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Maintaining the Integrity of  
the Public **Library Building**  
in the **Digital** Age

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Alexander J. Engle



# Maintaining the Integrity of the Public Library Building in the Age of Digital Media

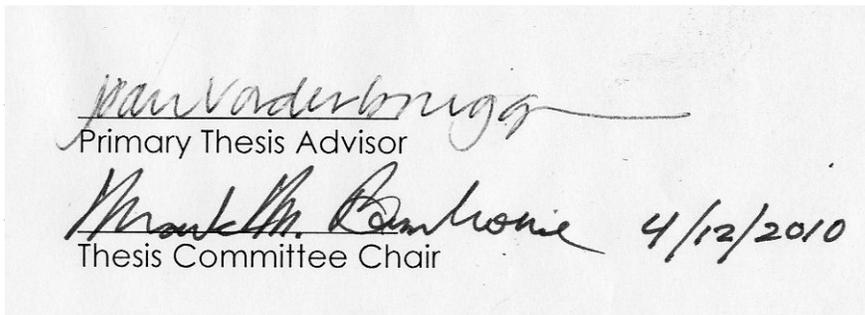
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A Design Thesis Submitted to the  
Department of Architecture and Landscape Architecture  
of North Dakota State University

By

Alexander J. Engle

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



*vanVorderbrugg*  
Primary Thesis Advisor

*Mark M. Rasmussen* 4/12/2010  
Thesis Committee Chair



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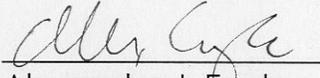
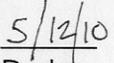
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## Contents

01	Cover Page
03	Thesis Title
05	Permission Rights
07	Contents
09	Abstract
10	Problem Statement
11	Statement of Intent
18	The Narrative
19	User/Client Description
19	Major Project Elements
20	Site Information
28	Project Emphasis
28	A Plan for Proceeding
29	Previous Studio Experience
32	Results From the Theoretical premise/Unifying Idea Research
39	Summary of Results
41	Case Studies
57	Historical Context
64	Thesis Goals
67	Site Analysis
77	Space Allocation
78	Process
84	Product
91	References
93	Personal Information



## The Abstract

Today's public library building sits in a peculiar position as media changes from the tactile to the digital. The thesis aims to illustrate the continued importance of the library as a physical place within the community. No longer a place simply to store books, the library has become a place for human interaction, a place for public discourse, and a place for continued education. Far from obsolescence, the public library building will continue to be a crucial place within the community for many years to come.

A Mixed Method approach to research will be used, gathering both quantitative and qualitative data, and a concurrent transformative strategy will be employed while collecting this data. Documentation of process will be done through the use of photography, sketching, audio/visual recording and any other method found to be useful. This data will be compiled digitally periodically through the semester to show process.

The building sits on Harriet Island, to the south of downtown St. Paul. The general public is granted access to the building. However within the immediate vicinity the building serves as a destination for residents of downtown and the Riverview neighborhood. The program includes outdoor gardens, lecture and reading rooms, music rehearsal rooms, digital access spaces as well as an eatery and an outdoor amphitheater.

## **Problem Statement**

How does the library as a physical place maintain its importance as our current society moves towards the digitization of media.

# Statement of Intent



## Typology:

The Design is a library located on Harriet Island within Saint Paul, Minnesota.

## State The Claim:

The public library continues to maintain its importance in the community by allowing a place for public discourse, human interaction, and access to resources for the public.

## Describe the various parts of the claim:

Q. Who are the actors?

A. The public library and its staff.

Q. What is the Action?

A. The library allows the public access to educational resources, human interaction and public discourse.

Q. What or who is the object acted upon?

A. The Public.

Q. Is there a manner to the action and if so what is it?

A. The public is allowed access to resources in order to satisfy educational, cultural, and communal needs.

## State the Premises:

Q. How is the actor related to the claim?

A. The library makes available various resources to be used by the public.

Q. How is the action related to the claim?

A. The library and it's staff provide users a place for meeting, utilizing resources, and discussing community issues.

Q. How is the object acted upon related to the claim?

A. The public utilizes said resources in order to further their education, interact with other members within the community, and engage in discourse to address problems within the community

Q. If present, how is the manner of the action related to the claim?

A. The public is granted access to various forms of media as well as programs and gatherings.

## **State the Conclusion, which is the Theoretical Premise/Unifying Idea:**

The public library remains an important place in the community despite media's progression into the digital realm.

## **State the Project Justification:**

The public library building of the 21st century remains a crucial place within the community as it provides access to resources that may be otherwise unavailable to members of the public. Even as media moves into the digital realm, the library as a physical place remains an important aspect of the community, as it allows for interaction between community members and access to resources that may otherwise be unavailable.



# Thesis Proposal

# Proposal

## The Narrative

Public institutions have acted as the foundations of society for thousands of years, however, these institutions are currently in the midst of a transformation as we make our way into the digital age. The public library is no exception to this phenomenon. The library is now far more than a place simply to store and access books, it is also a place for public discourse, research, continued education, digital access and community activities. Despite these changes, it remains crucial that the library exists as a physical place in the community.

Libraries are unique in that they are available to all members of society. It allows members of the community access to resources that may be unavailable anywhere else. The unemployed and homeless may use these resources to search for employment, the working class may use them to further their education. Students may use these resources for research. And all may use the resources simply for leisure.

The Minneapolis/ St. Paul metropolitan area continues to become more and more diverse as we move into the 21st century. The library must be able to acclimate to this increasingly diverse population in an effective and culturally sensitive manner.

Libraries are paid for primarily through federal funding, and as information is becoming more digitally accessible, funding for libraries has begun to dwindle. The aim of my thesis is to emphasize the importance of the library as a place, and its ability to engage all members of the public.

# User/Client Description

The library will be accessible to all members of the Minneapolis community as well as any visitors from elsewhere. Thus, the user description encompasses all demographics.

St. Paul is home to a diverse community, the major ethnic groups are whites, making up approximately two-thirds of the population, African-Americans constitute around fourteen percent, Asians at about twelve percent and Hispanics or Latinos make up about nine percent.

One of the largest immigrant groups in St. Paul is the Hmong, a group that traces its origins to areas of China, Vietnam, and Laos. St. Paul is home to the largest urban Hmong population in the world. Given these demographics, it would be very likely that the library will see various ethnic groups, cultures, and languages passing through its doors.

## Major Project Elements

**Media Shelving Space** - Space for books, magazines, periodicals, music, and films, will be provided in order to be made available to the public.

**Children's Area** - A space for children will be included in the design and provide media geared for young patrons, as well as provide space for workshops and other activities.

**Eatery** - An eatery will be included in the design to provide patrons with a place to dine, or grab a beverage.

**Meeting Spaces** - Meeting spaces will be made available to outside groups who need a place to gather and discuss, present media, perform workshops, etc.

**Staff Spaces** - Staff lounges, a receiving area, check-out areas, and offices will be provided in order to serve staff needs.

**Reading/Study Areas** - Small reading/study nooks will be incorporated throughout the design in order to provide patrons with tranquil spaces to read and/or study.

**Digital Access** - Spaces allowing access to digital equipment will be made available for all patrons.

# Site Information

## Macro

Saint Paul sits on the eastern edge of Minnesota, near the border of Wisconsin in the heart of the Midwest. The city, along with Minneapolis and the surrounding suburbs make up what is known as the Twin Cities metro. The city alone only has a population of approximately two-hundred and seventy-thousand, however the metro is home to around three-million five-hundred thousand people. The climate swings between both extremes, with frigid winters and hot, humid summers.









## Micro

The site sits on Harriet Island, located southwest of downtown St. Paul. The island was donated to the city of St. Paul in the early 1900's by a wealthy doctor. The island has been home to various functions throughout the years; it was home to St. Paul's first zoo, as well as an outdoor gymnasium. Between 1910 and 1915 it held public baths open to all citizens of the community.

The baths were frequented less and less as the river became more polluted. A pavilion was erected in the early 1940's, designed by Clarence W. Wigington, one of the first black architects in the U.S. Originally Harriet Island Pavilion, it now bears its designer's name.





1. Riverboat tours are accessible via the island during the Summer months, and views of St. Paul's Cathedral are available to the northwest. An abandoned mill also sits across from the site.



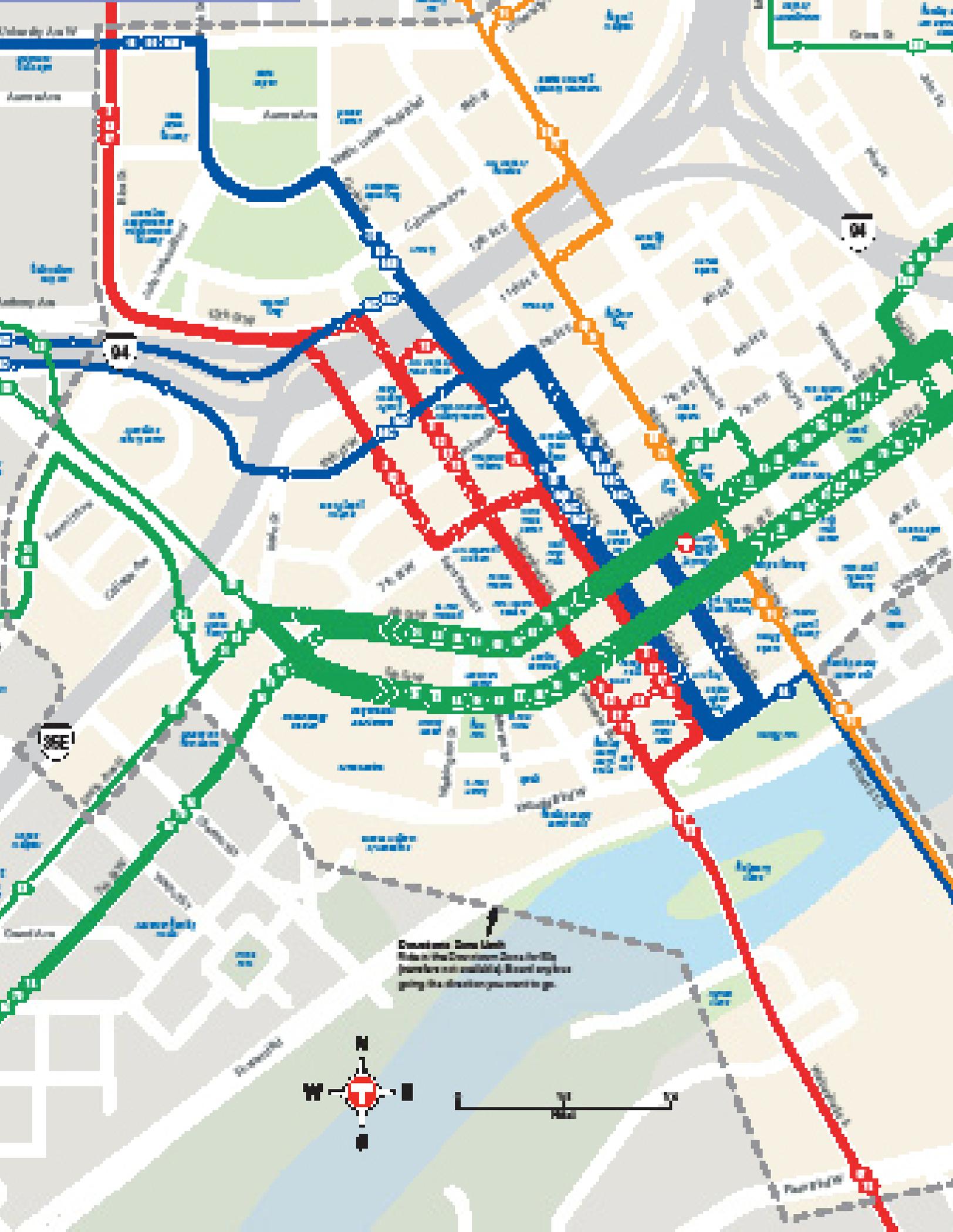
2. The Wabasha Bridge is an essential connection from Harriet Island to downtown and is a main thoroughfare for transit between the two.



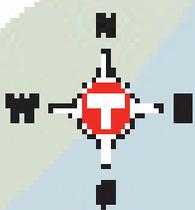
3. The site sits to the southwest of downtown St. Paul, across the Mississippi River, allowing for unobstructed views of the skyline. The site also sits at a much lower elevation than surrounding areas.

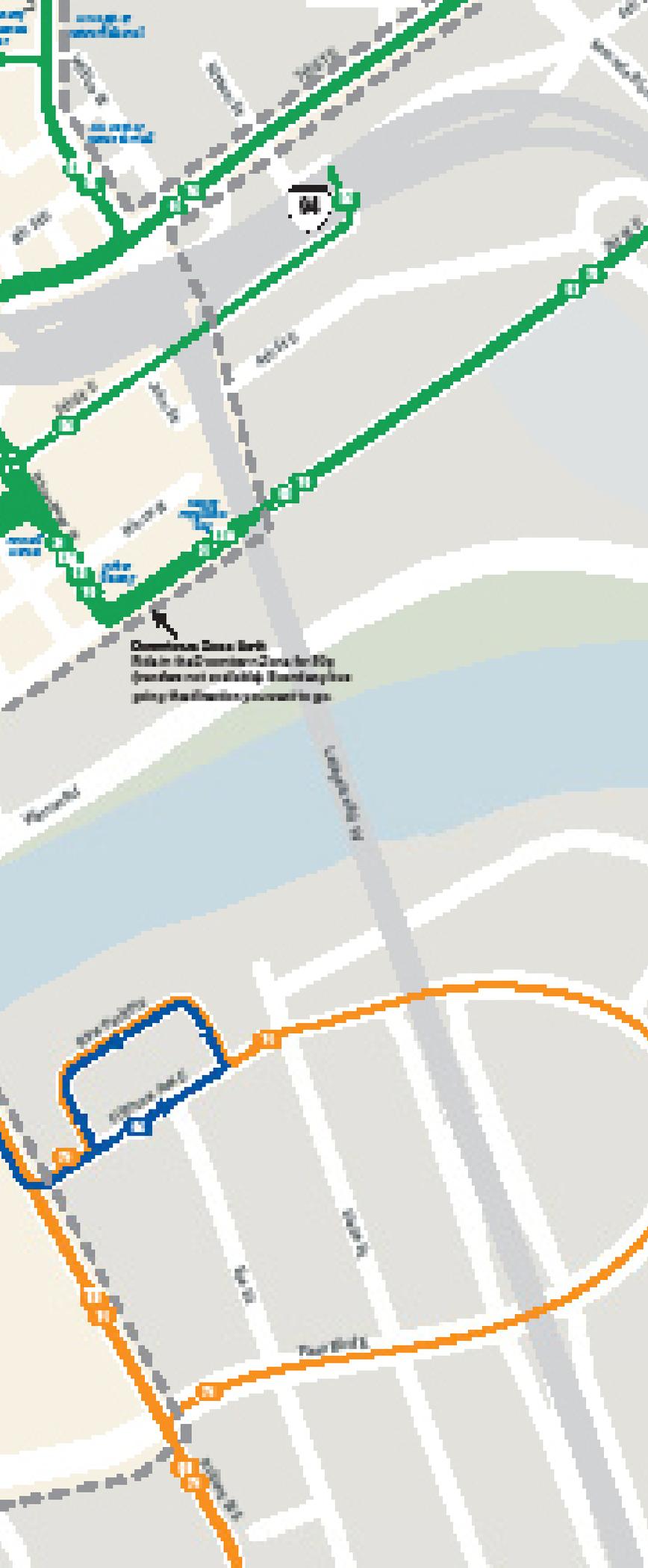


4. A view from the Wabasha St. Bridge overlooking the site. Small marinas sit at the northeast and southwest ends of the site.



**Excess one Stop Limit**  
Ride in the Downtown Area for 90  
minutes (not available). Board any bus  
going in the direction you want to go.





A transit map showing routes in and around downtown St. Paul

# Project Emphasis

Architecture emphasizing the importance of place and addressing the changes in the way we access media:

The thesis aims to establish the library as an important physical place within the community and address and adapt to the changes in the way the library functions within the city.

Architecture integrated into the urban fabric of the city:

The aspiration is to create a piece of architecture that acknowledges its surroundings and place in the city and rises to take advantage of the site's location and context.

