

PEDAGOGICAL COMPOSITION

an exploration of global passive practices

alec mikel johnson



PEDAGOGICAL COMPOSITION

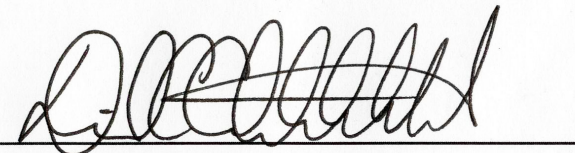
an exploration of global passive practices

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

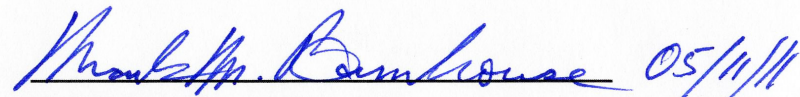
By

Alec Mikel Johnson

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



Primary Thesis Advisor



05/11/11

Thesis Committee Chair

May 2011
Fargo, North Dakota

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THESIS ABSTRACT

The Industrial Revolution has played a dramatic role in shaping the behavior and the mindset of the American people. Innovations like electricity generation, iron production, and sheet glass production have forever changed the way that people view the built world.

Well-known and widely practiced ideas centuries old have been set aside to make way for the innovations of the revolution. We have come far since the birth of the Industrial Revolution, but we have forgotten our past along the way. Thorough understanding of the past is crucial for the assurance of a balanced, successful future.

THESIS PROBLEM STATEMENT

How might an examination of world cultures' building practices and way of life lend insight to present and future passive design issues for the region?

STATEMENT OF INTENT

Project Typology

Theoretical Premise / Unifying Idea

Project Justification



STATEMENT OF INTENT

TYOLOGY

World Cultures' Passive Systems Research and Educational Center

THEORETICAL PREMISE / UNIFYING IDEA

CLAIM

By researching the building practices and overall culture present in the region and in the world currently and before the dawn of the Industrial Revolution, lost knowledge will be rediscovered and current passive strategies for the region will be refined, creating harmony between old and new building design practices.

SUPPORTING PREMISES

Appreciation of cultural heritage and the history that it accompanies is essential for the cultivation of an understanding of place, belonging, and self within the individual, the society, and the profession.

Thorough understanding of the past is essential for the assurance of a balanced and successful future. Researching the culture and building practices present in the region and the world will help to rediscover past knowledge and refine current systems, creating harmony between past and present passive design strategies.

Current passive system issues are usually a result of a one-track, technology infatuated mindset. Technology is a proper tool in passive design, but so is the awareness of our earthly elements. Past and current passive strategies must link in order to develop a sustainable future.

THEORETICAL PREMISE / UNIFYING IDEA

This thesis will research the way of life and building practices present in regional and global cultures throughout history in an attempt to rediscover past building practices. This study of our past is essential for achieving balance between previous and innovative passive design strategies, and will allow for the refinement, growth, and continuing maturity of passive systems in building design.

PROJECT JUSTIFICATION

Our recent infatuation with technology has weakened our connection to the world around us. We have lost ties to history, culture, and the earth. We must revitalize this relationship in order to flourish as individuals, as designers, and as a conscious, well-rounded society.

PROPOSAL

Narrative

User / Client Description

Major Project Elements

Site Information

Project Emphasis

Plan for Proceeding

Previous Studio Experience



THE NARRATIVE

The United States is an immigrant nation, a melting pot of cultural diversity. Early immigrants arriving in the U.S. brought with them their cultural identity, their way of life, and their building practices. The diversity of cultures was clearly apparent in the architecture of that time. Our cultural identity has changed dynamically since then.

Technology is the dominant force behind this change. New technologies have forever shaped and our continually shaping the world we live in. Our technological knowledge continues to grow at an exponential rate. The dawn of the Industrial Revolution introduced innovations such as iron production, sheet glass manufacturing, and numerous other machine based creations. The steam boat, train, automobile, and airplane soon followed. Commodities once dreamed of became an everyday normality in the lifestyle of the American people. We have evolved much further since. Society has now transformed into a digital culture. Today, we work, learn, and play in the digital era. The digital revolution is, at a much larger scale, once again advancing our knowledge at an exponential rate. The globalization of knowledge has forever changed our way of life. This is evident in all aspects of existence, and is highly visible in the architectural practice.

This new era has brought about countless advances in fields such as business, agriculture, education, science, building construction, and art. But as always, technology is a double-edged sword. This infatuation with technological advancement has severely clouded our connection to the culture that once embodied the nation. This disconnect has led to the diminishing of cultural diversity, hindering unique building practices once known and practiced in the architectural profession.

It is with a re-examination of past and present cultures that our nation will once again create harmony between culture and technology. Technology is an aspect of our culture, but it should not define it.

USER / CLIENT DESCRIPTION

Site Users

The building is state-owned and approved by the North Dakota State Historical Society and its Foundation. The building will primarily serve collegiate students and professors as a center of research, education/ continuing education, and practice. The building also serves as an educational tool and recreational center for the state and region.

Capacity

NDSU Passive Design Branch

The graduate students enrolled at the university will be the most frequent users of the center. Class size will be determined by the school board. Capacity levels should remain relatively constant due to the nature of the space. At maximum capacity the school will be able to accommodate 140 people.

Archives and Research Library

The Archives and Research Library is available to the professors and students of the school, and may be made available to the public by request. The space is designed to accommodate 80 people at maximum capacity.

Heritage Museum

The museum is the largest portion of the center. As it will be the most notable museum in a 200 mile radius and one of the largest museums of the Midwest, it is anticipated to attract numerous visitors on a regular basis. The number of occupants will vary from day to day and is designed to accommodate this fluctuation. At maximum capacity the museum will be able to house 300 people.

Peak usage

Peak usage will occur during the business week when the university, archives, and museum are open and fully operational. Peak usage should also be anticipated during special events planned by the center's owners.

Hours of Operation

School

Monday	8 AM to 5 PM
Tuesday	8 AM to 5 PM
Wednesday	8 AM to 5 PM
Thursday	8 AM to 5 PM
Friday	8 AM to 5 PM
Saturday	Closed
Sunday	Closed

Archives and Research Library

Monday	10 AM to 5 PM
Tuesday	10 AM to 5 PM
Wednesday	10 AM to 5 PM
Thursday	10 AM to 5 PM
Friday	10 AM to 7 PM
Saturday	10 AM to 7 PM
Sunday	Closed

Heritage Museum

Monday	10 AM to 7 PM
Tuesday	10 AM to 7 PM
Wednesday	10 AM to 7 PM
Thursday	10 AM to 7 PM
Friday	10 AM to 9 PM
Saturday	10 AM to 9 PM
Sunday	10 AM to 9 PM

Students will be granted 24 hour building access

Parking / Transportation

There will be off-site parking available one block south of the center for the public, staff, students, and professors. Public transit in the downtown area is available and recommended for all occupants. Street parking surrounding the site is also available.

Major Project Elements

University

The university's most important spaces are the design studios. These studios allow for individual and communal development of concepts, ideas, methods, and techniques. An exploration of self is a vital part of the higher education process and the studio creates an environment in which this is possible.

A series of lecture rooms will house various classes taught throughout the day. Primary lecture rooms will be used to accommodate larger classes and secondary lecture rooms will provide a setting for more personal levels of discussion. The university will have a gallery in which students' and professors' work will be on display, allowing for the members as well as all visitors to the center to attain an understanding of the work that is being produced there. The university will also incorporate admissions/affiliations offices, professor offices, and computer cluster space within the design.

Archives and Research Library

The library will serve the professors and students, as well as the public. It supports research of culture, passive design, and design technology. The library houses a collection of artifacts, books, newspapers, magazines, journals, sensory material, and digital media.

The library contains an archival repository which holds the majority of this material, computer clusters for digital research, reading rooms for collections examination, and a reference/help desk to aid users in effectively locating research material.

Heritage Museum

The Heritage Museum, a state owned and operated complex, brings to life the cultures present at the regional and global scale, showcases the history of these cultures, and provides the history of the region. This is accomplished through the various exhibits within the museum. Artifacts, materials, interactive programs, videos, and artwork are present in the exhibits.

Supplemental educational programs outside of these exhibits provide for another unique type of learning. Programs such as cultural festivals, performances, and guest lectures are all applicable within the design.

The museum houses a large entry / gathering space, a ticket office, permanent exhibits and galleries for temporary exhibits, a theatre for films and movies, an auditorium for supplemental educational programs, and a cultural café showcasing traditional native foods found from around the world. There are also offices, meeting rooms, and large collections/artifacts storage areas.

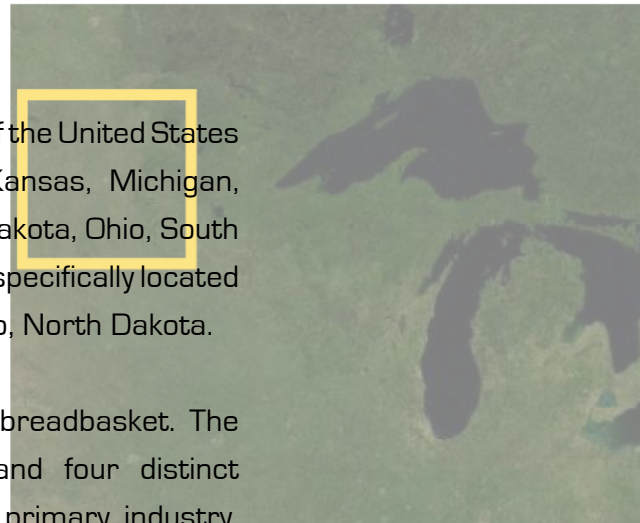
Outdoor Space

The outdoor spaces on the site will be places of gathering. The outdoor space will have the opportunity to house temporary outdoor exhibits. This space provides a connection to and evokes interaction with the vibrant activity present in the downtown area.

Site Information

Region

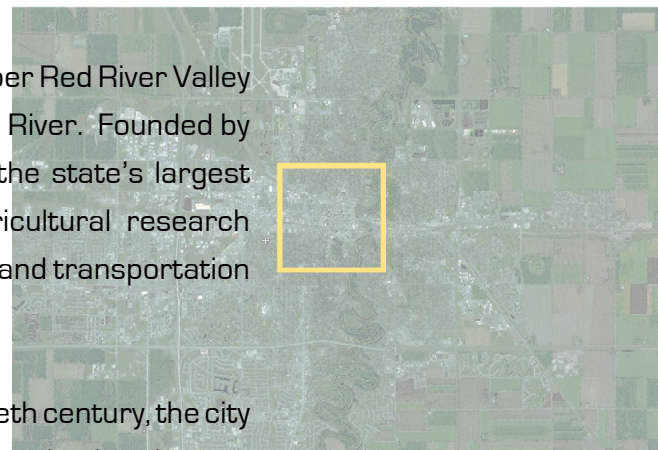
The site sits north in the Midwest region of the United States which includes Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. The site is more specifically located in the Red River Valley in the city of Fargo, North Dakota.



The Midwest is known as the nation's breadbasket. The region's flat topography, fertile soil, and four distinct seasons make agriculture the region's primary industry. There are three distinct agricultural areas or belts within the region: the corn belt, the wheat belt, and the dairy belt. Tourism, recreation, and manufacturing are other major industries of the region. In North Dakota, the state in which the site lies, tourism is the second largest industry; heritage tourism in particular being the fastest growing segment of tourism annually.

City

Fargo, North Dakota, is located in the upper Red River Valley and lies directly on the north-flowing Red River. Founded by the Northern Pacific Railway in 1871, the state's largest city is a thriving agribusiness and agricultural research center and is also a regional distribution and transportation hub.



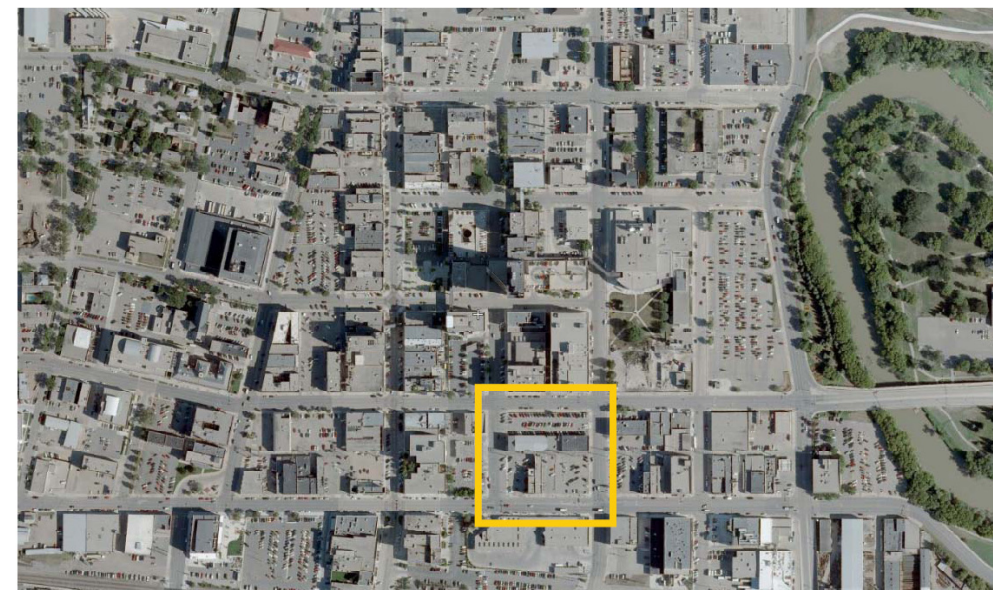
During the first few decades of the twentieth century, the city of Fargo flourished from a boom of Norwegian immigrants who came to the city in hopes of finding a better life. These immigrants brought with them their customs and way of life, influencing the character and culture alive in Fargo today.

Site

The site is located at the corner of 1st Avenue North and 5th Street in Fargo's historic central business district, known locally as downtown Fargo. Fargo's downtown area is a vibrant commercial area that provides many unique opportunities for housing, shopping, dining, and entertainment.

Fargo is home to North Dakota State University. Over the past decade the university has expanded from its on-campus location and now has three new locations in the downtown area. Renaissance Hall and Klai Hall are home to the university's Architecture and Landscape Architecture Department. Renaissance Hall also houses the university's Art Department. Barry Hall, completed in 2009, is the new home for the College of Business, the Agribusiness Department, and the Applied Economics Department. The three buildings have left a dominant impression on the downtown area. The Research Center and Heritage Museum will further shape this growing downtown region.

The Metro-Area Transit Bus Service runs throughout the city. The hub for the transit center is located one block south of the site, making transportation to and from the site opportune.



Site Importance / Relevance

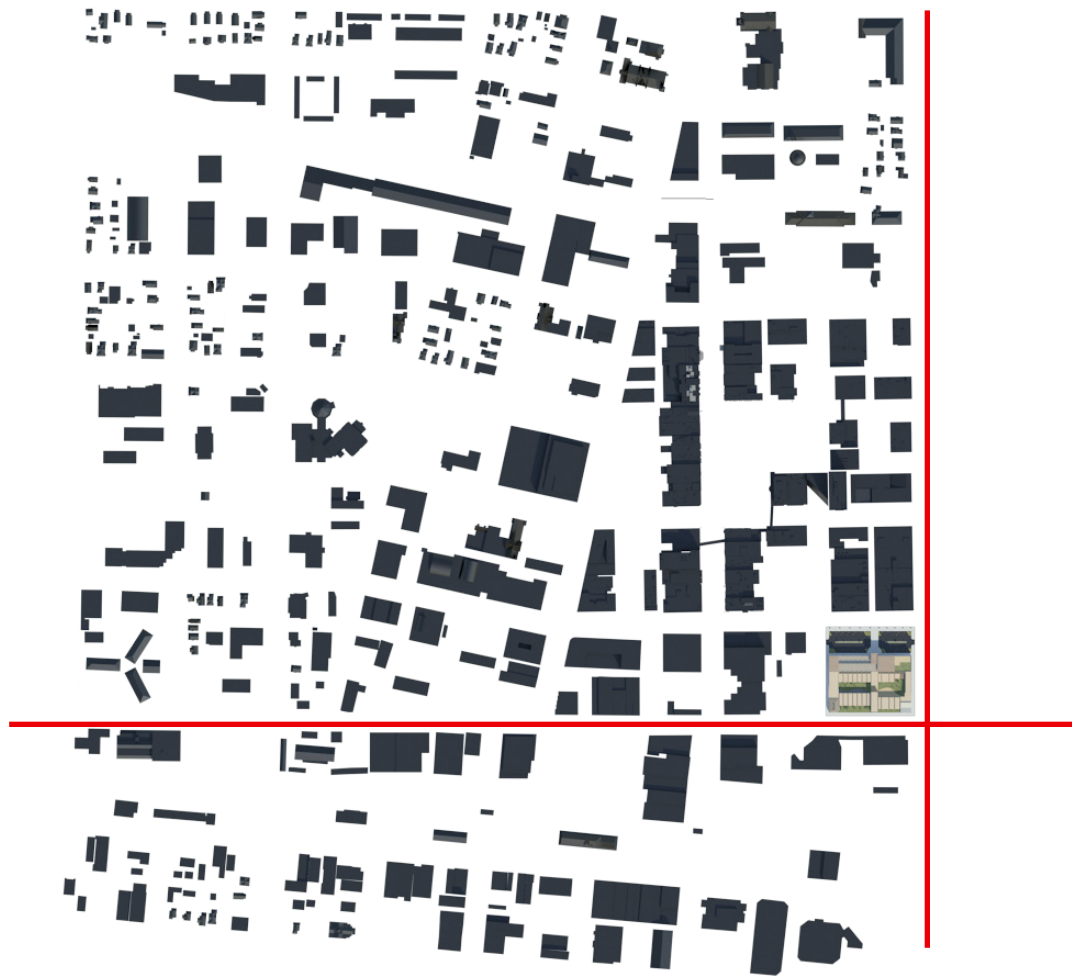
Recently across the country there has been a newfound interest in our history, culture and heritage. Heritage tourism, due to this fact has become a thriving industry once again. North Dakota has embraced its heritage for years and because of this appreciation, heritage tourism is the state's second largest industry.

North Dakota has a wide variety of cultural, historic sites and centers spread across the state. The Missouri River, because of its relevance to the Lewis and Clark Expedition, has become the focal point of the state's historic interest. Bismarck and Washburn, North Dakota, in particular have done a great job of showcasing this history. Bismarck-Mandan, the state's capitol, is home to Fort Abraham Lincoln State Park, the Lewis and Clark Riverboat, and the North Dakota Heritage Center. Washburn is home to the North Dakota Lewis and Clark Interpretive Center. Medora, North Dakota is the leading cultural and historic tourist destination of the state. Located in the western half of North Dakota, the town itself is a piece of history, and it includes attractions like the Chateau deMores, the North Dakota Cowboy Hall of Fame, the Harold Schafer Heritage Center, and the impressive Theodore Roosevelt National Park.

North Dakota stands behind its rich culture and has put forth a great effort in educating its residents and visitors of its own heritage. The state however, is in need of a center that educates its public on the different cultures present around the country and ultimately around the world. A multi-cultural center would be an opportunity for North Dakota to expand its cultural horizons and satisfy that need.

Fargo, North Dakota, the largest city in the state, is one of the few cities that has not incorporated any museum or center that focuses primarily on culture. The addition of a multi-cultural center and heritage museum to the city would be a unique opportunity for Fargo to render itself as a leading cultural hub of the state. This notion would also provide North Dakota residents with a center in which to educate themselves of the world's cultures.

The downtown Fargo area is one of the most vibrant districts of the city. The area is highly developed and houses an array of building typologies. The southeast block of the downtown area remains one of the last under-developed sites of the district. Proposing this block as the future site of the cultural center will complete the downtown atmosphere; bringing further diversity to an area already rich in culture.



The site sits at the southeast end of the historic downtown area. An abundance of activity and diverse building typologies provide a welcoming setting for the addition of the multi-cultural and educational center. Similar building types in the area include the North Dakota State University downtown educational facilities, the Plains Art Museum, the Hjemkomst Interpretive Center, and the Fargo Public Library.

The site is a quick walk away from the north flowing Red River that creates the North Dakota / Minnesota border. Walking trails and biking trails, canoe and kayak rentals, and areas of rest and leisure can be found here.



Views and Landmarks

The site provides views framed by the surrounding buildings of the area.

Looking east from the site, one will see bordered views of the Red River, the neighboring city of Moorhead, Minnesota, and Moorhead's unique Hjemkomst Interpretive Center.

Looking northwest of the site one will find glimpses of Broadway, the backbone of downtown.

Project Emphasis

The focus of the project is to examine, research, and educate culture and building practices with the intention of reforming the connection between culture and design. The goal of this process is to create harmony between past and present building strategies, as well as balance between technology and the natural environment. This goal will be achieved through extensive research, as well as educating the general public and the students through the process of culturally conscious design.

Plan for Proceeding

Definition of Research Direction

Qualitative and quantitative data will be retrieved throughout the research process of the project. The following categories will be researched to provide thorough information and subject matter: unifying idea, typology of the project, programmatic requirements, site analysis, regional history, education, culture, passive strategies, design technologies, and sustainability.

Plan for Design Methodology

As stated above, research will be conducted in both a qualitative and quantitative manner. Case studies and interviews will also be implemented to achieve a roundness to the research.

The data collected from this research will all share relation to the unifying idea and the focus of the project. Throughout the duration of the project design process, this data will be referenced to ensure that the spirit of the project remains on course with the original premise and unifying idea.

Documentation of the Design Process

Thorough documentation will occur at all stages of the project to showcase the overall process of the design. This information will be structured in a manner that is conducive to understanding the project from beginning to end. Documented information will appear in the form of text, sketches, drawings, photographs, physical models, and other methods deemed necessary. This information will be presented and made available in the form of a thesis book.

PREVIOUS STUDIO EXPERIENCE

SECOND YEAR

FALL 2007

Mike Christensen

Tea House

Boat House

Mixed Use

SPRING 2008

Stephen Wischer

'The A Train' - Fargo Venue

Rothbury House

THIRD YEAR

FALL 2008

Steve Martens

Wildlife Conservatory

Can Pile Revival Project - Casselton, ND

Mason's Guild

SPRING 2009

Ronald Ramsay

New Lebanon Revival Project

Chicago High Rise

FOURTH YEAR

FALL 2009

Darryl Booker

Identity Tower

SPRING 2010

Darryl Booker, Paul Gleye, Frank Kratky

Viable Community - Santo Domingo

Public School - Tanzania

Santo Domingo Housing

FIFTH YEAR

FALL 2010

Cindy Urness

Minnesota Experimental City - Trade School

SPRING 2011

David Crutchfield

Pedagogical Composition

PROGRAM DOCUMENT

Theoretical Premise / Unifying Idea Research

Typological Research

Historical Context

Site Analysis

Reference List

Personal Identification



THEORETICAL PREMISE / UNIFYING IDEA RESEARCH

UNIFYING
IDEA
RESEARCH

Theoretical Premise / Unifying Idea Research

RESEARCH

This thesis will research the way of life and building practices present in regional and global cultures throughout history in an attempt to rediscover past building practices. This study of our past is essential for achieving balance between previous and innovative passive design strategies, and will allow for the refinement, growth, and continuing maturity of passive systems in building design.

Culture and Heritage

Thorough understanding and embracing of mankind's heritage and culture is vital to the continued growth and development of the world, the community and the individual. The word "culture" is derived from the Latin word "cultura," which means "to cultivate." A person's origins, heritage, and culture make up a large part of what distinguishes mankind from the animal world. Humans are curious creatures that ask questions and strive for answers and understanding in every aspect of life. The challenge to understand one's identity and discover one's sense of place within the world and within the community is a dominant characteristic of human existence.

Culture is defined by many different elements. These elements are essential in the creation and structure of a culture.

Language: The various languages native to a certain culture are essential

Norms: Consisting of rituals, taboos, and way of life, norms are a common occurrence and an important element in culture

Religion / Beliefs: Religion and belief systems are an important part of every culture

Values: The social values established within a culture refer more often than not to achievements individuals and groups strive to reach or practice

Social Collectives: Social clusters, organizations, and communities that are viewed as social constructions of symbolic nature

Roles and Status: a social role or status is a position within the culture of the society that the members of the society adhere to and structure themselves by

Peoples and ethnicities from all across the globe share rich, unique heritages and cultures. Each ethnic group has gone about this in their own, individual ways. Location in the world, available resources, and sources of inspiration all shape the different cultures that the world encompasses today. Every culture can be considered to be shared, since a collective group of people embody it. Culture is taught and passed on from older generations to upcoming generations keeping the life and the unique characteristics of the culture alive. Culture is passed on to new generations in the form of symbols. Language, values, emotional expression, religion, taboo, art, and food serve as some of the primary symbolic modes of cultural transmittance to new generations. Cultural values passed on to new generations help to shape the peoples' behavioral standards, philosophies, and morality. Culture is a link between people and the ethical standards upheld within the cultural community.

The different cultures that comprise a community and the community of cultures both have the potential to slowly shift or change shape over the course of time; retaining new traits and leaving behind

traits of lesser value and importance. Time is the dominant channel for this change. Throughout the course of time new modes of work arise, new technologies are formed, and transformation in the definition of social norms and standards occur. Contact and interaction with various cultures is also a means for cultural change. In today's world, it is nearly impossible to remain isolated from different cultures. Every culture, then, is influenced by and influences surrounding cultures. This social interaction between cultures may mold and reshape the core of each culture. Mixing of various cultures within a defined place results in the diffusion of those cultures, effectively creating a community culture.

Communities today are full of a wide variety of individuals each stemming from various heritages, lineages, and cultural backgrounds. The identity of the community in today's world is shaped by the cultural values of its people. This gathering of cultures to a singular community creates a community with a character and culture of its own. Understanding and embracing one's culture within a community creates a bond that connects that community. Within this place similar cultures will

come together in an effort to practice and celebrate their own cultures. The various unique traditions and customs that the different cultures embrace, the festivals and dates of importance that they celebrate, the kind of clothing that they make, the importance and variations of food they create, the building types and styles they employ, and the values within the culture tie these people together. These vibrant practicing cultures that are alive and thriving in the community continually shape and define the culture of the community as a whole.

Cultural Tourism

Cultural Tourism is becoming a booming industry in today's societies. In narrow terms, cultural tourism is a result of the desire of individuals to witness cultural characteristics in the form of performing arts and cultural tours, attending festivals and other cultural events, and visits to various cultural sites to study unique heritage and rich cultures of the area. In a larger sense, cultural tourism is an act that satisfies an intrinsic need for diversity. This raises the level of cultural awareness in the individual and leaves them with new knowledge, new experiences, and a newfound understanding of a culture different than their own.

With the globalization of the world since the advent of the internet, new types of information that had never been shared were made readily available to anyone sitting at a computer. This availability to a seemingly endless supply of data played a dramatic role in seeing, inquiring, and learning about aspects of culture and heritage. It also allowed for different locations around the world to showcase and advertise their rich cultural heritages. People were able to realize that there is so much more out there to be learned and discovered. Being curious by nature, it was only a matter of time before people began to investigate. The combination of these two aspects affected by digital globalization led to an even stronger boom in cultural tourism.

Rapid growth of cultural tourism over the past two decades has had a dramatic affect on the way that heritage is perceived and preserved in places throughout the world. The recent interest directly affects the tourists, the general public living at the site destination, the elected officials, and the area itself.

Major opportunities to expand cities, to fortify information of culture and heritage, and to turn once neglected aspects into valuable assets have been taken advantage of. Economic growth and city development within cities of cultural interest can be directly related to this recent curiosity of world cultures.

Once a city is seen as a cultural hot spot, a variety of businesses and institutions have the opportunity to flourish. From restaurants boasting cultural cuisine to the expansion of higher educational facilities and cultural learning centers, there is much promise in the addition of cultural and historical aspects to the city's essence. City and state cultural events have also been implemented to satisfy the desire for cultural diversity. Multicultural festivals, celebrations, and similar events have become increasingly popular and are a source of economic success for said areas. Strategies like this effectively bring people of like and different cultures together in a unified whole, while also providing an economic staple for the site.

Another recent opportunity presenting itself is the revival of cities that contain historic and cultural significance. Areas of distress within

the city that had previously been set aside are being revived with the goal to restore and showcase the cultural and historical diversity of the area. Other cities in their attempts to showcase cultural and historic elements have built centers for culture, heritage, and history. These buildings have the opportunity to transform the area of the city in which they are placed and bring much activity to the area. Areas that at one point in time received little attention throughout the year have transformed into successful urban renewal sites. This enriches the appearance of the city, the culture of the city, and the city's essence.

The above mentioned efforts towards expanding and reviving a city's cultural and historical heritage in return create valuable and stable jobs for members of the community, once again strengthening community ties, values, and presence. Cultural tourism can be seen not only as a new trend, but as a way to develop and unite a community.

THEORETICAL PREMISE / UNIFYING IDEA RESEARCH

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SUMMARY

In my research I studied the inner makings of culture and how culture plays a dramatic role in everyday life within the community at the community, group, and individual levels. Cultural tourism was also studied in an attempt to explore the effects that the added aspect of a cultural focus might have in the transformation of a city.

In researching the social aspects of culture, I found that people are constantly searching for and looking to find comfort in an identity, both individual and communal. Culture is transferred from older generations to newer generations with the intention of creating an individual with a strong sense of character and place, as well as creating an individual who can carry on the traits and aspects of the culture. Once an individual has gained a strong sense of personal and communal identity it is natural to express a desire to explore the identities of other groups and individuals, examining characteristics of history, culture, and heritage. I believe that the multicultural museum and library has the potential to be a resource for cultural exploration of one's own identity and the identity of others.

When a community houses residents of different, varying cultures, the community itself forms a unique culture of its own. The culture it

creates encompasses traits and characteristics of the multiple cultures in the area and shapes them into one diverse cultural composite. I see this finding to be in direct correspondence with the premise of the project.

