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adaptive architecture [re]use and mixed use



title page

[RE]DUX: ADAPTIVE ARCHITECTURE [RE]USE AND MIXED USE

A Design Thesis Submitted to the
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By

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abstract [RE]DUX: ADAPTIVE ARCHITECTURE [RE]USE AND MIXED USE

This thesis examines the implications a building's history/past has on its future development. It is guided by the idea that some structures are more capable than others in making the transition from one function to another and that the need for this transition is inevitable if the economy in which these structures exist is to survive.

The outcome of this research will be realized through the mixed use [re]development of a building located in Milwaukee, Wisconsin's, Pabst Brewery complex which will serve to create a sustainable neighborhood that will positively influence the environment, the people who live and/or work there and the financial success of the newly created economy in which it exists.

key words adaptive [re]use
mixed use
transitional architecture
[re]development
adaptable architecture



problem statement



If we as architects look to the past to inform our design decisions, what implications does a building's history/past have on its future use?

statement of intent



typology An adaptive [re]use project focusing on the mixed use development of a industrial building.

claim Historically, some building types lend themselves better to future [re]development than others, and because of this, it is necessary that the architect/developer consider how different building types allow for a feasible transition from one function to another.

premises As the push for the sustainability of our built environment increases, it is critical that architects/developers recognize the inevitable need for our buildings to transition into a variety of functions in order to both support and survive in the economy in which they exist.

There is constantly a need for the structures around us to change to adapt to new user groups, changes in taste/style and technology.

The feasibility of a building to transition between functions and adapt greatly increases the lifespan of the building.

**theoretical premise/
unifying idea** Some structures are more capable than others to make the transition from one function to another.

project justification The built environment is ever changing, and as our structures age and become obsolete, it is important that they can transition from their initial purpose/function, extending their lifespan and decreasing the need for new construction.





the proposal





the narrative

Just like we, as humans, change, adapt to new situations and age as we go through life, so do the buildings and environments that surround us. And, just as we, as a society, look to our history/past to inform our decisions, it is important that we consider a building's history/past as we take steps to transition a building from one function to another and give it a new life.

The recent push for sustainability has called attention to the needs of our structures to change, adapt to new user groups, changes in taste/style and advances in technology. Additionally, it is key to this thought that this transition be made in a way that will allow the building, and its new functions, the ability to not only survive in, but also support the economy in which it exists.

One can argue that, with enough resources, any structure can be [re]developed and made to serve a new function completely different from what it had been before, but would that really be considered a success? Yes, the overall goal of extending the lifespan of the building will have been achieved, but at what cost?



It is important that we, as architects/developers, recognize the importance of a building's history and what this past means to the feasibility of not only the structure to transition, but also to the effects that this transition will have on the environment/economy that will be forced to transition as well.

As we in the United States begin to optimize our use of resources, we are forced to look for alternative ways of expansion. Similarly, as our economy transitions from one based on industry to one that outsources our manufacturing needs abroad, there are large areas of our cities that were once dedicated to this industrial past, that are littered with early 1900's warehouse and manufacturing structures that are sitting empty. So then I ask, why do we continue to expand our cities outward and upward when these perfectly suitable structures allow for the sustainable development of new neighborhoods that revive these empty spaces in our cities and celebrate our nation's past?

In this project I will explore the answers to these questions, using them to guide my research as I attempt to create an understanding of what makes some structures more capable than others to feasibly transition from one function to another. Inevitably, the ability of our structures to transition is just as critical to our nation's past as it is our future.



user/client description

In a mixed use project of this scale there are a large number of people who are involved in the development and everyday functions of the building.

**clients/
owners** The primary client for this project will be the Brewery Development Office, however the entire scope of the project will likely be owned by a private outside developer.

Secondarily, there will be tenants who will own and/or operate spaces within the structure under the realms of retail, commercial and residential use.

users There are many users in a project of this size and these users fall into the categories of retail, commercial and residential.

Retail

The primary retail audience will be the individuals who live/work/learn within the brewery complex. The secondary user group will include the general public who come to the building for the specific retail available. An additional group of users in the retail category will be those who manage and work in the stores.

Commercial

Commercial users will include those whose offices are located within the structure and the clients that they bring in.

Residential

The residential users for this project will include those who live in the structure and their guests.



major project elements



This project's mixed-use functions will be divided up into three sectors - retail, commercial and residential - each of which will occupy approximately one-third of the structure. Additional space will be set aside for courtyards, public gathering spaces and public restrooms.

retail Retail functions will include a variety of goods and services.

Possible retail entities include:

- Grocery Store/Food Co-op
- Restaurants/Bars/Coffee Shops
- General Store/Pharmacy
- Fitness Center/Gym
- Clothing/Goods Retail Stores

Spaces necessary for the previously mentioned entities include but are not limited to:

- Showroom/Sales Floor Space
- Dining/Bar Seating
- Open Workout Space
- Locker Room with Showers
- Back Room/Storage for Goods
- Refrigeration Space
- Kitchen Space
- Staff Break Room/Restrooms

Possible franchises to include:

- Caribou Coffee/Starbucks
- Corner Bakery/Panera Bread
- Jimmy John's
- Chipotle/Noodles and Co.
- Walgreens/CVS Pharmacy
- Crate & Barrel
- Urban Outfitters
- Container Store
- North Face/Columbia

commercial Commercial spaces will exist in an open plan layout. Other more enclosed commercial spaces will include:

- Conference/Meeting Rooms
- Enclosed Offices
- Staff Lunch/Break Rooms
- Restrooms
- Storage Spaces

residential Residential functions will include condo and loft spaces.

Private spaces necessary for the condo and loft functions include:

- Kitchens/Pantry Space
- Living Space
- Bedrooms/Offices
- Bathrooms
- Balconies
- Closets/Storage Spaces

Public spaces necessary for the condo and loft functions include:

- Entrance/Lobby Space
- Mail Room



site information macro

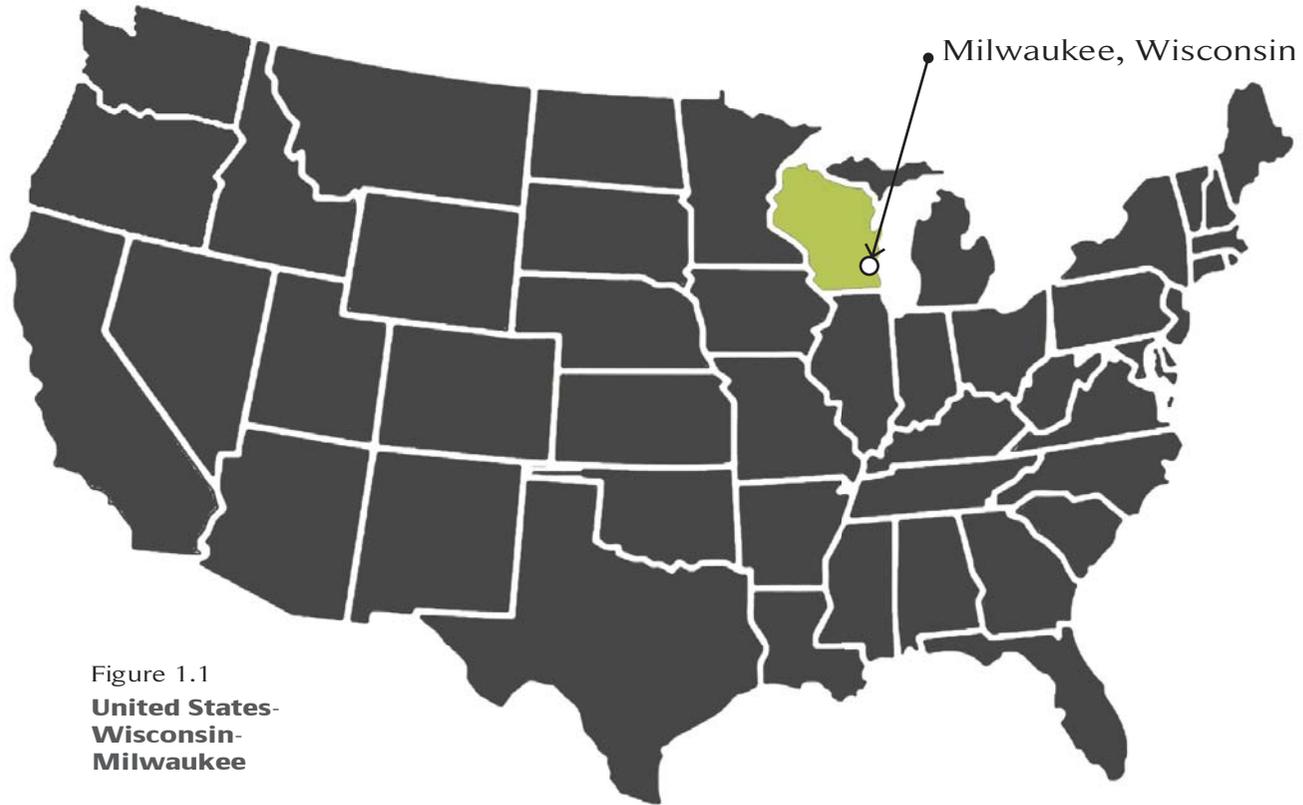


Figure 1.1
United States-
Wisconsin-
Milwaukee

region As a part of the Great Lakes region, Wisconsin is located in the United States' upper midwest. Located in Milwaukee county, the city of Milwaukee is situated on the western coast of Lake Michigan in southeastern Wisconsin.

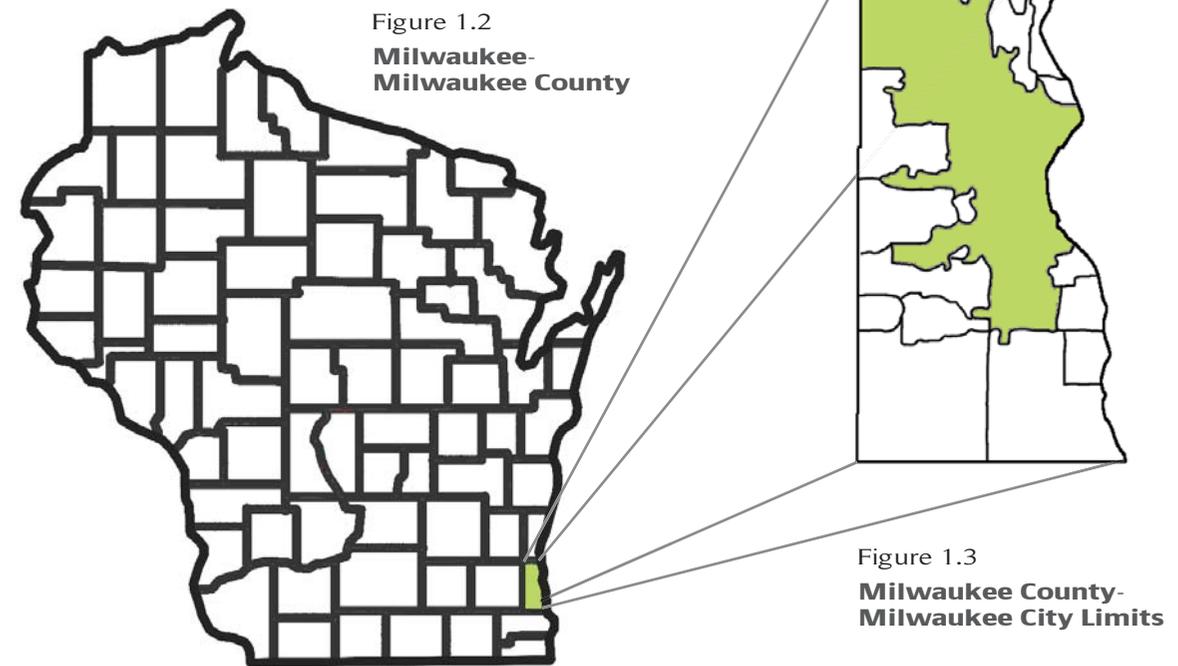


Figure 1.2
Milwaukee-
Milwaukee County

Figure 1.3
Milwaukee County-
Milwaukee City Limits

city Known as “The Good Land” to the Native Americans, the city of Milwaukee as it is now sprang up out of three separate towns; Juneautown, Kilbourntown and Walker’s Point (Our Milwaukee, 2010). Milwaukee has a rich past as the world’s leading beer producer and although the art of brewing beer is no longer the city’s major industry, it has left a legacy that is everywhere to be seen, for which the remains of the Pabst Brewery are a testament. According to city-data.com, the elevation of Milwaukee is 634 feet and the city encompasses approximately 96 square miles.

Milwaukee Population = 604 133
Males represent 47.8% (288 785)
Females represent 52.2% (315 348)

Ancestries Represented:

- German - 20.9%
- Polish - 9.6%
- Irish - 6.3%
- Italian - 2.9%
- English - 2.6%
- Norwegian - 2.0%



site information micro



Pabst Brewery Complex



Figure 1.4
**Milwaukee, WI
Pabst Brewery**
Scale: 1/16"=275'



Figure 1.5
Pabst Brewery
Scale: 5/8"=275'

site The historic Pabst Brewery complex spans a seven block area of downtown Milwaukee. Located immediately east of Interstate 43, the brewery is bound by W. Winnebago Street to the north, W. Highland Avenue to the south and N. 6th Street to the east.

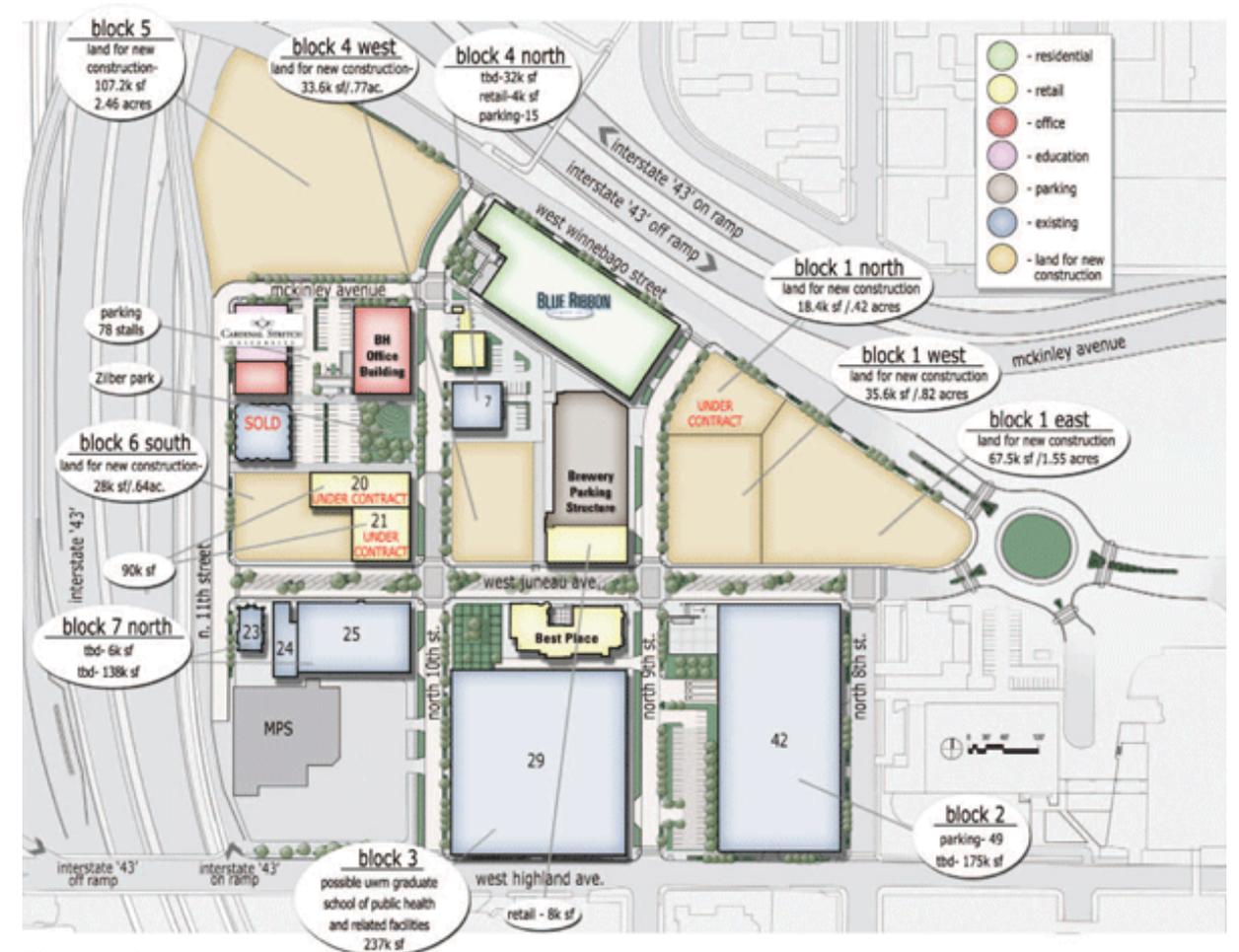


Figure 1.6
Pabst Brewery Complex [Re]development Site Plan

The historic Pabst Brewery complex is a prime example of Milwaukee's brewing past, and the Cream City brick, used on most of the buildings on the complex, is an everyday reminder of how industry has shaped not only the city of Milwaukee, but also its residents. With its proximity to the Milwaukee Area Technical College, the County Courthouse, Marquette University and the Aurora Sinai Medical Center, the Pabst Brewery complex is becoming Milwaukee's newest, sustainable downtown neighborhood.



site importance

The importance of this site lies in the context/environment in which it exists. In [re]developing and [re]purposing the existing industrial buildings, it is the goal of The Brewery Project to create a sustainable neighborhood that will positively influence the environment, the people who live and/or work there and the financial success of the project.