## A Plan for Proceeding

### A Research Direction

Moving forward, a rigorous exploration of the theoretical premise and unifying idea will be performed. The project typology will be explored through numerous case studies from both a current and historical standpoint in order to better understand the state of the typology today and how it has come to be.

A thorough site analysis will be performed in order to understand the site and its relation to the city as a whole.

Conducting this research will help to shape the programmatic requirements of the thesis.

### Design Methodology

A mixed method of data collection will be used gathering, both quantitative and qualitative data following a Concurrent Transformative Strategy with the theoretical premise and unifying idea as the driving force behind decisions. Both types of data will be collected throughout the research process, constantly being integrated with each other.

Qualitative data will be gathered from local sources or from an archival search, or obtained personally through experiment or measurement.

Qualitative data will be collected through archival searches, conducted interviews, site experience, and local surveys.

### Documentation

Documentation will be done through sketching, audio/video recording, photographs and any other method found to be useful. All materials will be compiled digitally periodically throughout the semester so as to create a record of research performed.

# Previous Studio Experience

## Second Year

Fall Semester 2006      Arch 271      Joan Vorderbruggen

- Tea House, Fargo, ND
- Boat House, Minneapolis, MN
- Dwelling, Bear Lake, CO

Spring Semester 2007      Arch 272      Darryl Booker

- Prairie Dance Academy, Fargo, ND
- Dance Studio, Fargo, ND

## Third Year

Fall Semester 2007      Arch 371      Ronald Ramsay

- Shaker Barn Renovation, New Lebanon, NY
- Agincourt Project, Agincourt, IA

Spring Semester 2008      Arch 372      David Crutchfield

- Mixed Greens, Fargo, ND

## Fourth Year

Fall Semester 2008      Arch 471      Bakry Aly Ahmed

- High Rise, San Francisco, CA
- KKE Cigar Box Competition

Spring Semester 2009      Arch 472      Stephen Wischer

- Residence/Hotel/Rail Station, Barcelona, Spain

## Fifth year

Fall Semester 2009      Arch 571      Regin Schwaen

- Hotel, Fargo, ND



# Thesis Program

# Results From the Theoretical Premise/Unifying Idea Research

“Predictions were that new media, particularly the internet, would hasten the decline of cities by freeing people of the need for face-to-face contact. But many cities are now thriving media centers; indeed, the temporal and spatial flexibility inherent in new media have actually helped increase and diversify the use of urban space.” (Strickland, 2006).

I've found the impact of media on the urban environment to be an appropriate jumping off point for this project. Just as technology would supposedly lead to the demise of the library building, the same can be said for the city.

“Media can serve as either the stimulant or suppressant of the special, heightened awareness of self, society and opportunity that is integral to urban life.” (Strickland, 2006)

This quote illustrates media's ability to either harm or help the urban environment, positively influencing through communication, work and helping to “diversify public space” (Strickland, 2006)

Media's threat lies in its ability to allow for us to isolate ourselves within the digital world, and its ability to displace us from space. Digital recreations of place may give us peace of mind but there is no substitution for the real thing, and that will always remain true.

A photograph, a description, a video or a recording of a place may give us some sense of the place but will never come close to creating the same conditions as actually engaging in a space with the human body.

The only way to truly experience a space is to simply be there, to smell its smells, sense the quality of light, hear the sounds, and perceive the space, this can be said about any place within the environment and the library is not exempt from this fact.

There is something to be said about visiting a library and feeling the tactile nature of the book in your hands, enjoying its accommodating and unbiased environment.

Upon beginning my research into the library typology and the library's place in current times, I was somewhat skeptical that they would be as relevant now as they have been in the past. With sweeping advancements in technology, I was worried that the library would be doomed to become obsolete. However, through my research I found quite the opposite. Libraries are clearly here to stay. It is just our understanding of what a library is and how it functions that is changing.

The last decade has seen the library prove its relevance, iconic libraries such as Cesar Pelli's Minneapolis Central Library and Rem Koolhaas' Seattle Central Library serve as examples of libraries that still retain the same soaring sense of civic pride as their historic counterparts.

The public library of the 21st century becomes much more than a storehouse for books, it is a place for education, for social interaction and a place to access all different forms of social media.

The traditional functions of the library should act as the foundation for today's libraries. With the world changing at such a rapid pace, libraries are increasingly becoming places of continued education, a place for lifelong learning. Ken Worpole says "imaginatively designed and responsive public library services can play a pivotal role in promoting greater social cohesion and a stronger sense of civic pride and local identity" (Worpole 2006).

These new services are a direct response to a change in culture with the inception of new forms of media such as film, DVD's, CD's and digital media.

A number of different factors can be cited for the divergence in the form of the

traditional library building. These factors also illustrate the necessity for library buildings in the age of digital media. One factor is that members of society are increasingly attaining higher levels of education, whether it be attending a four-year university or taking a course at a local community college, people are spending much more time in academic environments. This in turn creates an increased need for study spaces.

Another driving force is the fact that more people are living alone. This means that people must move outward in order to engage in social activities. Libraries, usually placed at convenient central locations in communities have become a meeting point, as many libraries feature amenities such as coffee shops or small cafes. Once notorious as places where you could hear a pin drop, libraries have become a place to socialize, allowing for discussion over a cup of coffee or lunch.

Scandinavians describe the library as “The living room in the city” (Worpole 2006), Koolhaas’ draws off this idea in his Seattle library, naming a large atrium reading space “The Living Room” as well. The goal is to throw out all the preconceived notions of the library as a stuffy, daunting building, and bring about an idea of comfort.

With globalization comes about the ability for individuals to move freely across the globe. Individuals such as traveling business professionals, tourists, or workers traveling from foreign countries may not have the means to stay in touch with their associates. The library allows them this ability. Internet access has become a staple of modern day public libraries. Birmingham library even has computers geared directly towards e-mail capabilities placed directly off the street for easy access by traveling patrons.

The advancements in technology are becoming more rapid as progress further into the digital age. A brand new computer can now become obsolete within a matter of months, for those unable to afford to keep up with these advancements in technology, the public library may provide a solution. Up to this point, libraries and other civic institutions

have been adept at updating their technology to the most current standards.

The ways in which we will engage with library staff in the future is debatable. Some argue that we will see less face-to-face contact with librarians, as self-checkouts become more common and patrons are able to reserve materials online without ever having to speak directly to anyone. Others argue that the new types of media being utilized will free the librarians from exhaustive cataloguing and allow them to be more engaged in the library environment to field questions and give guidance. One article foresaw librarians moving through the library amongst users with handheld computers. As for now, the former seems the most likely of the two scenarios. From experience with the Fargo Public Library and the university libraries, it seems very little interaction with library staff is necessary for satisfying student needs.

Sustainability will also revolutionize the way that we interact with public libraries. In a time when the amount of natural resources are waning, conservation comes to the forefront of key issues facing libraries and the architectural profession as a whole. The public library allows for the sharing of materials, reducing the amount of material needed to distribute information to a large number of individuals.

Incorporating sustainability into the design of the building also is of the utmost importance. As architects, it is our duty to educate the public on the importance of energy conservation. The building itself can become a piece for sustainability education to the community in which the design resides.

Public libraries could eventually play a key roll in the election process, as electronic polling becomes increasingly more popular. The numerous computers housed by many of today's libraries could play a key roll in the election of public officials.

Libraries may also become a forum for public debate as meeting spaces and auditorium spaces gain popularity in the library typology. Whether it be neighborhood groups, students, or city leaders and activists, the library could act as a platform for public debate. The library fits well into politics, as it is a neutral and unbiased institution.

In order to create an effective design, the architect needs to create a work that responds not only to its site's physical environment but to the social climate as well. The neighborhoods of Minneapolis/St. Paul vary greatly in diversity. Harriet Island sees many visitors from downtown St. Paul, which is host to residents, employees and tourists from the widest range of backgrounds.

Commuter bus lines pass within just blocks of the site and walking and bike paths criss cross along the River's edge on the north end of the park. As bike culture in the Minneapolis/St. Paul community grows, it is reasonable to guess that the library will see some traffic from bike trails.

Ken Worpole outlines a number of different library scenarios for the future in his report titled *21st Century Libraries: Changing Forms, Changing Futures*. The first scenario is The New Civic Landmark. This scenario places the library at the center of the community's attention, and offers media spanning across a wide variety and in large quantities. The building has defining characteristics that emphasize its importance.

The Retail Model, found in or near a city's shopping districts, and is aimed at moving a large amount of media to a large amount of "consumers." The library would essentially act similar to a Borders or Barnes and Noble.

The Neighborhood Lifelong Learning Center, the clientele for this type of scenario could be people living in remote areas, the disabled, or the elderly. Here an emphasis on online material would be present, with patrons able to access full texts and images of a work directly from the internet. The Physical library would hold a small amount of media, but would feature space for meetings and host various educational programs.

The Mobile Library would transport materials to various locations for certain events or to patrons unable to leave their homes. The pod proposes that small fixed Terminals could be created in the street. Similar to a vending machine, patrons could access media remotely, away from the main library building.

At this point in time, these scenarios illustrate the more extreme directions libraries could take in the future, however, I think there is something to be learned from each of these scenarios. Drawing on each will be useful when implementing the design for the thesis.

A report published by the Commission for Architecture & the Built Environment, or C.A.B.E., challenges architects to create better public libraries, laying out a foundation of six principles for competent urban design.

The first is to promote character by drawing inspiration from the local context. Even within the city limits, diverse cultures and landscapes can be found between neighborhoods, and a well designed building should respond to it's immediate context.

The second, Continuity and Enclosure, seeks to engage the street, rather than accommodate the automobile, creating an architecture that is more appropriately scaled to the human body. Enclosure refers to defining spaces clearly. Quality of the Public Realm challenges designers to create a condition that is pleasant and secure to all members of society. Ease of Movement endorses a condition that is easy to transverse and integrates well with existing conditions. Legibility is a sort of wayfinding, that makes paths clear and creates defining points within the project easy to recognize direct patrons. Adaptability looks to the future. As libraries are more prone to change than other typologies, designs should acknowledge future growth. Diversity aims to promote a variance in the spaces included in the library design catering to the community in which it's placed.

As technology advances, an entire new generation will be brought up with the world at their fingertips. As promising as this sounds, one must also consider the validity and credibility of all of these new sources of information. Virtually anyone can post information on the web via blogs, web pages, social networking sites etc. This is one reason the chances are paper books will continue to exist.

Published texts go through rigorous editing and revision processes and are typically published through a credible and legitimate publication company.

One school's attempts to move into a completely digital format came under heavy criticism. Just this past summer, Cushing Academy, a boarding school in New England, began to dismantle their library book collection. "When USA Today wrote about the school's decision last fall, a firestorm erupted, with at least one blogger likening it to book-burning" (Hardy, 2009). The American Association of Public Libraries was also critical of the move issuing a statement stating, "Every librarian we know is in the vanguard of technology use at his or her school and a passionate reader and user of printed books," (Hardy, 2009).

However that isn't to say that all digital information is to be discarded as incorrect. Educational databases are a fast growing area of the web. These databases can be found both in high schools and universities across the country. These databases search a variety of resources including full texts of books and magazine articles that have been digitally uploaded.

We can use our libraries to educate young people on both these problems and these solutions. Instilling appropriate research methods in today's students can greatly affect the outcome of the future, and libraries act as the medium through which we educate.

## Summary of The Results From the Theoretical Premise/Unifying Idea Research

The summary is organized similar to how the Results from the Theoretical Premise/Unifying Idea Research was presented, starting from a broad look into how media is affecting our cities, and then slowly focusing in on core issues.

As we move into the 21st century we are increasingly surrounded by media in the urban environment, whether it be the giant advertisements that line our interstates, the paper we grab from the front steps every morning, or the massive amounts of media on the internet.

Upon the emergence of digital technologies, it was said that cities may soon begin to dissipate as we would be able to accomplish many more tasks from more remote locations, the same was said about the library. As more works by writers, musicians, filmmakers etc. become available over the web, it was said that the library as a physical place would be rendered useless. However, that theory has consistently shown to be blatantly untrue.

Libraries are actually proving to be more useful than ever and are adapting at the changes brought in by the 21st Century. No longer a storehouse for books, the modern library is a place of social interaction, education, performances, and a place to access all types of different media including films, music, magazines, digital media, etc. The traditional functions of the library should serve only as the foundations for the modern library today. Building upon these foundations with newfound uses is what will maintain the library as a source of civic pride.

It is not only the changing forms of media that have caused today's libraries to diverge from their traditional forms. One reason cited is that more members of society are attending higher institutions of

learning, therefore requiring more space for research and studying. An increase in the number of people living alone also plays a role, as the library has become a place to meet someone for lunch or a coffee and socialize.

Travelers are also becoming more frequent users of the public library system. Whether it be the business professional or the tourist, someone on the road without the means to get in touch with colleagues, friends or relatives may stop into the library to shoot off an e-mail or connect via social networking sites.

The library is also staying ahead of the game technologically so their patrons don't have to. Patrons may use the library for free wi-fi services, if they are unable to afford an internet service provider at home.

Libraries, as unbiased public institutions, could also come to play a role in the election of public officials. With electronic polling becoming a more popular method, libraries could become polling stations.

We could also see libraries becoming more specialized in nature, catering to different groups of the community. For example, one scenario foresees retail customers taking advantage of media such as CD's and DVD's whereas another scenario sees the public library becoming a place for continuing education for the elderly.

The architect should take all these factors into consideration when employing design strategies towards a public library. We should strive to maintain the libraries symbol as a community gathering space that is a living, functioning, breathing organism that caters to the needs of it's patrons and is a monument to civic and local pride.

# Case Studies

## Philip Exeter Library

Exeter, Massachusetts

Louis Kahn

## Seattle Central Library

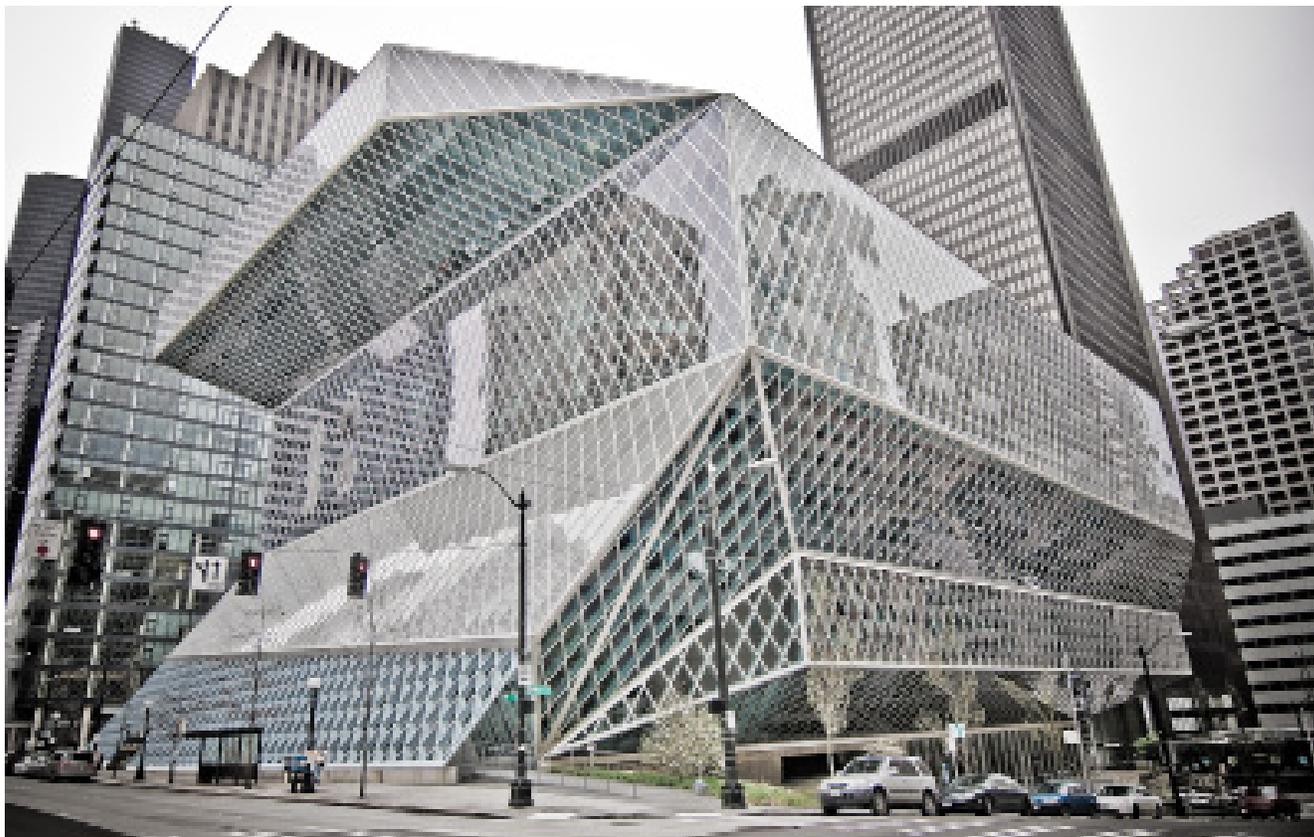
Seattle, Washington

Rem Koolhaas

## Minneapolis Central Library

Minneapolis, MN

Cesar Pelli



# Seattle Central Library

Architects: Rem Koolhaas at OMA and LMN Architects

Site: 1000 Fourth Avenue, Seattle, Washington, USA

Seattle's Central Library, designed as a joint project between Rem Koolhaas' firm OMA and LMN Architects, is a testament to the necessity of library buildings in today's urban environments.

