



johnson **BOAT WORKS** [revisited]

JOHNSON BOAT WORKS [revisited]

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

By

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ABSTRACT

figure 6.1: Gamelin, K. 2012. Photography.



Abstract

The regeneration of the historic and underutilized waterfront is essential for the community to retain the past to create a viable future.

The intention of this thesis is the regeneration of the Johnson Boat Works small boat manufacturing site in White Bear Lake, Minnesota.

The site, once a resort destination and water craft manufacturing hub, was absorbed into the Minneapolis /St. Paul metropolitan area, and became a suburb, losing much of the city's character. The project aim is to draw on the sense of identity that was clouded by a re-iteration of the place from resort town to bedroom community.

The project will draw from the history of the site and reinforce the significant past of the area. The project will aim to be a model for future growth and transformation in this fully developed city.

There will be an adaptive reuse of the existing boat manufacturing structures, and the creation of new spaces to compliment the site and the existing context.

Taking into consideration the design typology, the project will be a mixed-use housing and retail/commercial space with community space emphasizing the recreational aspects of the site.

Key Words

URBAN REGENERATION

WATERFRONT

ADAPTIVE REUSE

HISTORY

SENSE OF PLACE





Problem Statement

How can the regeneration of the historic and underutilized waterfront stimulate an aging city absorbed by a metropolitan area, while preserving the cultural identity of the sense of place?



the STATEMENT of
INTENT



Project Typology

The typology is an urban regeneration project with mixed-use housing and commercial/retail space.

Claim

The reinvigoration of the historic and underutilized waterfront is essential to retain the past to create a viable future.

Theoretical/Unifying Idea

The regeneration of the Johnson Boat Works will help to secure a historical artifact. The transformation of the buildings into a mixed-use pocketed village within a “suburbanized” city will bring vitality to the area. The preservation of the character of the boat works facility and the planning for future use of the area will re-establish the significant role the boat works facility had in creating the identity of the community.

Premises The regeneration of the site will help stabilize vacated single zoning use commercial sites nearby.

Implementation of a mixed-use built environment in a former single use area can “attract and restore an areas vibrance” (Hirt, Godschalk, 2007, p.437).

Preserving sense of place will help to promote and preserve the local identity.

Adaptive Reuse of the buildings will help to create a landmark or point of interest in the region.



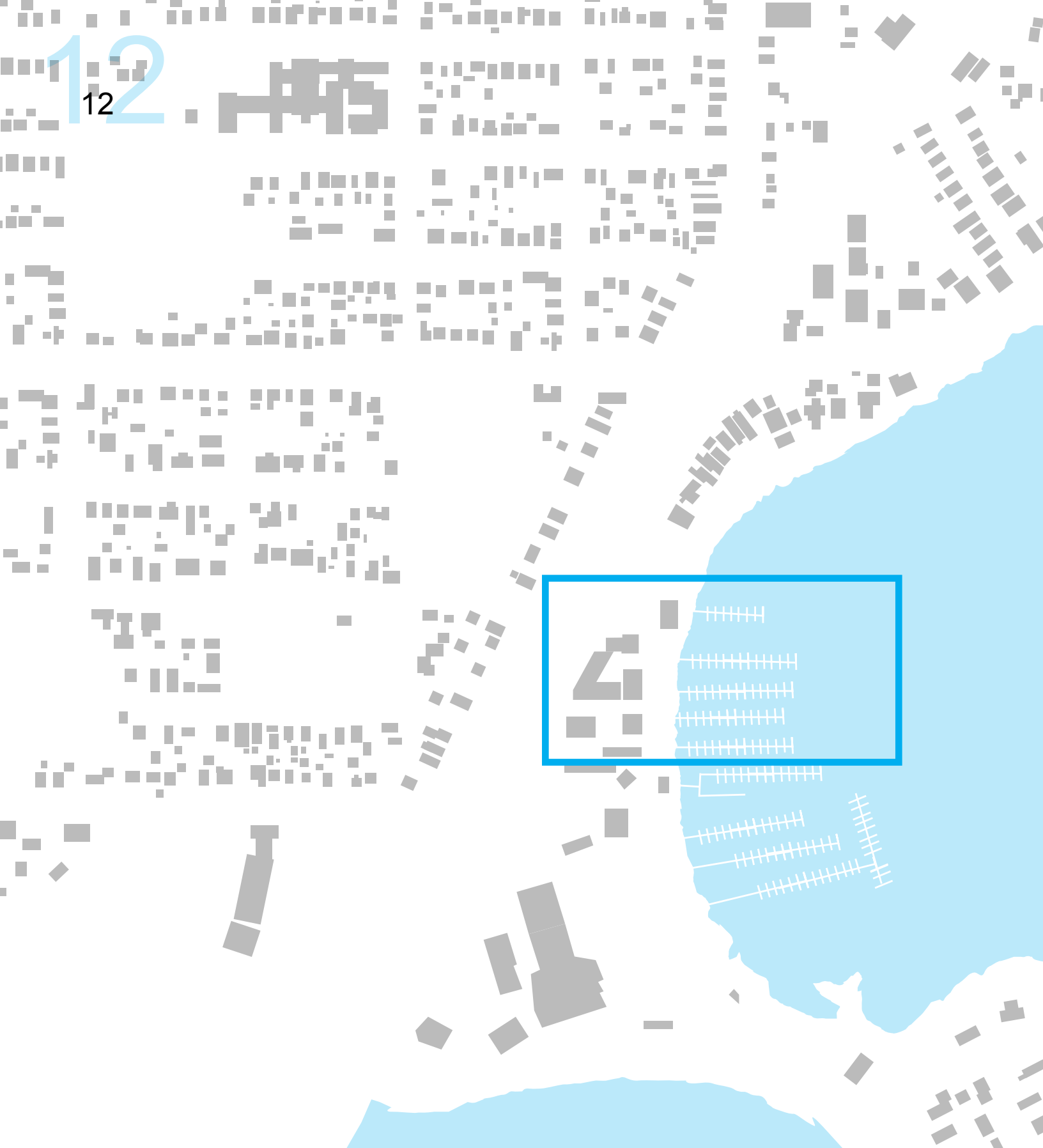
Project Justification

Places anchor and define our communities. The project intention is to reinvigorate and pay homage to the history of the Johnson Boat Works, while creating a new mixed-use setting. White Bear Lake was once a famed resort town founded North of St. Paul, MN. The city was subsequently absorbed as a suburb and lost much of the resort town feel and the association with the waterfront.

Losing a sense of identity when an anchoring landmark that defined the city is destroyed only further deepens the void created by losing the sense of place. By adapting the last remaining boat works manufacturing facility in the region with a mixed-use setting, it will promote community regeneration on the site. The site is currently slated for demolition, but with the slow economy, it has been postponed as many unsuccessful single-use proposals have lost interest or investment.

This project hopes to draw on private investment, with a public influence by having community spaces set up amongst the residential and retail settings. The rethinking and retooling of existing design is an important aspect of how the profession of architecture will stay current and relevant in times of uncertain futures. The goal is, ultimately, to provide a sustaining end product for the users of the project and the community.





JOHNSON

thesis PROPOSAL



Figure 12.1 (Gamelin, K. 2012. Google Map of White Bear Lake, MN. Image traced in Adobe Indesign).

In an era of heightened awareness of sustainable practices, the profession of Architecture should be interested in ways to reuse what is given on a site, and reiterate the transformation into a desirable composition. This thesis intends to investigate the merits of reusing structures and repurposing them for future uses. This project will be an adaptive reuse of the existing Johnson Boat Works factory building with additional structures being created to add to the composition of the building.

Adaptive reuse is important to society because we have numerous vacated and unused commercial, residential, and industrial buildings. In an economic environment of negative or weak growth, these vacated spaces tend to be demolished when they are no longer leasable, and current tax depreciation promotes this cycle after a period of time. The tax code will most likely not change, but our profession should change the cycle of build, use, demolish, and repeat (Jones, 2011).

Often times in the profession of Architecture, we contribute to the act of demolition. Should we continue on that cycle? Often there is no questioning to the leveling or destruction of one single use space for another. If the building or structure is so far into disrepair that it is economically not possible to save it, should it be left alone? Should we care about marking time through the built environment?

It is the intention of this project to use the hybrid urban-suburban Johnson Boat Works site because it was once a standalone destination in a the city of White Bear Lake, MN that was absorbed into St. Paul and then the metropolitan area, thus becoming a suburb. Much of the sense of identity of the area was clouded by a reiteration of the place, transitioning from a resort town into a suburban area.

PROJECT NARRATIVE



In order to “protect” structures they must have value or importance to our history, culture, and society. If nothing of outstanding or remarkable proportions took place in a structure is it still significant? It is my personal belief that a structure’s value may be shrouded. In the case of the Johnson Boat Works, the timber structure is hidden under layers of stucco and paint. The wide pine floors are weathered and greyed.

It must be remembered that any building or structure was a response to a place in a certain time frame, with a budget and external restrictions. Before taking the wrecking ball to a building it should be investigated. If a place had an impact on the way we live our lives, the values we hold, or if it is just an interesting landmark we should deeply consider what is being improved if the structure no longer exists.

When a regeneration project comes to completion, is it an improvement? Does it take into consideration the sense of place? Historical and cultural significance? Sustainability?

The Johnson Boat Works produced some of the highest quality wood boats and wood sail boats in the nation. Since the sale of the company, the city of White Bear Lake has acquired the land for a single-use condominium redevelopment project. There were many proposals from various architects and developers on the project. All of the proposals focused on having ample parking and a large monolithic single-use residential building which did not draw from the site and the surrounding context.

It was a matter of demolishing one storage box for another type of storage box. Many of the proposals have left out any public and retail interaction which should be a significant element of this hybrid urban-suburban redesign. The site has direct lake frontage, a busy stretch of roadway, and is in close proximity of downtown White Bear Lake. With the downturn of the economy, most of the proposals never made it past the first city planning meeting (City of White Bear Lake, 2010).



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The current Johnson Boat Works building sits almost vacant with only a short-term summer recreational outfitter in a small portion of one of the out buildings. A few of the other strip malls surrounding the site have vacated tenants, and the area is in need of a catalyst. It is my belief they have suffered this fate because there is no reoccurring draw to this area of the city. No sense of the place is created as the waterfront is bound by parking lots. There is no attraction to the space at different times of the day and the space is all single use zoning. By infusing the space with multiple use zoning, the site and surrounding context will have a draw and a conglomerate of patrons will be attracted to the site.

The enclave of buildings on the site varies from the large boat manufacturing building with its timber framed structure and one hundred year old wide plank wood flooring, to the various concrete block and galvanized steel storage buildings on the site. The buildings are fairly neglected, but have a lot of embodied potential in them. The boat manufacturing building will be saved, and the other outlying buildings may be recycled into new structures on the site.

The wide pine wood floors of the boat manufacturing area still show the visible scars where tools were dropped around the hulls of boats. The overhead hoists and trolleys are still intact where boats were picked up and moved along the linear manufacturing process. There are outlines of the boat's hull patterns on the floor in the drips of spar varnish outlining where they were coated and painted. The once large factory windows were filled in with smaller more efficient windows at some point but the large openings and quality characteristics of this building are still very present. The building shows a weathered and used character that could never be recreated in a new structure.



This thesis will research how transformation and adaptive reuse on the Johnson Boat Works can be a catalyst for growth in the area. Questions that will inform the research will be: How can creating a mixed-use environment stabilize surrounding single-use facilities? How can keeping local history be a way to create a community landmark? These key questions will draw upon the context to promote social interactions and identity of the place.

By creating a community centered design and a strong sense of place, the site can be reinvigorated. Paying homage to the Johnson Boat Works site and the areas significant past, this thesis will seek to create a mixed-use development that will be a desirable place to live, work, shop, socialize, and recreate.



figure 17.1: Gamelin, K. 2012. Photography.



PROJECT USER & CLIENT DESCRIPTION

The proposed project would be financed and built by a Development or Regeneration group that would be able to support the various proposed typologies suggested. The group would own the retail and pavilion space of the buildings, and individual owners would have the option to own or rent their residential units.

Commercial and Retail Users & Clients:

The lower portions of the existing Johnson Boat Works structure will be composed of Commercial and Retail uses. Depending on the leasable space and occupancy, the site can most likely hold 6-8 small sized retail suites depending on the scope of the project. The most likely tenants in this area would be small businesses, small cafe or restaurants, and small franchises. There may also be a limited scope in small medical or professional office practice.

With the estimated tenants there would be 9-12 practicing professionals and an additional estimated 30 customers or visiting clients per hour.

In addition to the built retail space, the program may try to attract seasonal retail for many of the outdoor market events hosted in the summer.

Pavilion Space:

There would be a gathering space on the site to draw people to the site. This may be a large open space for gathering either indoors or outdoors.



Residential Users & Clients:

The Building will be a mixed-use adaptive reuse project typology, with a variety of residential units. Based on the site information gathered thus far, the user definition would call for 15 residential units of various sizes.

It is estimated that there would be 15-30 (total) professionals, students, couples, and families living here and an additional estimated 15 parking spaces should be provided with a ratio of one parking space per unit of residential (McMorrough, 106).

Marina Users & Clients:

Since the site is adjacent to an existing marina, there should be some gesture to adequately provide some parking or circulation for these patrons. The marina should also make a connection to the building composition, and be involved in site development.

Other Users & Clients:

Local eateries surrounding the site are known for hosting concerts and activities during the summer time; some consideration should be placed on activity parking and retail connections.

Overall:

Peak parking needs will arise in the summer for the site, and it will be proposed to have the minimum required parking spaces to comply with both sustainable community practices and positive urbanist consumer practices. Peak interest in the retail spaces will probably coincide with summer as well. There should be some emphasis on drawing in a steady flow of users and clients in the winter.



MAJOR PROJECT ELEMENTS

The proposed project would include the following program elements:

Commercial and Retail Space:

The ground floor of the project will most likely be composed of Commercial and Retail uses. These spaces will be located in the existing Johnson Boat Works manufacturing facility. Individually, the spaces would require a mechanical room, rest rooms, and storage areas. These spaces would be build to suit, but should take a basic layout into consideration.

Pavilion Space:

The project elements would include an open meeting space for a variety of community uses as well as a connection to rest rooms and storage.

Residential Users & Clients:

The housing would be a built addition to the existing structure of the Johnson Boat Works. An array of residential units of various sizes would be used. Single users, couples, and families will be considered in the program. These units would include space for sleeping, food preparation, living, bathing, storage, and outdoor space.



Marina Users & Clients:

Some attention may be taken to cater a retail setting towards these users of the public marina near the site.

Overall Design Elements:

Careful attention will be placed on the exterior spaces, and the way they interact with the interior spaces. Preservation of elements of the buildings composed on the site will be a key design feature. Connections will be created to link the existing built environment to the new built environment. Unifying elements will create a sense of place and careful attention will be placed on the vocabulary of the buildings in terms of their context.



figure 21.1: Gamelin, K. 2012. Photography.



REGION

figure 22.1 (Gamelin, K. 2012. Google Map of Midwest. Image traced in Adobe Indesign.

CITY

Figure 22.1 Gamelin, K. 2012. Google Map of White Bear Lake, MN. Image is traced in Adobe Indesign.



BOATWORKS

NEIGHBORHOOD

WHITE BEAR LAKE, MINNESOTA



Figure 23.1 Gamelin, K. 2012. Google Map of White Bear Lake, MN. Image traced in Adobe Indesign & AutoCAD.



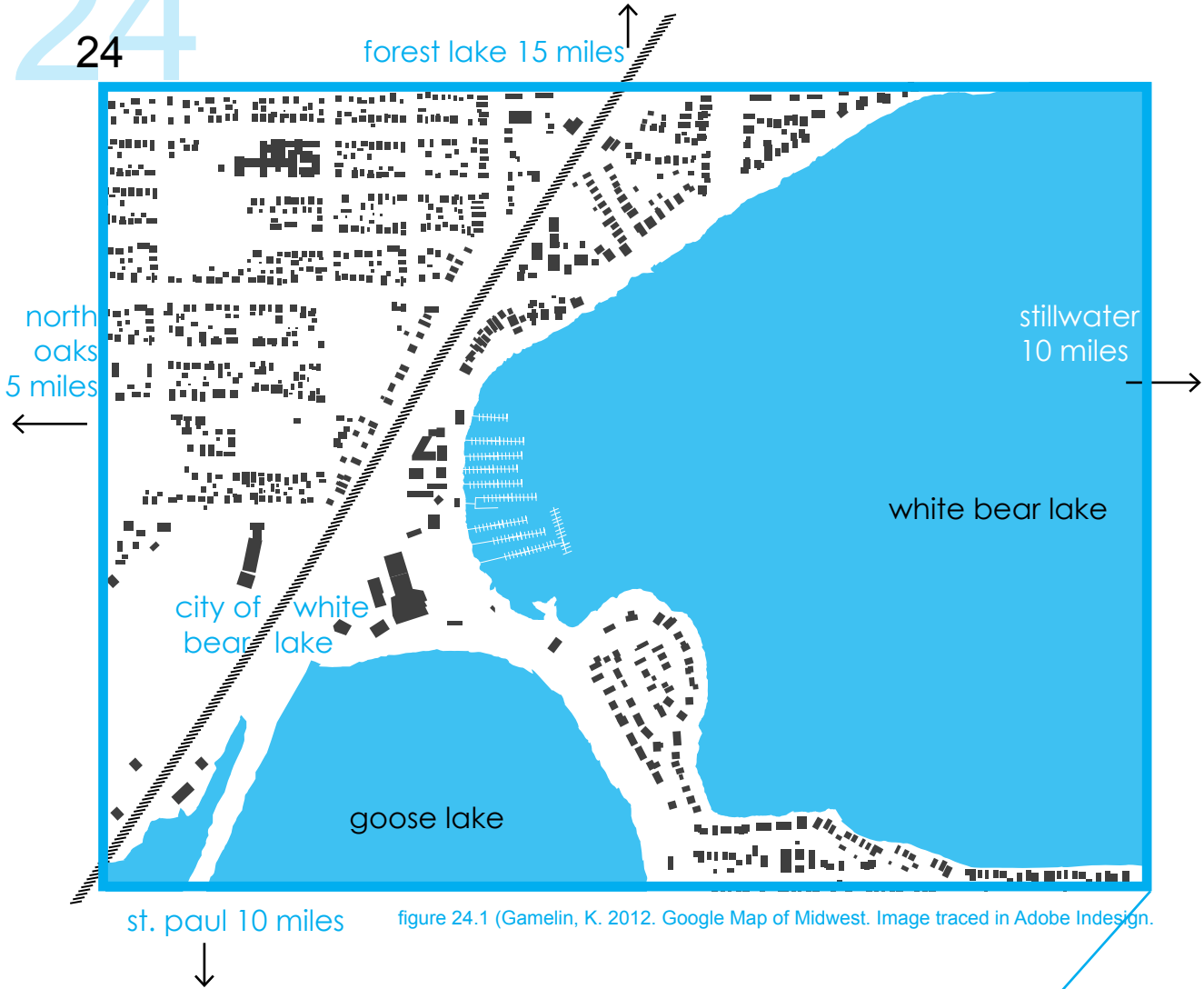


figure 24.1 (Gamelin, K. 2012. Google Map of Midwest. Image traced in Adobe Indesign.)

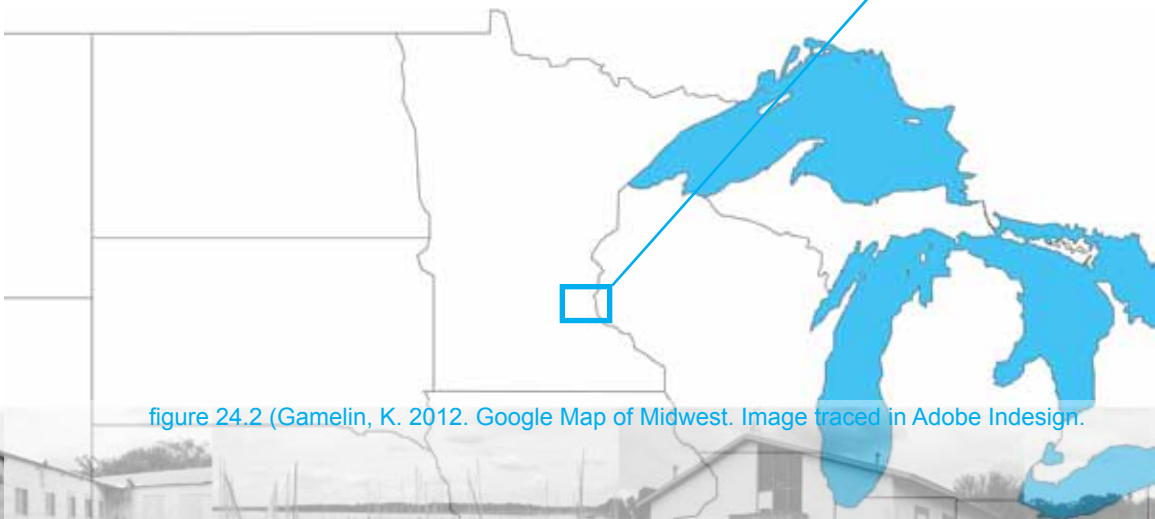


figure 24.2 (Gamelin, K. 2012. Google Map of Midwest. Image traced in Adobe Indesign.)



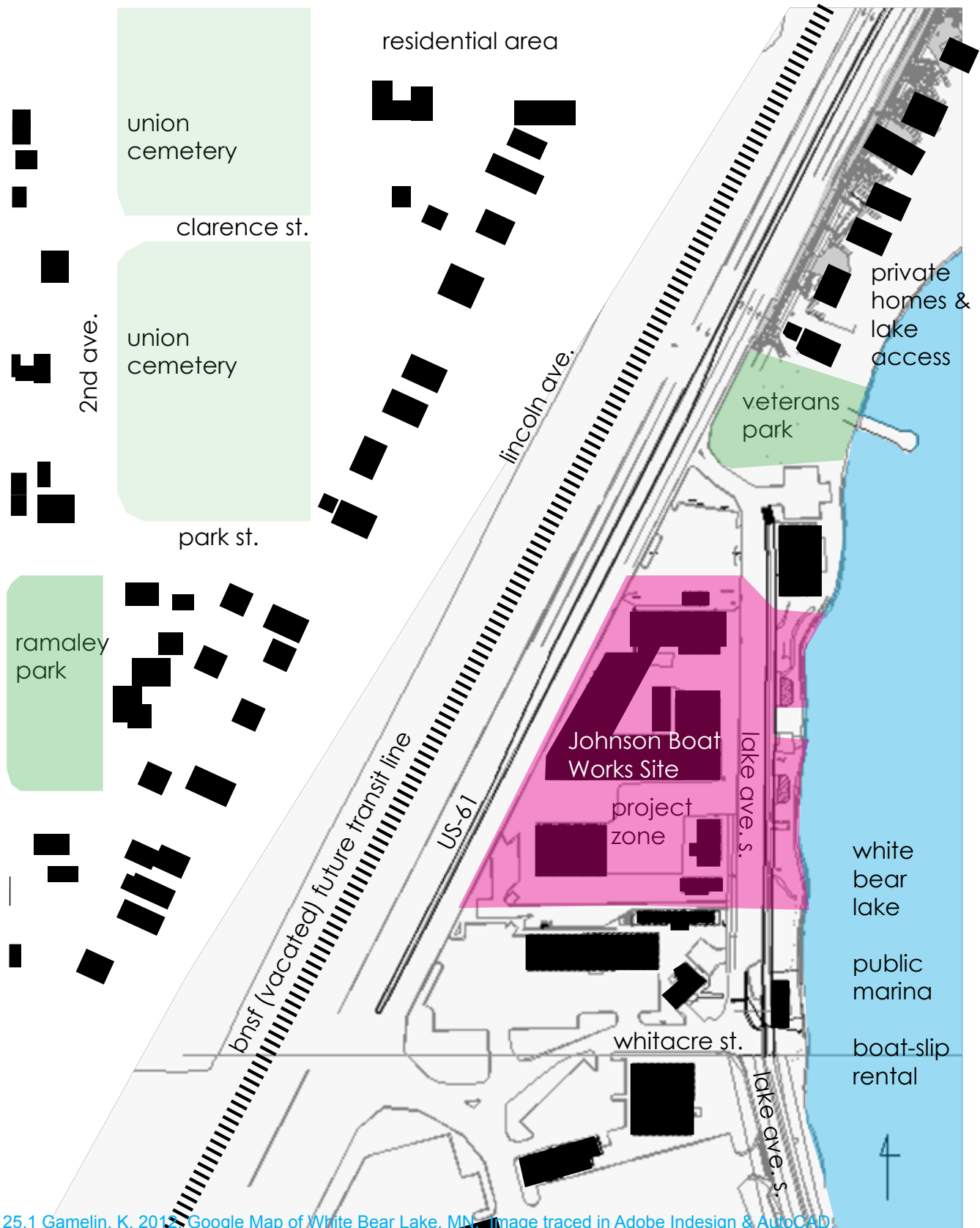


Figure 25.1 Gamelin, K. 2015. Google Map of White Bear Lake, MN. Image traced in Adobe Indesign & AutoCAD.





photo 1 figure 26.1: Gamelin, K. 2012. Photography.

The Former Johnson Boat Works Facility



photo 2 figure 26.2: Gamelin, K. 2012. Photography.



SITE NARRATIVE

The Johnson Boat Works site is of interest because of its various possibilities. There is a large stretch of frontage to the major roadway in the city, US-61, on the West side of the site. Adjacent to US-61, is the future North Star Commuter Line which will service the North and Eastern suburban area to St. Paul. To the East side of the site, the shores of White Bear Lake anchor the edge of the site, but the marina extends the built environment to the water. To the North of the site is a Veterans of Foreign Wars building and a small veteran memorial park.

Adjacent to the park is a compact residential neighborhood maximizing their city lot sized lake shore property. Further to the North is the business district of the original railroad town of White Bear Lake. To the South of the site are various 1960's era strip malls and chain stores. Further to the South there are numerous car dealerships where US-61 becomes a faster expressway into the Interstate and then shortly into downtown St. Paul.

This site provides a strong existing language for design that many other sites do not offer. This site has a rich history and proximity to downtown White Bear Lake and St. Paul and current and future transit connections. The site being bound by a major highway has a strong edge to tie to consumerism. With the shoreline, there is a recreational aspect to the site that makes it a draw for residential users.

With both the parallel edges of the lake and the highway, this will lead to a promising site for mixed-use development. This site and some of the adjacent properties are also the only commercial and residential lots with direct frontage to the highway and direct access to the water.

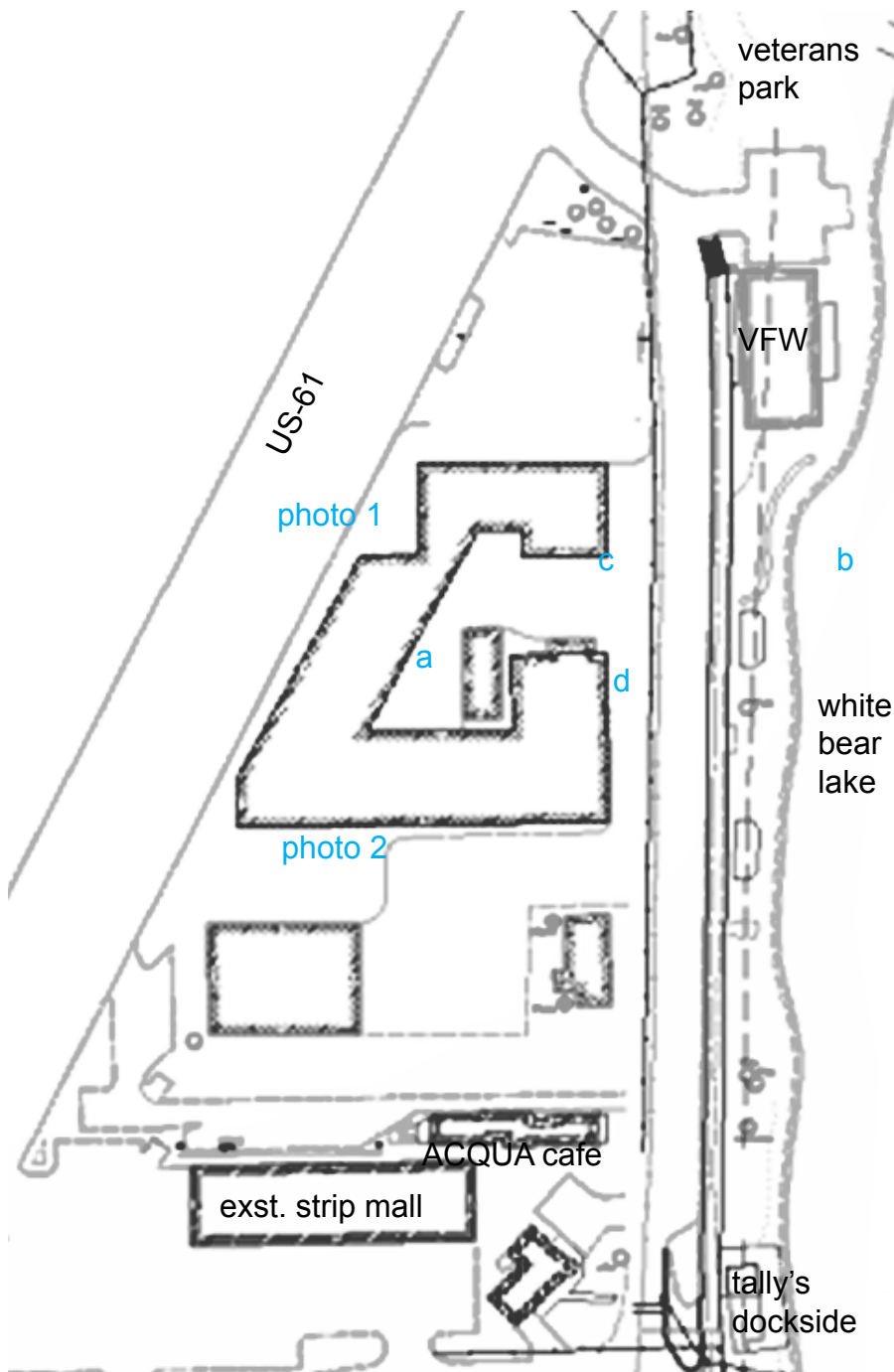


Figure 27.1 Gamelin, K. 2012. Google Map of White Bear Lake, MN.
Image traced in Adobe Indesign & AutoCAD.



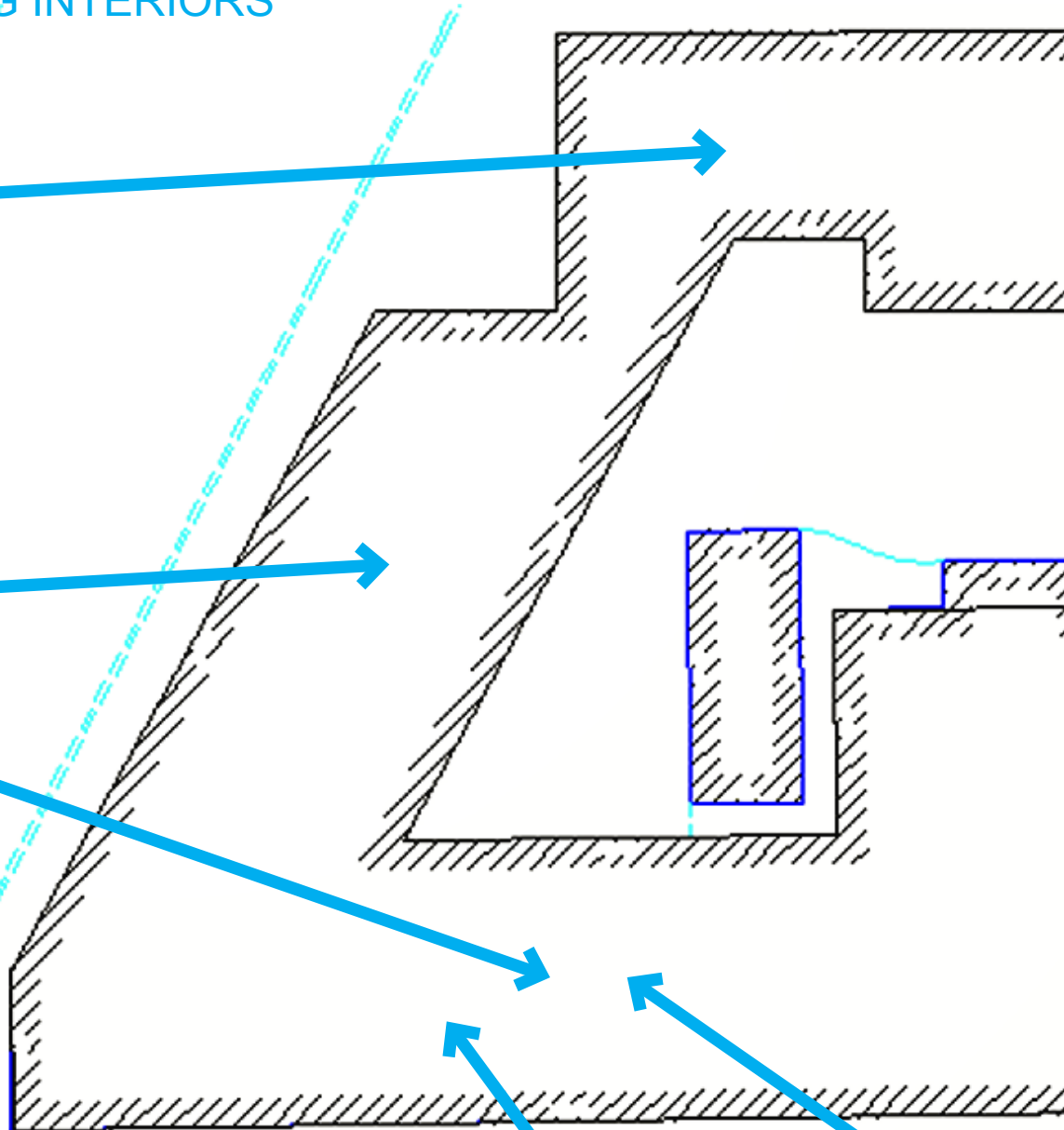
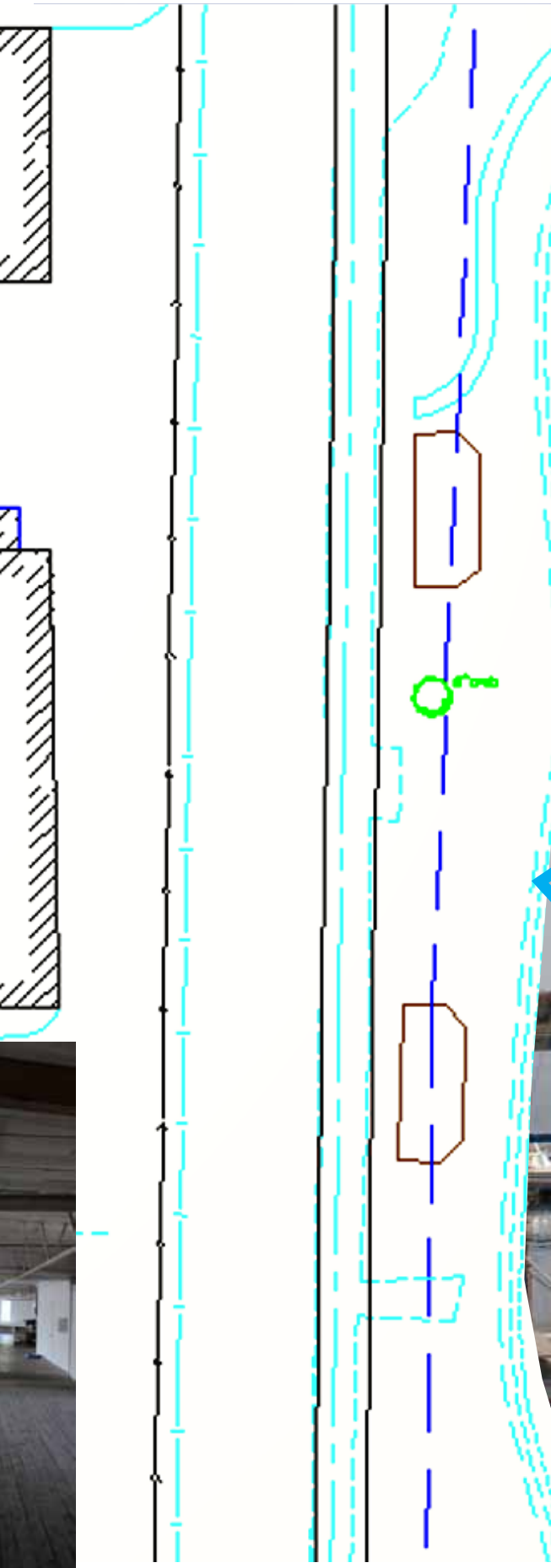


Figure 28.1: Gamelin, K. 2012. Google Map of White Bear Lake, MN. Image traced in Adobe Indesign & AutoCAD.