Figure 1.7

Block 3: Bottling Building (29)

Scale: 3/4"=275'

building proposed for use

Block 3:

Building 29 - Bottling Building

The bottling building is located between N. 10th Street and N. 9th Street and is bordered by W. Highland Avenue to the south. The approximately 237,000 square foot, three-story building sits on a eastward sloping site and offers a very unique, multi-leveled facade.



project emphasis

This thesis will examine the ability of some structures to adapt and transition from one function to another, and emphasis will be placed on the roles that technology and preservation play in this transition. Alternate focus for this thesis lies in examining the effects the transition from one function to another - from warehouse to mixed-use, church to retail, shipping yard to commercial office space - has on the economy in which the building exists.



plan for proceeding



research direction

Investigation into this thesis will have several focuses. Primary research will be conducted to further enhance the understanding and focus of the theoretical premise/unifying idea. Additional research will be devoted to a further understanding of the project typology, specifically the site, historical context and the programmatic requirements of the project as they interrelate.

design methodology

A mixed method model will be used for the completion of research for this project. This method will involve the concurrent gathering of both qualitative and quantitative data. The use of the concurrent nested strategy within this method will allow for the theoretical premise/unifying idea to direct the research while also allowing the simultaneous integration of data to identify a secondary emphasis on project typology and implementation.

documentation of design

There are several ways through which documentation of the design process will occur. In order to maintain a digital collection of work, all hand sketches/drawings and process models will be documented through scanning and photography on a biweekly basis and then combined with existing digital models. In addition, the physical products will be compiled into a binder that will be readily available.

Upon the completion of this thesis, the information will be formalized and integrated into the thesis book as well as a compilation of work to include all digital products of the project. These will be made available to the NDSU architectural library as well as the department so that they may be accessible for future use.



previous studio experience



year two:

FALL 2007: Stephen Wischer
Tea House (Fargo ND)
Minneapolis Rowing Club (Minneapolis MN)
House for Twins (Fargo ND)

SPRING 2008: Mike Christenson and Malini Srivastava
casting studio:
volume+translation:
past influences on design: trullo farmhouse, italy
body+light:
designed to the human scale: body in space drawings
volume+site:
a series of connections: creating a community court
volume+cohesion:
building by association: urban housing unit (Fargo ND)

year three:

FALL 2008: Steve Martens
wildlife research facility: minnesota black bear (Warroad MN)
mason's lodge (Cold Spring MN)

SPRING 2009: Ron Ramsay
Shaker Barn: Mount Lebanon NY
history reinvented: performance & reception space
44 West Congress Design Complex (Chicago IL)

year four:

FALL 2009: Bakr Aly Ahmed
sky-rise: 150 & 151 howard (San Francisco CA)

SPRING 2010: Mike Christenson & David Crutchfield
term abroad: jaipur, india
catalyst: an urban re-design of the five sectors of badi chaupar

year five:

FALL 2010: Steve Martens
Preservation Studio:
Re-Development: Fargo Laundry (Fargo ND)

program document





theoretical premise research

The inherent goal of this thesis lies in the understanding that “the history of the buildings that the human race has created over thousands of years is one of constant change” (Powell, 1999). Thus, it is of utmost importance that as our structures age and become obsolete, they can transition from their initial purpose and adapt to meet the ever changing needs of society.

In his novel, *1984*, George Orwell describes the link between the past, present and future, saying “...he who controls the present controls the past...he who controls the past controls the future.” The same can be said for the architect when charged with the task of transitioning our culture’s outdated structures into the present, “the issue is no longer about new versus old, but about the nature of the vital relationship between the two” (Powell, 1999).



It is only in the most provocative examples of historic preservation that we acknowledge this link between past and future as a shifting continuum between moments in time.

“Arguably, when a historic building is preserved and transformed for new uses, the dialogue created between old, conserved, or restored elements and the newly modern brings these shifts between past and future tenses into a dramatic present. Architects who effectively manipulate space, light, and materials to suggest something about the future beyond the process of time embodied by the historic remains, help to perceptually thrust the observer both backward and forward from the present moment he or she experiences this architecture” (Stephens, 2008).

past

The legacy of our buildings, what we choose to tear down and what we choose to keep, defines who we are and what we value. In understanding the past we create the potential to combine the old fabric of our cities with new ideas, creating almost limitless resources for the future. Historic buildings help define the character of our communities and provide a tangible link to the past.

As Jane Jacobs wrote in *The Death and Life of Great American Cities*, “cities need old buildings so badly it is probably impossible for vigorous streets and districts to grow without them. By old buildings, I mean not museum-piece old buildings, not old buildings in an excellent and expensive state of rehabilitation, . . . but also a good lot of plain, ordinary, low-value old buildings, including some run-down old buildings” (Jacobs, 1961).

The historic industrial buildings that we choose to keep are physical and tangible reminders of the original nature of the place, and they become material evidence of cultural development. Without the element of time, the past cannot be represented in space, but character-defining features help to illuminate the industrial traditions, and provide evidence of a particular history that emphasizes a place’s social construction and continuum through time.



present

According to James Marston Fitch, a proponent of preservation, “the ‘old’ building...is a reservoir of energy. To demolish it will require additional energy. The new building proposed to be built in its place will require still more energy.”

Planning officials have traditionally considered old structures to be an economic drag on the community and have thus termed such buildings “obsolete” as they no longer are needed to serve the purpose for which they were originally built.

In today’s world, reusing existing buildings is a process of common-sense economics and the process of transformation is open-ended. Limited only by the integrity of the components that make up the structure, the building may adapt many times throughout its lifetime, although these transformations don’t necessarily imply a change of use.

In the past, building conversion often took place without regard for the history of the “character” of the structure. Today, deciding what to save and what to do with the buildings we do save are just the first steps. We must also be aware of how much we can change a building before it loses the very qualities we set out to preserve.

future

According to Kenneth Powell, author of *Architecture Reborn*, “if new architecture, the so-called ‘heritage of the future,’ is vital to towns and cities, the rediscovery and reuse of old buildings and areas is even more significant in underpinning urban life in the twenty-first century” (Powell, 1999). Preservation for the future, then, involves designing buildings that are not only built to last, but that will also remain capable of offering new options for their use.

In *How Buildings Learn*, Stewart Brand defines the flexibility and adaptability of a space as “scenario-based planning,” a design tool that, unlike programming for specific needs, encompasses “unforeseeably changing conditions.” Scenario planning explores the driving forces that are likely to shape the future environment, including the economy, changes in technology, the development of neighborhoods and the role of the tenant.

More options for a building’s use will inevitably ensure the longevity of the structure. Industrial structures, for example, are particularly susceptible to adaptation due to the availability of capital for investment, market forces and the introduction of new technologies.



adaptability over time

“Buildings have lives in time, and those lives are intimately connected with the lives of the people who use them. Buildings come into being at particular moments and in particular circumstances. They change and perhaps grow as the lives of their users change” (Brand, 1994).

In the past, there were only four kinds of buildings - palaces, churches, houses and warehouses; now every function has its own building type. In medieval times, the town hall was a different sort of building from the cathedral. Perhaps contrived using the same elements, they nevertheless produced an altogether different effect. In the architecture of the early republic, on the other hand, the treasury building might be a church, and the church might be a mansion, for there is no external differentiation to be observed. (Mumford, 1955)

According to Stewart Brand, “a minor shift in the way we define architecture, from ‘the art of building’ to ‘the design-science of the life of buildings’ could transform the way civilization manages its built environment - toward long-term responsibility and constant adaptivity” (Brand, 1994).

“Since the features that govern the construction of modern buildings are conditioned by external canons of mechanism, purpose and adaptation to need play a small part in the design, and the aesthetic element itself enters largely by accident. The plan of the modern building is not fundamental to its treatment; it derives automatically from the methods and materials employed. The skyscraper...as mechanically conceived, it is readily convertible: the floors are of uniform height and the windows of uniform spacing, and with no great difficulty the hotel becomes an office building, the office building a loft” (Mumford, 1955).

The most common form of survival of old buildings into renewed value comes from what preservationists refer to as “adaptive use.” According to Jane Jacobs, “when a building design for one purpose is put to a completely different use, its value deepens” (Brand, 1994).

Three categories of buildings exist in today’s design world and present a continuum/spectrum of ability and willingness to adapt:

Commercial

- adapt quickly/radically
- forever metamorphic

Domestic

- steady changers
- mold to occupants

Institutional

- prevent change
- reluctance/delay



New usages persistently retire or reshape buildings. The old church is torn down because the parishioners have gone and no other use can be found for it. Churches, as with prisons and theaters, are among the most difficult to adapt because they are either too specialized or too large. (Brand, 1994)

The old factory, on the other hand, keeps being revived. Warehouses and factories are endlessly adaptable due to their raw space. The buildings are honest, generic, sound, and common, and welcome any use from corporate headquarters to live/work studios. (Brand, 1994)

One additional trait that invites longevity is strangeness. Almost any sufficiently odd building that offers endless functionality will attract supportive and creative occupants. (Brand, 1994)

Adaptive use is the destiny of most buildings. Thus, it is necessary that wisdom, acquired by looking backward into history, must be translated into wisdom looking forward, as it is now almost universally understood that old buildings are more valuable than new.



research summary

The preceding research was gathered and analyzed so that it supports the body and claims of the theoretical premise/unifying idea that historically some structures are more capable than others to make the transition from one function to another.

The first research exploration created an understanding of the connection between the need for the structures around us to adapt, and the architectural legacy we leave behind.

The legacy of our buildings, what we choose to tear down and what we choose to keep, defines who we are and what we value. In understanding the past we create the potential to combine the old fabric of our cities with new ideas creating almost limitless resources for the future. By adapting historic buildings we help to define the character of our communities and provide a tangible link to the past.



The next level of research broadened the scope through which sustainability and economic factors affect the profession's recognition that building conversion often takes place without regard for the history or the "character" of the structure. Today, deciding what to save and what to do with the buildings that we do save, are just the first steps. We must also be aware of how much we can change a building before it loses the very qualities we set out to preserve.

Following my research on the present outlook of adaptive reuse, I turned my attention to focus on the future and what can be done to increase the lifespan of our buildings. Scenario-based planning, defined by Stewart Brand, explores the driving forces that are likely to shape the future environment, including the economy, changes in technology, the development of neighborhoods and the role of the tenant.

Finally, I turned my attention to the development of adaptability over time, more specifically focusing on the characteristics that define a structure's ability to adapt.

Adaptive use is the destiny of most buildings. Thus, it is necessary that wisdom, acquired by looking backward into history, be translated into wisdom looking forward. It is now almost universally understood that old buildings are more valuable than new.



case studies



Ford Assembly Building Richmond, California, USA

Figure 2.1



The Granary Lofts Gliwice, Poland, EU

Figure 2.2



3641 Holdrege Avenue Los Angeles, California, USA

Figure 2.3



Ford Assembly Building

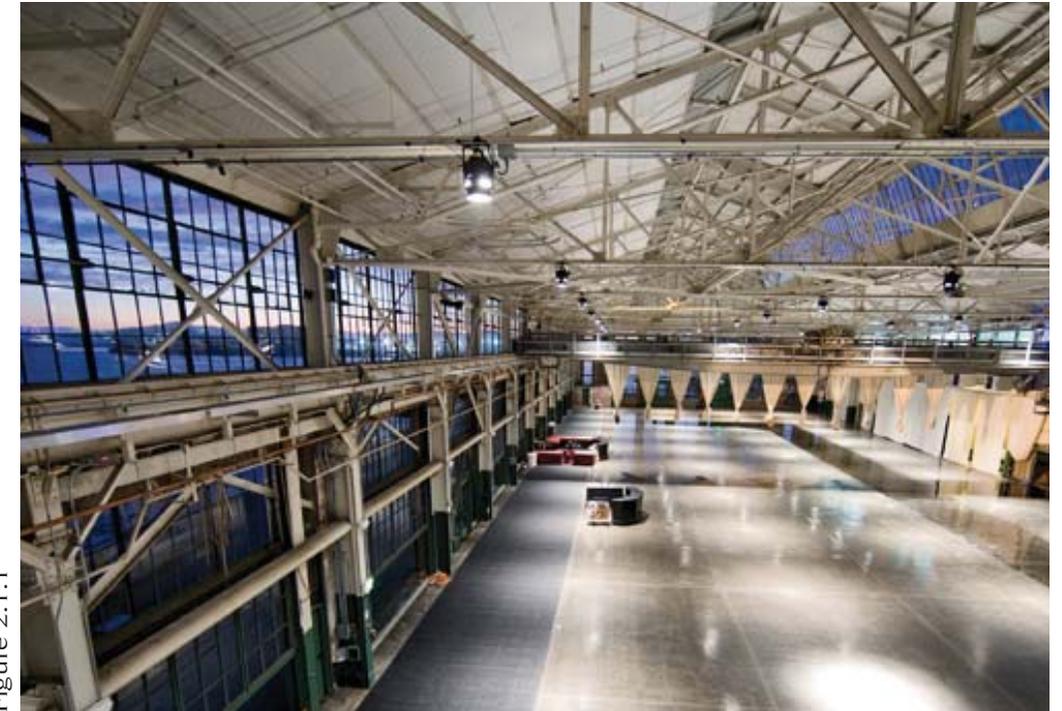


Figure 2.1.1

architect developers

Marcy Wong Donn Logan Architects

Orton Development, Inc.
The Richmond Community
Redevelopment Agency

typology location size

Adaptive Reuse

Richmond, California, USA

525 000 sq. ft.



“The scope of work led by Marcy Wong Donn Logan Architects for the adaptive use of this massive edifice encompassed the salvage, restoration, reinforcement and renovation of features inherent to the building’s architectural spirit” (*Rejuvenation*, 2009).

Orton Development, Inc., recognizing the structure’s inability to be converted into spaces for smaller tenants, enlisted Marcy Wong Donn Logan Architects “to restore and modernize the shell before trying to court potential tenants who might be drawn to large blocks of unimproved space” (King, 2010).

On the inside however, the architects took advantage of the large open spaces as an opportunity to create spaces similar to a cluster of workshops and offices rather than that of a more traditional multi-tenant structure.

- 1 The Craneway Pavilion
- 2 Boiler House restaurant
- 3 Vetrazzo
- 4 SunPower
- 5 Other tenants
- 6 Loading dock
- 7 Mountain Hardwear
- 8 Electric-car parking
- 9 Parking

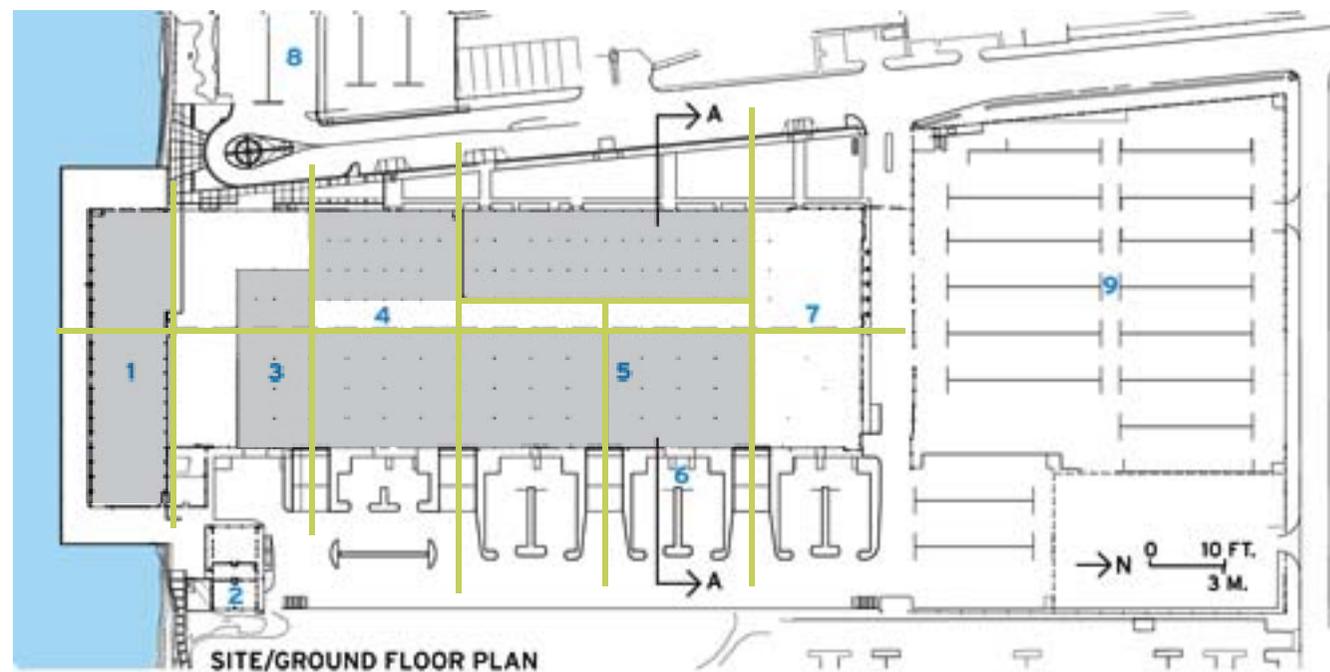


Figure 2.1.2



Figure 2.1.3

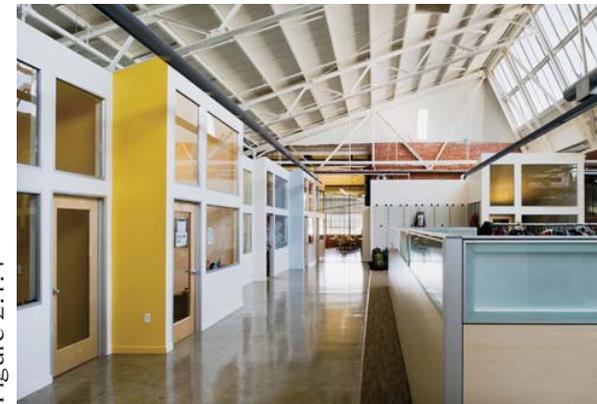


Figure 2.1.4



Figure 2.1.5

structure

As is typical of most industrial buildings, the Ford Assembly Building features a slab, on-grade with a steel frame. The columns, resting on spot footings atop pilings, form irregular bays that create large open plan spaces ideal for the use of larger tenants. The building also features brick curtain walls, industrial garage doors and industrial windows.

natural light

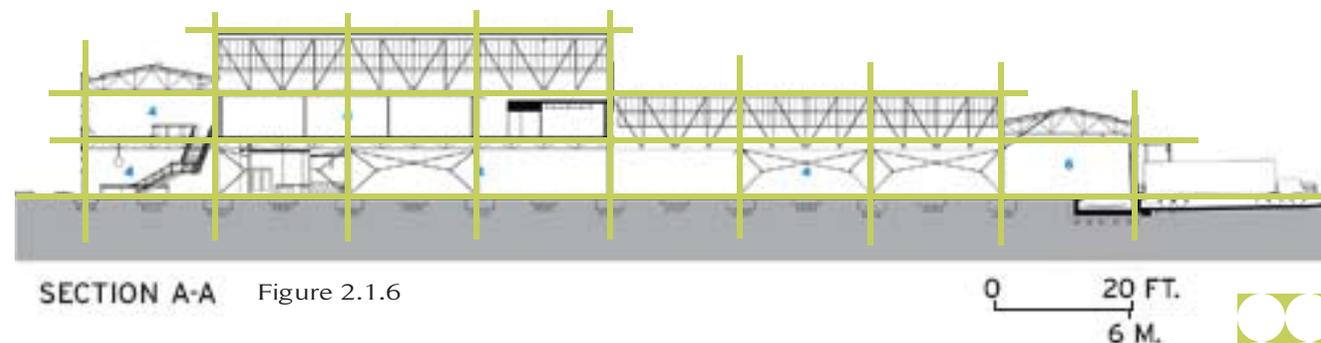
Unlike many other factory buildings, the Ford Assembly Building features “highly repetitive fenestrations (over 40 000 window panes) and vast skylight modules. The building’s classic saw-tooth roof configuration, with massive north-facing skylights, create a luxurious ‘day-lit’ factory space” (*Rejuvenation*, 2009).

massing

The structure can be understood as a single rectangular mass. Space within the mass is differentiated through varying vertical masses.

plan to section/elevation

The grid that can be overlayed the plan can be used to inform the height of the structure.