Time, new technologies, modes of work, and social constructs are all channels for change in cultural characteristics. As time progresses, new advancements in these areas allow cultures to adopt new practices and leave older, less important aspects behind. This means that culture changes with the city and the city with the culture. In the same way that time influences the culture of a people, culture has the opportunity to change the times.

Researching the effects that cultural tourism has on an area, it is evident that many opportunities to enhance the well-being of the area and its residents present themselves. The possibility of economic growth, city growth and city revival, and urban revival is attainable within the bounds of the community. This new appreciation for heritage and culture also presents the opportunity to educate the public about its own history and heritage as well as the many different cultures alive and well today, to allow them to participate in events such as cultural celebrations and festivals, and to provide opportunities for employment and growth throughout the city.

TYOLOGICAL RESEARCH

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1900

Typological Research

Case Study One

Contemporary Art Museum
Centro Gallego de Arte Contemporaneo

The Centro Gallego de Arte Contemporaneo (CGAC), designed by Alvaro Siza is located in Santiago de Compostela, Spain. This architectural work was commissioned by the regional government to celebrate the Ano Xacobeo, the 1993 Pilgrimage Year. [Cohn 1994]

The building is a multidisciplinary center that attempts to engage the community by holding various artistic activities in which the public may actively participate. The center is also a destination for researchers and various professionals to exchange ideas and utilize the surplus of provided resources.

Existing Program Elements:
museum, conference hall, art laboratories, exhibition rooms, garden, auditorium, library

URBAN CONTEXT

The site is located within the dense urban structure of the inner city. The building itself was designed in a horizontal manner, helping to reinforce the existing two and three story buildings that surround the site. The material palette and color palette speak with the surrounding structures, yet unique palettes are also used to define the building. The gardens in the design have lent themselves to the use of the community and have now transformed into public parks. [Cohn, 1994]

LIGHTING

Natural light is shaped and manipulated in a multitude of ways. Skylights utilized in the upper galleries drape light towards the exhibit walls. The design integrates angled clerestory, and floating soffits which help diffuse and direct light in a didactic manner. [Cohn 1994]

SPATIAL LAYOUT

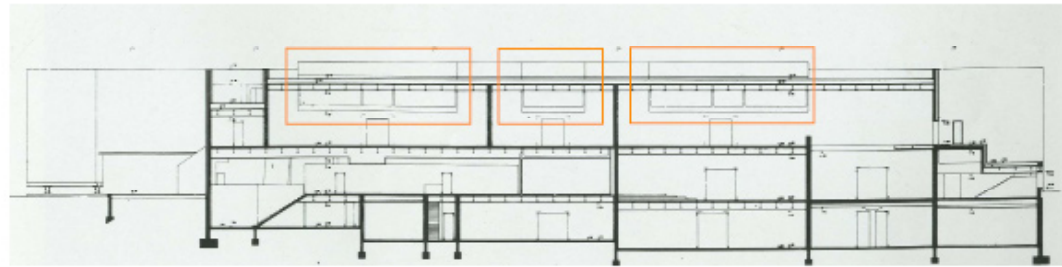
The general layout of the design allows for clear circulation throughout the building. The permanent and temporary exhibit halls, the auditorium, and the library may all be accessed from the main hall. The building has four floors, each employing convertible rooms.

BUILDING PURPOSE

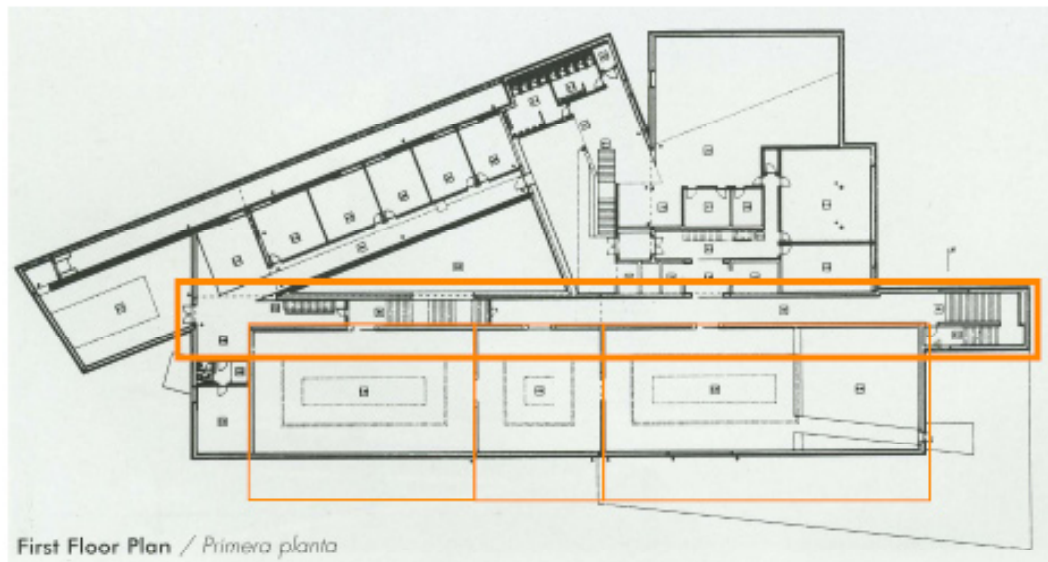
The CGAC is a multidisciplinary center in which conferences, various workshops, musical performances, films, and art festivals are accommodated. The building serves researchers, students, and the general public. The center has gained active participation from the community and is a place of group think and the swapping of ideas between professionals. [“Profile: Centro Gallego,” 2010]

CONCLUSIONS

Spain’s Centro Gallego de Arte Contemporaneo parallels many of the ideas proposed in the theoretical premise. Studies of building context express how the design may accentuate the surrounding structures while also showcasing the design itself. Spatial studies reveal how clear and concise patterns allow for easy circulation and a rhythmical presentation of information.

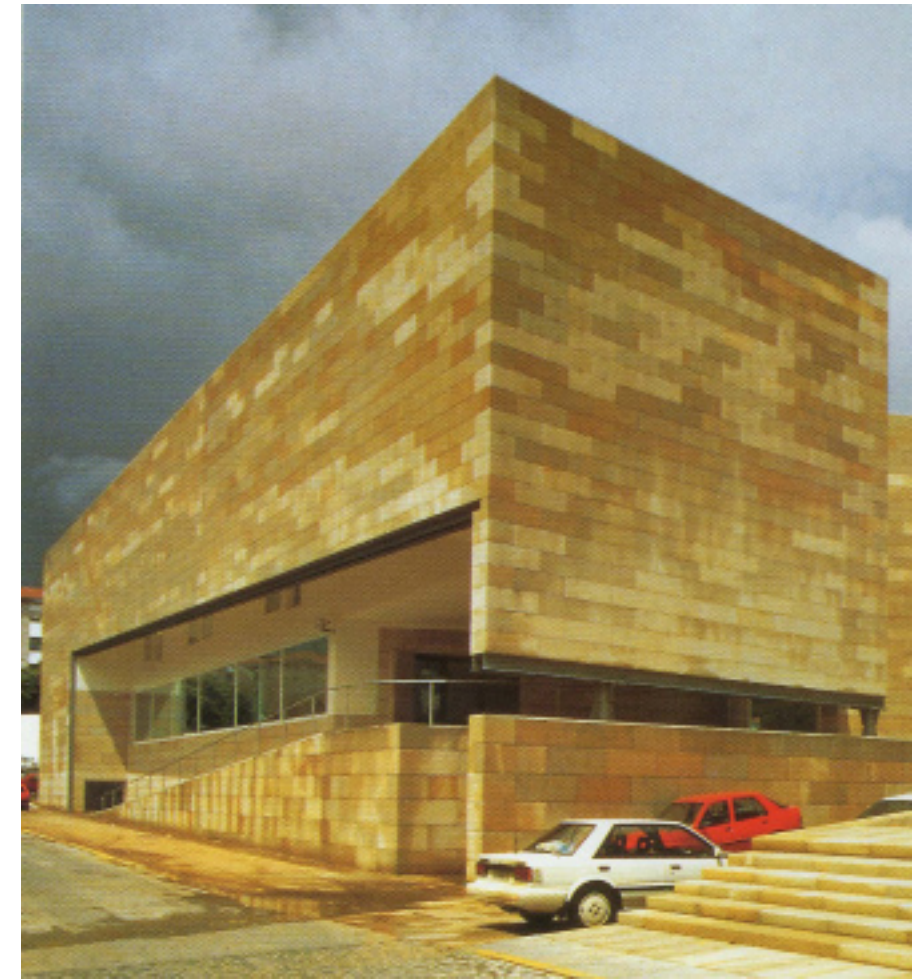


Lighting / Skylight Analysis



First Floor Plan / Primera planta

Circulation / Spatial Layout Analysis



Case Study Two

Heritage Center / Cultural Museum

The North Dakota Heritage Center expansion

The North Dakota Heritage Center expansion project located in Bismarck, North Dakota, and designed by HGA Architects and Engineers is intended to further develop the State Historical Society's goal to identify, preserve, interpret, and promote the heritage of the state and its people.

The 125,000 square foot project is an addition to the existing Heritage Center located on the North Dakota capitol grounds. The project is currently in the design development phase and is set to open in 2012, in preparation for the state's 125th anniversary in 2014.

BUILDING SIZE

The proposed expansion will offer 125,000 additional square feet to the existing Heritage Center. The space will be filled with three permanent galleries, a temporary gallery, collections storage, youth interactive spaces, educational halls and corridors, gathering space, an events center, a café, a museum store, and four outdoor exhibits.

SPATIAL LAYOUT

The focal part of the expansion is the lobby which acts a space of gathering for the museum's guests. The Hub of History, an informational center for other North Dakota places of interest branches from the main lobby. Circulation moves through the lobby and into the main educational corridor named the North Dakota Corridor of History, which then guides guests to exhibit spaces, temporary exhibit galleries, and the other educational attractions of the program.

BUILDING PURPOSE

The proposal for the expansion comes from a need for additional space. The current exhibit spaces and the collections spaces are full to capacity. This factor has severely limited the growth and development of the state's cultural, historic, and educational needs. Residents of North Dakota exhibit great interest in their state's heritage and the current facility is no longer large enough to adequately facilitate that interest.

The expansion is also intended to create a welcoming and needed architectural presence to the area. The main entrance of the expansion reaches outwards toward State Street, one of the most prominent streets in Bismarck, forming a profound presence within the community. The design utilizes materials that complement the existing structures on the capitol grounds while also using large glass entrances and clerestory windows unique to the area to portray the significance of the site.

Existing Program Elements

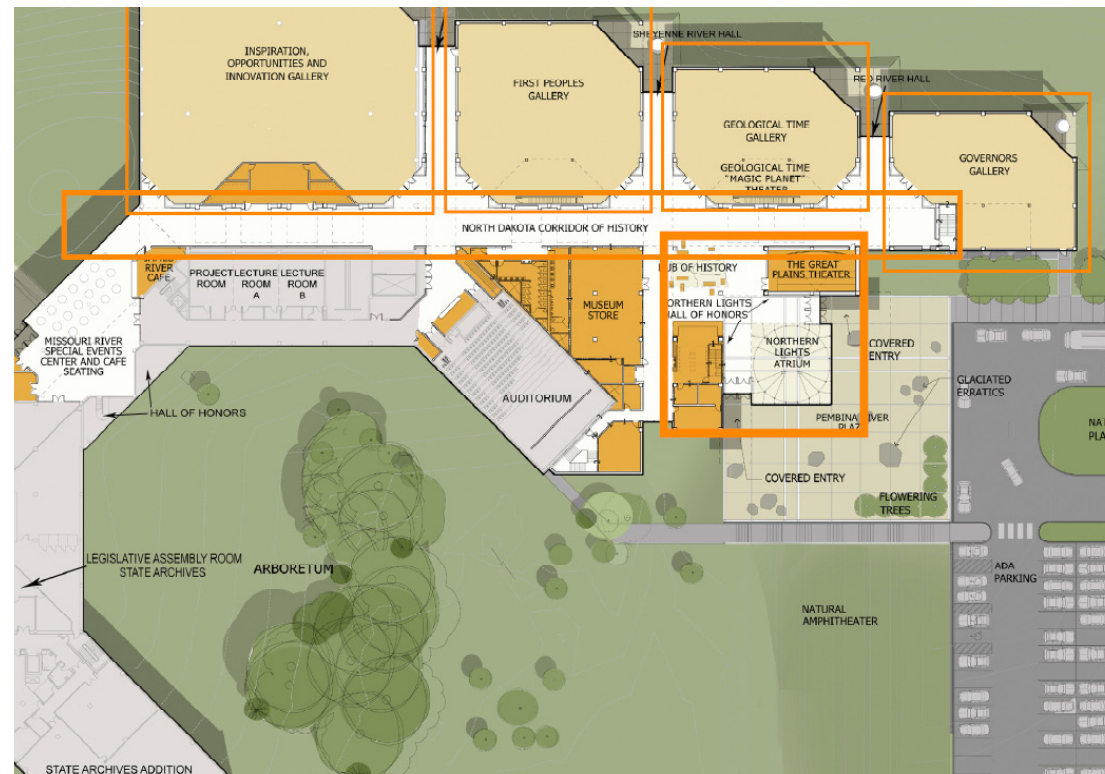
Permanent Exhibits, Temporary Galleries, Theatre, Auditorium, Classrooms, Plaza, Archival Repository, Events Center, Café, Museum Store

CONCLUSIONS

The North Dakota Heritage Center expansion is an intriguing cultural project that shares similar goals and a common macro-site with the proposed theoretical premise/unifying idea. A study of the plans led to a clear understanding of the necessary ratios that must be established between exhibit space and collections storage space. Analyzing the layout of the programmatic elements resulted in an understanding of how learning can be instilled through building movement and ease of circulation.



Interior Spatial Progression Analysis



Circulation / Spatial Layout Analysis

Case Study Three

Architecture Museum
The Netherlands Architecture Institute

The Netherlands Architecture Institute (NAI) of Rotterdam Holland, designed by Jo Coenen is a museum, archive, library and platform that works to get people of all ages involved in architecture.

The building is designed to house and cultivate three core objectives: management and accessibility of the archives and collections, ongoing exploration of the housed material and examination of new architectural advances, and showcasing the ensuing information through various exhibits, galleries, writings, and community events.

Existing Program Elements: museum, archives, auditorium, administration

DEFINING STRUCTURES

The building is designed in a way that each core objective is located in its own unique portion of the design: a section for archives and collections, an educational section, and an exhibit space. A fourth element was also included in the design of the building to house more public spaces such as a café, a museum store, and an auditorium. These four buildings paired with the outdoor spaces comprise the sum of the design.

URBAN CONTEXT

The colors, materials, shapes, and footprint of the design meaningfully relate to the surrounding urban context of the area. The exhibit section of the design takes on similar aspects of shape and color found in the nearby Museum Boijmans van Beuningen design. The terrace in this section of the design uses a green color palette intended to mimic the aged copper roof of

the museum. The public section of the NAI building incorporates a light tower similar to the glass tower found at the museum. Cube-like forms in the overall shape of the design converse with the villas that border a nearby street. Distinguishing characteristics of Rotterdam's port have also influenced the design in the form of aerial walkways, railings, water features, steel trusses, color choice, and vegetation. The unique shape of NAI's archive section shares characteristics found in the bow of a sea vessel.

USE OF LIGHT

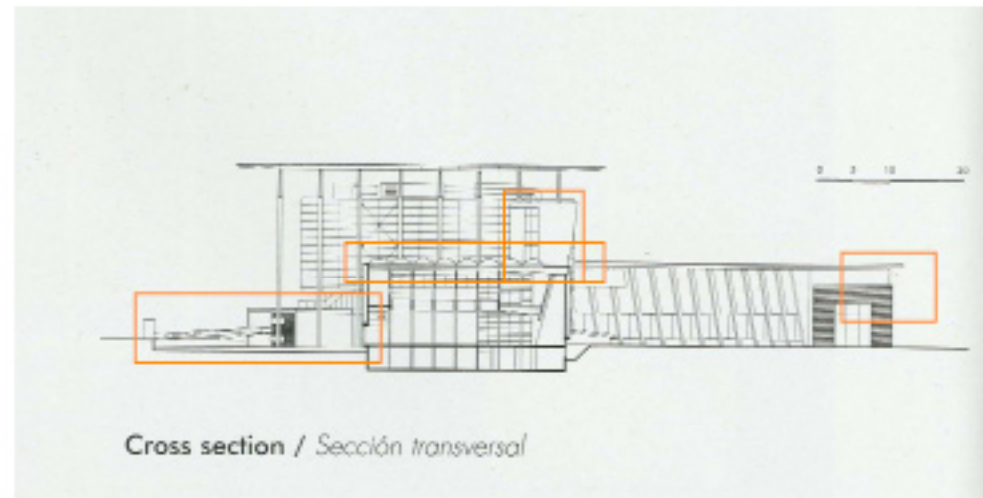
Different techniques used to manipulate light are found throughout the design. Alternating variations of direct and indirect light create intriguing spaces in the institute. The use of filtered and reflected light is embraced throughout the design. Fabric is stretched over the exhibition spaces creating a warm, light color. The element of water is used to drape reflections on the walls and ceilings of the gallery spaces. Additive and subtractive techniques are used in relationships between roofs and windows to provide effective sun shades.

MATERIAL PALETTE

Glass, Concrete, Steel, Baked Brick, Wood, Exposed Mechanical and Structural Elements, Water, Vegetation

CONCLUSIONS

A deep understanding of the context surrounding this site creates an effective method for the Netherlands Architecture Institute to evoke a strong sense of place and sense of familiarity within the physical, social, and cultural bounds of the area. In a building typology focused on exploration and learning, consideration to aspects such as light manipulation effectively provoke further exploration and curiosity of the building itself. Rather than housing all programmatic functions in a single structure, the NAI effectively separates core functions creating a unique spatial configuration on the site



Lighting Analysis



Defining Structures Analysis



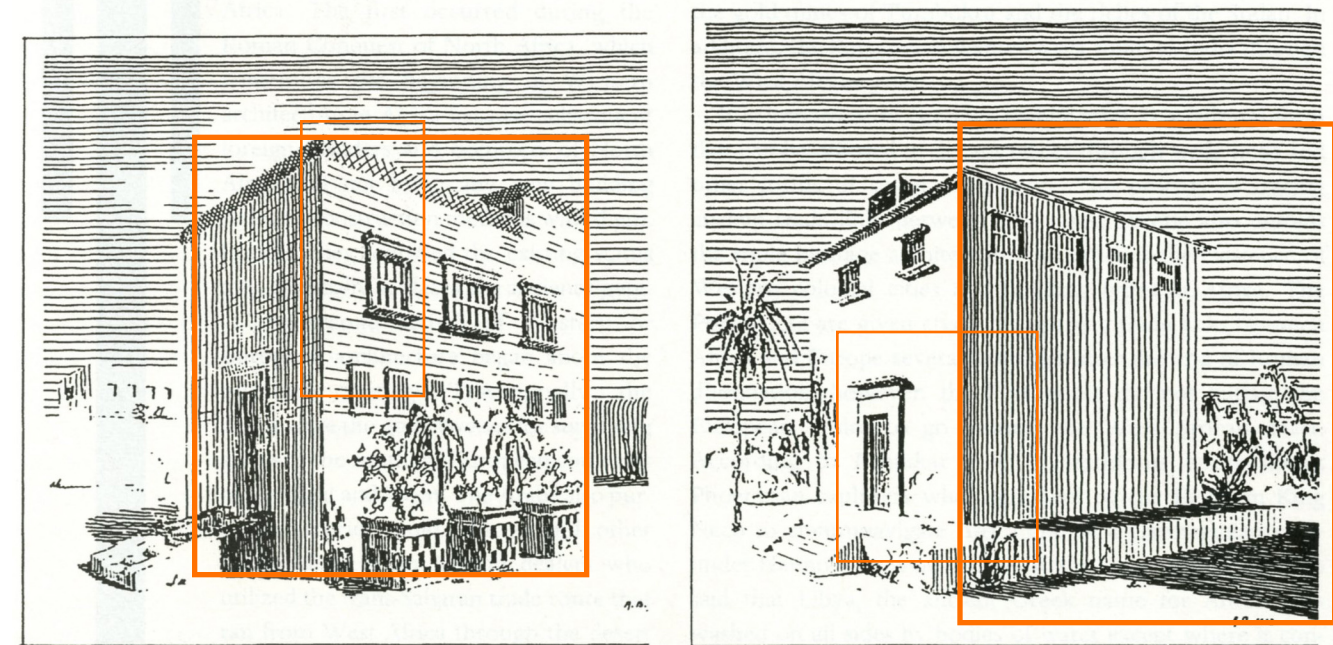
Case Study Series A

The following case study series examined cultural passive design strategies practiced within areas of the globe that share similar climatic traits to those of Fargo, ND. Case Study Series A is composed of cultural building practices found within hot climate zones throughout the world.

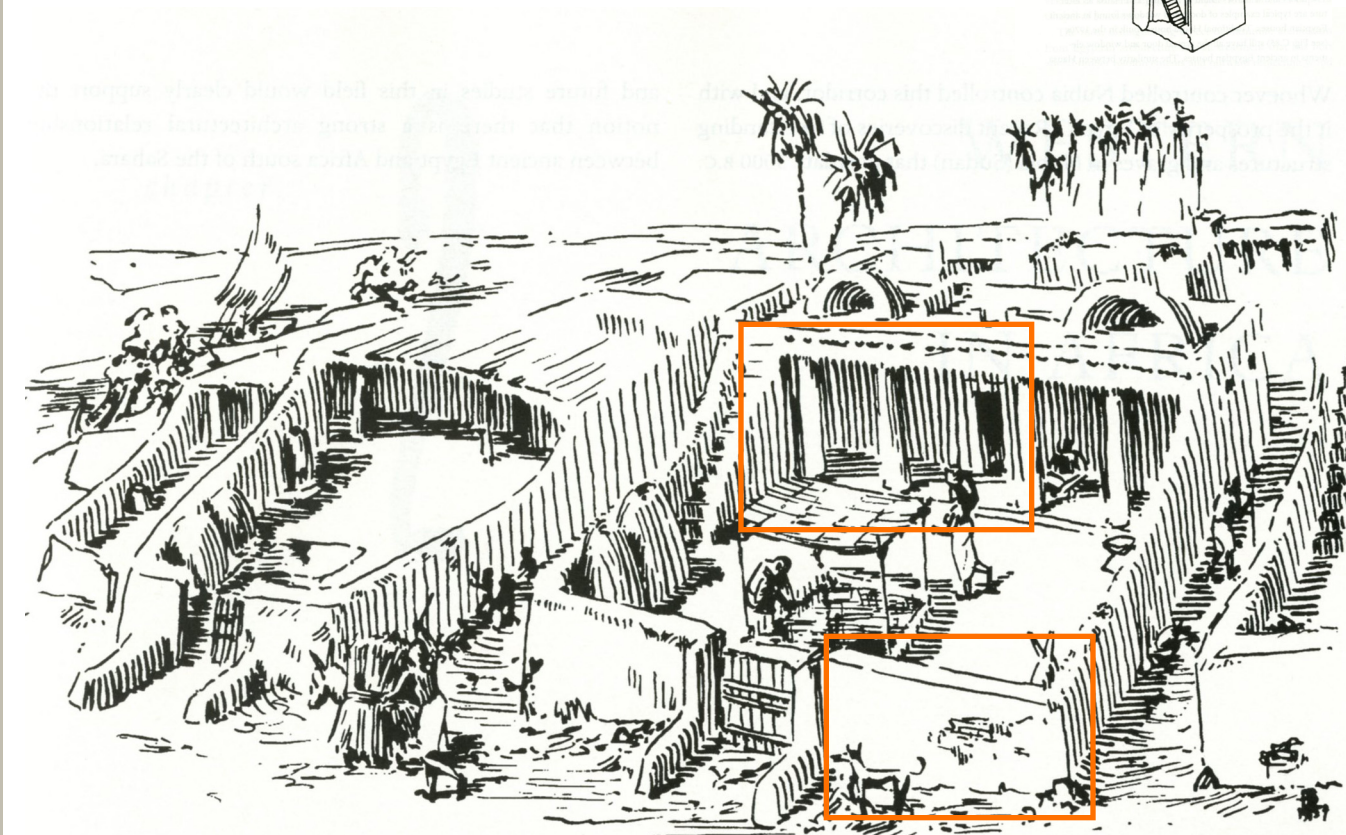
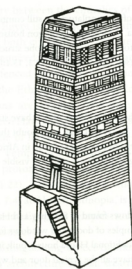
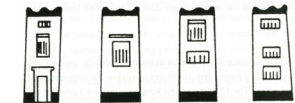
The bulk of the series examines vernacular and historical architecture. This was done in order to analyze buildings that were designed without thoughts of active systems such as lights, HVAC, etc. These structures were built in accordance with the Earth; built in a manner that allows for optimal use of the Earth's continually provided resources such as light, heat, and wind.

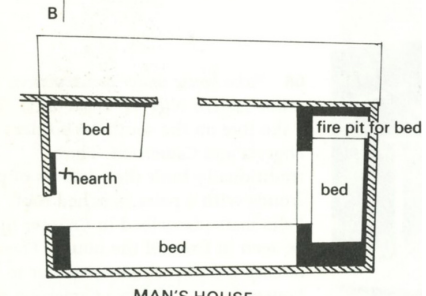
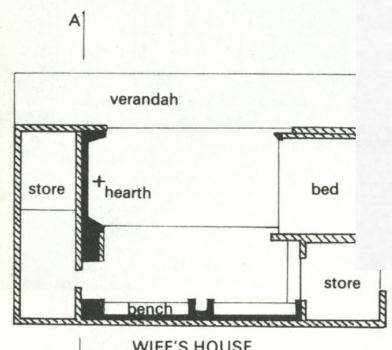
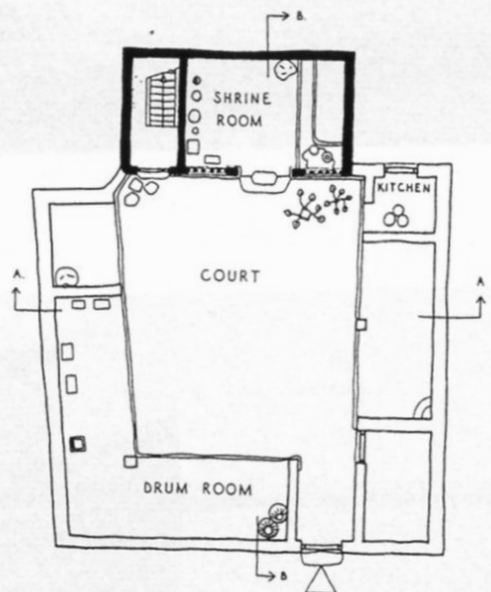
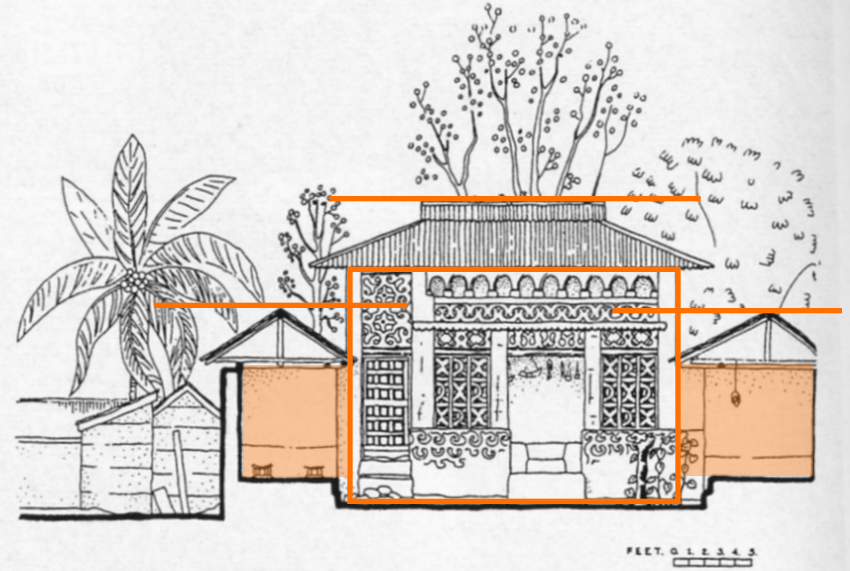
SITES CHOSEN

Sites all across the globe were researched in order to compile a comprehensive amount of data. Sites located within North America, South America, Africa, Europe, Asia, and Australia were all picked as necessary research areas.

