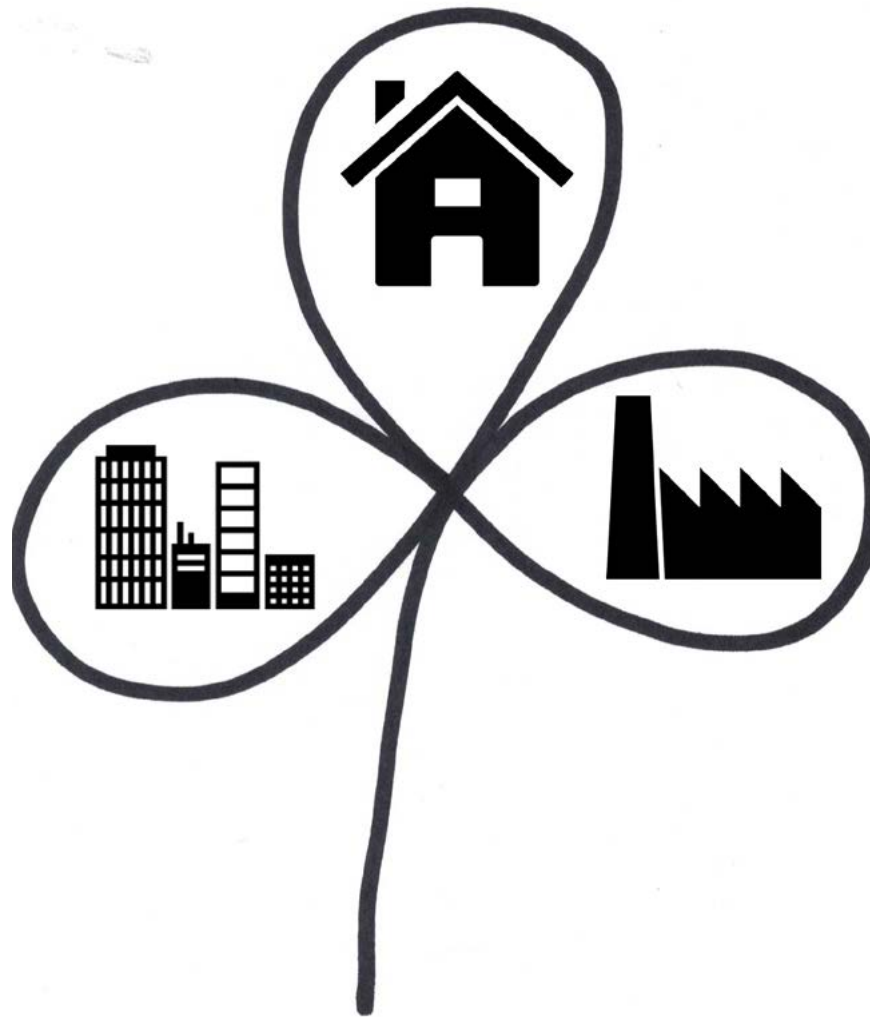


BREWING UP A COMMUNITY



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BREWING UP A COMMUNITY


A Design Thesis Submitted to the
Department of Architecture and Landscape Architecture
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By

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Primary Thesis Advisor


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Table of Contents

Page

Contents

1	Statement of Intent
3	Abstract
6	Theoretical Premise/Unifying Idea
7	Proposal
9	Narrative
13	Major Project Elements
14	Site
17	Project Emphasis
19	Schedule
23	Program
25	TP/UI Research
39	Typological Research
57	Historical Context
65	Site Research
82	Interaction Studies
87	Final Documentation
88	Process Documentation
96	Midterm Review
102	Final Design
122	Reference list
125	Personal Identification

