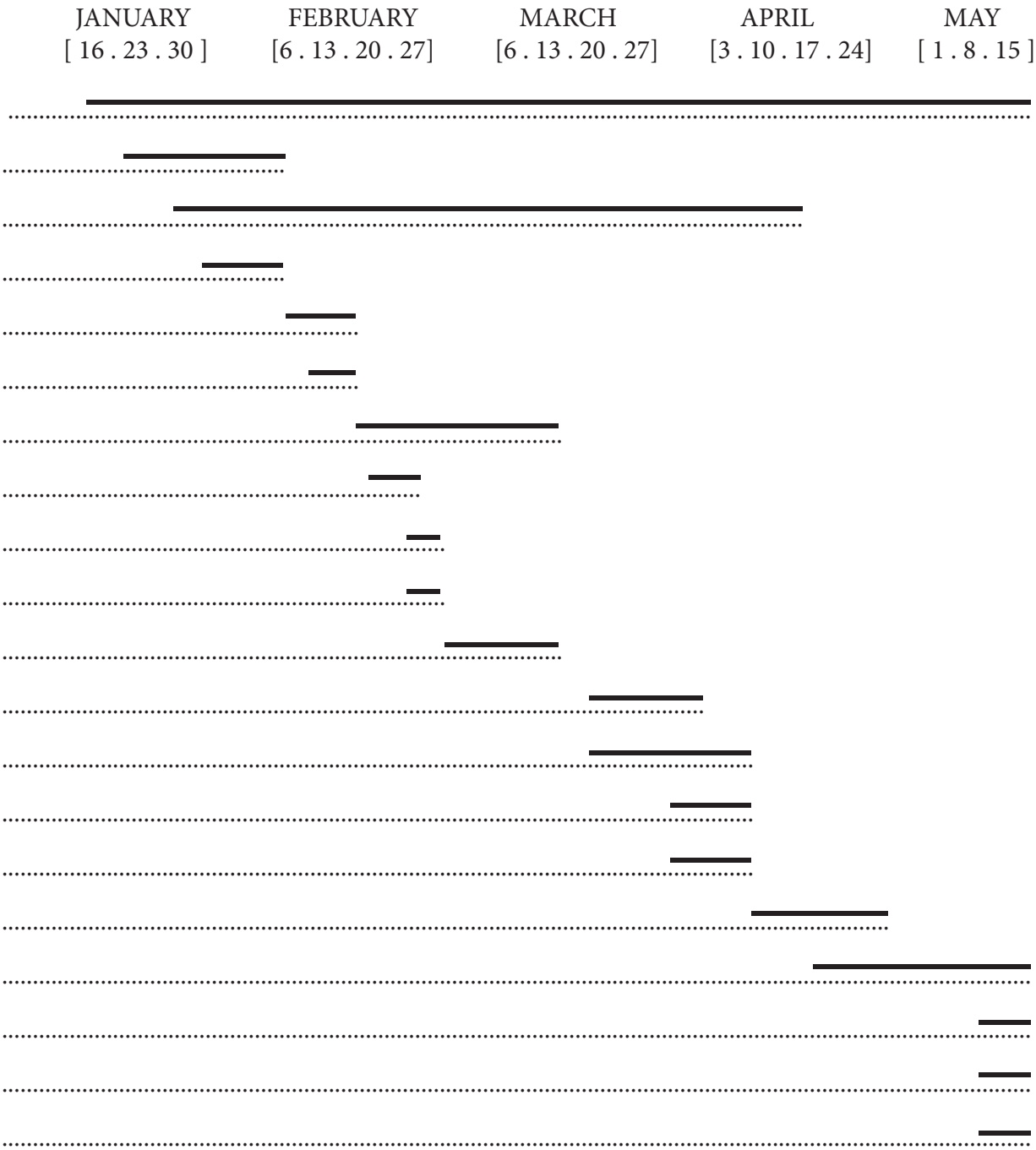
The research for this project will follow a mixed method approach, applying both qualitative and quantitative data and utilizing graphic and digital analysis as well as physical observation. The process of analyzing the data I collect, interpreting its significance, and applying it to my project will be presented through diagrams, graphics, and texts throughout my research and project development.

Design Documentation

Weekly and monthly research/analysis, drawings, diagramming sketches, models and computer graphics will be electronically scanned and physical copy of this design process will be preserved and kept in a divided binder. This design documentation will also be made available in the final thesis book and to scholars in North Dakota State University's institutional repository once completed.

SCHEDULE / PLAN FOR PROCEEDING

	DAYS	COMPLETION
PROJECT DOCUMENTATION	119	05.11.2015
CONTEXT ANALYSIS	21	02.02.2015
DIGITAL MODEL DEVELOPMENT	84	04.22.2015
CONCEPTUAL ANALYSIS	14	02.02.2015
FLOOR PLAN DEVELOPMENT	21	03.02.2015
SPATIAL ANALYSIS	7	02.09.2015
CONTEXT DEVELOPMENT	14	03.09.2015
ENVELOPE DEVELOPMENT	14	03.11.2015
MATERIAL DEVELOPMENT	7	03.11.2015
MIDTERM REVIEWS	7	03.13.2015
STRUCTURAL DEVELOPMENT	7	03.09.2015
PROJECT REVISIONS	21	04.22.2015
RENDERING	14	04.15.2015
PRESENTATION LAYOUT	7	04.22.2015
PLOTTING	7	04.24.2015
EXHIBIT INSTALL	3	04.27.2015
THESIS EXHIBIT	20	05.15.2015
FINAL THESIS REVIEWS	8	05.07.2015
FINAL THESIS DOCUMENTATION	1	05.11.2015
COMMENCEMENT	1	05.16.2015


JANUARY
[16 . 23 . 30]
FEBRUARY
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MARCH
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APRIL
[3 . 10 . 17 . 24]
MAY
[1 . 8 . 15]

The presence of a vacant, merely existing building can be viewed as the fork in the path for designers. A form unoccupied by people or current function presents options. Is its existence viewed as containing potential or hosting a decomposing nuisance? Would demolition provide better opportunities to the land it's positioned on, or what can be gained from restoring it?

In *People in Cities: The Urban Environment and its Effects*, Edward Krupat provides this contemplation on a larger scale. The question being, "what makes one city different from or better than another?" (Krupat, 1985). This question is basically asking for a series of very subjective responses. However Anselm Strauss (1976), an internationally known medical sociologist, suggests in his book *Images of the American City*, that "The entire complex of urban life can be thought of as a person rather than a distinctive place, and the city can be endowed with a personality – a character of its own" (pg. 14).

Krupat advances then to further question how to go about reducing a city's essence to something manageable, yet meaningful and pulls various urban characteristics Strauss made from his book (Krupat,1985):

(Milwaukee)
"which sits in a complacent shabbiness on the west shore of Lake Michigan like a wealthy old lady in black alpaca taking her ease on the beach"

(Houston)
"an incipient heavyweight champion in its pimply faced adolescence"

(Rochester)
"like a successful, well-adjusted individual of middle age"

This method of graphic characterization of cities can be transferred over to individual buildings as well. To analyze the biography and reputation of the building by not categorizing the building as "good" or "bad", but rather absorbing the ambivalence of its existence (a mixture of good and bad) can be beneficial when approaching an adaptive reuse project.

Krupat (1985) breaks down two contrasting sides to classifying cities which I believe is to be relevant in an individual building study as well. The first approach uses objective data to measure conditions as they exist, creating reasoning from what's physical in a systematical way. This is studying the "actual" environment. The second method utilizes subjective opinions from people, or studying the "perceived" environment. The following contains the titles of Krupat's listed components in approaches to urban description. I applied them to the concept of an individual building study within my project typology.

Objective approaches applied to potential adaptive reuse project:

Economic-functional approach:
What economic activity surrounds the site? What skills and services are at social demand (small scale: neighborhood, large scale: city).

Quality-of-life approach:

1) Economic component // Can the building function to provide economical enrichment to individuals interacting with it? (income and full-time, part-time, seasonal job creation)

2) Political component // Is it recognized by the Historical Society? What are the political advantages/disadvantages of pursuing a historic building (funding sources, tax incentives)

3) Environmental component // What sustainable strategies are already present or lacking with the building's current state of condition? How has the environment surrounding the building physically affected the building, and what has been lost or gained because of it?

4) Education component // What can be learned from the building transformation? Does the current condition hold educational potential?

5) Social component // An inventory of the surrounding cost of living, crime rates, housing quality, and sports and cultural opportunities. What can be added or improved?

Subjective approaches applied to potential adaptive reuse project:

Titled below are 6 factors by which the social climate of contrasting communities can vary (Krupat, 1985, pg. 42). As stated before, I adapted the categories to my project. They now capture the social climate on a much smaller scale of an individual building and its potential users. Since the building held occupants in its previous use, evaluation can made from earlier efforts as well as future potential.

1) Warmth and closeness // How is security currently addressed, and how can it be improved if lacking?

2) Activity and entertainment // Is there an atmosphere of culture?

3) Alienation and isolation // Is there inconvenience in space sizing and location?

4) Good Life // Could all necessities for the user plus extra luxuries be provided for?

5) Privacy // What is the separation between public vs. private spaces?

6) Caring vs. uncaring // How can a sense of purpose and interest be instilled?

So when it comes to subjective verses objective approaches of classification, which are the most valued and important when it comes to applying them into an overall evaluation? There are two arguments supporting each side. One being, that objective conditions operate directly, providing the setting for action to occur and placing control and restrictions upon behavior. The other is that if the interest is in how people respond, then their evaluations and perceptions are the determinants to consider first. However, Krupat suggests that the degree of disunity or agreement in the interaction between two kinds of classifications (subjective & objective), may offer a more useful form of description (Krupat, 1985).

To expand further on how these seemingly opposing determinants are actually complementary, Kurt Lewin, an influential pioneer of social, organizational, and applied psychology in the U.S. proposed a formula to define behavior.

$$B = f(P, E)$$

This defines behavior as a function of the person and the environment (Lewin, 1951). With this proposed formula, the external setting in which an individual functions became an important determinant for behavior. Not only does this formula present environment as an important variable to a resulting behavior, but it emphasizes the interaction and relationship between the person and the environment.

Lewin's formula can be applied to varying scales of analysis. Whether it is evaluating the behavior of a whole city or boiling it down to simple interactions for an individual's response.

$$B = f(P, E)$$

P	E
Internal determinant	External determinant
Population,people, person	City, neighborhood, building
Perceived	Actual / physical
User	Setting

Successful balance of poetic & functional influence.	=	Person with a need	,	Provided space / with potential to fulfill need

When looking into specific techniques to interlace past history with a new function, how does a designer know should and should not be altered? What and where can additions or subtractions be made? The National Park Service/ U.S. Department of the Interior defines character as “all visual aspects and physical features that comprise the appearance of every historic building.” (Nelson, 1988).

With two important goals in mind with the treatment of historic properties: 1) the preservation of historic materials and, 2) the preservation of a building’s distinguishing character, the National Park Service lists character-defining elements as being:

- Overall shape
- Materials
- Craftsmanship
- Decorative details
- Interior spaces and features
- Various aspects of the site and environment

When debating between various restoration techniques, a designer should make sure the techniques they end up choosing embrace the building’s historic character and not damage it. (Nelson, 1988).

New Exterior Additions to Historic Buildings

A new exterior addition should only be considered in an adaptive reuse project only if it is determined that the requirements for the new use cannot be fully met when modifying non-significant interior spaces. Sometimes an addition may be required in order to avoid modifying character-defining interior spaces (Grimmer, Weeks, 2010). When an addition is designed it needs to meet Standards 9 &10 of the Standards for Rehabilitation:

(9) “New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.”

(10) “New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.”

It is important to follow these standards close in order to protect the building’s historic character and materials/features from significant damage. It is also important to differentiate the new addition from what is genuinely historic, but also making it compatible (similar style, materials). An addition should never be competing in size, scale, or design with the original building (Grimmer, Weeks, 2010).

Preserving Historic Wood Porches

When a porch deteriorates past a state of repair or is missing altogether, replacement is heavily encouraged. The replacements should match the historic component as closely as possible in material, design, color, texture, and other qualities (Sullivan, Leeke, 2006). Looking into existing evidence of what is still intact can be a pattern for the new replacements. If a porch no longer exists period, looking back to historic plans to understand how previous porches were constructed and installed can help match the replacements to their historic past. It is important to understand how the original porches deteriorated or why they were removed, to make sure it does not happen again. When fully replacing porches, it may be a good opportunity to upgrade to a wood species that has better resistance to deterioration. It is important to keep a close visual match to the original in mind though as well.