SECTION A-A Figure 2.1.6

geometry

The Ford Assembly Building uses a rectilinear grid to establish its geometry. This rectilinear grid is present in both the plan and section.

hierarchy

Hierarchy in the structure is defined through the placement of the fenestrations and the two story vertical height found in portions of the building.

Due to its sheer size and industrial open plan layout, the Ford Assembly Building offers an insight in adaptive reuse/mixed use that differs from other case studies that pertain to smaller tenant and residential units. One programmatic element that the Ford Assembly Building has in common with the Pabst Bottling Building Complex, that other cases do not, is the Boiler House restaurant. Additionally, the importance of maintaining the historical integrity of the shell of the structure ties this case study to that of the Bottling Building.

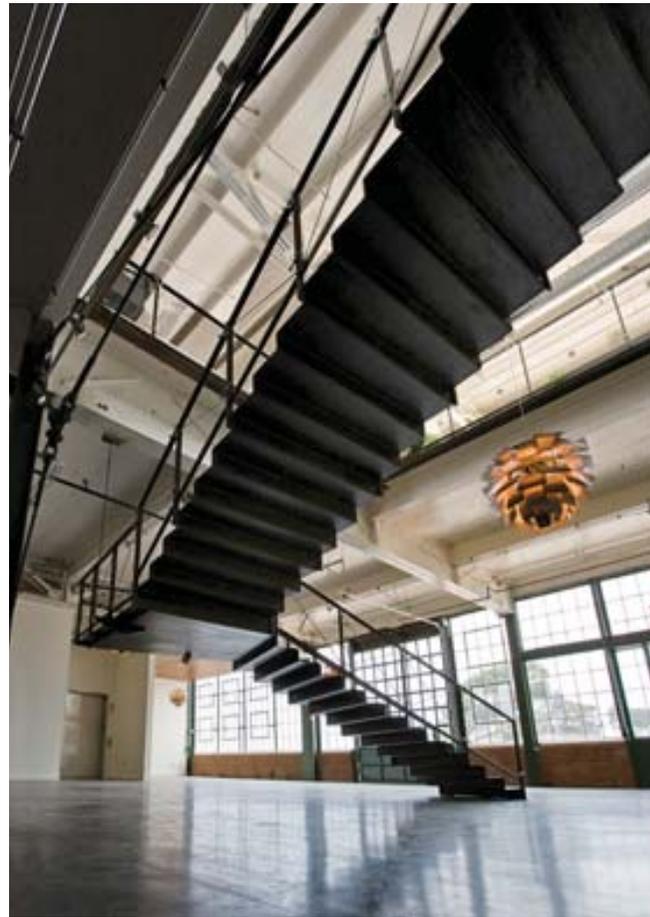


Figure 2.1.7



Figure 2.1.8



The Granary Lofts



Figure 2.2.1

architect	medusagroup
typology	Mixed Use/Adaptive Reuse
location	Gliwice, Poland, EU
size	54 000 sq. ft.



Medusagroup has taken what was once a granary and a drug warehouse and has transformed it into a mixed use facility offering retail and office functions on the ground floor and thirty residential units on the upper four floors.

On the interior, medusagroup preserved the raw brick and original wooden building construction. They also renovated the existing internal stairways and replaced the cargo elevator. The exterior facade was restored and care was taken to replace the existing windows with new ones that met thermal requirements and matched the character of the originals.

The biggest change medusagroup made to the structure was the addition of two communication and vertical transportation cores. The cores were set back from the existing building and the space between the building and the cores was covered with glass, creating a clear separation between the new elements and the historical facade.



Figure 2.2.2

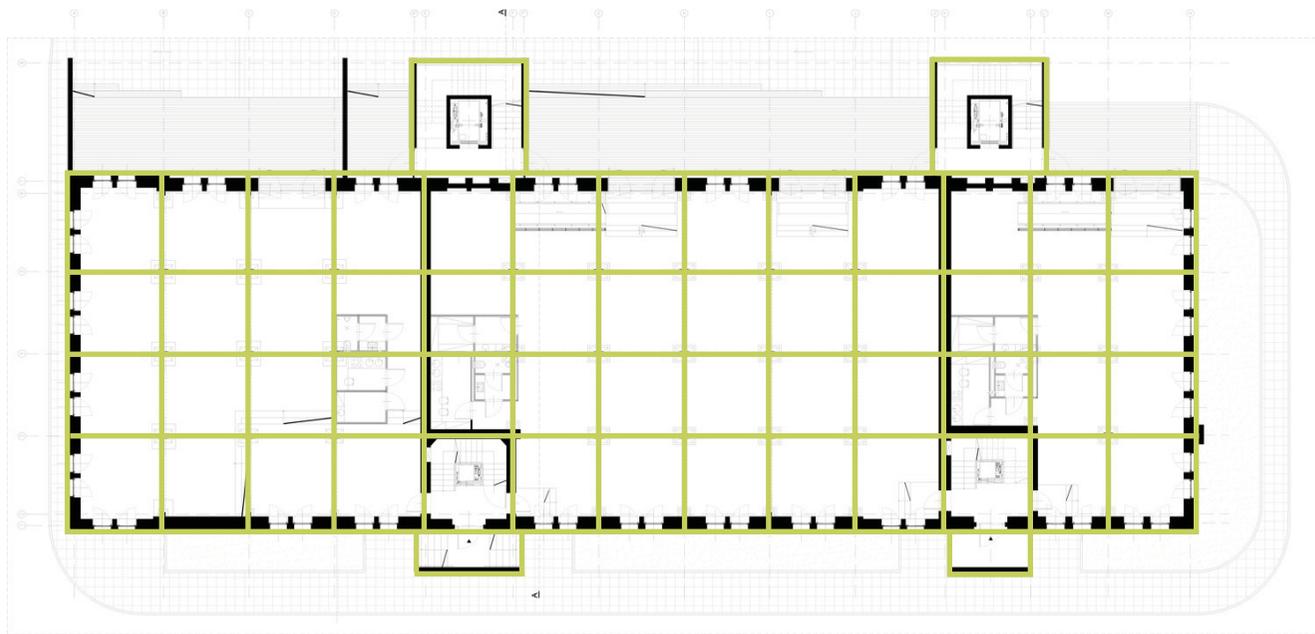


Figure 2.2.3 Level 00

structure

Like most warehouse structures in the historicism style, the Granary Lofts building has a repeatable floor setup based on the 5m x 5m construction grid of wooden columns.

natural light

The facade of the Granary Lofts building features over 200 fenestrations that allow light to penetrate all the way to the core of the structure.

massing

The primary structure can be understood as a single rectangular mass. Two additional masses house the building's primary vertical transportation.

plan to section/elevation

The grid that can be overlaid the plan can be used to inform the height and proportion of the structure.

circulation to space

Circulation in the Granary Lofts building is isolated in two cores that divide the structure into three main sections.

geometry

The Granary Lofts building uses a rectilinear grid to establish its geometry.

hierarchy

The two circulation cores on the building's southwest side create a hierarchy that denotes the building's entrances.

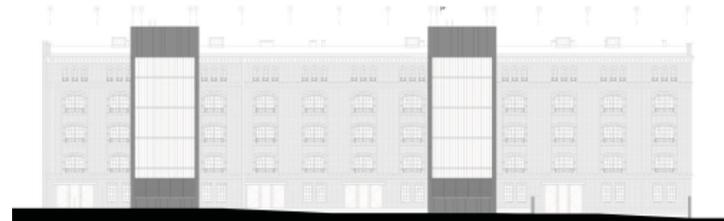


Figure 2.2.4



Figure 2.2.5



Figure 2.2.6

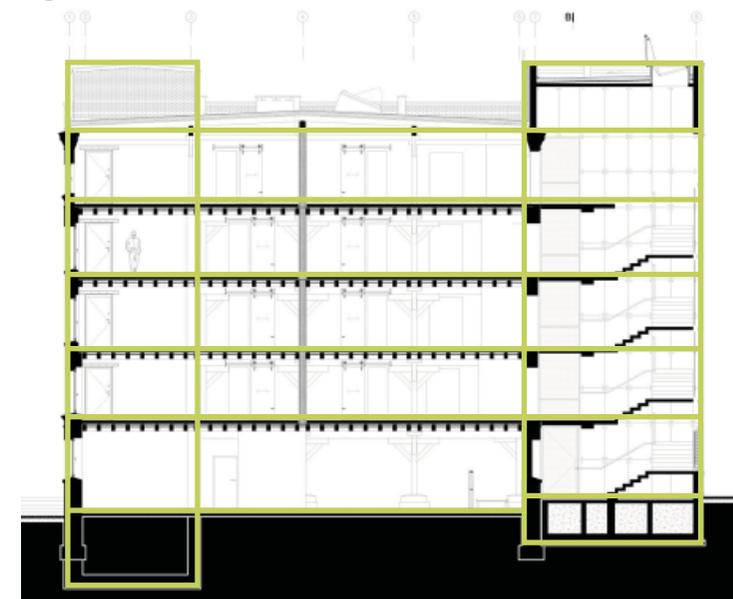


Figure 2.2.7

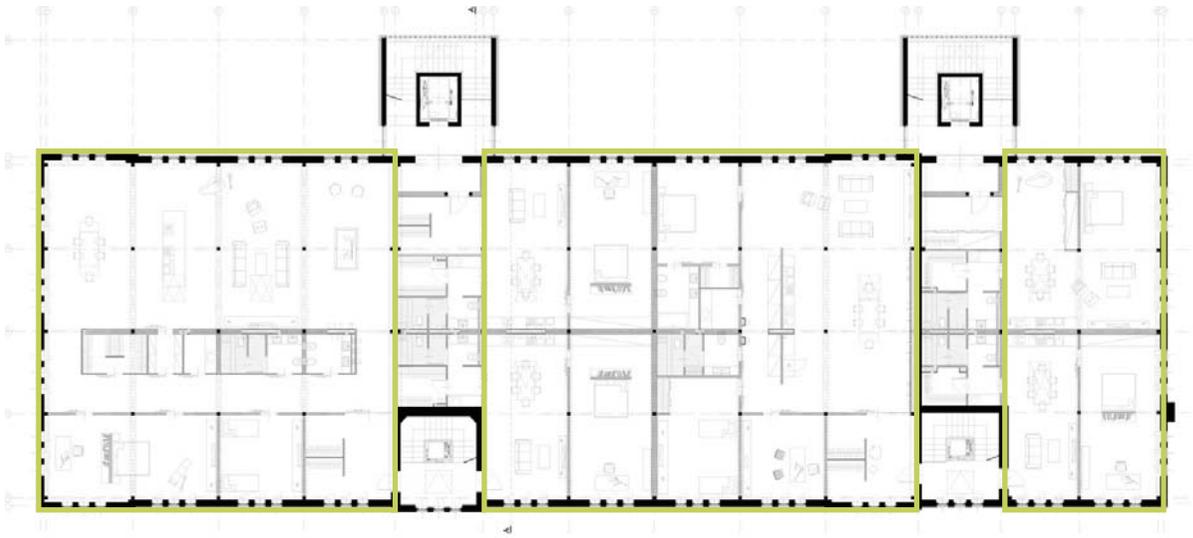


Figure 2.2.8

Level 04

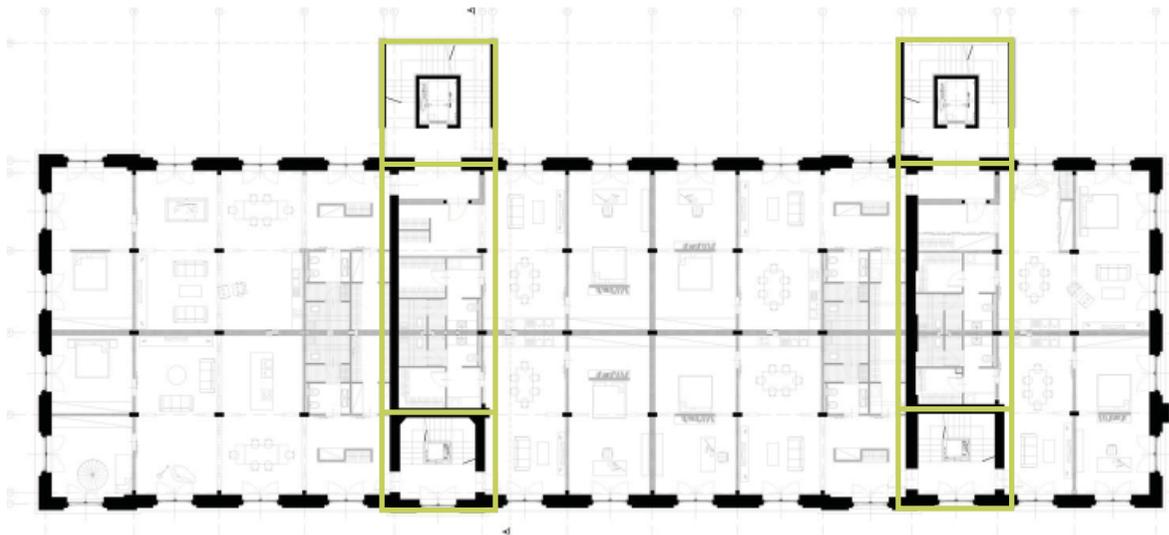


Figure 2.2.9

Levels 01-03

Of all the case studies, the Granary Lofts building has the most similarities with the Pabst Bottling Building Complex. Although there is a large discrepancy in the overall size between the Pabst Bottling Building Complex and the Granary Lofts building, the Granary Lofts features the smaller retail space and residential units that create the mixed use, live/work community.



3641 Holdrege Avenue



Figure 2.3.1

architect	Lynch/Eisinger/Design
developer	Urban Offerings
typology	Adaptive Reuse/Commercial
location	Los Angeles, California, USA
size	31 500 sq. ft.



Lynch/Eisinger/Design (L/E/D) took a different approach with the adaptive reuse of this old industrial complex. By using a process of renovation through subtraction, L/E/D took this trio of industrial buildings, carved out spaces for courtyards and gave some much needed character to this new multitenant commercial building.

Additionally, L/E/D recognized the opportunity to showcase the building's bowstring-truss roofs and tilt-up-concrete envelopes. In order to create adequate showroom and retail space, the architects removed all non-contributing interior partitions, ceilings and finishes, and sandblasted the trusses and concrete to reveal their natural textures.

Through the use of slatted-Douglas-fir and Cor-Ten steel, L/E/D created an intriguing entry sequence that accentuates the relationship between the indoors and out, and allows light to enter into the new open plan interior.