Figure 28.2: Gamelin, K. 2012. All other photos on page.





SITE VIEW
(facing east)



Unifying Idea The regeneration of the Johnson Boat Works will help to secure a historical artifact. The transformation of the buildings into a mixed-use pocketed village will bring vitality to the area. The preservation of the character of the boat works facility and the planning for future use of the area will re-establish the significant part the boat works facility had in creating the identity of the community.

Focus The first and primary goal is to stabilize the structures on the site in terms of saving key pieces of the former operations and to create space from these structures.

The next goal will be to create a mixed-use setting through the adaptive reuse of the manufacturing building and would include adding to existing buildings on the site.

Since the existing buildings that will stay on the site are located at grade, they will serve as commercial and retail space. The additional residential space would be built over and next to the existing manufacturing building.

The creation of a sense of place to make the site a historical narrative for users, community members, and passers by will be created to help establish the area. This will be the “draw” element that will reinforce the goals of stabilizing the building as a sense of place that resonates with the community.

Conclusion In the examination of the thesis idea, the goals for the project will be conveyed through the ideas of regeneration implementation, preservation, and adaptation.



Research will be guided through case studies, historical analysis, typology context, programing, and site analysis.

The premise/unifying idea of this thesis will look into how to adapt architecture to inspire new directions the architecture can conveyed. Research will be done in the creation of successful mixed-use waterfront places. The project goal of retaining a resonating sense of place will be researched by case study projects that create a draw and make the area a memorable destination. The project typology research will be done through scholarly resources and case studies of projects relating to the premise/unifying idea.

The historical impact and context of this project will be researched through local and state wide historical photo and journal databases. This will be used as a reference to compare and contrast what the site once was, and how it was transformed into what it is presently.

The site analysis research will be conducted by site visits, field measuring, and local government agencies information on the property as well as the climate. Emphasis will be placed on gathering information about the ephemeral and concrete elements of the site to be used as vehicles for sustainable design techniques.

The programmatic requirements will be researched through case studies, journals, and periodicals. The residential requirements for programming will be based off demographics. With demographics research being conducted, the commercial and retail settings will be based off desirability of lease space in relation to the site, context, and region. The additional elements of the program will be derived from building codes, case studies, and general research.



RESEARCH DESIGN METHODOLOGY

The research methodology will follow the theoretical/unifying premise and will be guided by the concurrent transformative strategy which is a mixed method approach of collecting and analyzing qualitative and quantitative research.

Graphic Analysis of statistical information and data shall be done to generate informed conclusions. The analysis of digital media will be done to design content from an ephemeral standpoints. Interviews may be done of knowledgeable and reputable individuals for historical context and community information.

RESEARCH IMPLEMENTATION

The theoretical and unifying idea will be the driving force to what information will be prioritized in the research. Research will be analyzed and implemented into the research document. The research gathered will be scholarly through accredited and knowledgeable professionals and authors.

Quantitative data will be defined as statistical data that is gathered and analyzed and/or obtained through research of archived material.

Qualitative data will be gathered through the analysis of direct observation of media, site visits, and scholastic printed media. Qualitative data may also be gathered through interviews, and searching through archived data.



DOCUMENTATION OF DESIGN PROCESS

Documentation of design process will be done at the end of the school week every Friday. All web sites that were visited will be reported in a document for further investigation and all sketches and process work will be scanned or documented in digital means. All documents will be dated when they were accessed, drawn, researched, etc. Documentation will be made available through the tables and figures section as well as through the works cited page. An additional drawing and process book may be included and presented at the culmination of the thesis project.



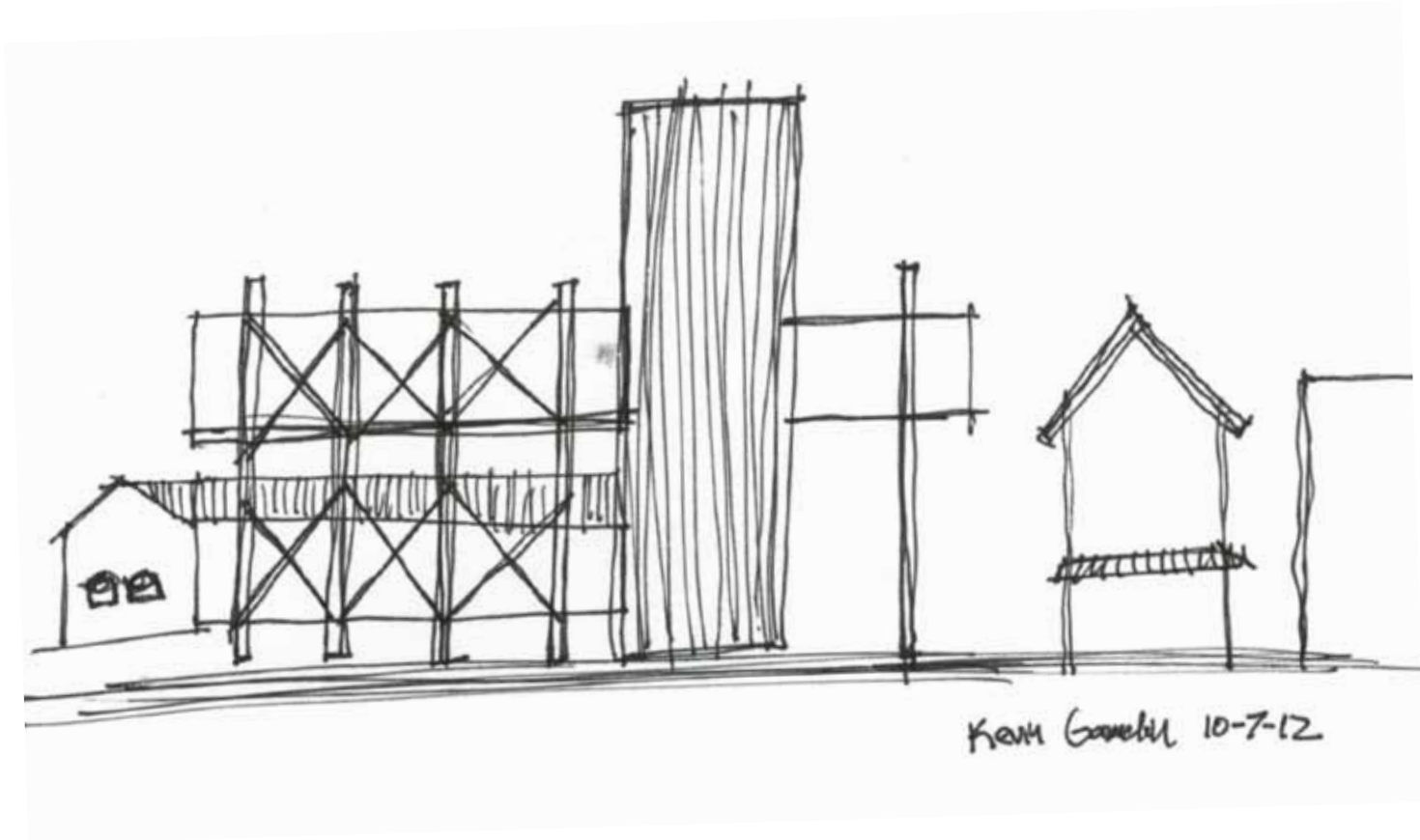


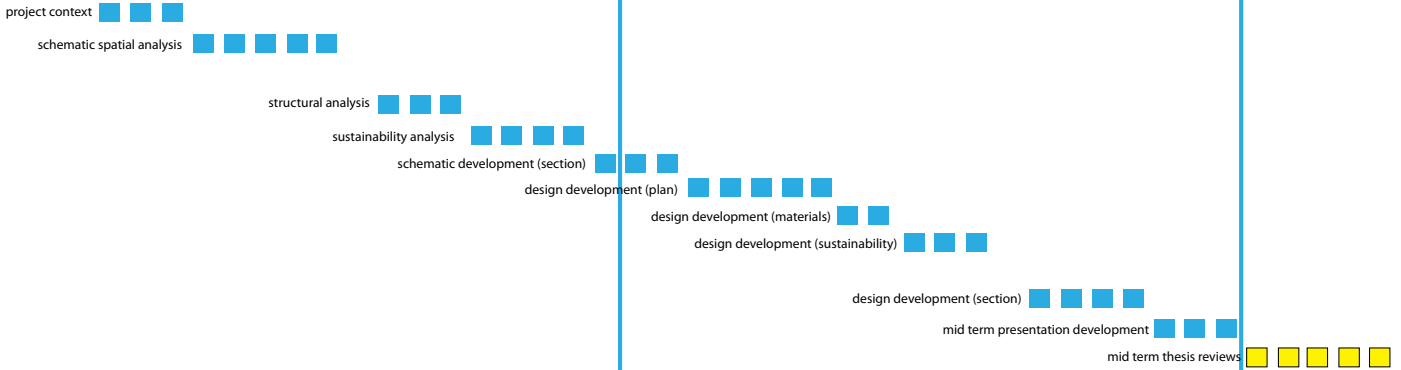
figure 35.1: Gamelin, K. 2012. Sketch.



JANUARY

FEBRUARY

8 9 10 11 14 15 16 17 18 21 22 23 24 25 28 29 30 31 1 4 5 6 7 8 11 12 13 14 15 18 19 20 21 22 25 26 27 28 1 4 5 6 7



- day
- holiday
- workday
- benchmark



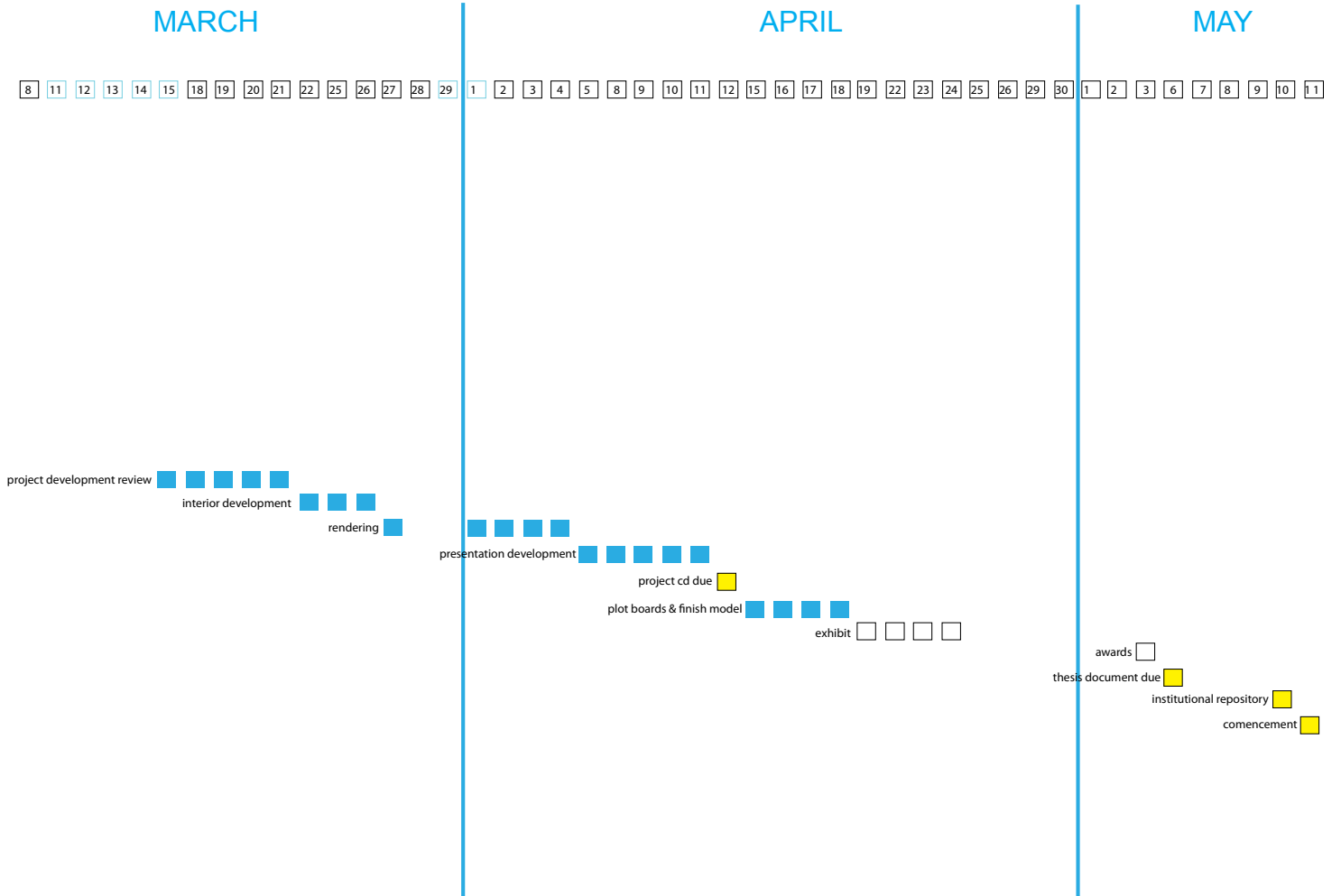


figure 36.1: Gamelin, K. 2012.



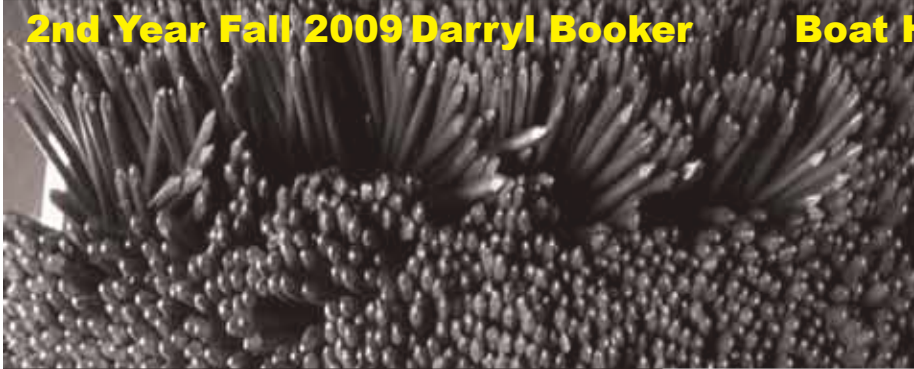
PERVIOUS STUDIO EXPERIENCE
2nd Year Fall 2009 Darryl Booker

A Place for Tea



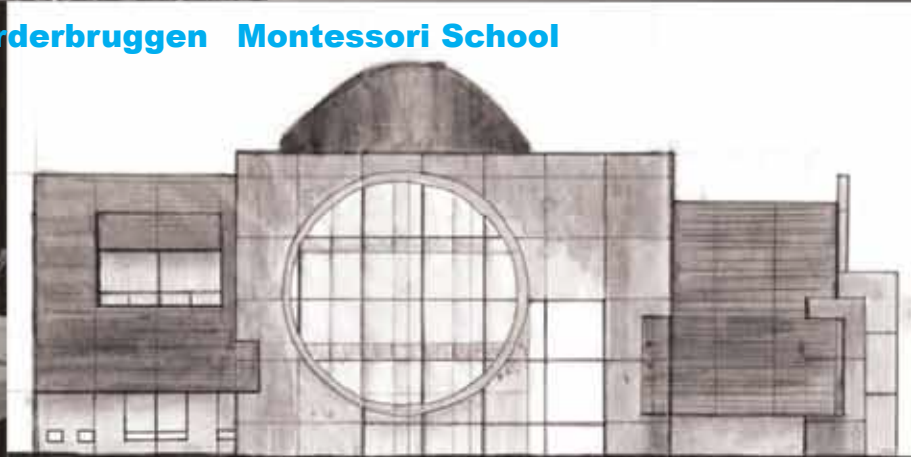
2nd Year Fall 2009 Darryl Booker

Boat House



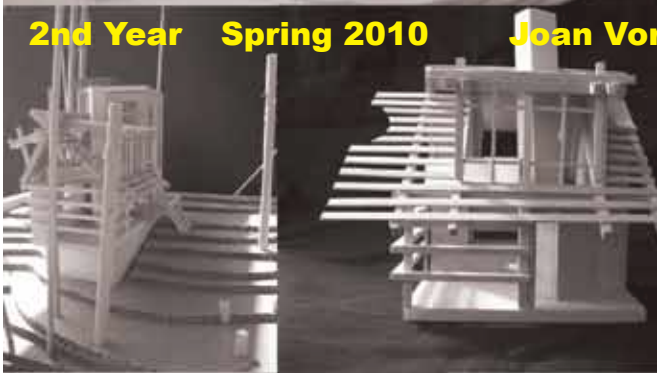
2nd Year Spring 2010

Joan Vorderbruggen Montessori School



2nd Year Spring 2010

Joan Vorderbruggen Dwelling



3rd Year Fall 2010

Milton Yergens Phil Bolger Center for Small Boats



3rd Year Fall 2010

Milton Yergens Masonic Temple and Guild Hall



figure 38.1: Gamelln, K. 2012. Previous Studio Work.



3rd Year Spring 2011 Regin Schwaen AISC Steel Competition



3rd Year Spring 2011 Regin Schwaen National Geographic Cafe



4th Year Fall 2011 Don Faulkner San Francisco High Rise



4th Year Spring 2012 Paul Gleye Square Fosh Lille, France



5th Year Fall 2012 Ron Ramsay Christ the King Chapel of St. Ahab



the RESEARCH



figure 40.1: Gamelin, K. 2012. Photography.

There is a quality about water which calls to the most deep-rooted and atavistic part of our nature. In the deep canyons of our cities, water along with fire, trees, and the sky above are the elements which can still tie us to our primitive past... water is positive and life giving; the element from which we have come from.

-Lawrence Halprin, *Cities*, 1963. p.134

Fundamentally, people have settled near water resources because of opportunities for trading, commerce, and recreation. An edge provides a beginning to build from a society, a culture, and a way of life. There is such a draw to edges, views, and the terrain around water. These edges can create a powerful sensation of prospect or refuge that draws a population to inhabit an area.

Throughout the evolution of settlement, there are periods of expansion, innovation, and decline. The goal of this thesis is take the decline of the former light industrial and commercial region in the city of White Bear Lake, Minnesota and reinvigorate the area with a mixed-use environment for commercial, retail, and residential living. The adaptive reuse of the Johnson Boat Works manufacturing facility in this area is to act as a catalyst for vitality and suburban regeneration. This thesis will draw from the benefits of creating mixed-use in a suburban environment, the knowledge obtained from waterfront urban regeneration projects, and what it means to create a powerful sense of place that resonates with the community.

The Call for a Mixed-Use Environment

According to Jane Jacobs, author of *The Death and Life of Great American Cities*, to create a successful city is to create space for multiple and mixed-uses:

A district [which] has as many internal parts as possible, must serve more than one primary function; preferably more than two.

These must insure the presence of people who go outdoors on different schedules and are in the place for different purposes, but who are able to use many facilities in common (1961, p. 152).

Jacobs's goal for successful multiple-use built environments is needed for cities and neighborhoods to thrive. What is lacking in many suburban areas is a centralized area for activity to take place at reasonable times of the day. The activity is defined by the amenities of the place. The amenities, in turn, are defined by the opportunities of the place.

In *Suburban Sprawl: Culture, Theory, and Politics*, Matthew Lindstrom suggests, "In practice, restrictive zoning in suburbia created the potential for great domains of large scaled development based on a singular function" (2003, p. xvii). This is due to the separate zoning regulations established and upheld in the United States by the Supreme Court in *Euclid v. Ambler* and the Standard Zoning Enabling Act suggesting that land be zoned for trade, industry, residence, and other purposes (Hirt, 2007). For these reasons, when new cities and suburban areas were established, these functions were separated and scattered across the landscape.

Living, working, and leisure environments are syncing and melding together, so should the architecture of these places. Since the housing boom after the Second World War, there was a drastic shift in living and space making in the United States. As a nation, people left the cities for suburban areas (Bloom, 2000). With this shift, there was a defined separation in leaving work in the city, shopping for daily items outside the city center, and living at home in the suburbs. One function was done during the working day, another function was done after work at another place, and then people went home outside of the city for family life. The zoning of space became polarized. The polarization of the zoning lead to the compartmentalization of space.

Current work models and lifestyles do not capture compartmental work and lifestyles. Many corporations and small businesses are moving towards what is known as, “results only work environments,” which transitions work hours to the workers needs when applicable (Ludden, 2010). Vacation, work, and home time are all set by the employee and subject to their lifestyle. The system is being embraced, just as long as the work is completed by the deadline (DuBois, 2011).

As technology and labor changes, our architecture should respond accordingly. The American Planning Association stated in their article, “Redevelopment Revolution,” that many of the new mixed-use projects are walkable because housing is mixed with retail, commercial, and office elements. “There is a great deal of variety in housing types, and the layout promotes social interaction” (Jackson, 2006, p. 14). The typology of mixed-use projects calls for locations with multiple forms of dependable transportation. The proper mix of consumerism and residential uses creates an environment where people can walk around the corner to work, to shop, and to recreate. By having mixed-use environments within proximity to one another, this can create more quality time to be spent for social interaction with colleagues, family, and friends.

Creating density in suburban areas is about creating social connections. “Pocket Neighborhoods form at a scale where neighborly relationships are formed...12-15 grouped households create this sense of identity, diversity, and activity” (Chapin, 2011 p. 9). With this idea, “Pocketed” urban villages can be created by infusing residences and consumerism in proximity and creating multiple connections. An additional reason for mixed-use is the shift in demographics in the United States. As members of communities age, they are still looking to stay in the places they call home. The patrons of mixed-use environments include “young singles, married couples without children, and empty nesters who want minimum maintenance residences” (Jackson, 2006, p. 14).

By creating a mixed-use environment, this demographic can stay in the communities they have created connections in for a large portion of their lives.

The transformation of underutilized sites can create greater density in neighborhoods and cities. Mixed-use allows for greater density where it is desired and preserves the quality of life that suburban residents expect. While traditional suburbs are being reborn, they are becoming more functional places where residents can live closer to the amenities they desire (Jackson, 2006). Mixed-use developments are on the cusp of sustainable design futures in regards to having amenities close by, and will be a highly desirable solution.

The Need for Waterfront Regeneration

As cities transitioned from manufacturing along the waterfront and moved towards service sector jobs, the waterfront became vulnerable and abandoned.

Historic waterfronts are integral to maritime heritage, and, as such, are usually tied to a city's early prosperity and economic development. Cities that are capable of preserving their historic waterfront districts have the chance to capture the allure that comes from being in touch with the past in modern daily life (Breen & Rigby, 1996, p. 115).

As somewhat historical (though, regarded as insignificant) structures are abandoned along the transitioning waterfront, they become victims of urban renewal. To summarize Ann Breen in the book, *The New Waterfront*, "If it were not for the popular appeal of historic sites and the revenue they generate, which pays for their restoration and upkeep, most structures would fall victim to the wrecking ball and disappear... 'While a trendy bar is not a 'real' warehouse, the reused structure maintains a tangible sense of the past that no new building can'" (1996 p. 116).

The adaptive reuse of industrial and commercial buildings and their transition into a new typology maintains this tangible sense of history and aged beauty.

Adaptive reuse transformations are often regarded as being 'too costly' and 'difficult to finance.' Professor Robert Shipley of the University of Waterloo, Canada states in *The International Journal of Heritage Studies* that these preconceived cost projection are incorrect. When redevelopment projects are presented to owners or clients, usually the developer or lender's cost analysis is presented, and they are usually unable to make informed judgments on the intrinsic value of the structures (2006).

Budgetary restrictions usually are the primary motive that cause owners and developers to stray away from adaptive reuse. While projects cannot be equally compared due to different structural conditions and typologies, on average, there were between 10% and 12% overall cost savings on commercial and industrial adaptive reuse projects versus a new build projects (Shipley et al. 2006, p. 511).

Waterfront regeneration coincided with the creation of better urban environments. The term "regeneration" has replaced the term "renewal" because of the stigma of the destruction and devastation "renewal" created in the 1960's. The aim of regeneration is not to start from a leveled site, but rather to build upon what is present, and create a sustained future for the area. Jane Jacobs stated in *The Death and Life of Great American Cities*, "The waterfront itself is the first wasted asset capable of drawing people at leisure" (1961 p. 159).

The power of water and edges is such a strong vehicle for design. It must be asked, "why is the waterfront asset wasted and hidden?" The answer lies at the water's edge because commerce was typically inland by numerous city blocks. There was a desire to separate manufacturing away from the trade of commodities and services. The programmatic functions of city life are bounded, but as cities transition away from manufacturing and shipping, these boundaries become obsolete.

Philosopher Martin Heidegger stated “A boundary is not that at which something stops, but the boundary is that from which something begins its presencing” (as cited in Norberg-Schultz, 1983, p. 64). The idea that Heidegger introduces reaffirms that boundaries and edges should not be viewed as elements that force internalization in design, but rather as elements of the design for interaction between boundaries.

The key to regenerating the waterfront is the transitioning of the waterfront into the city. Kevin Lynch, in the book *The Image of the City*, reiterates that an edge may be more than simply a barrier because if some visual or motion penetration is allowed through, the structure on either side becomes a seam rather than a barrier (Lynch, 1960). Thus, the two areas should be sewn together.

This can be interpreted to mean where there is a barrier to design, meld it with the design and create a strong connection. If there is a viewshed, but it is blocked by a mass, penetration of the mass will create a visual link to the seam. This link will create a stronger connection for interaction. At the waterfront, there should be a connection to the edge of the water so patrons can feel it, go over it, go in it, and interact with it. Jacobs adds to Lynch’s theory on edges and states:

Waterfronts, too, can be made to act much more like seams than they ordinarily do today. The usual form for a decayed waterfront vacuum is to replace it with a park, which in turn becomes a border element-usually appallingly underused, as might be expected-and this moves the vacuum effect inland. It is more to the point to grasp the problem where it originates, at the shoreline, and aim at making the shore a seam (1961, p. 269).

The underlying idea is that rather than becoming a barrier to design, elements of the waterfront should be feathered into the city. To address the seam at the shoreline is to start at the shoreline with the built environment through means of landscape, hardscape, or space making and work the shoreline through the built environment.

The reason why the seam is at the shoreline is to create as many interactions with the shoreline as possible. The next key design idea is to let the waterfront permeate through the city. The goal is to show the important natural edge condition that will attract passersby at the street level. Jacobs states:

Waterfront work uses, which are often interesting, should not be blocked off from ordinary view for interminable stretches, and the water itself thereby blocked off from city view too at ground level. Such stretches should be penetrated by small, even casual, public openings calculated for glimpsing or watching work and water traffic (1961, p. 267).

By creating “casual openings,” the design can effectively create a transparency between the water and the city. The openings and voids create a strong link to the water. The draw will then foster activity, commerce, and recreation. Where there is a draw for desirability and recreation opportunities, there will then be a draw for residences. This will cause a breakdown in the vacuum effect and create an effective atmosphere for mixed-use environments. By having transparency to the water, to the storefronts, and to the city, connections will be created.

An excellent example of where the principles outlined have converged is in Puerto Madero, located in Buenos Aires, Argentina. Puerto Madero is an example of a historic waterfront that was resurrected by using a mixed-use precinct nearby a central business district. “The design is retained through a waterfront promenade and obsolete cranes as artifacts of the industrial past along with restaurants and night clubs, this site is a destination (Breen & Rigby, 1996, p. 139).

The area is easily identifiable with the strong sense of place by leaving the industrial artifacts that once defined the site. The project was also notable for the fact there was no government subsidization for the regeneration of the property.

The funds were made through the sale of the warehouse buildings into mixed-use units which then created operating funds for the construction (Breen & Rigby, 1996, p. 138).

North Dakota State University Associate Professor of Architecture Ronald Ramsay, personally visited the project and stated the project was “a hub for activity” with a strong night life and “highly desirable real estate.” The typology of a mixed-use compliments the practice of adaptive reuse of the former warehouse buildings. The key is in the balance of the mixed-use environment, the proper setting for the environment, and the creation of a desirable link to the waterfront.

Similar projects have been completed in the city of Valencia, Spain. Known as the city with its back to the sea, a large industrial area and polluted river separated the city from the sea. The industrial area was retooled into high rise mixed-use facilities, and the river was drained and turned into a greenway linking the city to the sea with the city’s iconic arts and sciences complexes designed by Santiago Calatrava (GA Document, 1998).

Stepping away from the water, but incorporating the ideas of Jane Jacobs and Kevin Lynch is the Highline project in New York City. The project is along a one and a half mile long stretch of elevated rail spur that has been converted into a public park. The project is “inspired by the melancholic, unruly beauty of [this] post industrial ruin, where nature has reclaimed a once vital piece of infrastructure” (“High Line”, 2011, p.102). The project effectively “feathers” the built rails and sidewalks into the sedum that has infiltrated the cracks of the permeable pavers and adds to the quality of the space with elevated grasslands and park space. The project is one block away from the shoreline in the West Side of Manhattan and creates a link through the built environment in a “pathless landscape where the public can meander in unscripted ways” (“High Line”, 2011, p. 104).

The opportunity to create an effective edge condition to draw on the influence from the city to the edge of the water and the edge of the water into the city will create multiple nodes of interest in a city. The facilitation of movement to the water, rather than hiding the water, will create a draw. The preservation of waterfront artifacts should be left as remnants of the site's past. By suggesting that the shoreline is a seam, the regeneration of the waterfront will be successful in the creation of vantage points, feathering the built environment, and creating a link to the past in the modern site.

The Creation of a Sense of Place

Kevin Lynch, the author of *The Image of the City*, explained the creation of successful built environments by using the elements of defined paths, edges, nodes, landmarks, and districts to set up the narrative for effective urban design and place making (Lynch, 1960). In addition to Lynch's elements, there is a prerequisite for the elements to work effectively; they must have an achievement of identity (Lynch, 1960). This achievement of an identifying quality is conveyed through place making. Place making is achieved through the creation of nodes, which are, "the conceptual anchor points in our cities" (Lynch, 1960, p.102). The essences of Lynch's elements are paths as movement, edges as boundaries (either physical or legal), districts as a character or typology, nodes as a point of connection or interest, and landmarks as a point of orientation and reference. The question then becomes, "how are these abstract qualities of place making implemented in the current built environment, which may be devoid of the idea of a node?" The answer lies in the creation of a sense of place.

While the creation of a sense of place is a relatively abstract concept, it is through the distinctive and iconic qualities that identify the place as memorable. The sense of place may be conveyed through an iconic built environment, the preservation of a meaningful architectural artifact, or a powerful vista or landscape element incorporated into a setting.

Lynch iterates the goal of a node is to be a concentration for the consolidation of some use or physical character such as a bounded space for convergence (1960). A node is further strengthened by a landmark and provides a setting which “guarantees attention for any such landmark” (Lynch, 1960, p. 84). The node is, and becomes, a place for social interaction. With a draw for social interaction, the node acts as a place for social activity, and will be benefited by mixed-use activity. The idea of creating a place for mixed activity is further benefited through making the place “plastic” by having the ability to offer flexibility to the masses and offer insight for people to explore the environment (Lynch, 1960, p.119).

These ideas should be applied and further developed at a suburban scale. “Transforming under used suburban sites into lively mixed-use projects can create a focal point for suburbs that have never had a focus” (Jackson, 2006, p. 13). Lynch’s identification techniques for urban spaces have equal, if not more, merit in small cities and suburban sites where these elements may be more subtle.

The creation of a strong sense of place has a direct association with creating a mixed-use setting, adaptive reuse, and the waterfront. The waterfront is the visible landscape setting, the prerequisite, and draw for design. The adaptive reuse of a post industrial landmark, such as the Johnson Boat Works manufacturing building, is easily identifiable along the paths of automobile travel, and pedestrian links adjacent to the site because it is built to the edge of the site. The large mass of the building, and a traveler along the path sees the waterfront on both sides of the mass, and it is reinforced as a landmark.

The waterfront edge is the junction at which the path and waterfront are in proximity of each other, to reinforce the idea of a seam in the environment. The node is the mixing connection of the building, the edge of the water, and the boat docks. The elements of design are present, but the connection between the architecture and the seam (the waterfront) is lacking. By moving the node inland to the existing building, and by creating a defined area of enclosure, it will create a space for people to congregate and have a visible link to the docks.

In keeping with the site, the waterfront cranes and industrial artifacts should be left as a reminder of why the area is significant as a historical artifact, and they should be used as art. The cranes are helpful in the shaping of the identity as “public art contributes to the process of place making” (Sucher, 2003, p.196). By using these ideas of reinvigorating the architecture through adaptive reuse and new structures, a strong composition of a sense of place will be created with a connection to the landscape.