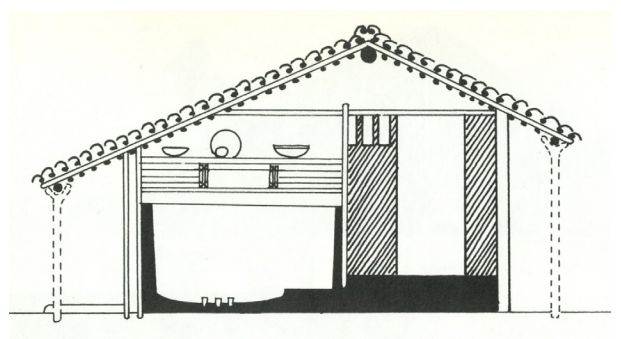


Building Shape / Orientation / Materiality

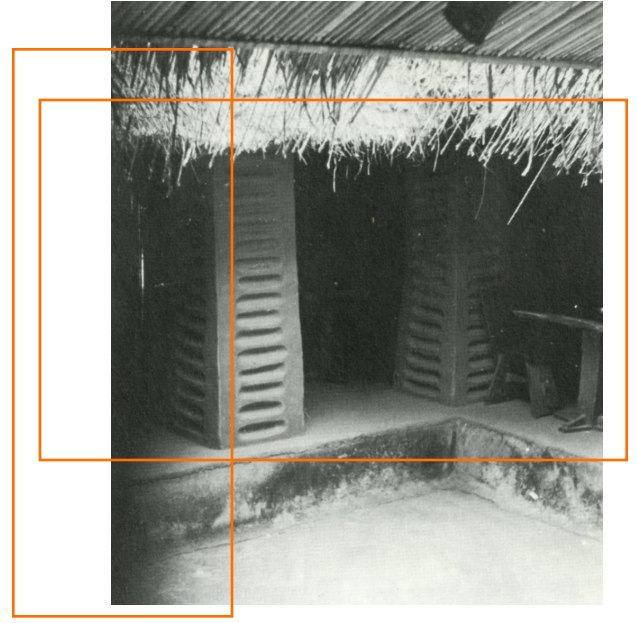
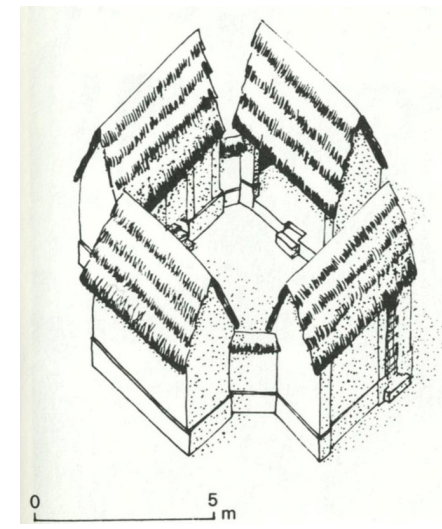
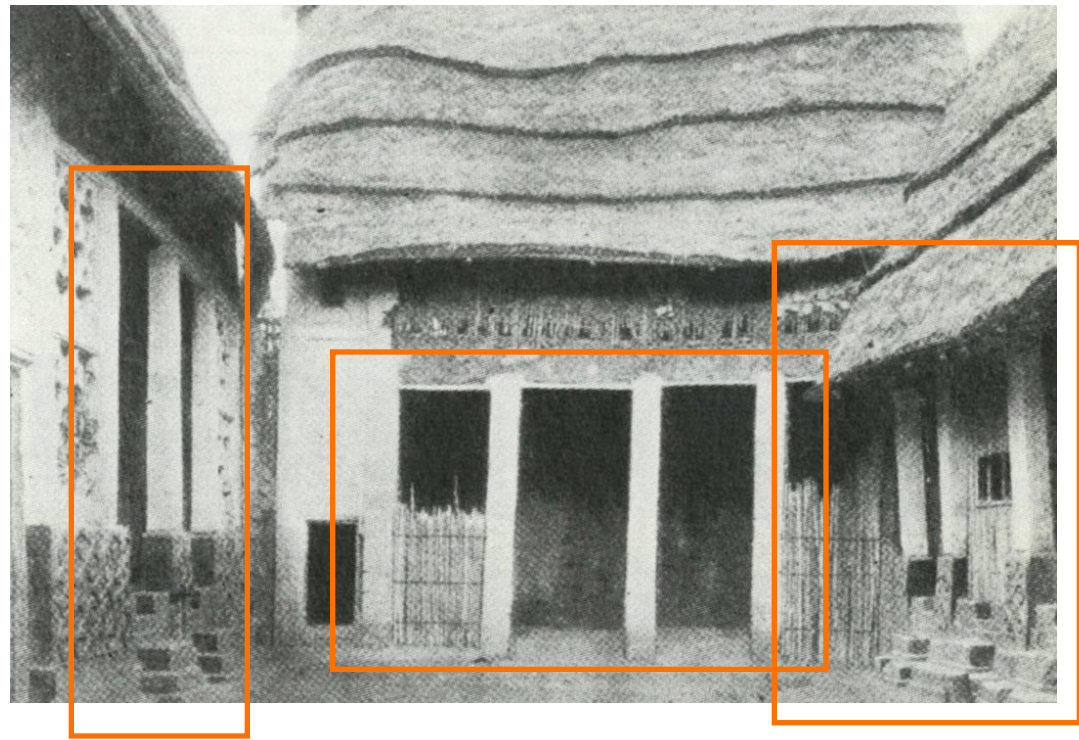




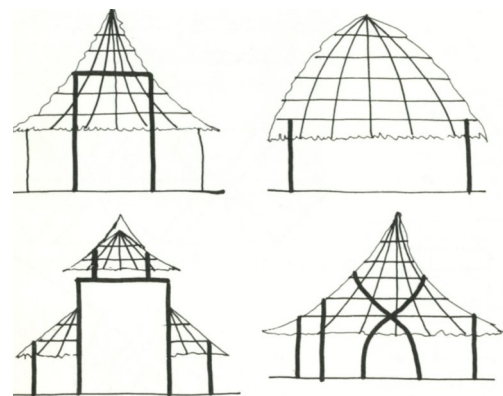
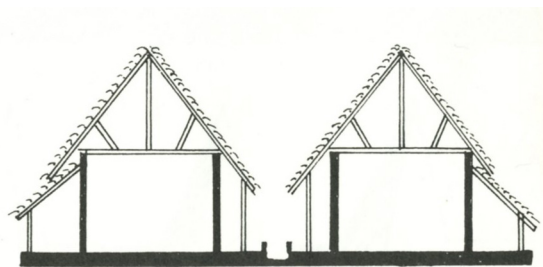
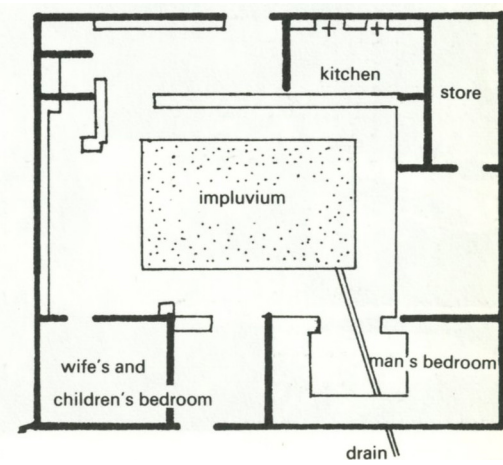
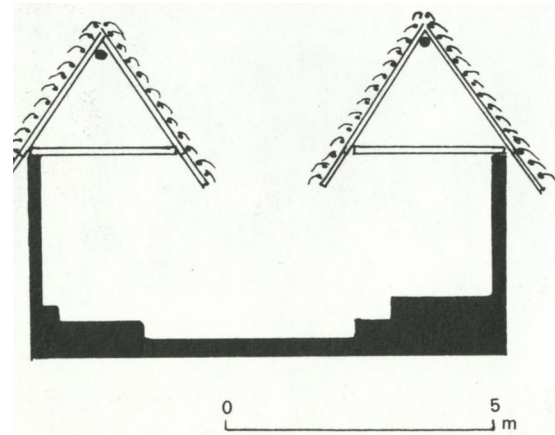
0 1 2 m
 mud and wattle
 solid clay



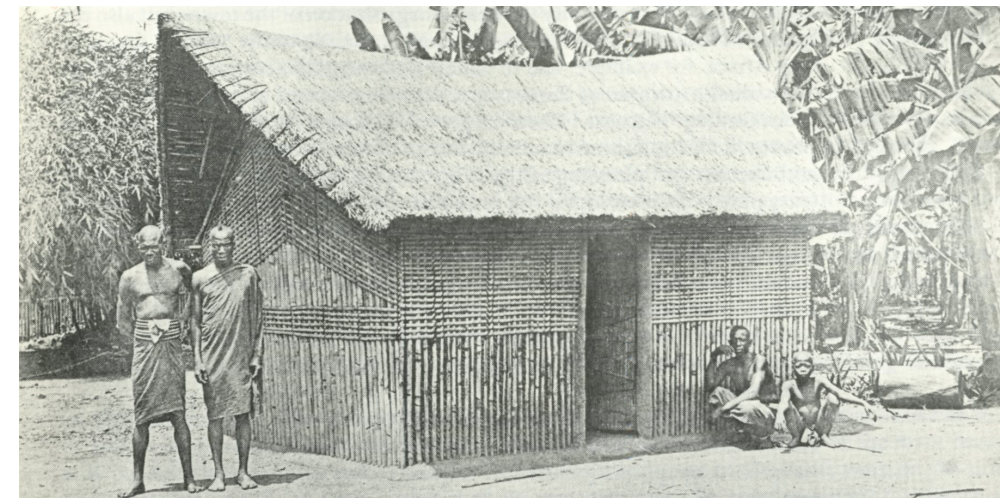
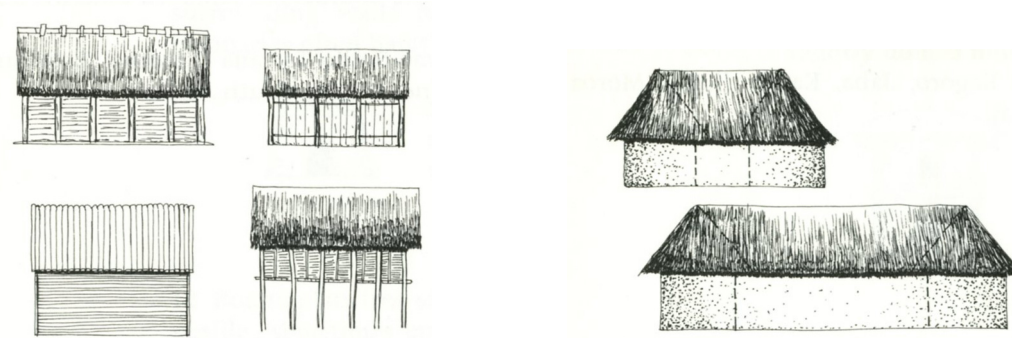
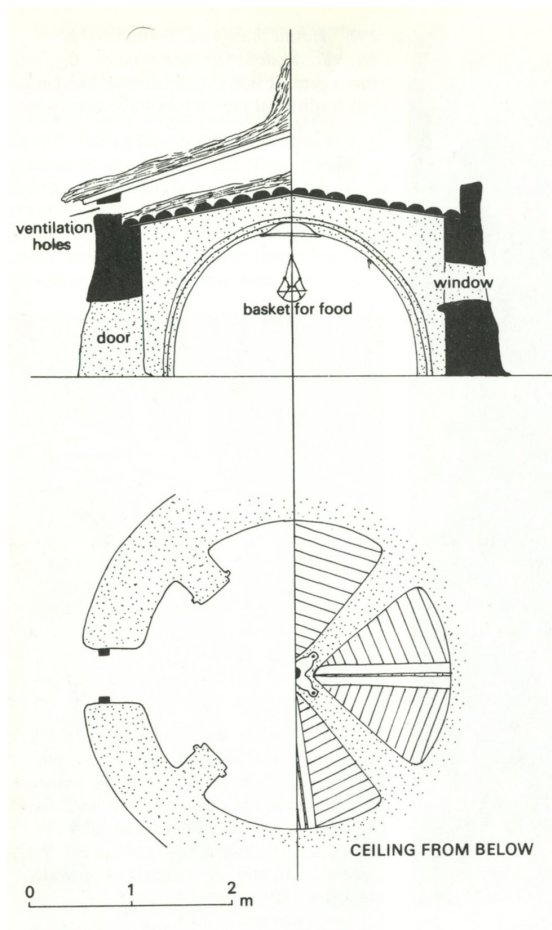
Spatial Layout / Relationships



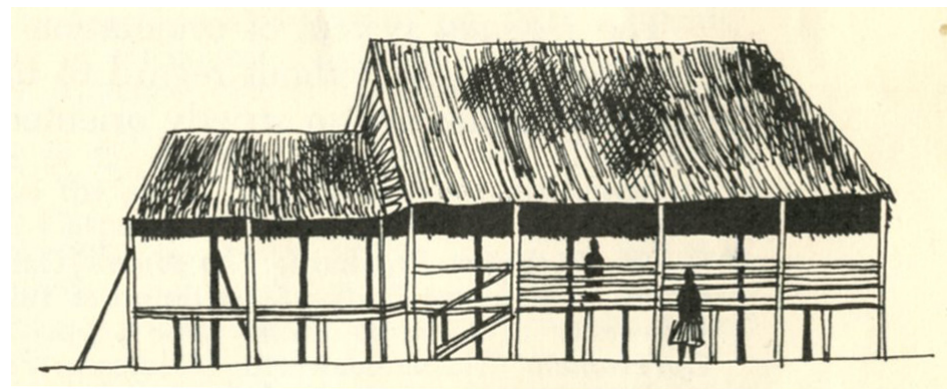
Courtyard / Verandah Shading Effectivity



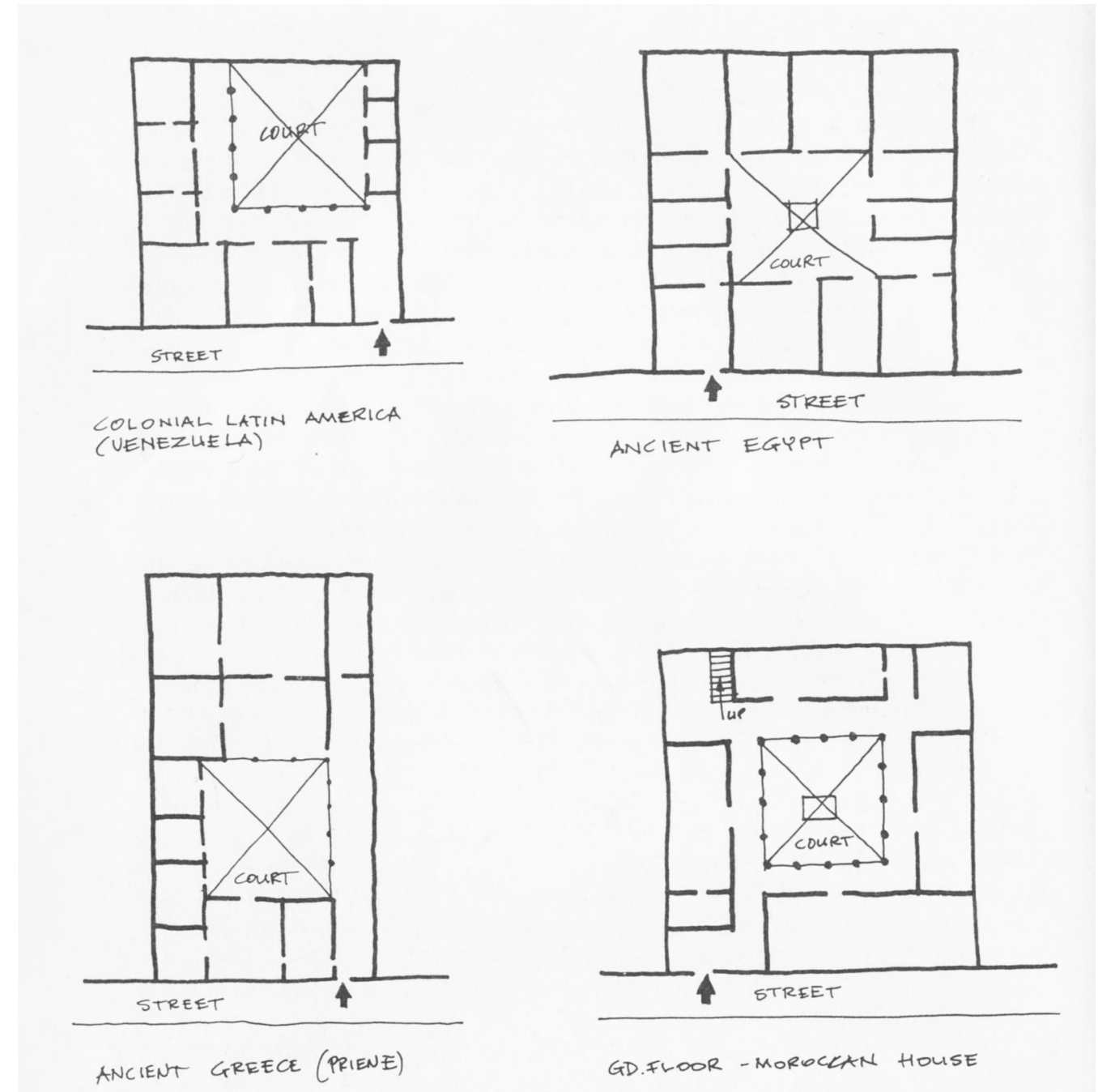
Structural Layout Variations



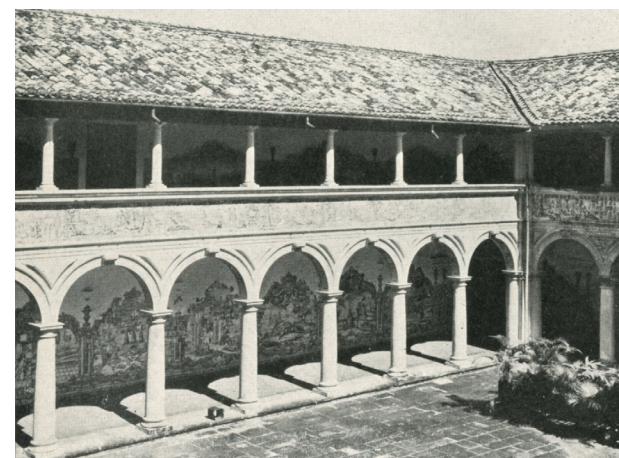
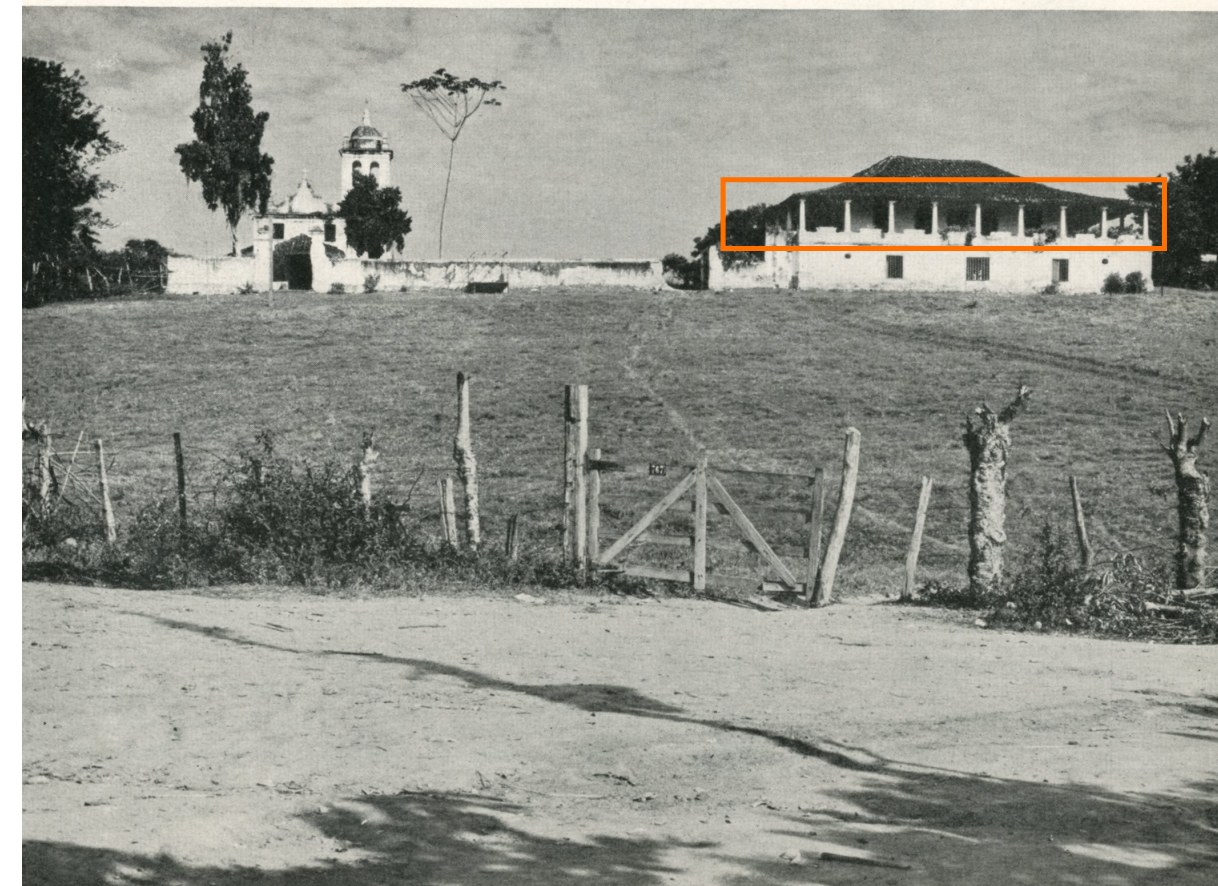
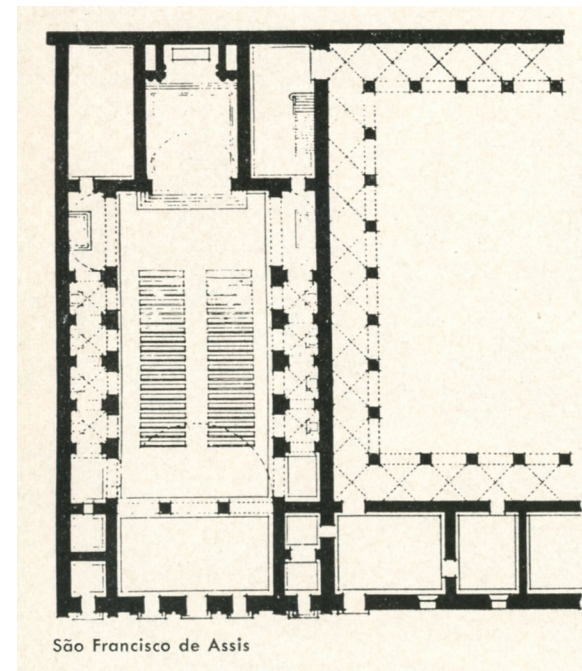
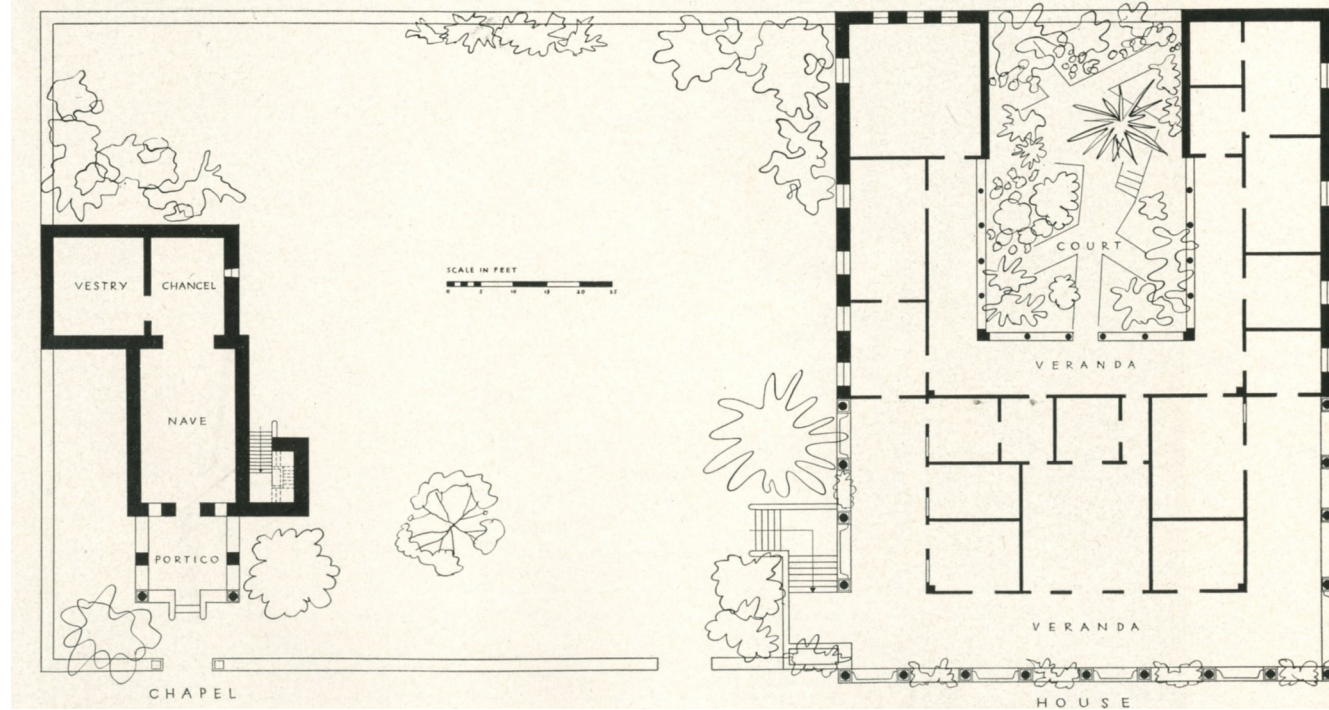
Materiality



Solid / Void Ventilation Study



Courtyard / Streetside Relationships

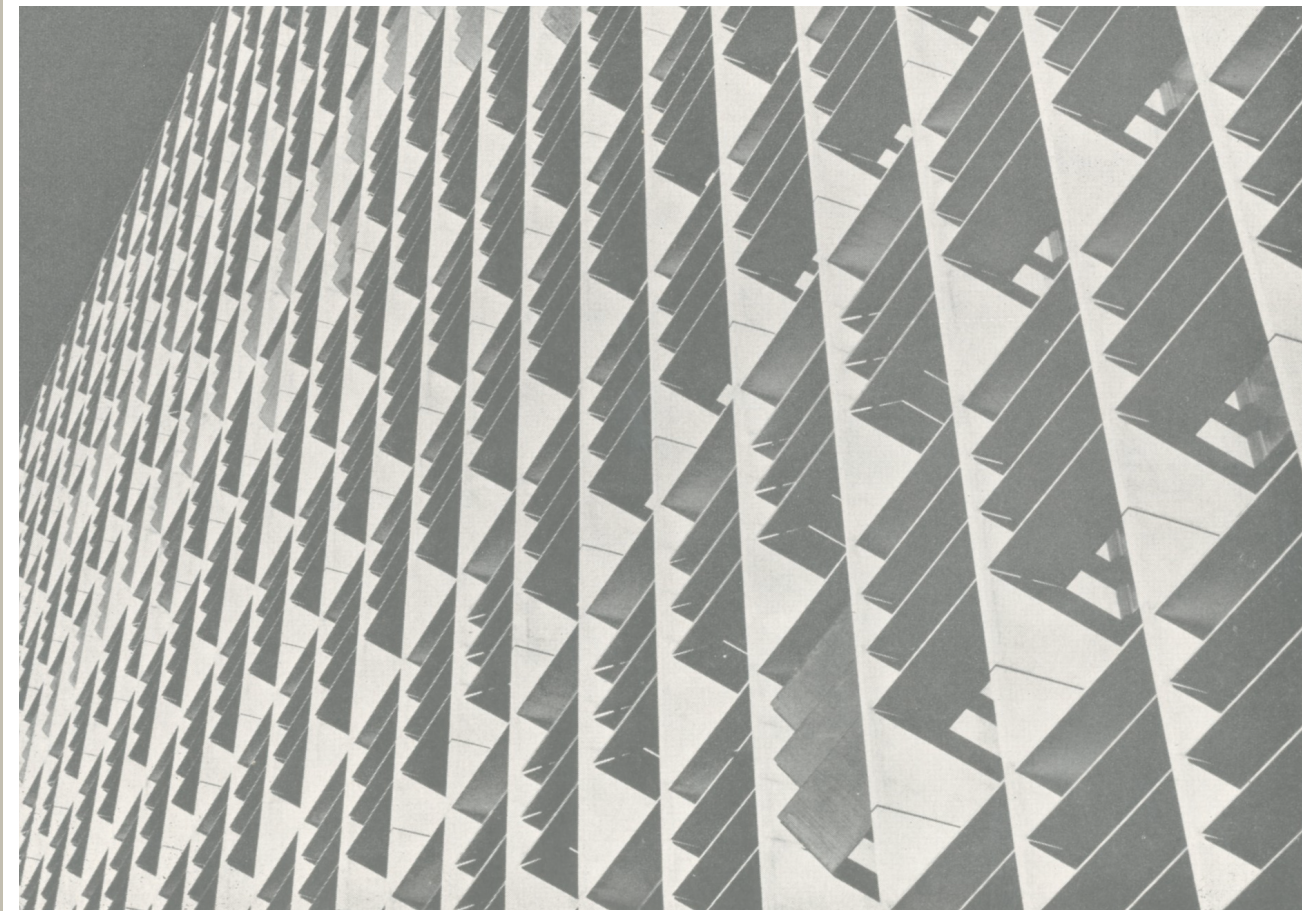
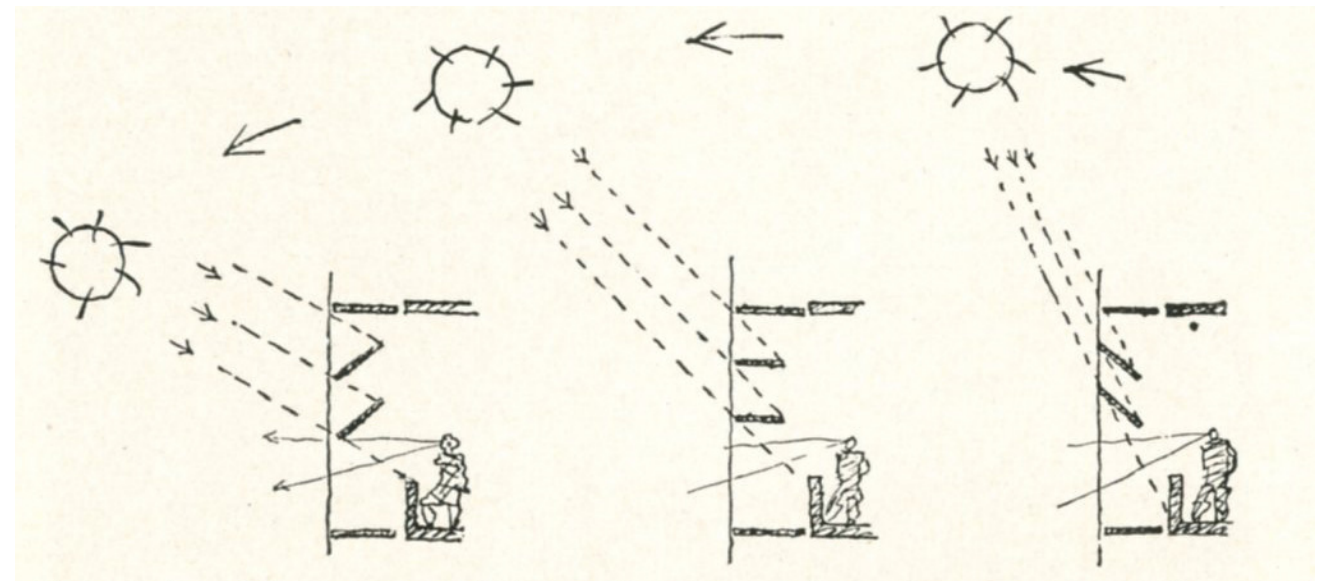