Figure 2.3.2



Figures 2.3.3 & 2.3.4

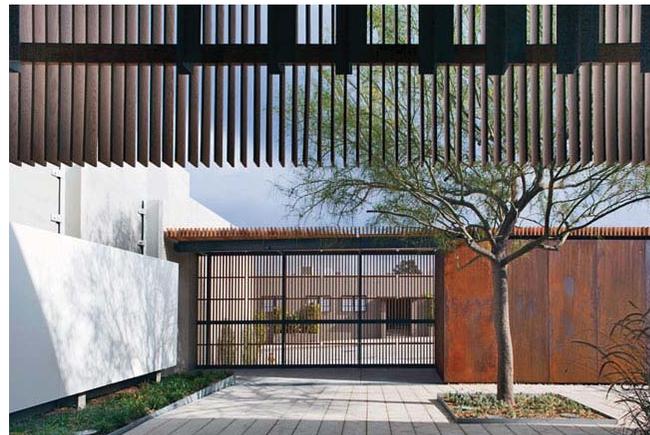


Figure 2.3.5



Figure 2.3.6

structure

The 3641 Holdrege Avenue building features a tilt-up-concrete shell and bowstring-truss roofs that allows the internal space to remain primarily free of structure.

natural light

In order to allow natural light to penetrate into the structure L/E/D restored two long skylights and added light scoops. Additionally, where they had sliced the old buildings to create the courtyards, they inserted glass curtain walls bringing light into the interior.

massing

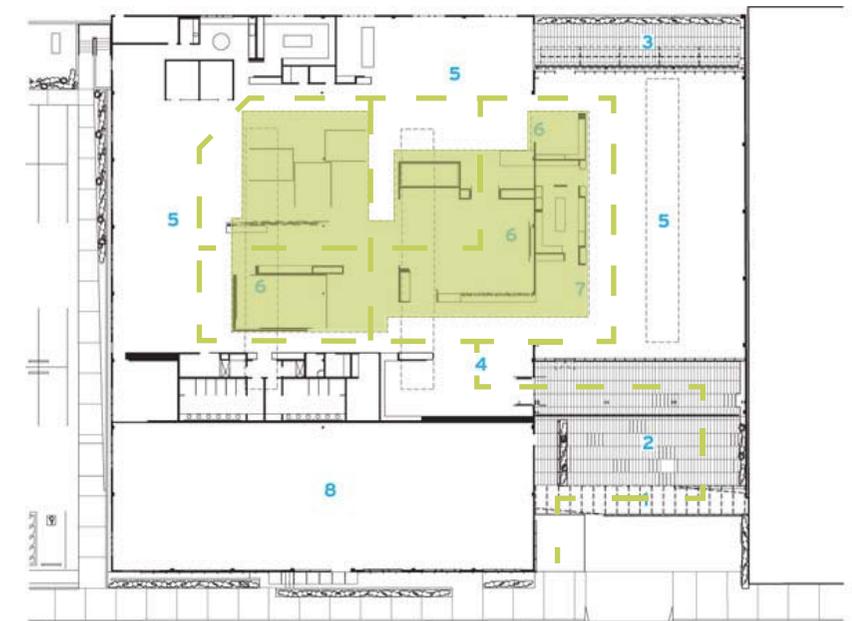
The structure can be understood as a single rectangular mass. Space within the mass is differentiated through a series of courtyards and interior partitions.

circulation to space

Circulation within the space revolves around the central core where the building's more enclosed spaces are located.

- Circulation Paths
- Enclosed Spaces

- 1 Entry Pavilion
- 2 Entry Garden
- 3 Rear Garden
- 4 Reception
- 5 Showroom
- 6 Meeting
- 7 Cafe
- 8 Tenant Space



SITE/GROUND FLOOR PLAN
Figure 2.3.7

0 20 FT.
6 M.



Figure 2.3.8

Although the scale of the 3641 Holdrege Avenue building differs quite drastically from the Pabst Bottling Building complex, the building has a very strong connection between interior space and exterior courtyards that cannot be found in many industrial buildings. In addition to this connection, the centralized spatial layout of the office/retail plan and circulation paths lend insight into possibilities for the Pabst Bottling Building complex that is lacking in the other case studies.



Figure 2.3.9
Tenant Space Layout - Option 1
17 Private Offices
50 Workstations

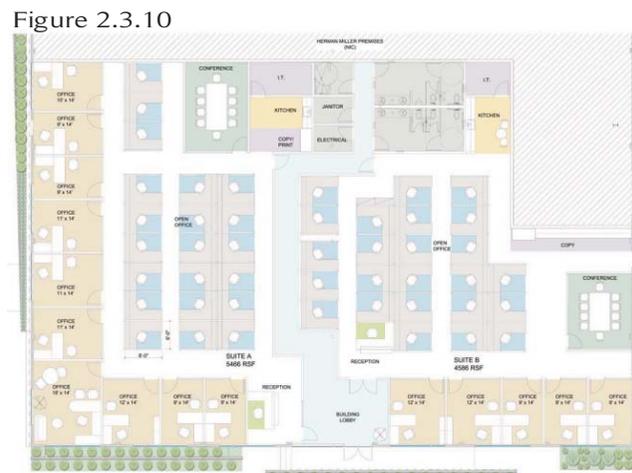


Figure 2.3.10
Tenant Space Layout - Option 2
Suite A
10 Private Offices
22 Workstations
Suite B
5 Private Offices
25 Workstations



Figure 2.3.11
Tenant Space Layout - Option 3
Suite A
11 Private Offices
27 Workstations
Suite B
5 Private Offices
14 Workstations



quick studies



Figure 2.4
Blue Ribbon Lofts
Milwaukee, Wisconsin, USA



Figure 2.5
Redpath Lofts
Montreal, Canada



Figure 2.6
Beverly-Canon Complex
Beverly Hills, California, USA



The Blue Ribbon Lofts

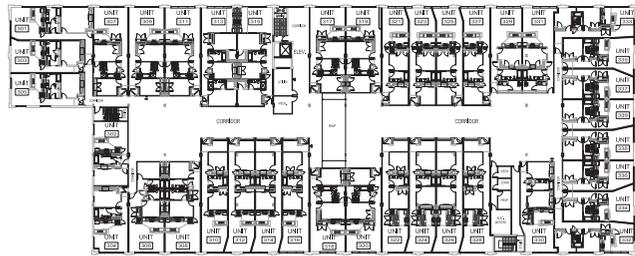


Figure 2.4.1 Third Floor Layout

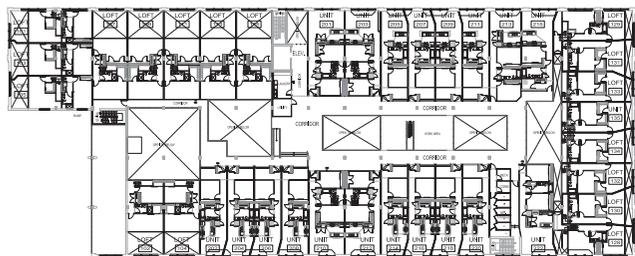


Figure 2.4.2 Second Floor Layout

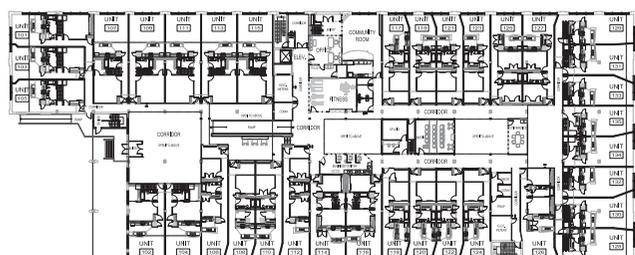


Figure 2.4.3 First Floor Layout

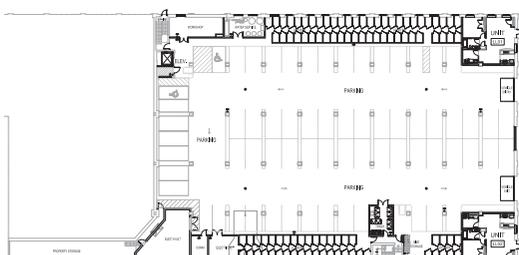


Figure 2.4.4 Lower Level Layout



Figure 2.4.5

architect
4240 Architecture
developer
Gorman & Company
typology
Adaptive Reuse/
Multi-family Residential
location
Milwaukee,
Wisconsin, USA
size
115 000 sq. ft.



Figure 2.4.6

The Redpath Lofts



Figure 2.5.1

Second Floor Plan

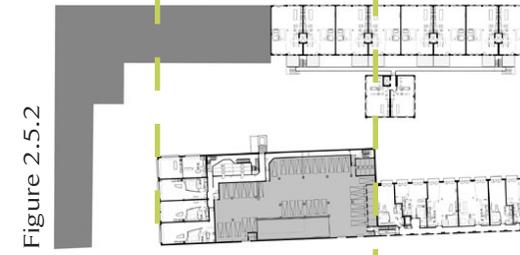


Figure 2.5.2

First Floor Plan

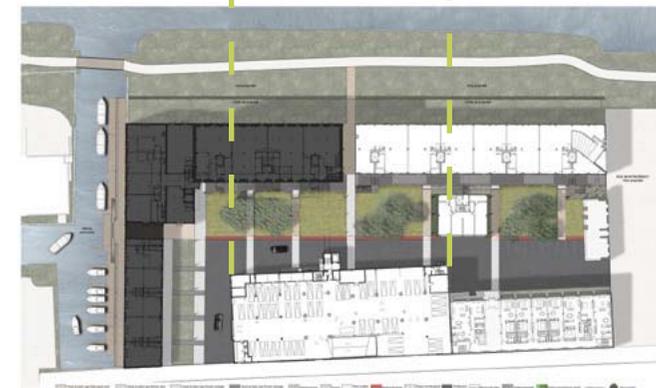


Figure 2.5.3 Ground Floor Plan



Figure 2.5.5



Figure 2.5.6

architect
Cardinal Hardy et
Associés, Architectes
typology
Adaptive Reuse/
Mixed Use/
Multi-family Residential
location
Montreal, Canada
size
350 000 sq. ft.



Figure 2.5.4

typological summary

Beverly-Canon Complex



Figure 2.6.1

architect
Field Paoli

typology
Mixed Use/Retail

location
Beverly Hills,
California, USA

size
90 000 sq. ft.



Figure 2.6.2

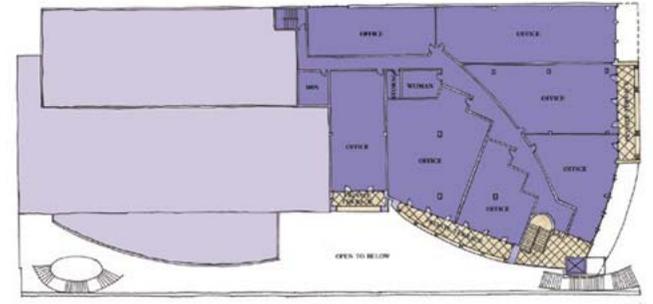


Figure 2.6.4

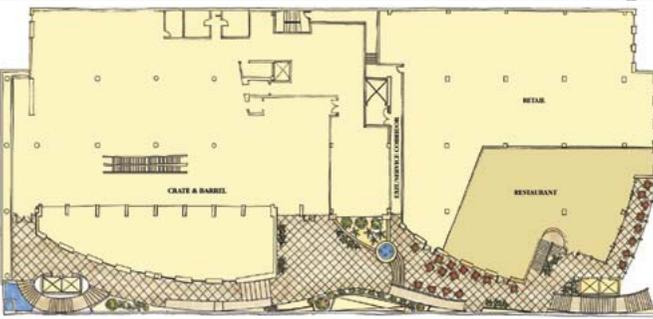


Figure 2.6.5

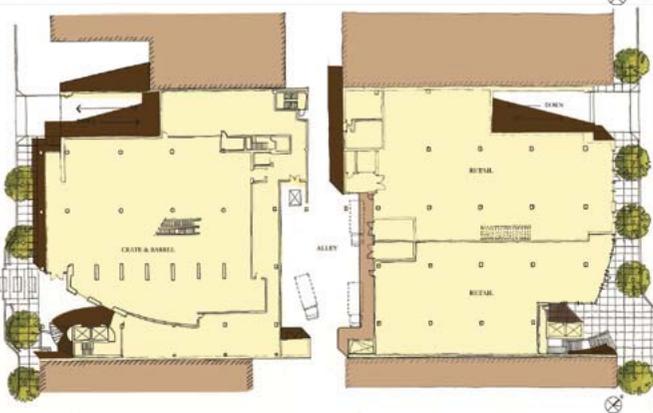


Figure 2.6.6



Figure 2.6.3

The series of case studies examined: the Ford Assembly Building, the Granary Lofts, 3641 Holdrege Avenue, the Blue Ribbon Lofts, the Redpath Lofts and the Beverly-Canon Complex, each portray an aspect that is important to either adaptive reuse or mixed use project development. All cases examined adhered precisely to the theoretical premise/unifying idea, with the exception of the Beverly-Canon Complex. Although this case did not fall under the category of adaptive reuse, it provided valuable insight into programming for mixed use developments.

As a mixed-use facility, this thesis project does not fall into one single typology category. Rather, it takes parts of other typologies to make up the end result. Because of this, not all of the case studies analyzed included all the necessary spaces for the program.

The case studies represent the role adaptive reuse and historic preservation play in the development of the program. The desired size for my thesis falls approximately in the middle of the sizes presented.

The importance of maintaining the historical integrity of the shell of the structure ties both the Ford Assembly Building, the Granary Lofts and the Redpath Lofts cases to the Pabst Bottling Building.

Even more closely related to the Bottling Building is the Blue Ribbon Lofts case as this project is a multi-family housing complex already located with the Brewery Development Site. This case provides not only pertinent information about the adaptability of the Brewery Complex buildings, but also allows for analysis into what the Brewery Development needs in terms of housing.

Additionally, the 3641 Holdrege Avenue case relates to the Bottling Building in a way not found in any of the other studies. The connection between interior space and exterior courtyards and the case's centralized spatial layout and circulation path lend insight into possibilities for the Pabst Bottling Building complex that the other cases lack.

Although no one case study possessed all the necessary programmatic elements for the Pabst Bottling Building, the combination of all six provides adequate insight into the building's functions.



historical context

formulating a strategy for preservation in industrial communities

Until recently, historic preservation has usually meant the conscious selection of a few outstanding historic landmarks to be preserved as museums or institutional structures. While a more mature approach has begun to be adopted in certain metropolitan cities, most towns have yet to discover the positive contribution which old buildings can make by bringing vitality to an urban district, where they are used in ways which transcend the limits of the isolated monument or historic house museum (Langenbach, 1977).



Even when economies are solidly in its favor, historic preservation can still be a difficult concept for a community to accept.

Conservation Guidelines:

- 1) Preserve mixed use within urban areas
- 2) Let the buildings be the guide!
- 3) Designate historic districts
- 4) Renovate a single structure in an area
- 5) Leave some old buildings alone
- 6) Establish a “Space Bank” for the future

In order to make the most of old buildings and districts, especially in smaller cities, mixed uses must be encouraged. The introduction of residential uses into commercial areas means that these areas can function on a twenty-four hour basis, allowing local shops the opportunity to develop a stable group of customers. (Langenbach, 1977)

Many 19th century complexes possess an expressive architecture, urban density, and human scale that most 20th century factories lack. These distinctive qualities make them ideally suited for non-industrial uses. What is important is to avoid thinking of them as being either exclusively industry, or exclusively housing, or exclusively retail shops, or exclusively anything. (Langenbach, 1977)

One important quality of old buildings is their ability to generate ideas for reuse based on their inherent qualities. Old buildings, representative of a community’s history and character, have the power to excite people into developing economic and educational activities that would not have otherwise been considered. (Langenbach, 1977)

The selection of an area as an historic district can be a positive force as it not only stimulates outside interest in the quality and heritage of the area, but also controls the changes that people are allowed to make to buildings within the district and helps to encourage them to improve their properties with a common purpose and plan. (Langenbach, 1977)



physical context

To gain an understanding of the character of the space, it is critical to be aware of the history of the physical context in which the proposed space will exist. There is a rich cultural history to the development of the Brewery site.

Incorporated in 1846 by the consolidation of three small settlements, Juneautown, Kilbourntown and Walker's Point, Milwaukee was originally a community of log and timber buildings interspersed with a few prominent structure built of brick. (Perrin, 1968)

The brewing of beer was an industry of great importance in Milwaukee's early years, and it remains that way today. The erection of the first brewery in Milwaukee came before the first flour mill, and by 1860 the city was home to twenty breweries. West Juneau Avenue was a virtual brewery row from approximately 1840 to 1870. The Empire Brewery, established in 1842 by Jacob Best, was located at North 9th Street and West Juneau Avenue. (Perrin, 1968)

The entire architectural ensemble of the Pabst Brewery has a good deal of repose in its setting at the top of the hill with old trees along Juneau Avenue adding to the effect. The walls, of Milwaukee common brick, have weathered sufficiently to provide a mellow appearance, which is a welcome contrast to the studied "brutalism" affected in so many modern buildings, industrial or otherwise. (Perrin, 1968)

In 1893, Pabst's namesake beer won a blue ribbon at an international contest and the name of the beer was changed to Pabst Blue Ribbon. Under the management of Captain Pabst and his successors, the brewery grew and prospered. Moving into more and more of its former neighborhood, it would eventually expand to over six city blocks and over 20 acres. In the 1950's the brewery was one of the most productive in the world. (The Brewery, 2007)

In the late 20th century the Pabst family sold the brewery to another entity, and the complex closed in November of 1996. The once proud giant of the brewing industry began to fade away. Its historic buildings were left to stand alone on one of the highest points in Milwaukee, in the northwest corner of downtown, waiting for something to happen. (The Brewery, 2007)



All that began to change in August of 2006 when Joseph Zilber, a philanthropist and successful nationwide real estate developer, purchased the complex. Putting together a team of senior managers from his organization, knowledgeable support staff and experts in historic renovation, remediation and sustainability, Zilber and his team began the work of transforming the Pabst Brewery into one of Milwaukee's newest and potentially greatest neighborhoods. (The Brewery, 2007)

To assure the success of the project, Zilber committed both monetary and professional resources, which were presented to city officials as part of a request to form a private/public partnership. This partnership would provide the finances necessary to offset the brewery's cost difficulties to redevelopment and lead to the implementation of a plan to prepare the site and structures for redevelopment opportunities of an unprecedented scope. The Brewery team is currently working closely with the city to save the maximum number of historic buildings and combine them with a sustainable program that utilizes the latest technologies available. (The Brewery, 2007)



project goals

academic goals

The primary academic-based goal of this thesis project is to produce an understanding of the implications history places on the [re]development of our structures. Moreover, this will be achieved through the creation of criteria by which to judge our structures to determine the success of their [re]development.

Additionally, this project aims to contribute a new device through which we may understand our architectural past and make projections for what is to come.

These academic goals are to be achieved through the execution of a quality publication that may be used by future generations to further advance their knowledge of architectural history and [re]development.





professional goals

Professional goals linked to this thesis include the production of a high quality final product and the thorough execution of research as it relates the to theoretical premise/ unifying idea.

The final result should showcase a well-developed claim, supported by raw data and presented in a way consistent with that of the professional realm of architecture. It is also imperative that this thesis come full circle and manifest itself in the thoughtful [re]design of a structure that embraces the social and cultural needs of a changing society.

personal goals

The personal goals associated with this thesis are to produce a high quality, well thought out project that can serve as a benchmark from which I can measure my future work, and to lay out a problem and solution that challenges my understanding of architecture and design.

site analysis





built environment

As the site is a part of the Pabst Brewery Complex, there are many existing structures that surround the Bottling Building site.