Species	Cut or Grade	Cost	Workability	Resistance to Decay	Resistance to Cupping	Paint Holding Ability
Redwood	Clear, Vertical-grain, all-heart	$$$	Fair	Excellent	Excellent	Excellent
	"B" Select, flat-grain	$$	Fair	Excellent	Good	Good
Cedar	Clear	$$	Fair	Excellent	Good	Fair
Cypress	Clear	$$	Fair	Excellent	Fair	Good
Douglas Fir	"C" & better, Vertical grain	$$	Fair to Poor	Good to Fair	Excellent	Fair
Southern Yellow Pine	"D" Select, flat-grain	$	Fair	Fair	Good	Fair
	Vertical-grain	$$$	Fair	Fair	Excellent	Fair to Good
Eastern White Pine	"D" Select, flat-grain	$	Excellent	Fair	Excellent	Good
	Vertical-grain	$$$	Excellent	Fair	Good	Excellent
Poplar	Firsts and Seconds	$	Good	Poor	Good	Fair
American Mahogany	Clear	$$$	Excellent	Excellent	Excellent	Good

Figure 20 // Wood Species

Rehabilitating Interiors in Historic Buildings

When assessing the interior of a building it is crucial to investigate the levels of alteration that has already happened over time because this sets the degree of new change that can take place. If new partitions or columns were added or other changes made that do not hold historic significance it may be easier to remove these alterations because it is restoring the building back to its previously historic state. The same follows for if an interior has been greatly changed due to subtractive methods, giving the designer more freedom to future alterations in the process of establishing reuse since the integrity has already, previously been compromised. NPS lists some recommended approaches for rehabilitating historic interiors (these are not all, just chosen ones relevant to my project) (Jandl, 1988).:

- Retain and preserve floor plans and interior spaces that are important in defining the overall historic character of the building.

- Avoid subdividing spaces that are characteristic of a building type or style or that are directly associated with specific persons or patterns of events.

- Avoid making new cuts in floors and ceilings where such cuts would change character-defining spaces and the historic configuration of such spaces.

- Avoid installing dropped ceilings below ornamental ceilings or in rooms where high ceilings are part of the building's character.

- Retain and preserve interior features and finishes that are important in defining the overall historic character of the building.

- Retain stairs in their historic configuration and to location.

- Retain and preserve visible features of early mechanical systems that are important in defining the overall historic character of the building, such as radiators, vents, fans, grilles, plumbing fixtures, switchplates, and lights.

- Avoid using destructive methods—propane and butane torches or sandblasting—to remove paint or other coatings from historic features.

Figure 21 // South Facade

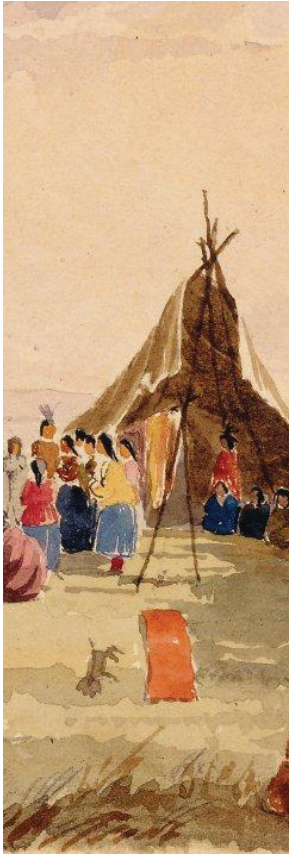
Research Conclusions

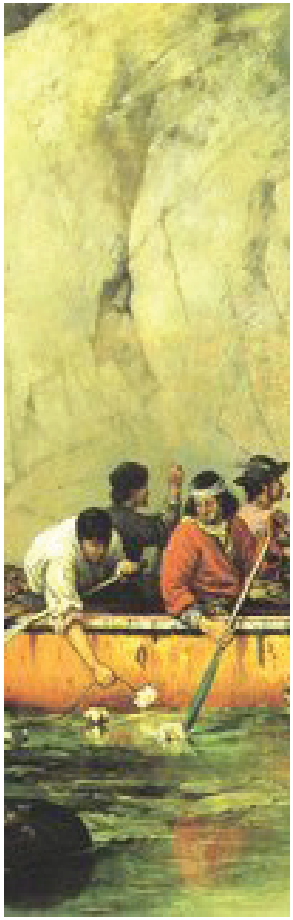
The interaction in Lewin's formula, which contributes to a sustainable practice of renovating historic buildings (B), is critical for the success of an adaptive reuse project. By reimagining the program of a historic building using Lewin's formula the result will facilitate not only an objective response to preservation but also create a positive subjective reaction for the users given the building relates to a more particular cultural and contextual position. It meets their subjective needs by providing a relevant social climate (P) and fulfills the demanded functional needs (E) to the point where the decision to stay or revisit in the future was decided or at least considered

Kurt Lewin's formula which explains how analyzing both subjective and objective determinants is crucial when working on an adaptive reuse project. I will consider Lewin's formula and concepts as I am using design strategies to execute techniques I have chosen to interweave the past and present of the building. In the designing phase of this project, I will observe the existing physical components of the unoccupied building and assess its potentials. Taking into account how the many objective variables interact with social, cultural, and subjective components, I will be able to make opportune changes to the building through the techniques of: new views, element exposure, and complementary additions. Implementing these techniques while recognizing subjective and objective determinants can create an ethical building response that establishes a relevant building program and form within a historic building.

Project Justification

The creation of this adaptive reuse project can serve as a case study in itself for future potential rehabilitation projects. New function and value can stem from already existing buildings through meditated methods of replacement, addtions, and subtractions. These techniques can produce new views, and expose historic elements (materials, craftsmanship) to highlight and preserve the architectural character of the building. It is important to understand and explore how reuse projects like these can be generated because it is a way for society to reconnect with their surrounding's past. It serves as a reminder of past history and helps us not to forget what has happened, but rather appreciate and learn from what has taken place. It takes projects such as the Mill City Museum in Minneapolis, Renaissance Hall in Fargo, and this one to stimulate renewal in unoccupied building which hold great potential for new purpose.






THIS IS MINN
One of the Oldest A
WOLD CHAM
ROAD
OFFICERS' QUARTERS
BACH
OFFICER
ENLISTED MEN'S BARRACKS

History, Social and Cultural Context

(All timeline information was retrieved from *Fort Snelling Light Rail Transit & Upper Post Master Plan,* complied by Cornejo Consulting, LHB Inc., Kimley - Horn & Associates Inc., McComb Group Ltd. February 2011)

Before the 1800's, Native Americans from Dakota tribes dwelled along the Mississippi River & Minnesota River. As their place of origin and spiritual gateway upon death, these rivers were of high importance to them.

1805 - 1808 // Dakota tribe leaders signed a treaty at the location, granting the U.S. government the purchase of 100,000 acres.

1820 - 1825 // Fort Snelling was established to protect fur traders, white settlers, and to encourage ground trade and exploration.

1880 - 1907 // Military construction took place establishing administrative buildings, living quarters, training facilities, stables, recreation facilities, and a hospital south-west of the Upper Post (original fort).

Figure 23 // Historical Context // Time-

Fort Snelling remained in use through the grounding of the Minnesota Territory, the Dakota - U.S. War, the Civil War, Spanish - American War, Mexican Expedition, and WWI and WWII. Soldiers trained on Fort Snelling grounds for the Civil War, Spanish - American War, and WWI.

1918 - 1939 // Considered and known as the “Country Club” of the Army, Fort Snelling had a golf course, officers’ club, streetcars to the cities, and polo games. Civilian Conservation Corps (CCC) which was a part of the Works Progress Administration (WPA), established work camps to help with the Great Depression economic crisis.

1940s // Upper Post established a military intelligence language school during WWII where 6,000 linguists, mainly Jananese - Americans were trained. More than 600,000 soldiers went through Fort Snelling during WWII. In 1946, the fort was decommissioned by the U.S. Army but the Veterans’ Administration still held ownership.

1961 - 1970s // Fort Snelling State Park was established in 1961 and the Upper Bluff listed on the national Register of Historic Places as a Landmark District following in 1966. That same year the Minnesota Historical Society began restoring the original fort. Minnesota’s DNR gained ownership of the historic land to the east of Bloomington Road in 1971 and a living-history museum was then established in the late 1970s

Recent Efforts

2006 // National Trust for Historic Preservation lists Fort Snelling as one of America's 11 Most Endangered Historic Places.

Hennipen County uses a Base Realignment and Closure (BRAC) grant to re-employ workers after the 88th U.S. Army Reserve Regional Readiness Command was relocated. The grant also assessed real estate, historic preservation tasks, site security, utility services etc.

2006 // 2010 Hennepin County & Minnesota DNR undertake emergency stabilization and "mothballing" of Upper Bluff buildings.

Historic context studies are carried out for the Upper Post and West District. Previous reuse and development character investigations are considered and built on to.

2009 // Preservation Alliance of Minnesota presents Hennepin County and Minnesota DNR with Stewardship Award for the stabilization efforts.

Hennepin County uses funds from Federal Transit Administration (FTA) to prepare and push the Fort Snelling Light Rail Transit and Upper Post Master Plan which aims to maximize LRT ridership through redevelopment. To restore and expand the existing buildings would provide flexibility for reuse.

Today // The Minnesota Historical Society runs the restored and reconstructed HIstoric Fort Snelling and engages the community with historic reenactments of what life was like in the 1840's. From ceremonial reenactmnents to craft demonstrations, individuals dress up in the time's attire and act how soldiers and fort civilians would. There are 46 vacant buildings on the West District and Upper Post.

Figure 23 // Changes to the historical site

Cavalry Barracks 17 & 18 are identical in design ad were constructed in 1904. Located just west of the historic fort, each building held housed about 170 men (Two troops of 85 men each). Troops G & H of the Third Cavalry, comprising of 4 officers and 144 enlisted men arrived to the barracks on June 14, 1905. By the end of the year they left for the Philippines and Troops I, K, L, M of the Second Cavalry from San Francisco filled their place in February 1906. (Petersen, Roise, 2008).

The buildings were turned into medical offices and clinic spaces in the 1970s, but have stood vacant since the 1990s with the exception of a reuse study conducted by the Society and the State Historic Preservation Office in 1993. The buildings have remained completely vacant to this day since 2008. (Petersen, Roise, 2008).

Building 17 & 18 are U-shaped in plan with a front rectangular block measuring 39 x 150 feet. Each of the buildings' wings measure at 39 x 59 feet and project out towards the Mississippi River. Both 17 & 18 have full basements, and each building once contained open courtyard. However they were filled with one-story, 72 x 50 foot additions and basements. The breezeway that connects the two-story buildings is two-stories tall as well. Each building consists of about 26,700 square feet on each floor. The two-story wood porches that once stretched out from the front facades have been removed as well as the single-story porches that were previously located on the back end of the side wings (Petersen, Roise, 2008).

Figure 24 // Fort Snelling Perspective

Style // Georgian Revival vernacular :
symmetry, gabled roofs, Palladian
windows, brick or wood exteriors,
white painted fenestration/ ornament,
simple eave returns.

Structure // Masonry load-bearing exterior walls
Wood framing for floor, ceiling, roof, and interior partitions
Floor joists → Heavy timber beams → Round cast iron columns

How does this project relate to similar projects undertaken throughout history?

Many buildings have been retrofitted in the past. When an old company moves out and a new one moves in needing to make changes to the building so spaces can accommodate new functions, this is an example of reuse. What is more unique is when an abandoned building is restored once again to hold occupancy. That shift from when a building is deemed unvaluable for a function back to being valuable after changes evokes admiration for some designers. The case studies of the Mill City Museum and Renaissance Hall are good examples of this scenario.

Hows does this project relate to social trends or developments within our society?

Many older cities are looking into urban renewal as a way to revive the community. Deciding to keep the existing architectural character instead of constructing new buildings is a way to maintain and restore a city's identity. Cities such as Duluth, St. Paul, and parts of Fargo are example advocates for the restoration movement, working on development within what's already existing verses expanding outwards.

What is the physical and social context within which your project is set?

This particular adaptive reuse project encourages use from a variety of individuals. Ranging from students and travelers, to wedding parties and convention attendees. With easy access to the highways 55 & 5, the light rail system, and a historic environment this project provides ample connections to its surroundings. Serving as an interactive artifact from history, the international hostel and event venue aims to bring alive history, enriching the present by connecting with the past.