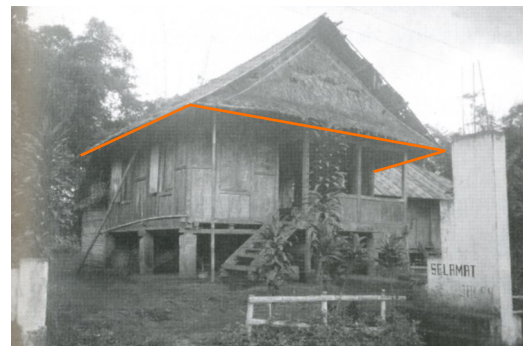
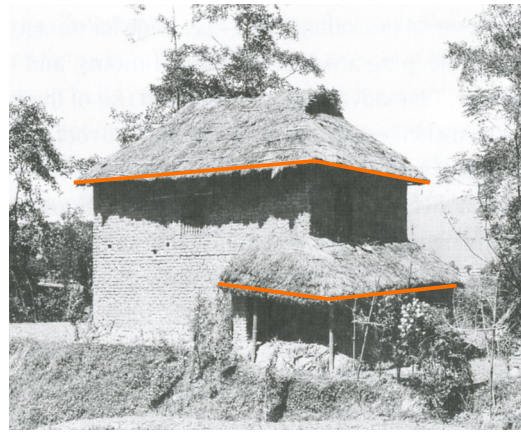
Courtyard / Verandah Relationship

Verandah Study

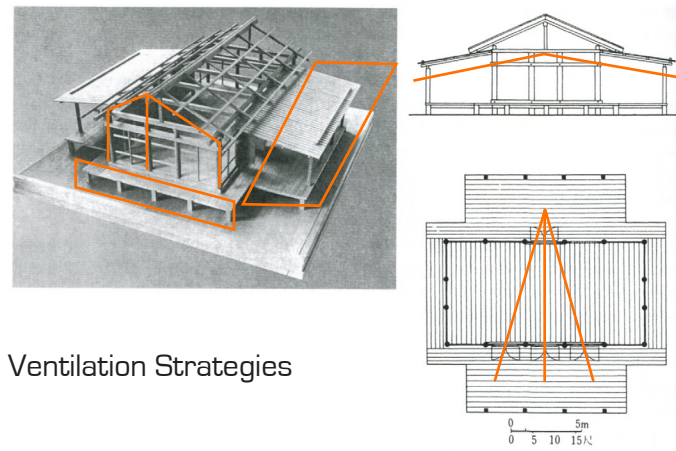


Sun Shading Study

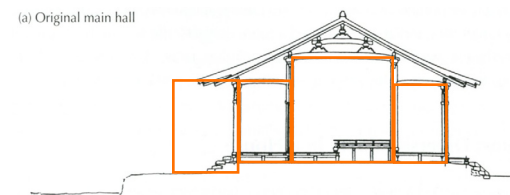
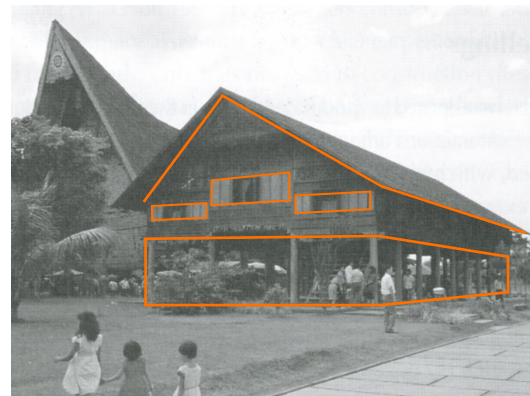




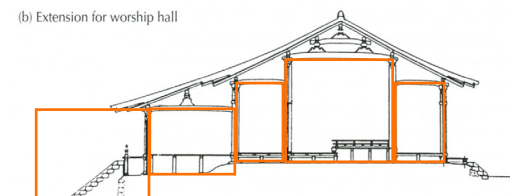
Protection from Sun



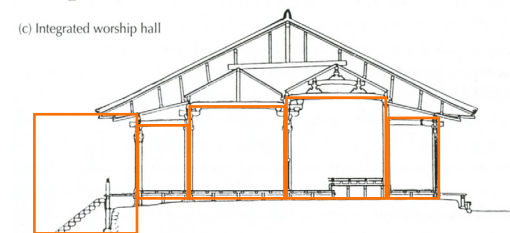
Ventilation Strategies



(a) Original main hall

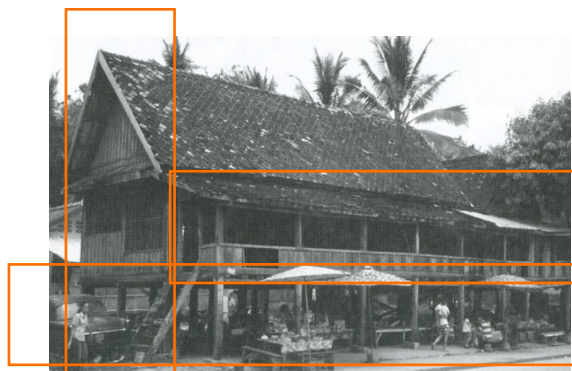


(b) Extension for worship hall

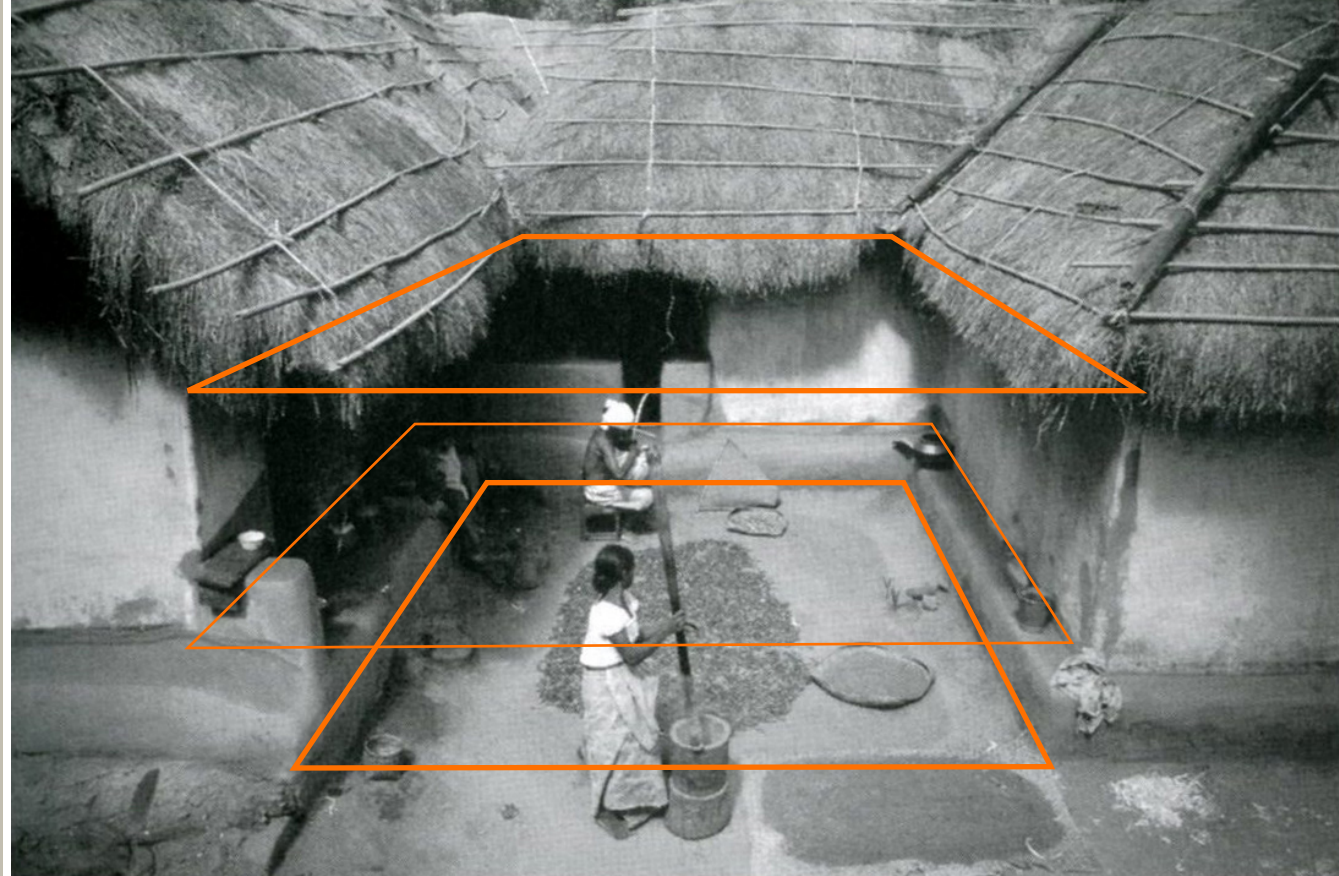


(c) Integrated worship hall

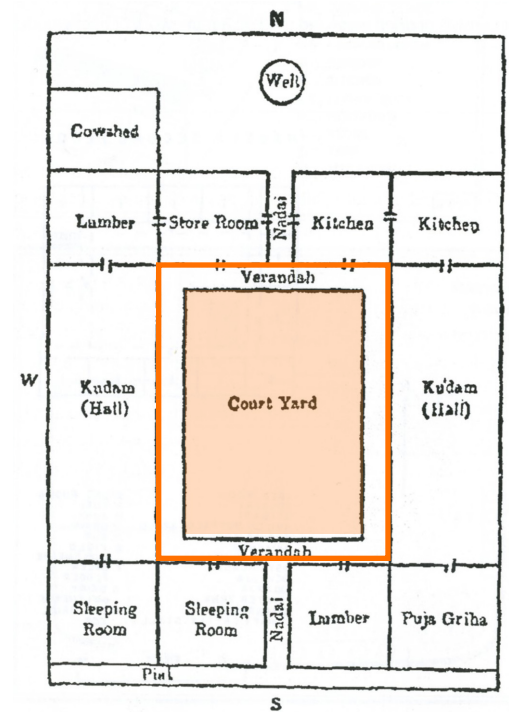
Volumetric Relationships



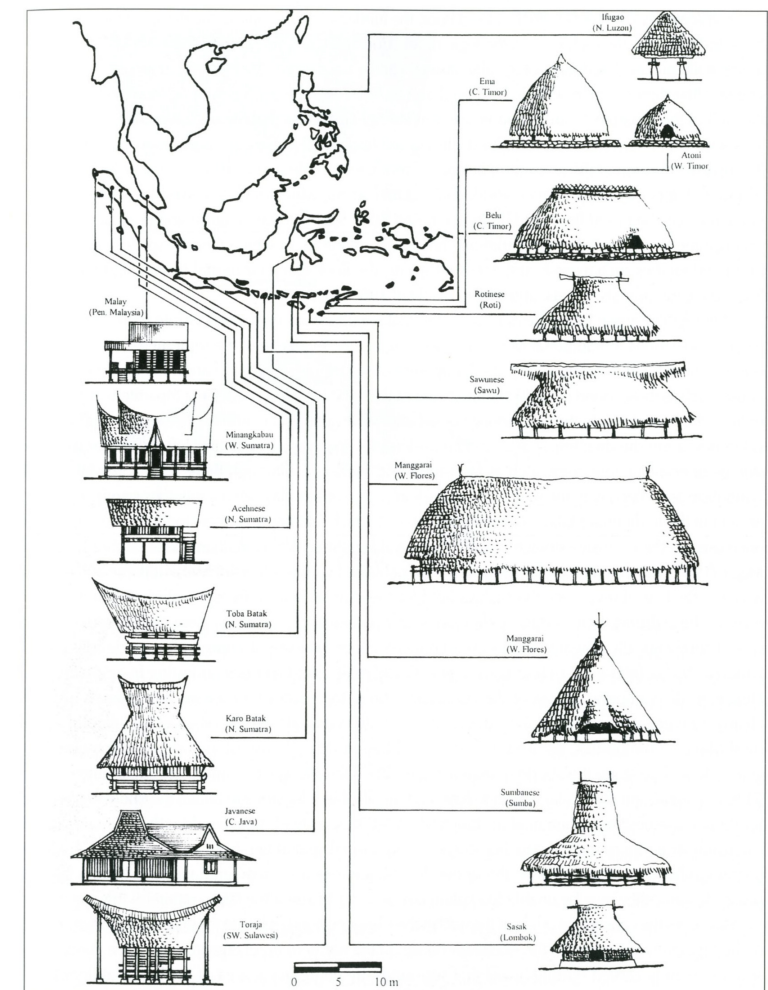
Passive Cooling

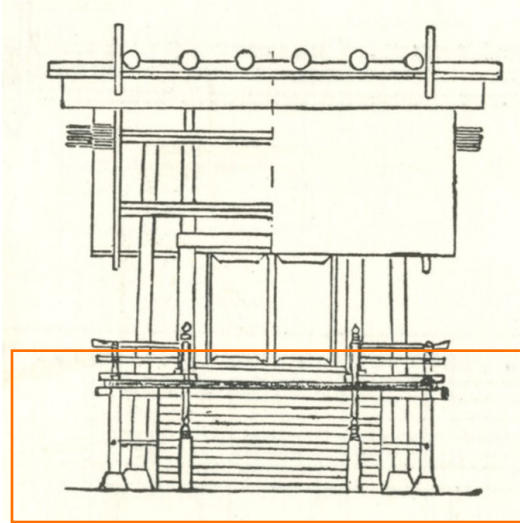


Courtyard Analysis

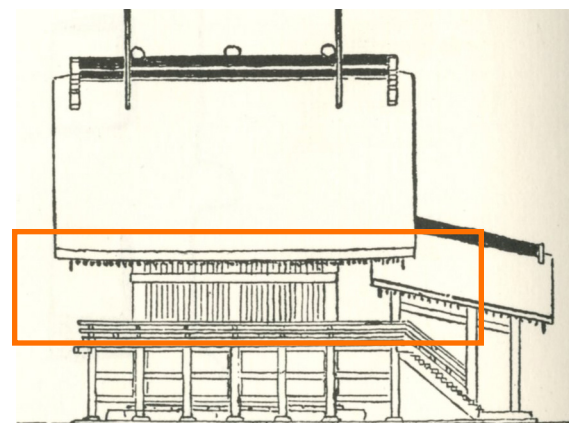
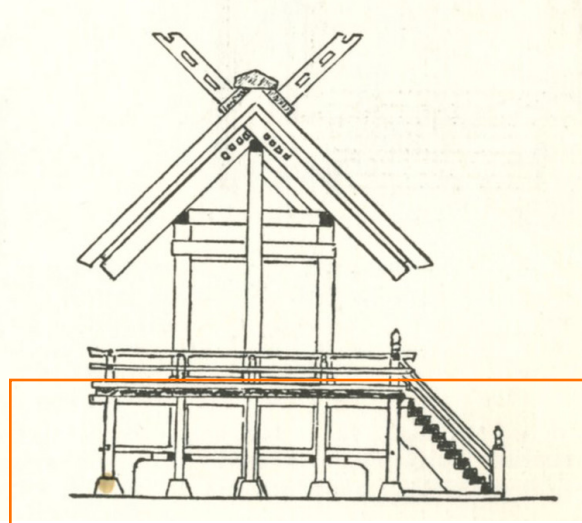


Courtyard / Verandah Relationship

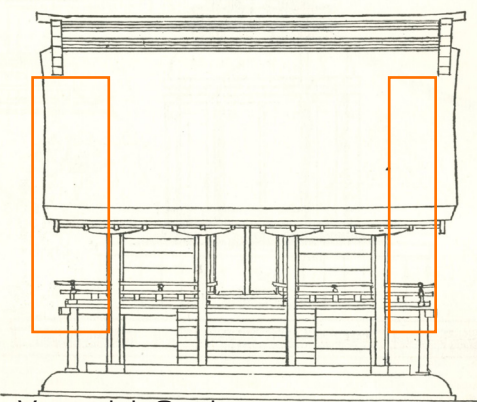
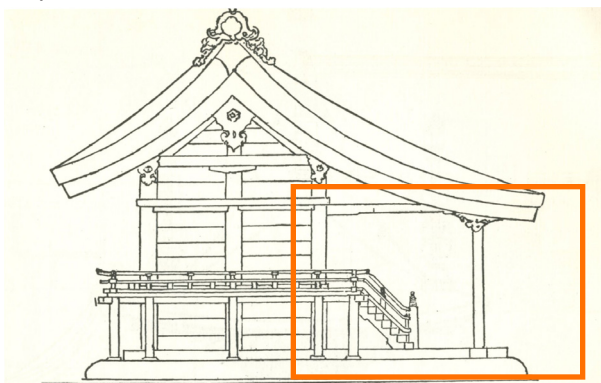




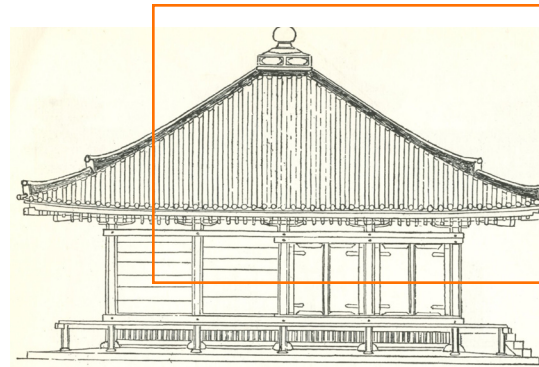
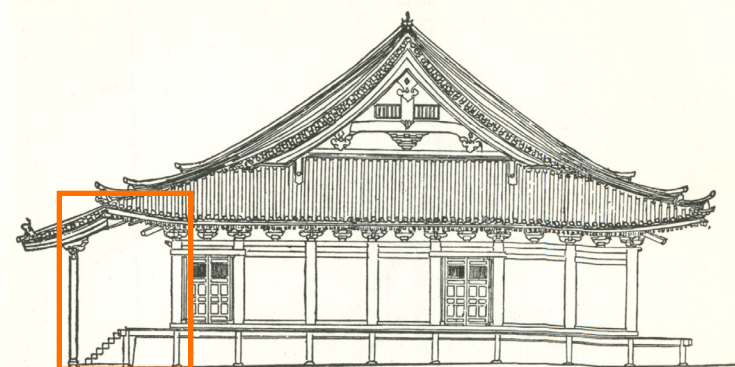
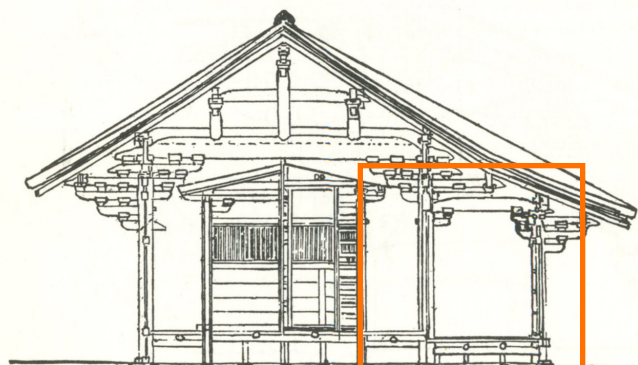
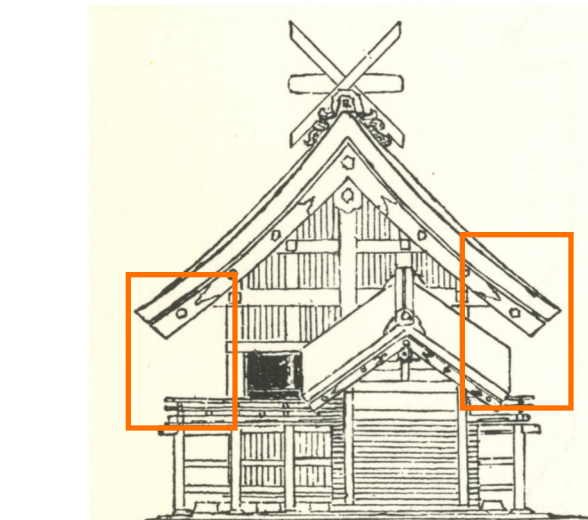
Raised Floor



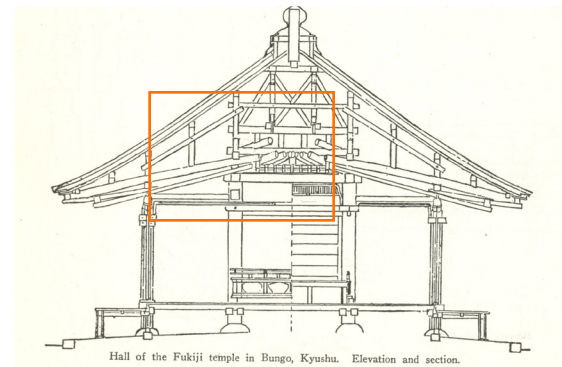
Open Porch



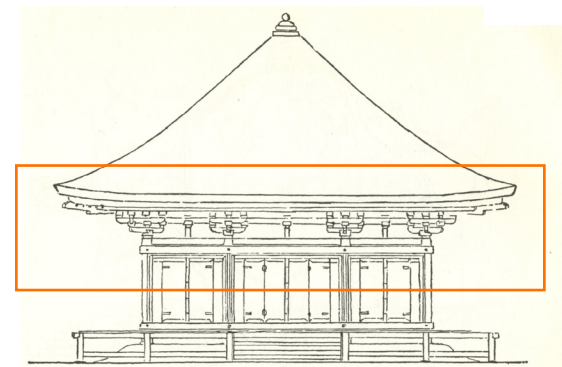
Verandah Study



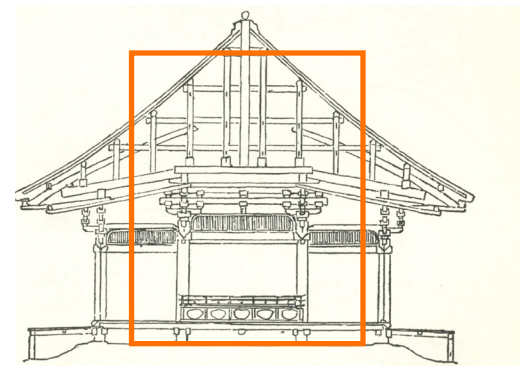
Pitched Roof



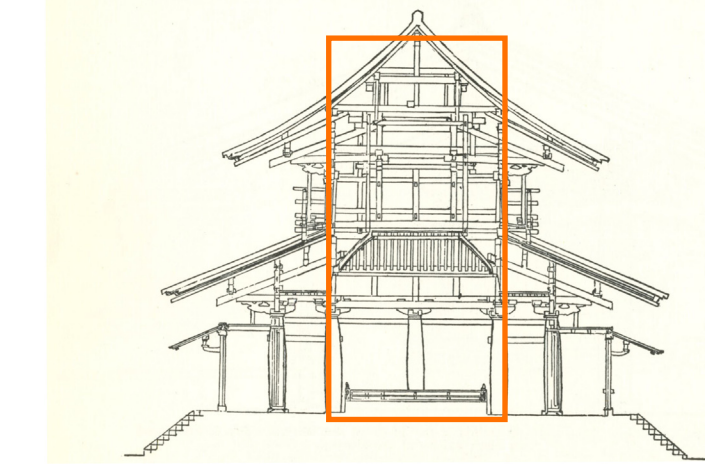
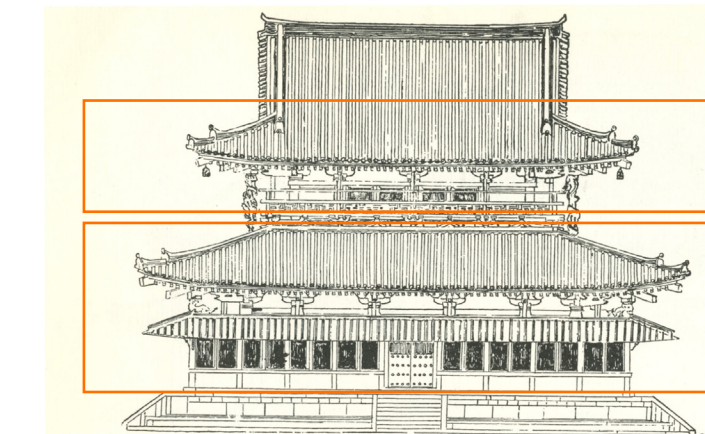
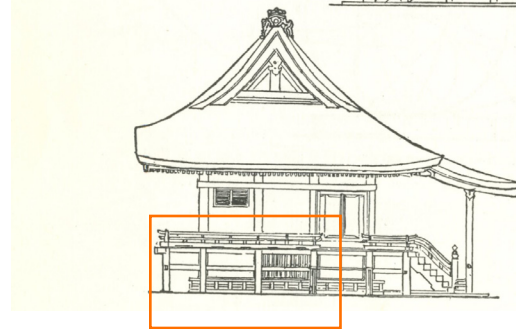
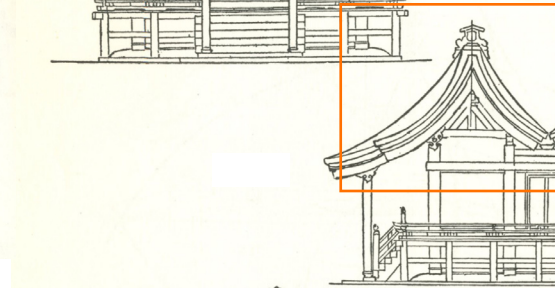
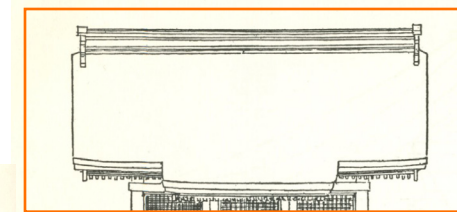
Light Materials

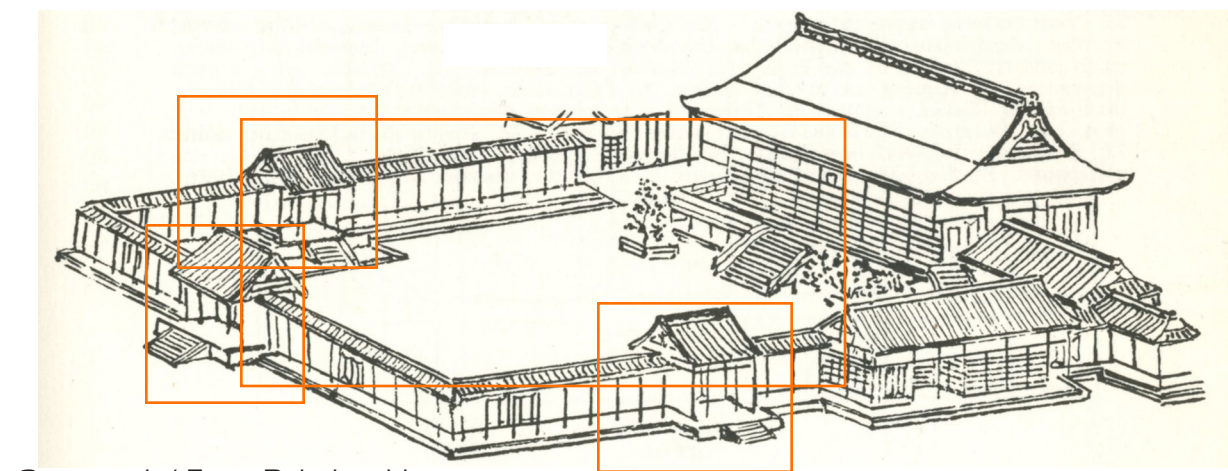
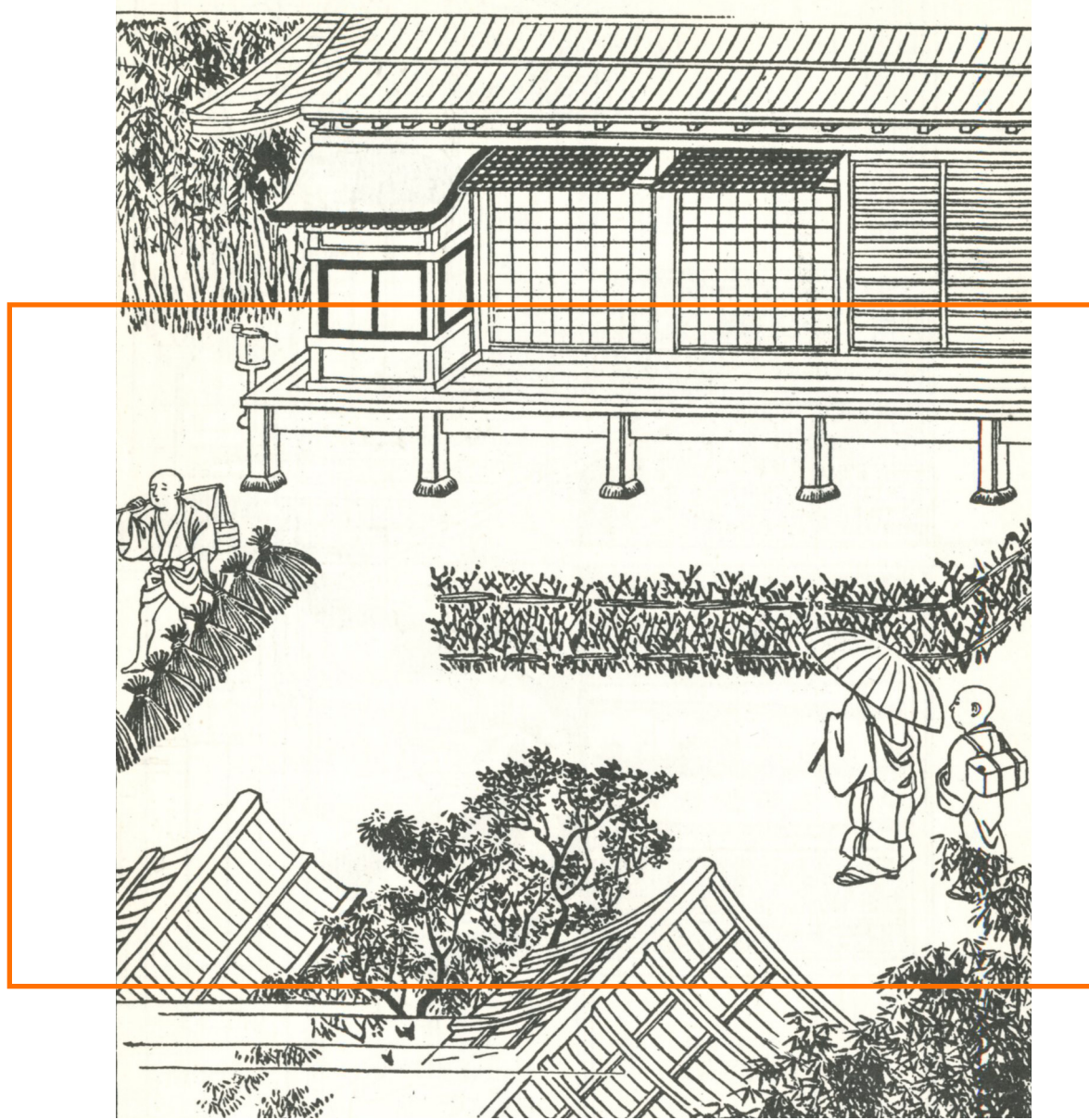