- 01. Bottling Building (Site)
 - 02. Shipping Center
 - 03. Manufacturing & Cold Storage
 - 04. Keg House*
 - 05. Boiler House*
 - 06. Research Lab*
 - 07. Paint Shop*
 - 08. Grain Silos
 - 09. Brew House
 - 10. Mill House
 - 11. First German Methodist Church
 - 12. Malt Elevator
 - 13. Malt House
 - 14. Parking Ramp (New Construction)
- * indicates structures that have been renovated

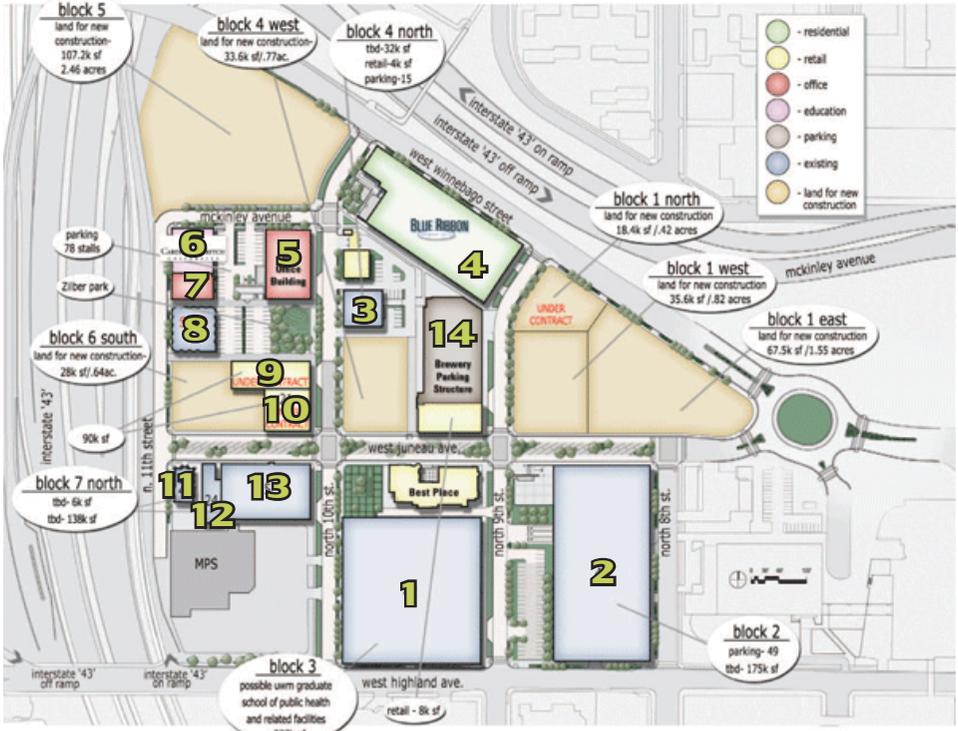


Figure 1.6
Pabst Brewery Complex [Re]development Site Plan



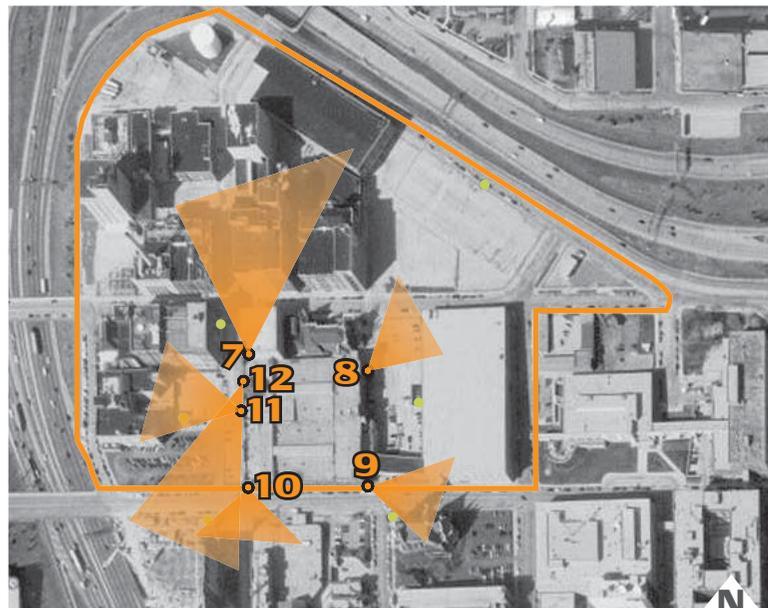
photographic inventory



Figure 3.1
Views looking
inward at the site



Figure 3.2
Views looking
outward from the
site



01 Figure 3.3
View of the NW corner of the
Bottling Building



02 Figure 3.4
View of the NE corner of the
Bottling Building and the Best
Place Building



03 Figure 3.5
View of the E facade of the
Bottling Building



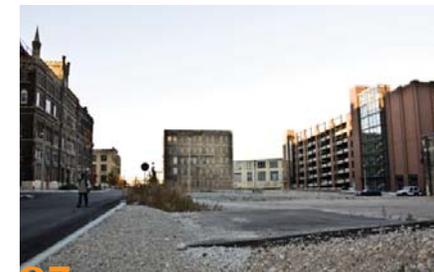
04 Figure 3.6
View of the SE corner of the
Bottling Building



05 Figure 3.7
View of the SW corner of the
Bottling Building



06 Figure 3.8
View of the W facade of the
Bottling Building



07 Figure 3.9
View from the NW corner of
the Bottling Building showing
the Brew House and the
Parking Structure



08 Figure 3.10
View from the NE corner of the
Bottling Building showing the
Shipping Building



09 Figure 3.11
View from the SE corner of the
Bottling Building showing the
Shipping Building and Trinity
Evangelical Lutheran Church



10 Figure 3.12
View from the SW corner of
the Bottling Building



11 Figure 3.13
View from the W facade of the
Bottling Building showing the
public schools building and the
Malt Elevator and Malt House

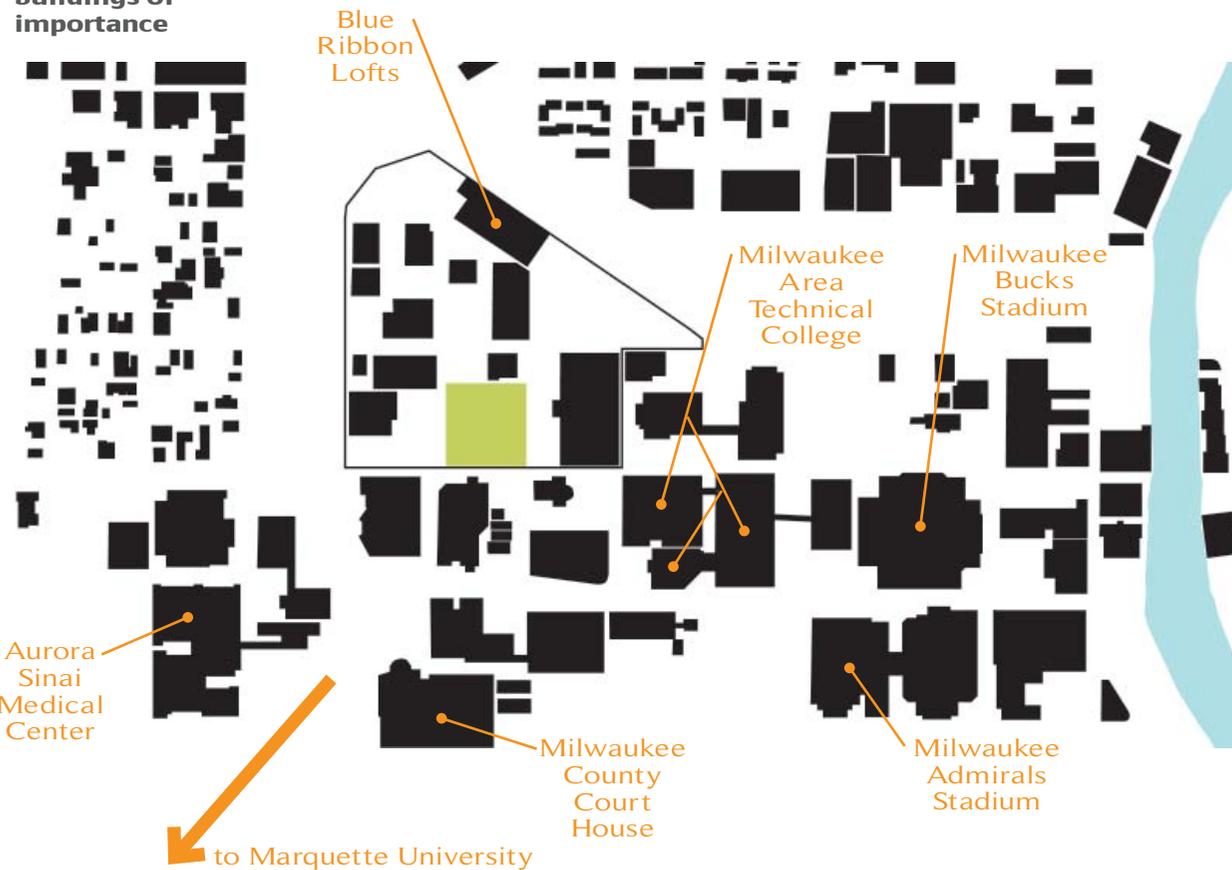


12 Figure 3.14
View looking S from the NW
corner of the Bottling Building

human characteristics

Although the Brewery Complex is not the bustling manufacturing center that it once was, there still remains a large amount of human interaction with this site. The complex's proximity to the Aurora Sinai Medical Center, Marquette University, the Milwaukee Area Technical College, the Milwaukee County Court House and stadiums for both the Milwaukee Admirals and Milwaukee Bucks ensures that the complex sees human interaction in the form of pedestrian movement and vehicular traffic throughout most hours of the day. Additionally, as the complex continues to develop its residential function, this interaction will increase and bring new types of activity.

Figure 3.15
Figure/ground showing the proximity between the site and surrounding buildings of importance



figure/ground studies



the Bottling Building (site), the Brewery Complex, existing buildings, undeveloped sites, green space/parks, the street grid and parking



the Bottling Building (site), the Brewery Complex and existing buildings



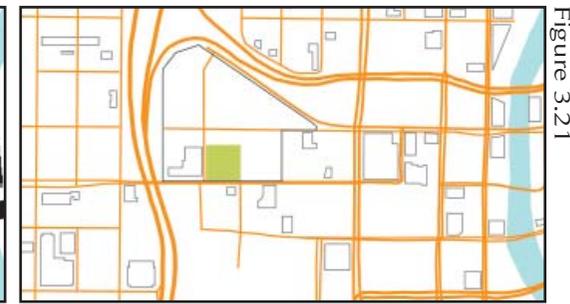
the Bottling Building (site), the Brewery Complex and the street grid



the Bottling Building (site), the Brewery complex, existing buildings and undeveloped sites



the Bottling Building (site), the Brewery Complex, undeveloped sites and green space/parks



the Bottling Building (site), the Brewery complex, the street grid and parking

textures

The textures that occur on and around the site add greatly to the character of the place. There is a rough texture, with brick on the facades of the buildings, along with a woven texture from nets which cover portions of the building. The rocky surface of the gravel and the semi-smooth surface of the porous pavement that cover the ground surrounding the building differ greatly in texture. An additional natural organic texture can be found in the bioswales that line several of the complex's streets.

distress

Due to the age of the Pabst Brewery site, there are multiple forms of distress that are visible. Many of the existing structures are abandoned and have been empty for over ten years, leaving them in a rundown condition. Sections of streets throughout the complex have been torn up and replaced, yet some sections still remain deteriorated. The developer has begun some site work to deal with storm water management, but the overall site still lacks vegetation.

light quality

The buildings located to the south of the structure are only a single story in height, allowing for an unobstructed southern exposure. The Malt Elevator and Best Place buildings to the north and northwest of the site, however cast shadows onto a large part of the structure in the late afternoons.

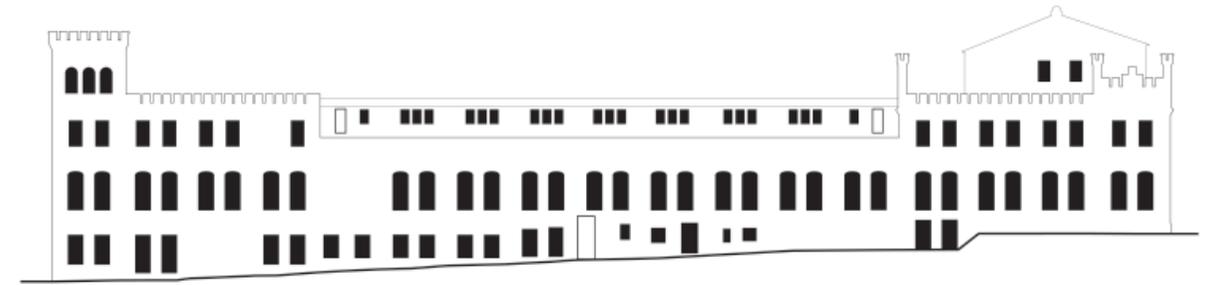


Figure 3.22
North Elevation - Existing Doors and Fenestrations

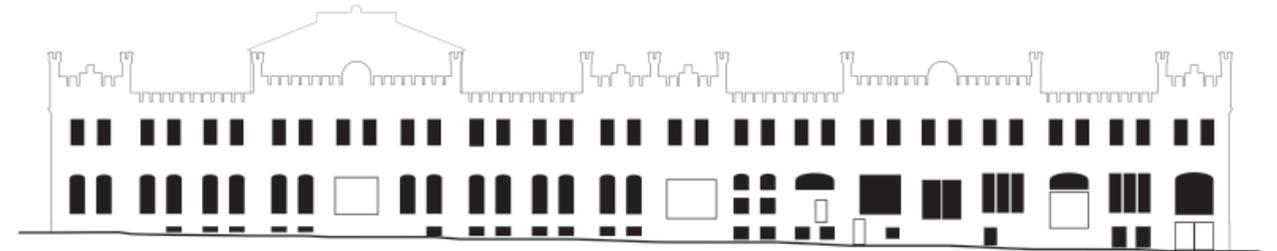


Figure 3.23
West Elevation - Existing Doors and Fenestrations

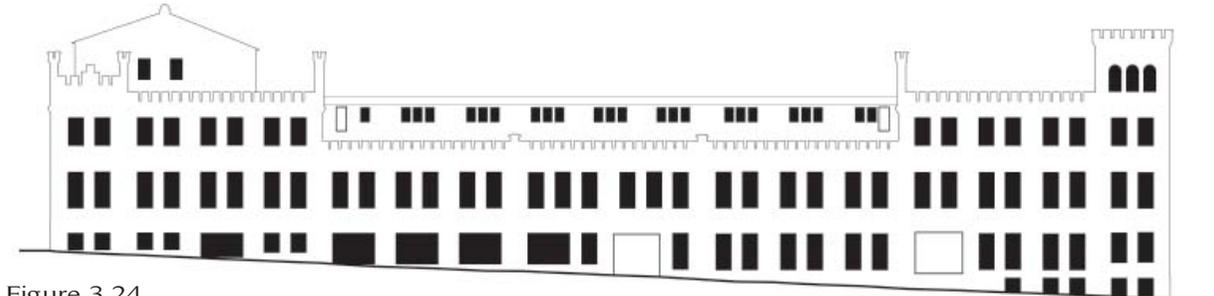


Figure 3.24
South Elevation - Existing Doors and Fenestrations

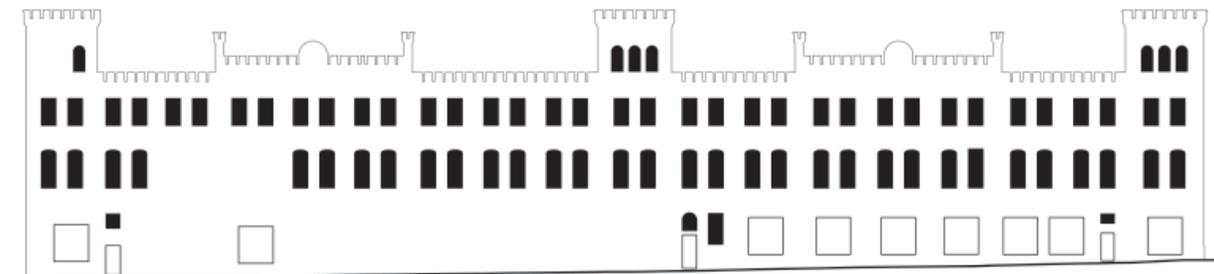


Figure 3.25
East Elevation - Existing Doors and Fenestrations

wind

The Pabst Brewery Complex sits atop one of the highest points in Milwaukee, leaving it vulnerable to increased winds. The amount of wind on site, however, has the potential to be a positive attribute. Through the utilization of microturbines, wind energy can be collected and converted into mechanical and electrical energy to be used on site, reducing the complex's dependence on the grid.

traffic

The site is surrounded on all sides by paved city streets.

W. Highland Avenue, which runs along the south side of the site, is a major connecting link between the downtown area and Interstate 43.

W. Juneau Avenue to the North functions as the primary entrance to the complex and provides a direct link to the complex's parking structure.

N. 10th Street to the West and N. 9th Street to the East, divide the complex into thirds and serve as the North/South connections between W. Winnebago Street and W. Highland Avenue. N. 9th and 10th Streets are also the primary routes of pedestrian traffic past the site as they lead to both the complex's parking structure and the Blue Ribbon Lofts.