The Library is located at 1000 Fourth Avenue in Seattle, Washington, in the heart of downtown. The building houses a staggering 362,000 square feet of floor space and contains over a million books along with 300 public computers, along with multiple other spaces including a coffee shop, an atrium and various meeting spaces.

The most distinguishing feature of the work is the organization of its general stacks. A continuous ramping system, dubbed "The Spiral" by Koolhaas, winds vertically through four floors of the building, allowing access to every single volume in the library without ever encountering a single stair, elevator, etc.

The most notable space on the entry level is "The Living Room," a large atrium space that presents patrons with an excess

of seating and an ample amount of day lighting. Progressing upwards you reach the mezzanine which occupies two floors. The first features computer clusters and meeting rooms, the second however features, "The Mixing Chamber," a large space allowing the public access to computers for general research and searches of the library systems catalog.

The next four floors contain "The Spiral," an uninterrupted ramp housing all volumes of text within the library. Despite its collection numbering over one million volumes, the stacks are not packed to capacity allowing for future expansion. Upon reaching the top floor of the stacks, patrons enter into a massive reading room that allows for heightened views of downtown with views of Elliot Bay and Mount Rainier in the distance.

Crowning the top of the building is administrative space for the entire Seattle Public Library System, featuring office and meeting spaces.

The Seattle Central Library is similar to Kahn's Philip Exeter Library and the Minneapolis Central Library in that they serve as a sort of community center for their respective communities. They also accommodate a vast number of patrons and offer services far beyond the simple distribution of books.

Seattle's case is unique because it engages with a multitude of mediums without favoring any medium in particular. Koolhaas has recognized that advancements in technology have, and will, vastly change the way we learn and interact with the world and the people in it. He acknowledges this through "The Mixing Chamber," and the auditorium space.

The building is designed not as a warehouse for books, but as an active building integrated into the urban fabric of Seattle, creating a social gathering place that allows for education, conversing, eating, etc.

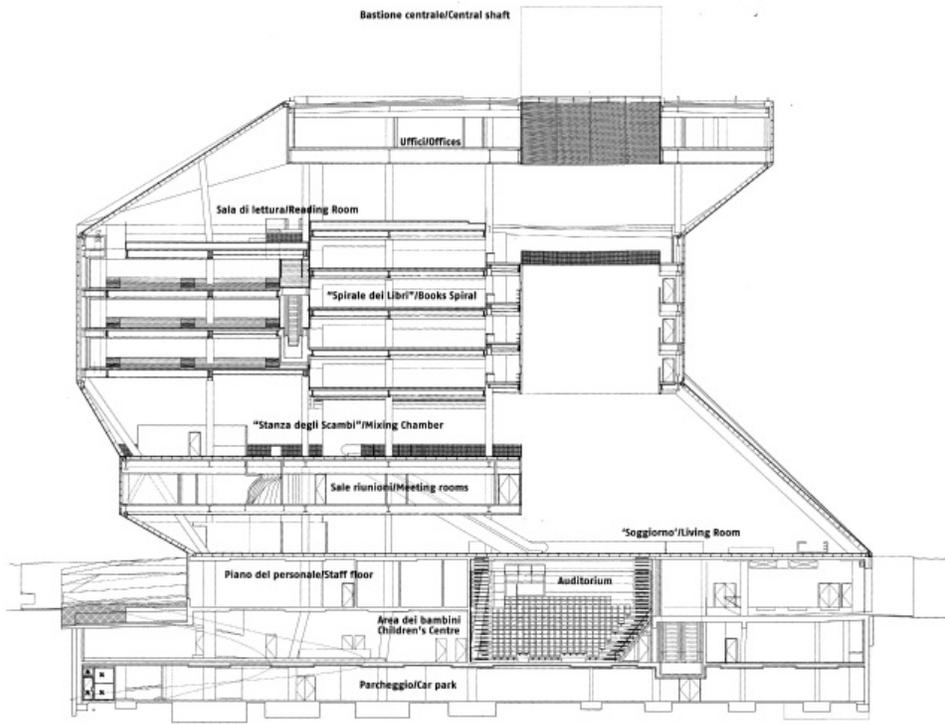
The building is certainly not your conventional downtown high rise, however, with its steel and glass facade it seems to fit well with its downtown counterparts. Its open and airy plan fits perfectly with its openness to the public, truly becoming a place that not only houses artifacts of culture, but a place that actively creates culture.

Part of a massive library revamping project, the Central Library has taken center stage in a program that cost 280 million dollars and has renovated or built 27 branch libraries in the city.

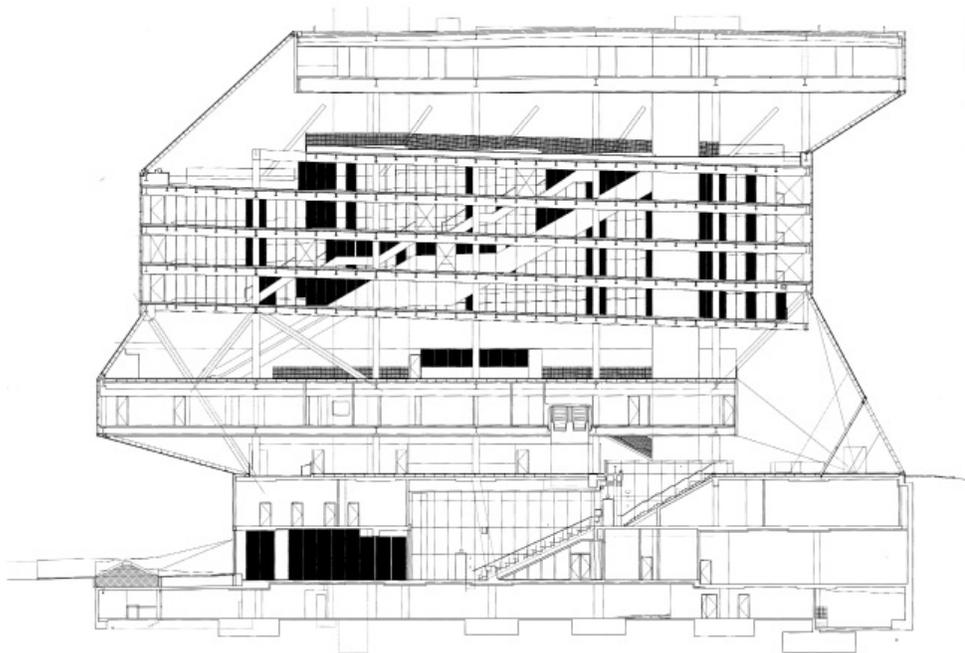
OMA and LMN were successful in creating a library that acknowledges the changes happening right now and foresees the changes coming in the future. They have created a piece of architecture that has a lasting relevance in a transforming typology.

The Seattle Central Library is a testimony to the fact that libraries can, and indeed will remain relevant pieces of architecture within our communities at least for many years to come.

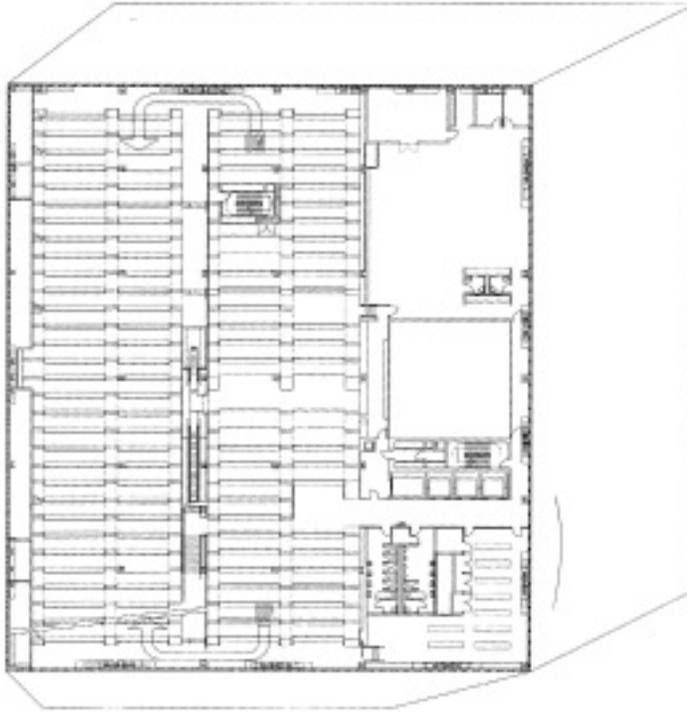




Section drawing parallel to the axis of Madison Street.

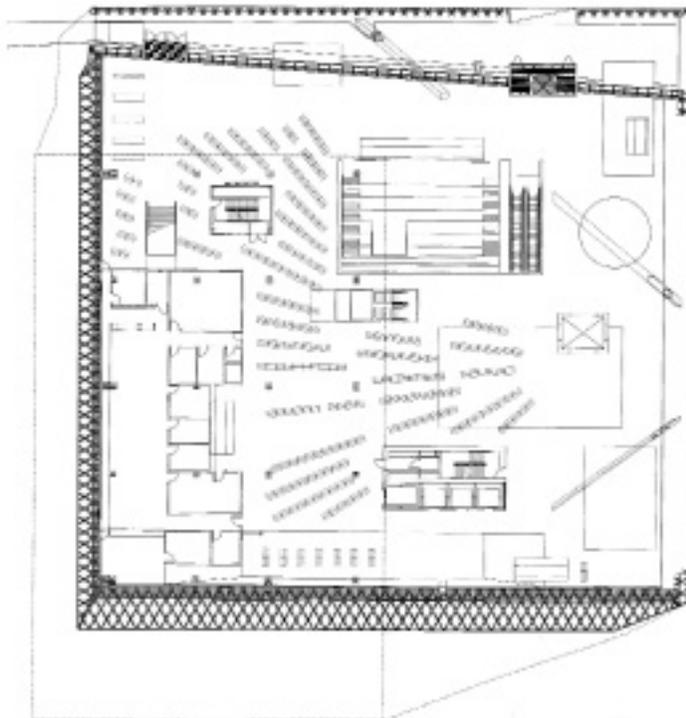


Section drawing parallel to the axis of Fifth Avenue.



Floor plan of "The Spiral"

"The Spiral" allows for patrons to browse the entire catalog of the Seattle Central Library in one long ramp that ascends four floors.

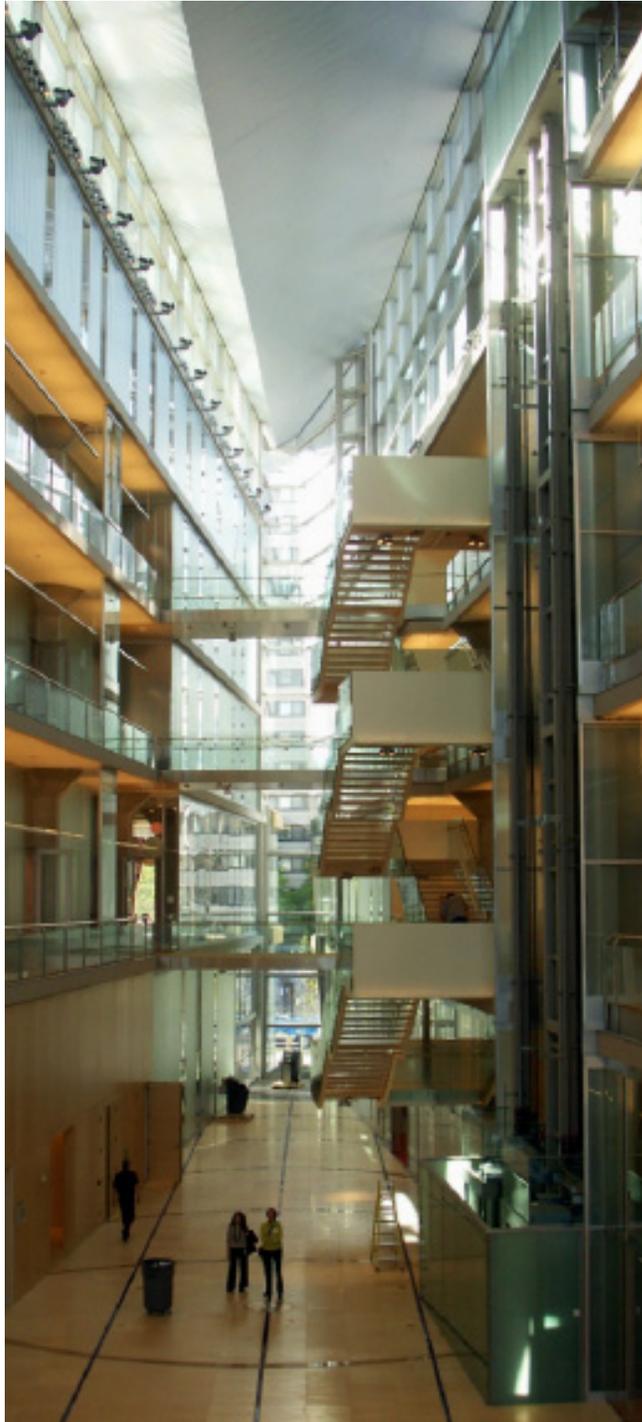


Floor plan for "The Living Room"

"The Living Room is a space devoted for studying and reading, providing ample amounts of natural light and comfortable seating in a grand atrium space."

# Minneapolis Central Library

Architect: Cesar Pelli  
Location: 300 Nicollet Mall,  
Minneapolis, MN, USA



Minneapolis Central Library, located at the north end of Nicollet Mall in Minneapolis, was designed by Argentine architect Cesar Pelli of the firm Cesar Pelli and Associates. The Massive Library stands five stories tall, covers 365,000 square feet, and cost 138.7 million dollars.

The building is very successful in drawing its inspiration from the Twin Cities area and from the state of Minnesota. This is accomplished by utilizing local materials, particularly dolomite limestone which is found throughout Minnesota, as well as acknowledging different scenes in window shading devices. For Example prairie grass, water, white birches, and snow covered tree branches adorn various facades of the building. These graphics not only illustrate Minnesota imagery to patrons, but also help block out harsh sunlight during warmer months to help cool the building.

Other environmental conscious gestures in the design include a large green roof planted with native grasses as well as recycling nearly all materials from the previous Minneapolis Central Library building.

Natural daylighting is the most striking feature of the library; upon enter the Library Commons, which slices through the building creating a north and south wing, one's eyes are immediately raised upwards to witness daylight streaming down from five stories above. The stacks on the floors above are open to the commons below creating a very open free feeling to the design.

The south section of the library acts more as community center featuring an auditorium space, staff and administrative spaces and even a book repair and binding service area on the fifth floor.

The north section houses the stacks as well as spaces for music rehearsal and



computers for public use. The architect was even able to utilize an old, elaborately carved door frame taken from a late 1800's library, previously located in downtown Minneapolis.

Pelli intentionally created simple, open spaces that can be adjusted to accommodate future needs. Staff desks are adjustable, and the stacks are mobile, allowing for easy reconfiguration. An art installation placed on the glass elevators in the Library Commons feature LED displays that show what items are currently moving through the checkout. Plenty of seating and study spaces provided on each floor allow patrons to read or study in comfort.