Conclusion

Through the analysis of the research, the benefits of creating mixed-use buildings in a suburban environment can create a memorable sense of identity and foster social interactions, recreation, and positive live/work environments. The knowledge obtained from waterfront urban regeneration projects conveys the importance of adapting the waterfront for mixed-uses. The adaptive reuse and preservation of the industrial and historical role in the waterfront further defines its role in the creation of a sense of place. Treating the waterfront as a seam in a composition will create a powerful connection between the built environment and the landscape that will permeate through the design. Lastly, the creation of a powerful sense of place that resonates with the community will reinforce the design and make it identifiable. As the edge was the initiation of the design, it should not be looked at as the limiting factor that binds the design. Rather, the edge is a seam at which materials are sewn together into a composition to make a piece apart of a whole.



figure 55.1: Gamelin, K. 2012. Photography.

THE SUMMARY

The framework of the research was established through the unifying idea and the design intentions. Research was conducted to establish a link of validity between the call for mixed use in the suburban environment, adaptive reuse of structures, regeneration of the waterfront, and the creation of a sense of place that embodied these elements. Through the research and analysis of the unifying idea it was established that the regeneration of the Johnson Boat Works will help to secure a historical artifact. The transformation of the boat works into a mixed use pocketed village will bring vitality to the area. The preservation of the character of the boat works facility and the planning for future use of the area will re-establish the significant part the boat works facility had in creating the identity of the community.

As designers and creators of architecture, the exploration of the concepts of preservation through the lens of adaptive reuse is vital. Architecture needs to evolve from the cycle of building back up and tearing back down. With energy, materials, and capital becoming scarcer, it is necessary to think of the future uses embodied in existing architecture. Adaptive reuse of structures can help to mark time and preserve fragmented artifacts of history in the landscape. These historical artifacts and buildings can be used to reiterate an areas truthful past. Unlike historical recreations, the actual building, structure, or relic in the composition has a stronger connection to the past, yet can be re-purposed to act as a bridge for future use.

The future of suburban areas lies in the ability to adapt and create meaningful connections. By implementing mixed use, some density, and public space into a site or district, it will help to restore vitality to ineffective single use areas by creating a new focus with connections to the surrounding context. Mixed use projects allow for greater density for built suburban cities and preserves the high quality of life that suburban residents expect. By having amenities close by, suburban areas are being reborn as more functional pocketed urban villages.

Edges and lines define areas, yet those very edges can entrap design and create a lifeless environment. An edge, as vehicles for design, can be the waterfront, a built wall, or a legal line. When edges are thought as seams, rather than barriers, a patchwork composition of the city can be sewn together creating connections. These connections will provide grounds for social interactions for areas that can handle mixed-uses.

The research done will directly effect and impact the course the design will take on the Johnson Boat Works facility. As a post-industrial building located on the waterfront in a suburban area, it will rely on a future brought through adaptive reuse. The key to its preservation and vitality is the introduction of the mixed-use zoning as it is located amongst single-use zones. Vitality will come through place making. Fostering social interactions with community members who live, work, and recreate nearby will create connections. The ability to address the post-industrial waterfront and adapt and reuse existing structures for mixed-use will help to create a memorable sense of place.

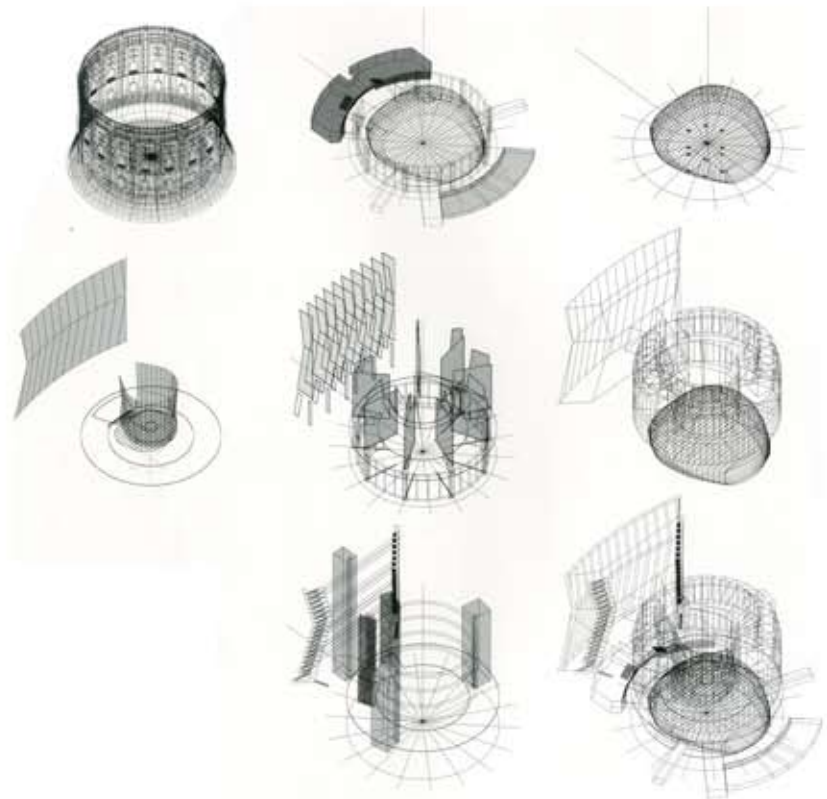
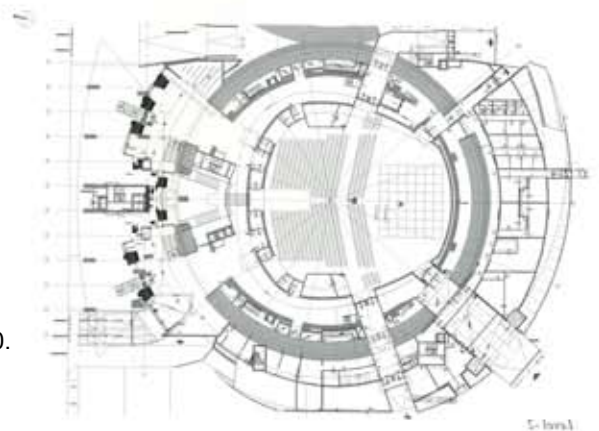
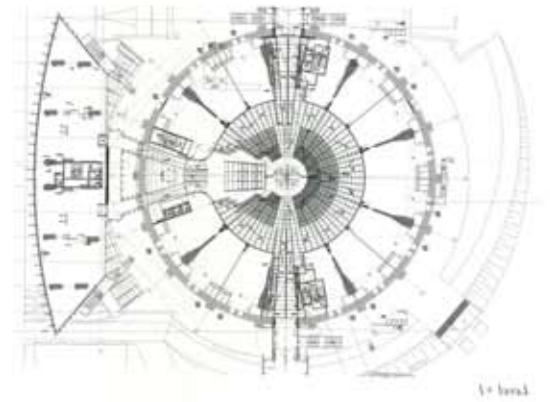
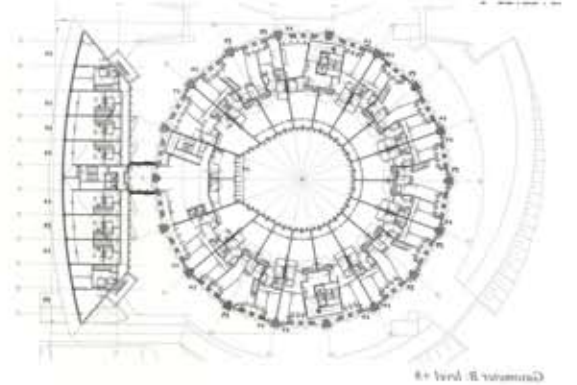
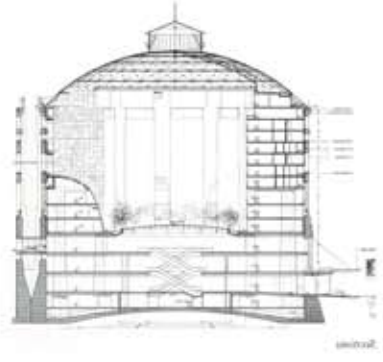
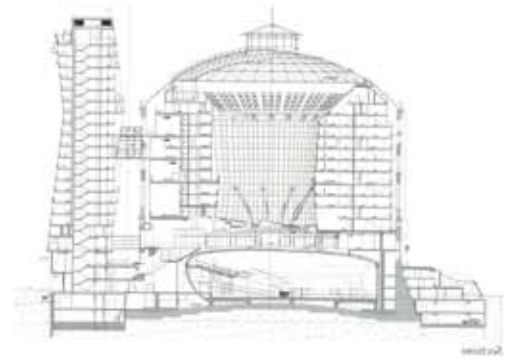
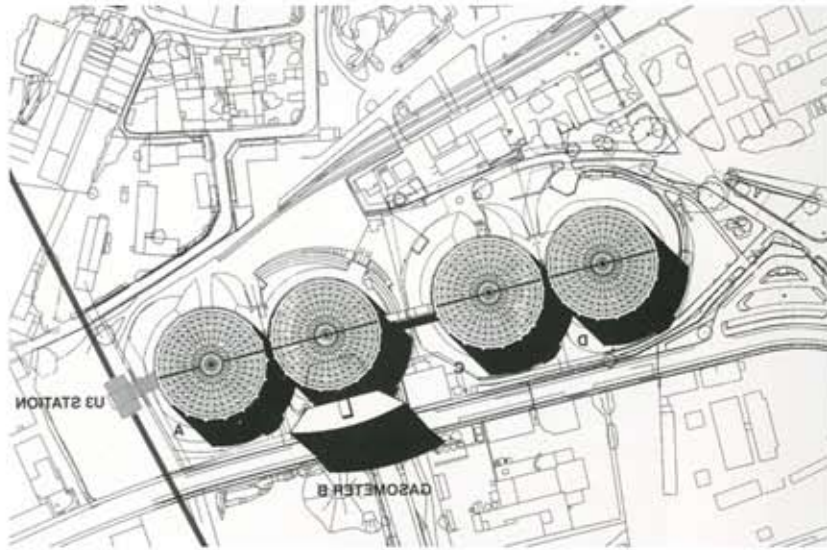


figure 56.1 et. all: (2001). Apartment Building Gasometer. GA document, 69, 68-80.

APARTMENT BUILDING GASOMETER

COOP HIMMELB(L)AU

Jean Nouvel
Manfred Wehdorn
Wilhelm Holzbauer

Vienna, Austria

Design 1995-1998
Construction 1998-2001

Size: 28,550 m² per Gasometer building

Adaptive reuse of four former gas storage buildings into mixed use housing and retail space.



figure 57.1: (2001). Apartment Building Gasometer. GA document, 69, 68-80.

APARTMENT BUILDING GASOMETER

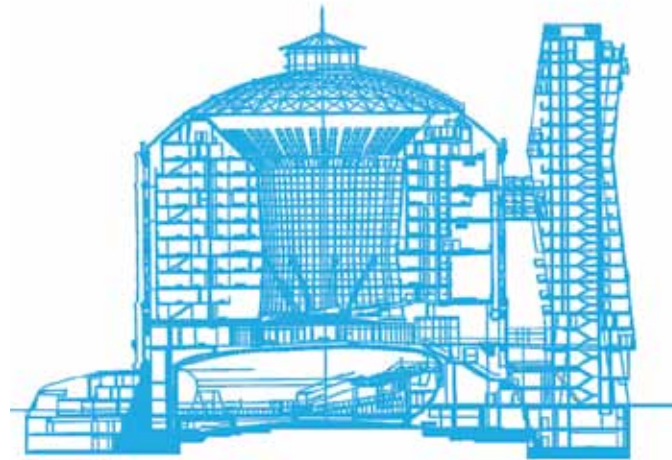
COOP HIMMELB(L)AU

VIENNA, AUSTRIA

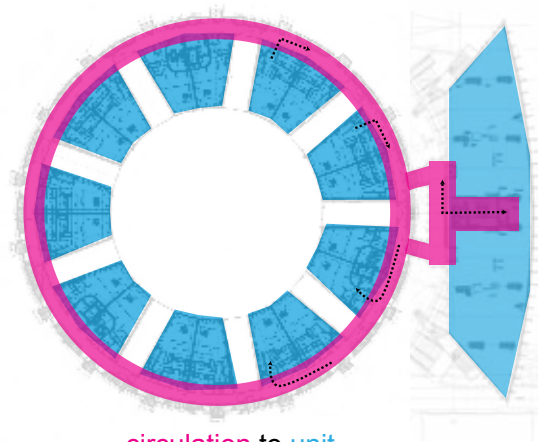
The apartment gasometer project was an adaptive reuse of large gas storage tanks that were built just outside the city of Vienna, Austria. The existing structure of the brick tank walls were left intact and the architect of record, Jean Nouvel, created apartments and retail space in the large volume (GA document, p. 69, 68-80.)

What is common between this case study and the typology of the thesis project is the adaptive reuse theme of a conversion of an industrial building into retail and housing. Effectively, this is a model for the transformation of local history with a purpose of mixed-use.

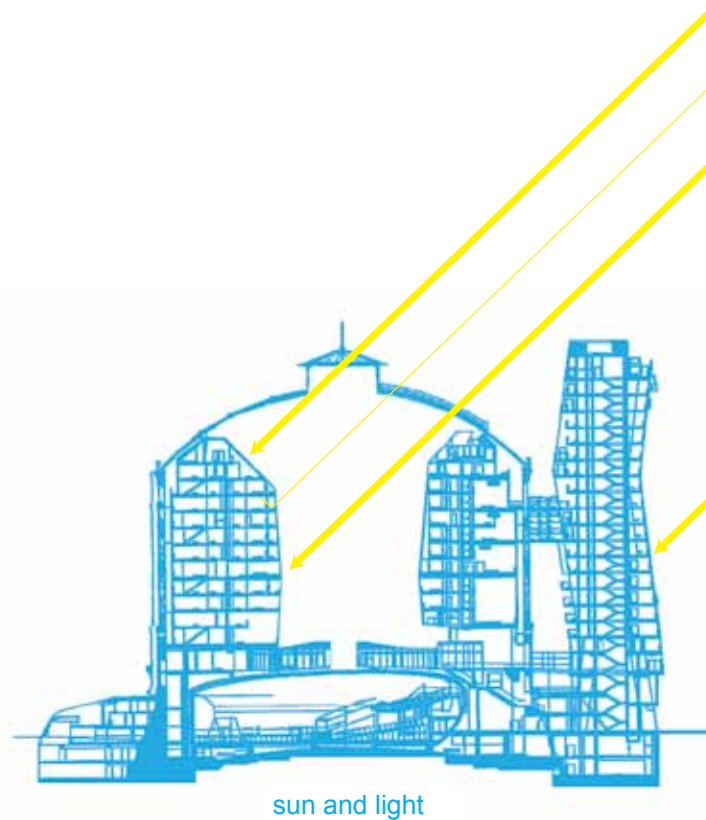
Apartment Gasometer responds to the environment through the void, which effectively creates natural lighting for the apartments as well as the retail space at the base of the building. The building, being an adaptive reuse, had a lower environmental impact being refurbished rather than demolished.



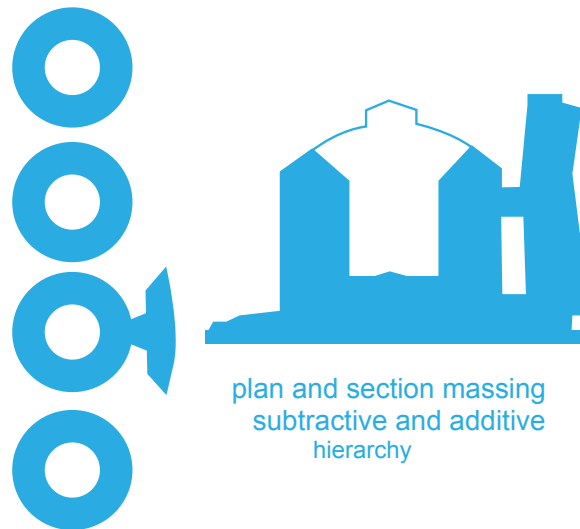
structure



circulation to unit
unit to whole
subtractive



Socially, the housing and retail project have created an urban like center of activity outside the true urban core of the city. The building program mixed housing and subsidized social housing into a desirable environment. The program melded the need for consumerism outside of the city center and the need for socialized housing at a large scale into a desirable composition.



The reason for the selection of this building was the proposed thesis project of the Johnson Boat Works and the apartment gasometer are located outside of the urban center and have a proximity to the waterfront. While the scale, and their structures differ, the use of the unit to whole and the creation of the void within the mass is an effective use of the space. Levels of public, private, and semi-private interactions are well separated, but retain a unifying connection to the building as a composition.

figure 59.1: Gamelin, K. 2012. Apartment Building Gasometer.
GA document, 69, 68-80. Image is traced in Adobe Illustrator.



Figure 60.1: King, J. (2010). Ford Assembly Building. Architectural Record, 2010(02), 78-81

FORD ASSEMBLY BUILDING

Marcy Wong Donn Logan Architects

Richmond, CA, USA

Project Year 2009

525,000 square feet

Adaptive reuse of a former Ford manufacturing facility into retail space and an event center.



Figure 60.2
LONGITUDINAL SECTION LOOKING WEST
FORD ASSEMBLY BUILDING
0' 50'

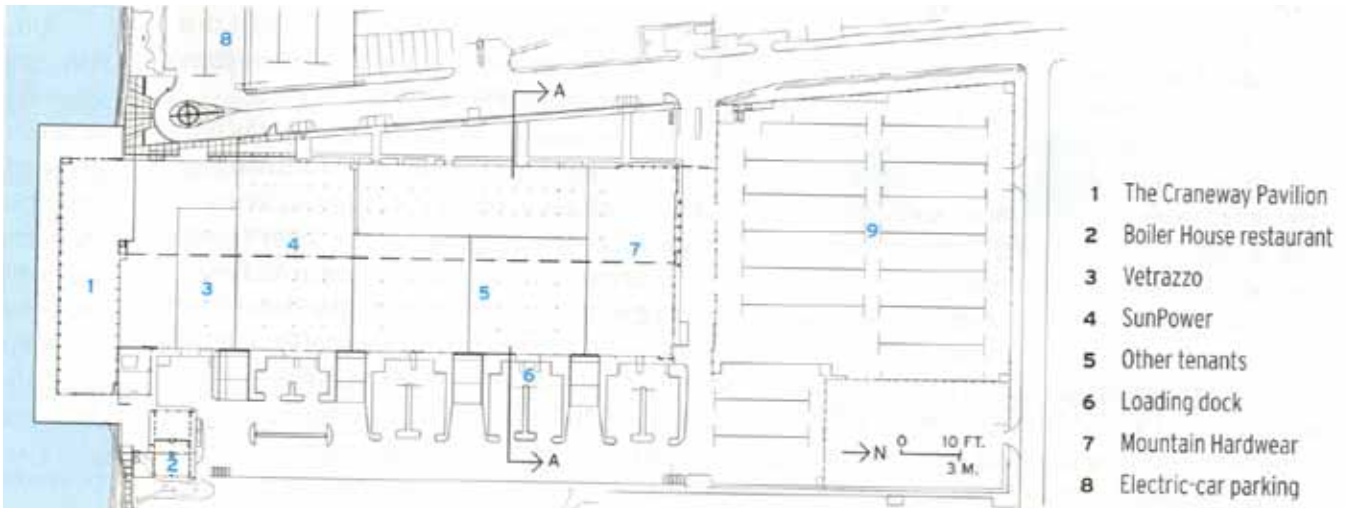


Figure 61.1&61.2: Ford Plan. King, J. (2010). Ford Assembly Building. Architectural Record, 2010(02), 78-81



Figure 61.3-61.5: Ford Photos. King, J. (2010). Ford Assembly Building. Architectural Record, 2010(02), 78-81

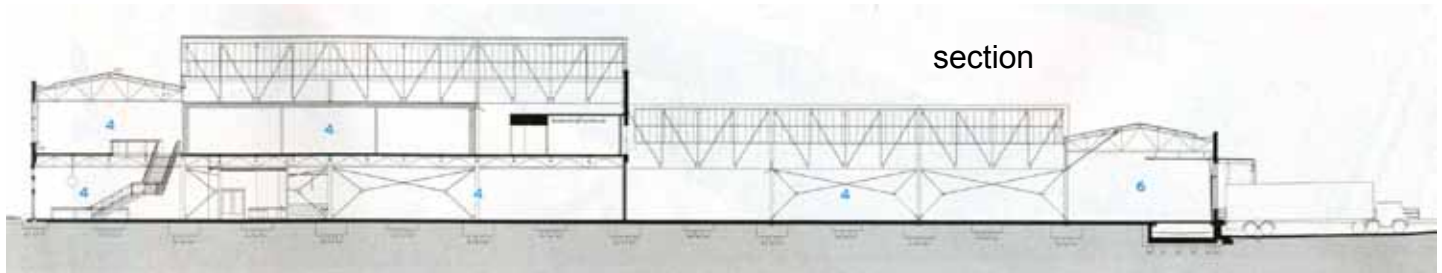
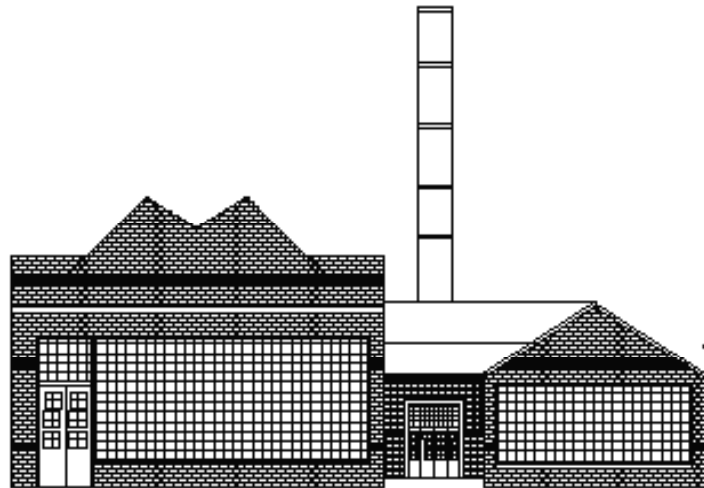


Figure 62.1: King, J. (2010). Ford Assembly Building. Architectural Record, 2010(02), 78-81

The Ford Assembly Building in Richmond, California was built by architect Albert Kahn in 1931. The building sat vacated after 1950 until the city purchased the property in 1988. After numerous attempts to sell the building, it was purchased by a development corporation in 2004. The building was converted into a large pavilion space and retail/office/restaurant space because it was not viable to convert the structure into live-work residences (King, 2010).

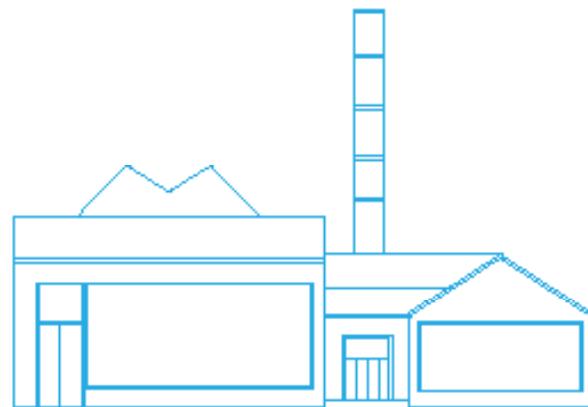
What is in common between this case study and the typology of the thesis project is the adaptive reuse theme of a conversion of an industrial building into retail space. The adaptation of the Ford factory will be similar in programming elements of the thesis project in how the space is broken up into commercial units. The circulation of the Ford building remains uninterrupted throughout the core building space, yet individual businesses retain a storefront entrance and facade for retail displays.



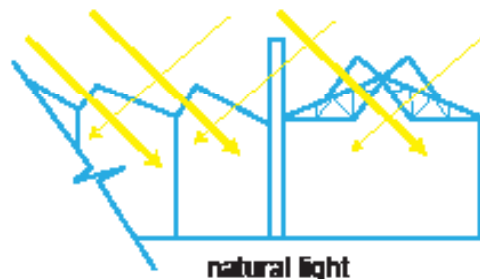
boiler house elevation

Figure 62.2: King, J. (2010). Ford Assembly Building. Architectural Record, 2010(02), 78-81

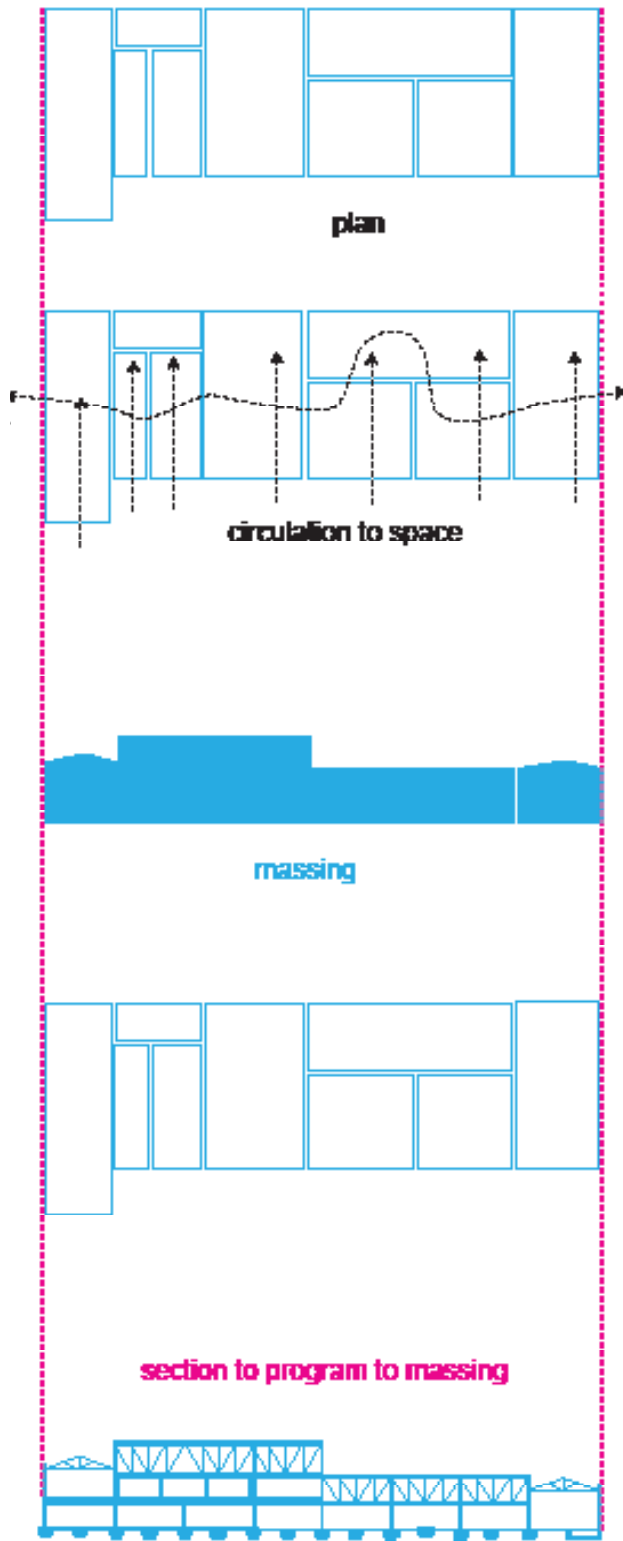
Figure 62.3: Gamelin, K. 2012. Traced in Illustrator



hierarchy / asymmetric balance



natural light



What is unique about the approach of the Ford project is there is no residential living on site or close to the structure. This is due to the area being less desirable for residences because the surrounding areas are dirty industry and the area is known for its social issues and violence. So, socially speaking, the Ford project attempts to draw in the community through the pavilion space for events and functions and makes an attempt to sell the retail space to patrons during events.

Environmentally speaking, the structure effectively uses natural lighting for the retail space through the existing sawtooth roof structure. The building being an adaptive reuse, had a lower environmental impact being refurbished rather than demolished.

This case study was selected to be a framework for the thesis project of the Johnson Boat Works factory because of the building typology and the effective transformation of the industrial artifacts into architecture as high art. The cranes and steam pipes were all left intact and painted to accentuate their structure. This was an intentional design decision that will be carried through in the thesis project. The building also uses the existing large factory openings as storefront glazing to attract retail patrons into the shopping space. While the glazing was replaced, the articulation of the openings was kept to emphasize the industrial past of the building.

Figure 64.1-64.3: (1996). Eric Owen Moss SAMITAUR. GA document, 49, 150-160.



SAMITAUR BUILDING

Eric Owen Moss Architect

Los Angeles, CA, USA

Project Design 1989-1995

Project Construction 1994-1996

Commercial/Industrial building addition.

57,000 square feet

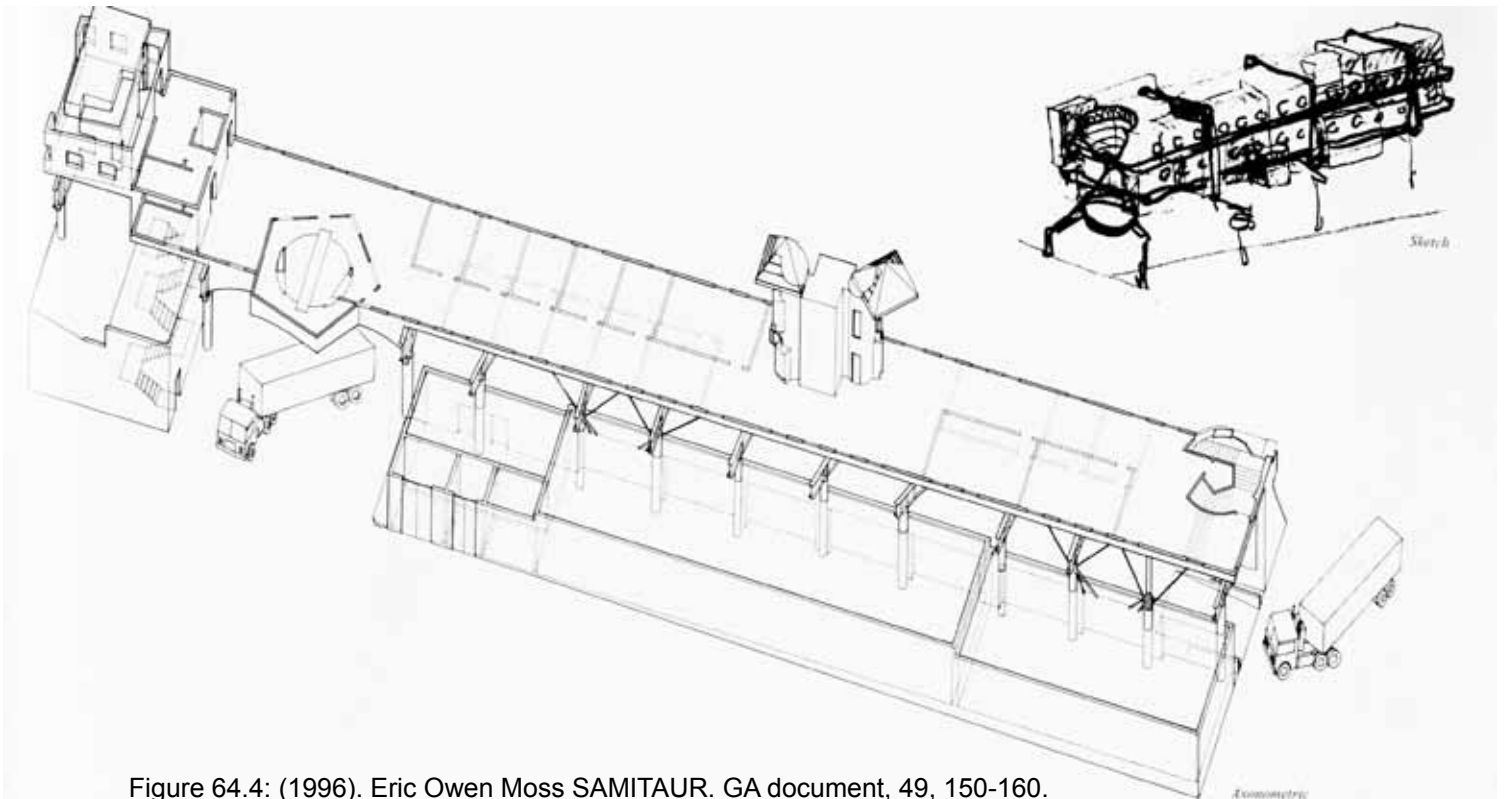


Figure 64.4: (1996). Eric Owen Moss SAMITAUR. GA document, 49, 150-160.



Figure 65.1: Moss, Eric Owen. SAMITAUR. 1996. GA document, 49, 150-160.

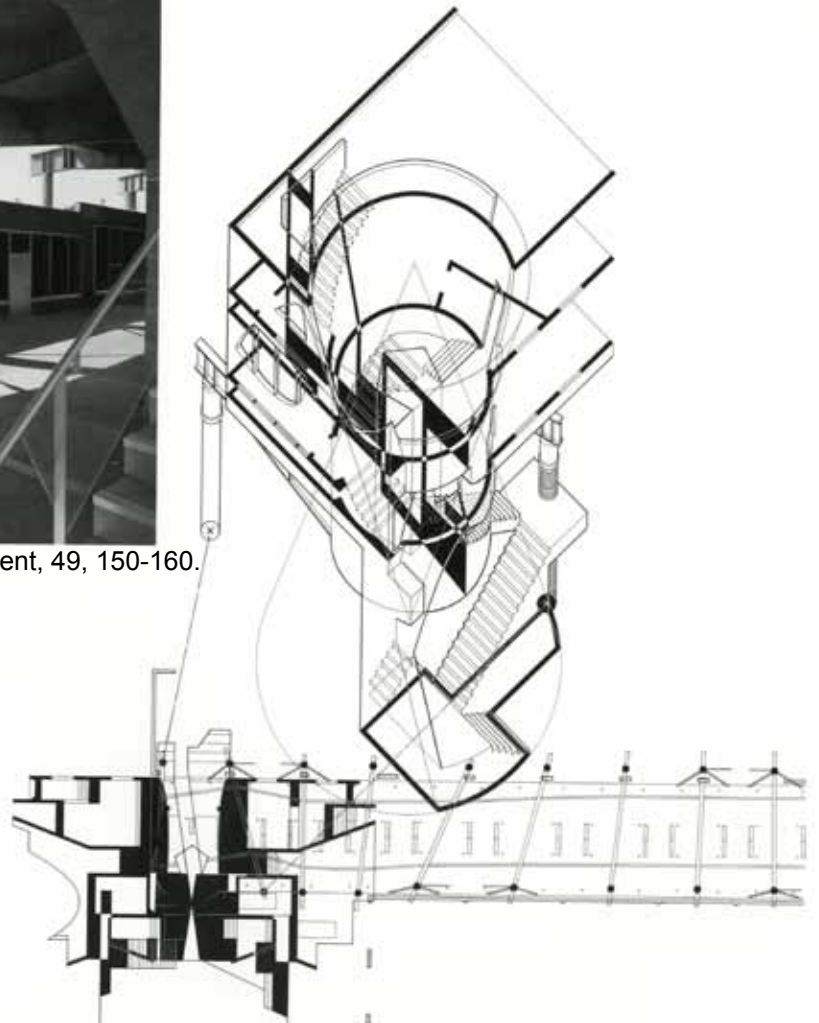


Figure 65.2: Moss, Eric Owen. SAMITAUR. 1996. GA document, 49, 150-160.