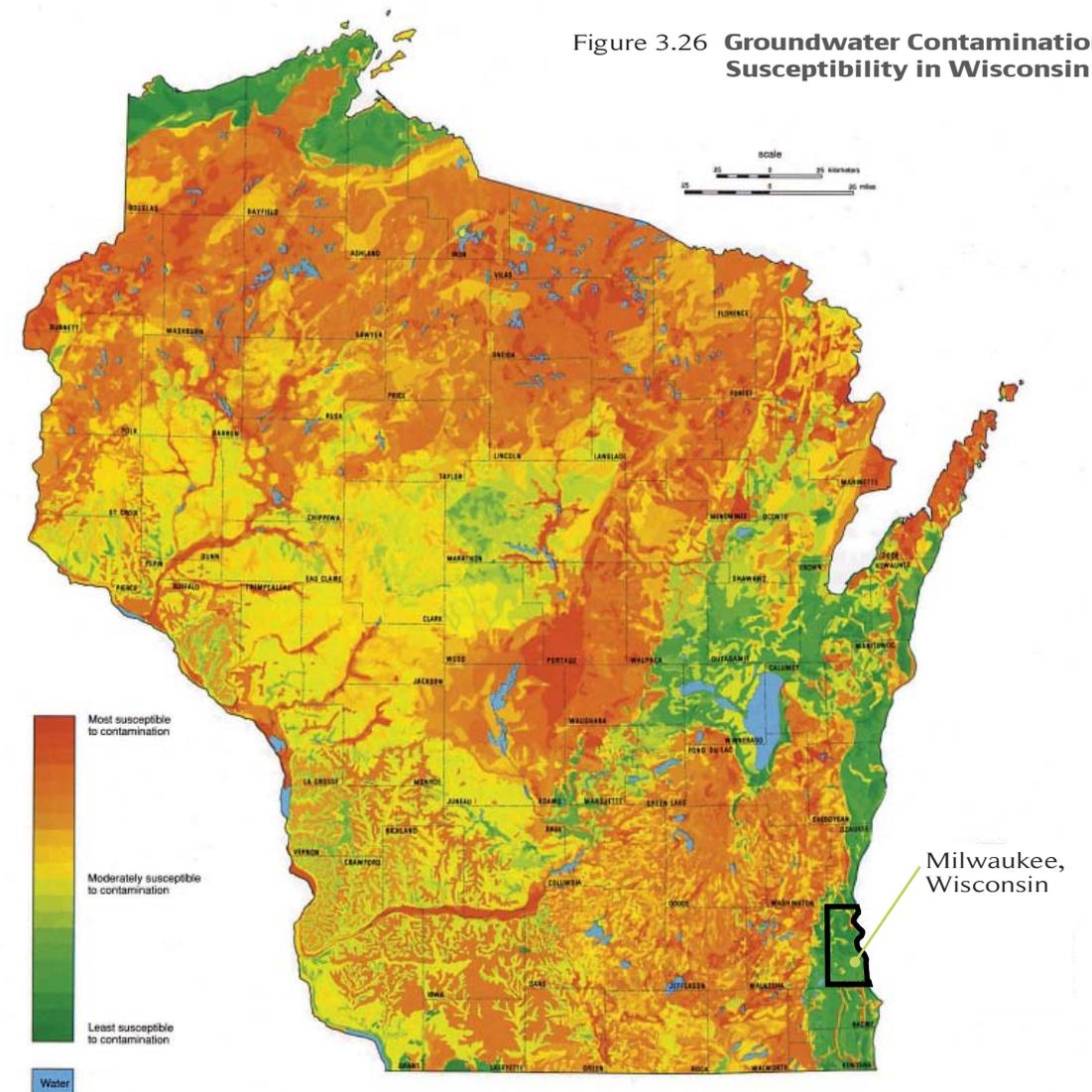
noise

The primary noise that can be heard around the site is transportation based. Vehicular traffic on W. Highland Avenue and N. 9th and 10th Streets, as well as the nearby Interstate 43, produces noise that can be heard on the site.

water management

The storm water management design is possibly the most notable sustainable element of the complex. The design will separate the surface water and aggressively capture, contain and treat storm water within virtually all of the site. In order to do this, the design incorporates bioswales that take advantage of the northwest to southeast water flow and porous pavement areas that are linked to underground detention tanks.

Figure 3.26 **Groundwater Contamination Susceptibility in Wisconsin**



mapping topography

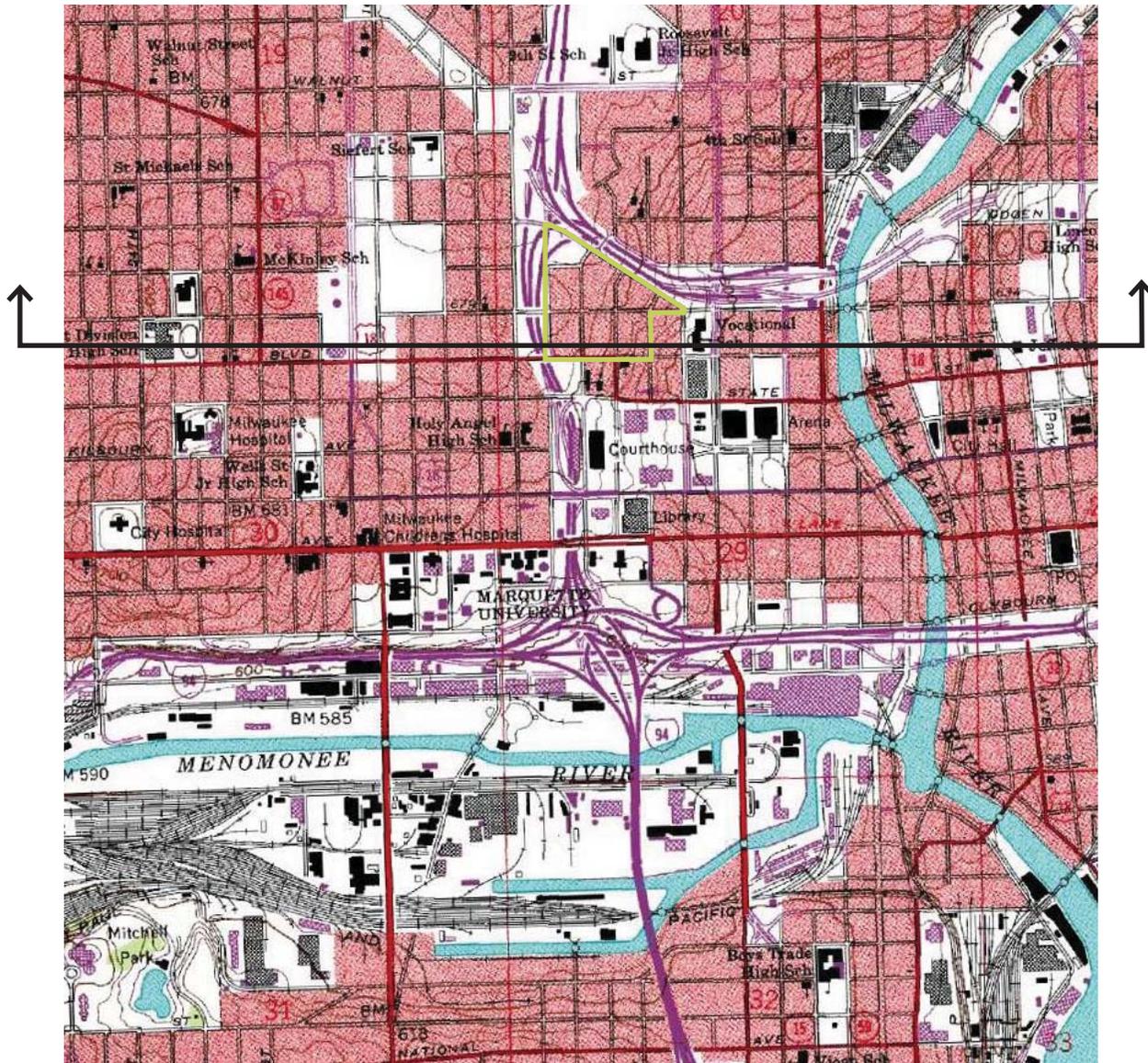


Figure 3.30 GIS Topographical Map of Milwaukee, Wisconsin

utilities

All modern utilities already exist on the site and are primarily contained underground. Above ground, remnants of the complex's past such as the fire hydrant and mailbox, both pictured below, remind us of another time.



Figure 3.31



Figure 3.32

site section

The Pabst Brewery Complex sits atop one of the highest points in Milwaukee. As can be observed from the site section, there is approximately a 10 foot drop across the site from west to east.



Figure 3.33 West-East cut through the site



site statistics



Figure 3.34
temperature

The graph depicts the annual average temperature for Milwaukee, WI, as well as the average high temperature (the upper line) and average low temperature (the lower line).

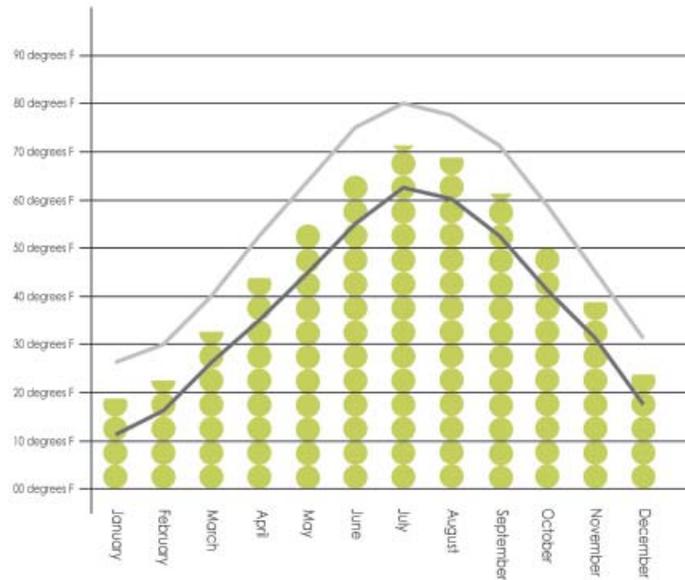


Figure 3.35
humidity

The graph depicts the annual average relative humidity as well as the average humidity levels for morning (the upper line) and afternoon (the lower line) for the city of Milwaukee, WI.

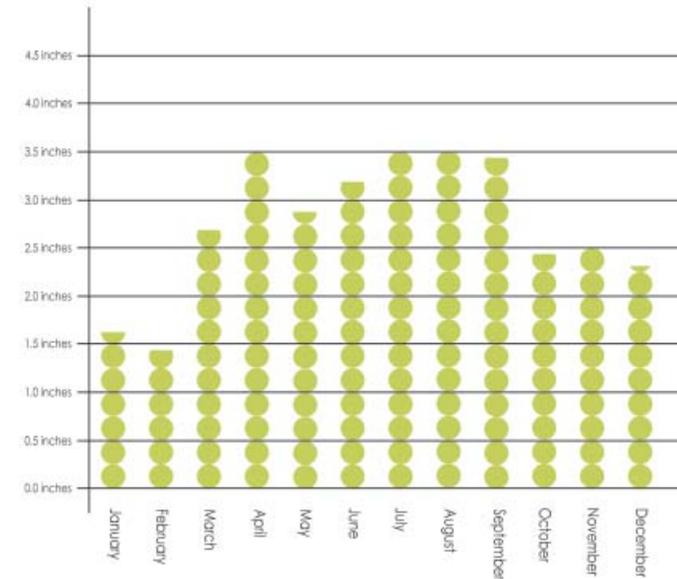
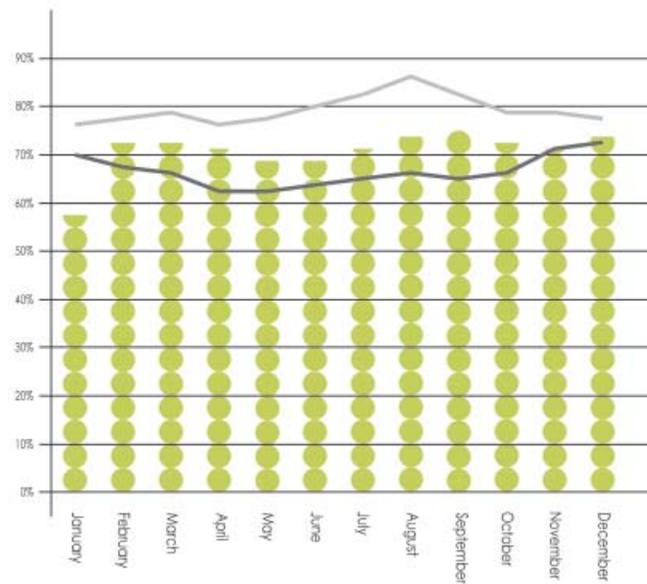


Figure 3.36
precipitation

The graph depicts the average levels of precipitation for Milwaukee, WI.

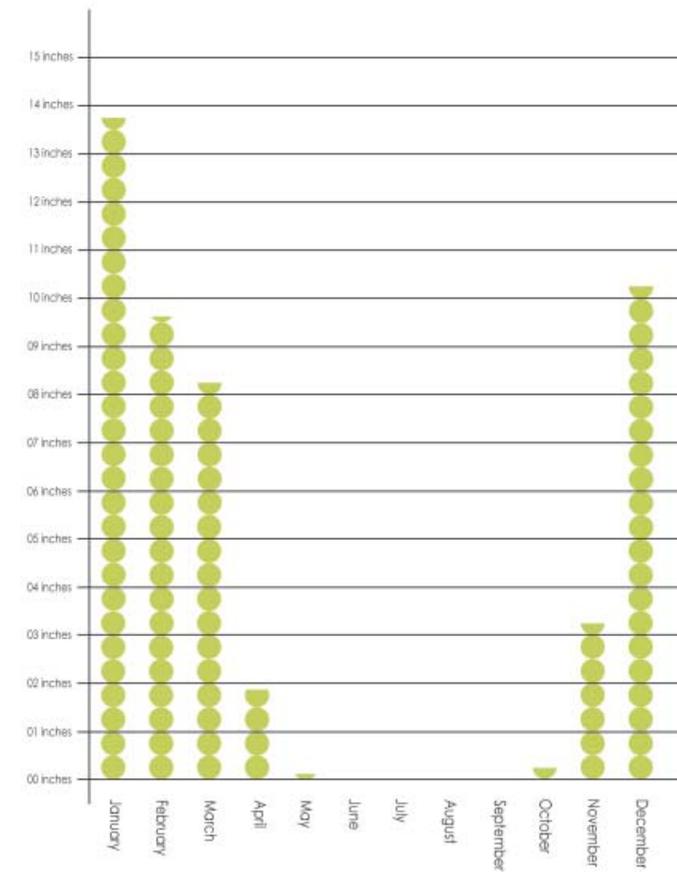


Figure 3.37
snowfall

The graph depicts the amount of average monthly snowfall for the city of Milwaukee, WI.



Figure 3.38

sunshine

The graph depicts the percent of possible sunshine for Milwaukee, WI.

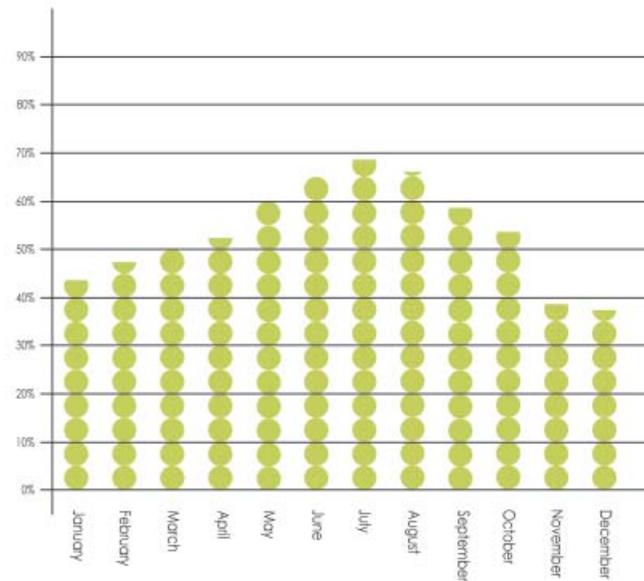


Figure 3.39

wind speed

The graph depicts the average wind speed per month for the city of Milwaukee, WI.