Tables and Figures

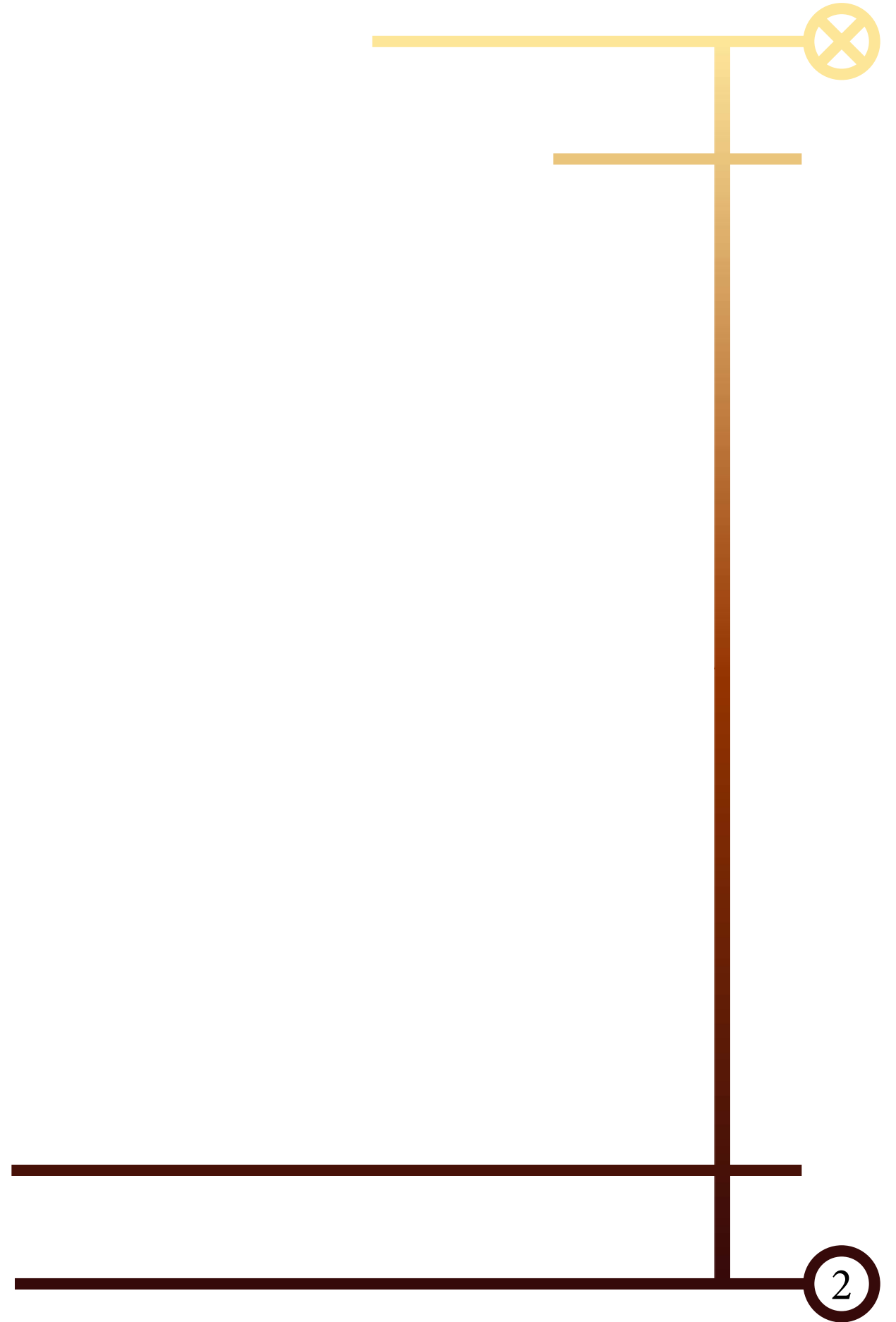
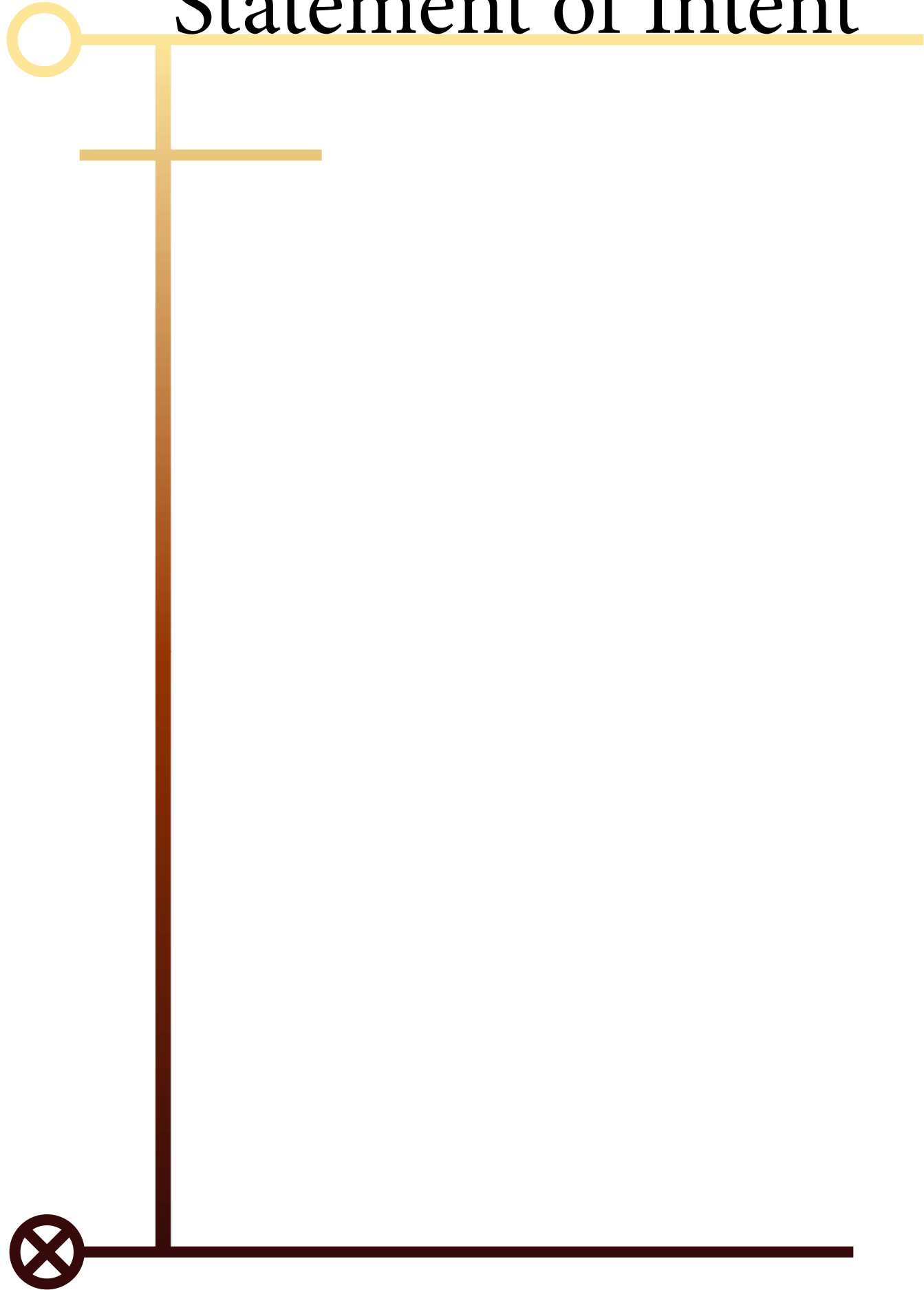
Page Contents