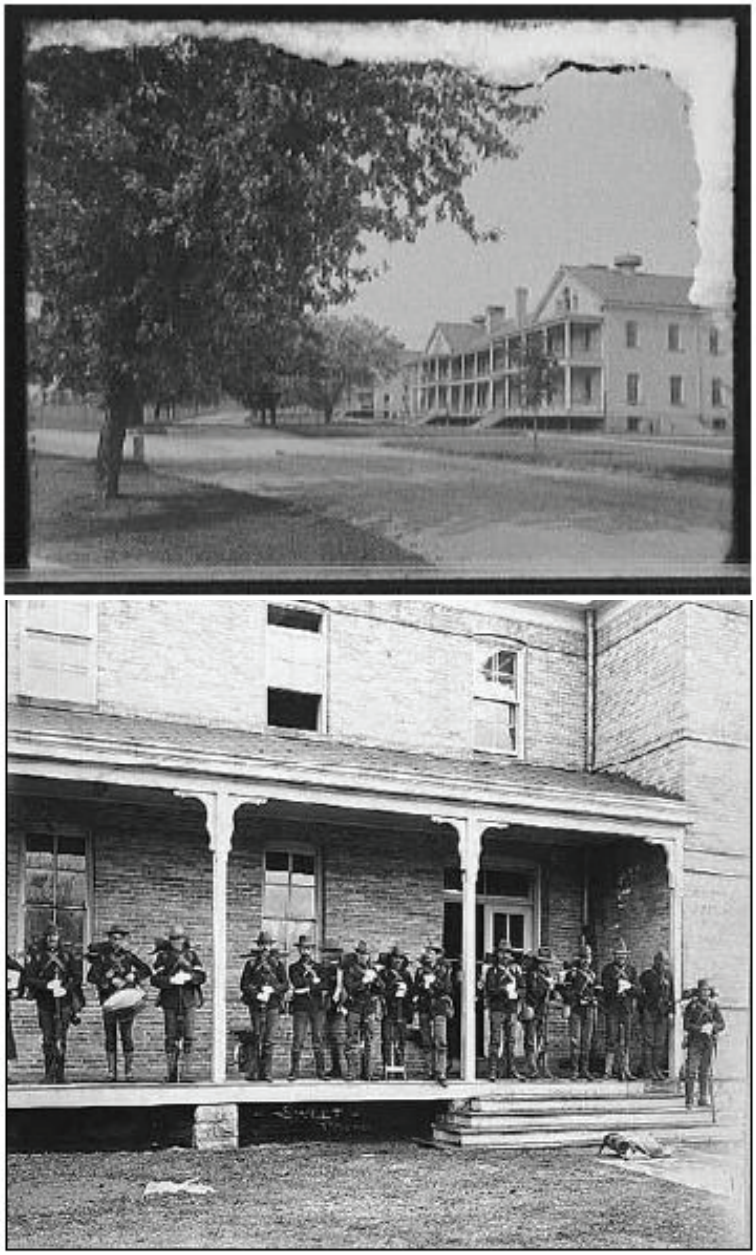


Figure 25 // Fort Snelling at 1989

Site Narrative

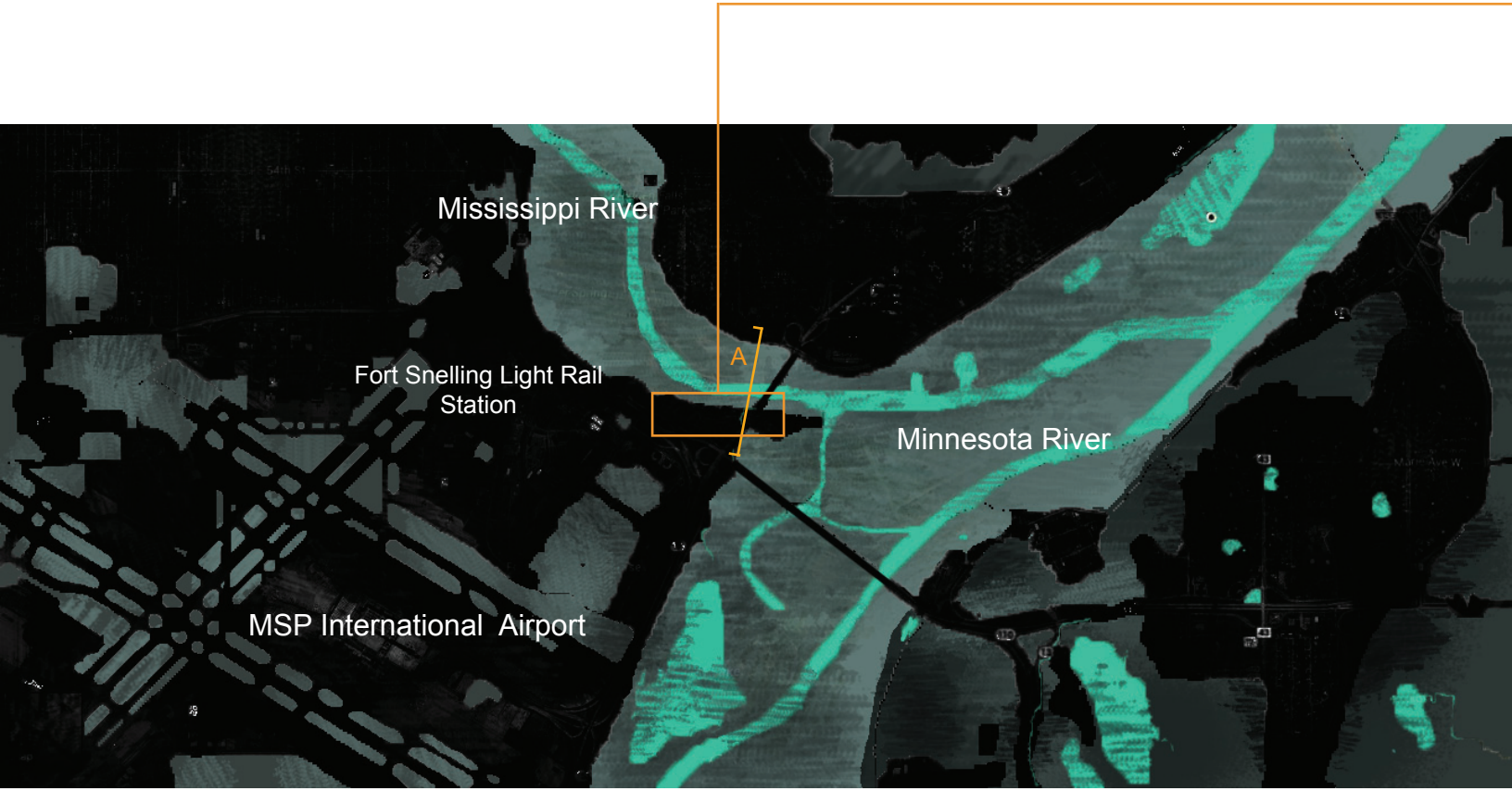
Exiting off of highway 55, I take the ramp onto Tower Avenue and right away I pass the first historic Fort Snelling building, which is tucked behind overgrown brush and trees on a slight slope to my left. The next thing I notice is the ample amount of parking provided for me and the varying car types occupying some of the spaces. Many suburban vehicles with bikes tucked in the back, many cars, a few with bike racks, and a couple trucks holding equipment. At mid-day over 50% of the 250+ parking spaces are covered with shade from the surrounding deciduous trees.

A strong breeze flows across the lot from the north from where the river is located. Perhaps the most appealing qualities of the site are the overlooking views out to the Mississippi River. These views exist from the already established lookout due north of the parking lot (west of the visitors center) and other occasional scenic views framed through the Fort Snelling State Trail vegetation following north-east of Buildings 17 & 18. A view of the Minneapolis skyline is visible from these view points as well, as well as the source of the traffic noise (Highway 5, which crosses the Mississippi in a southwest to northeast direction). The people I pass as I wander across the site range from couples touring Fort Snelling, families biking the State Trail, workers walking out to their cars, and bicyclists commuting to and from the stairwell to highway 5. As I sit in direct sun south of the buildings I notice all these individuals having something in common.

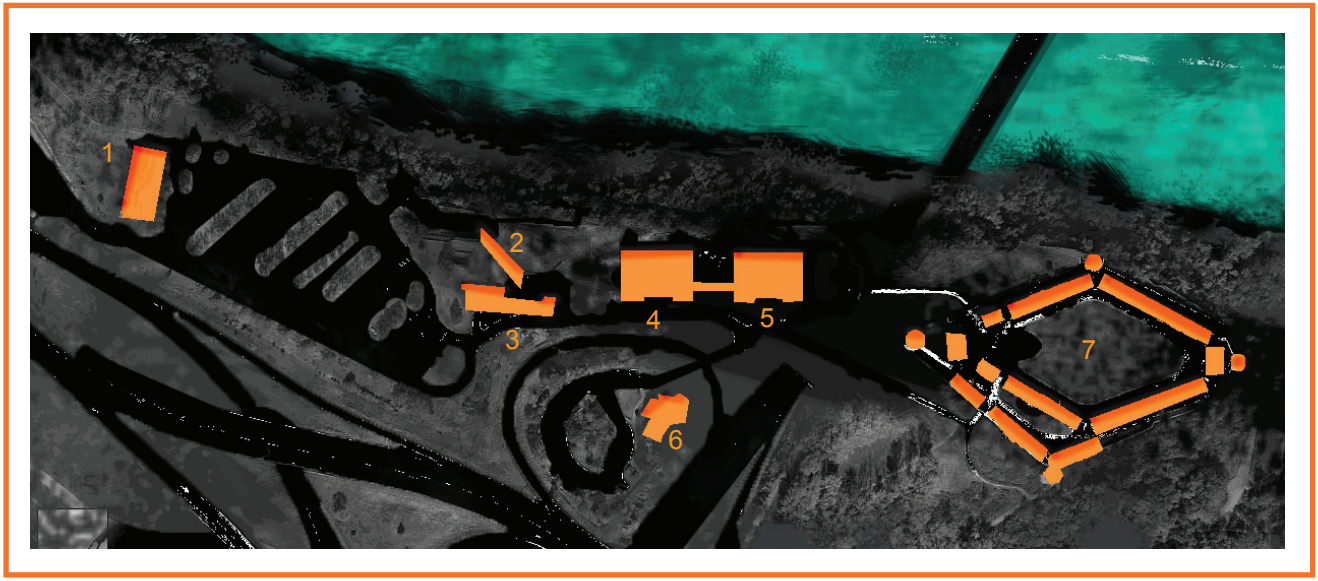
Crossing from the parking lot onto the sidewalk that runs along the front of Buildings 17 &18, every person at least takes a glance at the buildings. Some stop to read the informative plaques while a couple curious individuals will take a peek into the windows. With zero access into the buildings, people keep moving on to wherever they were off to. Much can be heard south of the site but little can be seen except the vegetation that hides the highway structure. The landscape of the site varies greatly from a dense entanglement of vines, shrubs, and trees on the river side, to groomed grass in the lawn and open space. The transition of the natural environment into the build environment is fairly gradual as trees from the state trail cup the site and various trees are scattered on the site as well.

Multiple points of entry and exit are apparent, however where they lead to can be slightly deceiving. The Fort Snelling Memorial Chapel is hidden away between trees and encircled by a highway ramp and you wouldn't know it was there until you ventured around the corner. Also downward ramp from the parking lot is visible however you really do not know it leads to the visitor center until you walk closer to it. The Lower Post portion of Fort Snelling is quite visible however the Higher Post is completely separated from the site by the highway.

Site Analysis



Built Environment Green Environment Water



1. Building #30 : 75’ x 30’
   one- story, used for storage
   brick

2. Visitors Center
   sub-grade, information / museum
   concrete

3. Building #22 : 75’ x 20’ (15’ on narrow end)
   one- story, current offices / storage
   limestone

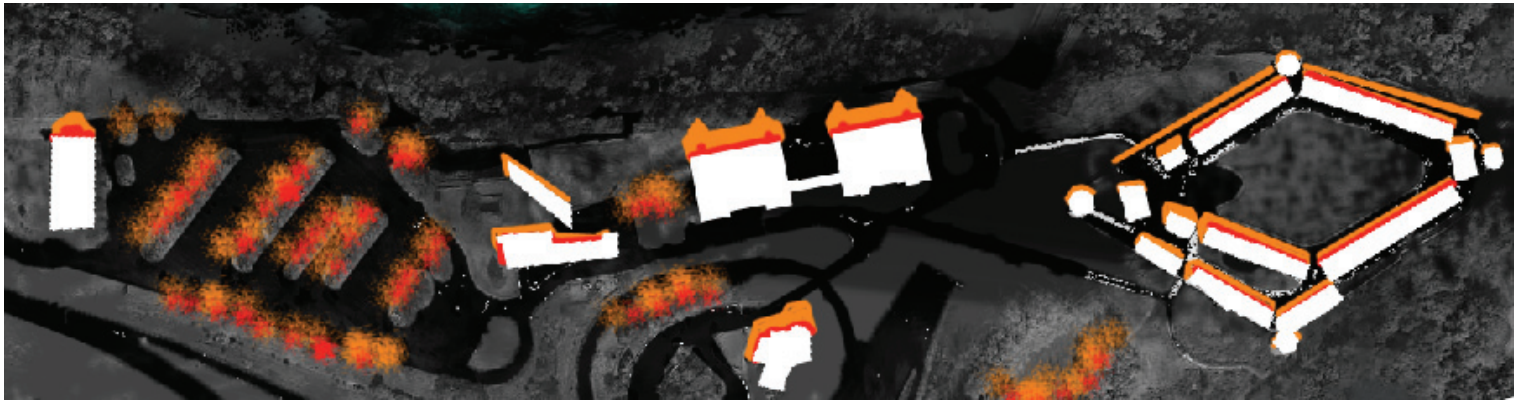
4. & 5. Buildings #17 & #18 :
   39’ x 150’, 39’ x 59’ wings (2 each)
   2-story (+basement), vacant
   brick

6. Fort Snelling Memorial Chapel : 46’ x 105’
   1 & 2 story, non-denominational church
   limestone

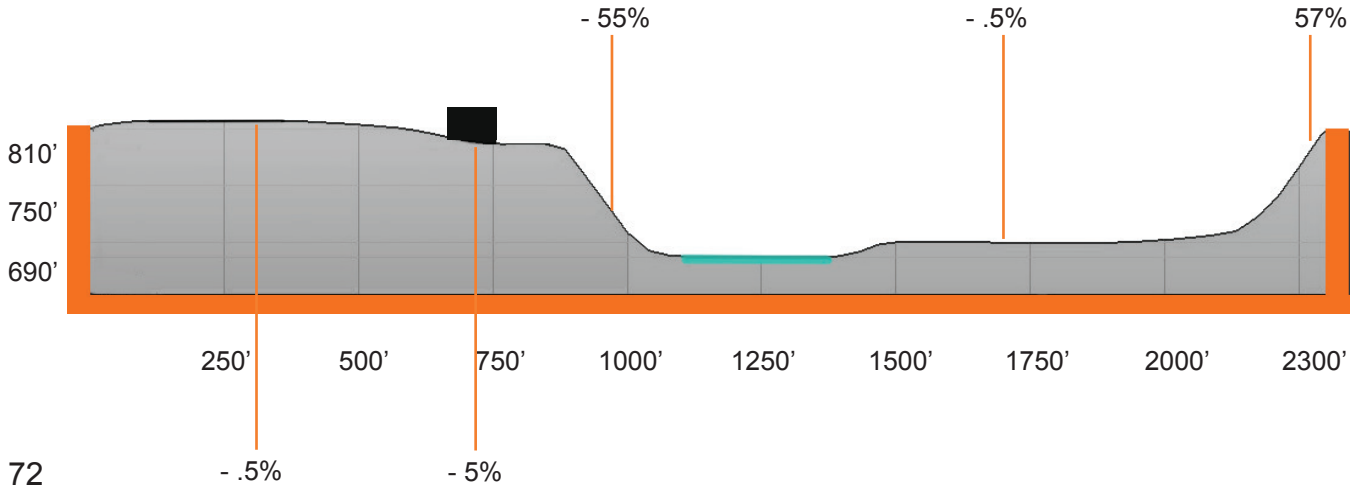
7. Historic Fort Snelling
   mainly 1-story buildings, multiple level towers
   limestone