The library is extremely responsive to site, Pelli drew inspiration for the floor plan from the original layout of the city grid of downtown, in which the streets grew closer together as they neared the Mississippi River which runs by not too far from the library. Given its location in downtown, the patrons using the library span across all social classes, races and genders. It has become a place for both research and simple leisure.

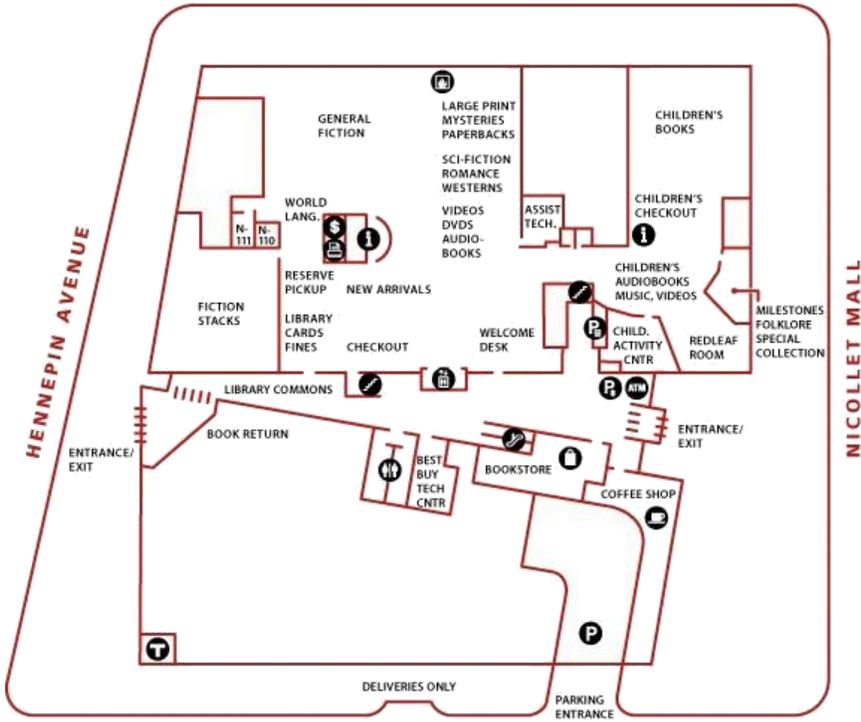
By drawing upon Minnesota qualities, it is a building that embodies the culture of Minneapolis and Minnesota at large. Creating this building has, in turn, created a renewed sense of civic pride for the community.

Much care has been taken to make the design environmentally friendly, from the shading panes of glass, to the substantial amount of day lighting, to the massive green roof topping the building that allows for rainwater retention.

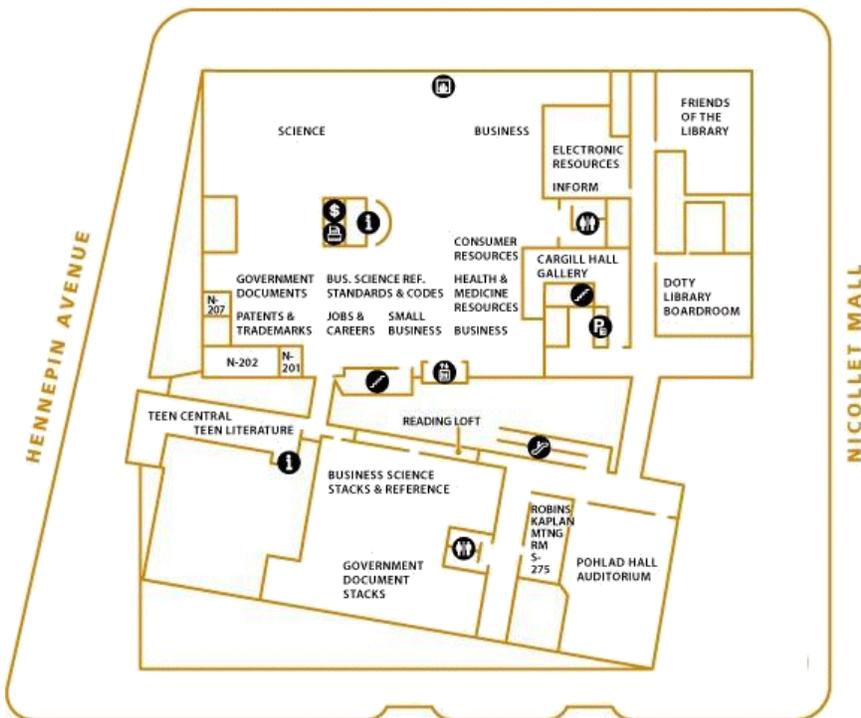
The Minneapolis Central Library is similar to Koolhaas' library in Seattle in that it views the library as not simply a place to access books, but as a place for interaction between members of the community.

I believe the library addresses the needs of the current generation of library patrons who are exceedingly different from library patrons even as recently as 10 years ago.

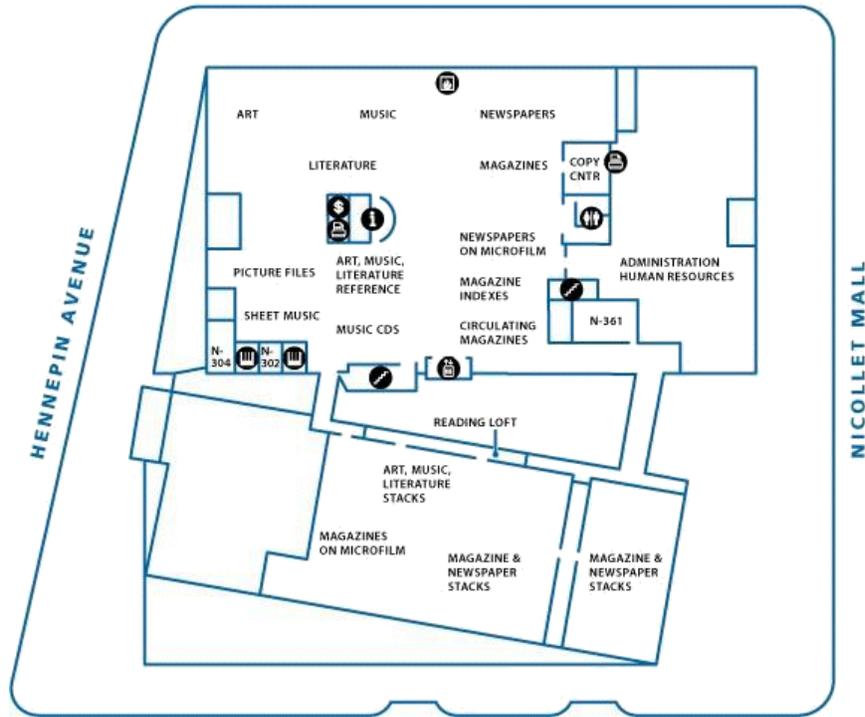
1st Floor



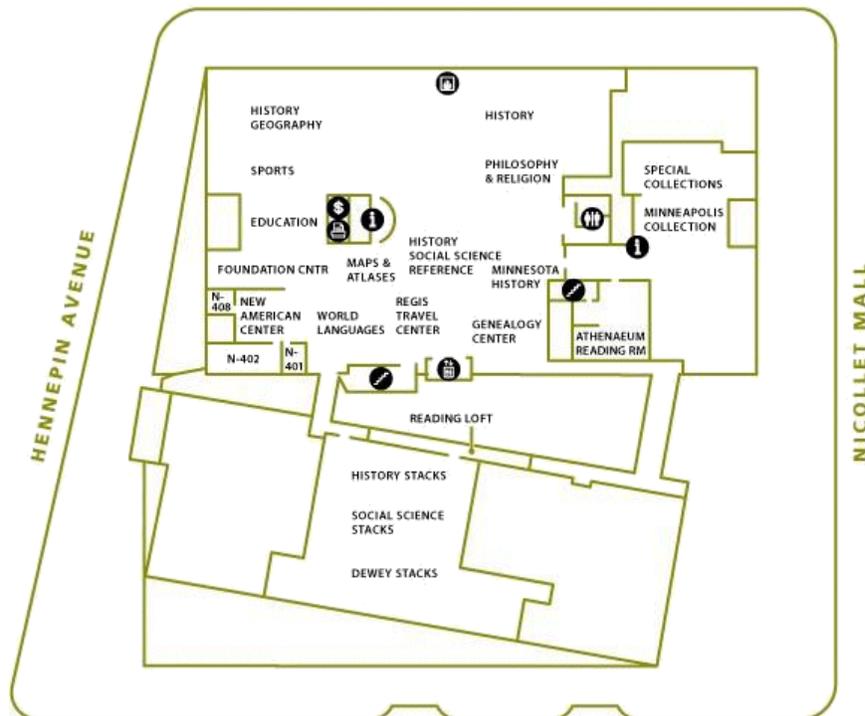
2nd Floor



3rd Floor



4th Floor



# Philips Exeter Library

Architect: Louis Kahn

Location: Philips Exeter Academy Campus, Exeter, Massachusetts



Philips Exeter Library in Exeter, Massachusetts is the largest secondary school library in the world. The design was commissioned in 1965 by the Philips Exeter Academy with Louis Kahn as the chosen architect and completed in 1971. The library currently houses 160,000 volumes with the capacity to hold 250,000.

The most distinguishing characteristic of the building is its massive interior atrium that penetrates through four floors to the lobby below. Kahn used a simple material palette, utilizing the Academy's traditional brick along with stone, slate, natural wood, travertine and large amounts of concrete.

The design is hierarchical moving from interior to exterior, the atrium at the center, surrounded by the stacks, with student study carrels at the exterior along the facade. The top floor features 2 seminar rooms available for classes and meetings.

The library is extremely massive compared to the size of the school and has enough seating capacity to accommodate half of the school population.

Kahn's library at Exeter Academy is similar to Minneapolis and Seattle in that it is seen as a place for congregation, however, it comes far before the age of computers and digital media. Much more emphasis is placed on the book with the stacks occupying much of the spaces, however the architect also allocates a large amount of space to the act of studying and research with plenty of study areas for individual students and groups.

However, Kahn does acknowledge the future use of the library simply with its scale, creating an extremely large library that would still be able to accommodate a large number of patrons nearly forty years after its completion.

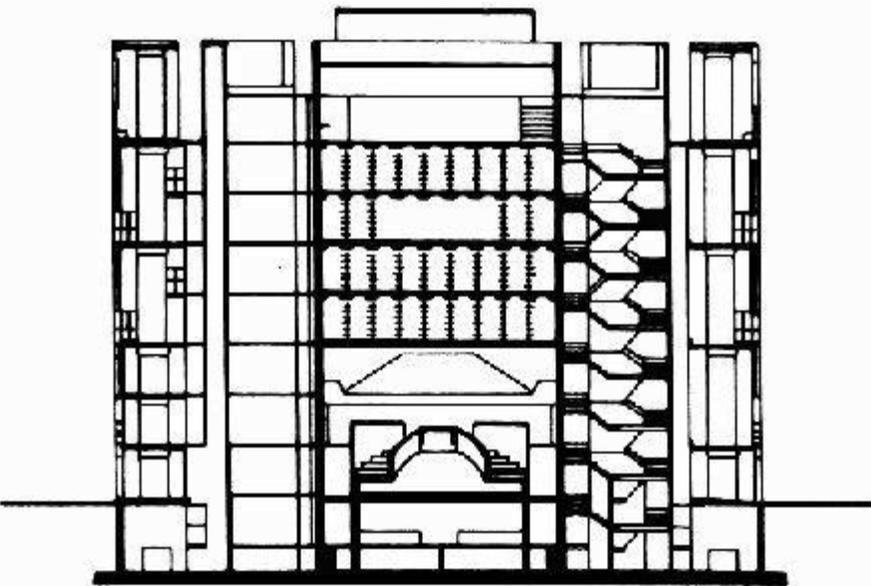
Environmentally, the building responds quite well, harnessing natural daylight with an almost temple-like quality.

Given the fact that the library is made available only to students, staff and faculty of the school makes it somewhat less democratic than the other case studies shown. However it is a place where students flow freely in and out exchanging ideas and socializing. Therefore, I believe it is as effective as the Minneapolis Central Library and the Seattle Central Library, simply on a smaller scale.

Very symmetrical in its design, the four facades are very similar, however I feel this allows for easy access to the design from all points of the campus.

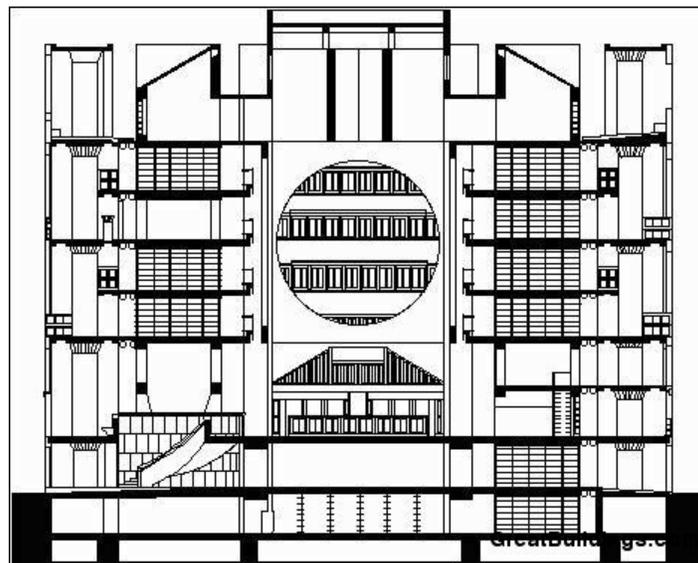
Kahn's library at Exeter Academy is useful relating to the overall project given it's context in time, it helps illustrate how vastly the design of libraries has changed within the last half century. However, I think there is much to be said about the timeless quality to the design. The library has been able to adapt to these changes in culture and is still able to serve the people at Philips Exeter Academy with much success.



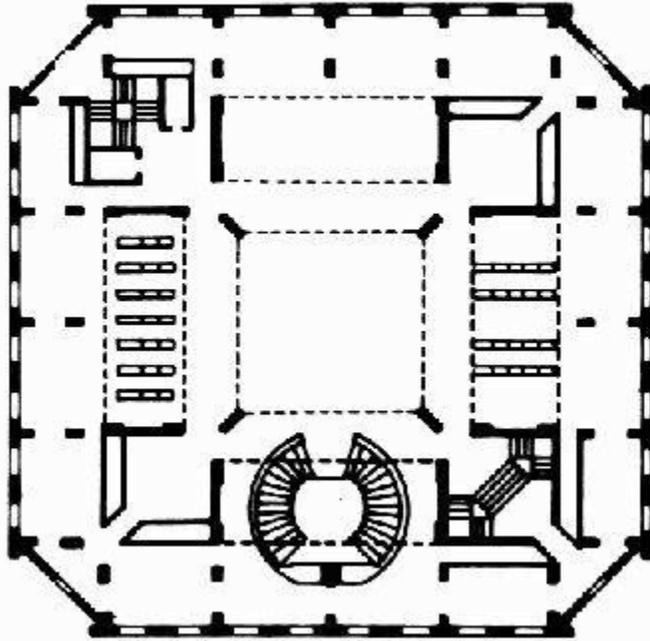


Section Drawing

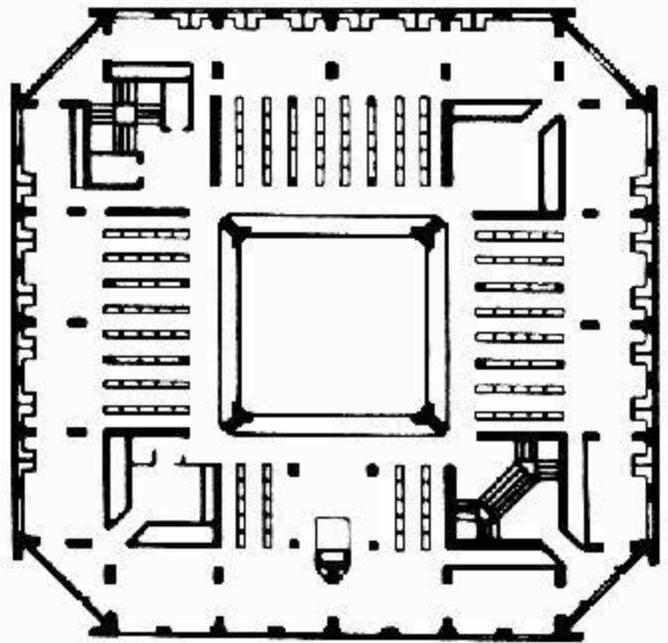
The section drawing to the right shows Kahn's large circular voids in the concrete center atrium, allowing for a more open feeling and a visual connection between the main level lobby and the stacks above.