SAMITAUR BUILDING ANALYSIS

The SAMITAUR building was designed by architect Eric Owen Moss in Los Angeles shortly after the 1992 riots in the area. The building is a corporate office that was built using “air rights” over existing warehouse buildings and a small street. The building was placed in the air on a foundation of columns that penetrated some existing buildings. The columns look random, but they are placed in locations where they did not interfere with the existing buildings at grade. The columns were placed in between roll-up garage doors and commercial storefronts (GA Document, 1996).

This case study added additional commercial space to existing warehouse space, while having a minimal impact on the existing buildings and shipping circulation. The design effectively left the circulation of semi-trucks alone to keep the movement of goods as efficient as possible.

SAMITOUR BUILDING ANALYSIS...

One of the major differences with this case study is the application of the building to the existing context. While the business could have purchased and demolished the existing buildings on the site, they chose to build over them creating a very separate, yet unified conglomerate of structures.

While this case study seems a bit dated and very de-constructivist and post-modernist, it has a very elegant quality to the design application of creating something new and iconic so that people know what it is and where it is. The building hovers over the context of the industrial and warehouse buildings in the area. This unique approach of elevating an entirely new structure would be a good application for a dense environment where the existing buildings have a architectural value that does not desire a drastic transformation. While this approach is usually done in large high rise buildings over cultural landmarks such as high rises over churches and monuments, the application to do this over an insignificant and ordinary warehouse building is very striking.

The building is effective in responding to the site in terms of the programmatic elements of natural day lighting to the existing structures and to the new building with its long rectilinear mass. The project was relatively monumental in the fact that it was built in LA after huge riots and violence left the area around the site in chaos. The building was constructed in a almost fortress like manner to combat the social and political insecurity in the area head on, yet the building is respectful of its neighbors and attempts to create a transparent office and commercial space for people within the office and at the street level.

This building is a very iconic answer to the question of what to do with an addition to an existing building. This type of a solution will have an impact on the Johnson Boat Works thesis project because the existing factory structure does not have enough interior area to be converted into a live-work setting, and because the structure itself could not structurally take a large addition to the buildings as it would be problematic for structural integrity. This “air rights” type of solution does not take away from the identity of the existing structure, but rather lets it be re-iterated and interpreted into a composition of elements.



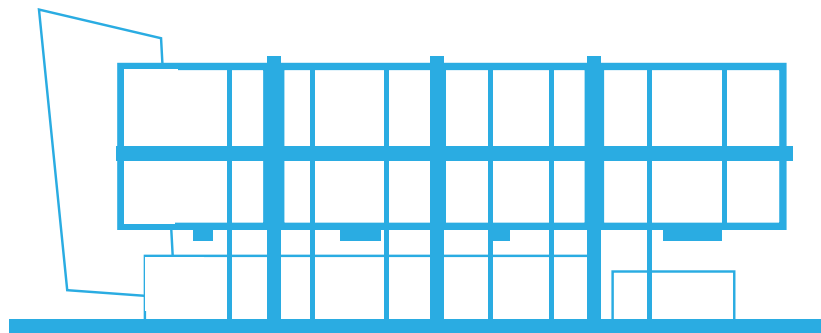
plan floor 3



plan floor 2

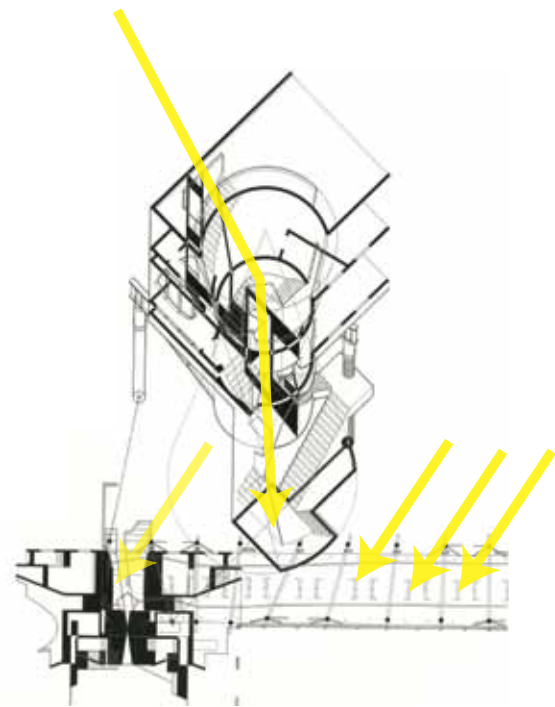


elevation massing



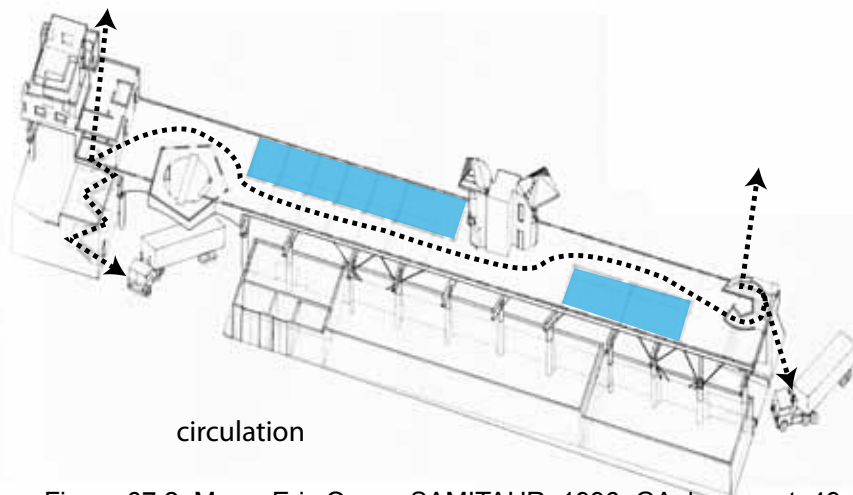
structure

Figure 67.3: Gamelin, K. Traced in Adobe Illustrator.

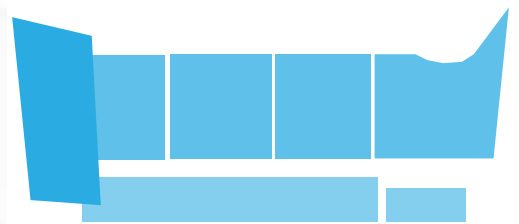


sunlight on isometric and reflected ceiling plan

Figure 67.1: Moss, Eric Owen. SAMITAU. 1996. GA document, 49, 150-160.



circulation



massing

Figure 67.2: Moss, Eric Owen. SAMITAU. 1996. GA document, 49, 150-160.



Figure 68.1-68.3: SALT - Acton Ostry Architects. (n.d.). Acton Ostry Architects - . Retrieved November 6, 2012, from <http://www.actonostry.ca/projects/salt>

SALT WORKS

[VANCOUVER SALT CO LTD]

Acton Ostry Architects Inc.

Vancouver, British Columbia, CA

Project Completion: 2009

Renovation of a timber framed salt factory on the waterfront into a pavilion and restaurant.

14,000 Square Feet

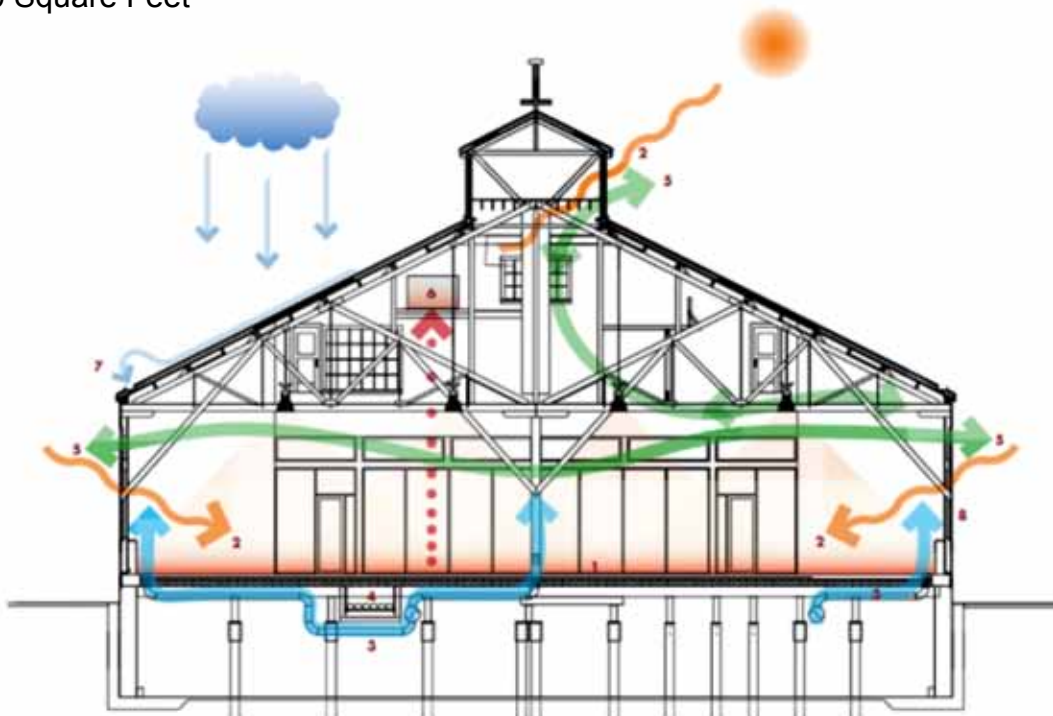


Figure 68.4: Arch Daily. (2011, December 26). Salt Building / Acton Ostry Architects. Retrieved October 28, 2012, from www.archdaily.com/194397/salt-building-acton-ostry-architects/sustainability.

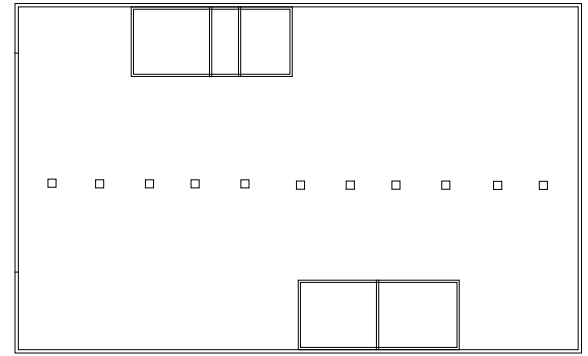
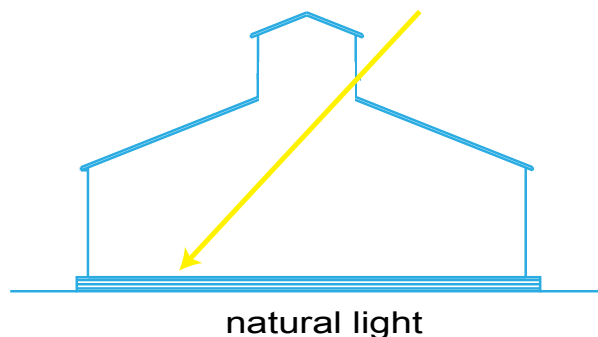
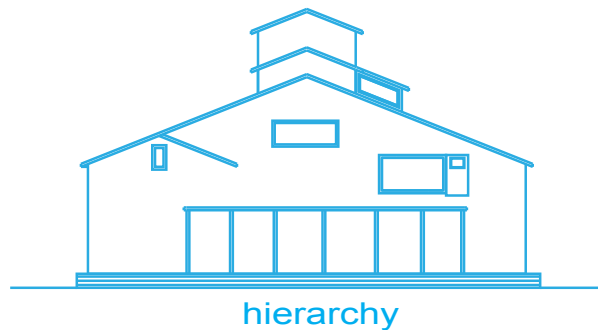
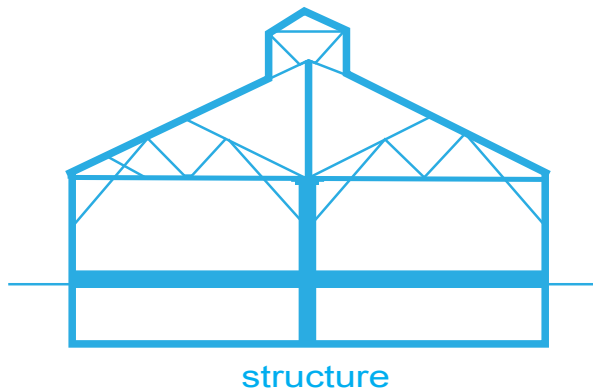


Figure 69.1-69.2: SALT - Acton Ostry Architects. (n.d.). Acton Ostry Architects - . Retrieved November 6, 2012, from <http://www.actonstry.ca/projects/salt>



This case study was selected because the adaptive reuse intentions and the structural form are similar to the existing Johnson Boat Works Facilities. This building, too, was slated for demolition until a third party offered to buy the property from the owner and convinced the city not to demolish the building (Acton Ostry Architects).

This building was converted into a large flexible space pavilion and has a similar construction in timber framing to the Johnson Boat Works Facility. The Vancouver Salt Works building is a quality case study for what was done to the interior space. The wood structure appears to have been cleaned and sandblasted. New interior spaces that were created were clad in drywall as to stand out from the existing structure.

To improve the structures thermal performance, all the walls and roof structures were insulated with spray foam insulation. Where exposed structural studs and ceiling members had to be filled with insulation, it was camouflaged with plywood as an interior cladding material (Acton Ostry Architects).

Figure 69.3: Gamelin, K. Traced in Adobe Illustrator.

70 SALT WORKS

[VANCOUVER SALT CO LTD] ANALYSIS

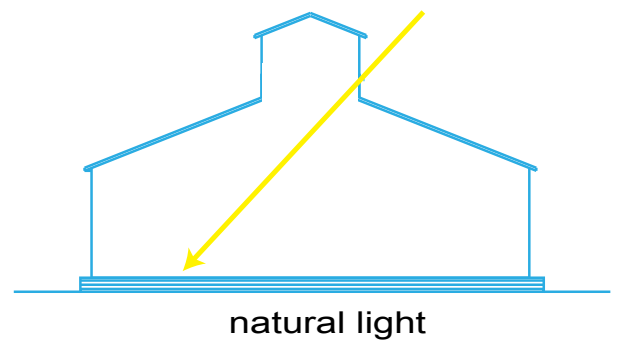
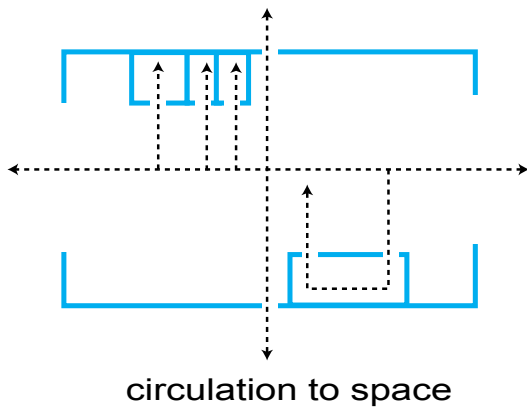
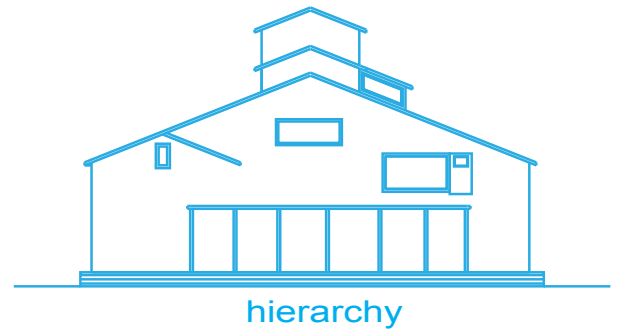
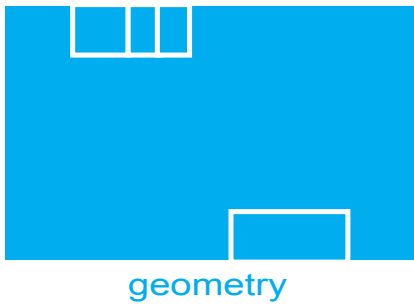
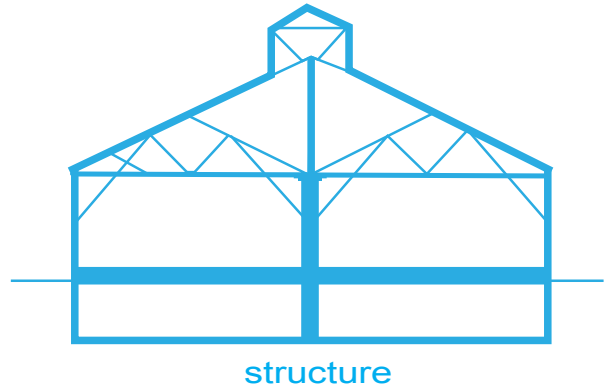


Figure 70.1: Gamelin, K. Traced in Adobe Illustrator.

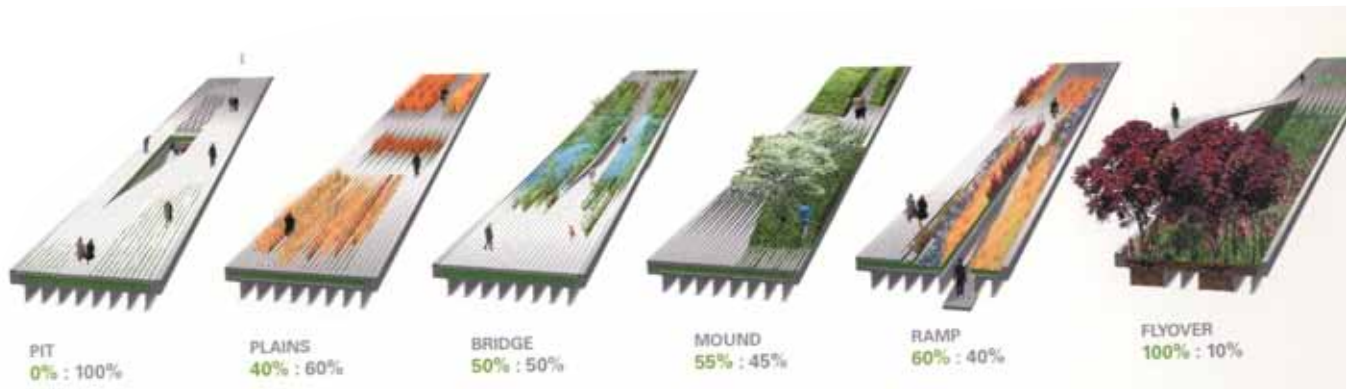


figure 71.1: High Line. GA document, 2011.120, 102-104.

THE HIGH LINE

Diller Scofidio + Renfro with James Corner Field Operations and Piet Oudolf

New York, New York, U.S.A.

Project Design 2004-

Project Construction 2011

1.5 Miles



figure 71.2: (2011). High Line. GA document, 120, 102-104.

72 THE HIGH LINE

This project is a reclamation of an abandoned elevated rail spur that was closed, yet community members would walk along (GA Document, 2011). This project is the transformation into a safe public space, while adapting the remaining urban remnants of the rail line with the overtaking sedum and grasses.

The High Line project is an effective case study in creating a link between the built environment and infrastructure as a tool for design inspiration. The project “feathers” the built environment and natural sedum through the permeability of the paving surface. This project is an excellent example of interactions between built edges, natural edges, and artificial elevation transformations.

As discussed in the thesis panel discussion about our role in the environment, this project is an interesting example of how we can take a post industrial ruin and transform it so we become stewards of our environments and gardeners of the land through architectural remnants.

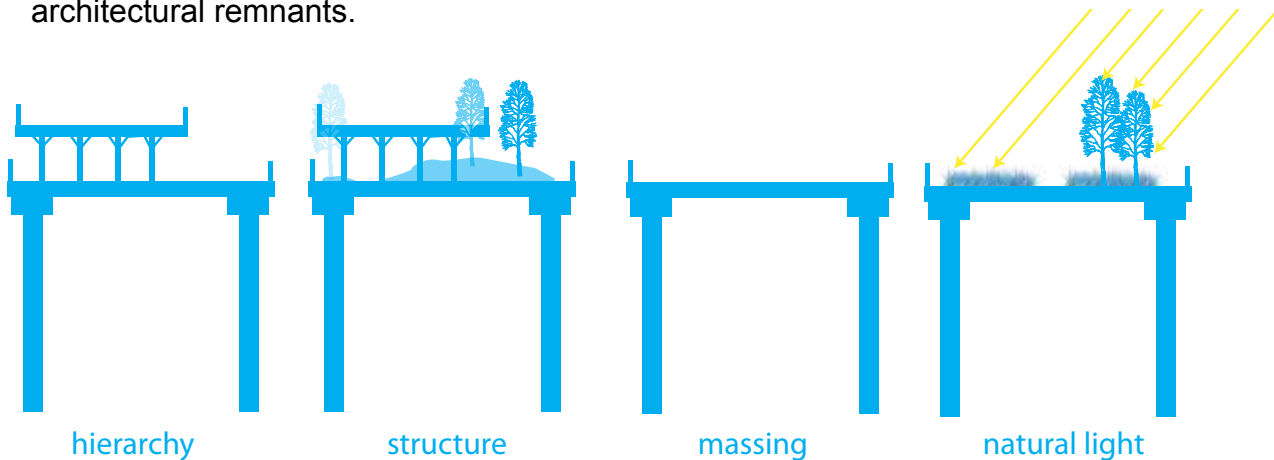
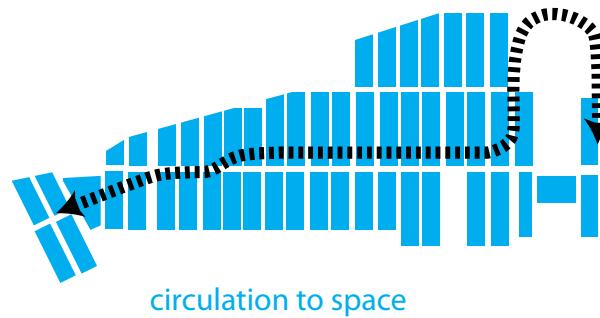
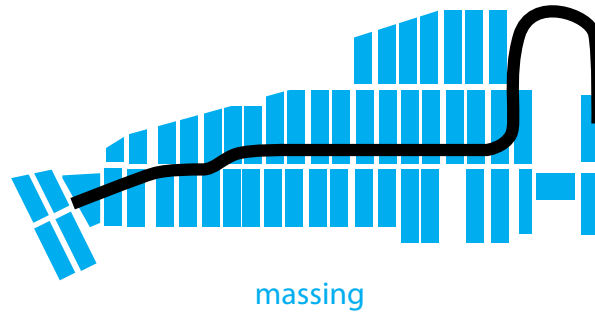


figure 72.1: Gamelin, K. Graphic Analysis traced in Adobe Illustrator.

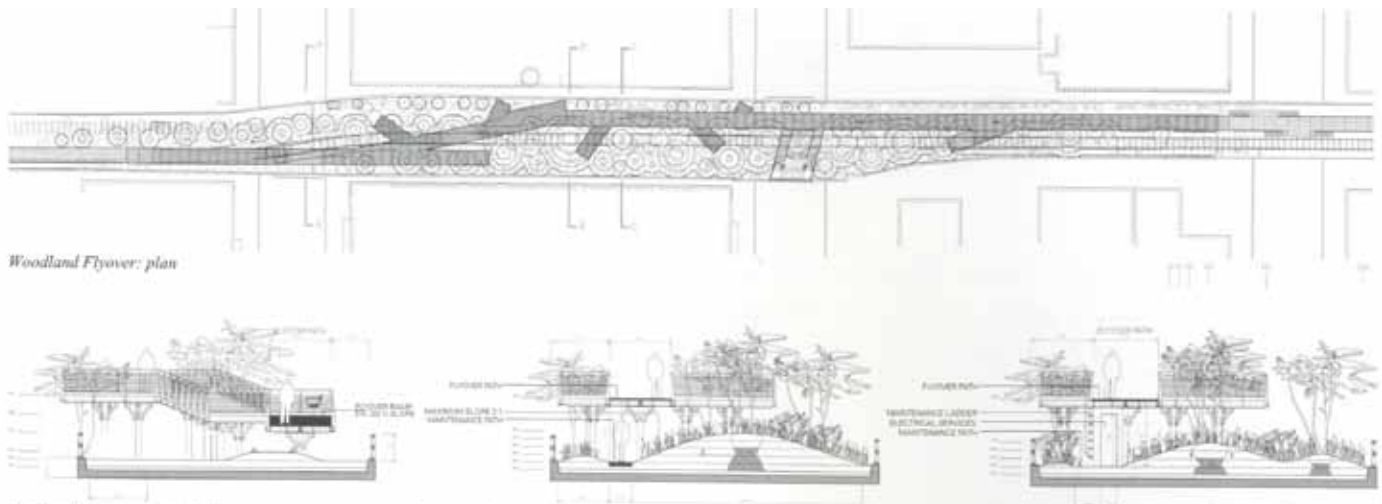


figure 73.1: High Line. GA document. 2011. 120, 102-104.



figure 73.2: High Line. GA document. 2011. 121, 102-104.

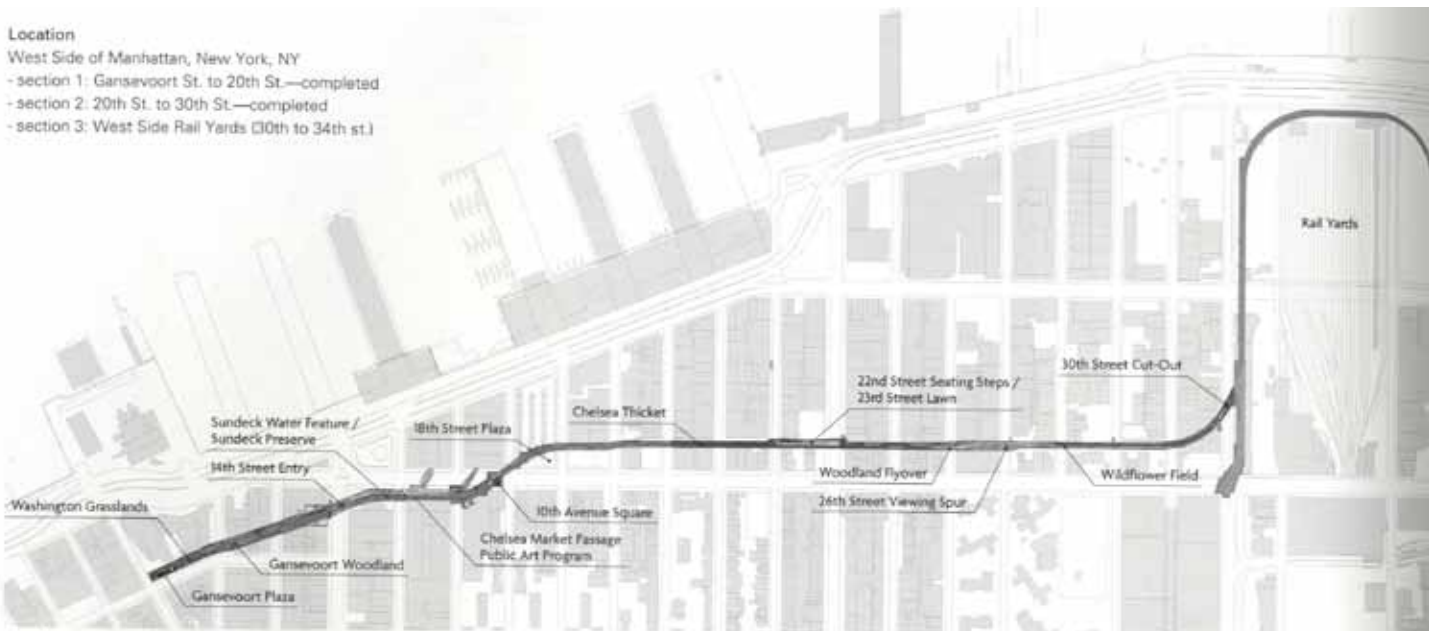


figure 73.3: High Line. GA document. 2011. 120, 102-104.

Through the analysis of the case study series, it has been shown that a variety of adaptive reuse and mixed-use projects are related to the merits of this typology and theory of design. The analysis of the Apartment Gasometer (Coop Himmelblau), the Ford Assembly Building, the Samitaur Building, the Vancouver Salt Works, and The High Line have shown a strong connection to the theories of adaptive reuse, and theories put forth in the research portion of this thesis. The theoretical/unifying idea was a driving force for the research of the case study section. This section was impacted in the approach of suggesting the design should “preserve the character” of the existing structure.

Apartment Gasometer was an adaptive reuse of large gas storage tanks outside the city of Vienna, Austria. The existing structural facades of the four tanks were left intact, and the architect created apartments and retail space in the large volume. The lower floors of the volume consisted of a large shopping center with internal and external circulation. The upper floors of the tanks were social housing, condominiums, and apartments.

The adaptive reuse of the former Ford Factory is unique in there is no residential housing in this commercial, community, and retail space. The area is less desirable for residences because the surrounding areas are dirty industry, and the area was known for its social issues along with violent crime. So, socially speaking, the Ford project attempts to draw in the community through the pavilion space for events and functions and makes an attempt to unify and improve the area through social interactions.

The Samitaur Building was designed in an LA neighborhood known for the 1992 riots. This discouraged development near the site. The building responded to this by elevating the structure over the existing industrial spaces. The building is composed of industrial and corporate spaces for the company. The building is an interesting response to design constraints of an existing site with an iconic air-rights solution.

The Vancouver Salt Works building is a quality case study for adaptive reuse interior architecture and design. The building had a similar manufacturing past and is a contemporary of the Johnson Boat Works. The building was re-purposed from a salt warehouse into a flexible community space with a cafe.

The High Line project is a reclamation of an abandoned elevated rail spur. Community members would walk along the abandoned tracks that were overtaken with sedum and grasses. This, in turn, inspired a 1.5 mile long public park which feathered the built environment and the landscape.

The common characteristics between these projects are the ideas of adaptive reuse of architecture and infrastructure. The goal of the projects were to create new purposes by tooling a useful future. This was the intention of the theoretical/unifying idea and the selection of the Johnson Boat Works site. Many of the projects feature elements described in the research of this thesis project. They focus on edge conditions as seams, implementing mixed-use for vitality, and urban and suburban regeneration.

The various approaches to design in the case studies were different. In the Samitaur building versus the Apartment Gasometer, the building programs both have a commercial setting, but the Samitaur building has an industrial warehouse, whereas the Apartment Gasometer focuses on housing with commercial and retail mixed-use. In the Samitaur and the Ford building, social context and urban defense played a large role in the design intentions as these projects do not have housing and are mostly used for daily functions. The High Line, Apartment Gasometer, and the Salt Works buildings drew from their location to gather residential users and create a connection to their retail, commercial, and community spaces.

The spatial and functional relationships of these case studies are various as to be expected with an adaptive reuse project. While the Apartment Gasometer focuses on a centralist design based on the subtractive principle, the other case studies tend to be linear as their structures are based off post and beam grids. There is usually a retail connection at the base of the buildings, and housing or corporate elements are placed above to create a hierarchy of levels of public influence.

In closing, these case studies have provided useful and real applications of the design principles explored throughout this thesis project. The theoretical/unifying idea has guided and was transformed through the exploration of these examples. The graphic analysis has influenced some motivators for the thesis design moving forward and will play a role in the final composition of the design portion of this project.



Looking west at Lake Shore. Johnson Boat Works in fore ground.

figure 76.1: Courtesy of the White Bear Lake Area Historical Society. Used with Permission.
Johnson Boat Works White Bear Lake, MN Summer 1930

The city of White Bear Lake has such a rich and colorful history that will be briefly summarized. The name of White Bear Lake is from Native American legend at a time when the Sioux were going to attack the nearby Chippewa. There is some discrepancy in stories, but there is a recurring theme. Mrs. Carl T. Thayer wrote in the book *Indian Legends of Minnesota* (1883) that a brave Chippewa approached Manitou Island, anticipating a meeting with his Sioux lover. He saw a great white bear attacking her and launched to her rescue. She ran to get help from her father and the other Sioux. When they returned they saw the brave sink his knife into the bear, but they both fell to the ground dead. Slowly, as they watched, the spirits of the warrior and the bear rose from their bodies and this brave deed of the Chippewa warrior deterred the Sioux chief from attacking (as cited in the City of White Bear Lake, 2012).

Mark Twain in *Life on the Mississippi* wrote this of the Legend White Bear Lake:

The warrior, with one plunge of the blade of his knife, opened the crimson sluices of death, and the dying bear relaxed his hold on the beautiful woman. "That night, there was no more sleep for the band or the lovers, and as the young and the old danced about the carcass of the dead monster, the gallant warrior was presented with another plume, and ere another moon had set he had a living treasure added to his heart. Their children for many years played upon the skin of the white bear – from which the lake derives its name, and the maiden and the brave remembered long the fearful scene and rescue that made them one, for Kis-se-me-pa and Ka-go-ga could never forget their fearful encounter with the huge monster that came so near sending them to the happy hunting ground (Twain, 1883, p. 399).

The area around White Bear Lake was sacred to the Native Americans, and was the location for Nine Indian Burial Mounds. The largest was at the corner of Lake Avenue and Shady Lane and was removed in 1889 to widen Lake Ave. The bodies were obtained by the newly formed Minnesota Historical Society for study (White Bear Lake Historical Society). Only one remaining mound is present and it is fenced off in a private lawn near the lake and others are said to have been moved to the nearby Civil War era Union Cemetery.

figure 77.1: Indian Burial Mound 1889 before removal. Courtesy of the White Bear Lake Area Historical Society.



The land was platted as Wisconsin Territory in 1847, and was made available for Military Land Warrants. It later became Minnesota Territory in 1849, and in 1849 the first road was built linking the city to St. Paul (City of White Bear Lake). The city was established amidst the chaos of the American Civil War.

On September 10, 1868, the first railroad connected St. Paul to White Bear Lake, and 500 people made the 20 minute long 10 mile journey from St. Paul! The area became a summer time attraction for the wealthy and well-to-do alike to summer North of the city (City of White Bear Lake).

Mark Twain, in 1874, included White Bear Lake in his book *Life on the Mississippi*. *The American Travelers Journal 1881* called the city, “One of the most popular resorts in the magic northlands is White Bear Lake” drawing national attention and travel (White Bear Lake Area Historical Society).