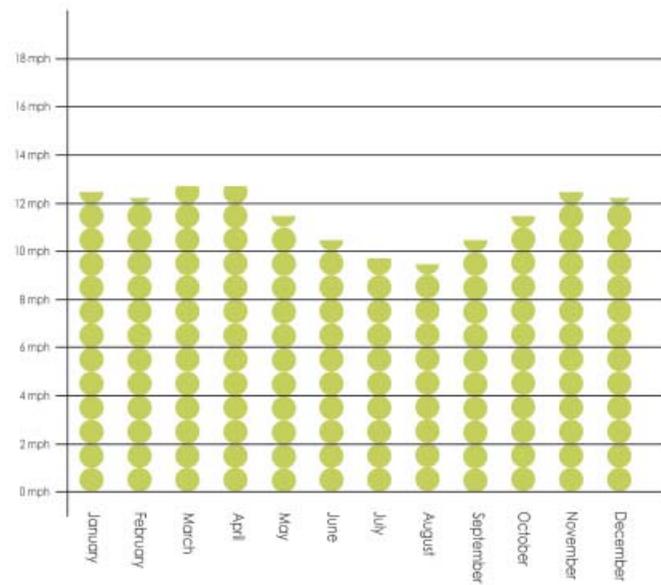
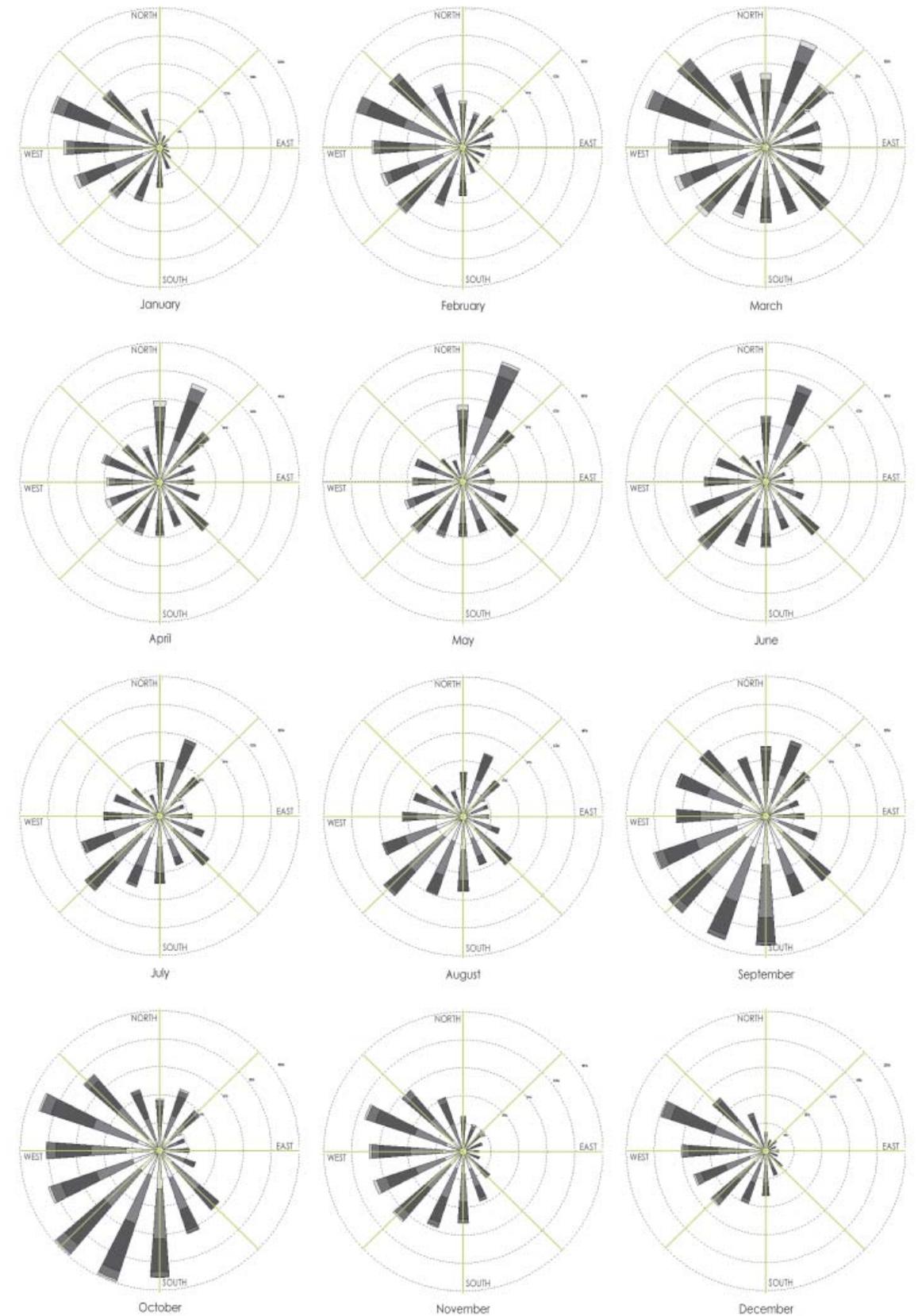
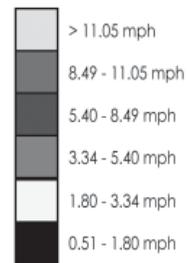


Figure 3.40

wind direction

The graphs on the adjacent page represent the speed of wind, as well as the percentage of time the wind comes from a certain direction for the city of Milwaukee, WI, for each month of the year. The most common winds for this area come from the south-southwest, the west and the north-northwest with occasional gusts from the north-northeast.

WIND SPEEDS



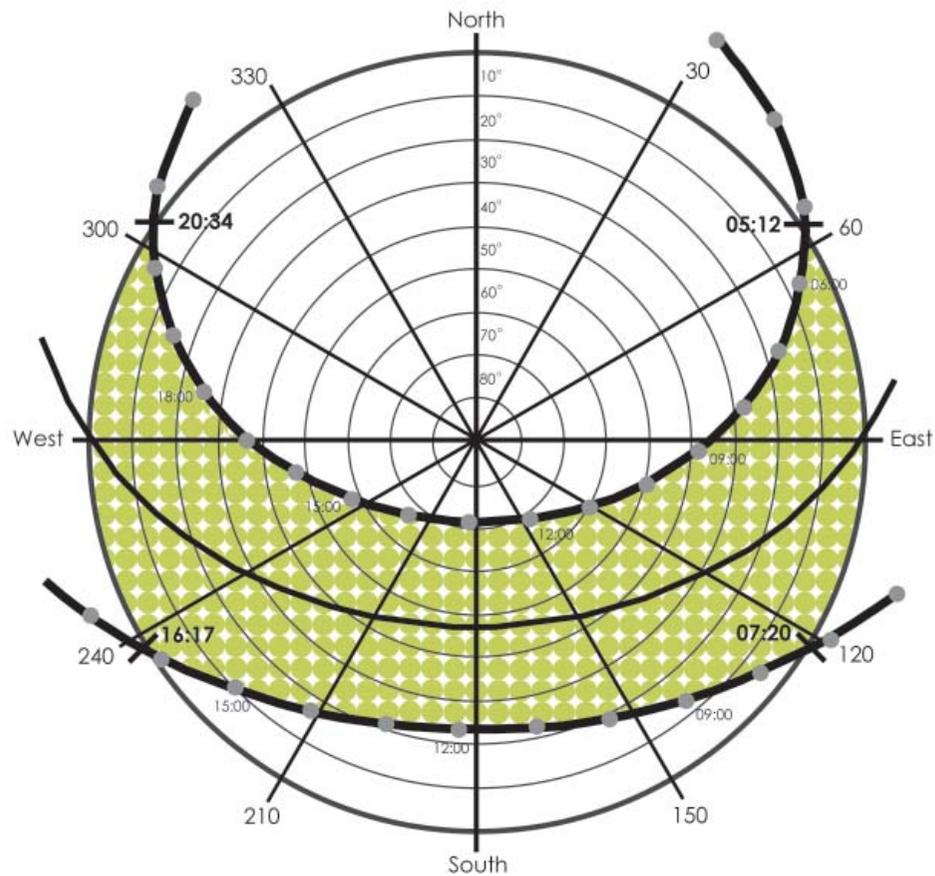


Figure 3.41

sun path diagram

The graph represents the sun's relationship to the earth at varying points of the year. The upper line is the sun's path, including the times of sunrise and sunset, on the summer solstice (June 21). The line in the middle is the sun's path around the earth on both the vernal and autumnal equinoxes. The lower line corresponds to the sun's path on the winter solstice (December 21).

programmatic requirements

retail	restaurant: the bottling building 18 000 sq. ft.	grocery store: food co-op 77 000 sq. ft.
	workout: fitness center 9 500 sq. ft.	speculative retail: leasable space 18 000 sq. ft.

commercial	commercial office: leasable space 53 500 sq. ft.
-------------------	--

residential	public space: common areas 7 000 sq. ft.	private space: residential units 40 000 sq. ft.
--------------------	--	---

misc.	service spaces: mech. & elec. rooms 10 000 sq. ft.	circulation: elevators 4 000 sq. ft.
--------------	--	--

TOTAL 237 000 sq. ft.

restaurant: the bottling building

Arrival/Waiting Area	500 sq. ft.
Coat Room	100 sq. ft.
Bar Area (Patrons)	3 000 sq. ft.
Bar (Service)	500 sq. ft.
Dining Area (Main)	5 500 sq. ft.
Dining Area (Private)	500 sq. ft.
Wait Stations	300 sq. ft. (03 @ 100 sq. ft.)
Beer Cove/Bottling	1 000 sq. ft.
Kitchen	3 000 sq. ft.
Storage (Dry/Cold)	1 000 sq. ft.
Restrooms (Male)	300 sq. ft.
Restrooms (Female)	300 sq. ft.
Office/Staff Area	350 sq. ft.
Restrooms (Staff)	150 sq. ft.
Circulation	1 500 sq. ft.
TOTAL AREA	18 000 sq. ft.

grocery store: food co-op

Entrance	1 000 sq. ft.
Shopping Floor	30 000 sq. ft.
Specialty Areas	10 000 sq. ft.
Check-out/ Registers	1 000 sq. ft.
Storage (Dry)	8 000 sq. ft.
Storage (Cold)	8 000 sq. ft.
Restrooms (Male)	500 sq. ft.
Restrooms (Female)	500 sq. ft.
Offices/Staff Area	1 500 sq. ft.
Loading/Receiving	4 000 sq. ft.
Restrooms (Staff)	500 sq. ft.
Circulation	7 000 sq. ft.
TOTAL AREA	72 000 sq. ft.

speculative retail: leasable spaces

Leasable Space	4 500 sq. ft. (01 @ 4 500 sq. ft.)
Leasable Space	4 000 sq. ft. (01 @ 4 000 sq. ft.)
Leasable Space	3 500 sq. ft. (01 @ 3 500 sq. ft.)
Leasable Space	6 000 sq. ft. (02 @ 3 000 sq. ft.)
TOTAL AREA	18 000 sq. ft.



workout: fitness center

Lobby	500 sq. ft.
Info Desk/Check-In	200 sq. ft.
Staff Offices	300 sq. ft. (02 @ 150 sq. ft.)
Locker Room (Male)	1 000 sq. ft.
Locker Room (Female)	1 000 sq. ft.
Freeweights	1 500 sq. ft.
Workout Equipment	2 000 sq. ft.
Aerobic Equipment	2 000 sq. ft.
Tanning Beds	400 sq. ft. (4 @ 100 sq. ft.)
Laundry	100 sq. ft.
Circulation	500 sq. ft.
TOTAL AREA	9 500 sq. ft.

commercial office: leasable spaces

Leasable Space	30 000 sq. ft. (03 @ 10 000 sq. ft.)
Leasable Space	16 000 sq. ft. (02 @ 8 000 sq. ft.)
Leasable Space	7 500 sq. ft. (01 @ 7 500 sq. ft.)
TOTAL AREA	53 500 sq. ft.

private space: residential units

Efficiency Apartment	3 600 sq. ft. (06 @ 600 sq. ft.)
1 Bedroom Apartment	9 600 sq. ft. (08 @ 1 200 sq. ft.)
2 Bedroom Apartment	13 600 sq. ft. (08 @ 1 700 sq. ft.)
3 Bedroom Apartment	13 200 sq. ft. (06 @ 2 200 sq. ft.)
TOTAL AREA	40 000 sq. ft.

public space: common areas

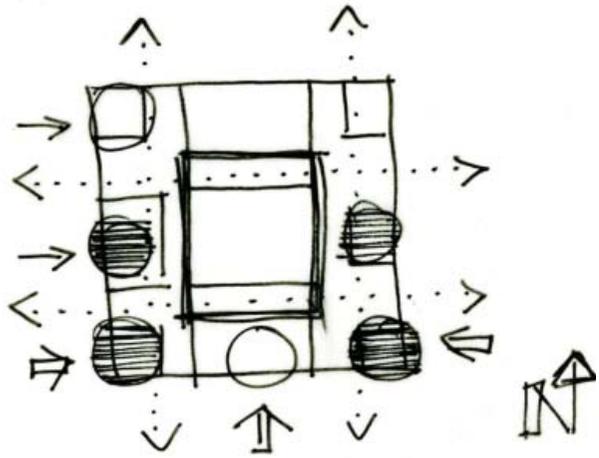
Lobby/Entrance Space	1000 sq. ft.
Rental Office	400 sq. ft.
Mailboxes	200 sq. ft.
Waste/Recycling	500 sq. ft.
Community Room	1 800 sq. ft. (02 @ 900 sq. ft.)
Laundry Room	600 sq. ft. (04 @ 150 sq. ft.)
Circulation	2 500 sq. ft.
TOTAL AREA	7 000 sq. ft.



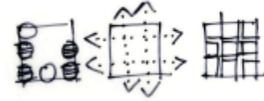


process work



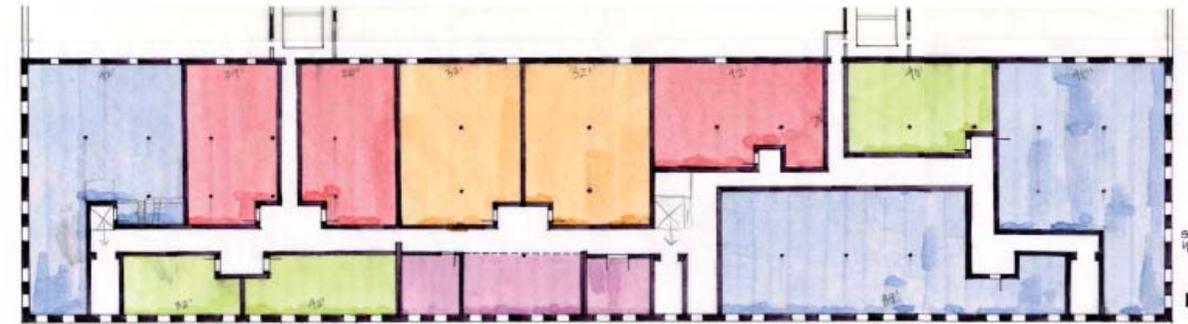
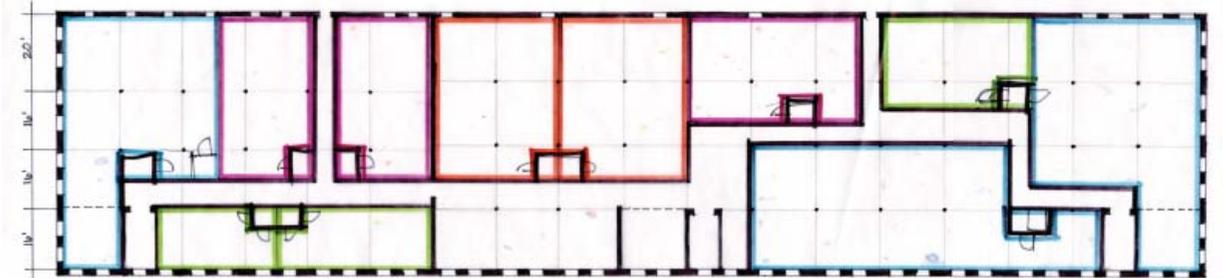
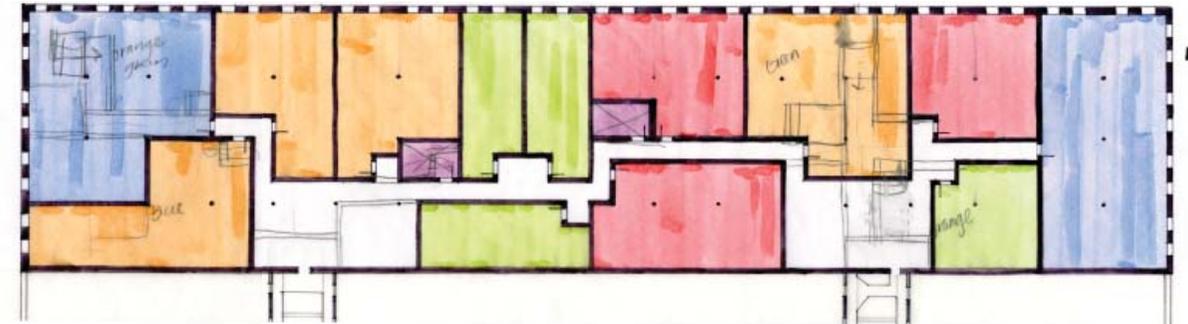
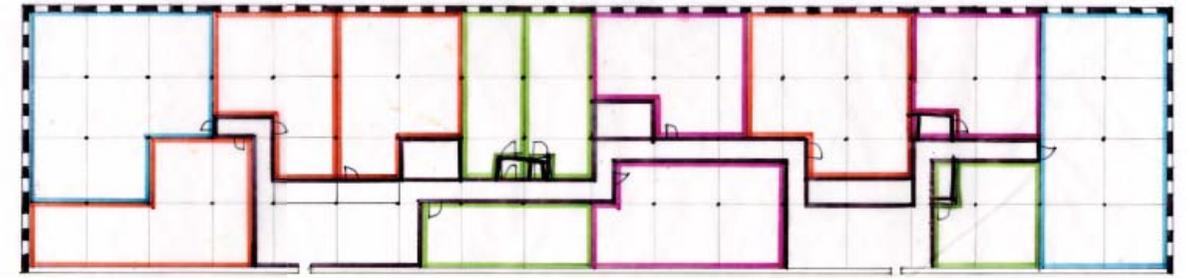


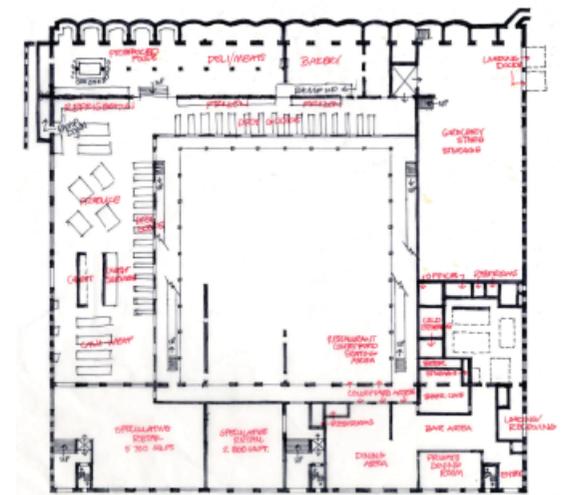
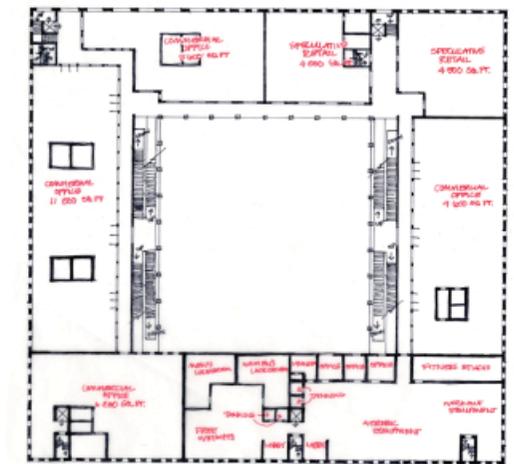
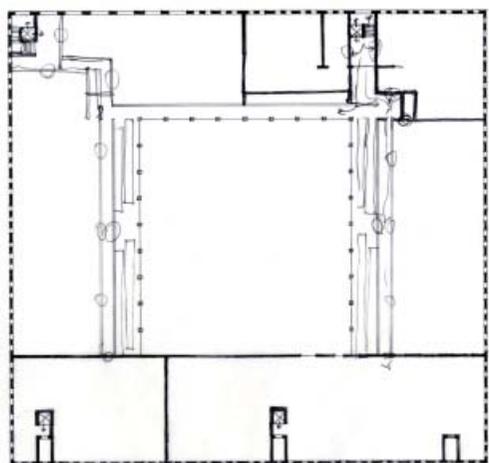
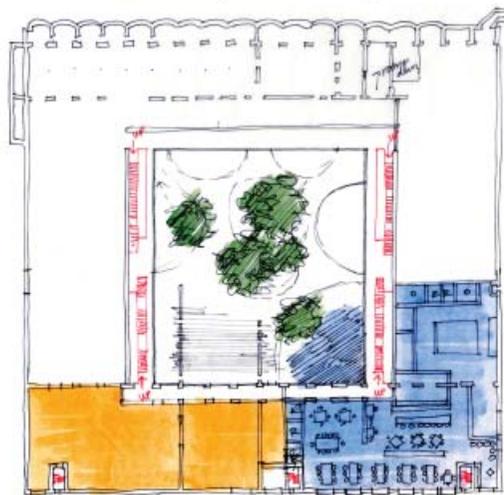
- PROMINENT ENTRY
- SECONDARY ENTRY
- HORIZONTAL TRANSPORTATION
- ENTRANCE
- VERTICAL TRANSPORTATION