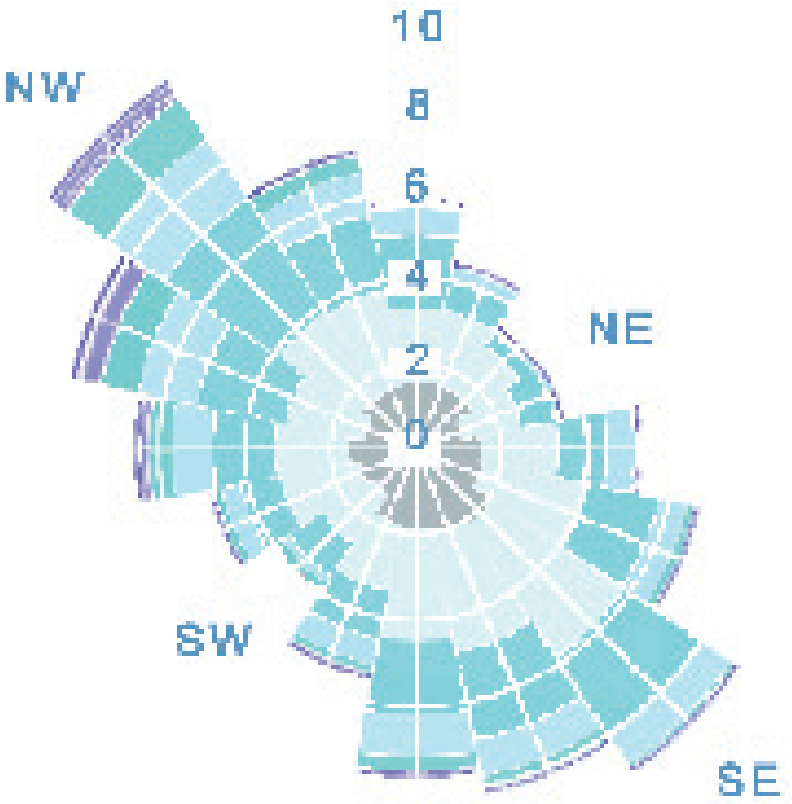
Shadows at December 21st 12:00 pm

Shadows at June 21st 12:00 pm



Section Cut A : Slope & Topographic Survey

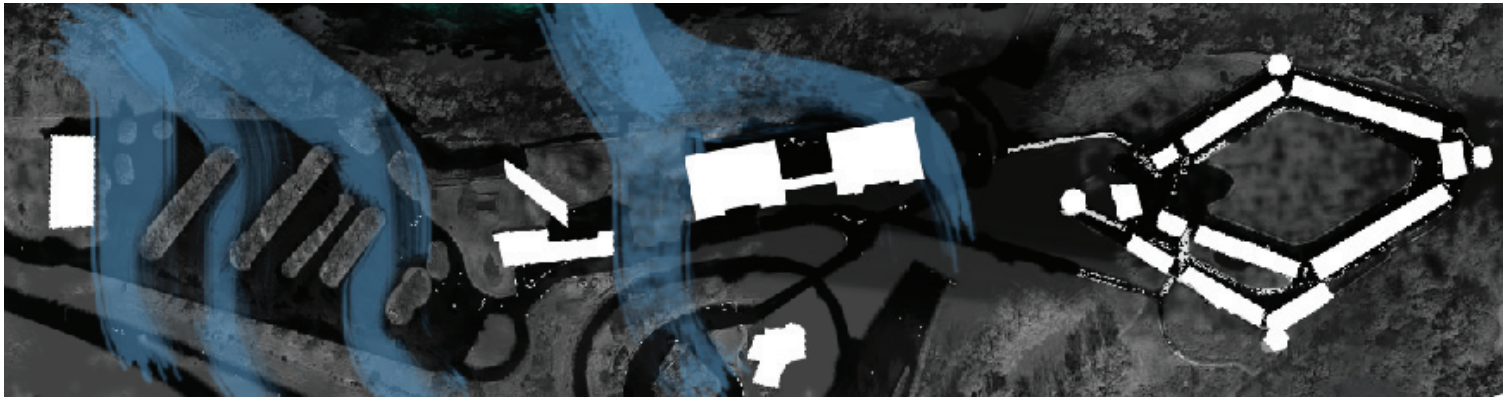


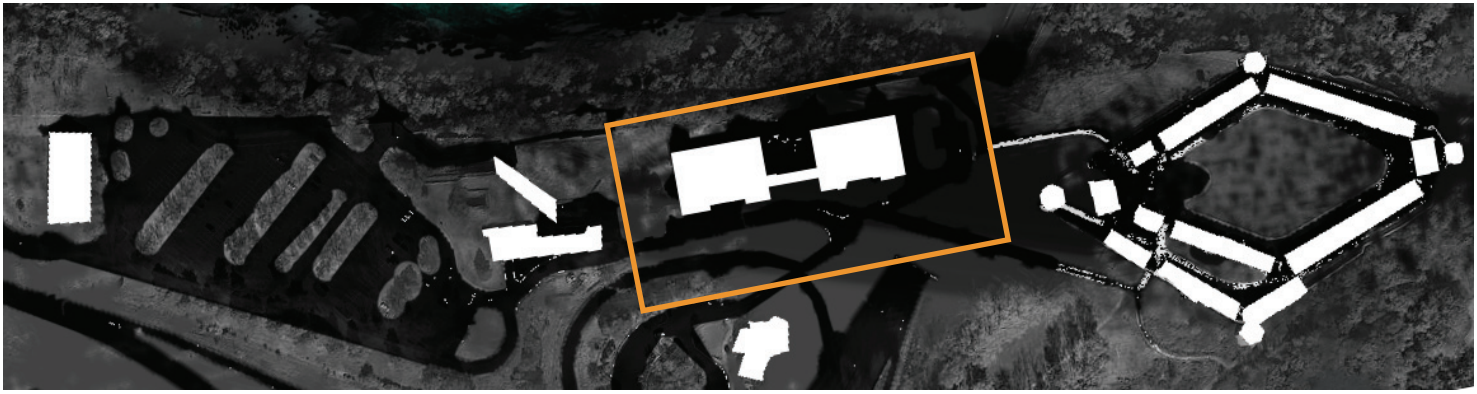


Wind Speed (knots)

- 11 - 14
- 9 - 11
- 6 - 9
- 3 - 6
- 0 - 3

Wind from north west blows up from the river, trees along the river bank slow some of it down but Buildings #17 & #18 get hit with majority of the winds. Trees in the parking lot also slow down the wind current as it travels more south. Breezes also travel in the opposite direction towards the river, so the site receives a nice summer breeze or a cold winter one the majority of the time.





Soil Study

Typical profile
- 0 to 18 inches: loamy sand
- 18 to 23 inches: loamy sand
- 23 to 60 inches: sand
- 60 to 80 inches: unweathered bedrock

Map Unit Composition
- Urban land: 70%
- Hubbard, bedrock substratum, and similar soils: 20%
- Minor components: 10%

Urban Land Setting
- Landform: Stream terraces
- Parent material: Sandy outwash over bedrock

Description of Hubbard, Bedrock Substratum Setting
- Landform: Hills on stream terraces
- Landform position (two-dimensional): Summit
- Down-slope shape: Convex
- Across-slope shape: Linear
- Parent material: Outwash over limestone bedrock

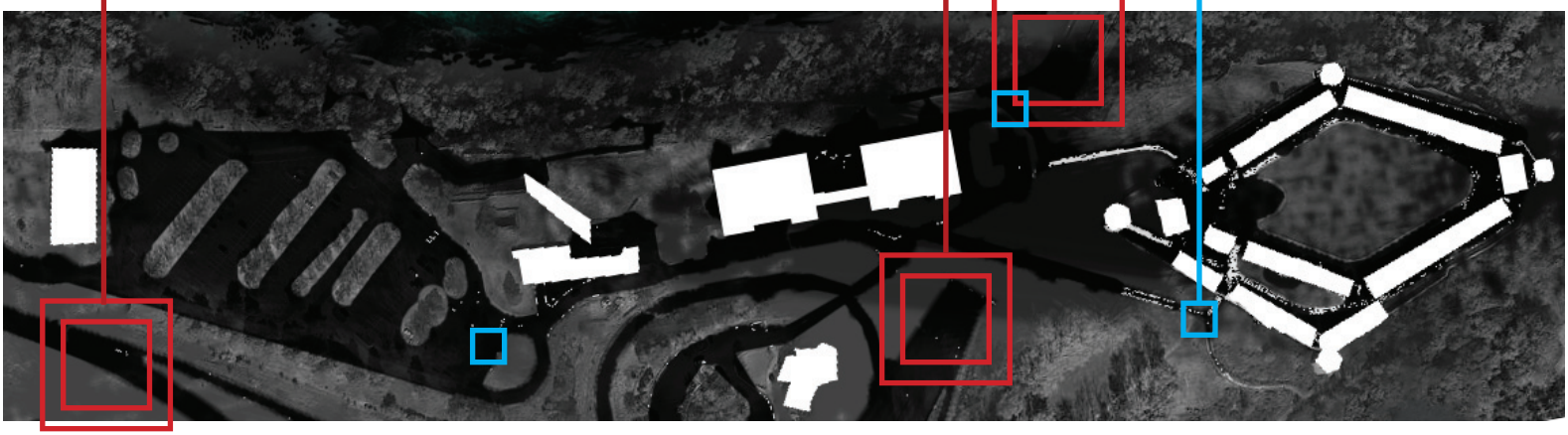
Properties and qualities
- Slope: 0 to 8 percent
- Depth to restrictive feature: 40 to 80” to lithic bedrock
- Natural drainage class: Excessively drained
- Capacity of the most limiting layer to transmit water: Very low (0.00 in/hr)
- Depth to water table: More than 80”
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum in profile: 15%
- Available water storage in profile: Low (about 3.9 inches)

Interpretive groups
- Hydrologic Soil Group: A
- Other vegetative classification: Sandy

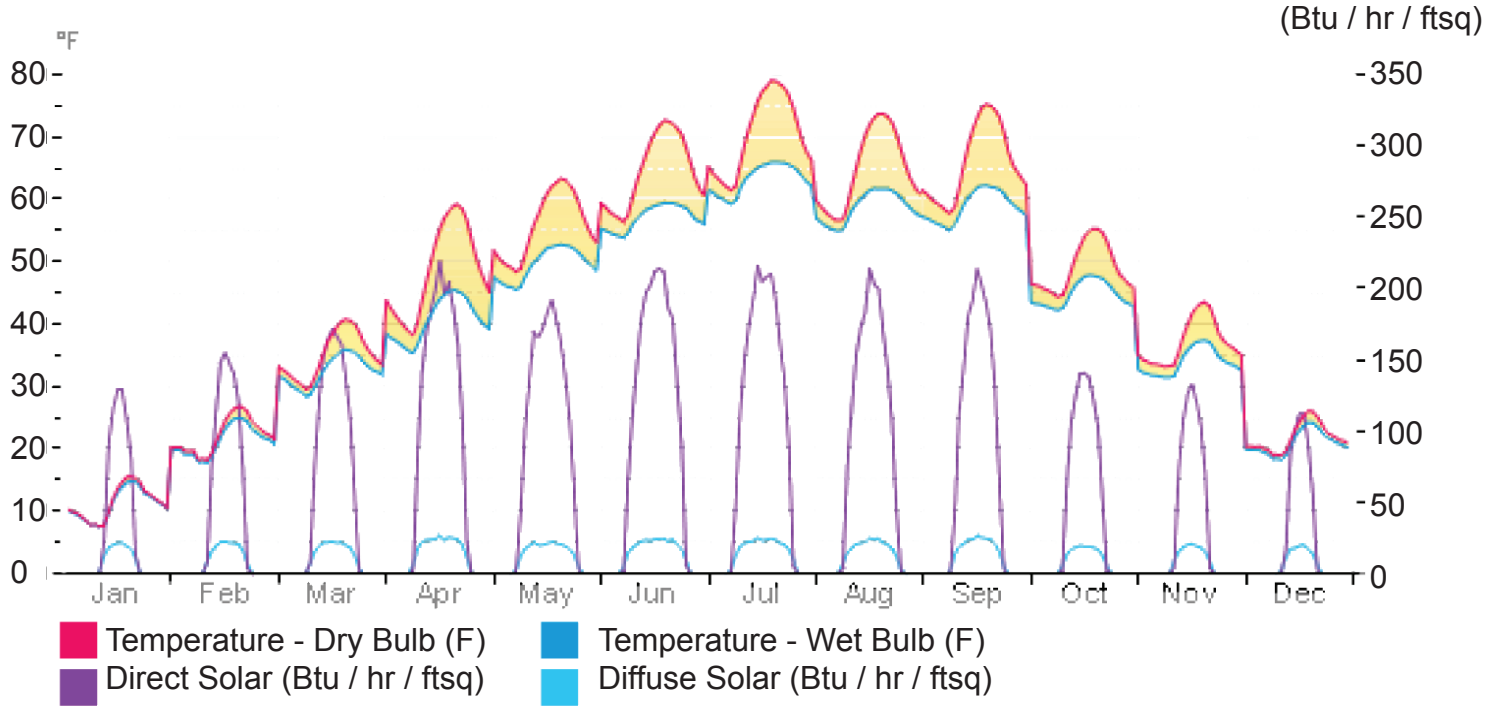
Pedestrian traffic described in the site narrative stems from 3 sources: the parking lot on the west side, the bike trails located south-east from the site and from the pedestrian bridge along Highway 5. A variety of ages, but overall physically fit individuals are seen walking the site.