In the late 1880’s, following the prosperity after Reconstruction, White Bear Lake was becoming known as the popular get-away destination for both the St. Paul and Minneapolis, elite as well as the working class. During this time, many recreated at the White Bear Yacht Club and sailed on the lake (City of White Bear Lake).

A large pavilion and casino was built in 1898 (adjacent the site of the future Johnson boat works), and was a popular attraction stepping off the trains from St. Paul. The casino and pavilion, known as the Ramaley Pavilion, faced the lake and stood on the site until 1908 when it was razed due to disrepair (White Bear Lake Area Historical Society).



figure 78.1: Ramaley Pavilion post card 1886

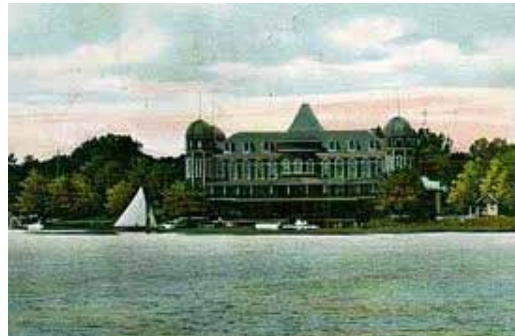


figure 78.2: Ramaley Pavilion post card circa 1890



figure 78.3: Train Tracks 1870
(8 tracks now Hwy. 61)



figure 78.4: Ramaley Pavilion 1904
at South Shore Street Car Stop

Photos Courtesy of the White Bear Lake Area Historical Society



figure 79.1: Minnesota Digital Library
Ramaley Pavilion and
TCRT Street Car Summer 1904.



figure 79.2: Minnesota Digital Library
TCRT Street Car Map 1917.
(site highlighted in box)

In the 1890's, during summer time, a train would arrive and depart on the hour, and by 1904, the Twin Cities Rapid Transit Company had a street car line to the area on every quarter hour. The transit company owned the nearby Wildwood Amusement Park in Mahtomedi across the lake, which had roller coasters, shooting ranges, a bowling alley, and log chutes into the lake (White Bear Lake Area Historical society). The railroad stations, amusement park, and street cars were torn down in 1935, and only one set of train tracks of eight remains today. Highway 61 (then known as highway 1) was built the same year to service St. Paul to Duluth. The city evolved in to a suburban area, and many of the old hotels and cottages were torn down. A few early Cass Gilbert and Edwin Lunde homes remain on Manitou Island.

The photo at top left is standing at the Johnson Boat Works looking North (Notice beach sand street. The power lines are still located on the shore).

Many boat building shops set up along the shore to cater to their thrill-seeking clientele, and steamer ships ferried patrons across the lake for leisurely rides. Of the boat builders, the most notable were the Ramaley Boat Co, Amundson Boat Works, and later the Johnson Boat Works (White Bear Lake Area Historical society).



figure 79.3: Minnesota Historical Society
Ramaley Boat Co. 1924
(to the south of the Johnson Boat Works and demolished in the 1940's)

The Johnson Boat Works Company successfully built boats in their White Bear Lake location for over one hundred years until 1998, when the company was sold. They were the first makers of the “inland scow.” The story is, in the initial race of the boat at the White Bear Lake Yacht Club in 1896, the “Johnson Scow not only lapped the racing fleet by a mile, but was home with the sails down by the time the second place boat crossed the finish line...” (Johnson Boat Works History. 2009).

J.O. Johnson was born in Norway, orphaned, he was sent to the US to live with family. He became a parcel delivery worker who sailed packages along the East Coast. At 18, he came to Minnesota to work at the Gus Amundson Boat Works, as they were friends in Norway. Johnson came up with a new type of scow privately for a client and left Amundson. The above story is that boat. The Johnson Boat Works started on its present site in 1896 in a small rented building, and by 1906, the company was in full production of its Minnitzika inland scow sail boat in part of the current building on the site. (Johnson Boat Works History, 2009).

The Johnson Boat Works Company relied on its successful innovation of the inland scow to develop successful boats for many years to come including the popular X-boat and J-boat series. With the popularity of Ice Boating starting in the 1930's, they continued their craft and made a line of ice boats for winter enthusiasts (Johnson Boat Works History, 2009).

The boat works worked in primarily wood to construct the boats, but kept up with technology transitioning to producing boats in extruded plastic and finally fiberglass and resin (Johnson Boat Works History, 2009).



figure 80.1: White Bear Lake Area Historical Society.
Johnson Boat Works 1953



figure 80.2: White Bear Lake Area Historical Society.
Johnson Boat's in Sailing Regatta 1950's



figure 80.3: White Bear Lake Area Historical Society.
Johnson wood J-boat 1950's



figure 80.4: White Bear Lake Area Historical Society.
Johnson boats in storage 1950's

The Johnson Boat Works has had an impact nationwide in their revolutionary design of the inland scow, to the invention of the first rotary snow blower. Since the city purchase, the site has faced demolition numerous times in favor of replacing the factory building with single-use residential condominiums. A historical plaque on the waterfront of the Johnson Boat Works tells the historical narrative, yet the site faces demolition. If the building deserves a plaque, it is probably worth saving.

JOHNSON BOAT WORKS

John O. Johnson immigrated from Norway in 1893 at the age of 13. He worked at Amundson Boat Works for his friend, Gus Amundson. In 1896 John founded Johnson Boat Works. In 1900 he designed and built a 38 foot sailboat, "Minnezitka", which he called the first true Inland Scow. The flat-bottomed, planing hull design was the precursor to the Class A Scow, the world's fastest single hull sailing craft.

John O. Johnson's inventive and creative mind led to his construction and flight in 1910 of the first successful powered airplane in Minnesota. In 1923 he designed, built and patented the first rotary snowplow.

Milton, Iver and Walter, the next generation of the Johnson family, guided the growth of the Inland Scow classes throughout the country. They were instrumental in the design and construction of the first competitive fiberglass scows.

Skip, Steve and Jason, members of the third and fourth generations of the John O. Johnson family, undertook further expansion of the various scow classes, and also developed and manufactured additional national one-design racing sailboats.

After 102 years of sailboat manufacturing, and the delivery of thousands of Johnson scows throughout the United States, the manufacturing business was sold in 1998. The following year the City of White Bear Lake purchased the property and Marina.

THIS MARKER WAS ERECTED IN 2000 BY
THE JOHNSON FAMILY
WHITE BEAR LAKE AREA HISTORICAL SOCIETY
CITY OF WHITE BEAR LAKE

figure 81.1: Gamelin, K. Photography. 2012

Adaptive reuse is the conversion of structures from one purpose to another. The structures used in adaptive reuse are usually older and may be an outdated form of their previous typology. The implementation of adaptive reuse tends to lower the environmental impact of demolition and is an effective solution to preserve a historical architectural artifact.

The major difference between historic preservation and adaptive reuse are the techniques and approaches of design. “Historic” buildings are usually renovated to look similar to the period they were constructed if there have been severe modifications to the structure over the years (Kiliment, 2005). Adaptive reuse approaches design in a way that the building can be old and still significant, but may not have a history deemed worthy of historic preservation as purely a museum. The adaptive reuse building ultimately has more freedom with the ability to re-propose it into a new architectural composition (Kiliment, 2005).

The adaptive reuse of castles, Roman ruins, and religious monuments is centuries old. Adaptive reuse throughout history was due to the economics of reusing materials, and re-purposing them into another structure (Russo, 2011). Castles and fortified walls in Europe were transformed into village buildings for commerce and dwelling. The Pantheon went from Pre-Christian temple to Catholic Church. The Roman walls of Barcelona became the backbone of the homes of the wealthy in the Gothic Quarter and the enclosure of the cloister of one of the oldest churches of Barcelona. The Roman theatre of Lucca, Italy was converted into shops and housing after the fall of the Roman Empire (Kiliment, 2005).



figure 82.1: Gamelin, K. (2012).
Roman wall and tower attached to
Barcelona Cathedral in Gothic Quarter

ADAPTIVE REUSE NOW

Today, examples of adaptive reuse are found in the Louvre Museum, the Tate Modern Gallery, and many warehouse conversions into lofts and artist in residence studios. Regionally, adaptive reuse projects can be found throughout the Upper Mid-West. The Industrial building conversions of Park Point in Duluth, MN took former shipping warehouses and transformed many into condos, shops, and cafes. Another striking example, is the former Mill District in Minneapolis, Minnesota, which has been transformed into condos and a mill museum. In Fargo, North Dakota, the North Dakota State University School of Architecture is a converted buggy whip factory as part of their studio facility, and the Landscape Architecture school is a former insurance agency office building converted into a studio and library.



figure 83.1: Gamelin, K. (2012).
Tate Modern interior



figure 83.2: Gamelin, K. (2012).
Louvre Museum

Henry Cisneros, the Former U.S. Secretary of Housing and Urban Development for the Clinton Administration, stated in an article for *Multi-Housing News*, “Many of the economic regeneration challenges this country faces are in older cities where the industrial economy has gone away... The best hope for revitalization is a new economy using what’s already there by putting new uses in older structures in a respectful way by bringing people, offices, and retail establishments into these historic structures” (Russo, 2011).

Adaptive reuse has been a precedence in architecture for many years, and will continue to be an avenue for success as resources, labor, and capital have stricter restraints. This thesis project is relevant with the historical and present theories of adaptive reuse as an architecture of regeneration.

The thesis project is an opportunity to take the knowledge obtained through our architectural studio experiences, education in architectural and urban design, and architectural theory, to select a project and typology that we are inspired by to create a design through the advisement of faculty. The goals for this project are both personal, academic, and professional and I wish to fulfill them to the best of my abilities with the tools, knowledge, and resources I have available to me.

Academically, I wish to create a really interesting thesis project that I will be proud to show to friends, family, and colleagues alike. In school I have developed a strong connection to use materials that are not only local, but truthful in their application. I have created a desire to really think about how the built environment and the landscape makes a connection. When the landscape is brought into the building, and the architecture reaches into the landscape, it creates a really powerful connection and place. Adaptive reuse is really key now, and will shape the way we work as architects. I will continue to research these elements of design as well as synthesize the thesis research to fully develop these ideas.

academically

I chose NDSU because of the great architecture school it offered, the knowledgeable and kind faculty I meet touring the school, and because of that “gut feeling” that it was the right place at the right time for me. Now my challenge is to see this project through to a completion that is satisfying on an academic, personal, and professional level.

Professionally, I wish to grow my knowledge and skills to compete and be at the forefront of the workforce. I wish to complete my IDP hours and start the steps towards becoming licensed. I really enjoyed the two summers I spent working as an intern. The next goal after school is to be a licensed architect before I turn thirty.

professionally

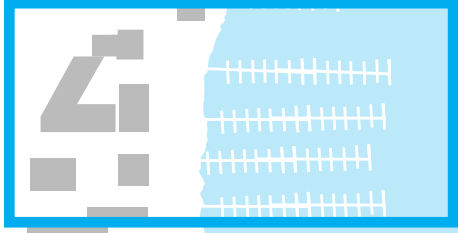
I know a lot of things can change between now and then, but regardless, I have started on my way and wish to see it through. I found that it seems the best designers make the most impact with economical, efficient, and aesthetic buildings and not with expensive exotic materials that leave regional users disconnected.

personally

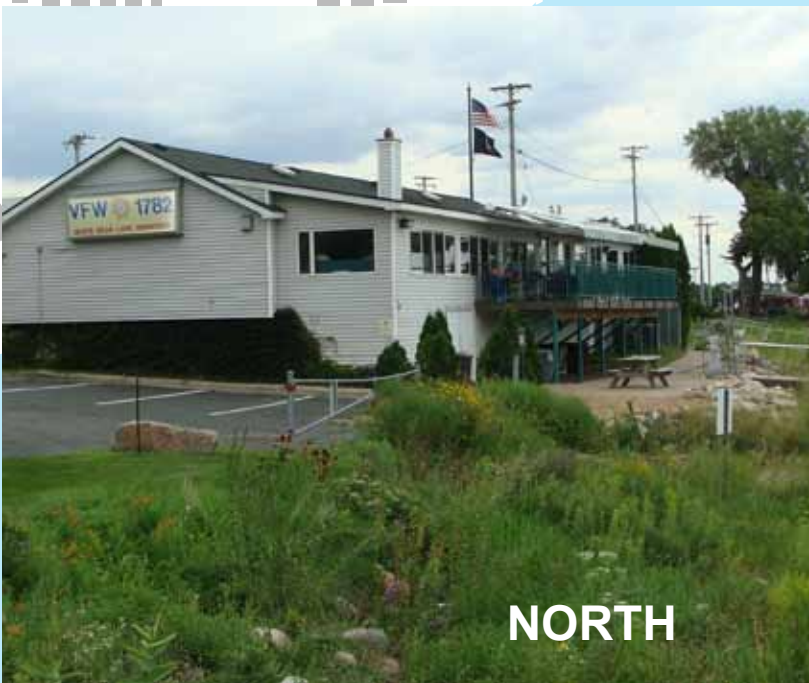
I always enjoyed building sand castles in the sandbox as a kid, and taking over the living room with legos and play-mobile. But, my little sister would go and wreak havoc on my finalized and methodically thought out composition of legos and play-mobile in the form of her manifested as "Hurricane Kara." But, that taught me something very important...One, mom and dad got their living room back (as I had to clean it up). And two, design is not about the precious object in the end, it is about exploring the opportunities and finding a solution that is functional and personable.

I think that in the course of writing this thesis I have found I have a strong connection to adaptive reuse and feel strongly that it should always be a consideration in any project from the scope of a greasy fast food joint to a new Vikings stadium (that's a lot of concrete they are going to demolish). I say this because every day in the Summer on my way to work I would drive by the Johnson Boat Works facility. It hugs Highway 61 and I thought "what an ugly building, I wonder what it is like inside?" To my surprise it was full of beautiful old growth wide plank flooring and timber and steel framed trusses. The overhead cranes and tramways were still operational and the aged marks on the floor were truly the markings of time and talent from generations of boat builders.

The site has been proposed for demolition since the year 2000, and I would venture that not a single city council person, developer, or architect has set foot into that space because they took the building for its facade value. The destruction of a building that has a historical plaque right behind the building is what I do not understand. Preservation movements seem to like to preserve old houses, and decorated ornamental brick buildings. But what about the significantly-insignificant structures that define our regional and contextual history? If it is possible, as many of the schemes to build on this site have fallen through, I would hope that the building could be saved, and that the solutions I will pursue, have some influence on keeping this area landmark.



SITE ANALYSIS



NORTH



EAST



WEST



SOUTH

figure 86.1-87.4: Gamelin, K. (2012).



JOHNSON BOAT WORKS MANUFACTURING BUILDING



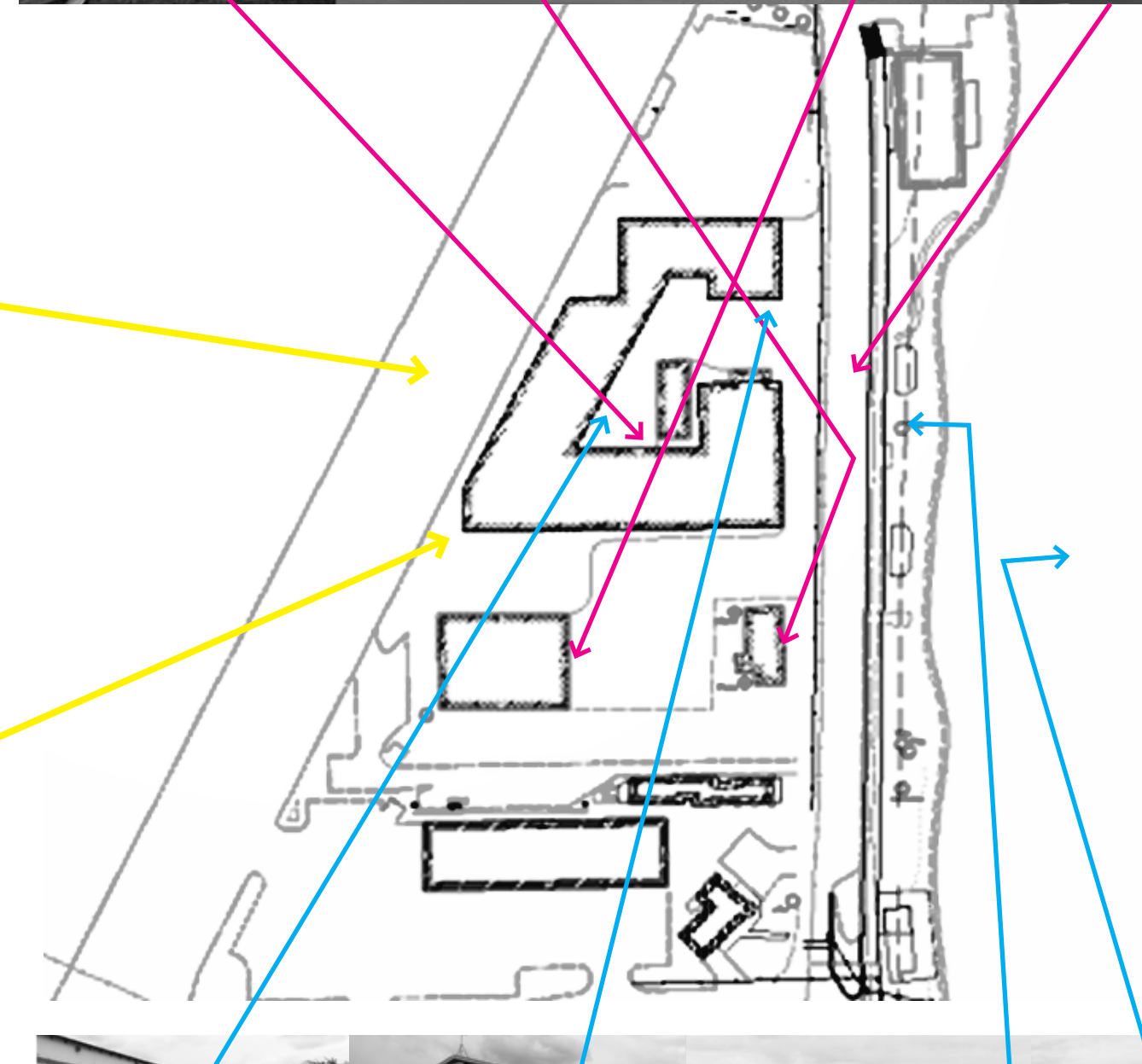


figure 89.1: Gamelin, K. 2012. Google Map of White Bear Lake, MN. Image is traced in Adobe Indesign.
figure 89.2 et all: Gamelin, K 2012. Photography.

[site narrative]

The sandy shores of White Bear Lake have been home to Native American Legends, and modern day recreation. These are some of the aspects journaled in various site visits.

To the East:

The views of the clean and clear water surrounded by woods and nature create a backdrop to sit and look for hours. Cattails and water lilies hug the drop-offs and marshes while waves dissipate from unseen movement across the way. The clink-clink-clink, clink-clink-clink of the loose sailboat rigging rattles off the aluminum mast as white noise to what would be assumed a calm day. A boat full of happy looking friends pulls a waterskier as another boat going the other way pulls a wake surfer. An old man fishes from the pier and waves to his fellow colleagues at the nearby VFW. Community members parked their cars at the waters edge and sat in their cars eating lunch to take in the views as there were no public places for them to sit down.

To the West:

As we turn and face the west, our perception of the senses has changed. Old boat pieces lay junked in the overgrown weeds and brush now growing thick through the large cracked bituminous layers that frost the ground. A few remnants of the sites past are visible in the peeling paint of a crane and some exposed timber joists now caked in a stucco frosting. Punched openings seem to no longer respond to their grided intentions and cracked plaster patches over former openings are now showing their original locations. The buzz of tires becomes louder as we near the highway only to be broken by the occasional lamenting freight train.

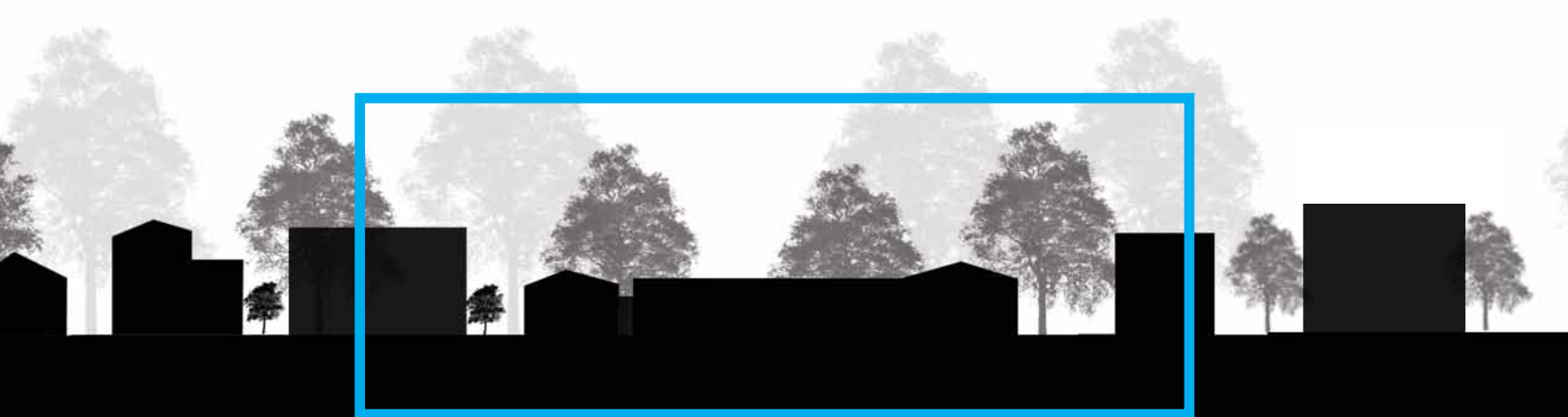
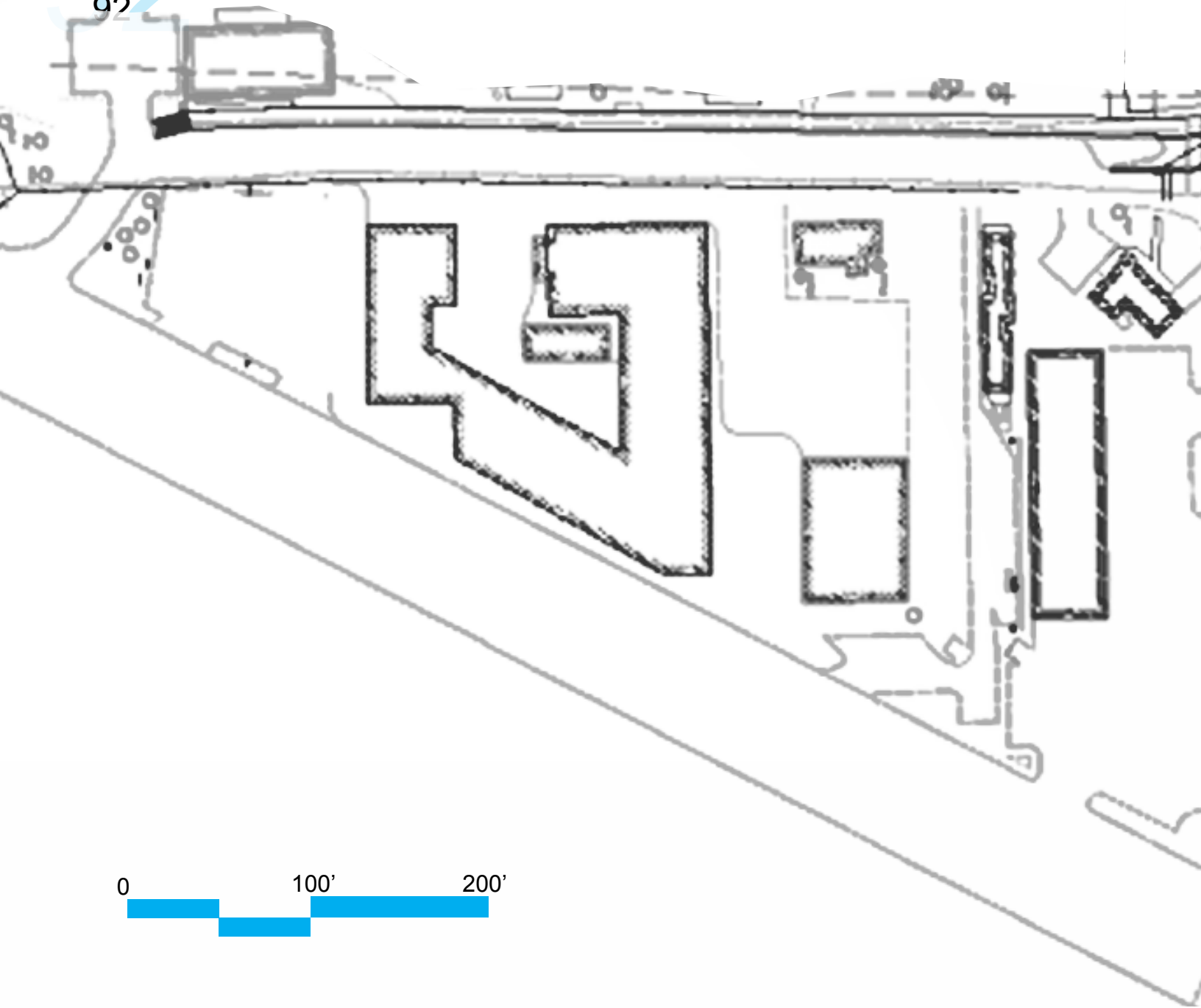


As we step inside, the aged beauty of the building is overwhelmingly apparent in the smell of old wood and wood dust character. The old growth wide plank oak floors show the character of the boat building process as every step of the production. The floors have the wear mark of going up and down steps and turning corners. You can follow these wear marks to follow the process of boat construction from where chisels were dropped, to the various coats of spar varnish were coated on the boats.

The overhead trolley hoist and crane system are still visible and in working condition (or so I was told). The small window openings that were not covered in subsequent window remodelling let a flood of warm light into the space; now only if the original large opening were restored, this factory floor would have been filled with ample natural light.

The interior space seems to have forgotten the connection to outside. There are no openings that view directly onto the docks or the lake. The window openings follow the perimeter of the building on the street side, and face the central "U" shaped court of the building. This was a factory after all, but the connection to the outdoors is missing, but the natural light is very nice.

The building and its context are full of design potential. Metaphors of design, a strong connection to nature, and a weathered architectural artifact make a strong foundation for an exploration in design.



site context section elevation & plan to section elevation

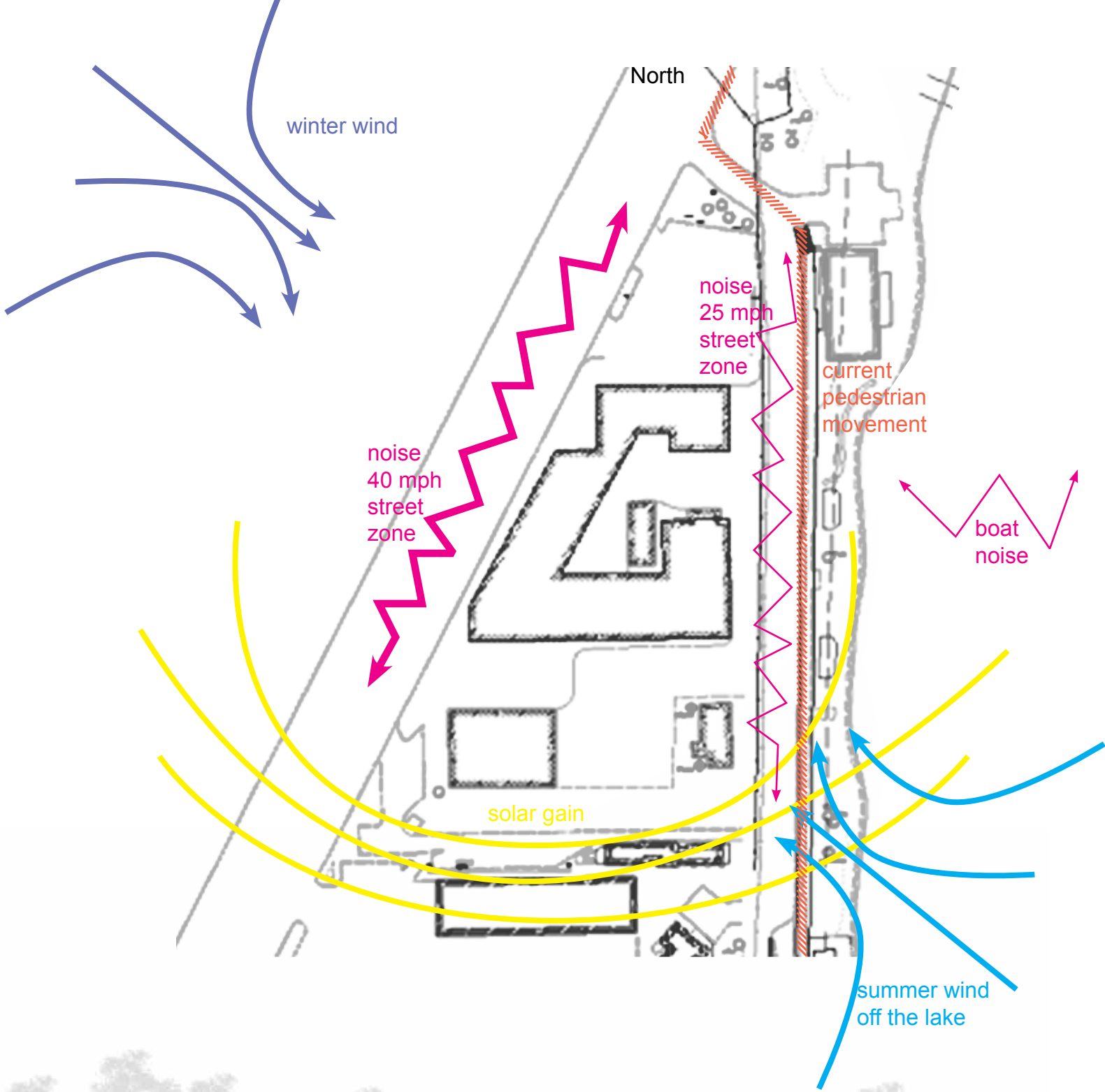


figure 92.1& 93.1: Gamelin, K. 2012. Google Map of White Bear Lake, MN. Image is traced in Adobe Indesign.

SOILS AND HYDROLOGY

CLASSIFICATION 859B-Urban Land-Zimmerman Complex with 1 to 8 percent slopes.

SOILS Zimmerman: Mixed Family, Frigid Alfic Udipsamments Taxonomic Class (Vinar, 1980).

Permeability is rapid in Zimmerman soils and it has a low natural fertility and low ability for water capacity. Surface runoff is usually rapid and easily channeled into storm water sewer systems. For effective vegetation growth, Zimmerman soils should be topped with fertile loam soils (Vinar, 1980).

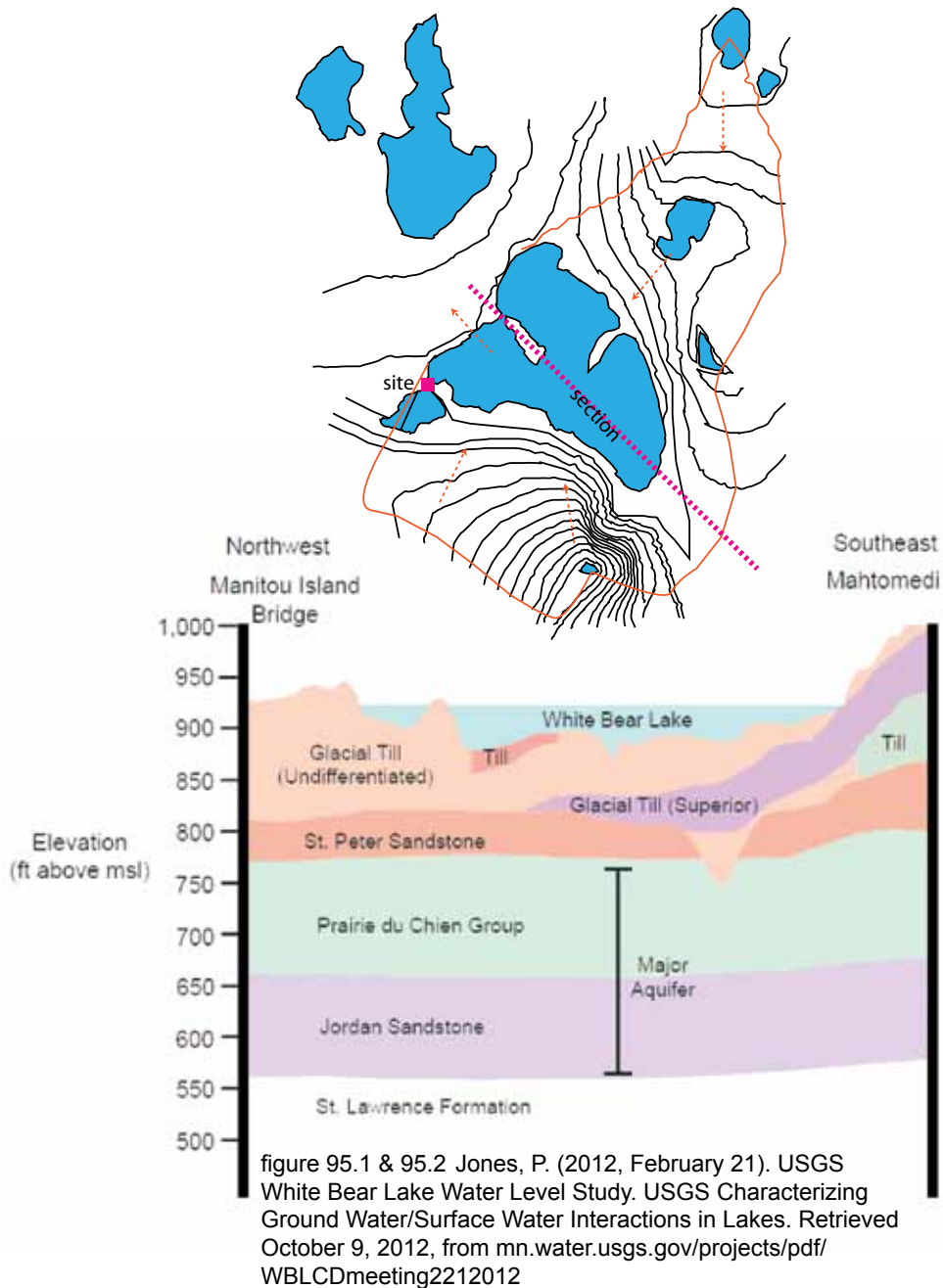
Zimmerman soils are well suited to building and site development. Erosion control may be necessary during construction (Vinar, 1980).