Overhang

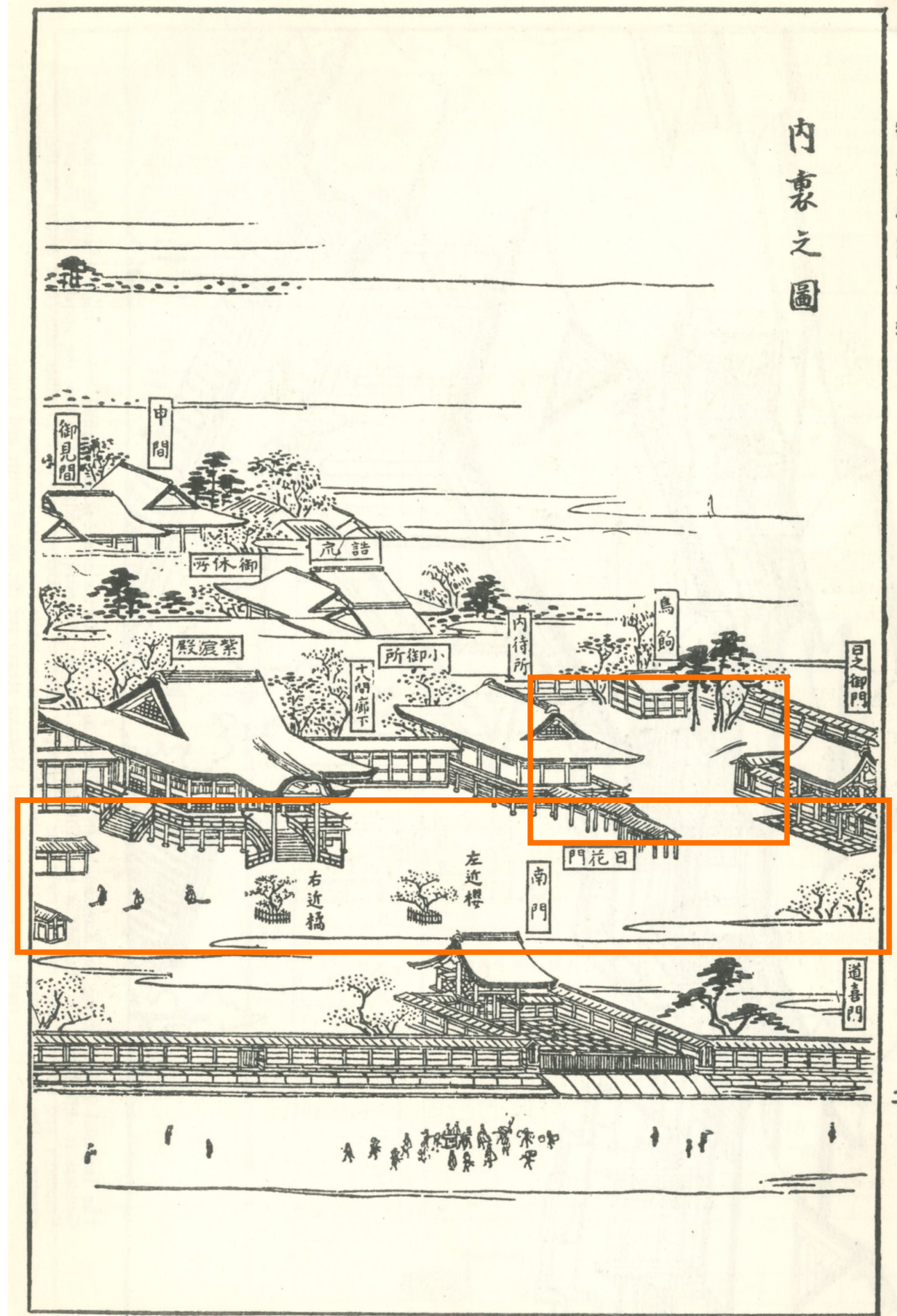


High Ceiling Height





Courtyard / Entry Relationships



Imperial Palace, Kyoto. Front gate and Shishinden.

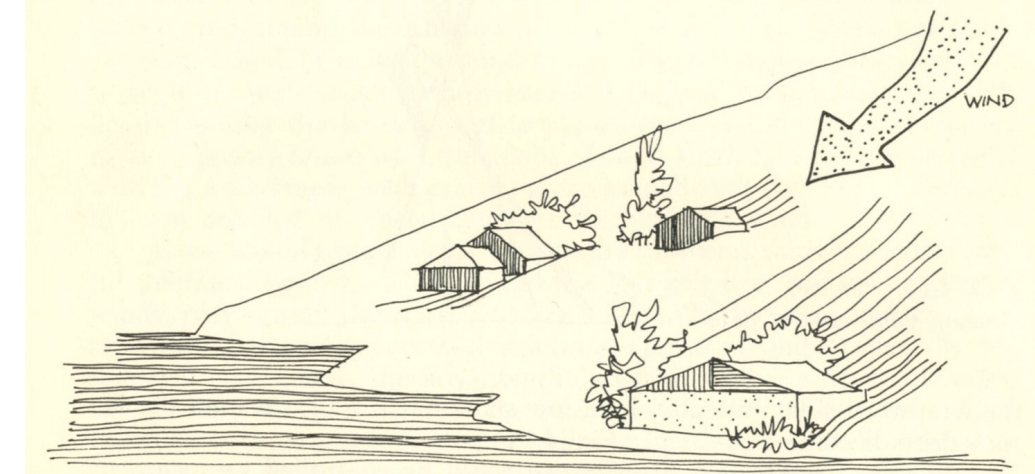
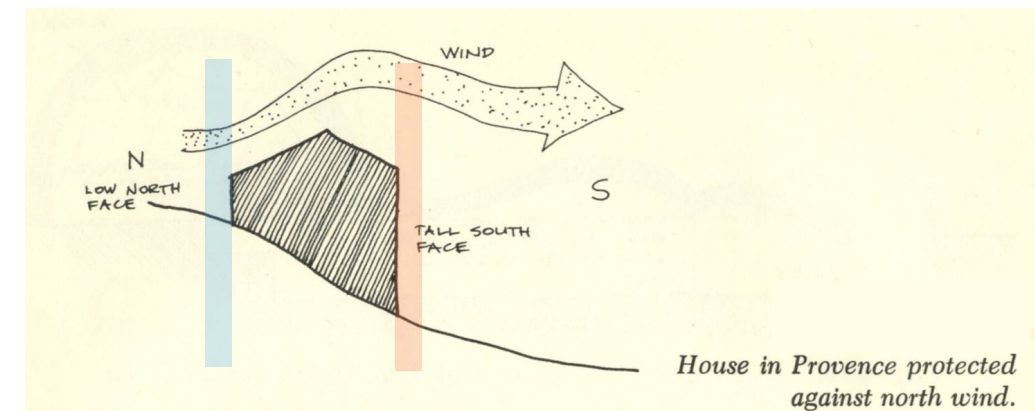
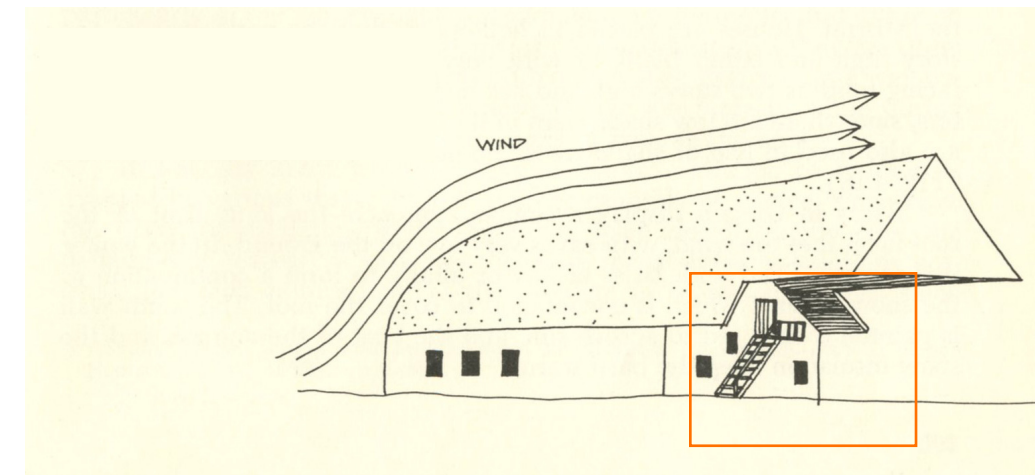
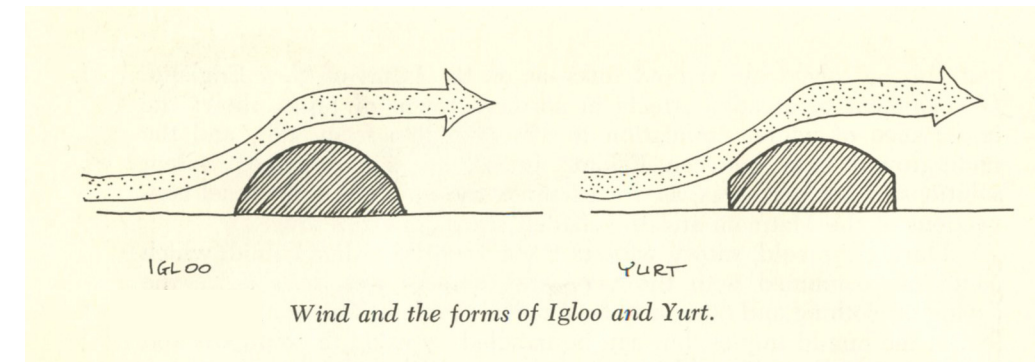
Case Study Series B

The following case study series examined cultural passive design strategies practiced within areas of the globe that share similar climatic traits to those of Fargo, ND. Case Study Series B is composed of cultural building practices found within cold climate zones throughout the world.

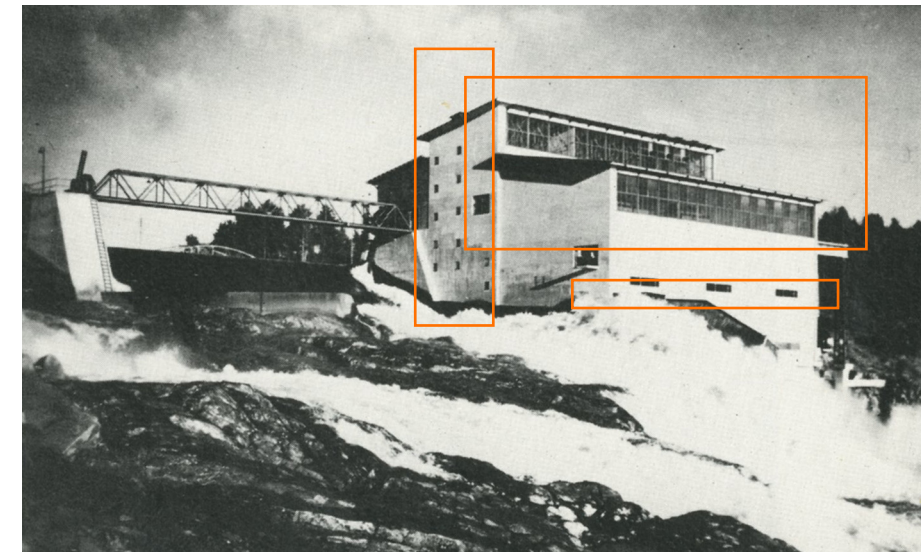
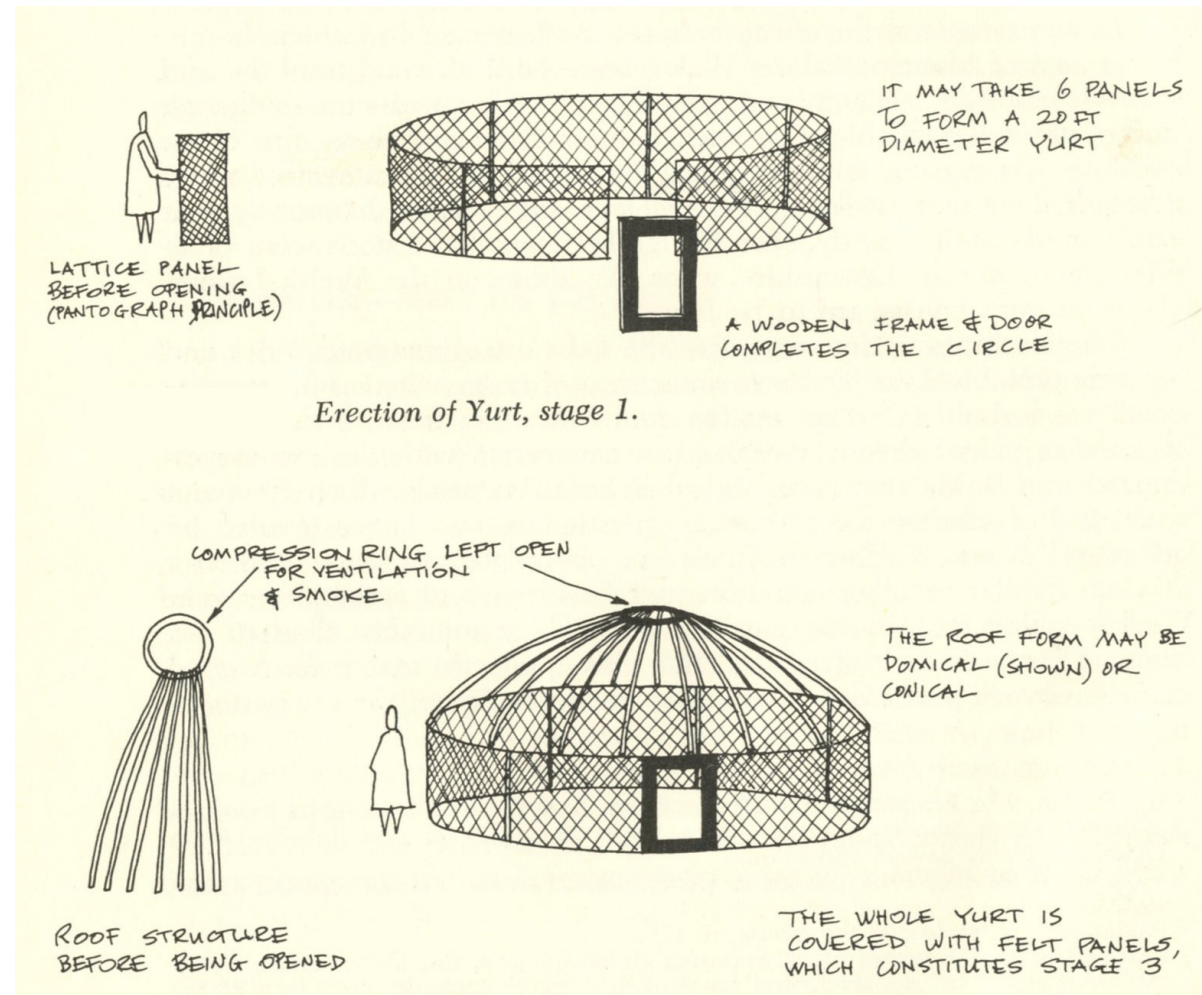
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SITES CHOSEN

Sites all across the globe were researched in order to compile a comprehensive amount of data. Sites located within North America, Europe, and Asia were all picked as necessary research areas.



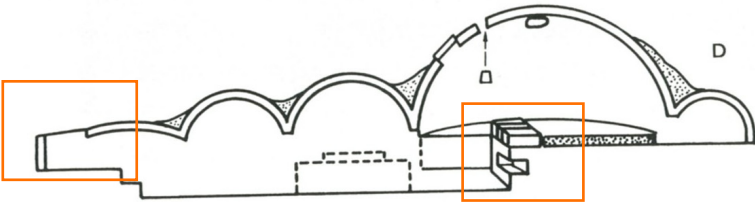
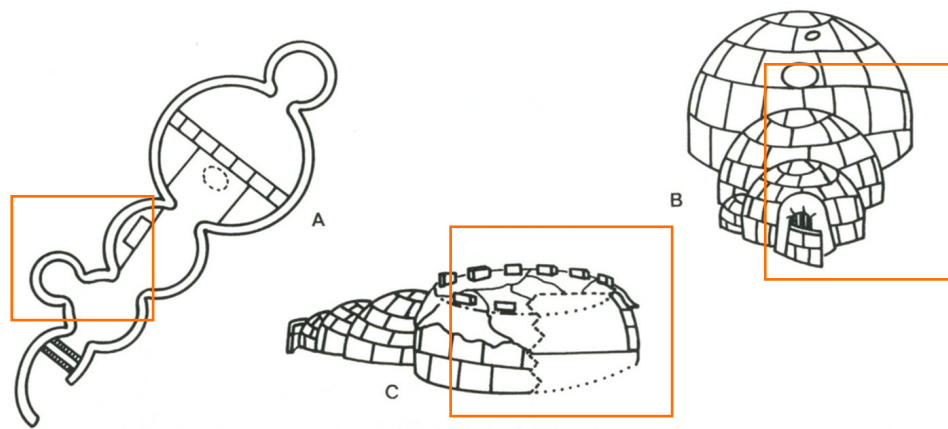
Prevailing Wind Protection Analysis



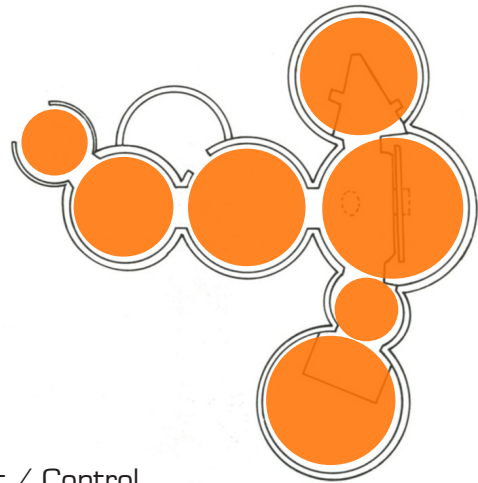
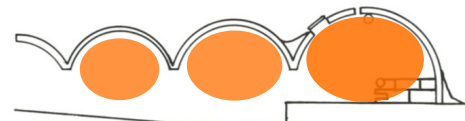
Window Importance / Placement



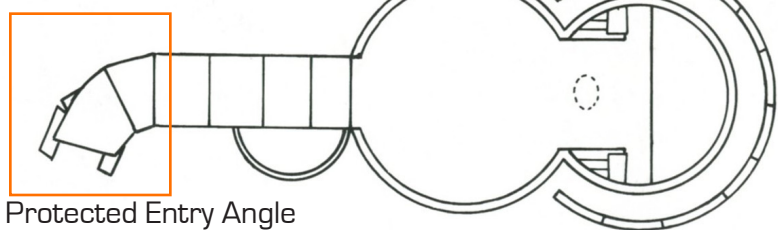
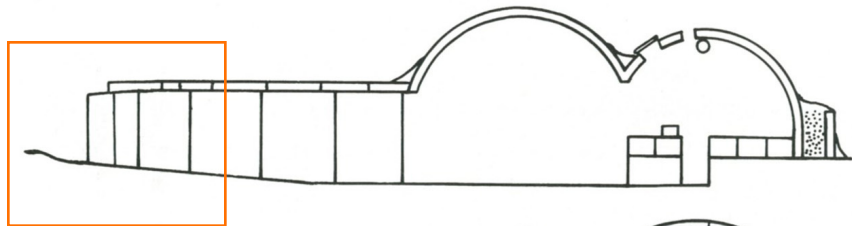
Urban Site Placement / Relationships



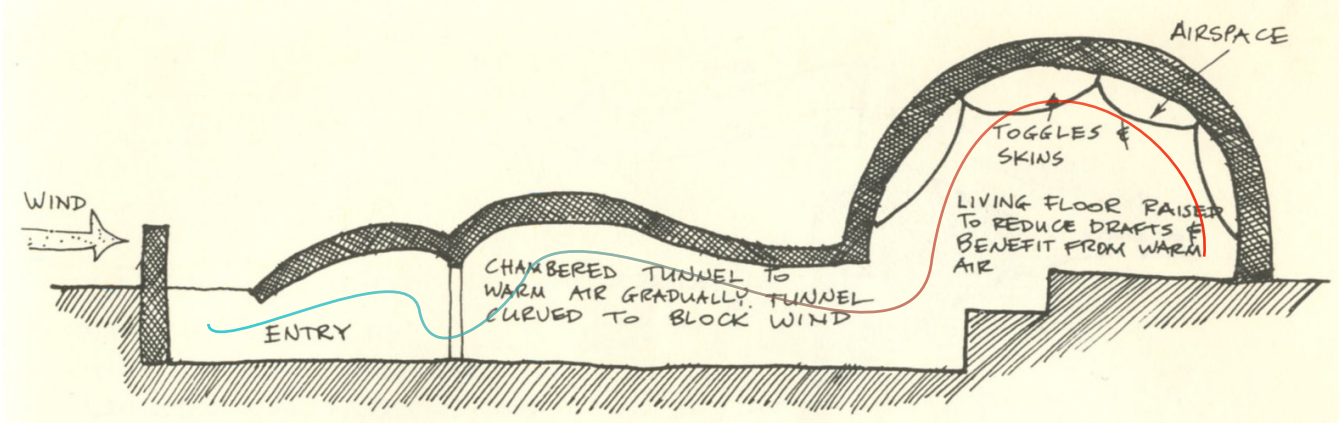
Thick / Insulated Materials



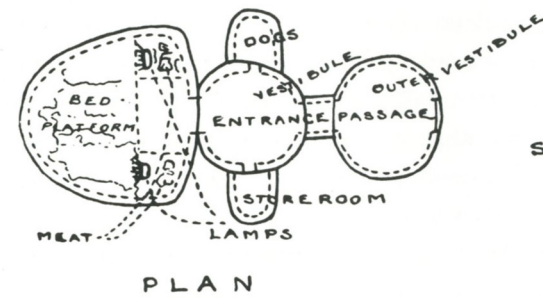
Heat Entrapment / Control



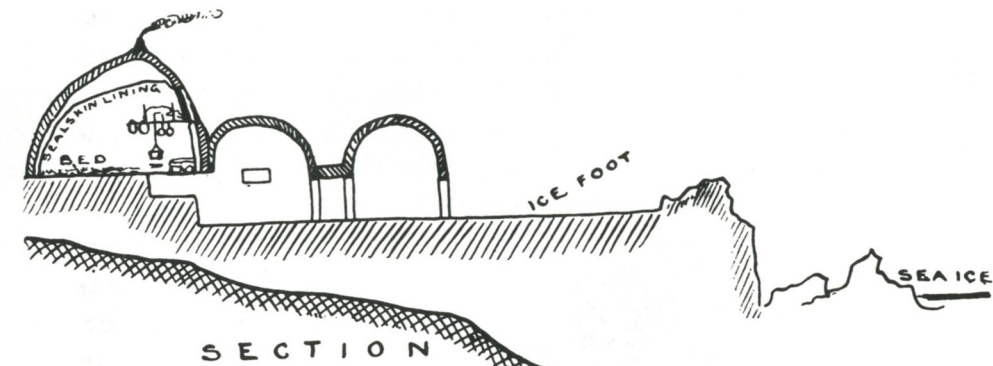
Wind Protected Entry Angle



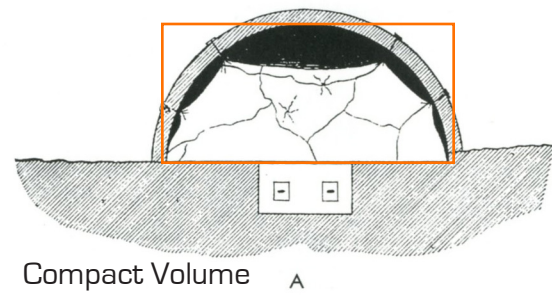
Air Flow / Heat Accumulation Study



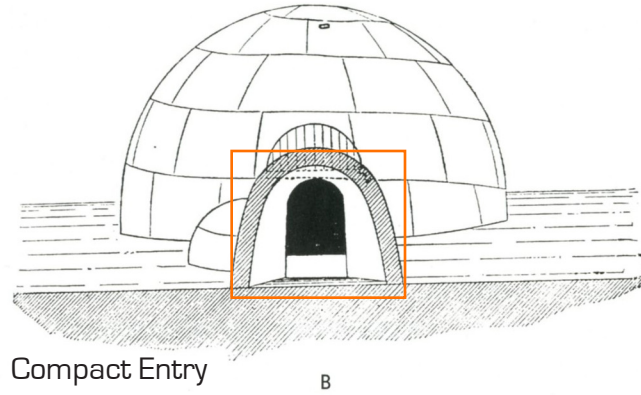
PLAN AND SECTION OF SNOW IGLOO (IGLOOYAH) AT PETERAHWIK MAR. 1895



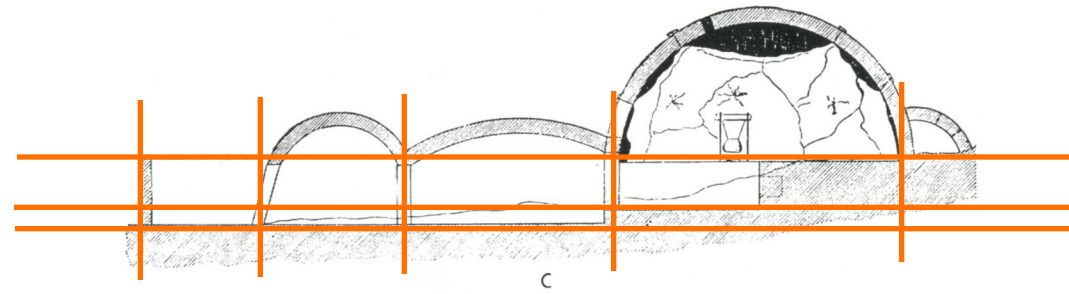
Spatial Functions Relationships



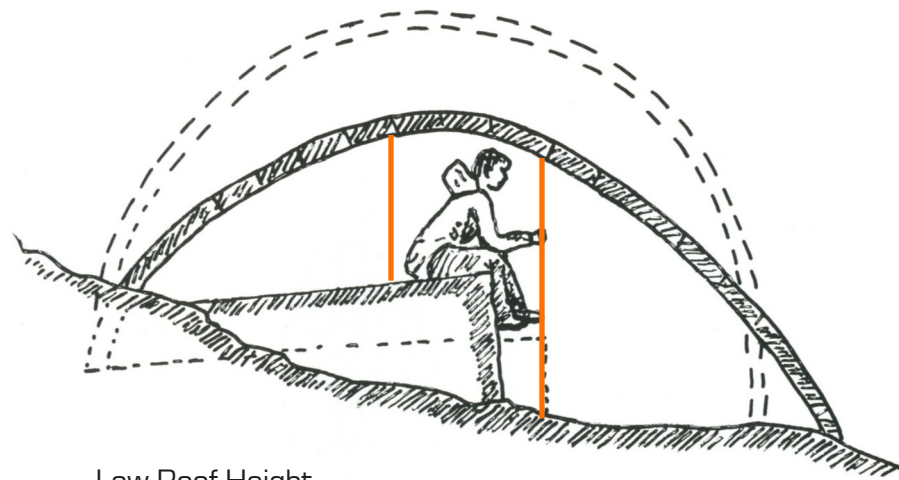
Compact Volume A



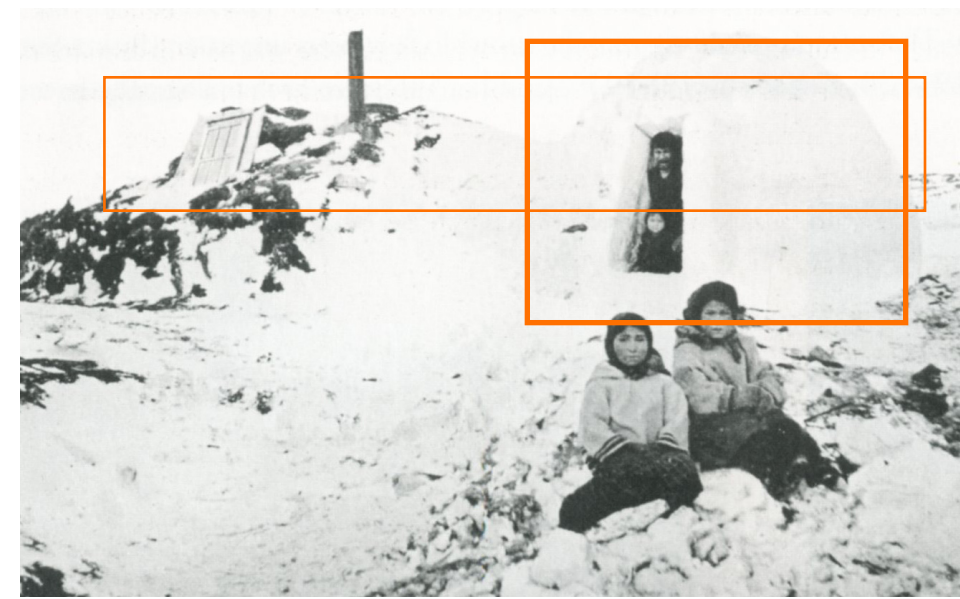
Compact Entry B



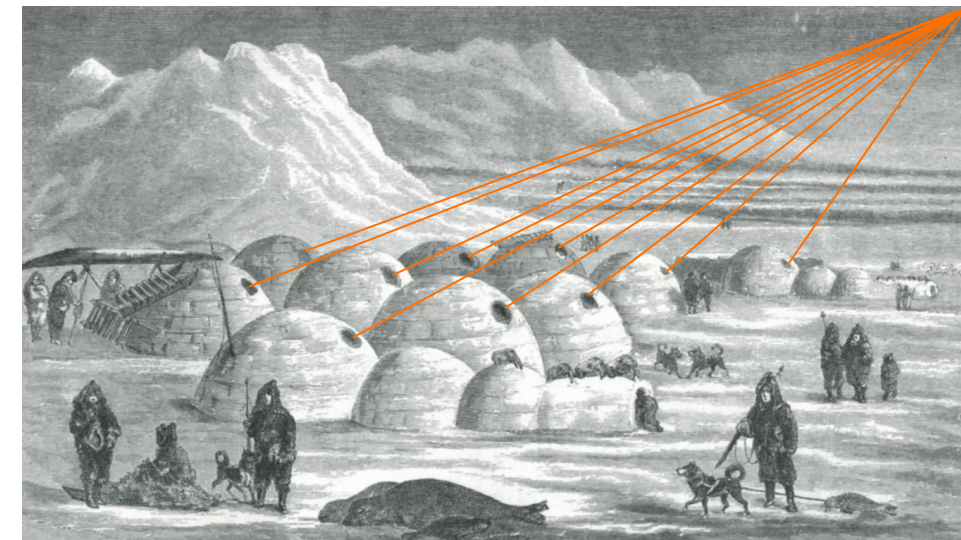
Spatial Relationship Analysis C



Low Roof Height



Offset Entry Condition



Window Orientation



TYPOLOGICAL
RESEARCH

RESULTS

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SUMMARY

Researching case studies that share similar project typologies and ambitions was an exercise that inspired new thoughts and ideas, lent insight to design techniques that have been successfully established in previous instances, and ultimately allowed for many aspects of this project to grow and ascertain a higher level of professionalism and validity.