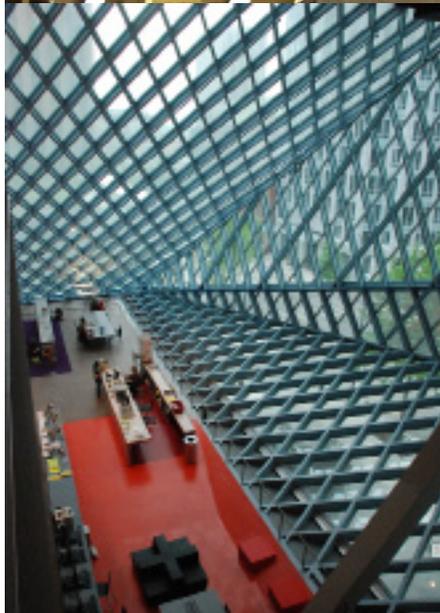
Section Drawing



Ground level floor plan showing circulatory systems and lobby area.



Upper level plan showing the stacks.



Each of the case studies examined brought forth a unique take on the library typology. Minneapolis' Central Library exemplified how a design can draw inspiration from the community and environment in which it resides. The library also addresses the needs of the modern day library patron, with access to a various array of media types, activities and spaces in which to engage themselves. The library also faces one of the most daunting topics in architecture today; sustainability. With its exceptional response to day lighting, rainwater retention and recycled materials, it serves as a luminary icon, from which other cities can learn.

Seattle's Central Library fits perfectly in with it's downtown surroundings. Sharing many similarities with the Minneapolis library, the design captures substantial amounts of daylight into its interior, offering patrons great, well lit spaces ideal for research and reading. It is also similar to the Minneapolis library in its acknowledgement to the growing number of non-traditional forms of media utilized by today's library patrons. The library is far from a warehouse for books, but more a social gathering place for the Seattle community.

The Philips Exeter library is, to a certain extent, the black sheep of the case study series. Given the time period in which it was built, it doesn't address the same questions as the other two case studies. However, the library does touch on the civic nature of the typology, acting almost as a temple of education and a centerpiece for the campus.

The case studies relate well to the Theoretical Premise and Unifying Idea in that these projects, particularly the Seattle and Minneapolis projects are actively addressing the changes in the way we understand and interact with libraries in modern times.

Each project in its own approach, seeks to create a condition which encourages interaction between their patrons, and a venturing outside of typical activities usually associated with libraries, whether it be community meetings, musical productions, or accessing visual and auditory media.

Koolhaas' library in Seattle questions the idea of stacks being separated by floor, something that wouldn't even cross the mind of most designers. His solution "The Spiral" proposes a revolutionary solution, with the stacks placed in a continuous spiral upwards through the building allowing patrons access to the entire collection without moving between floors.

Each project was successful in engaging with the site, for example the Minneapolis Public Library Commons creates a triangular incision giving a generous main entry open to Nicollet Mall, a street with heavy pedestrian activity, and a smaller opening to Hennepin Ave. It draws its inspiration for the plan from the street layout of Minneapolis and features graphics on the windows that illustrate aspects of Minnesota's natural environment. The library takes full advantage of its open site and pulls light down into the heart of the building.

Upon first glance, Seattle's library is unconventional, however, upon closer inspection it seems to be a logical solution for its site that sits among the high rise buildings of downtown Seattle. The Building's outdoor spaces, protected by the canopy curtain wall above almost seem to suck visitors into the structure. Seattle's library is also a testament to the politics of the city, as it was the end product of a large revamping of the city's library system.

Kahn's Library at Exeter seems to be a perfect spatial hierarchal arrangement, with a massive central reading space surrounded by single-story height stacks out to the individual carrel stalls, designed to cater to the individual.



## **Historical Context**

The Library in the Ancient World

Andrew Carnegie and the American  
Public Library

The History of Minneapolis/Saint Paul

The City Today

The Hennepin County Library

## The Library in the Ancient World

The library can trace its roots nearly back to the beginning of civilization. Archives have been found in ancient Mesopotamia, with literature inscribed on clay tablets. Literature was reserved for only the most affluent members of society, including the wealthy and the royal. Religious establishments, such as temples, also kept archives of text.

The Mesopotamians were soon followed by the Egyptians, who, similarly to the Mesopotamians, kept texts to document nearly all aspects of their society. They kept records of essential knowledge as well as lists, letters, records and any other information found to be crucial for documentation.

The first public library was created sometime around the 4th century BCE by the Greeks. The Greeks were especially exceptional library builders due to their ability to copy texts and distribute them throughout libraries.

The most notable library of the ancient world was The Great Library of Alexandria. The goal of the library was to house all the texts of the world, translated into Greek. Wishing to acquire 500,000 scrolls, the library actually contained 750,000 at its height, an amazing accomplishment especially given the time period.

## Andrew Carnegie and the American Public Library

Andrew Carnegie is a prime example of the American success story. Immigrating from Scotland as a young boy in the mid 1800's, Carnegie worked his way up the social ladder to eventually become one of the wealthiest and most successful businessmen in America. Starting out as a low-income bobbin boy in a textile company, Carnegie would rise fast up the corporate ladder, moving onto become a boiler operator, office clerk, and then a telegram operator.

Carnegie eventually went on to found the Carnegie Steel Company which at one point was the largest steel manufacturing company on earth. He could be compared to today's wealthy elites such as Bill Gates or Warren Buffet.

Carnegie attributed his ability to build a financial empire to his access to a friend's private library. At this point in time, libraries were largely privately owned and accessible only by society's elite. Carnegie felt that the access to knowledge should not be limited to a certain class of people, but available to all members of society. Carnegie says, "Libraries stood for the world of books and words, the world of high culture so often barred to the working poor in the so-called Gilded Age of millionaires." (Jones 1997)

Carnegie's solution was to create a program aimed at funding the construction or reconstruction of over one thousand libraries across the United States and other English-speaking countries around the world. The program, unofficially known as the Carnegie Program for Public Library Building helped to create approximately 1,750

buildings around the world.

The first library constructed through the program was the public library of Fairfield, IA. Over the next 26 years Carnegie would donate \$68,333,973 towards these libraries.

By creating these libraries Carnegie helped to contribute to the education of an entire nation, and to some degree, the entire world. The act of creating libraries completely open to the public allowed for a vast amount of knowledge to be able to accessed by any member of the community, no matter what social class.

The Carnegie program for public library building construction is considered by some to the greatest philanthropic programs of all time. Carnegie says, "Free libraries maintained by the people are cradles of democracy, and their spread can never fail to extend and strengthen the deomcratic idea, the equality of the citizen and the royalty of man. the are emphatically fruits of the true American Ideal." (Jones 1997)

Carnegie's vision is still apparent in today's context. The definition of precisely how a library functions may have changed, however, society's quest for knowledge remains as pressing as ever.

"Libraries stood for the world of books and words, the world of high culture so often barred to the working poor in the so-called Gilded Age of millionaires."

-Andrew Carnegie

## History of Minneapolis/St. Paul

Minneapolis draws its name from both Greek and Native American Dakota languages. The Dakota word for water, "mni," combined with the Greek word for city, "polis," an appropriate name for a city that can trace its beginning to the St. Anthony Falls on the great Mississippi River.

The falls were first discovered in 1680 by Father Louis Hennepin, a Franciscan Priest traveling down the Mississippi River. The Falls were made famous twelve years later by an east coast explorer named Jonathan Carver, when his sketches were published in a popular book.

The U.S. officially secured the land that would eventually become Minnesota with the Louisiana purchase, after it had passed through the hands of numerous other nations including England, France, and Spain.

To secure the land that would eventually become the heart of Minneapolis, an Army Lieutenant, Zebulon Montgomery Spike was sent to negotiate a deal with the Sioux tribe in order to obtain the land at the mouth of the St. Croix River and Minnesota River.

Following the war of 1812, more settlers began moving westwards across what is now the United States. Travelers were especially drawn to St. Anthony Falls because of its unique and beautiful landscape.

St. Paul draws its name from the first chapel erected on the bluffs above the Mississippi River, in what is now St. Paul. Priest Fr. Lucien Galtier named the chapel after his favorite apostle, Paul, and later suggested that the surrounding settlement adopt this name as well.

## The City Today

It is hard to believe how far St. Paul has evolved as a community since its inception less than 200 years ago. The 2,000 Census placed St. Paul's population at 287,151. The city itself is not very large, however, with Minneapolis and the surrounding Twin Cities Suburbs, the area hosts a large and diverse community.

It is here in the Twin Cities that you can find works by world renowned architects; The massive St. Paul Cathedral, completed in the early 1900's was designed by French architect Emmanuel Louis Masqueray, Famed Minnesota architect Cass Gilbert designed the iconic Minnesota Capitol building just north of downtown St. Paul, French Architect Jean Nouvel designed the Guthrie Theatre a new building in 2006; Philip Johnson designed the high-rise IDS building in the 70's; Frank Gehry has designed the Weisman Art Museum for the University of Minnesota Twin Cities Campus and Herzog and Demeuron recently added an addition to the Walker Art Center.

The Twin Cities have recently made great strides with its public transportation system. In 2004, the city introduced Light Rail through Metro Transit. As of August, 2009, the rail line covered 12 miles, featured 17 stations, and had approximately 30,200 riders on average per day during the week. Incredibly, over half the riders were completely new to public transit. Since then Metro Transit has opened up a line to Big Lake, a suburb outside of the Twin Cities, adding more stops and more mileage. The city plans to extend to other suburbs as well in the future.

The Twin Cities is awash with culture, Minneapolis.org states "Minneapolis Saint Paul boasts more theater seats per capita than any other U.S. City outside New York." The theatre scene is massive, with 75 theater companies calling the Twin Cities home. In the northeast portion of downtown Minneapolis you'll find the Hennepin Theatre District, home to the Historic State Theatre, the Pantages Theatre as well as the Orpheum. In addition to the Weisman and the Walker art galleries, the Minneapolis Institute of Arts features more traditional forms of art. There are also numerous smaller gallery spaces scattered throughout the city.

"Minneapolis/Saint Paul boasts more theater seats per capita than any other U.S. City outside New York."

-Minneapolis.org

# The Hennepin County Library

The Hennepin County Library System today is comprised of Minneapolis Central Library and 40 branch libraries in Minneapolis and suburban Minneapolis. Although these libraries are located throughout various neighborhoods in Minneapolis, they all act essentially as one entity. The Library possesses over five million pieces of media including Books, DVD's, CD's Etc. It features nearly 2,000 computers that can be accessed by any members of the community and serves over one million residents living within Hennepin County.

Founded by Gratia Countryman in 1922, the Hennepin County Library was actually located in the Minneapolis Public Library. The library was created in response to the lack of library materials made available to those living in rural communities. Countryman states, "The public library is an institution so pliable that it bends to every growing need of community life; so susceptible to social needs, so eager to render all possible service, that it must by virtue of its own nature reach out beyond the city borders."

The Library essentially began as a bookmobile: a truck containing bookshelves was driven out to remote towns surrounding the city of Minneapolis. The truck could fit about 500 books and made its rounds based on a monthly schedule with 195 stops at schools, homes, and other public buildings. Eventually these towns took it upon themselves to organize a permanent library which was in part funded by the Hennepin County Library.

As these suburbs grew and it became easier to for residents to travel to and from the city to more rural areas, libraries began popping up at an extremely fast rate. By 1952, 30 years after its inception, there were 24 libraries. All the while advances in technology brought about new forms of media to be distributed by the Hennepin County Library. The 1970's saw film, tapes and visual content being distributed through the library.

1979 saw the first instance of electronic checkout at the Eden Prairie Branch, a revolutionary idea at the time. Through the 80's, this technology eventually came to include nearly all the libraries, allowing patrons to search the entire Hennepin County Library catalog from a single location.

Just Recently in 2008, the Hennepin County Library merged with the Minneapolis Public library bringing the total number of libraries in the joining system to 41.

These various libraries host a number of different events on a day to day basis. For example, a number of the libraries host storytelling nights for children and parents. The Teen Center Reading Club at Franklin Library invites teens in 6th grade and above to get together to read books and learn about current events. Franklin Library also hosts more unconventional library activities such as Game On! Gaming Wednesdays inviting teens to play board games as well as video games.

With the state of the economy, job search workshops as well as resume building workshops are becoming more and more common.

Given Minneapolis' diverse population, non-native English speakers are invited to attend meetings where they are able to work on their speaking skills and learn more about the library.

Classes are offered in other languages as well, for example, in recent years, Minneapolis has witnessed a large influx of Hmong immigrants. A class offered at the North Regional library offers entry level computer classes in the Hmong language. Libraries have come to provide access to media, but to education as well, breaking down barriers in society.

In 2007 the Committee on the Future of Libraries in Hennepin County was created. The goal of the committee is to assess future and current library problems and find solutions to these issues.

# Thesis Goals

The thesis aims to create a design that responds to the rapid transformation occurring in the building typology. I aspire to create a piece of architecture that acknowledges the recent changes in the way that we view and interact with social media. I also intend to illustrate the importance of the library as a physical place within the community as society moves further into a digital age. My hope is that my thesis will be able to restore the civic qualities that are rapidly vanishing from modern libraries.

Creating a design that responds to site is extremely crucial. The thesis site in downtown Southeast of downtown Minneapolis allows for a vast array of influences to draw upon. The rich landscape along the Mississippi, the changing of the seasons, and the diverse population will all contribute to design decisions.

In an age where humanity faces it's biggest threat, itself, sustainability must play a key role in design decisions. As designers we must step up and become stewards of the environment and lead by example. It is our responsibility to create buildings that are energy efficient and clean. This will be accomplished by rigorously assessing climate and site conditions, as well as being mindful of materials used in the design.

As the site sits close to home both literally and figuratively, my goal is to create a design that opens up a dialogue between the architecture surrounding the site and within the Minneapolis community as a whole.

Academically, my goal is to create professional level work as moving out into the professional world is the next logical step upon graduation. The thesis should stand as a testament to the knowledge acquired over five years here at NDSU. I hope to draw inspiration from the various professors I have encountered and worked with throughout my time here at the University.

I aim to conduct research utilizing a wide range of study materials and taking full advantage of the resources made available to us as students.

I also intend to create a clear, precise, and well thought out design and present this design in the best way possible. I hope also to give a final presentation that is easily understood and inspirational.

Civic architecture in particular has been an interest throughout my time in the school of architecture. These buildings become testimonies to the time period in which they were built. This can be traced all the way back to the earliest civilizations, particularly the Greeks and Romans.

My hope is to continue this work on civic architecture into practice in the professional world. I believe that working on civic would projects could help to positively affect the lives of a great number of people.

Politics have also been of great interest, and civic projects and politics go hand in hand. Without politics, civic institutions would cease to exist. Politics are the means through which great civic projects are constructed. By creating a dialogue with the public, politicians and activist groups are able to persuade members of the community to support projects that will better society as a whole. In civic projects, the architect becomes mediator between government and the people. The most successful architects immerse themselves in whatever project they're currently working on.

I hope to attend meetings held by organizations with relations to the public library system in order to gain a better understanding of it's inner workings and needs.



# Site Analysis

Harriet Island, Saint Paul, Minnesota

# Qualitative Aspects

Harriet Island sits south of downtown Minneapolis and is a unique part of the Minneapolis community given its natural character.

Surrounding Powderhorn park is a high density residential neighborhood, organized along a tight and repetitive grid with narrow, long lots. The park, juxtaposed against this rigid grid, looks fluid, with its paths meandering through the park with no sense of direction. The plan is organic, appropriate for the experiential character of the site.

The textures are also mostly organic, large expansive lawns, sporadically placed trees and the smooth fluid surface of Powderhorn Lake.

Topographically the impact of human activity on the site is hardly apparent, with a few baseball diamonds, few rectangular buildings and other sports fields. The lake looks like a giant black void interrupted by a small island along the south shore.