WATER

Ground water is present on the site in excavations from anywhere between 6 feet to 15 feet. The major Regional aquifers lie about 150 feet below the surface of the site. White Bear Lake is deemed clean and safe for all types of water recreation (Jones, 2012).

0-15" Sandy Loam	pH: 4.5-6.5	Permeability: 6-20in/hour
15-60" Fine Sand, Loamy Fine Sand	pH: 6.1-7.3 (Vinar, 1980)	Permeability: 6-20in/hour





WATERSHED
ANALYSIS

HYDROLOGY

ANALYSIS

The soils and watershed analysis information informs the design that the soil is good for construction and drainage and will drain effectively. The watershed of the region flows away from White Bear Lake and across the site towards the West. Yet, the drainage of the site is sloped towards the lake at the site scale. Overall, flooding is not an primary issue as the site is above the flood zone, but simple precautions should be taken with drainage to prevent any possibility of urban flooding. The figure 9.2 Shows the hydrology of the site and the aquifers that feeds White Bear Lake, as well as the make up of the bedrock.

PHOTO GRID OF EXISTING SITE

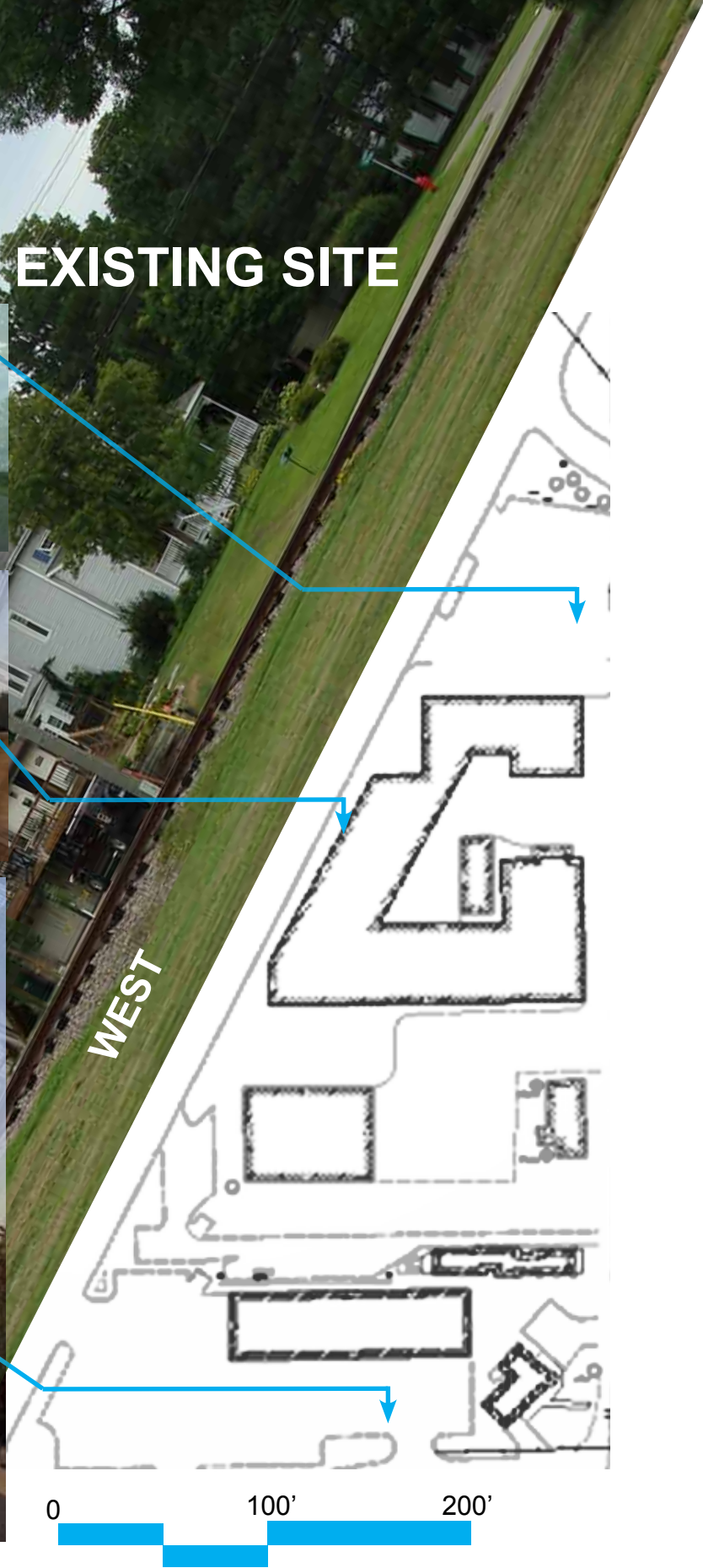
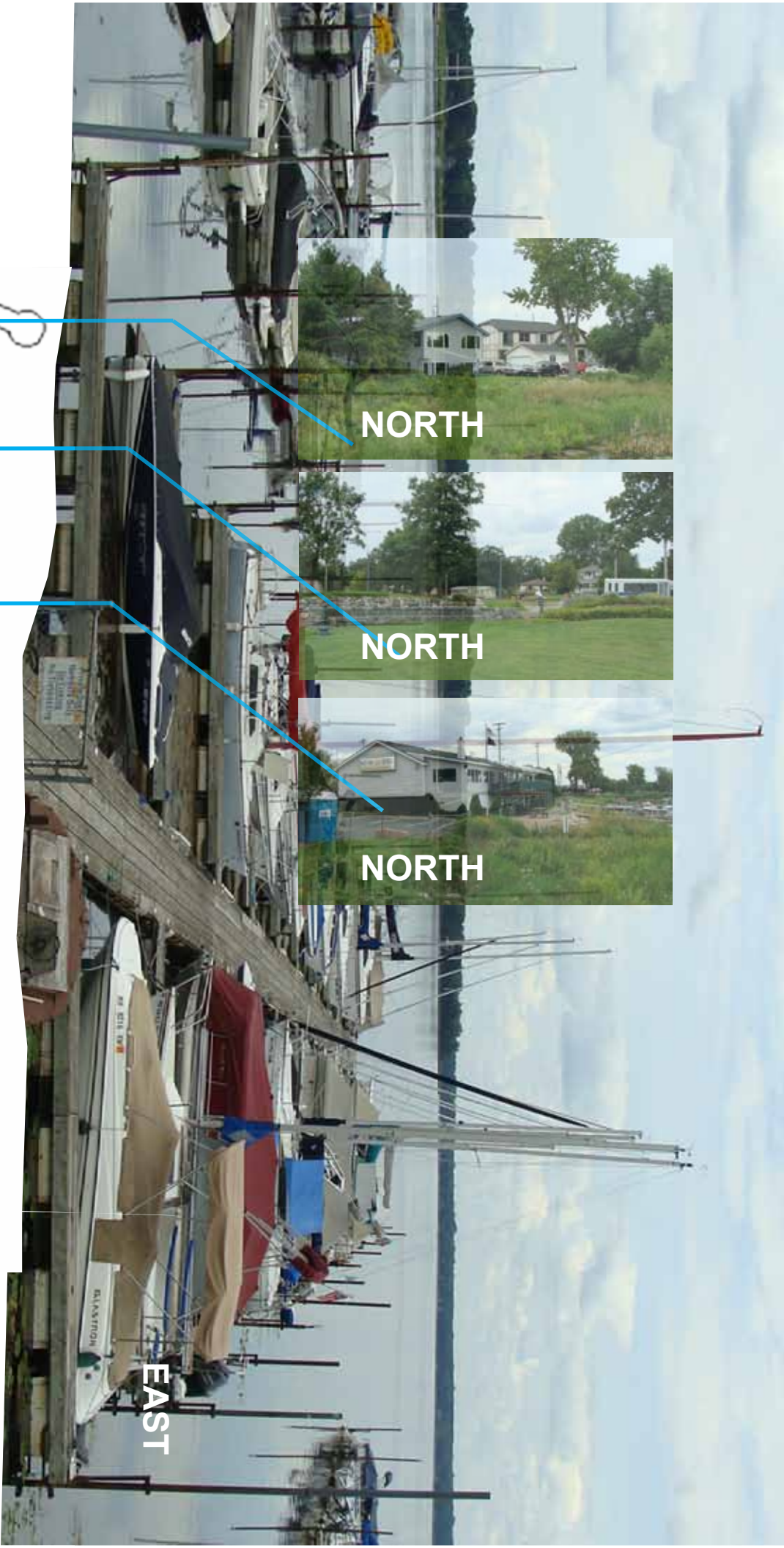
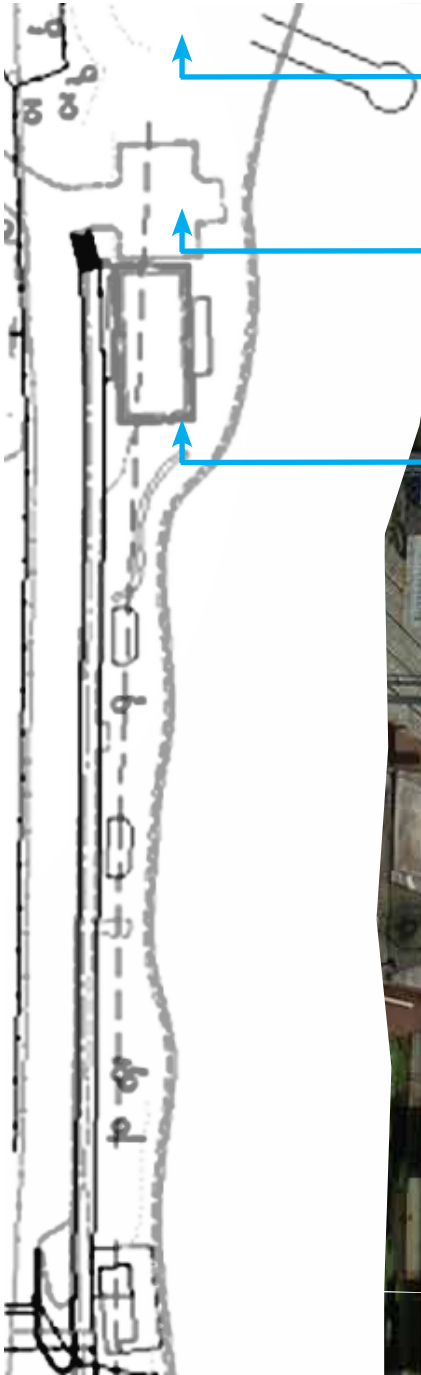


figure 96.1: Gamelin, K. 2012. Google Map of White Bear Lake, MN. Image is traced in Autocad 2011.

figure 96.2et all: Gamelin, K. Photography.



EAST



photo A

Site Vegetation:

The site is mostly paved with a bituminous surface. The vegetation on the site is mostly over grown weeds and untrimmed hedges. A natural shoreline is kept at the lake shore with reeds, cattails, and water lilies.

The existing large trees will be saved. The trees are two large pines and 3 maples with a cottonwood on the shore. The site is mostly in a distressed state due to a lack of maintenance and upkeep. There are many remnant boat parts around the site.



photo B

Site Distress Micro Systems:

The site has some invasive species such as buckthorn taking over in some overgrown parts of the site. The exterior of the structure is also in disrepair and in need of some structural work. The interior is in average condition for a 100 year old building. In the photo at left you can see some heaving of the stucco cladding and the overall bedraggled site condition.



photo C

Site Distress Macro Systems:

White Bear Lake, which is adjacent to the site, has reached a 100 year low water level and is 5'-3" below normal water height according to the Minnesota Department of Natural Resources. They concluded that with more than average strain on the aquifer, the lake level is being drained. The lake is known for a Eurasian Milfoil invasive lake weed problem which can overgrow the natural vegetation.

Vegetation Options:

Since the site is mostly paved, it has a lot of new opportunity for new vegetation to be planted and to mature. The site is in planting zone 4b according to the USDA. This would allow a wide variety of hardy birch trees, pines, maples, oaks, and aspen. In addition to the trees, smaller grasses and shrubs would add to the definition of the space. For shade and aesthetic reasons maples and oaks would fit in with the existing planting context and add shading. A nice variety of birch, pines, and dogwoods for color would add to the character of the landscape.

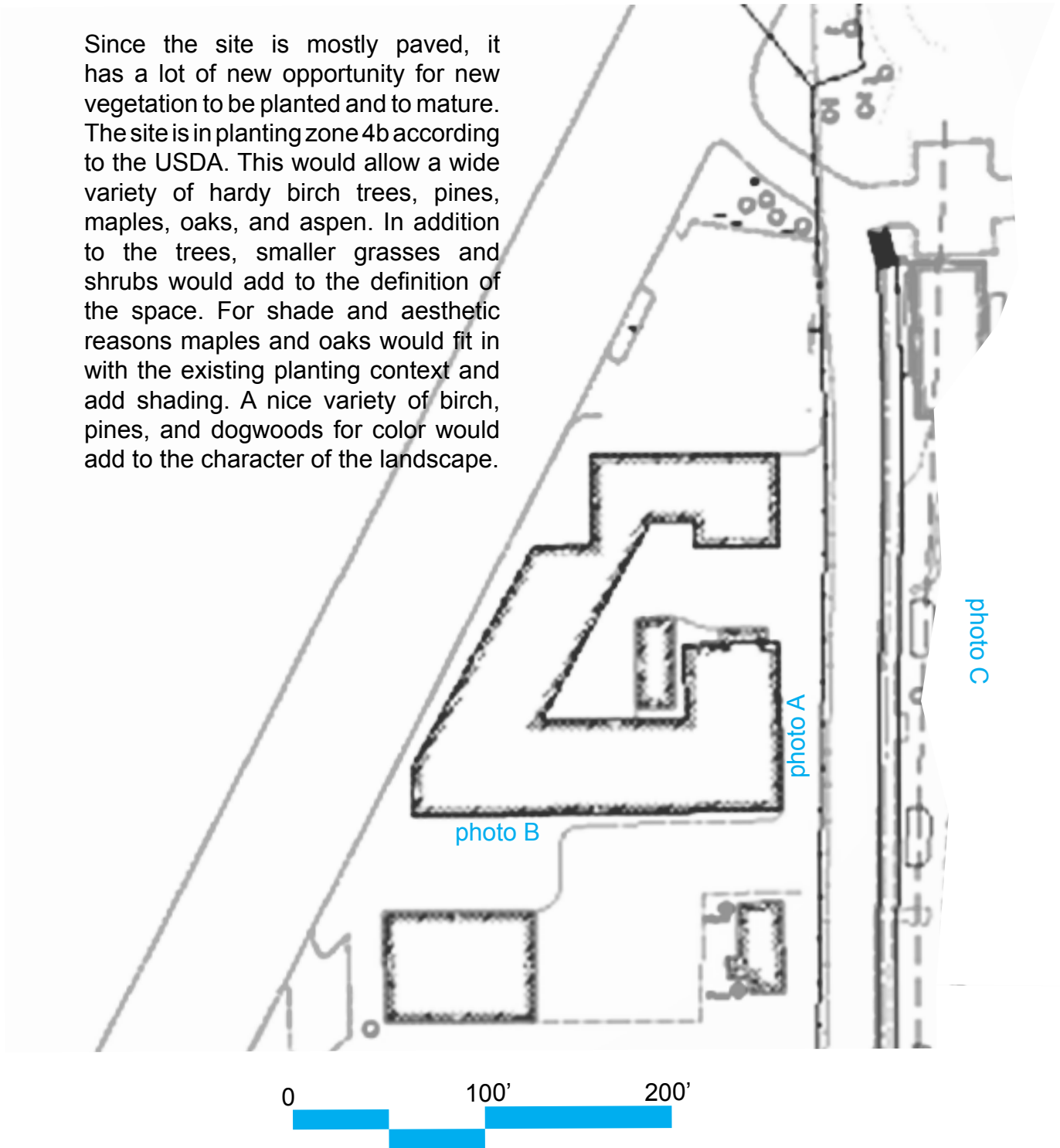


figure 99.1: Gamelin, K. 2012. Google Map of White Bear Lake, MN. Image is traced in Autocad 2011.

figure 99.2et all: Gamelin, K. Photography.

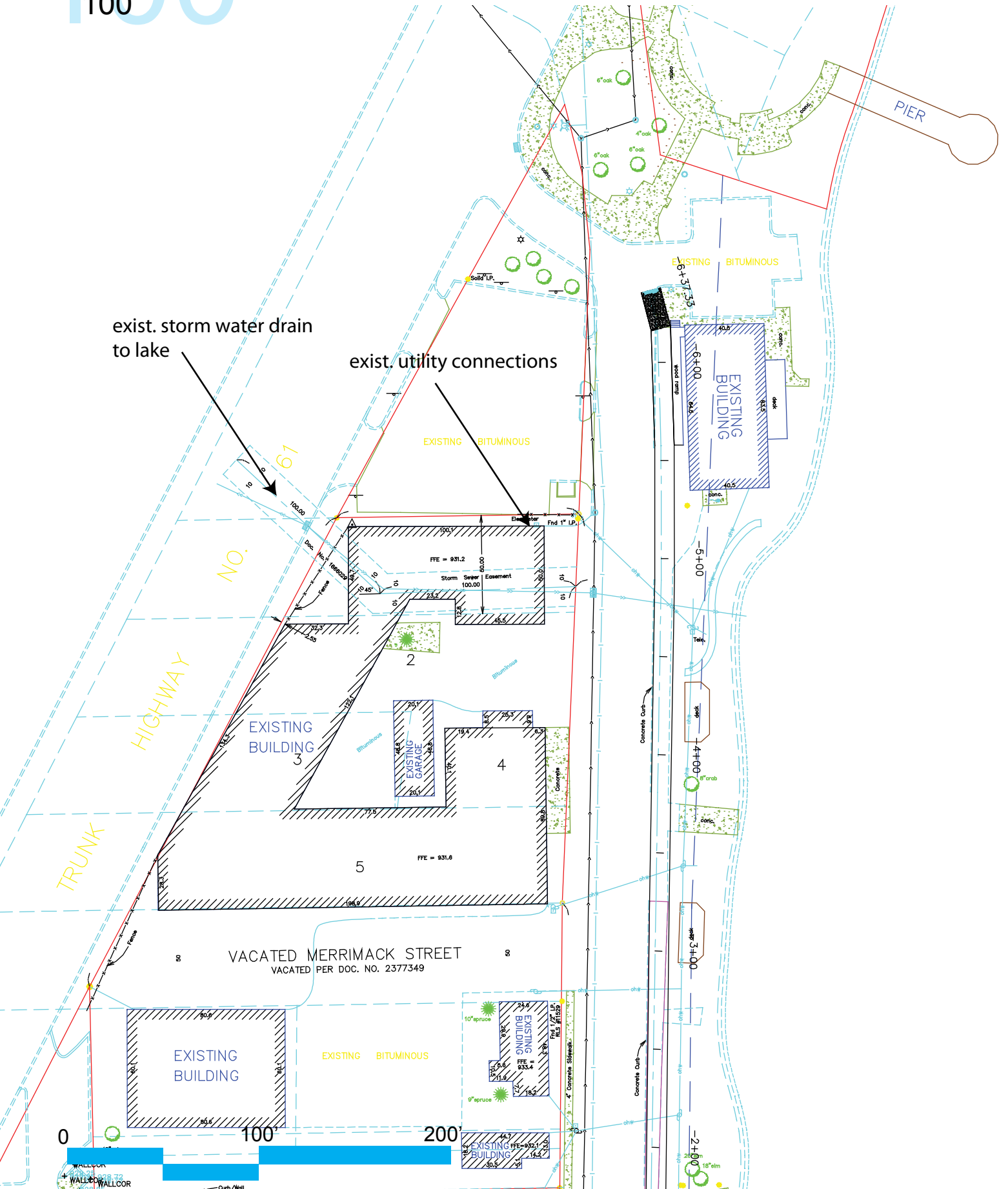


figure 100.1: Site Survey traced in Autodesk CAD civil http://www.whitebearlake.org/index.asp?Type=B_BASIC&SEC=%7BCB874C1F-AC21-4791-A97F-C13CFB28E9C%7D

SITE & CONTEXT MINNESOTA POLLUTION CONTROL STUDY



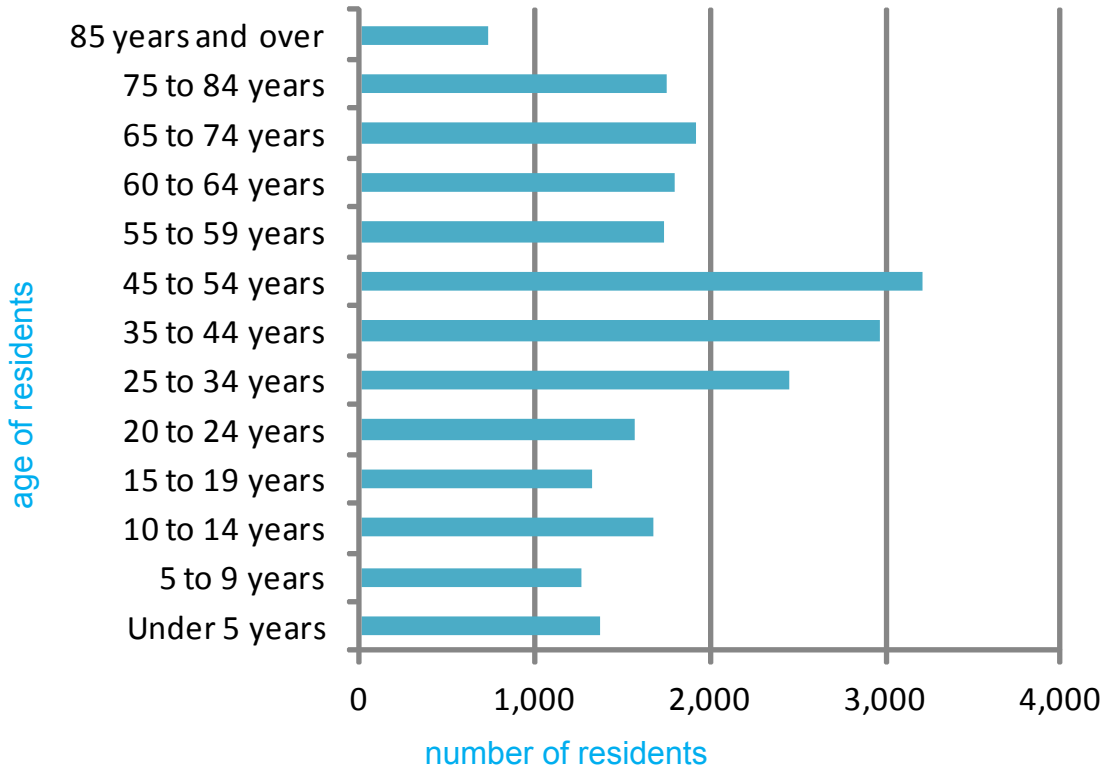
figure 101.1: Image of Brownfields and Superfund Sited in MN <http://www.pca.state.mn.us/index.php/waste/waste-and-cleanup/cleanup-programs-and-topics/cleanup-programs/brownfields.html#sites>

The Johnson Boat Works site was cited in the Minnesota Pollution Control Agency's list of contaminated properties for leaking oil and fuel tanks that were remediated and removed in 1990. The site was permitted to have and process some forms of small to medium hazardous waste. This permit was the licensing to use fiberglass and resins to construct the boats and some remnants of volatile organic compounds in the form of paint, varnish, and stains. The industrial manufacturing permit was terminated in 2000 with the closing of the Johnson Boat Works. The site and the owner (the city of White Bear) have opened the site for voluntary investigation and cleanup currently. Nothing has been reported as contaminated since the voluntary investigation started in 2010.

Near the site there were gas and oil tank leaks at Tally's Dock Side. They serviced and sold gasoline right on the shoreline for many years until it was converted into a restaurant and café.

To the South and West of the site there was an un-permitted dump site that was closed in the 1960's and contains household refuse and construction debris. The city of White Bear Lake had a raw sewage discharge site near the dump and adjacent to the Goose Lake watershed (opposite of Big Goose Lake on the West side of US-61). The sewer discharge station and lime dump site was closed in the early 1950's and the watershed from this area flows South and away from the site and White Bear Lake. These areas are deemed contained, investigated, and cleaned up (Minnesota Pollution Control Agency, 2012).

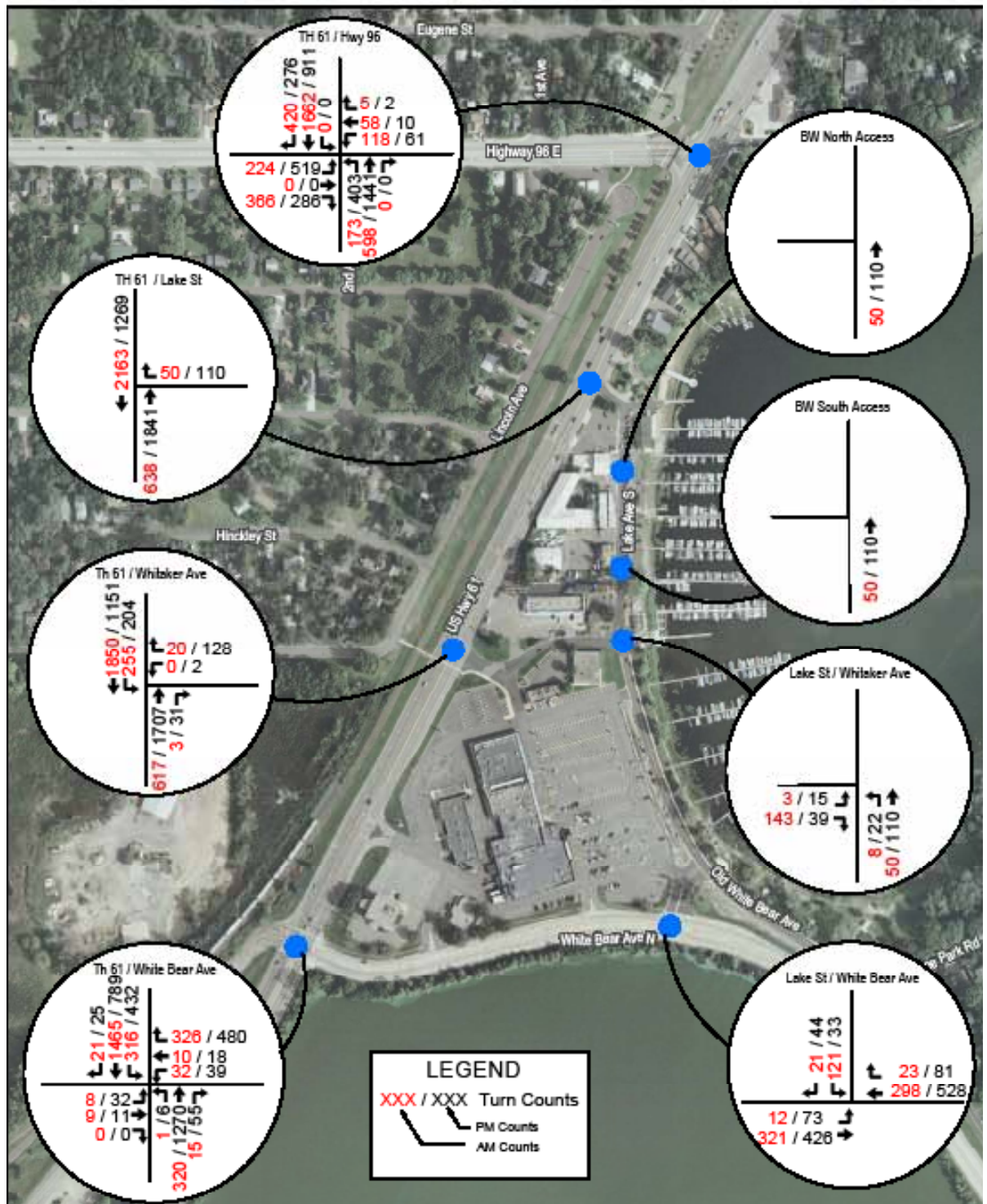
WHITE BEAR LAKE, MINNESOTA POPULATION AGE FREQUENCY



2011 U.S. Census Population: 24,087

The above was taken from the last Census and shows the population frequency. The target audience of the residential units that will be designed will be the upper middle and lower middle of the frequency since studies have shown that young couples and newly empty-nesters tend to gravitate towards wanting to live in somewhat urban mixed-use housing.

figure 102.1: Gamelin, K. Data collected from: http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_11_3YR_P05&prodType=table



WHITE BEAR LAKE, MINNESOTA MNDOT TRAFFIC STUDY

figure 103.1: BWC Traffic Circulation study. (2012) accessed from: http://whitebearlake.org/index.asp?Type=B_BASIC&SEC={3FAE863E-DB6C-41BC-8F4E-F8E4C18FFFCA}

The above was a traffic study conducted to see the daily average of traffic flow around the site and during peak traffic times. This data shows the frequency of traffic in a given day. The traffic going past the site will influence how spaces are placed to best take advantage of not only passers by, but also to shelter the street noise.



Site Elevation: 912'-0"

Location: 45.0762°N 93.0162°

The project site is a moderate density, urbanist environment. The site is mostly paved with bituminous material and has a natural shoreline. The site has a slight pitch towards the lake and then a slight slope down towards the road. A moderate slope remains where Merrimack St. once was connected with US-61. The site is mainly graded flat and paved to encourage water movement away from the structures.

figure 104.1: Gamelin, K <http://usgs.gov>

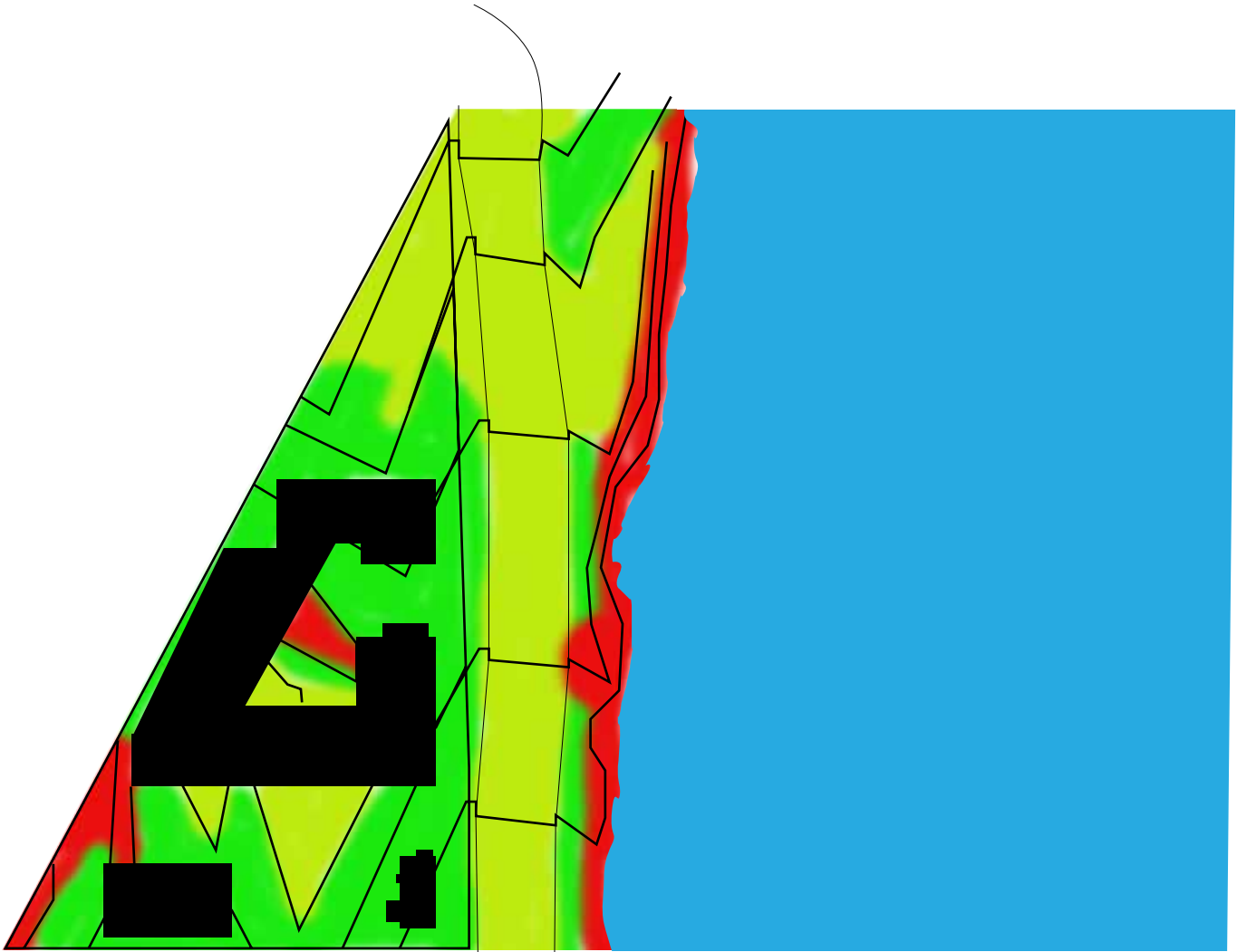


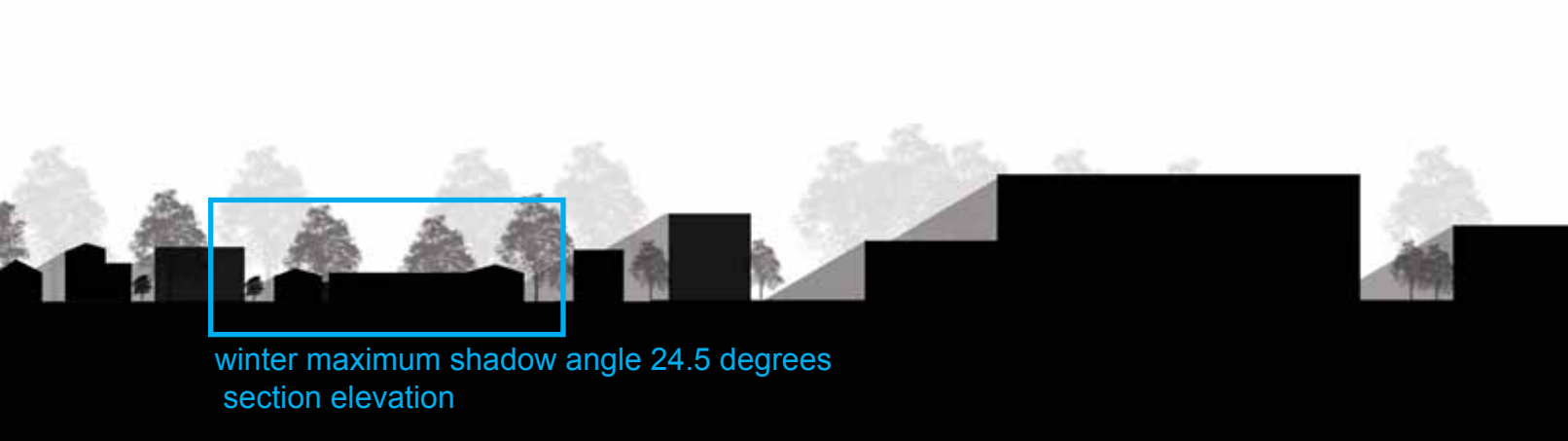
figure 105.1: Gamelin, K <http://usgs.gov>

slope >3%

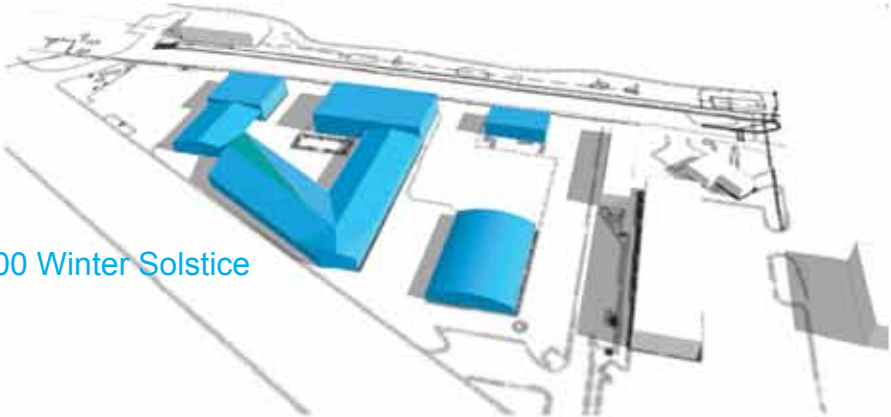
slope 2-3%

slope <2%

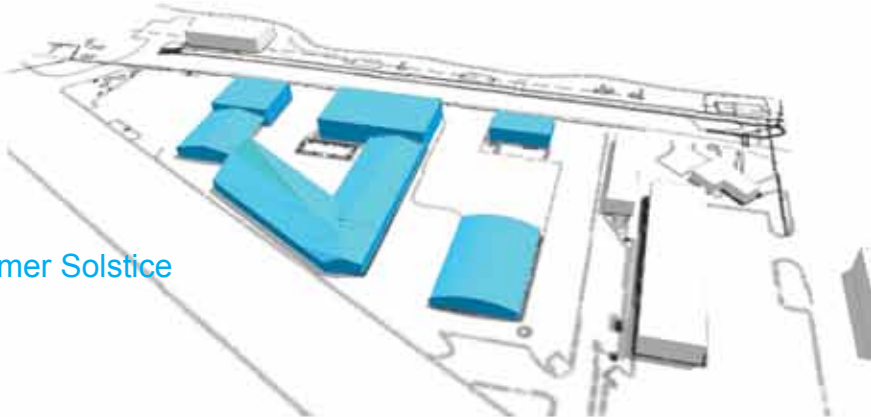
Slope Analysis: Since this is an urban site, it has been graded and regraded from the natural contour of the land. The site falls within a slope of one to eight percent and since a large amount of the current site is paved, it heavily relies on storm water management and drainage which ultimately ends up into the lake and is not filtered in the process. A better localized storm water management system should be considered on the site.