The three case studies researched- the Centro Gallego de Arte Contemporaneo, the North Dakota Heritage Center expansion, and the Netherlands Architecture Institute- all align with the theoretical premise / unifying idea of the project. Although the subject matter housed within each of the cases varied, the underlying principles and building practices executed within the designs depicted ideals that that should be sought after in any comparable typology.

I have found that successful museum designs are generally much more complex than a building that simply houses interesting displays. Museums should act as a cultural and historical backbone for the community, providing opportunities for public participation, interaction, discovery, research, education, and growth. The collections housed in these facilities are available to the public so that the people within the community and visiting the community may find a connection to one another, to themselves, and to their place. In the same manner, the design itself must find connection to its

surrounding context. Most apparent in the cases of the Centro Gallego de Arte Contemporaneo and the Netherlands Architecture Institute, the designs find common ties to the existing buildings, the surrounding environments, and the cities in which their sites are located. At the same time, the designs themselves are ultimately unique and perform as place of discovery.

In the case of the North Dakota Heritage Center expansion project, the configuration of the programmatic elements play a defining role in how people move, interact, and learn in the building. The community is drawn together as a whole in the main gathering space and then sent out to explore and learn as they please. Hallways and corridors within the building are designed as centers of learning, continually exciting peoples' interest and curiosity. To a great extent, each project shared these spatial relationships and paths of circulation. Designing in such a manner places significance to each space, creating a truly meaningful design.

It is by these connections and ideals that a successful design for the project will be achieved. An awareness of path, place, culture, and self will sculpt the cornerstones of the design.

Historical Context

History of Fargo

The Northern Pacific Railroad Company was established on July 2, 1864, after President Abraham Lincoln signed and approved an Act of Congress that would effectively span a railroad route from Lake Superior to Puget Sound. When the route approached the border between Minnesota and North Dakota, a suitable location for the railroad to cross the Red River needed to be selected. It was believed that the selected site would become the next large city west of the Minneapolis / Saint Paul area. Scouts were sent out to find a suitable location for the crossing, and due to knowledge of frequent flooding of the river, areas of the highest embankments to the Red River were preferred. The Northern Pacific finally secured the land on both sides of the Red River in 1871. It is reported that within one month's time Moorhead was laid out, 411 lots were sold, and two hotels had been built.

Two primary communities in present day Fargo developed after the land was secured; one named "Fargo in the Timber" that was nestled along the banks of the Red River and the other called "Fargo on the Prairie" which was constructed in the general area of the Broadway and Main Street intersection. The first inhabitants of the area were mostly surveyors and engineers of the railroad along with their families. The structures set up at the time were mainly tents. On February 14, 1872 the newly formed town was officially named Fargo, after William G. Fargo, a beneficiary of the railroad and a member of the Wells-Fargo Company.

The town continued to flourish until the Fargo fire of 1893 devastated the town. Starting along NP Ave, the fire continued north along Broadway to Fifth Ave North. An estimated 140 homes and 220 businesses made primarily out of wood were destroyed. Before the town began to rebuild, city leaders implemented building codes that required most buildings to be constructed of brick. This event is the reason for the distinct look of the downtown area present today.

An appreciation of the theatre arts has been present in Fargo since its beginnings and a variety of theatres have come and gone throughout the years. The longest operating theatres in the area are the Little Country Theater founded in 1914 and the Fargo Theatre founded in 1925, which is still located in its original building.

The first college campus was opened to the Fargo area in January, 1892 and was named the North Dakota Agricultural College and Experiment Station at Fargo (NDAC). The campus was renamed North Dakota State University in 1960. Its location has remained the same since the bill for the original 1892 college was passed.

History of Polynesian Cultural Center

The Polynesian Cultural Center (PCC) located in the city of Laie in Oahu, Hawaii, was founded in 1963. The site's history dates back to the mid 1800's when missionaries first arrived and worked with the Polynesian people. By 1919 a significant religious temple had been built in Laie; catching the attention of surrounding islands. The vision for a school of higher education to be built in the rural community would effectively make the area the educational and spiritual center in the Pacific Islands. This vision became a reality in 1955 when ground breaking for the school commenced. Strong appreciation for traditional culture in the area led to the proposal and approval of a cultural center. Just eight years after the school was built, the Polynesian Cultural Center was built. Over one hundred missionary volunteers, with the help of skilled artisans and contractors helped to construct the center's 39 original structures.

This half century old center was created out of a strong need voiced by the public to preserve and showcase South Pacific island cultures. The cultural center was also formed to help resolve the issue of low university attendance rates. The center helps in providing educational opportunities for young adults with an eagerness to attend university. The Polynesian Cultural Center is an extension of the Brigham Young

University-Hawaii, and since the opening of the center, an estimated 17,000 students have financed their studies by working for PCC.

In its beginning stages, the center rarely filled its 600-seat amphitheater. In the late 1960's however, a newfound interest in Hawaiian culture paved the state as a significant tourism destination, and the center has been thriving ever since. Five years after its opening, the center had surpassed one million total visitors. The Cultural Center reached a new landmark when in 1977 over a million guests visited the site within one year. To date, over 30 million visitors have traveled to Laie to experience this authentic Polynesian center.

The center features an array of different traditional Polynesian customs- food, music, dance, dress, art, celebrations, and building styles- preserving native culture and educating the public about the rich Polynesian heritage. The center could be classified as a multicultural center in that it showcases micro-cultures and traditions unique to the several South Pacific islands that comprise the whole of Polynesia.

"The allure of old Polynesia lingers among the Pacific island people who demonstrate their traditional arts and crafts and perform their lively songs and dances at the Polynesian Cultural Center."

New Orleans Redevelopment as Model for Current Building Trends

A redevelopment plan for the city of New Orleans has been proposed that intends to ultimately showcase the city's rich historic and cultural heritage while at the same time designing for sustainability and protection. Careful consideration of these aspects creates a modern design that is current with the technologies of the times, but also preserves the richness of the area's heritage.

The New Orleans Principles: Celebrating the Rich History of New Orleans through Commitment to a Sustainable Future, 2005 USGBC research proposal is primarily a model for the redevelopment of the city, but it may also be studied as a method in which to design new buildings.

New Orleans is a contributing cultural hub for the United States. It is known for its food, music, art, festivals, and culture. Dense city blocks and mixed-use areas strengthen this diversity. Within the proposal, this knowledge of the city's character is seen as a crucial aspect to the success of the future redevelopment. Designing for compact, walk-able nodes serves to bring the unique people of the New Orleans area together and will allow for the city to regain and strengthen its title as a cultural well and neighborhood town of the U.S.

The proposal requests that the redevelopment honor the history of the city, while at the same time creating structures suitable for the 21st century: buildings that are durable, sustainable, inexpensive to operate, and that promote the health and well-being of the occupants.

An argument arises that many newer homes in the area were not suitable to be occupied due to their dependence on electricity. On the other hand older houses that were built with a sense of site and sense of place were able to be occupied. Older homes in the New Orleans area addressed solar gain through the use of porches and overhangs, and stayed lit throughout the day by sunlight due to thoughtfully placed windows. To avoid overheating many of the houses utilized high ceilings and raised ground floors, and designed for cross ventilation. Cisterns for collecting rainwater were common passive design strategies that were incorporated into the building. By maintaining livable, passive strategies in building design a smarter, more efficient, and safer building will be created. When building in a location like New Orleans, the proposal takes it one step further and suggests designing for disaster. Using the passive strategies present in older homes as guide should not significantly increase construction costs and will encourage a unique, flavorful, functional architecture that coincides with the abundant history and culture of the area.

THESIS PROJECT GOALS

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Thesis Project Goals

1. To develop a comprehensive and unique theoretical premise and unifying idea based on a need to change and/or improve a social issue.
2. To acquire a thorough amount of both qualitative and quantitative research that is successfully transformed into a detailed thesis proposal allowing for a path of design to explore.
3. To remain on a productive pace and to utilize all resources made available, allowing for the opportunity to explore all possibilities.
4. To create a unique, well-developed typology that encompasses successful aspects of similar typologies, but also constructs new, interdisciplinary approaches to said building types.
5. To document each stage of the design process in order to show a linear progression of the development of the design.

6. To compile all research, documentation, and final products into a thesis book that is useful to future researchers and people with related interests.

7. To create a design solution that aids in the growth and continuing development of the historic, cultural, social, and sustainable needs of our time.

8. To produce a complete and professional graphic presentation of the finalized design that effectively communicates the theoretical premise and unifying idea of the project.

9. To produce a project that embodies all elements of my education developed over the past five years, and highlights my strengths as a designer. The project will be a tool in which to market myself as an upcoming professional.

SITE ANALYSIS

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Site Analysis

Narrative

As I sat at my studio desk, I watched the snowfall slowly begin to clear. I gathered up my sketch book, camera, film, and my hat and gloves: the essentials. The brisk Fargo air came over me as I left the warmth of the school behind. The sound of the snow crunching beneath my feet made a bold effort to drown out the sounds of passing cars and university buses as I forged the path to the site.

Along the way I took a moment to enjoy the different aromas emanating from the various restaurants on Broadway. With the sun now shining I continued my journey. As I approached the transit station I knew my destination lay just ahead. The journey seemed shorter than I had expected. With this thought in mind I was able, for the first time, to truly appreciate the close relationships the site would certainly share with the surrounding amenities.

I smiled as I viewed the site for the first time. "I can only imagine how this place will transform during the upcoming months," I thought to myself. The site in its present state is destined mostly as an area for vehicle parking. This is a common occurrence of any space still available in the downtown area as parking is limited. My attention moved from the paved lots to the existing buildings of the site. Two small shops sit awkwardly in the middle of the site; one of them abandoned and the other an adult book store. I chuckled to myself at the current condition of the site knowing that as of yet, its true potential had not been recognized. There is much work to be done.

The low profiles of the buildings surrounding the site provided me with a sense of comfort and ease, and their varying tan, brown and red brick facades created a feeling of warmth amongst the winter cold. There was a unique sense of place about the area, and I already felt at home.

After gaining an understanding of the site itself I decided it was time to explore the surrounding area. I found myself drawn once again to the fragrances of the different local restaurants home to the area. As I recollected myself, realizing that now was not the time to eat, I discovered the new public library. Its architectural presence within the area was refreshing. Again I felt a sense of excitement, imagining the relationships that this building and the new design will share. I continued east, away from the site, and caught the first glimpse of the natural environment that I had seen in some time. Trees lined the banks of the Red River along with bike paths and walking trails. I took comfort in realizing that the opportunity to escape the urban environment was but a short walk away.

I found myself excited with the newly discovered potential of the site. I understood now what the site is and what it can be. With the cold nipping at my nose and a smile lighting my face, I packed away my camera and began the journey back.

Views and Vistas



The site provides views framed by the surrounding buildings of the area.

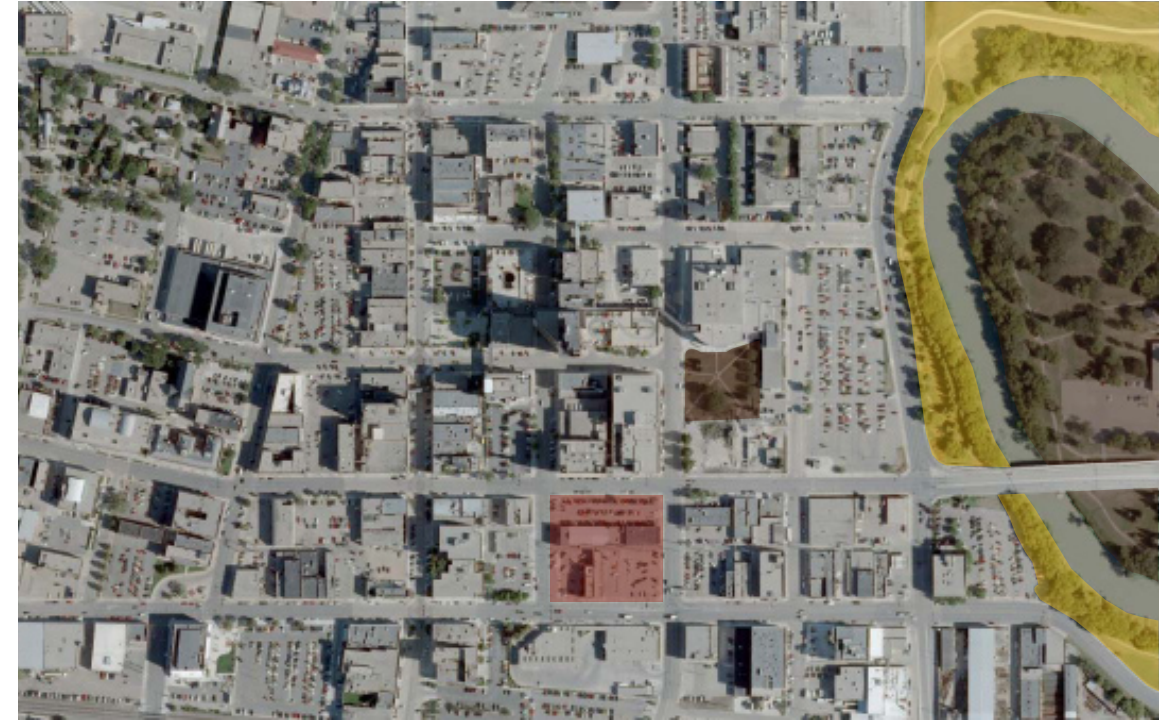
Looking east from the site one will see bordered views of the Red River, the neighboring city of Moorhead, Minnesota, and Moorhead's unique Hjemkomst Interpretive Center.



Looking northwest of the site one will find glimpses of Broadway, the backbone of downtown.



Existing Textures in Plan



The site is surrounded by the paved streets and sidewalks of the downtown area.

The outdoor space to the northeast shared by the Fargo Civic Center and the Fargo Public Library, along with the Red River to the east provide the natural environments in closest proximity to the site.

Existing Materials

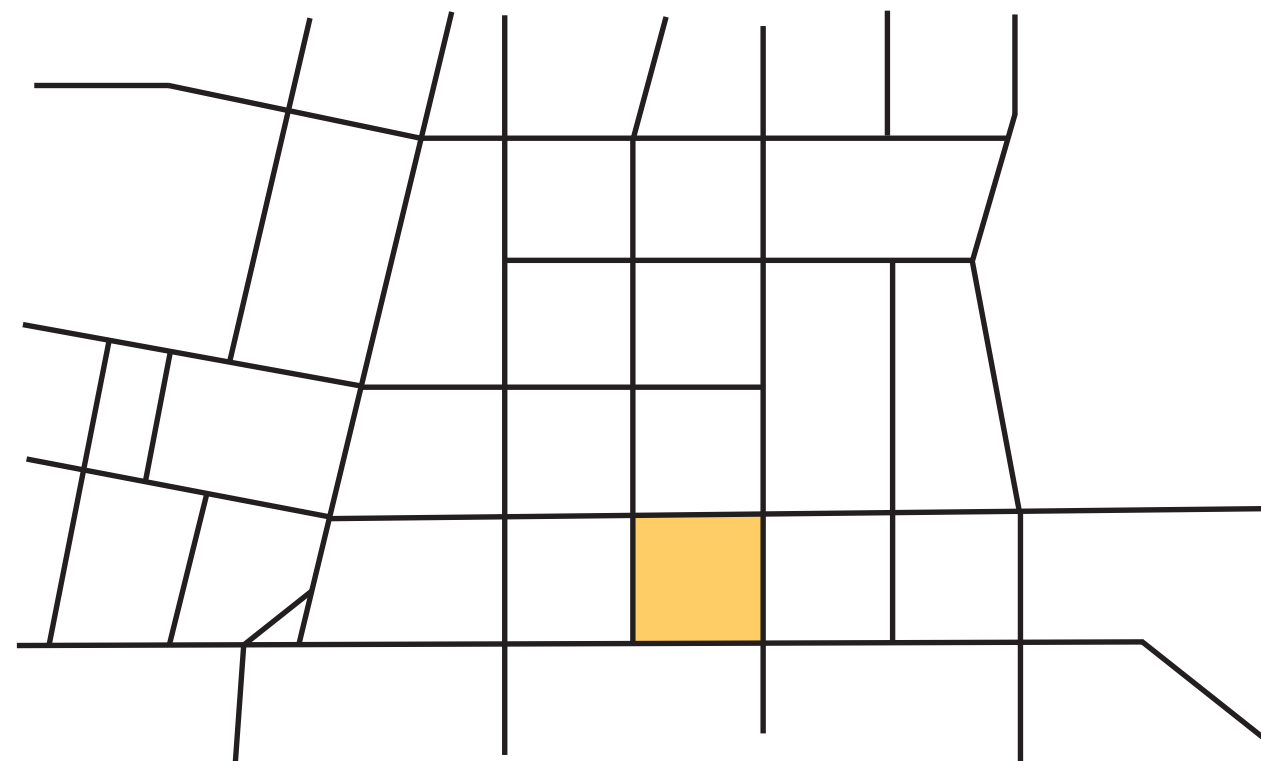


The site sits on the outer edge of Fargo's historic central business district known as the downtown area.

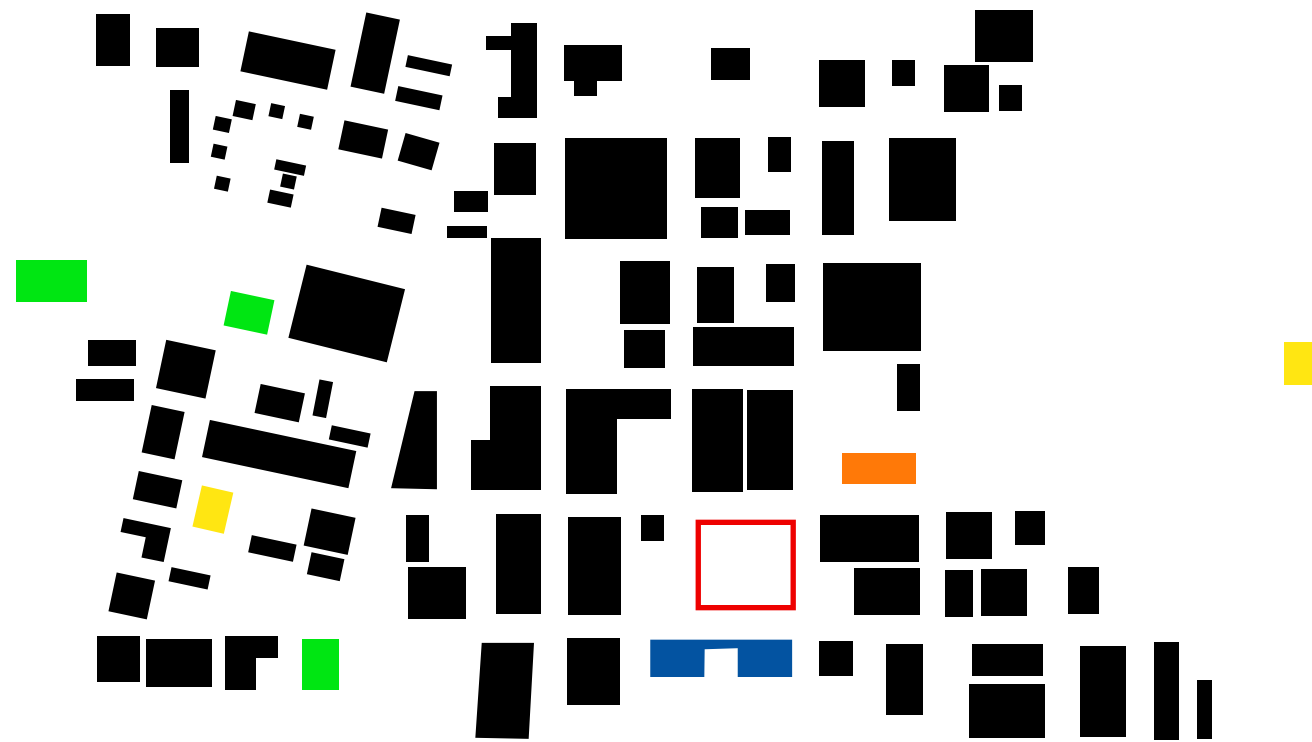
The buildings surrounding the site have primarily brick exteriors although stone and store front glass are also quite common materials.

Variations of tans, browns, and reds make up the majority of the area's color palette.

Existing Grid

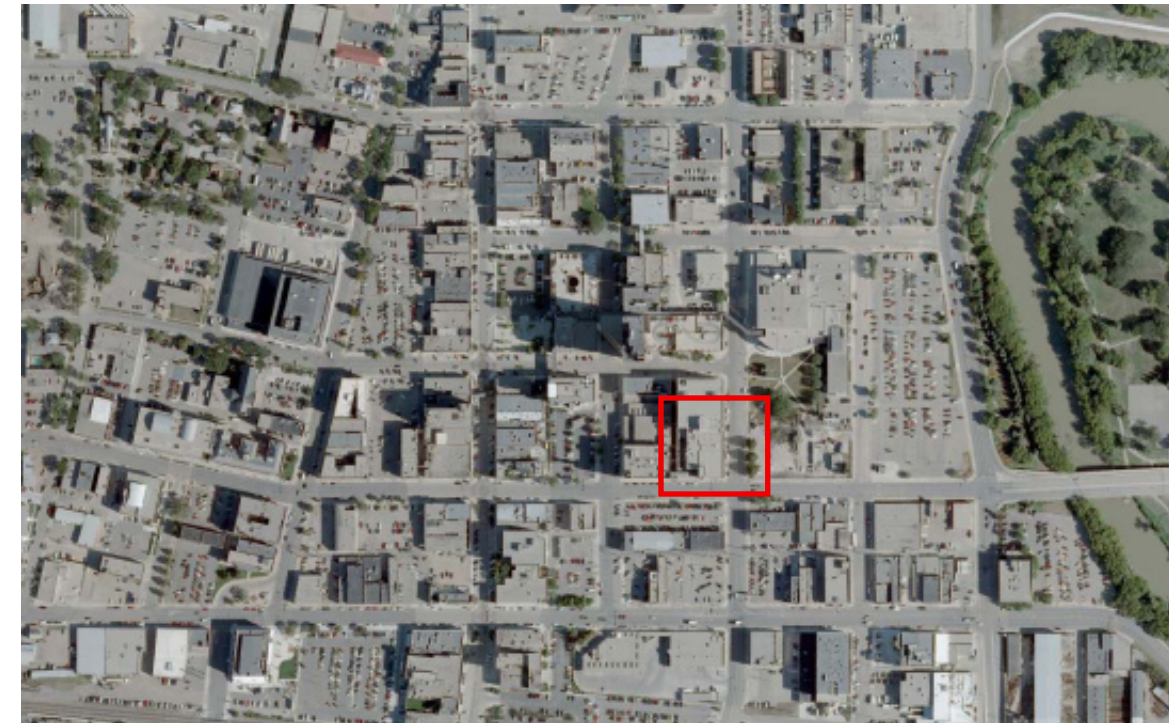


Notable Buildings



- Site
- Library
- Museum
- College
- Transit

Shade and Shadow Characteristics



As seen from plan view, there are no existing structures with a height great enough to impose shadows onto the site.

The proposed design will cast shadows onto the streets running along its western and eastern borders.

Section Characteristics

The low profiles of the existing structures located directly south of the site allow for direct lighting throughout the duration of the day. Filtered light presents itself briefly at times of dawn and dusk.

Like all of Fargo, the site is flat. There is no significant elevation change affecting the site.

Low profile two- and three-story buildings border the site on the west and east. Four- to six-story buildings lie directly north of the site.

Gate City Bank and the Radisson Hotel are seen reaching vertically in the distance.



Notable Landmarks



The downtown area is now home to three North Dakota State University facilities: Renaissance Hall, Klai Hall, and Barry Hall.

The Fargo Public Library is the primary library in this section of the city.

The Plains Art Museum in Fargo and the Hjemkomst Interpretive Center in Moorhead are two staples of cultural appreciation in the area.

The Metro Area Transit known as MATBUS is the public transit system serving Fargo, Moorhead, West Fargo and Dilworth.

Broadway is the main attraction of the downtown area providing many unique opportunities for housing, shopping, food, and entertainment.

The Fargo Civic Center hosts a variety of community events and activities.

Light Quality

Constant direct sunlight illuminates the site during the hours of the day. At sunrise cool yellow, pink and blue tones paint the buildings' facades. Direct sunlight keeps the site bright during the day. The evening sunsets are full of vibrant, saturated yellow, orange, red, pink, and purple tones.



Vegetation

The site has no existing natural or planted vegetation. There are planted trees scattered at various surrounding sites.



Water

The Red River is a five minute walk from the site and is the prominent water source in the area. The river runs actively throughout the warmer months of the year and freezes over during the winter months.

The river frequently rises and floods during late winter and early spring months. The river is unique in that it is one of the few known rivers to flow north.



Wind

Fargo is considered a windy city. Buildings to the north of the site may slow the wind to some extent, but the site will experience the wind's effects throughout the entirety of the year.

In the winter, wind at the site makes already cold air feel colder, a phenomena known as wind chill.

Human Characteristics



The site is located in a fully developed urban setting in the city and is frequented by people on a daily basis. Sidewalks and streets border the site.

There are two built structures on the site currently; Romantix Adult Boutique and the now closed Twin City Army Store.

Parking for Romantix Adult Boutique is located on the west portion of the site and a public parking pay lot occupies the east portion.

Noise

The downtown Fargo area is full of life and movement. Sounds of passing vehicles are clearly audible from the site. Buses are heard entering and departing the Metro Area Transit Station, and trains run frequently on the tracks south of the site.

Often one will hear the sounds of music and laughter emanating from Broadway just west of the site.

Distress

The complex housing Romantix Adult Boutique and the abandoned Twin City Army Store is the sole element of distress on the site.

The army store has not been occupied in quite some time and sits lifeless on the site. Romantix Adult Boutique is a cultural blemish on the downtown area and the city of Fargo. The site has the opportunity to complete downtown's southeast corner, tying the entire downtown area together. Instead it embodies a sense of lifelessness and awkwardness for all who pass by.