Highway 5: Runs north and south, heavy traffic flow, loudest source of noise

Highway 55 : heavy traffic flow, 2nd loudest source of noise



Temperature & Solar Data

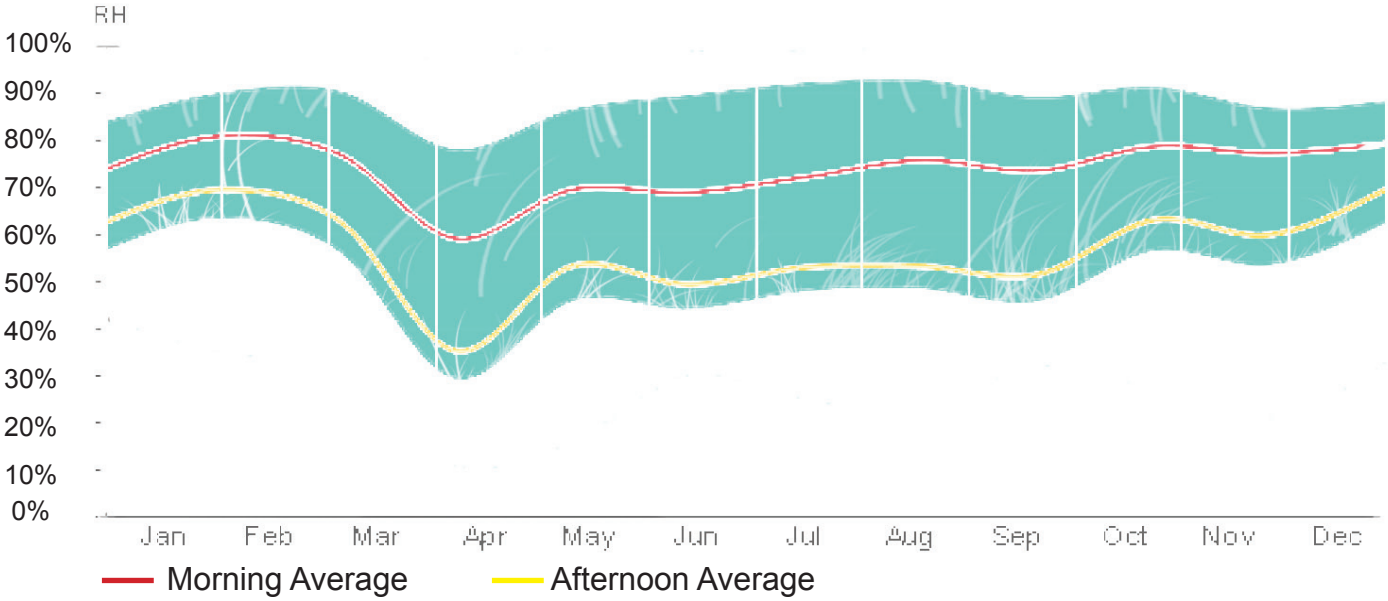


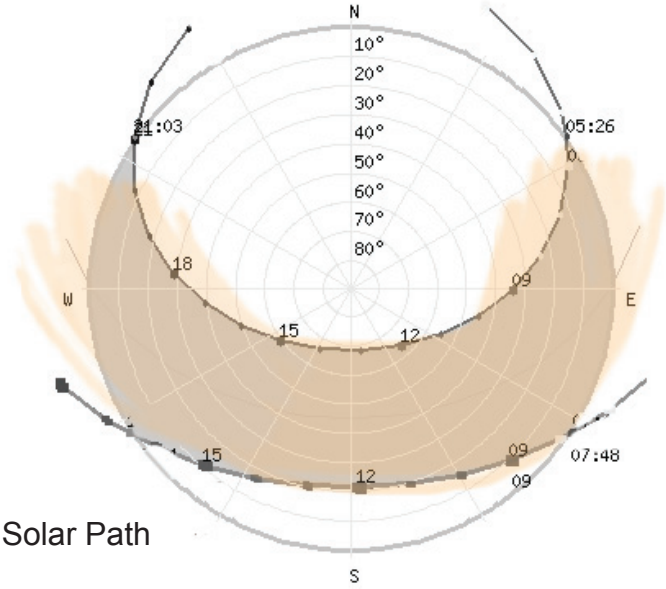
Average Snowfall:

Obviously Minneapolis varies each year in how much snow it receives, these are just averages from 1980 - 2010.

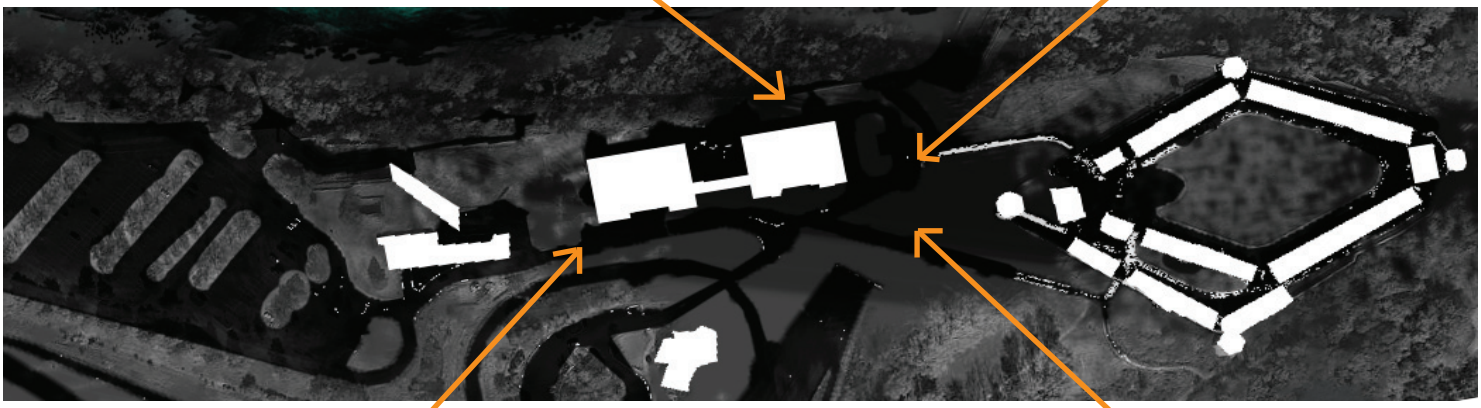
Days		Inches
8.2	January	12.1
6.8	February	7.8
5.4	March	10.2
2.0	April	2.5
.1	May	0.0
.6	October	.6
5.2	November	9.3
9.0	December	11.5
37.3	Year	54.0

Relative Humidity





Minneapolis Solar Path



Site Character

Even though the site is located along two major rivers with strong currents, the site itslef shows no signs of erosion, muddy water, or dying trees. No signs of distress are present and the site is very well maintained even though the buildings on site are vacant.This is mainly due to the site sitting high above the water on a rock terrace. Trees along the slope below are lush and very healthy. No severe sign of flooding can be seen on the site or below the site by the river edge. Large trees on the site are located on the northern side of the site but the southern side provides an ample amount of open space for new potential vegetation.

Building Program

Interactive Matrix

Direct Connection

Indirect Connection

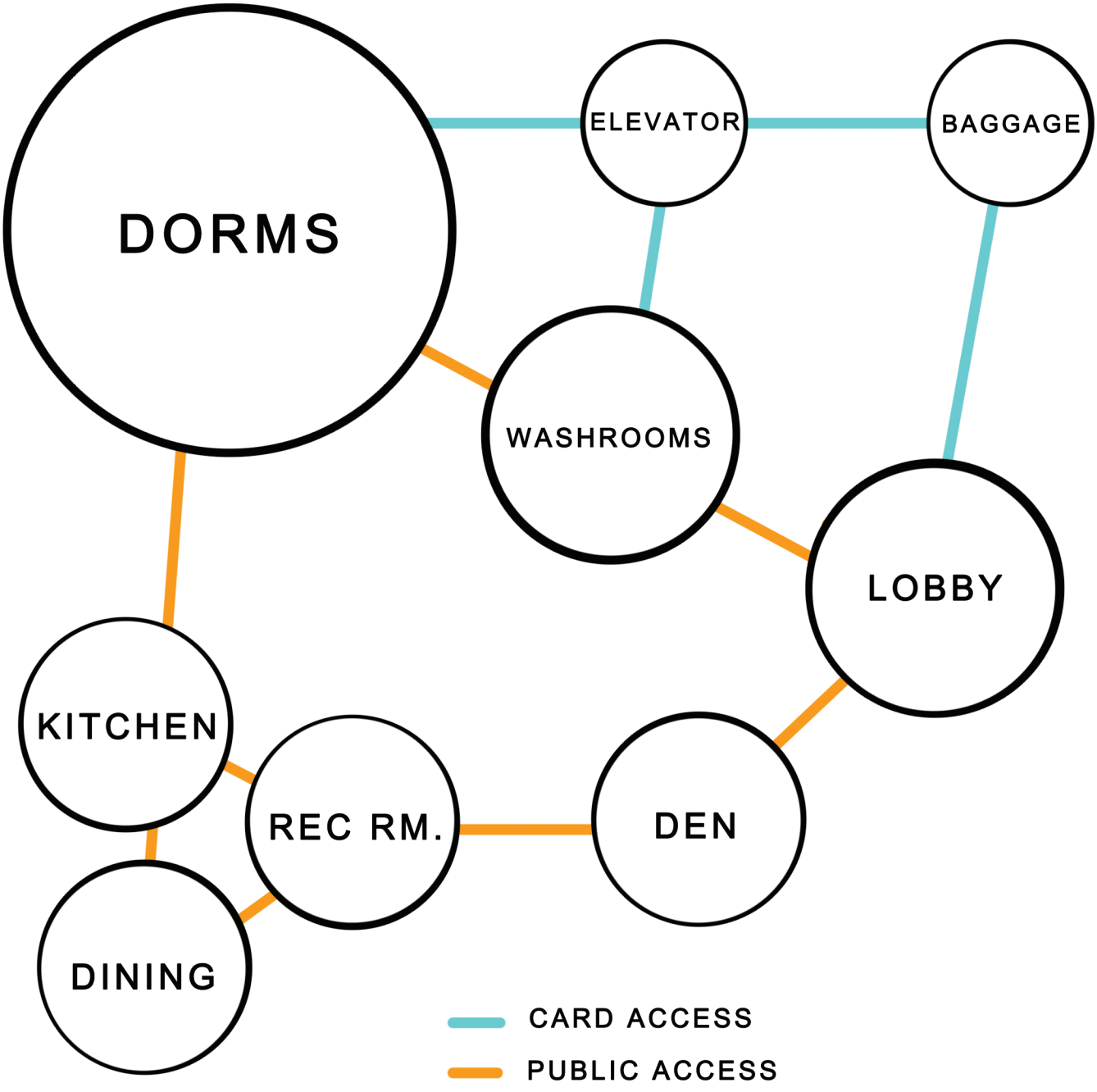
	Lobby/Reception	Laundry (public)	Laundry (private)	Elevator	Storage/ Baggage Rm.	Den/ Computers	Men/ Women Wash	Kitchen	Dining	Rec Rom	Dorms	Mech. Room
Lobby/Reception			Indirect	Direct	Direct	Direct	Indirect				Indirect	Indirect
Laundry (public)				Indirect							Direct	Indirect
Laundry (private)	Indirect			Indirect							Direct	
Elevator	Direct	Indirect	Indirect		Indirect					Indirect	Direct	
Storage/ Baggage Rm.	Direct			Indirect		Indirect						Indirect
Den/ Computers	Direct				Indirect					Indirect		
Men/ Women Wash	Indirect								Indirect	Indirect	Direct	Indirect
Kitchen									Direct	Indirect	Indirect	
Dining							Indirect	Direct		Indirect	Indirect	
Rec Rom				Indirect		Indirect	Indirect	Indirect	Indirect			
Dorms	Indirect	Direct	Direct	Direct			Direct	Indirect	Indirect			
Mech. Room	Indirect	Indirect			Indirect		Indirect					