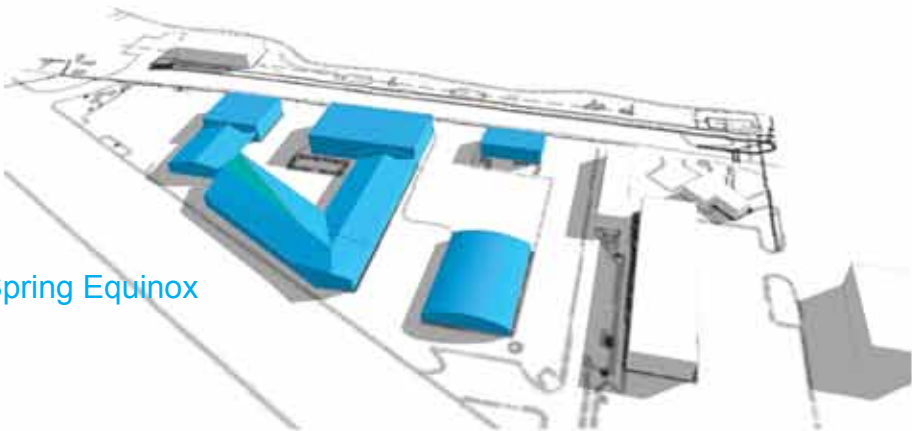
December 21 12:00 Winter Solstice



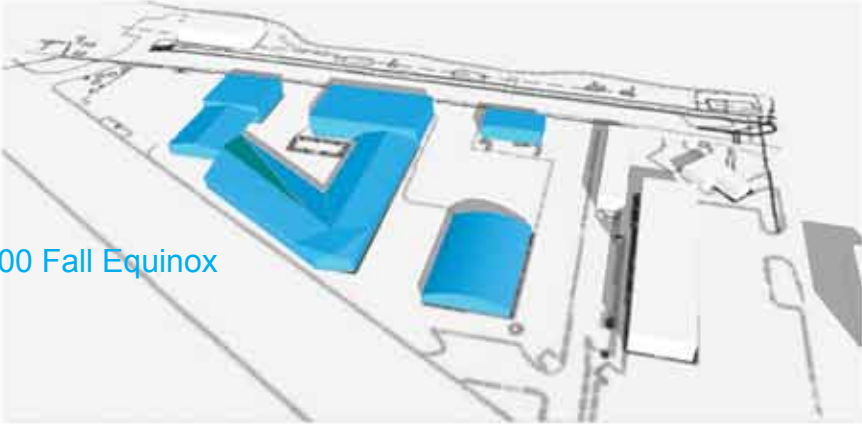
June 21 12:00 Summer Solstice



March 20 9:00 Spring Equinox



September 22 20:00 Fall Equinox



SITE CLIMATE DATA

AVERAGE TEMPERATURE

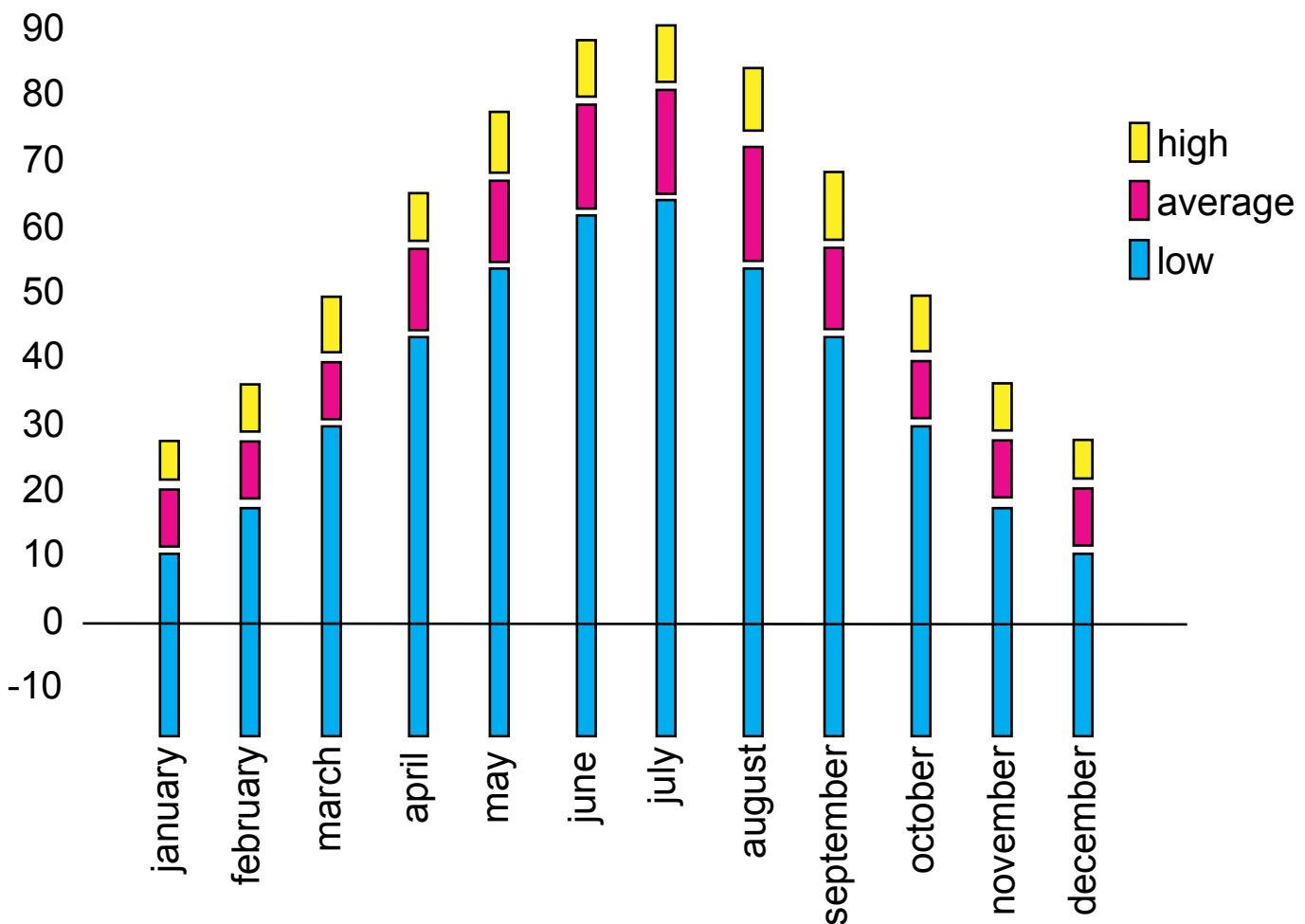


figure 108.1: Gamelin, K. 2012. Data from <http://www.city-data.com/city/White-Bear-Lake-Minnesota.html>

The graphs on this page and the following page show the relationship of temperature to humidity and snow fall. There is a direct relationship between the temperature and the snow fall. This data shows that there is about a one hundred degree temperature swing that is possible for a given year and that must be taken into account in designing passive and active systems. In the next few pages, the graphs will show the importance that wind and sunshine will play in the design of the spaces and space programming.

AVERAGE SNOWFALL

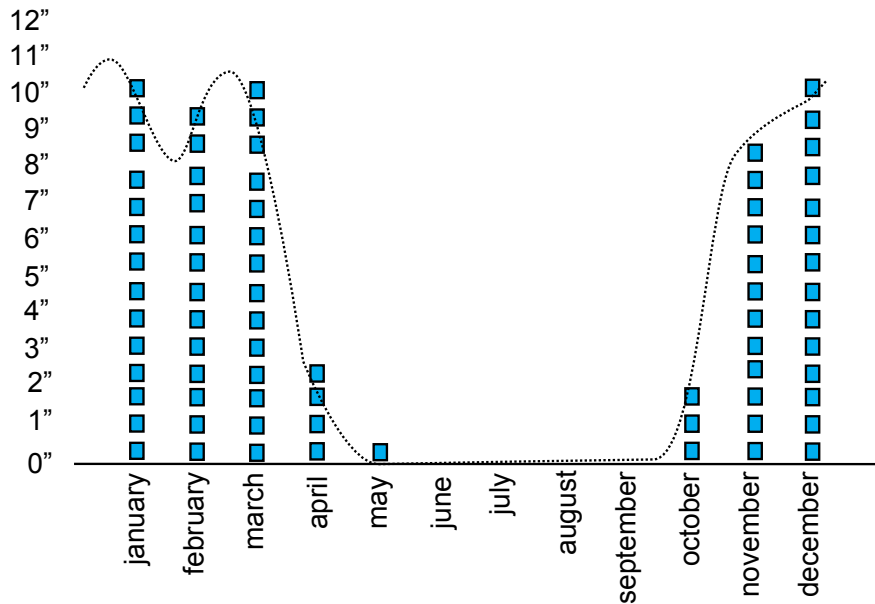


figure 109.1: Gamelin, K. 2012. Data from <http://www.city-data.com/city/White-Bear-Lake-Minnesota.html>

AVERAGE HUMIDITY

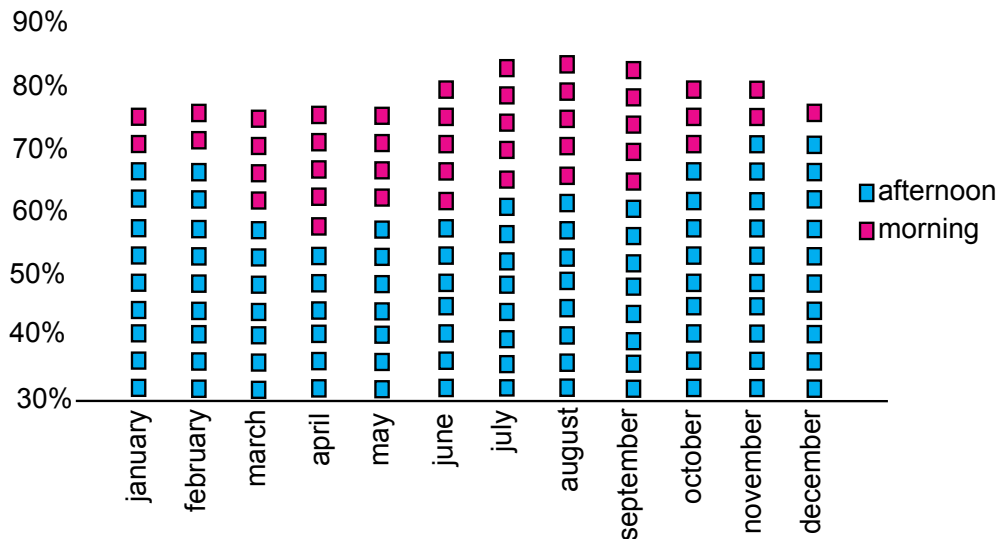


figure 109.2: Gamelin, K. 2012. Data from <http://www.city-data.com/city/White-Bear-Lake-Minnesota.html>

110 CLOUDY DAYS & SUNSHINE

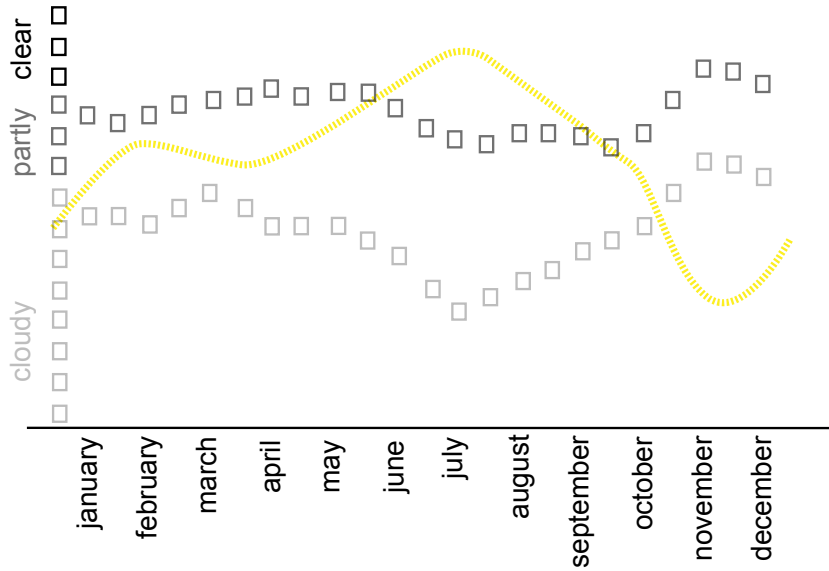


figure 110.1: Gamelin, K. 2012. Data from <http://www.city-data.com/city/White-Bear-Lake-Minnesota.html>

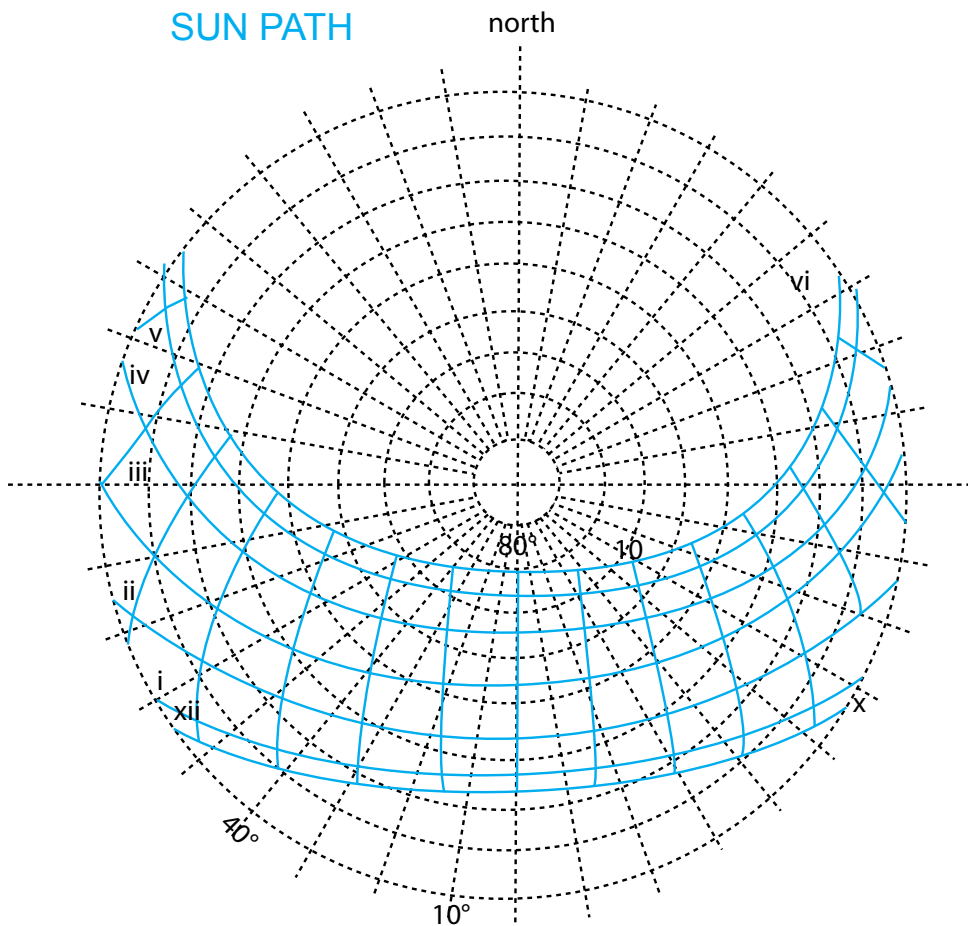


figure 110.2: Gamelin, K. 2012. Data from Lechner, N. (2009). Heating, cooling, lighting: Sustainable design methods for architects. Hoboken, New Jersey: John Wiley & Sons, Inc.

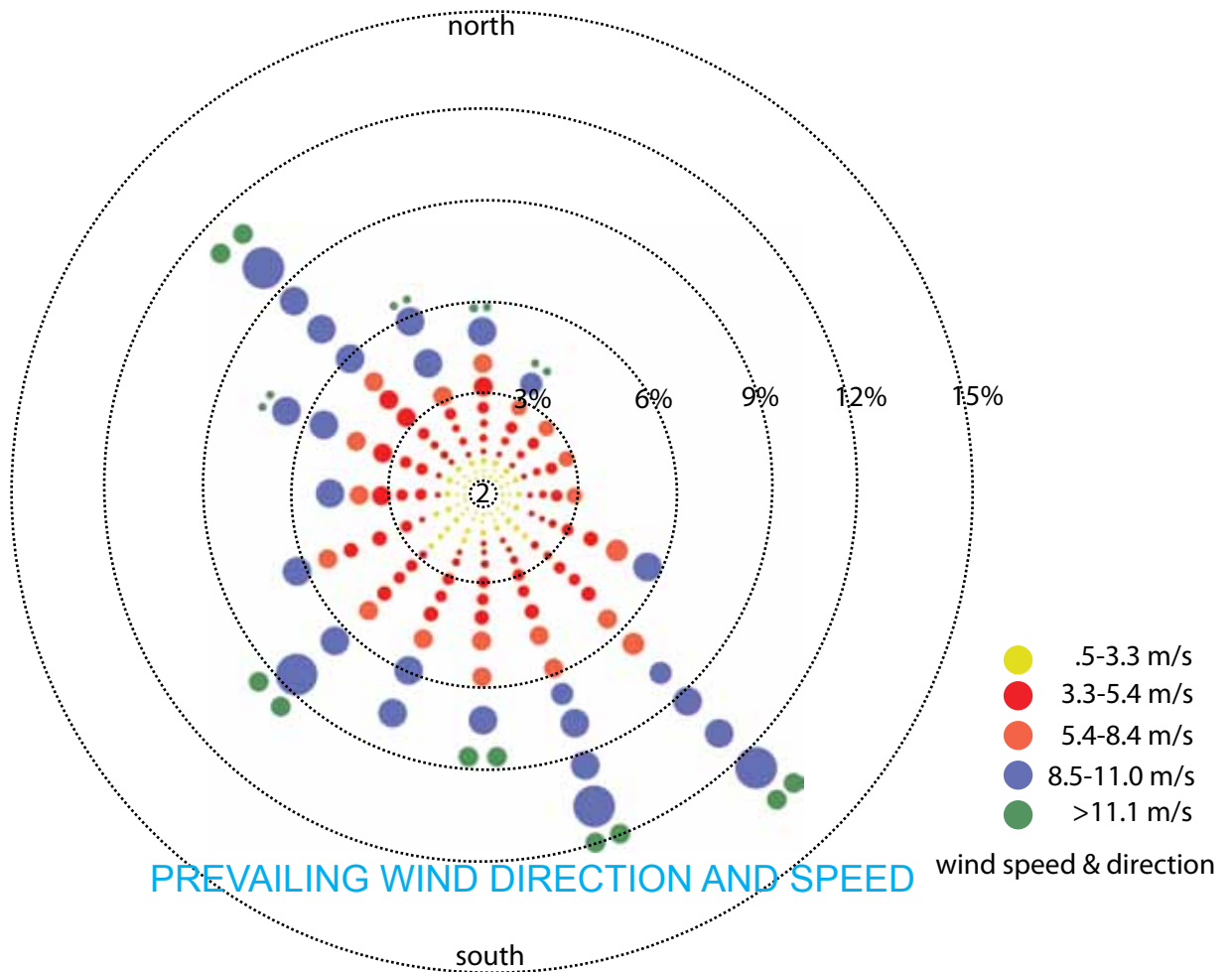


figure 111.1: Gamelin, K. 2012. Data from <http://www.wcc.nrcs.usda.gov/ftpref/downloads/climate/windrose/minnesota/minneapolis/minneapolis.gif>

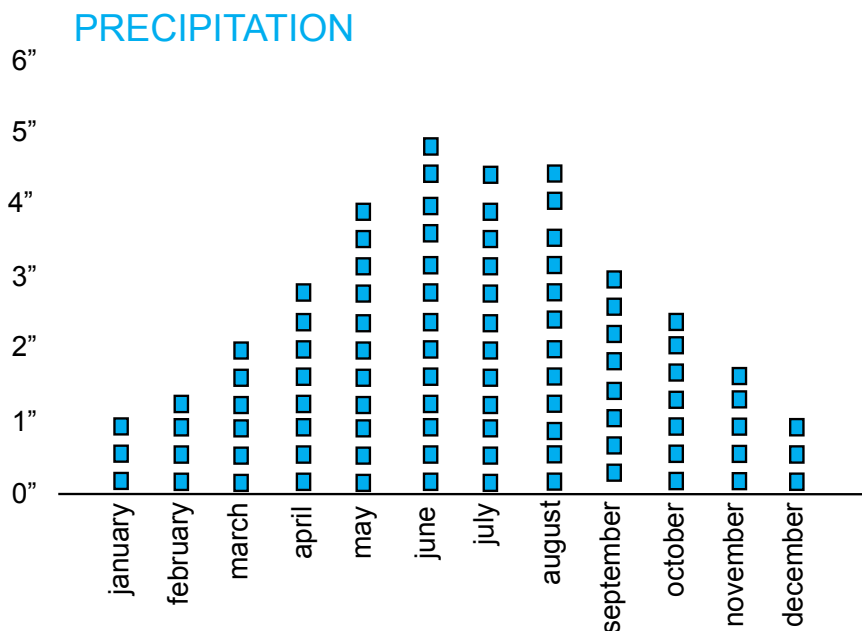
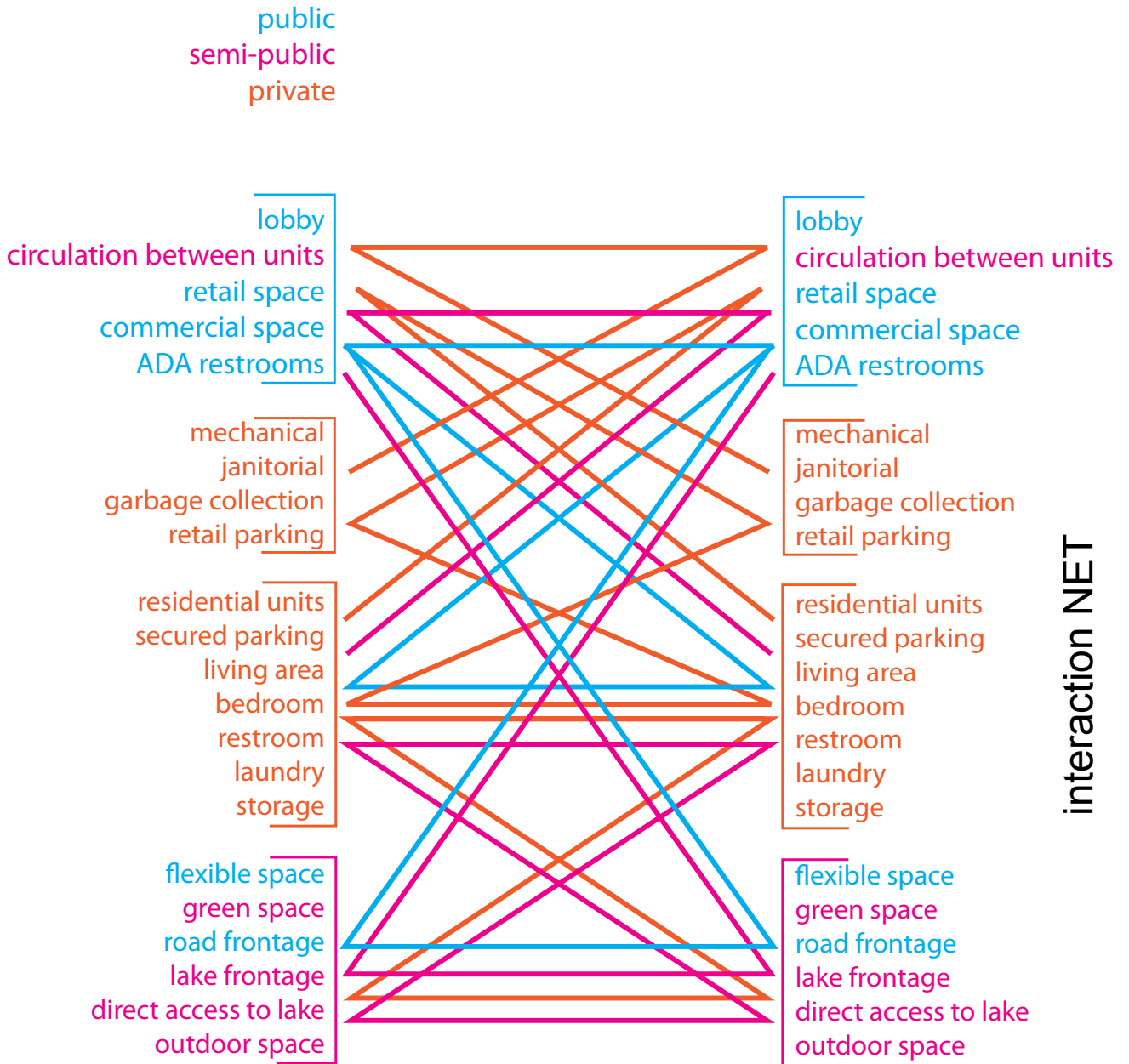


figure 111.2: Gamelin, K. 2012. Data from <http://www.city-data.com/city/White-Bear-Lake-Minnesota.html>

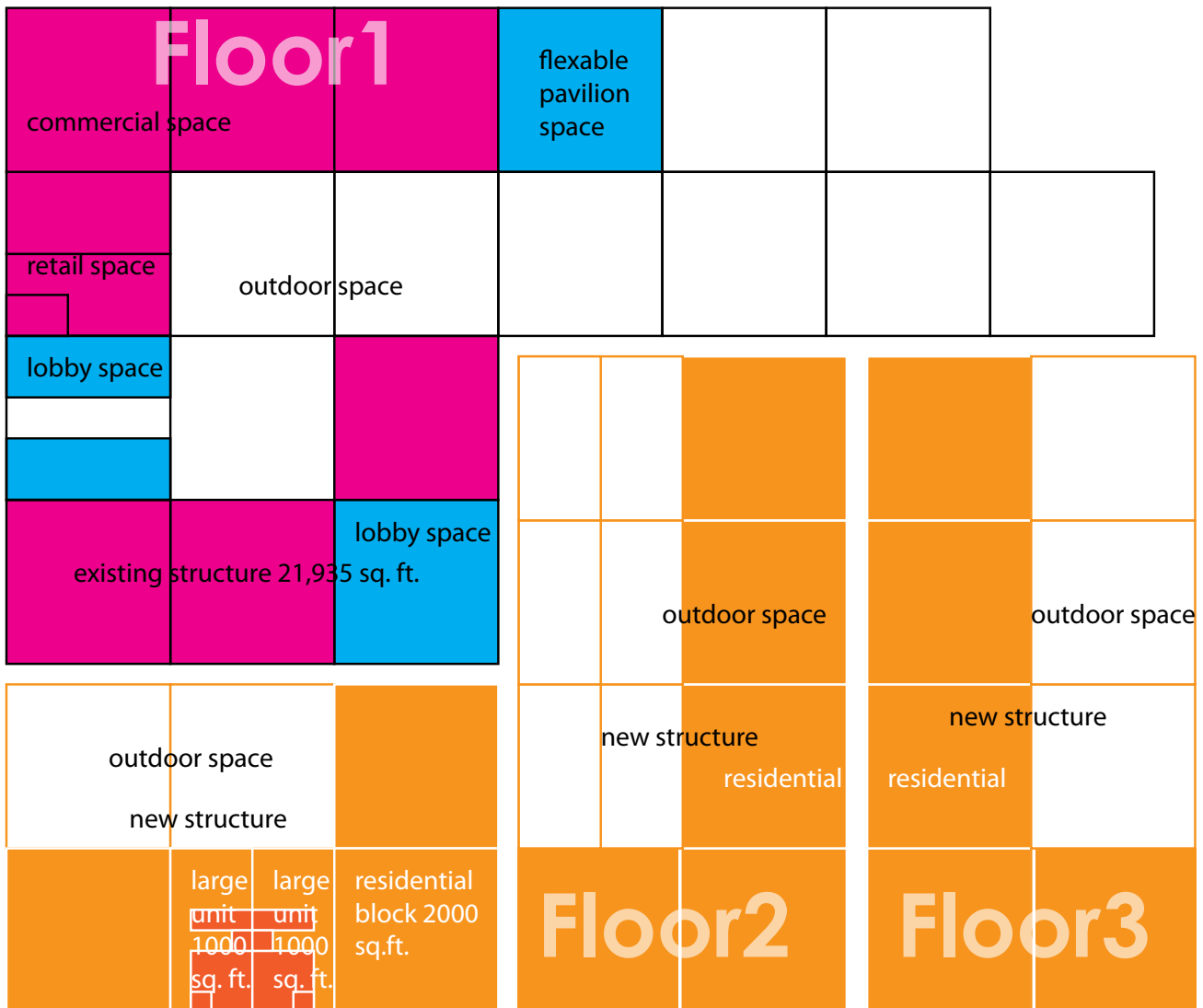
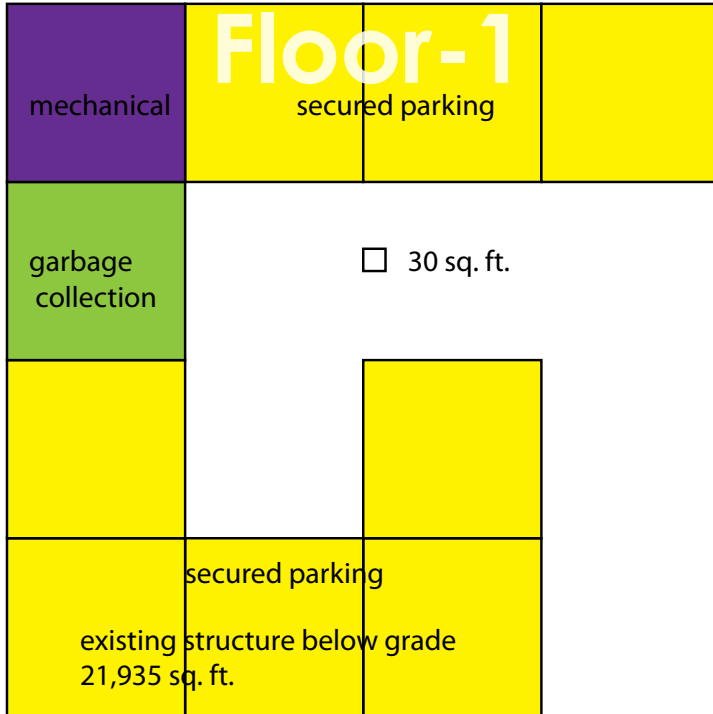
112
112

PROGRAM DATA

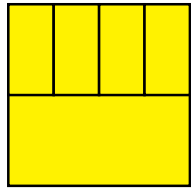




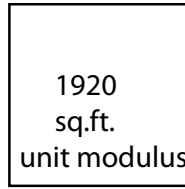
This interaction NET shows the abstract connections of elements to one another and how spaces should form connections. It should not imply building form at this time, but rather the idea of public, semi-public, and private circulation and connections.



CONCEPT PROGRAM

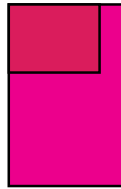


4 vehicle/
storage units

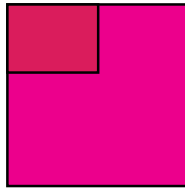


1920
sq.ft.
unit modulus

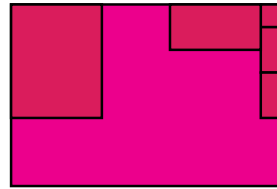
□ 30 sq. ft.