	RESTAURANT										GROCERY STORE										FITNESS CENTER/DYM									
	ENTRY	BAR	CHINA	WAIT	RESTROOM	OFFICE	CIRCULATION	ENTRY	RESTROOM	SPECIALTY	PREP	RESTROOM	OFFICE	LOADING	CIRCULATION	ENTRY	LOCKER	RESTROOM	WEIGHT	WEIGHT	RESTROOM	LAUNDRY	CIRCULATION							
NATURAL LIGHT																														
ARTIFICIAL LIGHT																														
DESIGNED FLOOR																														
CHANGING																														
PUBLIC																														
PRIVATE																														
VIEW OUTDOOR																														
ACCESSIBLE																														
VISIBILITY FROM OUTSIDE																														

	SPECULATIVE RETAIL										COMMERCIAL OFFICE SPACE										RESIDENTIAL SPACE									
	ENTRY	SALES	RECEPTION	STORAGE	RESTROOM	KITCHEN	OFFICE	CIRCULATION	ENTRY	OFFICE	RESTROOM	KITCHEN	OFFICE	STORAGE	LIBRARY	ENTRY	RESTROOM	BATHROOM	CLAYTON	STORAGE	ENTRY	RESTROOM	LAUNDRY	CIRCULATION						
NATURAL LIGHT																														
ARTIFICIAL LIGHT																														
DESIGNED FLOOR																														
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VIEW OUTDOOR																														
ACCESSIBLE																														
VISIBILITY FROM OUTSIDE																														



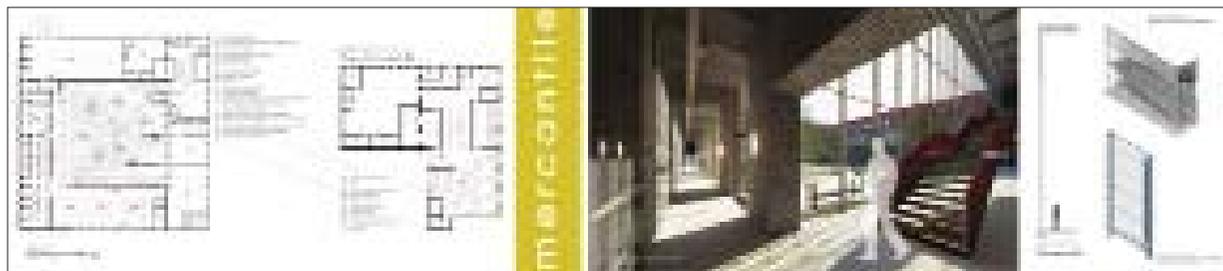


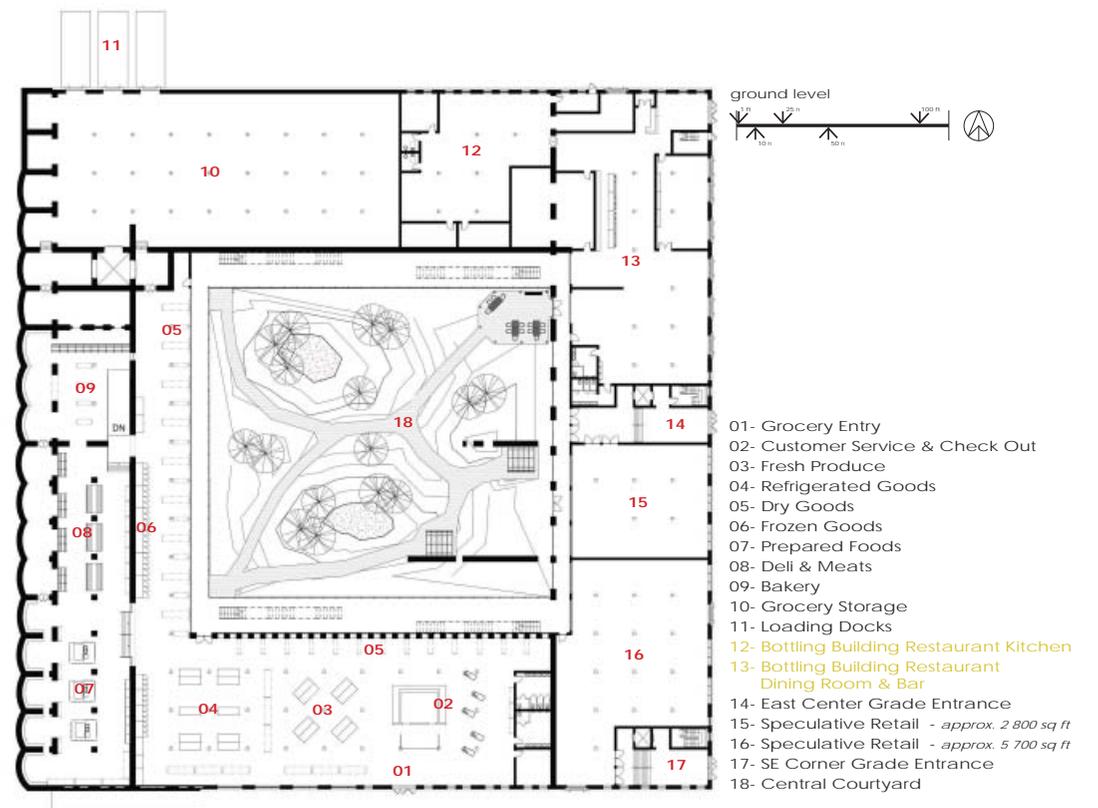


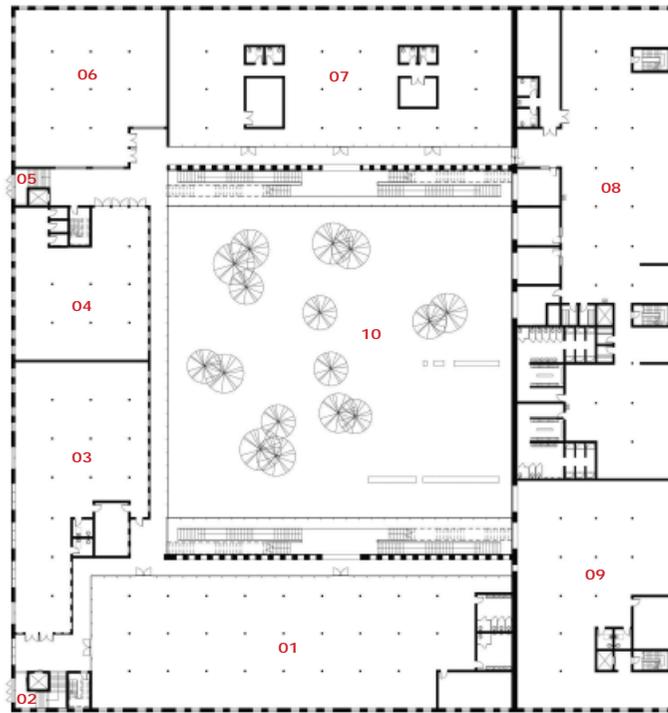
design solution



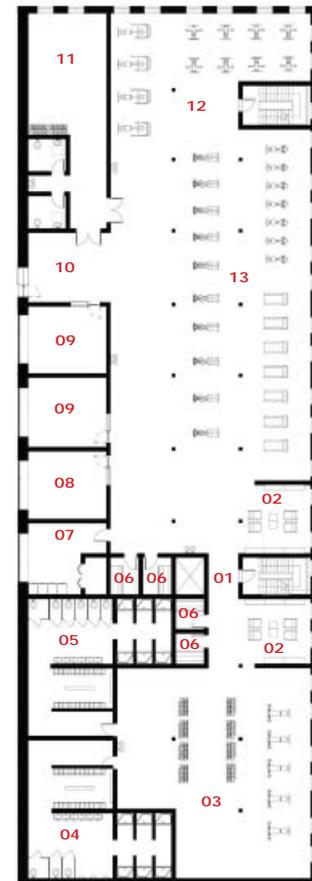
final boards



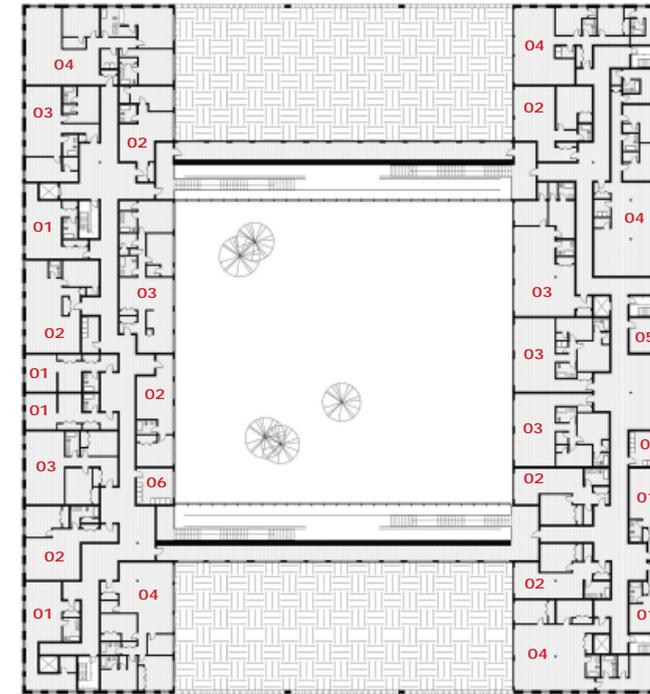




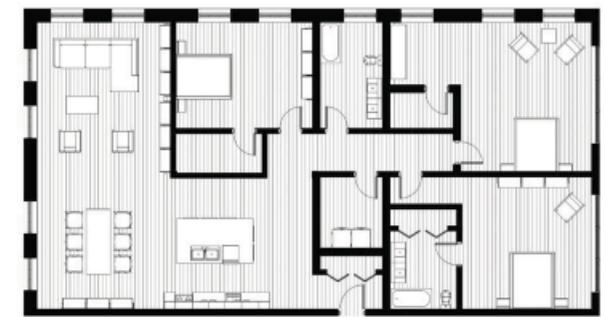
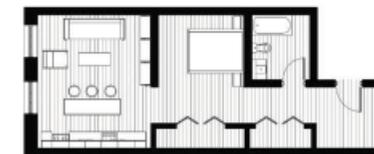
- 01- Commercial Office Space - approx. 11 500 sq ft
- 02- SW Corner Grade Entrance
- 03- Commercial Office Space - approx. 5 600 sq ft
- 04- Speculative Retail - approx. 4 000 sq ft
- 05- West Center Grade Entrance
- 06- Speculative Retail - approx. 4 500 sq ft
- 07- Commercial Office Space - approx. 9 600 sq ft
- 08- Fitness Center
- 09- Commercial Office Space - approx. 6 200 sq ft
- 10- Central Courtyard

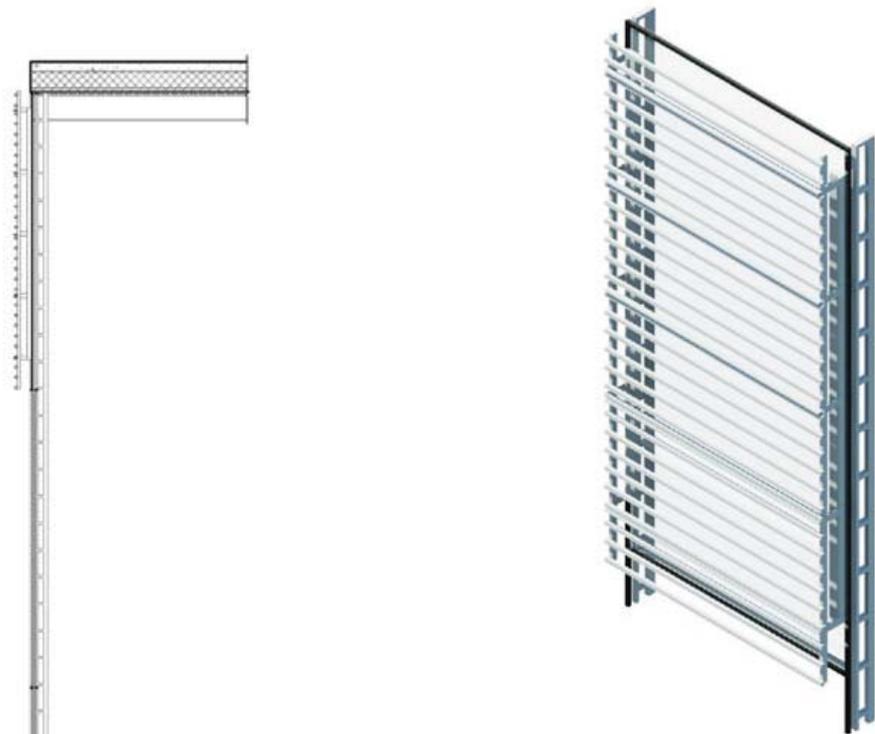


- 01- Main Entry
- 02- Lounge Space
- 03- Free Weights
- 04- Men's Locker Room
- 05- Women's Locker Room
- 06- Tanning Bed
- 07- Laundry/Storage/Mechanical
- 08- Fitness Center Main Office
- 09- Personal Trainer's Office
- 10- Secondary Entry
- 11- Fitness Studio
- 12- Workout Equipment
- 13- Aerobic Equipment

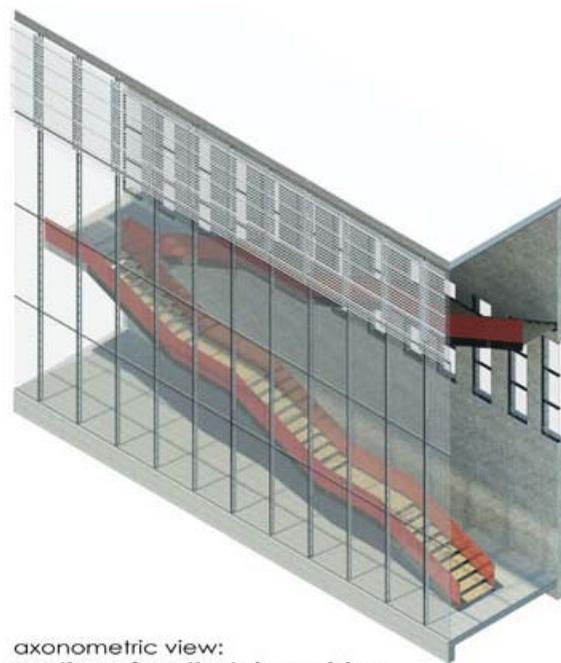
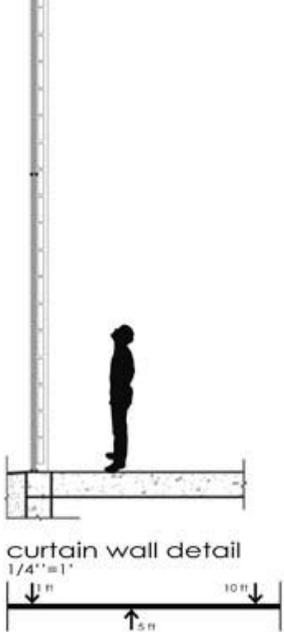


- 01- Efficiency Apartment
- 02- One Bedroom Apartment
- 03- Two Bedroom Apartment
- 04- Three Bedroom Apartment
- 05- Office/Mailroom
- 06- Laundry
- 07- Community Space





axonometric view:
custom sun shade and mullions
 Autodesk Revit Architecture 2011



axonometric view:
section of north stair corridor
 Autodesk Revit Architecture 2011



sectional perspective:
east to west cut looking north
 Autodesk Revit Architecture 2011, Adobe Photoshop CS3



proposed east elevation
 Autodesk Revit Architecture 2011, Adobe Photoshop CS3

existing west elevation



existing east elevation



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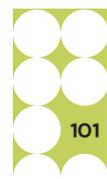
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Image taken from: <http://www.medusagroup.pl/>
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- figure 2.2.9 **Levels 01-03 - the Granary Lofts**
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Image taken from: <http://www.fieldpaoli.com/>
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Image taken from: http://archrecord.construction.com/projects/bts/archives/retail/07_beverly/slide_8.asp



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Image taken from: http://archrecord.construction.com/projects/bts/archives/retail/07_beverly/slide_5.asp
- figure 3.1 **Views looking inward at the site**
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Photograph courtesy of Emily Nicole Photography

“Imagination is the beginning of creation. You imagine what you desire, you will what you imagine and at last you create what you will.”

-George Bernard Shaw