Direct Connection

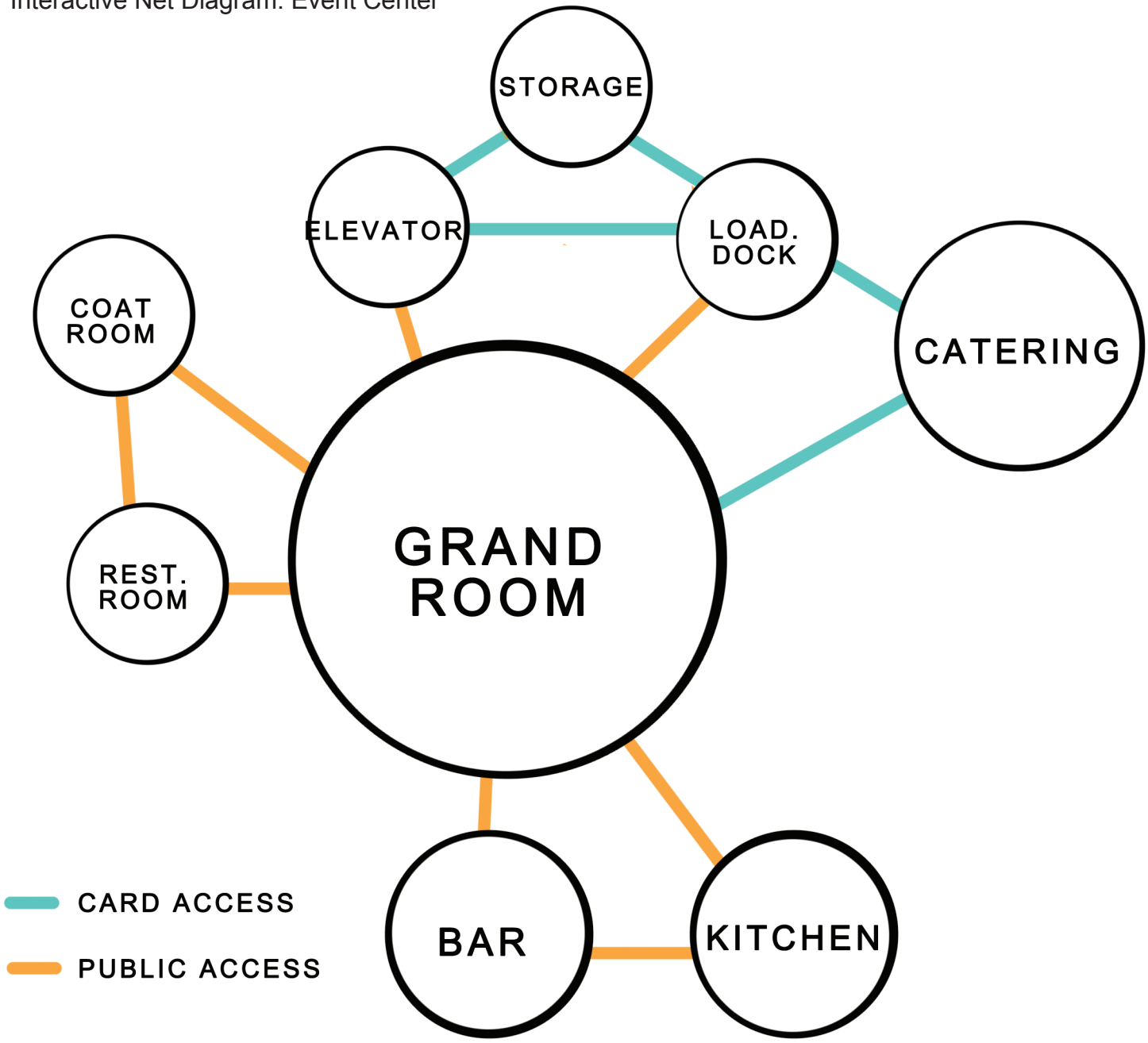
Indirect Connection

	Coat Room	Elevator	Grand Room	Long Bar	Self-Serve Kitchen	Restrooms	Catering Kitchen	Rear Loading Deck	Storage	Mech. Room
Coat Room			Direct			Indirect				
Elevator			Indirect						Direct	Direct
Grand Room	Direct	Indirect		Direct	Direct	Indirect	Indirect	Direct	Indirect	
Long Bar			Direct		Direct					
Self-Serve Kitchen			Direct	Direct			Indirect			
Restrooms	Indirect		Indirect				Indirect			Indirect
Catering Kitchen			Indirect		Indirect	Indirect		Direct		
Rear Loading Deck			Direct				Direct		Indirect	
Storage		Direct	Indirect					Indirect		Direct
Mech. Room		Direct				Indirect			Direct	

Interactive Net Diagram: Hostel



Interactive Net Diagram: Event Center



Programming up to this point has been set up with the intention of renovating both Barracks Buildings #17 & #18 with the international hostel being in a separate building from the rentable event spaces. Below are the space allocations for when this program involved both buildings. However, after much contemplation it was decided to merge both functions (hostel & event spaces) into Building #18. Many reasons factored into this decision, one being I saw the benefit of establishing a multi-function program within one building and engaging multiple different users. Another benefit I gained from this transition is it gave me more of an opportunity to focus in on the details of the individual building. The pre-programming and spatial relationship work completed previously remained useful and helped me to focus in on the intimate space interactions. On the following page are the finalized space allocations for the combination of the hostel and event rental spaces.

Hostel Space Allocation

Lobby/Reception:	(20x30) : 600 sf
Laundry (public):	(12x7)(2) ; 168 sf
Laundry (private):	(12x18) : 216 sf
Elevator:	(6x6) : 36 sf
Storage/ Baggage Rm.:	(10x10) + (20x20) : 500 sf
Den/ Computers:	(40x50) : 2000 sf
Men/ Women Wash:	(20x20)(2.5 floors)(2 genders) : 2000 sf
Kitchen:	(20x30) : 600 sf
Dining:	(20x30) : 600 sf
Rec Rom:	(40x50) : 2000 sf
Dorms:	(12x18 avg.)(20 per floor)(2.5 floors) : 10800 sf
Mech. Room:	2300 sf
Circulation:	2300 sf
Total SF:	24120 sf

Building Measurements: (39x150) + (39x59)(2) : 10452 (1 Floor)
(10452)(2.5) : goal of 26130 sf

Event Center Space Allocation

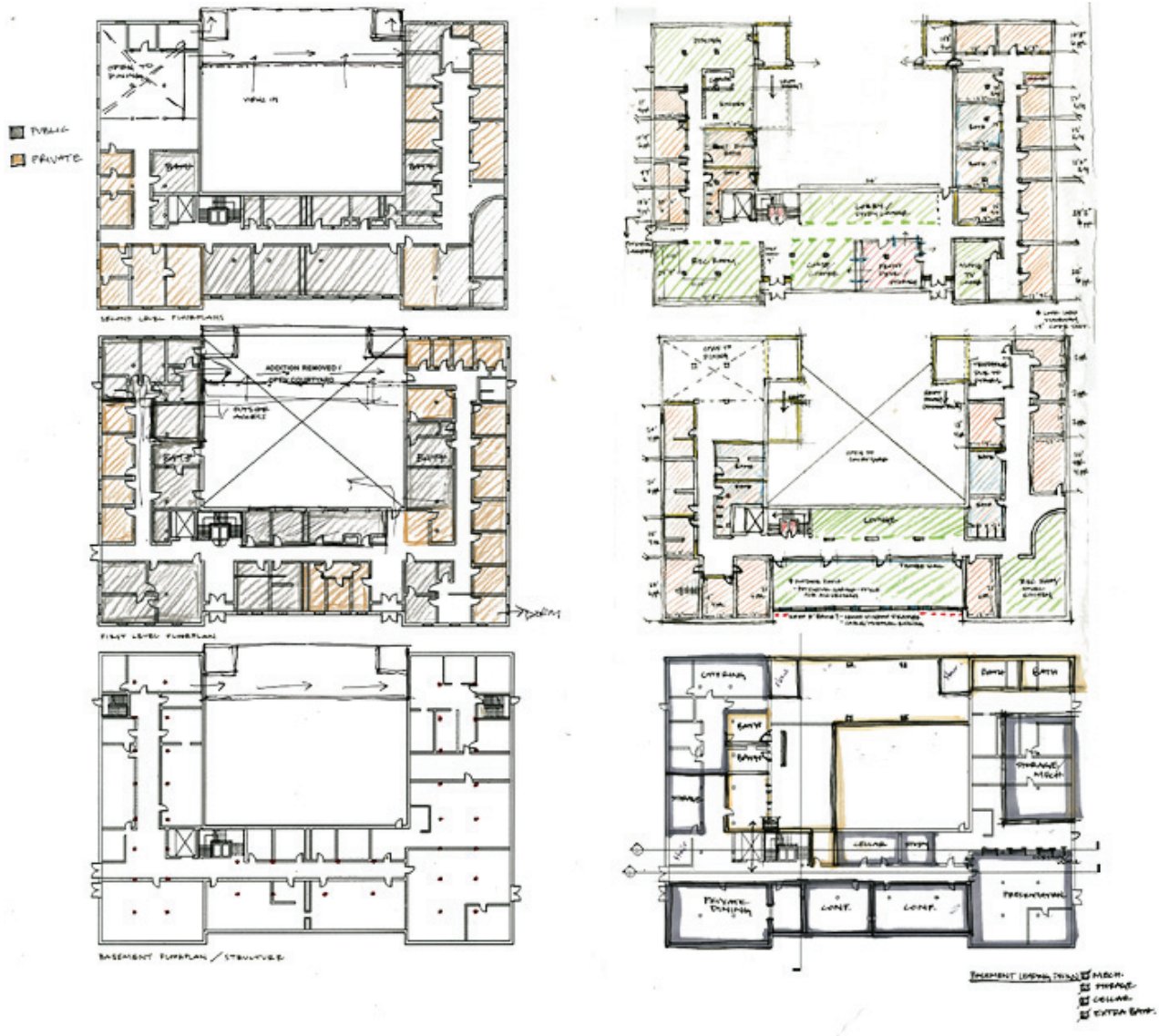
Coat Room: (20x20) : 400 sf
Elevator: (6x6): 36 sf
Grand Room: (complete right wing)(2 floors) : 8502 sf
Long Bar / Self-Serve Kitchen: (30x65) : 1950 sf
Restrooms: (400)(2 genders) : 800 sf
Catering Kitchen: (60x80) :4800 sf
Rear Loading Deck: (20x20) : 400 sf
Storage: (35x65) :2275 sf
Mech. Room: 2600 sf
Circulation: 2600 sf
Total SF: 24363 sf

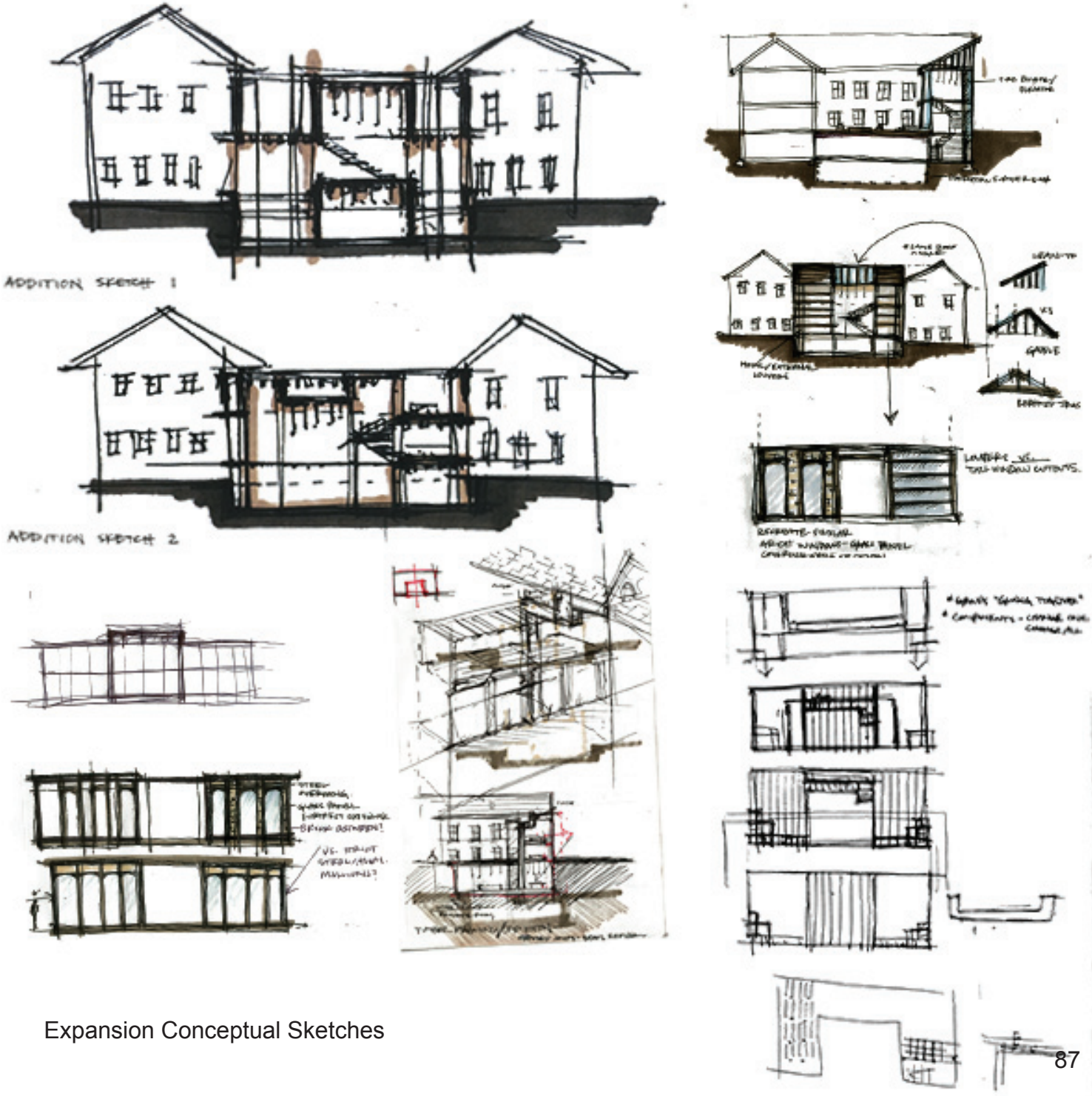
Building Measurements: (39x150) + (39x59)(2) : 10452 (1 Floor)
(10452)(2.5) : goal of 26130 sf