The site is fairly open to sunlight, The trees aren't many relative to the site as a whole, however they are evenly dispersed allowing for small shaded areas to occur in nearly all portions of the park

The entire park slants down towards Powderhorn Lake, as water naturally seeks to reach the lowest point. The presence of the surrounding neighborhood isn't very apparent while in the park given the fact that the majority of these homes rise to a height of two stories or less.

The plan and section are similar in their organic nature, the vegetation of the site is apparent in section, whereas the meandering trails and organic forms of the landscape are apparent in plan.

The number of built structures on site are few, the largest being a Recreation Center on the southeast shore of the lake. The center contains computer labs, a gym, and rest room areas. A warming house is also located within the park. These buildings are the only ones present on site, so the density is extremely low. However the neighborhoods surrounding the park are of an extremely high density.

The light quality on site varies greatly from season to season, The Summer sees very direct intense sunlight with warm colors witnessed at dawn and dusk. The Winter light is less direct, however it's reflection off the snow can become almost blinding.

The Vegetation on site is rich in greens and hues of yellow during their peak during the summer months. The fall however is when the vegetation showcases it's most beautiful array of colors, the changing of the leaves brings forth dark maroons, bright yellows and almost neon oranges that blend with the setting of the sun. Given the large amount of water moving through the site the vegetation remains healthy. There is really no driving organization of the vegetation, it's almost as if there was once a forrest on site and shrubs and trees were removed at random to allow an opening up of the forrest floor. The vegetation for the most part is deciduous with some coniferous plants sprinkled throughout.

The only water on site is that of Powderhorn lake, which remains present throughout all months of the year. The water is typically untouched, allowing for sediment to settle to the bottom, therefore allowing for a clean and pristine look

Winds are prevalent on site, as there is little to stop their flow. Warm winds blow in from the southeast during warmer months, whereas during the winter harsher winds come from the Northwest. Given it's close proximity to the Mississippi River, the site sits at near the bottom of the Mississippi River valley, allowing for stronger winds to pass over at higher elevations.

Human activity on site is most noticeable during the more temperate months of the year. Annual events held in the park such as a Fourth of July celebration, The Powderhorn Art Fair, and a May Day celebration. A dock located directly next to the park center gives visitors a unique view of the lake, and is open to fishing.

The winter months allow still show sign of activity, as children from the surrounding neighborhood convene on it's hills to go sledding. An ice rink in the park can be reserved whereas an ice rink on the lake allows for open skating.

The site does show some signs of distress, for example the heavy pedestrian traffic particularly around the softball and baseball fields shows grass that has been worn down to dirt. The same condition appears around the playgrounds located within the park.

Muddy conditions along the northwestern shore of the lake appear to have caused some trees to become water-logged. Some erosion appears along the edges of the lake with flowing water the most likely culprit.

# Quantitative Aspects

## Soils

Two types of soil were found on site using the United States Department of Agriculture's Web Soil Survey , the first type of soil found, labeled D8E, referred to loamy coarse sand located on an 18 to 35 percent slope. The first 11 inches consist of loamy coarse sand, 11 to 27 inches consists of coarse sand and 27 to 80 inches consists of gravelly coarse sand. This refers to the soil surrounding Powderhorn lake.

The second type of soil found, labeled U2A consisted of Udorthents and wet stratum on a 0 to 2 percent slope. This soil is made up of various soil material and is located in wet depressions. This refers to the type of soil comprising the bottom of Powderhorn Lake.

## Water Table

The drainage class of soil type D8E was excessive with, no flooding and the depth to wet soil moisture status at 6.7 ft. year round. The soil has a water capacity to a depth of 60 inches of 3.6 inches.

The soil type U2A had no flooding and no ponding.

## Utilities

Given the site's lack of built structures it does not feature very much infrastructure, however sewage, electricity, water and natural gas lines connect the park center to the rest of the city's grid. Surrounding neighborhoods are powered via above ground power lines.



## Vehicular Traffic

Vehicular traffic varies throughout the year with less traffic during the cold winter months when the island is less frequented by visitors. Summer months see a peak of traffic on weekends, as people may park to access the walkways along the river's edge. There also may be an influx in traffic during major events the park hosts to such as festivals or concerts.

## Pedestrian Traffic

The site is dominated by pedestrian traffic particularly during the summer months as Harriet island is frequented by runners, bikers, walkers etc.

Pedestrian traffic also peaks during festivals and concerts; at times, there are thousands of people within the park.



Street map of site and it's immediate context.

## Site Character

The most dominant element within immediate vicinity of the site is the Mississippi River. The site's surroundings include industrial buildings as well as newly developed condos.

## Topographic Survey

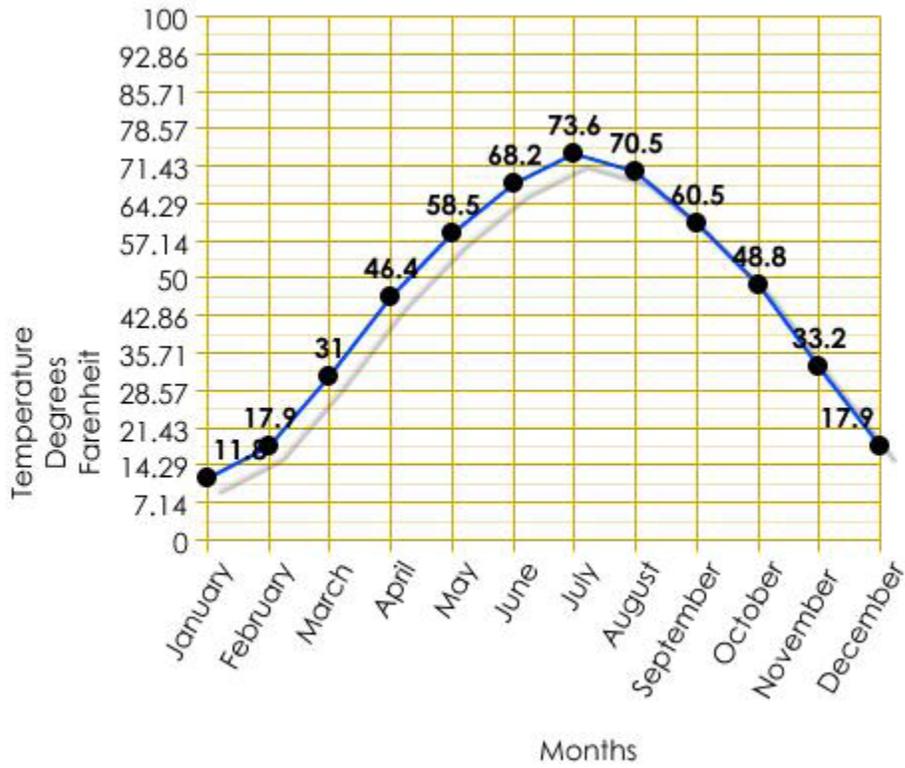
It was found through the soil analysis that the shores of the lake range in slope anywhere from 18 to 35 percent, the slope of the lake bottom ranges from 0 to 2 percent. As for the remainder of the site, the slope sits at under 4 percent. Making them ideal for any type of activity.



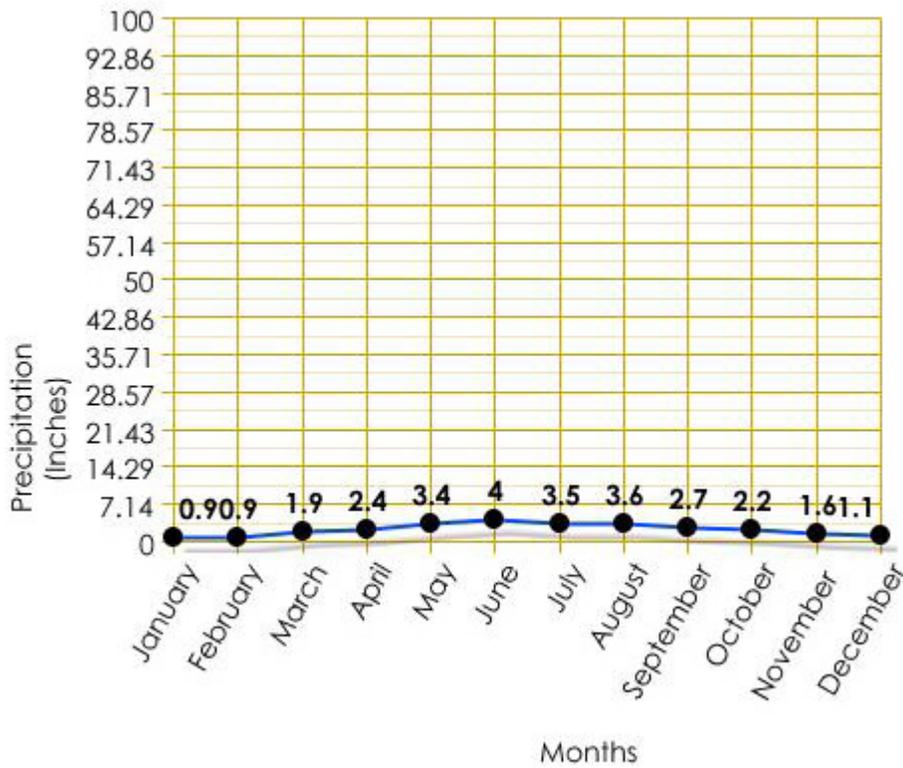
# Climate Data

Harriet Island, St. Paul

Saint Paul Mean Temperature Data



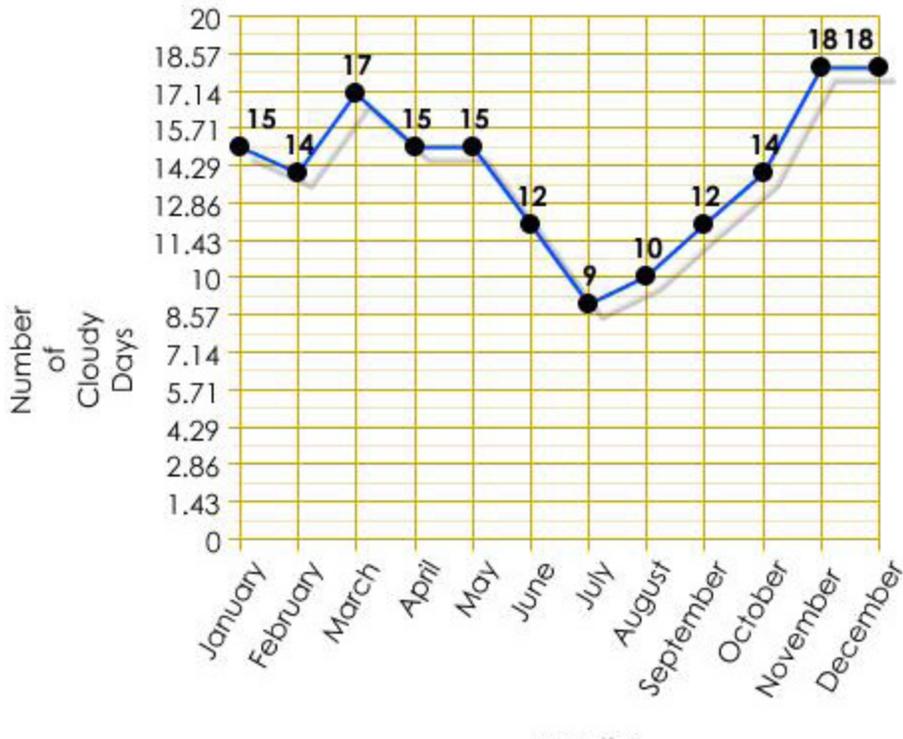
Saint Paul Precipitation Data



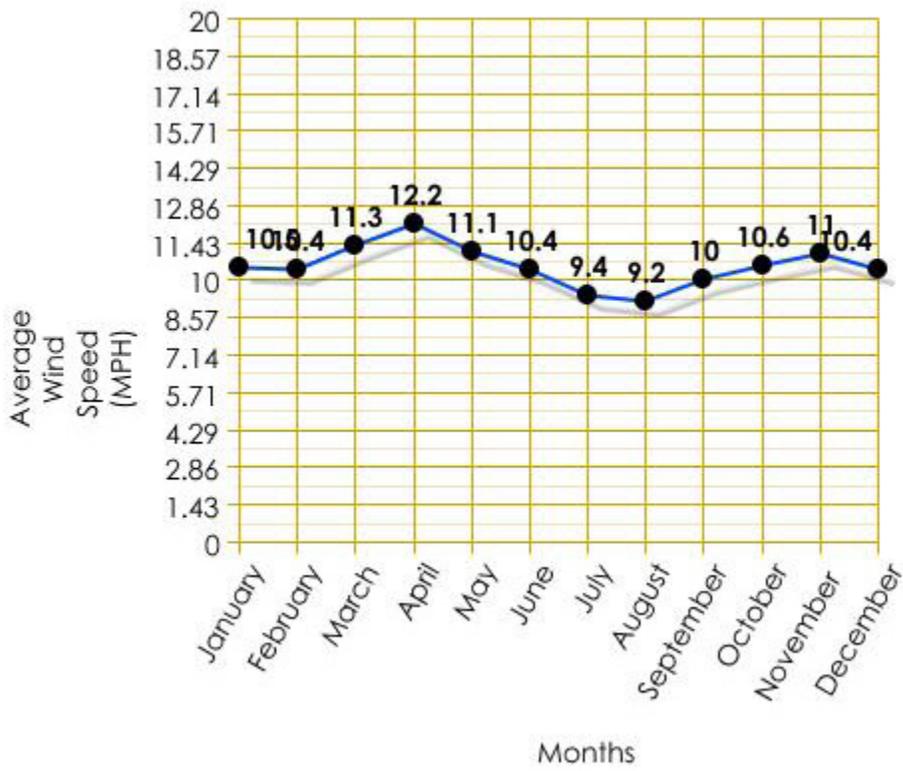
Average Relative Humidity for Saint Paul



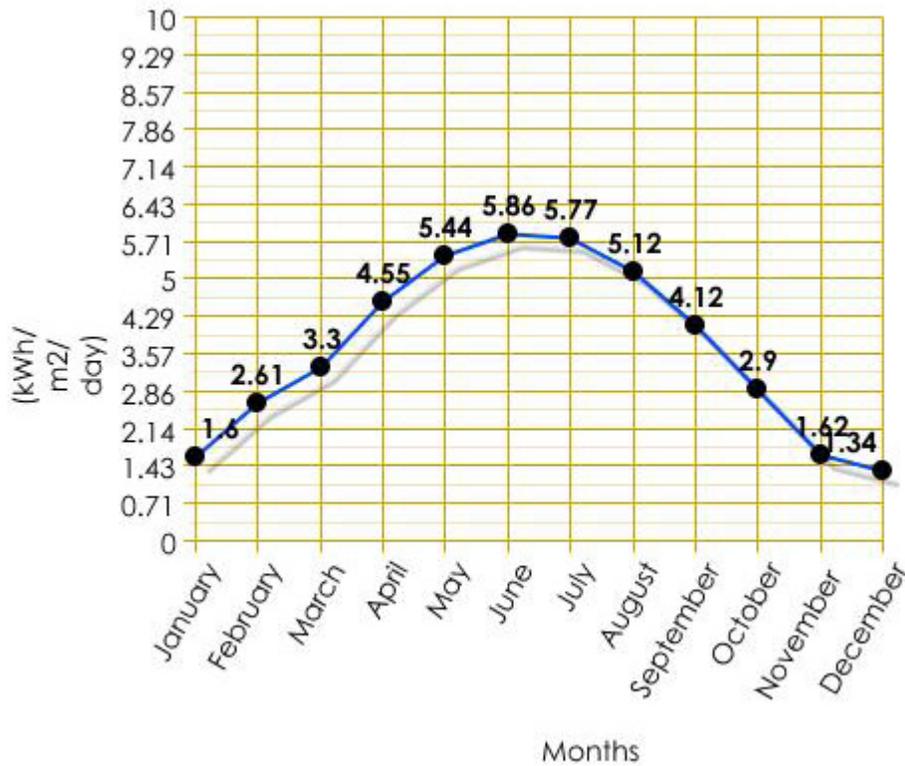
Cloudiness Data for Saint Paul



Wind Speed Data for St. Paul



Solar Insolation Levels for North America



# Space Allocation

Researching case studies helped to give direction in determining which spaces should be included in the design and the scale of these spaces.