Soils

The site is located within an urban area. The USDA classifies the soil of the area as "Silty Clay Soil." This type of soil has a depth between 0 and 60 inches. The liquid limit for the soil falls between the percentages of 50-75%. The plasticity index of the soil is 25-45%. Silty clay soil is categorized in the minute side of the particle size and has been labeled as not optimal for the construction of extremely large structures. The average frost depth of the soil in Fargo is approximately 55 inches.

Utilities

There are a variety of existing utilities on the site. Stoplights are posted at each corner of the site. Street and sidewalk lamps are spaced evenly along the sides of the site.

Utility boxes are located on the northwest and southwest corners of the site, and fire hydrants are located on the northeast and southeast corners.

Electrical lines enter the site from the north and connect with a series of east and west running lines that cut entirely through the site.

Topographic Survey

The site is currently paved and has a slope that is under 1% which makes drainage an issue. Issues of grade change and drainage will need to be tended to.

Vehicular Traffic

Traffic around the site varies in density from quiet roads to busy streets. NP Avenue and First Avenue, both of which are one way streets, border the north and south edges of the site. These streets, as well as Main Ave just south of the site are the prominent high traffic streets of the area. Broadway, Second Avenue, and Roberts Street are also fairly busy.

NP Avenue, First Ave, Second Ave, and Fifth Street are utilized by the Metro Area Transit MATBUS as public transit routes for the downtown area.

Pedestrian Traffic

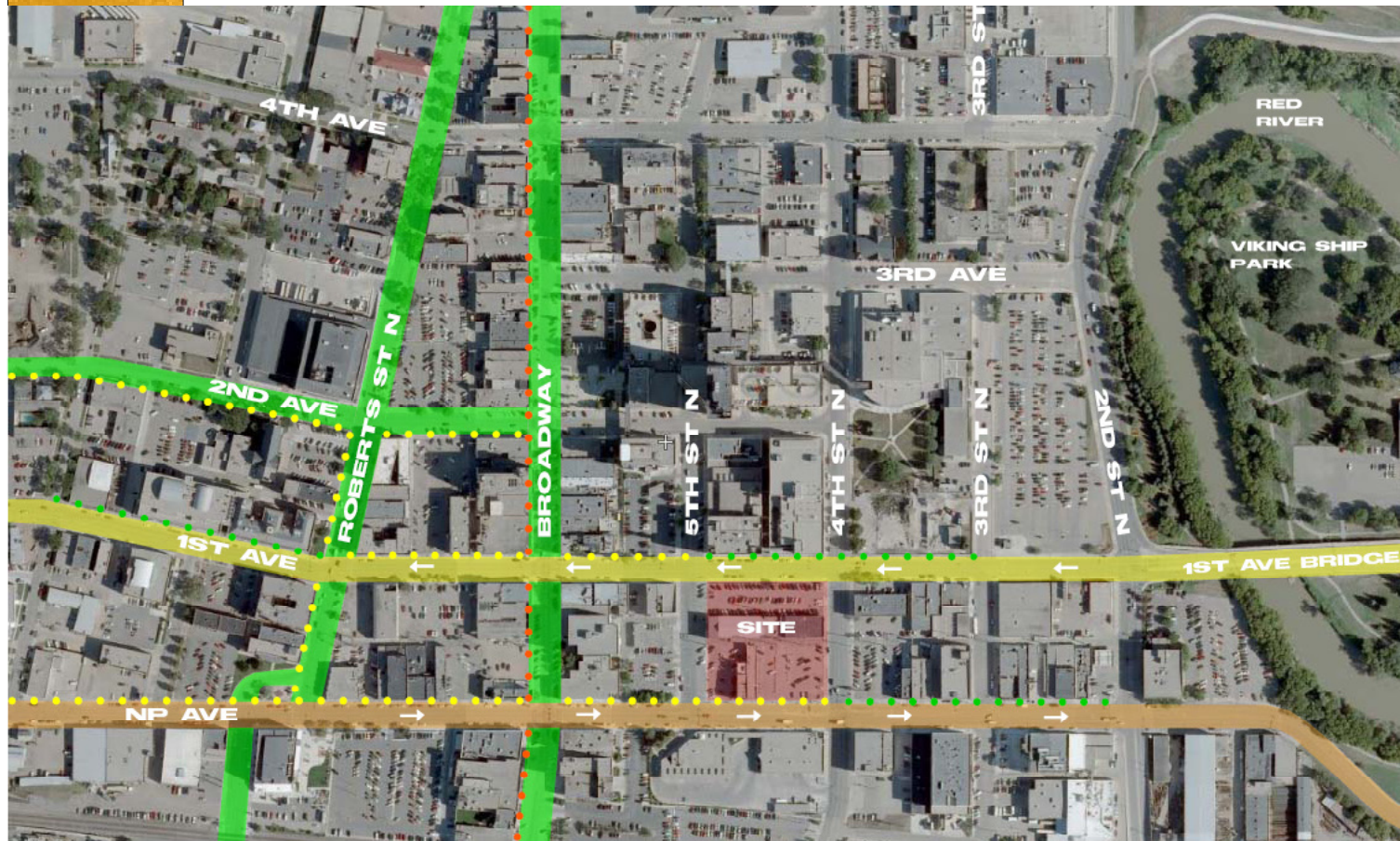
Broadway has the highest concentration of pedestrian traffic in the area due to the shops, restaurants, and bars that line each side of the street.

First Avenue experiences decent pedestrian activity as well, mostly due to people walking to or from Broadway.

NP Avenue maintains constant pedestrian traffic throughout the day due to the North Dakota State University building and the Metro Area Transit Station on the south side of the road.

Roberts Street and Second Avenue create a path linking North Dakota State University buildings, with Renaissance Hall situated on NP Avenue and Klai and Barry Hall, located on Second Avenue.

Vehicular / Pedestrian Traffic Map



Views from Site

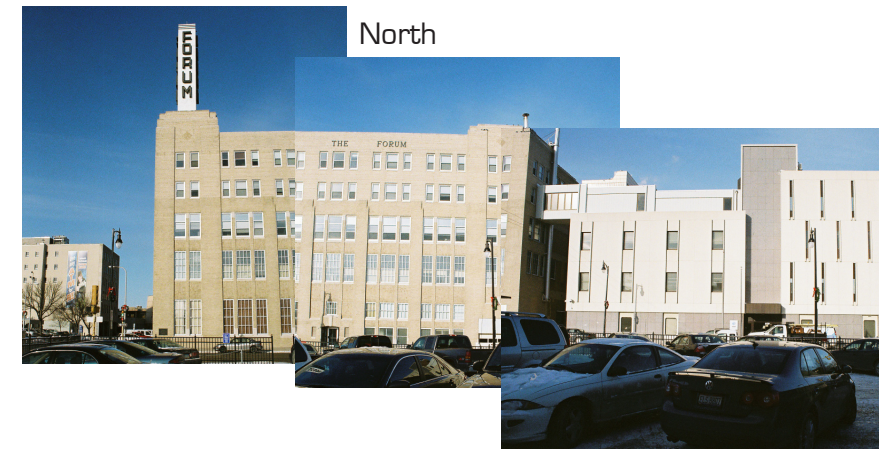


Photo Grid

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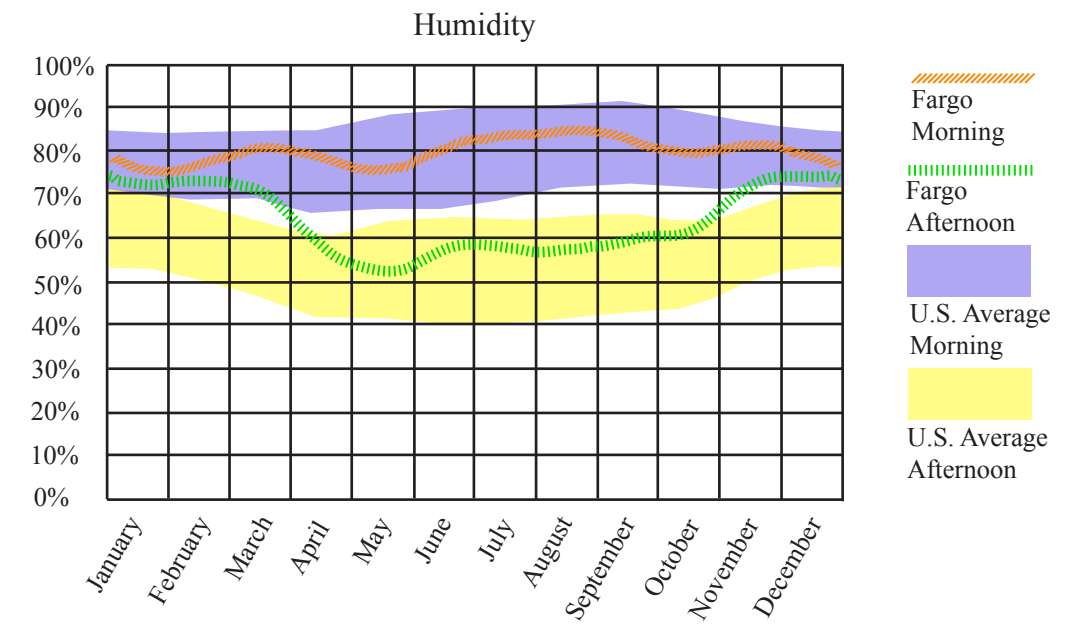
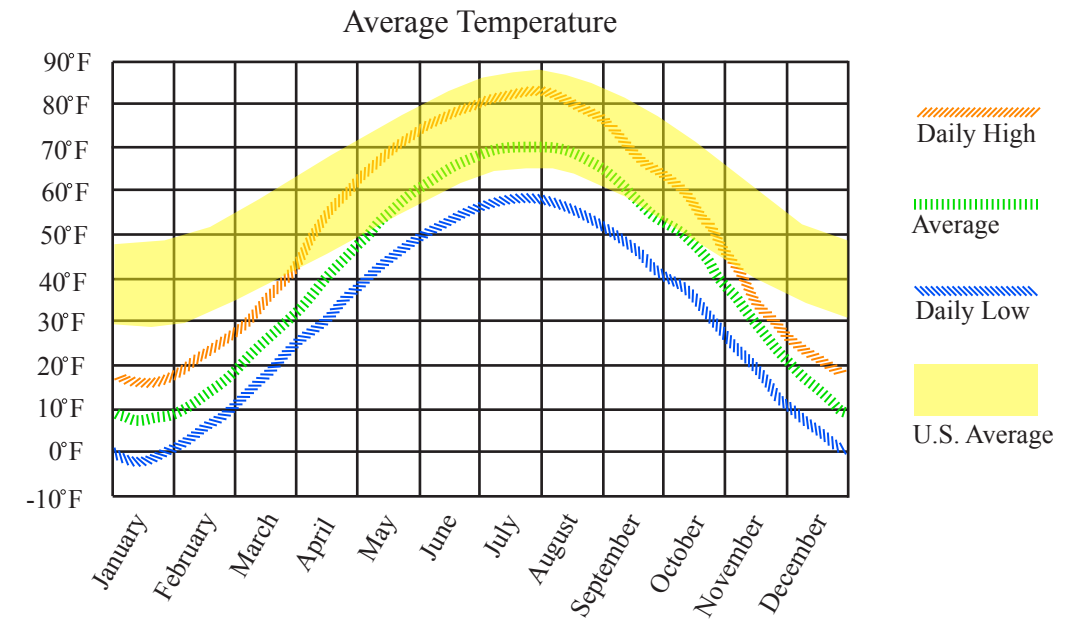
East

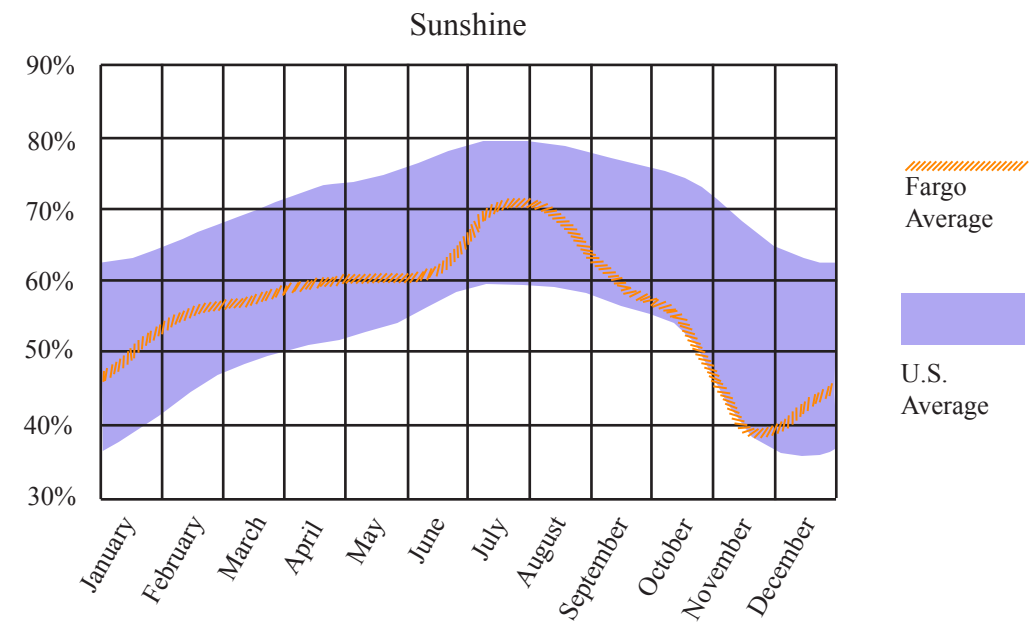
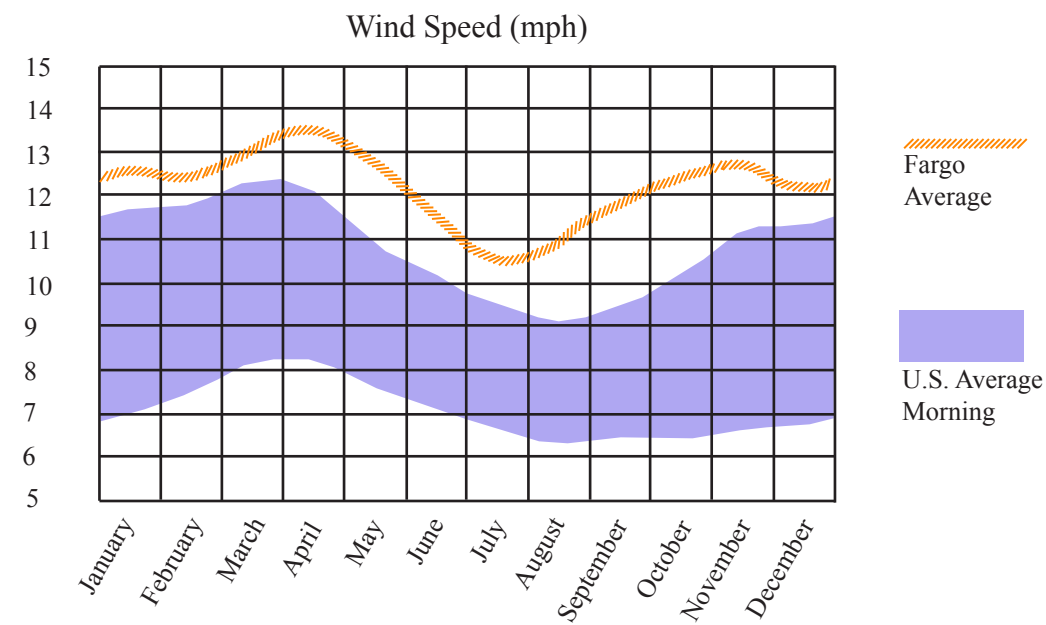
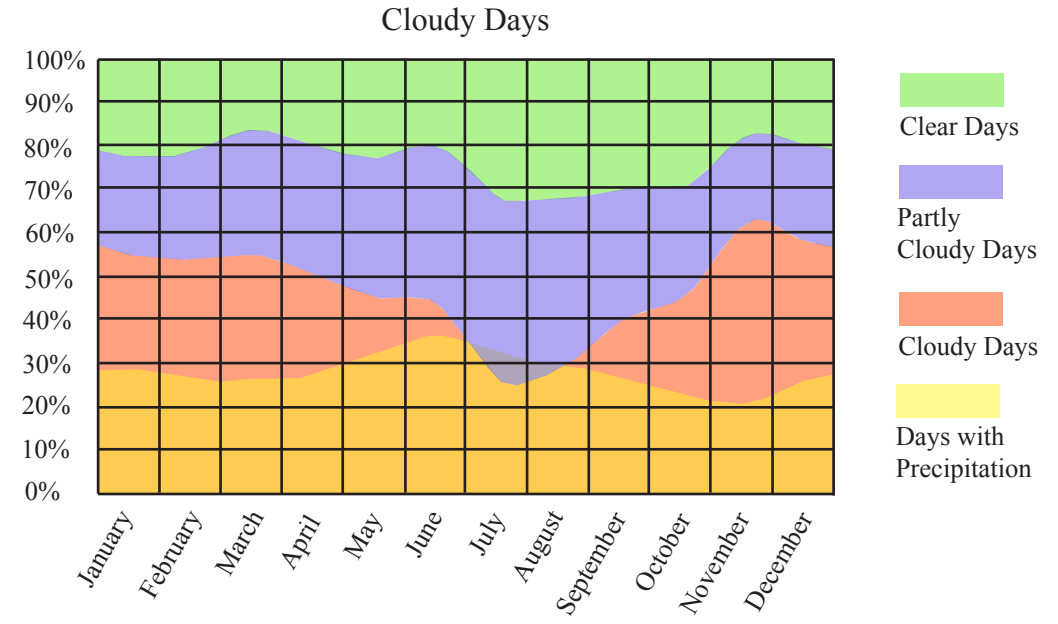
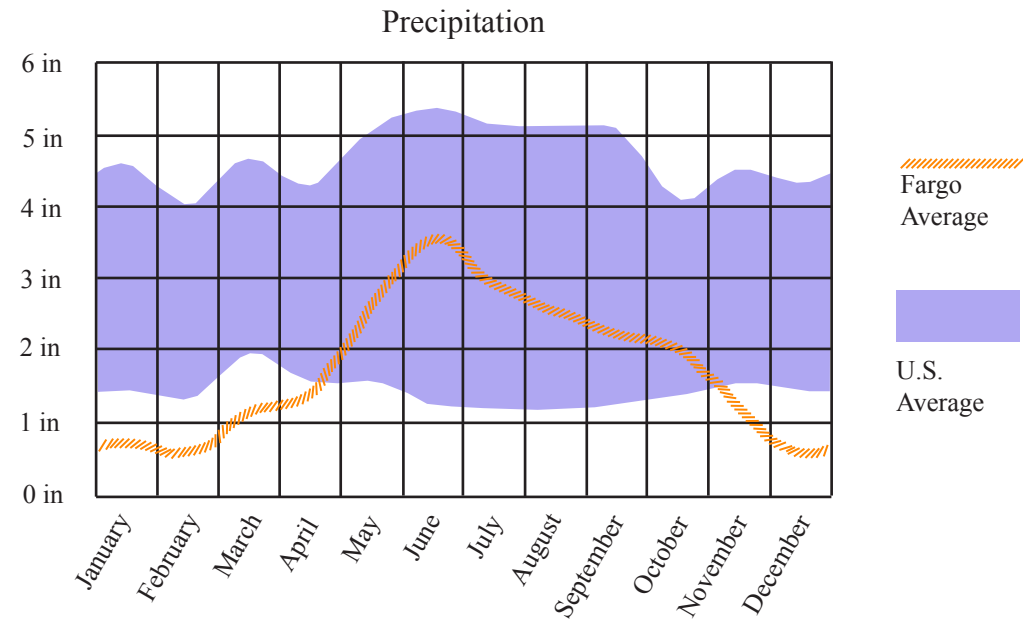


West



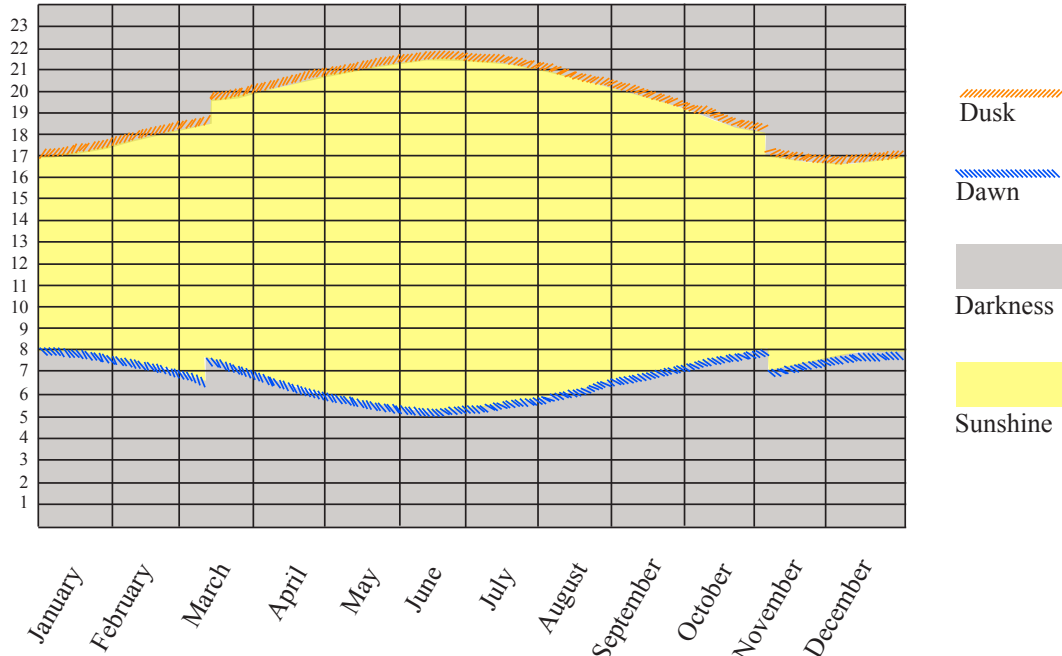
Annual Climate Data



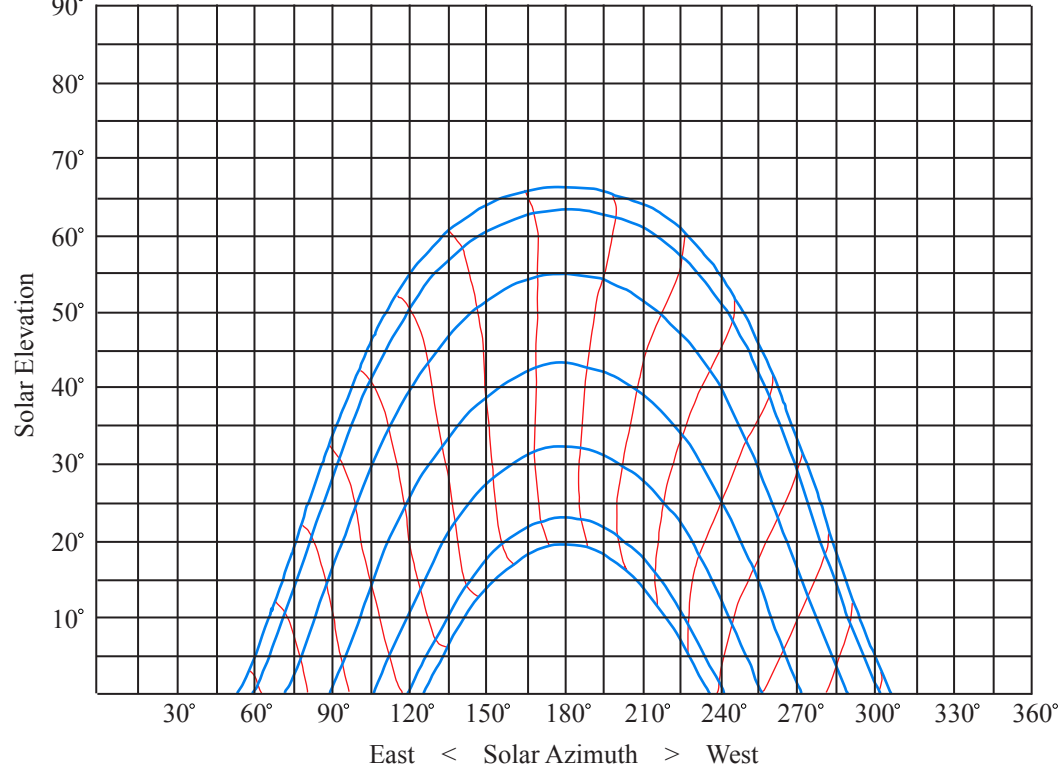


PROGRAMMATIC REQUIREMENTS

Sunrise, Sunset, Dawn, and Dusk Time Graph



Vertical Sunpath Diagram



Programmatic Requirements

SCHOOL

design studios	7000 sq. ft.
primary lecture rooms	2000 sq. ft.
secondary lecture room	900 sq. ft.
entry/gallery	4500 sq. ft.
admissions/affiliations office	1600 sq. ft.
outdoor rec decks	10,250 sq. ft.
professor offices	1200 sq. ft.
computer cluster	450 sq. ft.
SCHOOL TOTAL	27,900 sq. ft.

LIBRARY

archival repository	6000 sq. ft.
computer clusters	650 sq. ft.
reading rooms	1000 sq. ft.
reference / help desk	200 sq. ft.
LIBRARY TOTAL	7850 sq. ft.

HERITAGE MUSEUM

entry / gathering space	5500 sq. ft.
ticket office	200 sq. ft.
exhibit spaces	24,500 sq. ft.
experiential transition zones	4350 sq. ft.
hot climate pedagogue zone	3450 sq. ft.
cold climate pedagogue zone	3000 sq. ft.
theatre	400 sq. ft.
cultural café	1200 sq. ft.
kitchen	450 sq. ft.
conference rooms	1500 sq. ft..
offices	700 sq. ft..
collections/artifacts storage	20,000 sq. ft.

MUSEUM TOTAL

65,250 sq. ft.

SECONDARY SPACES

outdoor	15,500 sq. ft.
sidewalk	21,000 sq. ft.
parking	21,750 sq. ft.
restrooms	2000 sq. ft.
mechanical	5775 sq. ft.
janitorial	1200 sq. ft.

SECONDARY SPACES TOTAL

67,225 sq. ft.

TOTAL PROJECT SQUARE FOOTAGE

168,225 sq. ft.

FINAL DESIGN

PROGRAM

PEDAGOGICAL COMPOSITION

An Exploration of Global Passive Practices

How might an examination of world cultures' way of life and building practices lend insight to present and future passive design issues for the region?

Pedagogue (n)
A center for learning that serves as a model to teach others through its own design

World Culture's Passive Systems Research and Educational Center

COLD CLIMATE PEDAGOGUE ZONE

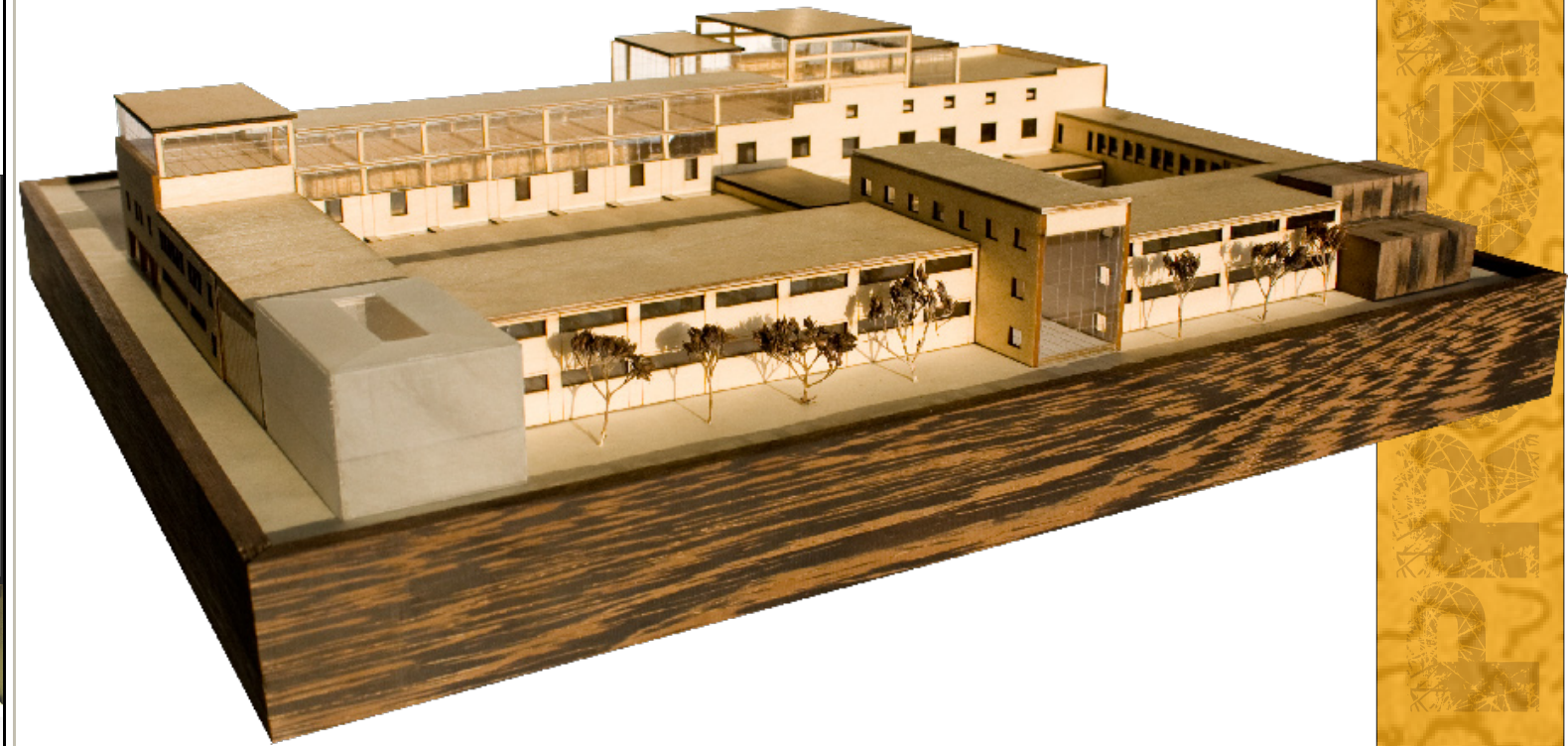
The cold climate pedagogical zone is designed with the intention of providing a model for passive design in a cold climate. The zone is designed to provide a model for passive design in a cold climate. The zone is designed to provide a model for passive design in a cold climate.