Hostel & Multi-Use Event Center

Lobby & Reception Desk (includes bag storage) :	(25x20) + (23x20) : 960 sf
Laundry & Mech (public + private; all floors) :	1608 sf
Elevator (2) :	105 sf
Computer / Breakfast Bar :	442 sf
Recreation Rooms (2) :	(24x27) + (76x20) : 2168 sf
Dorms (2 floors) :	(2473) + (3290) : 5763 sf
Kitchen (Main & 2nd floor) :	(272) + (192) : 464 sf
Dining :	621 sf
Men/ Women Wash :	2074 sf
Rental Space :	4676 sf
Catering Kitchen :	1040 sf
Storage :	300 sf
Conference Rooms (2) :	(684) + (1360) : 2044 sf
Basement Dining :	1320 sf
Courtyard :	3042 sf
Seminar Room :	1394 sf
Circulation :	3000 sf
Total SF :	31980 sf

Design Solution // Process Work

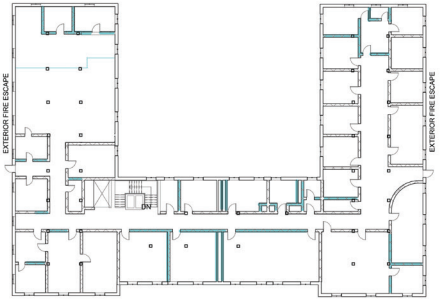




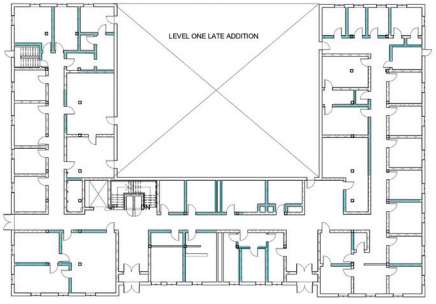
Expansion Conceptual Sketches

FLOOR PLANS

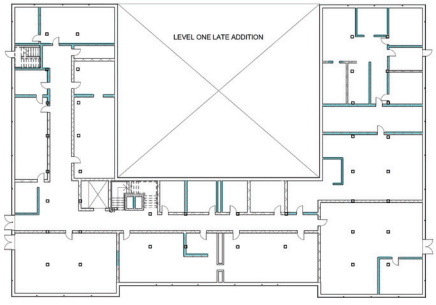
EXISTING FLOOR PLANS // HIGHLIGHTED WALLS WERE REMOVED IN RENOVATION



Level 2
1" = 20'-0"

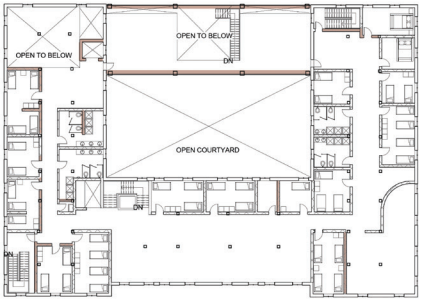


Level 1
1" = 20'-0"



Basement
1" = 20'-0"

NEW FLOOR PLANS // HIGHLIGHTED WALLS WERE ADDED IN RENOVATION



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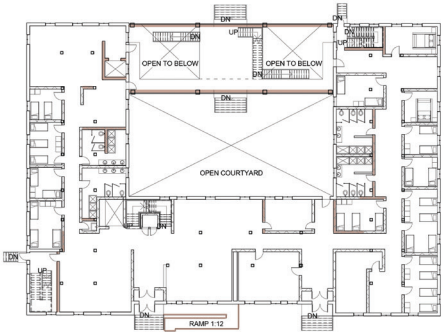

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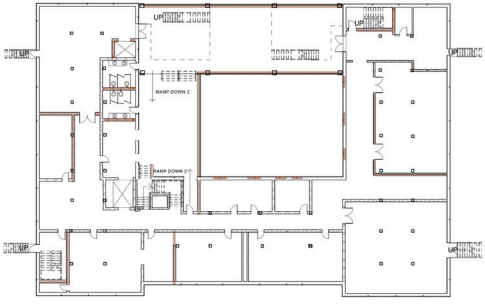
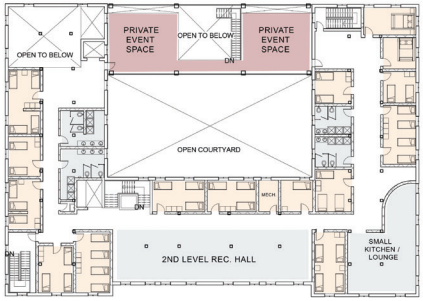


Basement
1" = 20'-0"

NEW FLOOR PLANS // SECURITY DIAGRAMS
ORANGE - REQUIRES ROOM KEY
RED - RENTAL SPACES
BEIGE - PUBLIC SPACES



Level 2
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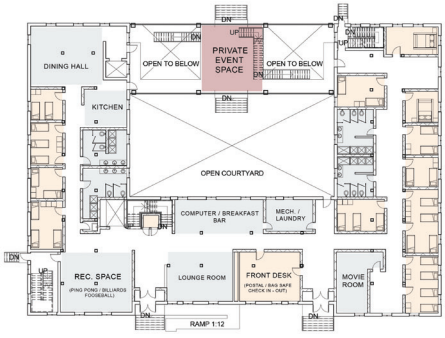

Level 1
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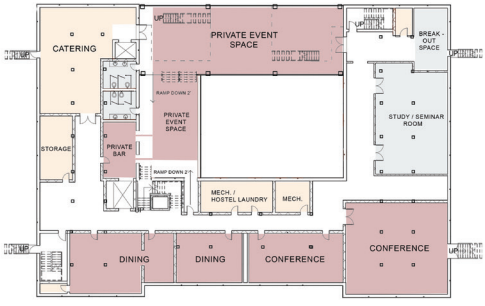
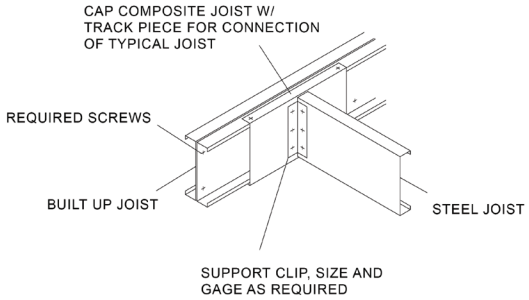


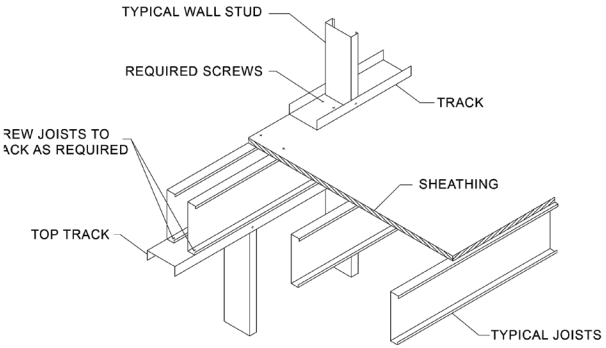
Basement
1" = 20'-0"

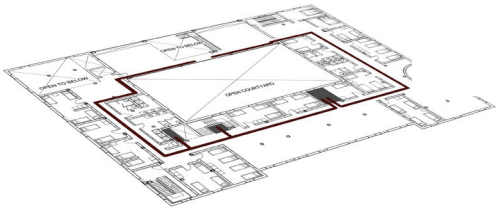
Technical Drawings // Details // Systems