The most crucial space is a large, well lit lobby area that helps to direct library patrons to their proper areas, followed closely by a large reading and study area.

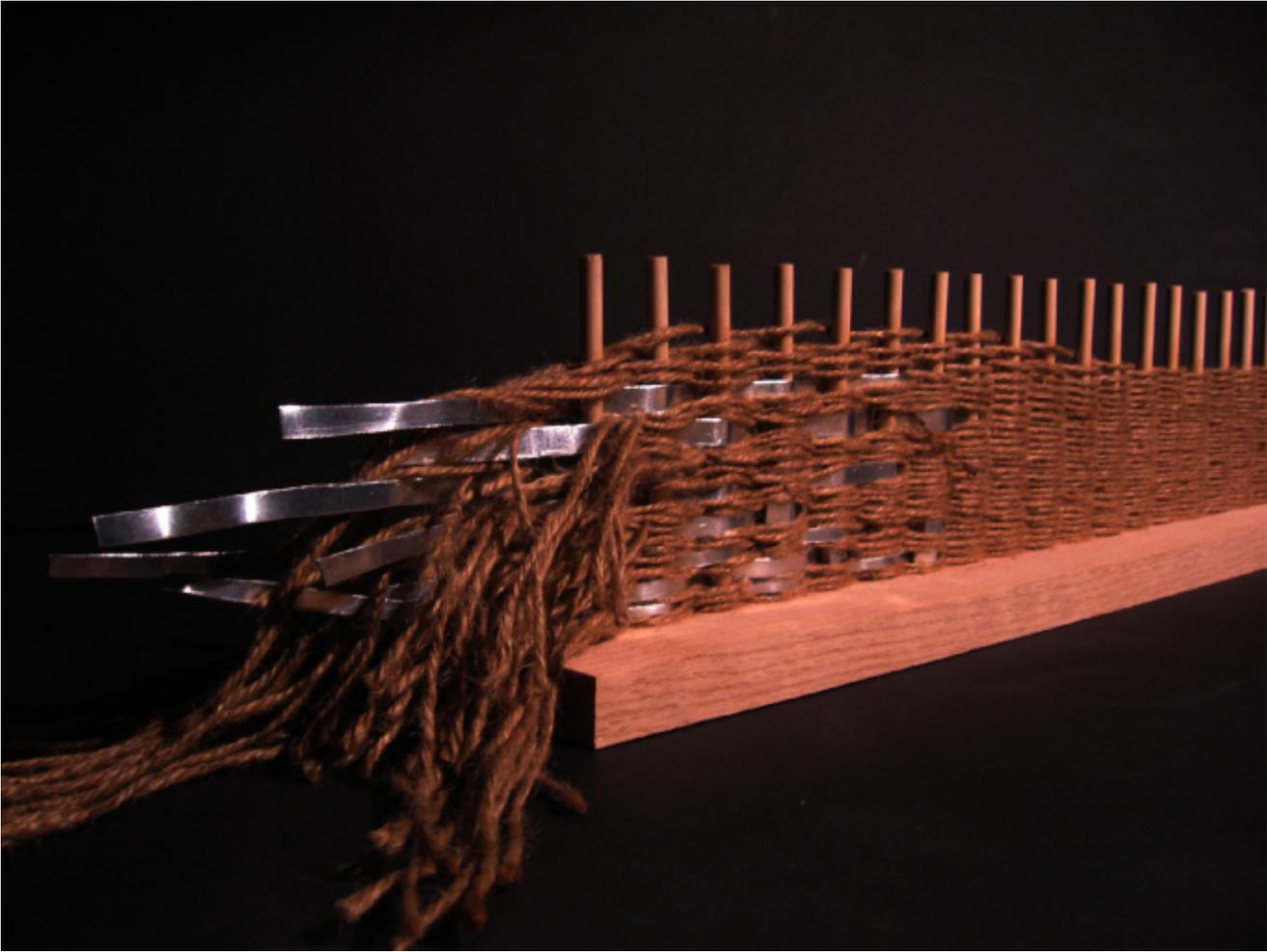
A generous amount of space will also be given to areas designated for computer clusters as access to digital information is currently a fundamental service of libraries.

As the design will sit near the Minneapolis Greenway, workshop areas for cycling classes, bike building, and bike repairs will be included with the design. I also foresee these workshop areas being able to host other types of workshops as well.

Some type of coffee shop/cafe will also be included in the design as libraries have become a place for meeting and socializing.

A small amount of administrative offices will be included as they are essential for the running of the library. Given the beauty of the site, outdoor spaces will become a large factor in the design.

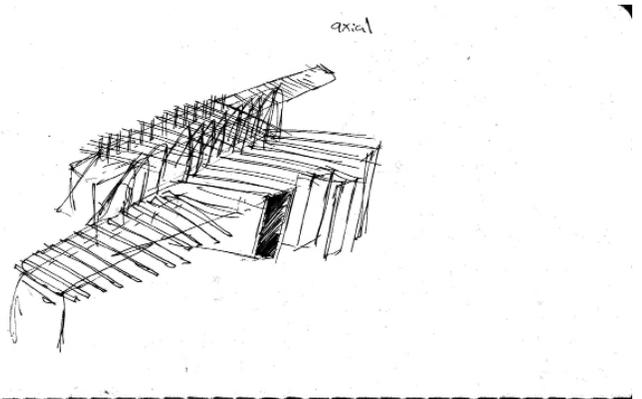
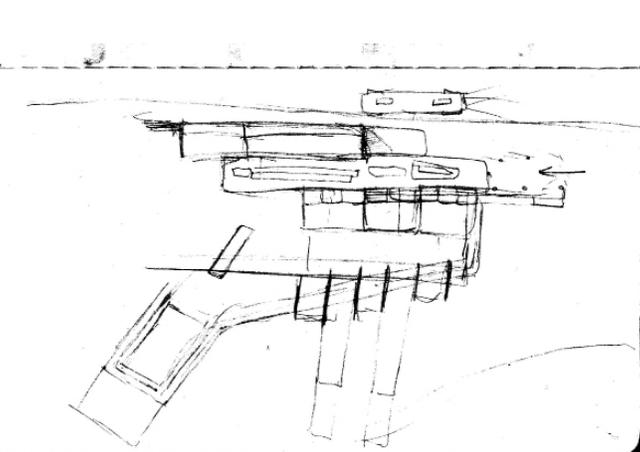
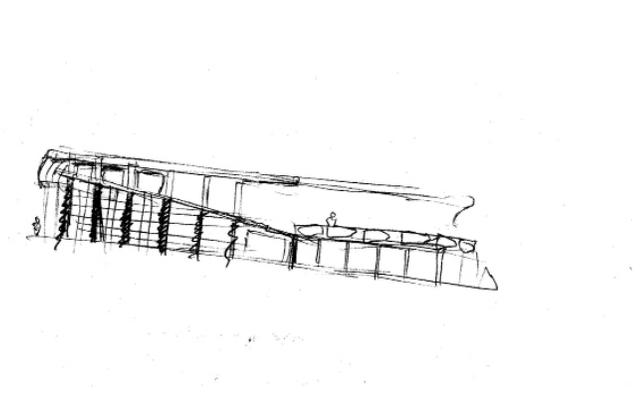
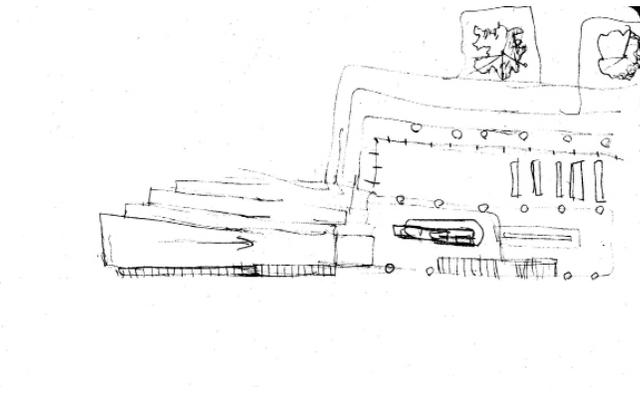
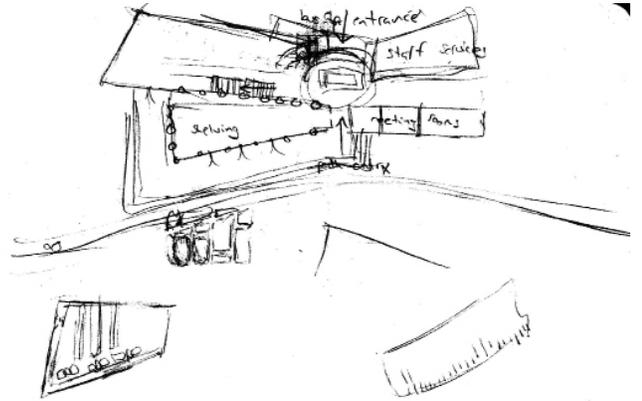
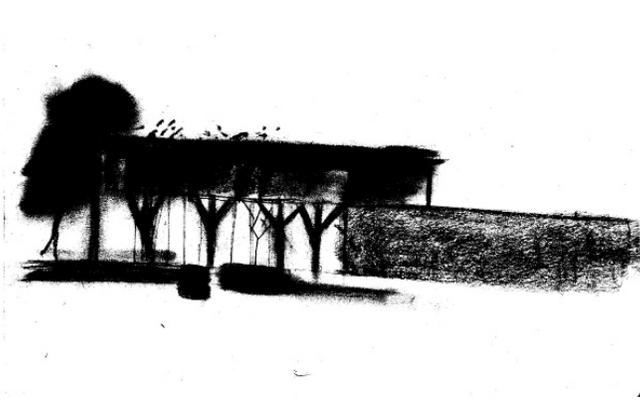
# Process



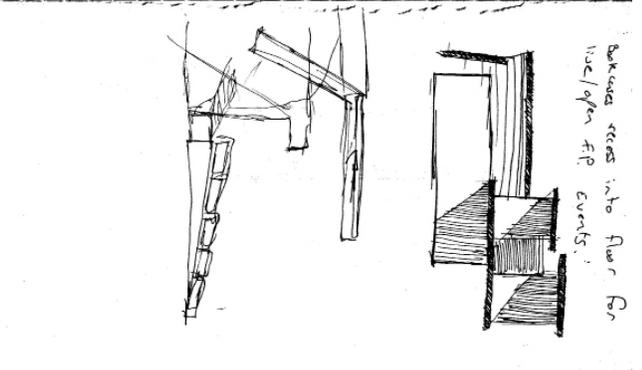
## Partii

The first step in the design process was the creation of a partii. The Partii illustrates the way the library remained essentially unchanged for thousands of years by creating a linear pattern of dowels with the organic hemp material symbolizing the classical technology. Only recently has the library typology witnessed grand changes in it's usage. The metal symbolizes the introduction of these new technologies and the way they can work with existing technologies into the future.

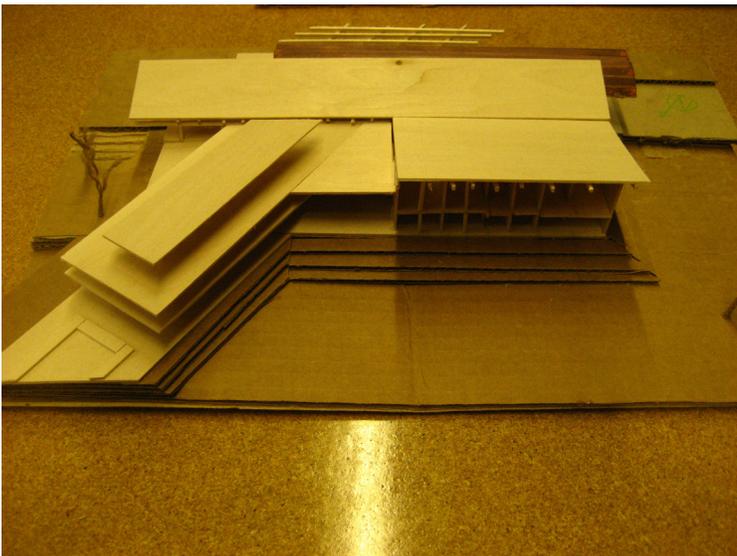
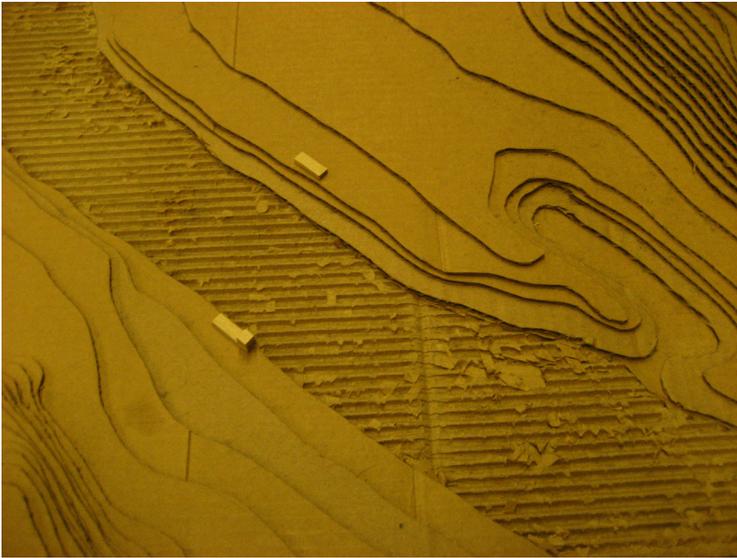
# Process Sketches

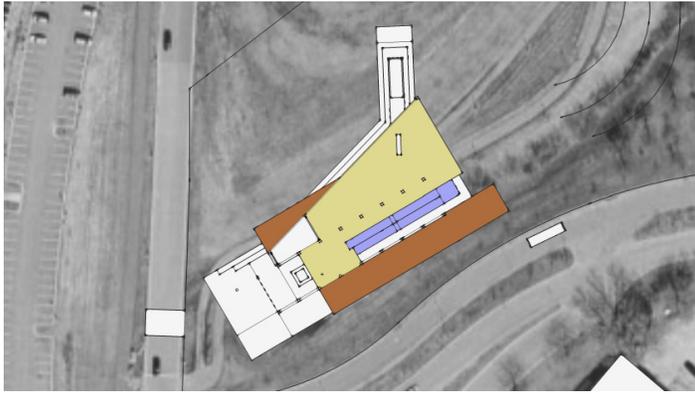


Initial sketches showing immediate response to site context.