960 sq. ft.
commercial/
retail



1920 sq. ft. retail
commercial/
retail



2880 sq. ft. retail
commercial/
retail



1440 sq. ft
2+ bed



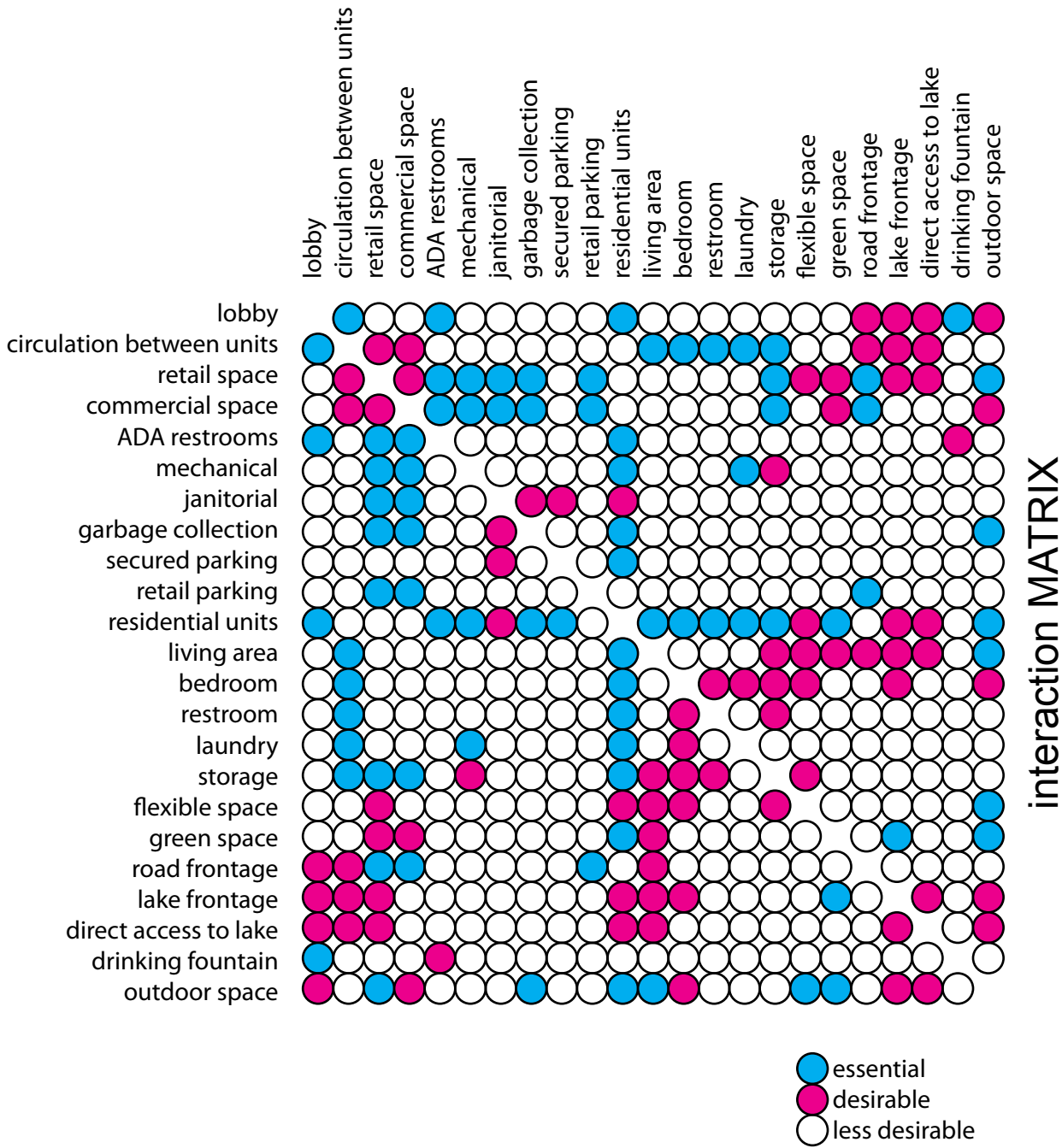
960 sq. ft
1-1.5 bed

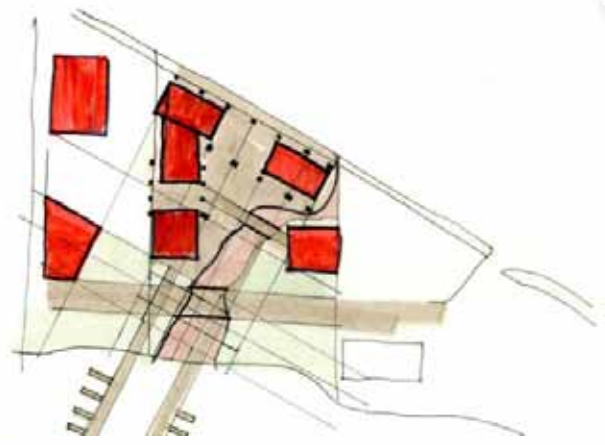
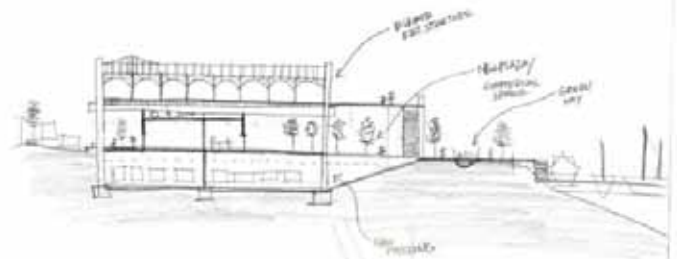


600 sq. ft
0-1 bed

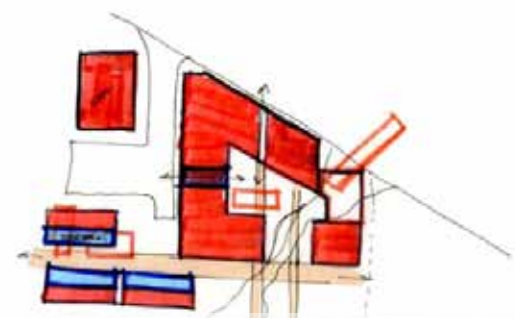
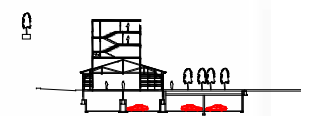
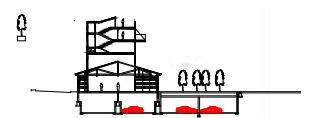
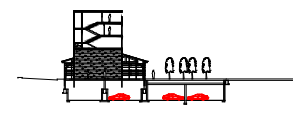
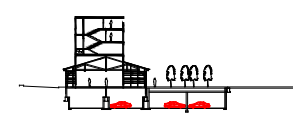
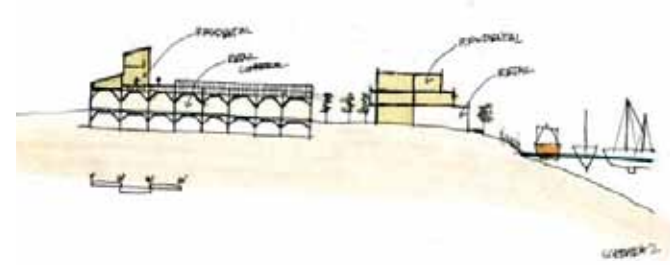
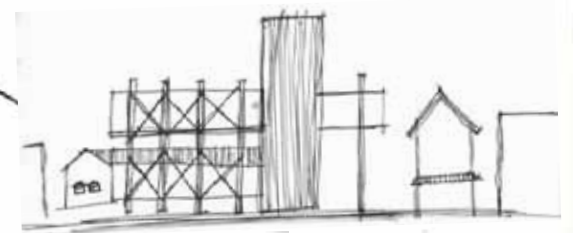
Proposed Programmatic elements:

(15) Residential Units	600-1440 sq. ft.
Sleeping Space	130 sq. ft.
Food Preparation	169 sq. ft.
Living Space	200 sq. ft.
Bath/Rest Room	130 sq. ft.
Storage	50 sq. ft.
(5-9) Commercial/Retail Units	960-2880 sq. ft.
ADA Rest Rooms	200 sq. ft.
Storage	300 sq. ft.
Flexible Pavilion Space	920 sq. ft.
Parking, Storage, & Service Area	21,935 sq. ft.
Outdoor Space	32,640 sq. ft.
Public Space ADA Rest Rooms	400 sq. ft.

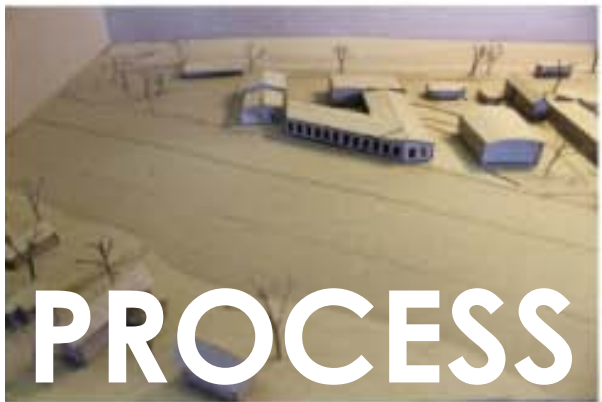




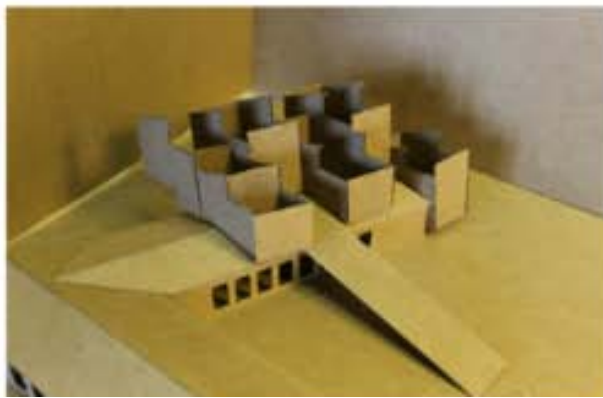
DATE: 11-15-11
11-15-11

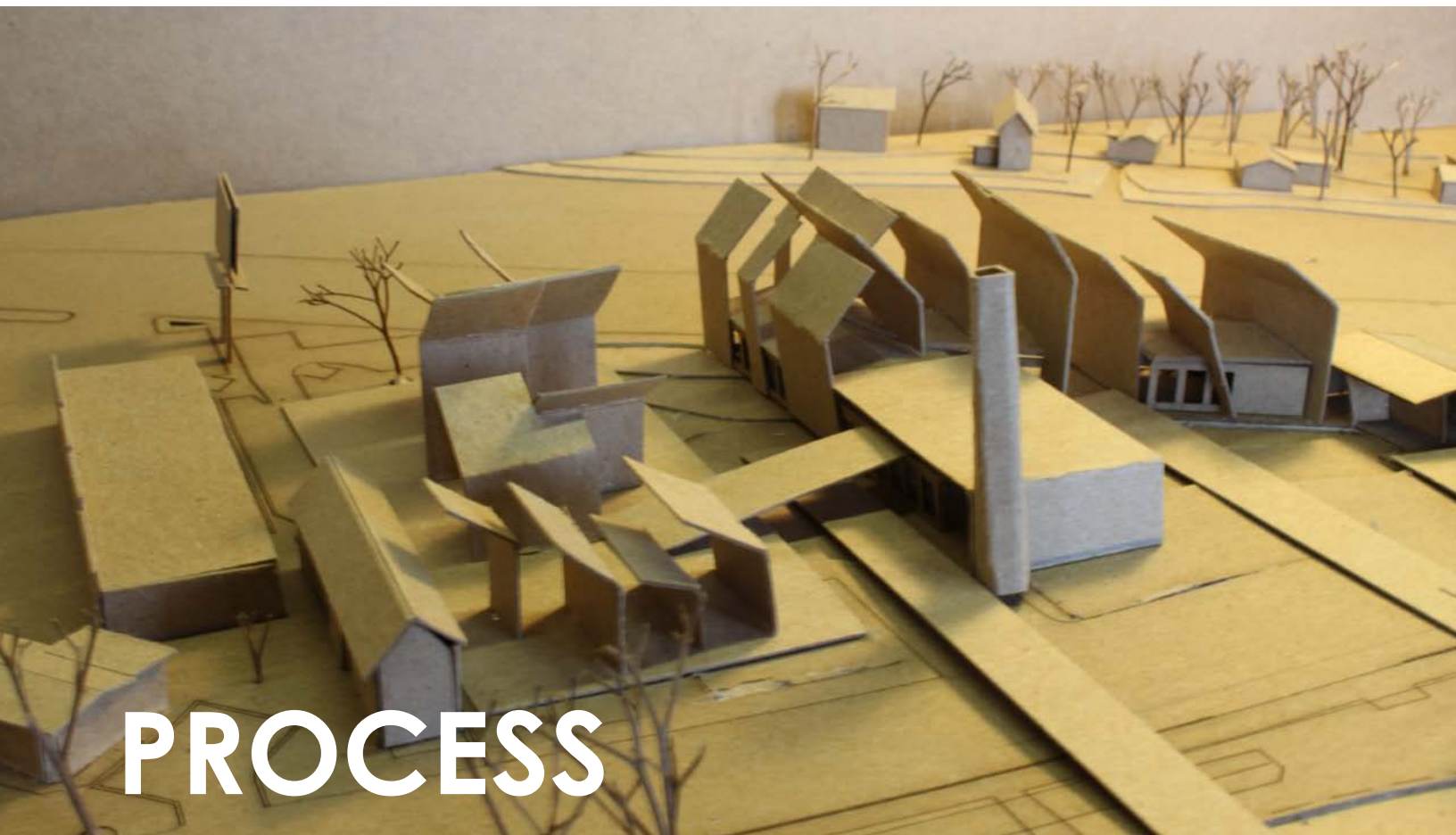


PROCESS

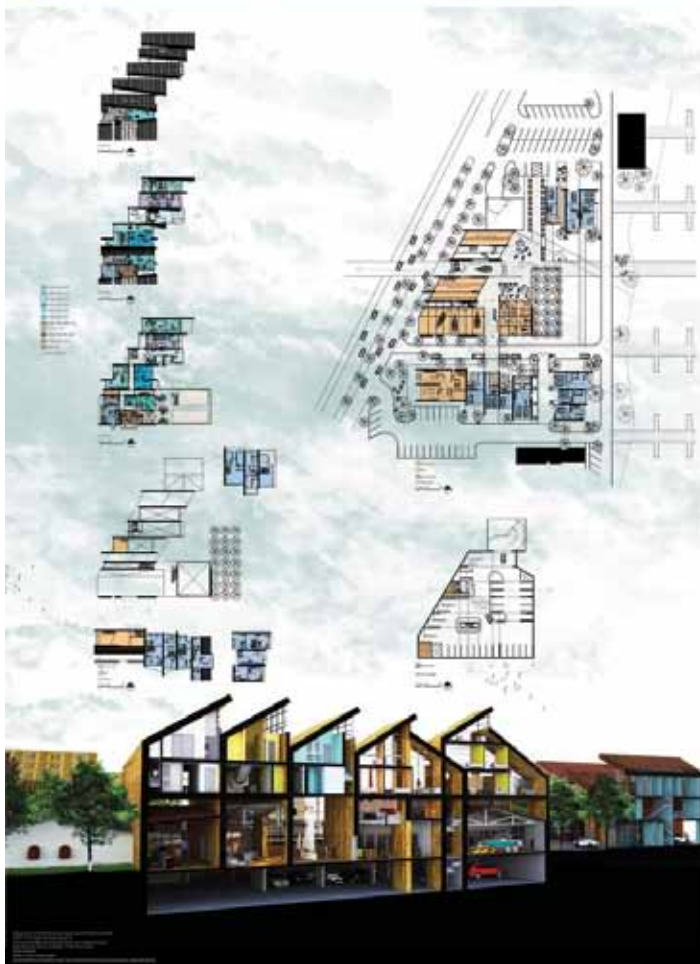


PROCESS





PROCESS



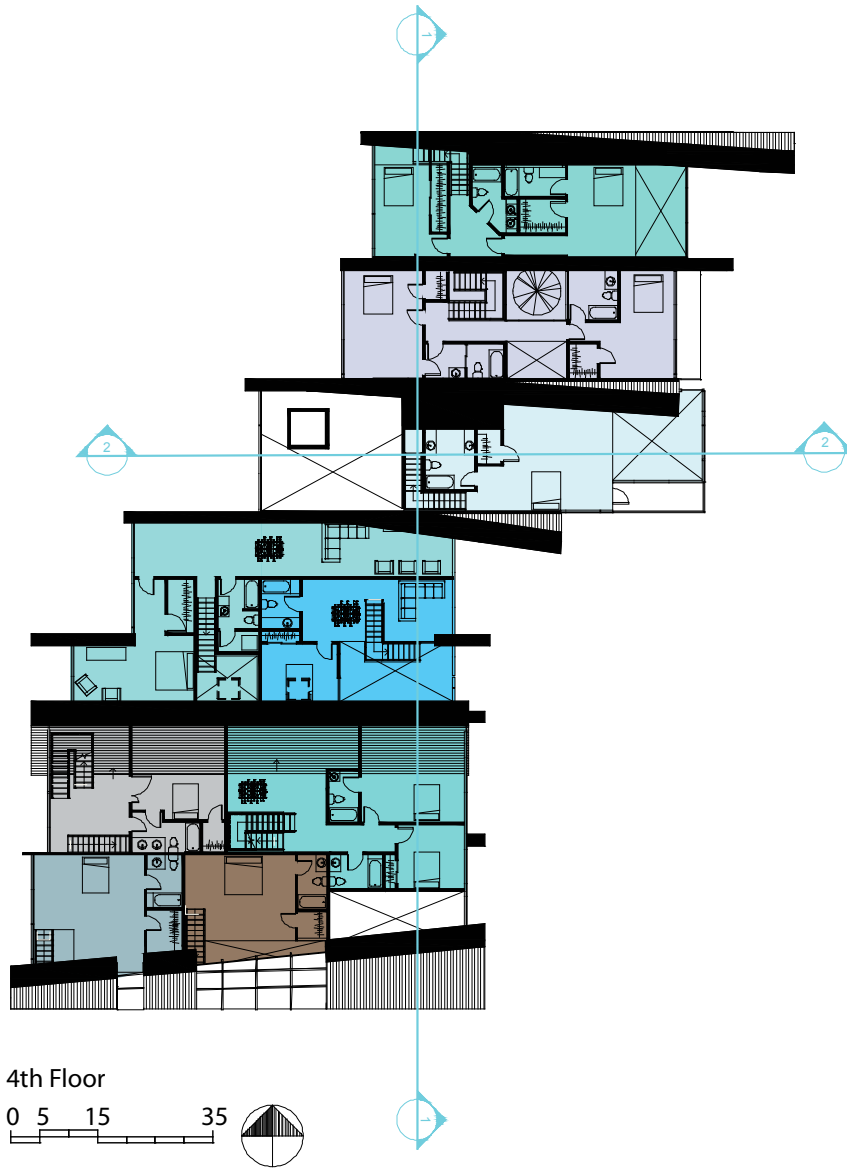
FINAL BOARDS





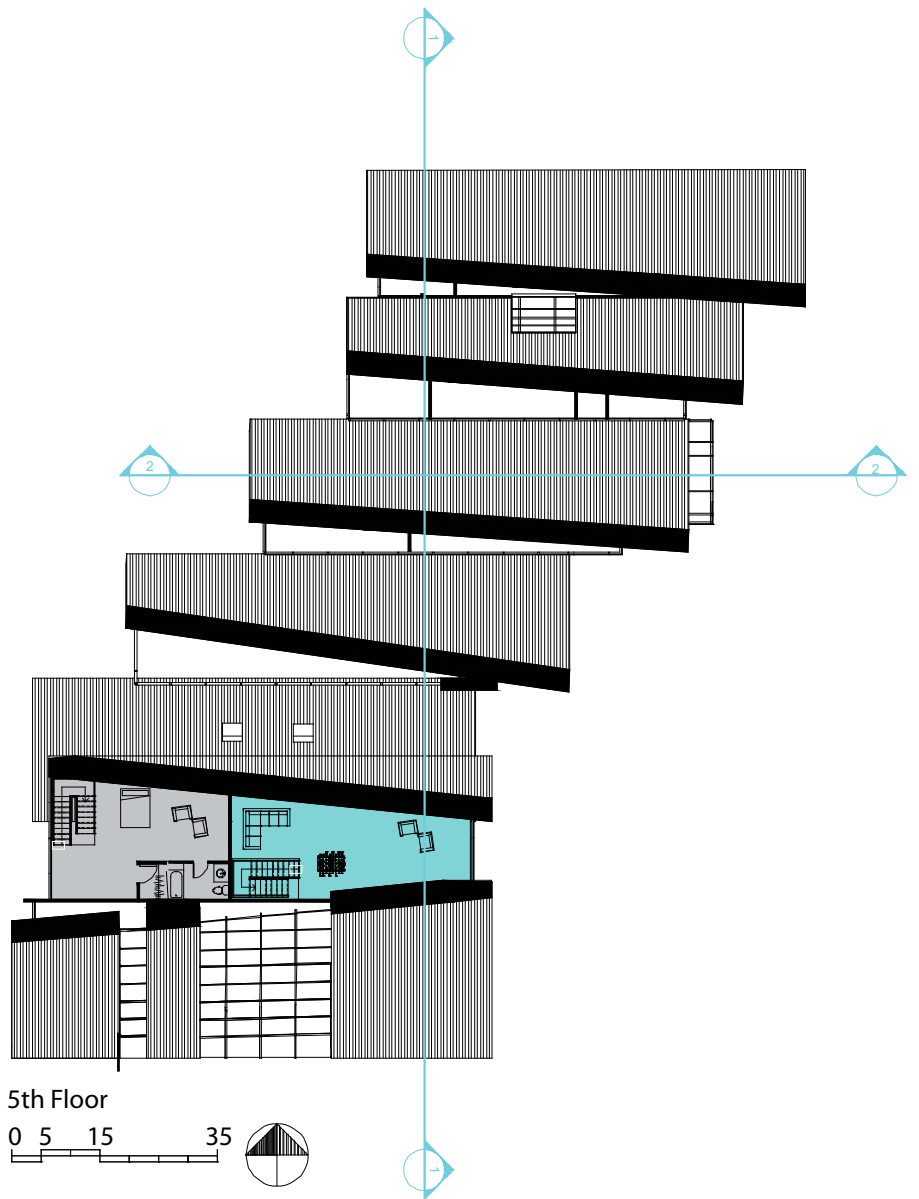
The total building is 51,500 square feet. Each residential unit is color coded and varies in square footage as seen above and on the following and previous pages.

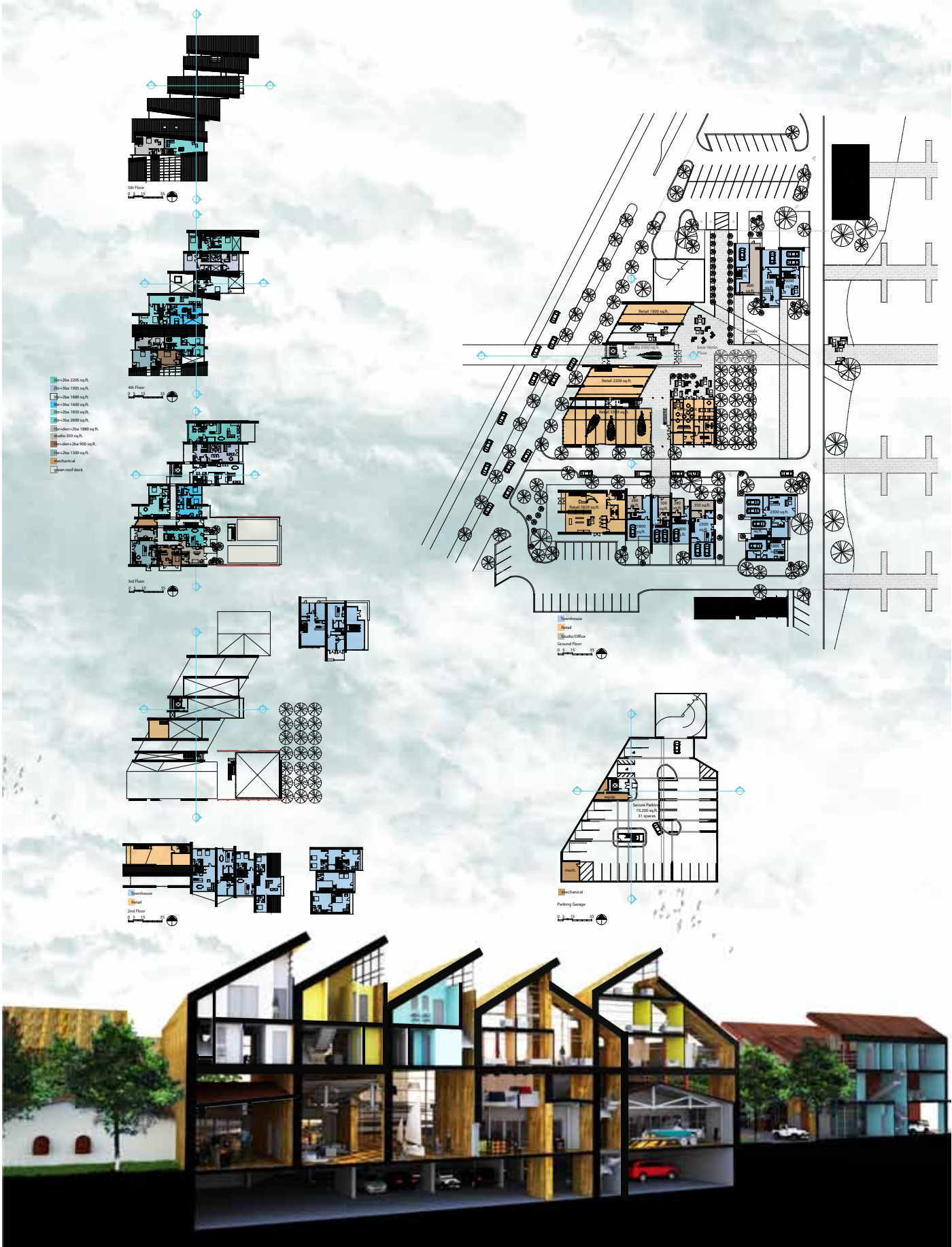
- 2br+2ba 2205 sq.ft.
- 2br+3ba 1905 sq.ft.
- 3br+2ba 1880 sq.ft.
- 3br+3ba 1600 sq.ft.
- 2br+2ba 1850 sq.ft.
- 2br+3ba 2600 sq.ft.
- 1br+den+2ba 1880 sq.ft.
- studio 550 sq.ft.
- 1br+den+2ba 900 sq.ft.
- 1br+2ba 1300 sq.ft.
- mechanical
- green roof deck



2br+3ba 2600 sq.ft.

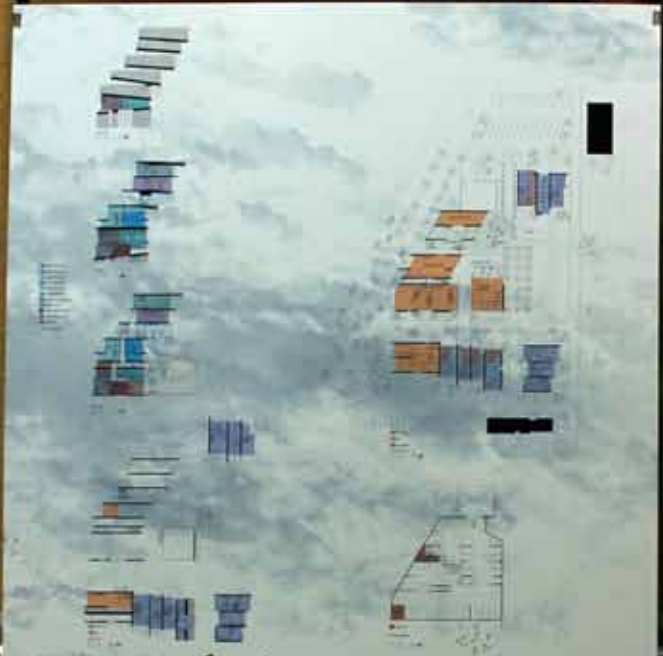
1br+den+2ba 1880 sq.ft.











PRESENTATION

- Berton, B. (2011). Affordable Workforce Housing. *UrbanLand*, 70(3/4), 86-151.
- Bloom, N.D. (2001). *Suburban Alchemy: 1960s New Towns and the Transformation of the American Dream*. Urban Life. Columbus, Ohio: Ohio State University Press.
- Breen, A & Rigby, D. (1996). *The New Waterfront: a worldwide urban success story*. London, England: Thames and Hudson Ltd.
- Chapin, R. (2011). *Pocket neighborhoods: creating small-scale community in a large-scale world*. Newtown, CT: Taunton Press.
- DuBois, S. (2011, February 1). Flexible vacation policies are here to stay - Feb. 1, 2011. *CNNMoney - Business, financial and personal finance news*. Retrieved October 9, 2012, from <http://money.cnn.com/2011/01/31/news/companies/html>
- GA Document. (1998). Valencia. *GA document*, 108(1), 102-104.
- GA Document. (2011). High Line. *GA document*, 121(1), p.102.
- GA document. (2001). (coop himmelblau) Apartment Gasometer, 111 (1), p. 69,68-80.
- GA document. (1996). SAMITAUR, Moss, Eric Owen. 106 (1), p. 150-160.
- Halprin, L. (1963). *Cities*. New York: Reinhold Pub. Corp.
- Hirt, S., & Godschalk, D. R. (2007). The devil is in the definitions: contrasting American and German approaches to zoning. *Journal Of The American Planning Association*, 73(4), 436-453.
- Jackson, R. (2006, January). A Redevelopment Revolution. *Planning-American Planning Association*, 72, 12-19.
- Jacobs, J. (1961). *The death and life of great American cities*. New York: Random House.
- Jones, E., & Williamson, J. (2011). *Retrofitting Suburbia, Updated Edition Urban Design Solutions for Redesigning Suburbs..* Hoboken: John Wiley & Sons, Inc.
- Jones, P. (2012, February 21). USGS White Bear Lake Water Level Study. USGS White Bear Lake Water Level Study. USGS Characterizing Ground Water/Surface Water Interactions in Lakes. Retrieved October 9, 2012, from mn.water.usgs.gov/projects/pdf/WBLCDmeeting2212012. Retrieved November 21, 2012, from USGS.

- King, J. (2010). Ford Assembly Building. *Architectural Record*, 2010(02), 78-81.
- Kliment, S. A. (2005). *Building Type Basics for Housing*. Hoboken, NJ: John Wiley.
- Lindstrom, M. J. (2003). *Suburban sprawl: culture, theory, and politics*. Lanham, Md.: Rowman & Littlefield.
- Local History. (n.d.). Welcome to the White Bear Lake Area Historical Society. Retrieved October 6, 2012, from <http://www.whitebearhistory.org/Resources.html>
- Ludden, J. (2010, March 16). The End Of 9-To-5: When Work Time Is Anytime : NPR. NPR : National Public Radio : News & Analysis, World, US, Music & Arts : NPR. Retrieved December 9, 2012, from <http://www.npr.org/templates/story/story.php?storyId=124705801>
- Lynch, K. (1960). *The image of the city*. Cambridge, Mass.: MIT Press.
- McMorrough, J. (2006). *Materials, Structures, and Standards*. Beverly, Massachusetts: Rockport Publishers, 100-110.
- Minnesota Pollution Control Agency-Brownfields. (n.d.). Home - Minnesota Pollution Control Agency. Retrieved November 22, 2012, from <http://www.pca.state.mn.us/index.php/waste/waste-and-cleanup/cleanup-programs-and-topics/cleanup-programs/brownfields.html>
- New Bedford, MA. (1977). *Preservation and Rehabilitation of a Historic Commercial Area*. New Port, R.I.: Reynolds-DeWalt Printing inc.
- Norberg-Schulz, C. (1983). Heidegger's Thinking on Architecture. *Perspecta-The MIT Press*, 20, 61-68. Retrieved November 12, 2012, from <http://www.jstor.org/stable/1567066>
- Ojeda, O. (2005). *Buildings & landscapes: Lake/Flato*. Gloucester, Mass.: Rockport Publishers.
- Russo, M. (2011, March 13). Economic Factors Drive Adaptive Reuse on Multi-Housing News Online. *Multi-Housing News, Multifamily, Property Management, Real Estate Market Data, Multimedia and More!*. Retrieved November 28, 2012, from <http://www.multihousingnews.com/features/development/economic-factors-drive-adaptive-reuse/1004030991.html>

- Schneekloth, L. H., Feuerstein, M. F., & Campagna, B. A. (1992). Changing places: remaking institutional buildings. Fredonia, N.Y.: White Pine Press.
- Sheridan, M.. (2008). Urban Regeneration. *UrbanLand*, 67(10), 82-121.
- Shiple, R. (2006). Does Adaptive Reuse Pay? A Study of the Business of Building Renovation in Ontario, Canada. *International Journal of Heritage Studies*, 12(6), 505-520.
- Sucher, D. (1995). *City comforts: how to build an urban village*. Seattle: City Comforts Press.
- Twain, M. (1883). *Life on the Mississippi*,. New York: Harper & Brothers.
- White Bear Lake History. (n.d.). City of White Bear Lake. Retrieved November 12, 2012, from www.whitebearlake.org/index.asp?Type=B_BASIC&SEC={66B1FFA6-12B1-4E23-B823-2BE76FBAD439}
- Smith D.S. (2008). Waterfront Destination. *UrbanLand*, 67(10), 129-160.
- Vinar, K. R. (1980). *Soil survey of Washington and Ramsey Counties, Minnesota*. Washington: U.S.G.S. The Service.
- White Bear Boat Works. Johnson Boat Works History. (n.d.). WHITE BEAR BOAT WORKS. Retrieved October 10, 2012, from <http://www.whitebearboatworks.com/History.html>
- White Bear Lake Area Historical Society. (n.d.). Welcome to the White Bear Lake Area Historical Society. Retrieved September 22, 2012, from <http://www.whitebearhistory.org/>

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“Good, Better, Best. Always do your Best!
Never give up until your GOOD is BETTER than your BEST.”
-Tim Duncan



Kevin Gamelin, originally from Forest Lake, Minnesota, holds a Bachelors of Science Degree in Environmental Design from North Dakota State University in Fargo, North Dakota.

As a student at North Dakota State University he had the opportunity to take part in a study abroad program between North Dakota State University and the École Nationale supérieure d’Architecture et de Paysage in Lille, France where he participated in design studios focused on building materials and an urban design seminar focusing on urban regeneration and sense of place.

At North Dakota State University he focused on various design typologies such as religious, educational, civic, cultural, and institutional spaces.

Pursuing his Masters of Architecture Degree at North Dakota State University he is interested in community design, suburban regeneration, and sustainable and economical building practices.