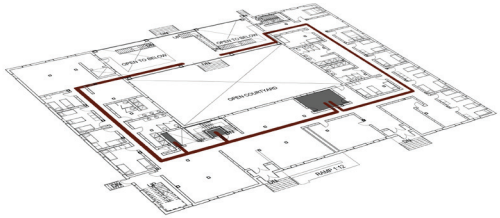
JOIST CONNECTION

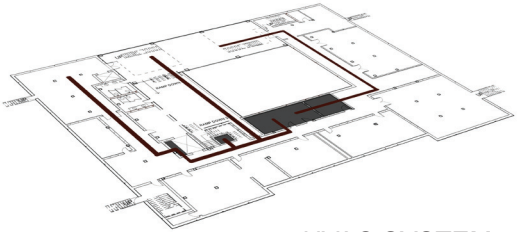


JOIST FRAMING PARALLEL TO EXTERIOR WALL



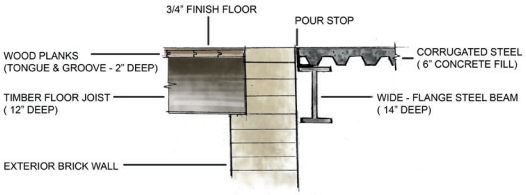




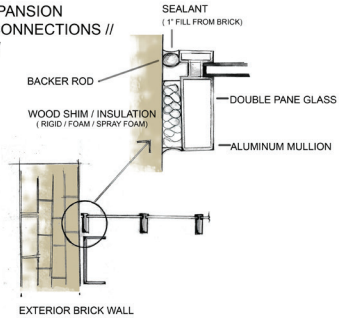


HVAC SYSTEM

NORTH EXPANSION
FLOOR CONNECTIONS



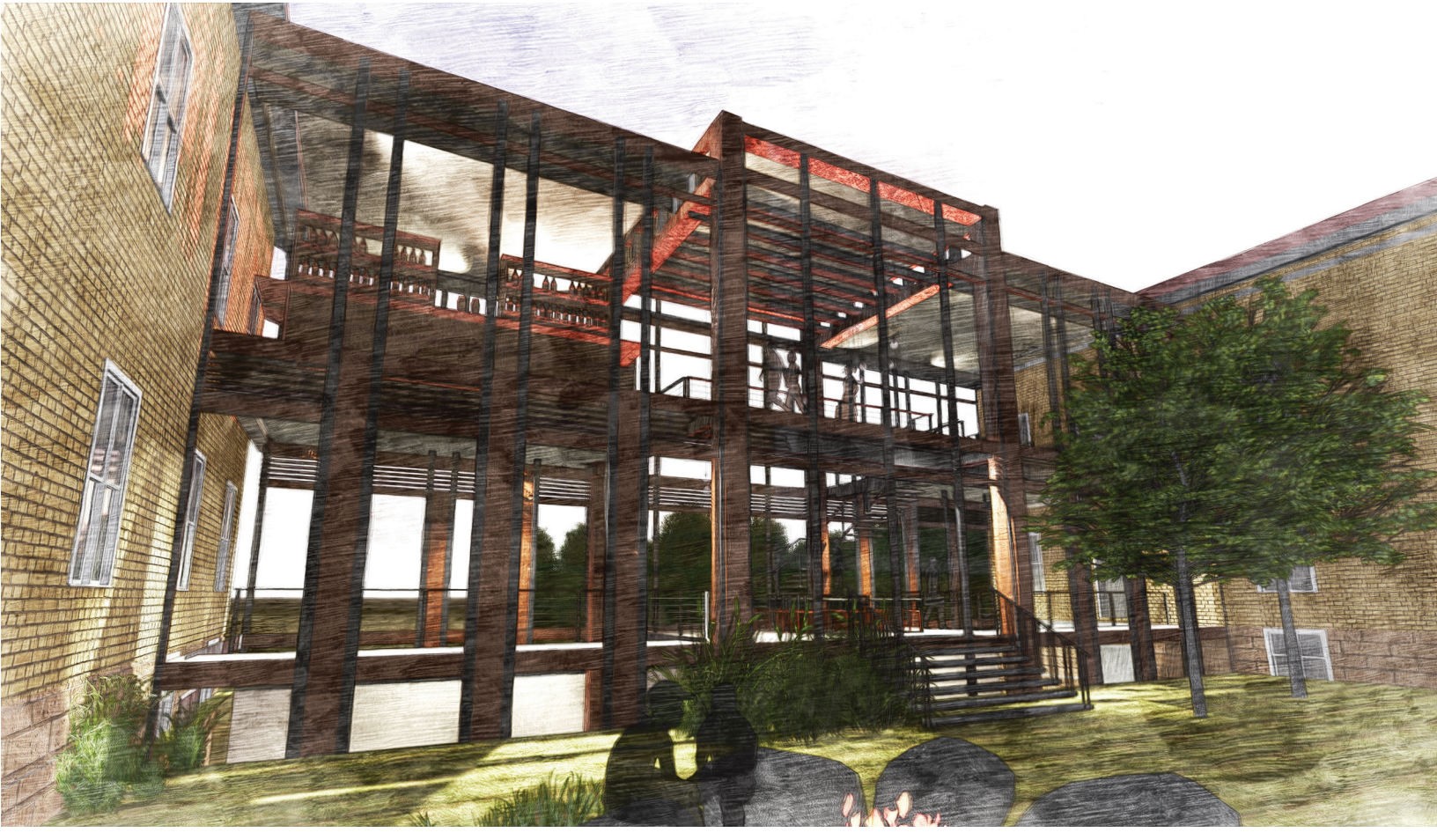
NORTH EXPANSION
MULLION CONNECTIONS //
PLAN VIEW



SECTION CUT A // REFER TO PLAN DRAWINGS

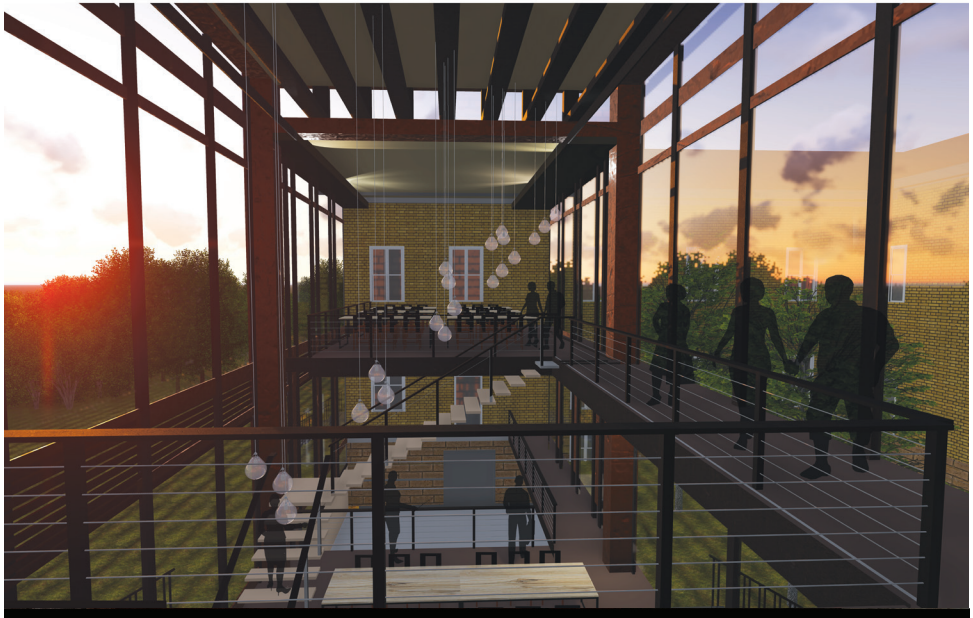
8 Person Dorm Room

Dining Hall& Kitchen

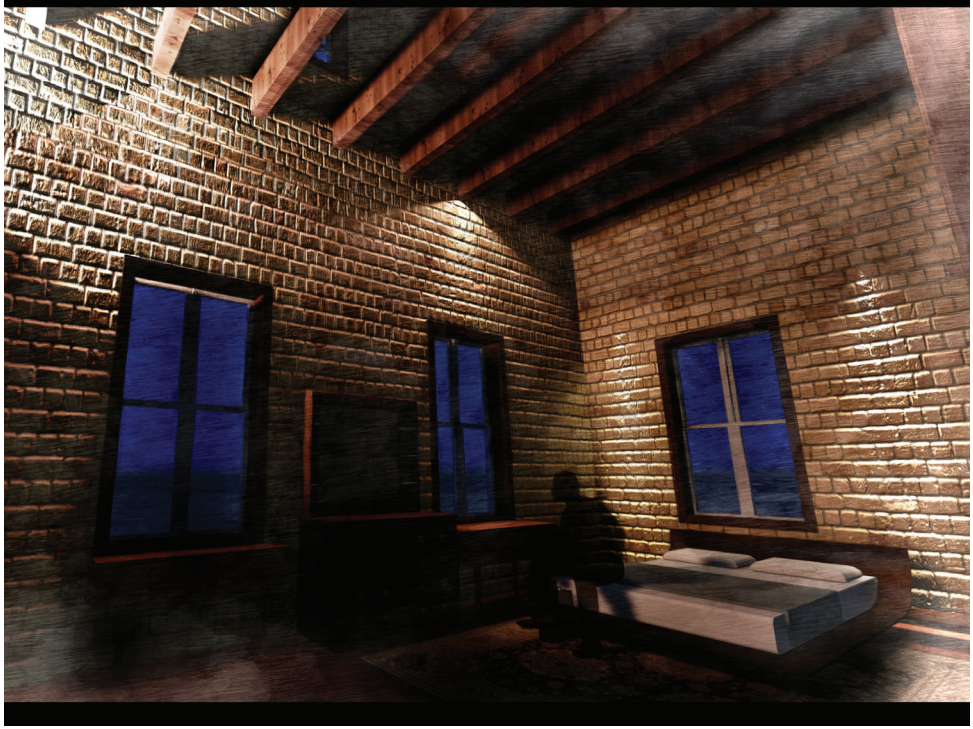


Courtyard Perspective

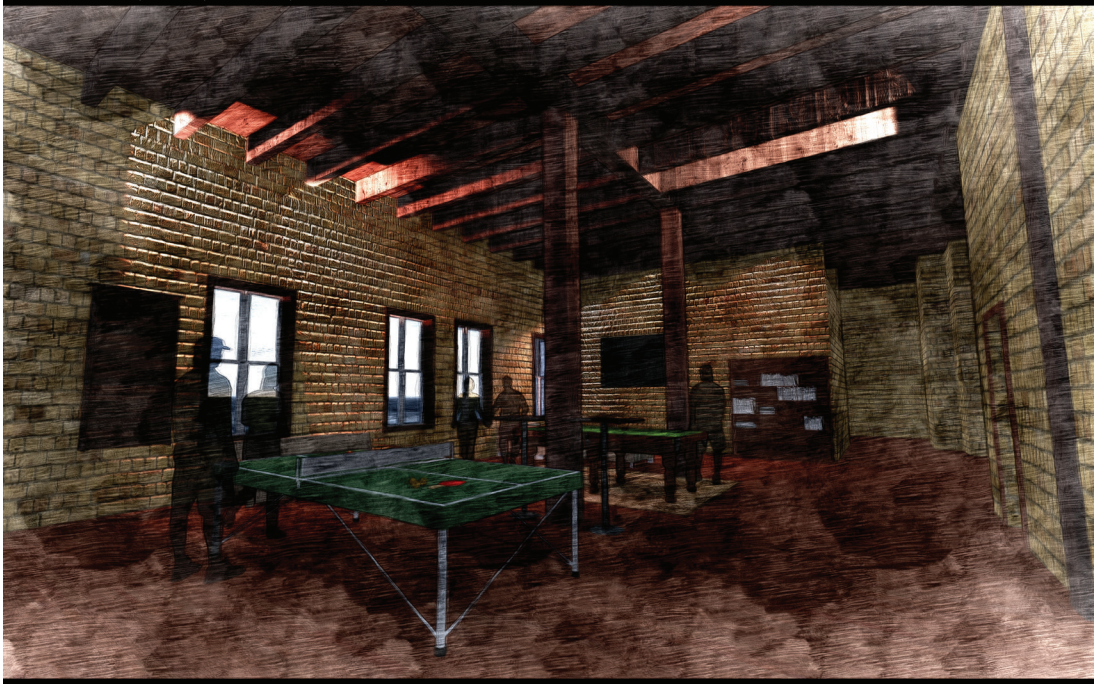
INTERIOR PERSPECTIVE //
NORTH EXPANSION



PRIVATE SUITE // 20' x 10' 6"



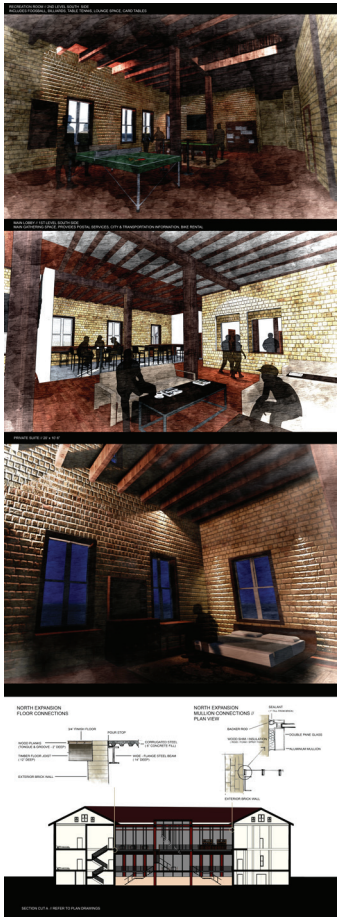
RECREATION ROOM // 2ND LEVEL SOUTH SIDE
INCLUDES FOOSBALL, BILLIARDS, TABLE TENNIS, LOUNGE SPACE, CARD TABLES

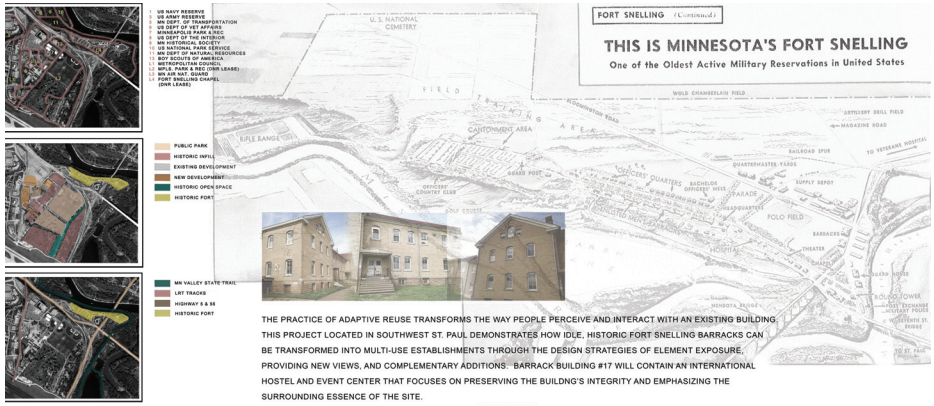


MAIN LOBBY // 1ST LEVEL SOUTH SIDE
MAIN GATHERING SPACE, PROVIDES POSTAL SERVICES, CITY & TRANSPORTATION INFORMATION, BIKE RENTAL

Physical Model // Existing & Expansion Addition

Digital Copy of Presentation Boards






FORT SNELLING
THIS IS MINNESOTA'S FORT SNELLING
One of the Oldest Active Military Reservations in United States
THE PRACTICE OF ADAPTIVE REUSE TRANSFORMS THE WAY PEOPLE PERCEIVE AND INTERACT WITH AN EXISTING BUILDING. THIS PROJECT LOCATED IN SOUTHWEST ST. PAUL DEMONSTRATES HOW ICDE. HISTORIC FORT SNELLING BARRACKS CAN BE TRANSFORMED INTO MULTI-USE ESTABLISHMENTS THROUGH THE DESIGN STRATEGIES OF ELEMENT EXPOSURE, PROVIDING NEW VIEWS, AND COMPLEMENTARY ADDITIONS. BARRACK BUILDING #17 WILL CONTAIN AN INTERNATIONAL HOSTEL AND EVENT CENTER THAT FOCUSES ON PRESERVING THE BUILDING'S INTEGRITY AND EMPHASIZING THE SURROUNDING ESSENCE OF THE SITE.
FLOOR PLANS
EXTERIOR PERSPECTIVE // COURTYARD

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(Chateau Front) oct. 19, 2014, photo by Michael DeLaRosa

(Chateau Grand Staircase) oct. 19, 2014, photo by Michael DeLaRosa

(Collapsed Floors (2)) oct. 23, 2014, photo by Michael DeLaRosa

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Previous Studio Experience

2nd Year

Fall // 2011 // Rhet Fiskness
Tea house / Boathouse for the U of M

This was the first architecture studio we had and it served as an introduction to learning and applying the different types of standard architectural drawings to projects. There was also a heavy emphasis on site analysis and documentation.

Spring // 2012 // Darryl Booker
Bird house project / Dance studio / Marfa dwelling

Site context and how our designs correlated to the existing surroundings was heavily emphasized in the Moorhead dance studio project. LEED strategies, community planning, and small dwelling design were focus points in the Marfa project.

3rd Year

Fall // 2012 // Mike Christenson
Askanase Hall Renovation

The Askanase project was the first time I worked in depth with a renovation project. As a group project we went through the existing campus building and figured out what to keep & build off of, and what to remove.

Spring // 2013 // Steve Martens
Steel & Glass (Town Hall) / Bad Lands Fossil Museum

The Fargo Town Hall project encouraged my project partner and I to explore various steel structure systems. Understanding column, beam, and joist formation and their connections helped me to understand the possibilities for the expansion in my thesis project.

4th Year Fall // 2013 // Bakr Aly Ahmed
San Francisco High-Rise / Vision Award Project

Working on a large-scale high-rise project as a partner project introduced me to hospitality design, which helped out later in my hostel design. Understanding hotel layout and multi-use building design made me realize I could see myself working for a firm that specializes in hospitality work.

Spring // 2014 // Paul Gleye
Belgium Study Abroad Program

This semester abroad is the driving reason behind the choice of my thesis project's typology. Traveling through 9 countries and staying in many hostels which varied in size and condition provided me with the experience and consistant interest I needed for my thesis project

5th Year Fall // 2014 // Regin Schwaen
International Competition - Concrete Emphasis

The competition I participated in this semester provided me with the opportunity to enhance my Photoshop skills. My Sketchup modeling skills were also improved this semester so I felt confident entering my final semester with designing in both Sketchup and Revit.

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