# Process Models





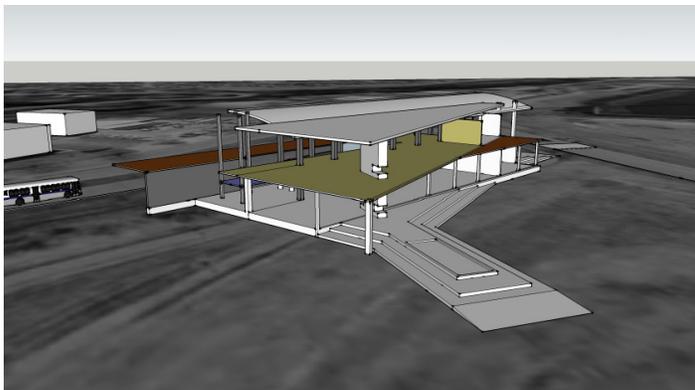
Site Plan



Entry Perspective



Lobby Perspective

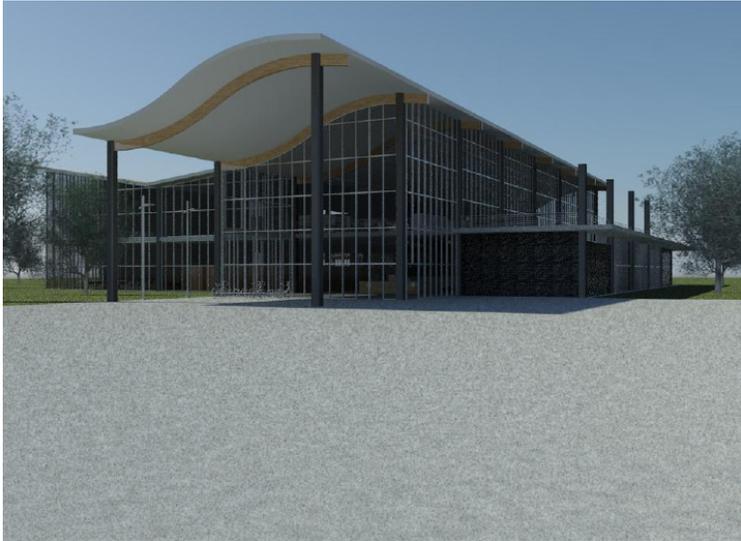


Outdoor Space Perspective

# Midterm Board Images



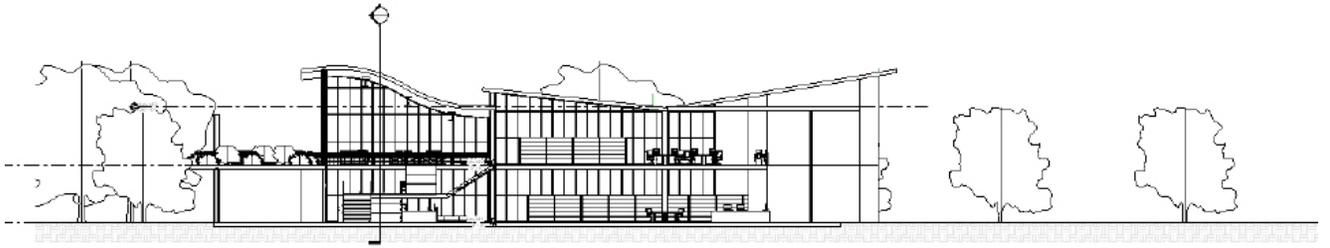
Cafe Perspective



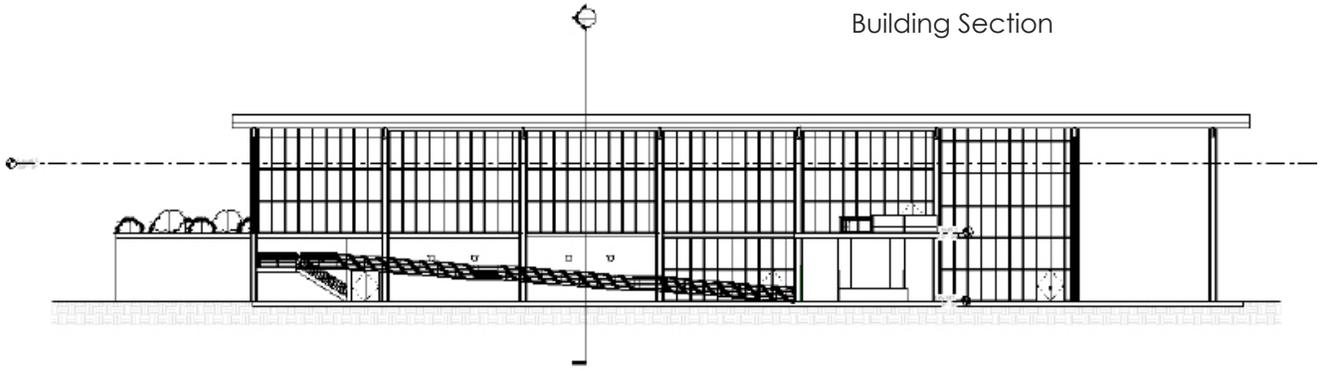
Entry Perspective



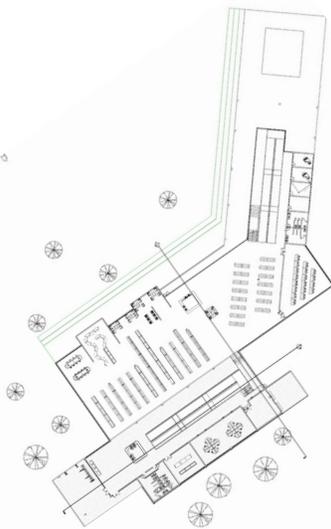
Lobby Perspective



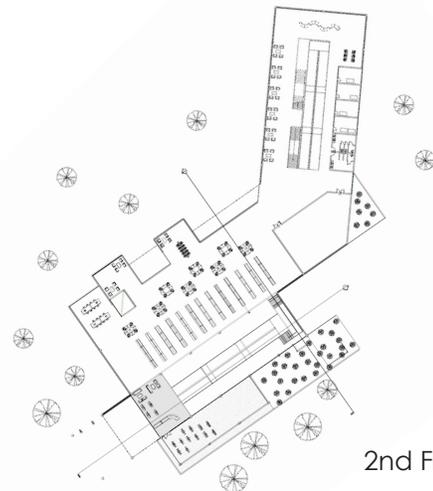
Building Section



Building Section 2



1st Floor Plan



2nd Floor Plan

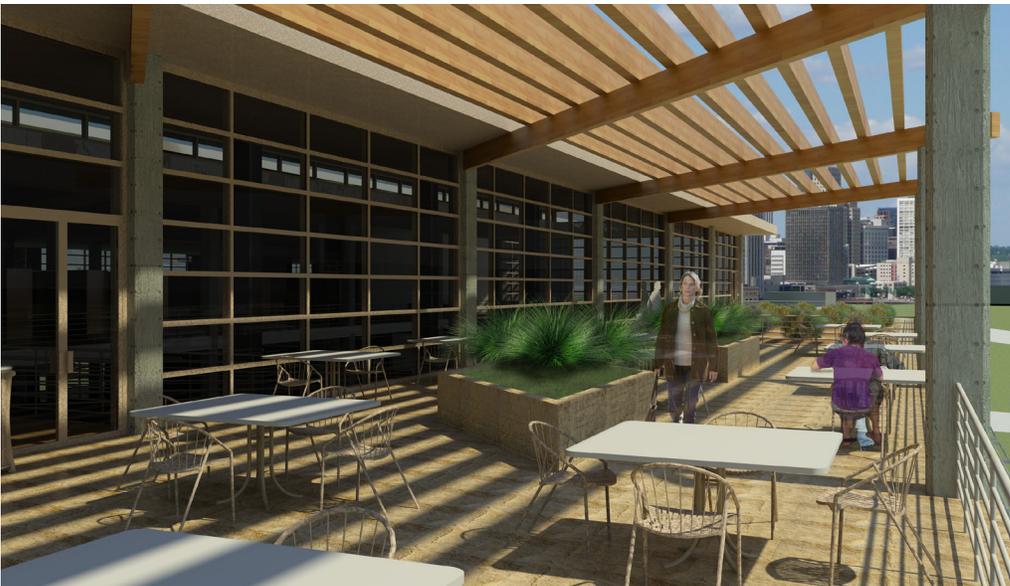
# Product



Site Plan



Final Entry Perspective



Outdoor Cafe Space



Community Gardens



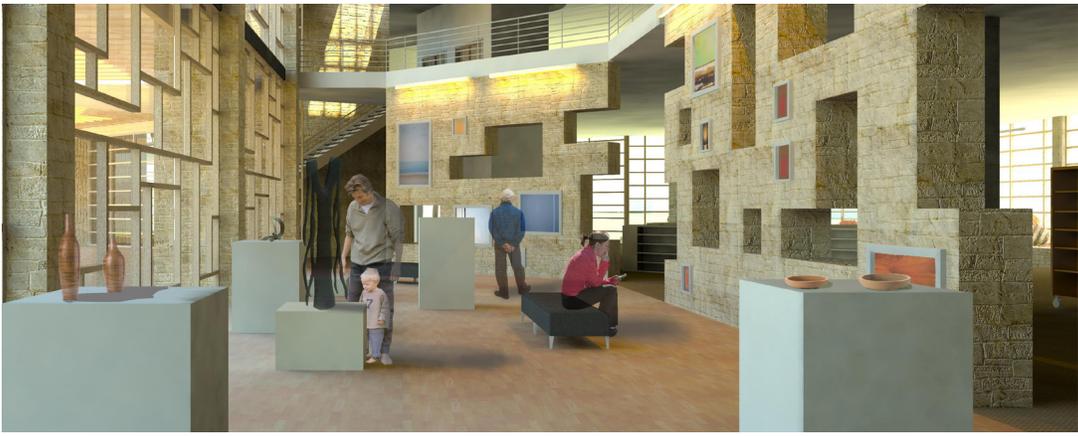
Outdoor Amphitheatre



Children's Reading Area



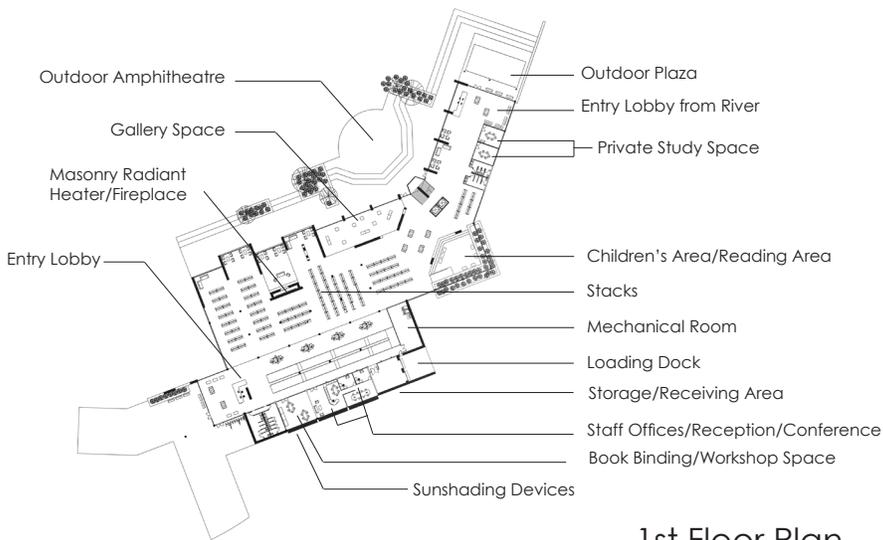
Section Perspective



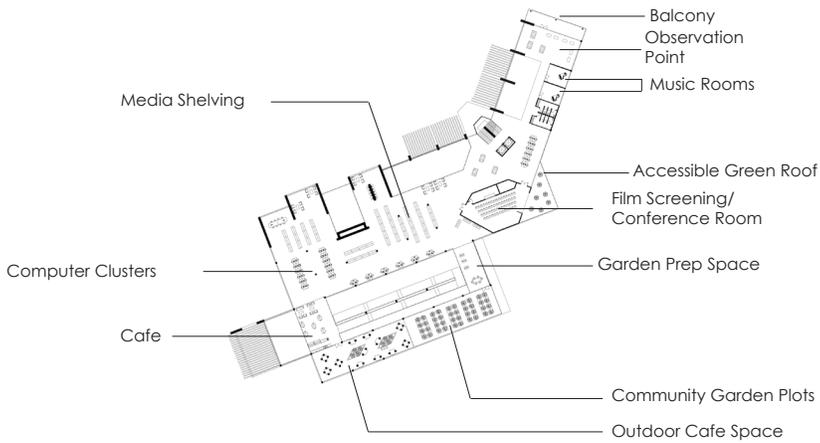
Gallery Space



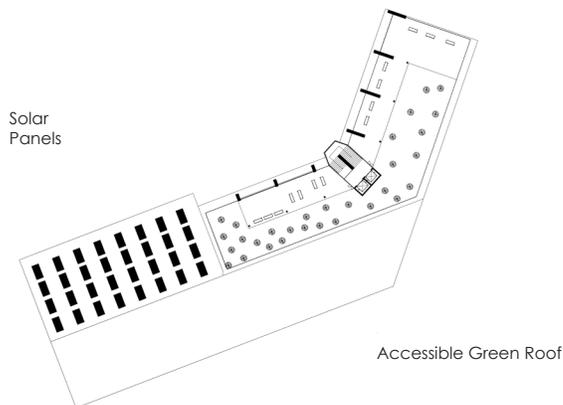
Riverview Perspective



1st Floor Plan



2nd Floor Plan



Roof Plan

# Final Boards

## Harriet Island Public Library

Maintaining the Integrity of the Library in the Digital Age

St. Paul, MN

The site sits to the southwest and below downtown St. Paul on Harriet Island. A site that is rich in St. Paul history, hosting a variety of public functions over the course of the last half century, Harriet Island is currently home to park space owned by the City of St. Paul.




Far from doomed to extinction, the public library is redefining itself as a place of community gathering within the era of digitization. No longer simply a warehouse for books, the design aims to encourage community interaction, foster a variety of functions, and enable access to various forms of media. The design integrates itself into the site by engaging numerous different transportation routes and allowing for gracious views of the Mississippi River and downtown St. Paul.



Entry



Site Plan  
1" = 50'

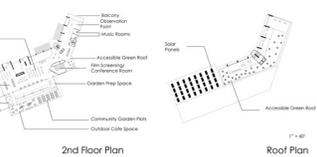


Masonry Radiant Heater Detail

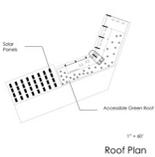
Two roof planes act as a rainwater collection system, funneling rainwater down into a radiant heating system. The radiant heat is transferred to a massive central masonry mass that radiates heat outward in all directions.



1st Floor Plan



2nd Floor Plan



Roof Plan

1" = 40'



Section Perspective



Outdoor Cafe Space



Community Garden Plots

The library is easily accessible from bike paths running along the Mississippi river, as well as from commuter bus lines. The design engages the site by utilizing a local material palette, and creating spaces that blur the lines between indoors and outdoors.



Children's Reading Space



Amphitheatre



Gallery



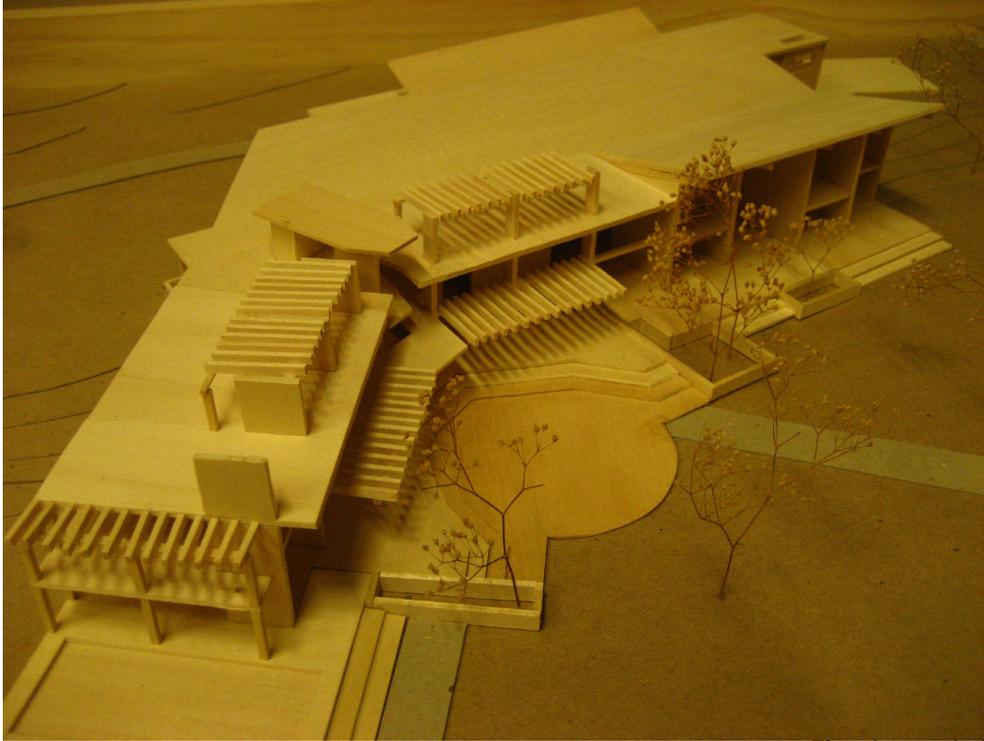
Riverview Perspective

Alexander J. Engle  
Joan Nordstruggen  
Arch 772 Design Team  
Spring 2016  
Department of Architecture and Landscape Architecture  
North Dakota State University  
Aurora, ND

# Exhibition



Exhibition Setup



Final Model

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Alexander J. Engle

1633 Mill St.  
White Bear Lake, MN  
55110

(651) 270-1795

[Alexander.Engle@ndsu.edu](mailto:Alexander.Engle@ndsu.edu)

White Bear Lake, MN

"Where the buffalo roam."