Hot Climate Pedagogue Zone

The hot climate pedagogical zone is designed with the intent to remain comfortable throughout the hot summer months in Fargo, North Dakota. A series of passive practices including shading, thermal mass, and cross-ventilation are integrated into the design to ensure that it remains cool and comfortable.

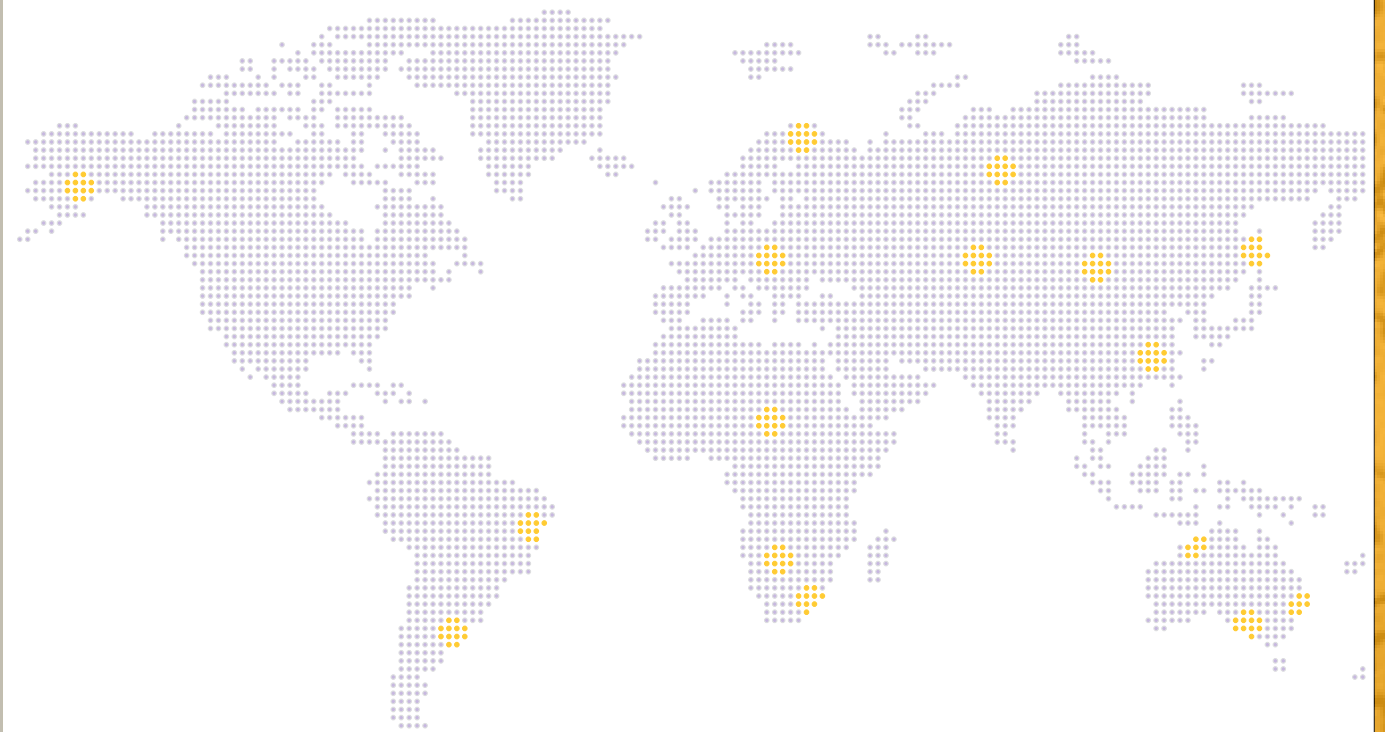
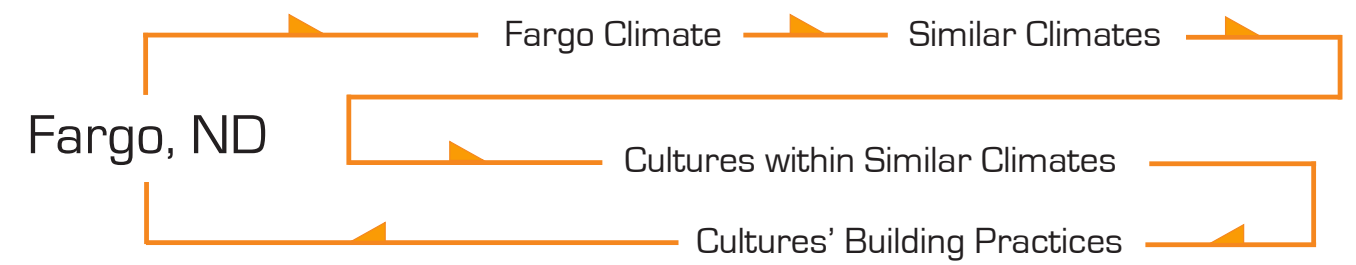
Other Board Details:

- Thick Walls and Floors:** The design calls for a compact plan, tight floor plates, and high thermal mass to store heat during the day and release it at night.
- Material Colors:** The design calls for light-colored materials to reflect heat and reduce cooling loads.
- Low Ceilings:** The design calls for low ceilings to reduce the volume of air to be conditioned.
- High Ceilings:** The design calls for high ceilings to allow for natural convection and stack effect.
- Building Orientation:** The design calls for a building orientation that maximizes passive solar gain and minimizes cooling loads.
- Screen Wall:** The design calls for a screen wall to provide shade and reduce solar radiation.
- Interior Courtyard:** The design calls for an interior courtyard to provide a source of natural light and ventilation.
- Walled Courtyards:** The design calls for walled courtyards to provide a source of natural light and ventilation.
- Window Placement:** The design calls for window placement that maximizes passive solar gain and minimizes cooling loads.
- Light Color Materials:** The design calls for light-colored materials to reflect heat and reduce cooling loads.
- Building Orientation:** The design calls for a building orientation that maximizes passive solar gain and minimizes cooling loads.
- Raised Foundation:** The design calls for a raised foundation to provide a source of natural light and ventilation.





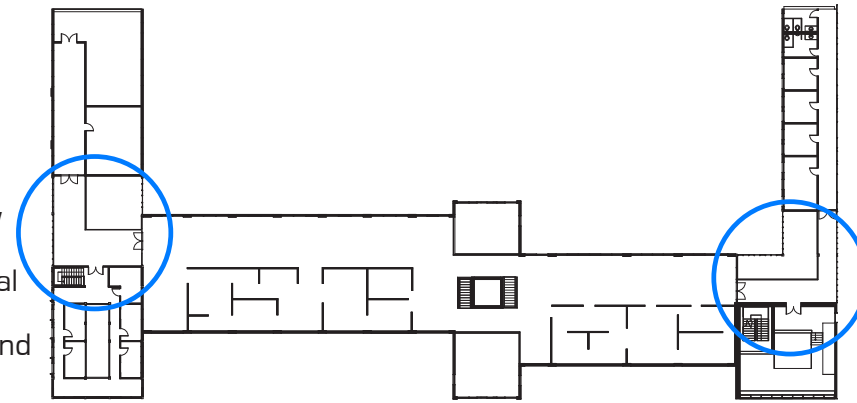
Mode of Cultural Passive Strategies Research



Experiential Transition Spaces

Accessibility / Circulation

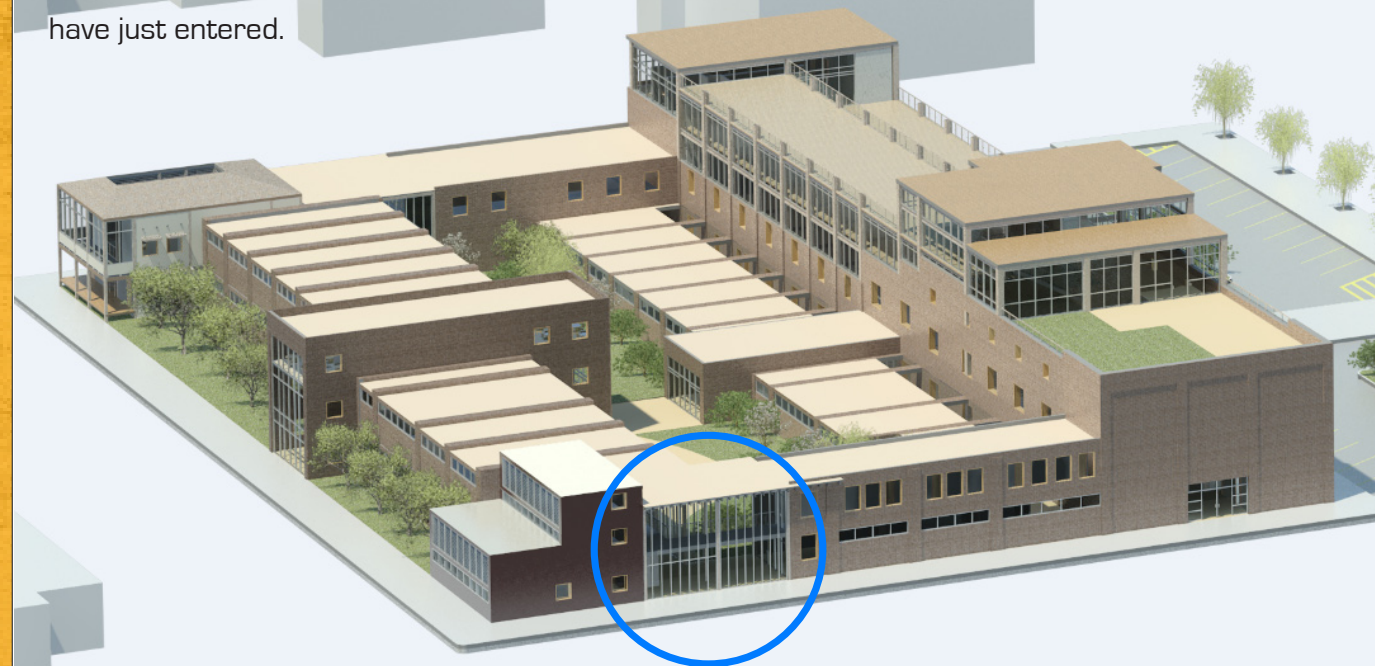
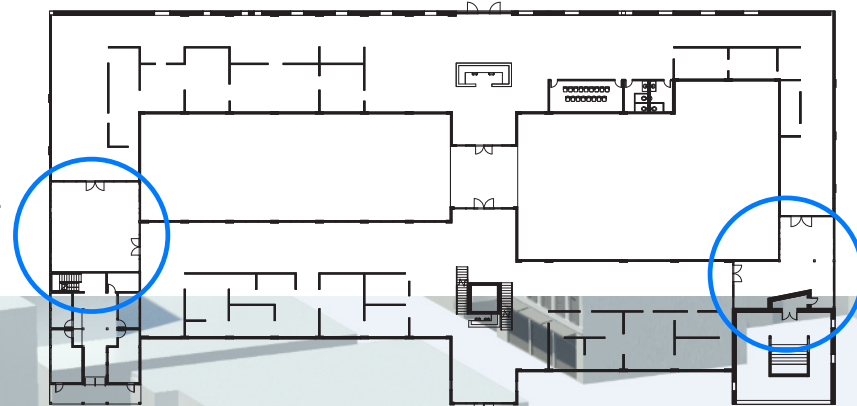
The transition spaces provide easy access to and from the pedagogical zones directly to the first and second levels of the museum.



Thermal Experiential Break

The transition spaces take the occupant out of the comfort of the museum's controlled environment.

The intent of these spaces is to make the occupant consciously aware of the comfort level found within the pedagogical zone they have just entered.



Ped·a·gogue (n)

A center for learning that serves as a model to teach others through its own design

Hot Climate Pedagogical Zone

Space that remains comfortable during Fargo's hot climate months solely by integrating passive strategies practiced by cultures throughout history that share climatic traits similar to that of Fargo, North Dakota.

Cold Climate Pedagogical Zone

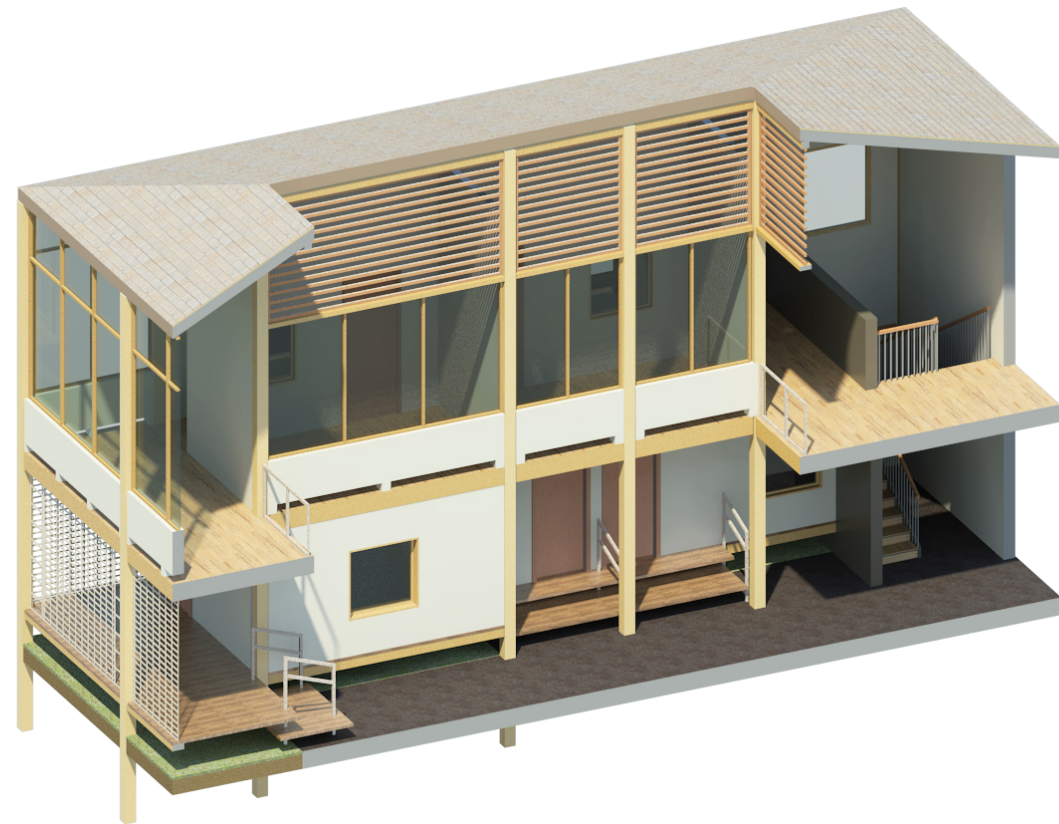
Space that remains comfortable during Fargo's cold climate months solely by integrating passive strategies practiced by cultures throughout history that share climatic traits similar to that of Fargo, North Dakota

Pedagogical Zone Intent

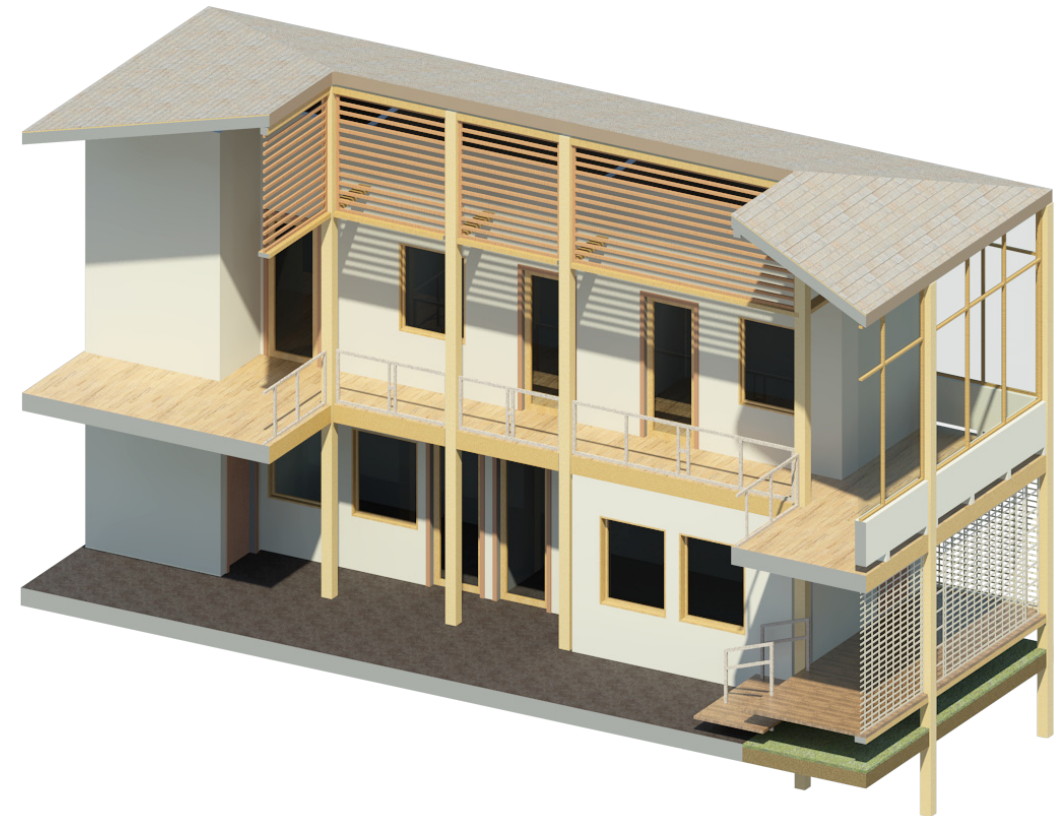
The primary intent of the Pedagogical Zones designed within the project is to inform and teach the students, professors, construction related professionals, and general members of the public of the benefits that passive design can provide for a building.

Hot Climate Pedagogical Zone

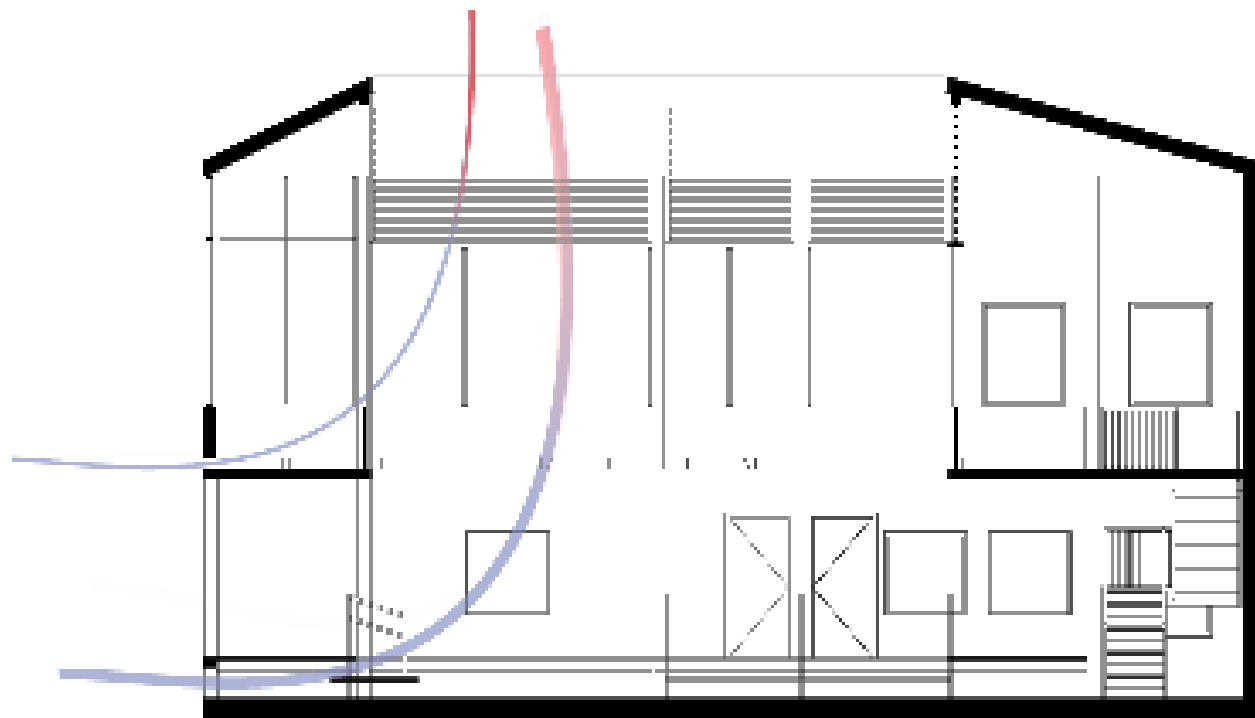
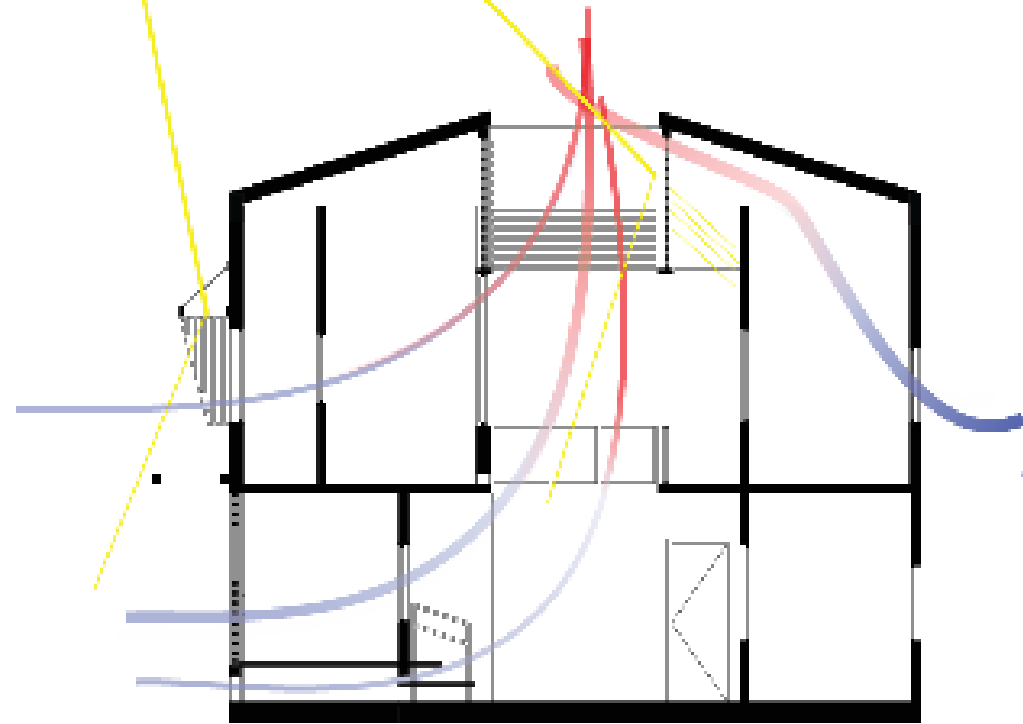
Sectional Perspective West Half



Sectional Perspective East Half



Section Study



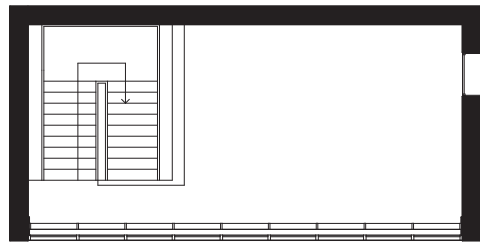
Cold Climate Pedagogical Zone

Sectional Perspective West Half



Sectional Perspective East Half





Cold Climate Pedagogical Zone
Interior Rendering



Museum Entry Perspective



University Entry Perspective

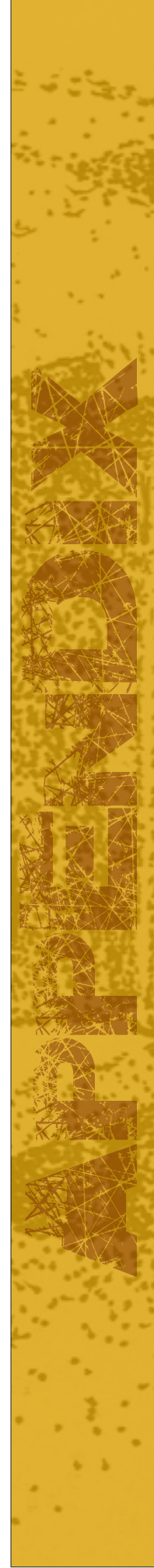


University Studio Interior Rendering





PROGRAM APPENDIX



REFERENCE LIST

Andersson, H. O. & Bedoire, F. (1986). 'Swedish architecture: drawings 1640-1970'. Stockholm: Byggforlaget.

Bartezko, D, Burgard, R, Fischer, V, & Lauer, H, (1990). 'Museum architecture in frankfurt, 1980-1990'. Munich, Federal Republic of Germany: Prestel.

Bhuyan, S., Chrest, A. P., Iqbal, M., Monahan, D. R., & Smith, M. S. (2001). 'Parking structures: planning, design, construction, maintenance and repair'. Norwell, Massachusetts: Kluwer Academic Publishers.

Braungart, M, & McDonough, W. (2002). 'Cradle to cradle: remaking the way we make things'. New York: North Point Press.

Broto, Carles. (1997). 'Education and culture'. Barcelona, Spain: LINKS International.

Darragh, J, & Snyder, J. S. (1993). 'Museum design: planning and building for art'. New York, NY: Oxford University Press in association with the American Federation of Arts and the National Endowment for the Arts.

'Deer valley rock art center'. (2010). Retrieved from <http://www.willbruder.com/>

Denyer, S. (1978). 'African traditional architecture: an historical and geographical perspective'. New York: Africana Publishing Company.

Dobbelsteen, A., Dorst, M., & Timmeren, A. (2009). 'Smart building in a changing climate'. Amsterdam, The Netherlands: Techne Press.

'Downtown fargo'. (2010). Retrieved from <http://www.ci.fargo.nd.us/CityInfo/Downtown/>

Elleh, N. (1997). 'African architecture: evolution and transformation'. USA: McGraw-Hill.

'Fargo: history'. (2009). Retrieved from <http://www.city-data.com/us-cities/The-Midwest/Fargo-History.html>

Farmer, G, & Guy, S. (2001). 'Re-interpreting sustainable architecture: the place of technology'. Journal of Architectural Education, 54:3, 140-148.

Goodwin, P. L. (1943). 'Brazil builds: architecture new and old 1652-1942'. New York: Simon and Schuster

Hilger, O, & Naredi-Rainer, P. (2004). 'Museum buildings: a design manual'. Basel, Switzerland: Boston : Birkhauser, Publishers for Architecture.

Hyde, R. (2000). 'Climate responsive design: a study of buildings in moderate and hot humid climates'. London and New York: Taylor & Francis Group.

Justin, H. (1998). 'Museum architecture'. Cincinnati, Ohio: North Light Books.

Knapp, R. G. (2003). 'Asia's old dwellings: tradition, resilience, and change'. Oxford: Oxford University Press

Koch-Nielsen, H. (2002). 'Stay cool: a design guide for the built environment in hot climates'. United Kingdom: The Cromwell Press.

Kubler, G. (1984). 'The art and architecture of ancient america: the mexican, maya and andean peoples'. New York, New York: Penguin Books Ltd.

Lee, M. (2003). 'Eskimo architecture: dwelling and structure in the early historic period'. Alaska: University of Alaska Press.

MacKenzie, D. & Wajcman, J. (1999). 'The social shaping of technology'. Philadelphia: Open University Press.

Manuel, R. E., & Tapia, L. A. (2009). 'Contemporary art center galicia santiago de compostela espana 1988-1993'. Retrieved from <http://www.arqhys.com/articulos/artecontemporaneo-centro.html>

Moore, K. D. (2000). 'Culture-meaning-architecture: critical reflections on the work of amos rapoport'. Vermont: Ashgate Publishing Ltd.

Pollard, T. L. (2009). 'Economy of the midwest region'. Retrieved from <http://edhelper.com/>

'Profile: centro gallego de arte contemporanea [cgac]'. (2010). Retrieved from <http://www.saatchi-gallery.co.uk/museums>

Rapoport, A. (1969). 'House form and culture'. Englewood Cliffs, N.J.: Prentice-Hall, Inc.

Rohracher, H. (2005). 'Sustainable architectures: cultures and natures in europe and north america'. London and New York: Spon Press.

Sadler, A. L. (1962). 'A short history of japanese architecture'. Rutland, Vermont & Tokyo, Japan: Charles E. Tuttle Co.

Schoenauer, N. (2000). '6,000 years of housing: revised and expanded edition'. New York & London: W. W. Norton and Company.

Smith, J. (2010, March 09). 'Deer valley rock art center is much more than a museum'. Retrieved from <http://asunews.asu.edu/>

State Historical Society of North Dakota Foundation. (2010, October 22). 'Heritage center expansion'. Retrieved from <http://www.statehistoricalfoundation.com/>

Trulove, J. G. (2000). 'Designing the new museum: building a destination'. Gloucester, MA: Rockport.

U.S. Diplomatic Mission to Germany, U.S. State Department. (2008). 'Travel & geography: the regions of the united states'. Washington: IIP Publications. Retrieved from <http://usa.usembassy.de/travel-regions.htm#midwest>

Vogel, S. (1996). 'Against nature: the concept of nature in critical theory'. Albany, NY: State University of New York Press.

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'The old get older
and the young get stronger'