14	F. 1
15	F. 2
16	F. 3
28	F. 4
32	F. 5
39	F. 6
40	F. 7
41	F. 8
41	F. 9
41	F. 10
42	F. 11
42	F. 12
42	F. 13
42	F. 14
44	F. 15
44	F. 16
46	F. 17
46	F. 18
47	F. 19
47	F. 20
47	F. 21
48	F. 22
50	F. 23
50	F. 24
51	F. 25
52	F. 26
52	F. 27
52	F. 28
53	F. 29
53	F. 30
53	F. 32
62	F. 33
69	F. 34
71	F. 35
72	F. 36
73	F. 37
73	F. 38
74	F. 39
76	F. 40
76	F. 41

Page Contents

77	F. 42
78	F. 43
79	F. 44
79	F. 45
80	F. 46
83	F. 47
84	F. 48
85	F. 49

Statement of Intent



Statement of Intent

Abstract

This thesis begins to answer the question: through design how can different zoning types, such as commercial and industrial, be built to create a hybrid structure that would complement each zoning type? The Typology used for the examination of this problem is a 30,000 square foot Destination Brewpub. The Theoretical Premise/Unifying Idea that will guide the research is: "Approaching an integrated design with a holistic view draws upon multiple influences that, when combined, create new design opportunities and solutions." The Project Justification is: With increasing industries, mixed-use buildings provide new jobs and products. These buildings must be looked at in a holistic sense in order to integrate them into the community. The site for the project is located in Fargo, North Dakota.

Title: Brewing up a Community

Key words: Brewery, Mixed-Use Development, infill, Neighborhood enrichment

Problem Statement

Through design, how can different zoning types, such as commercial and industrial, be combined to create a hybrid structures that would complement each zoning type?

Statement of Intent

Project Typology

Destination Brewpub

Claim

By integrating the techniques and needs of diverse zoning types an integrated design can be created to improve overall performance.

Actor - Diverse Zoning Types
Action - Integrating techniques and needs
Object - Integrated design
Manner - Improve overall performance

Premises

The use of smart zoning and improved technologies can be combined to create a hybrid typology, which allows for new opportunities in employment and production.

A holistic view will be taken to examine programmatic and functional overlaps found in the building's processes and needs in order to create a deeply integrated system.

A developed form that draws upon a wide range of influences, will allow for future growth.

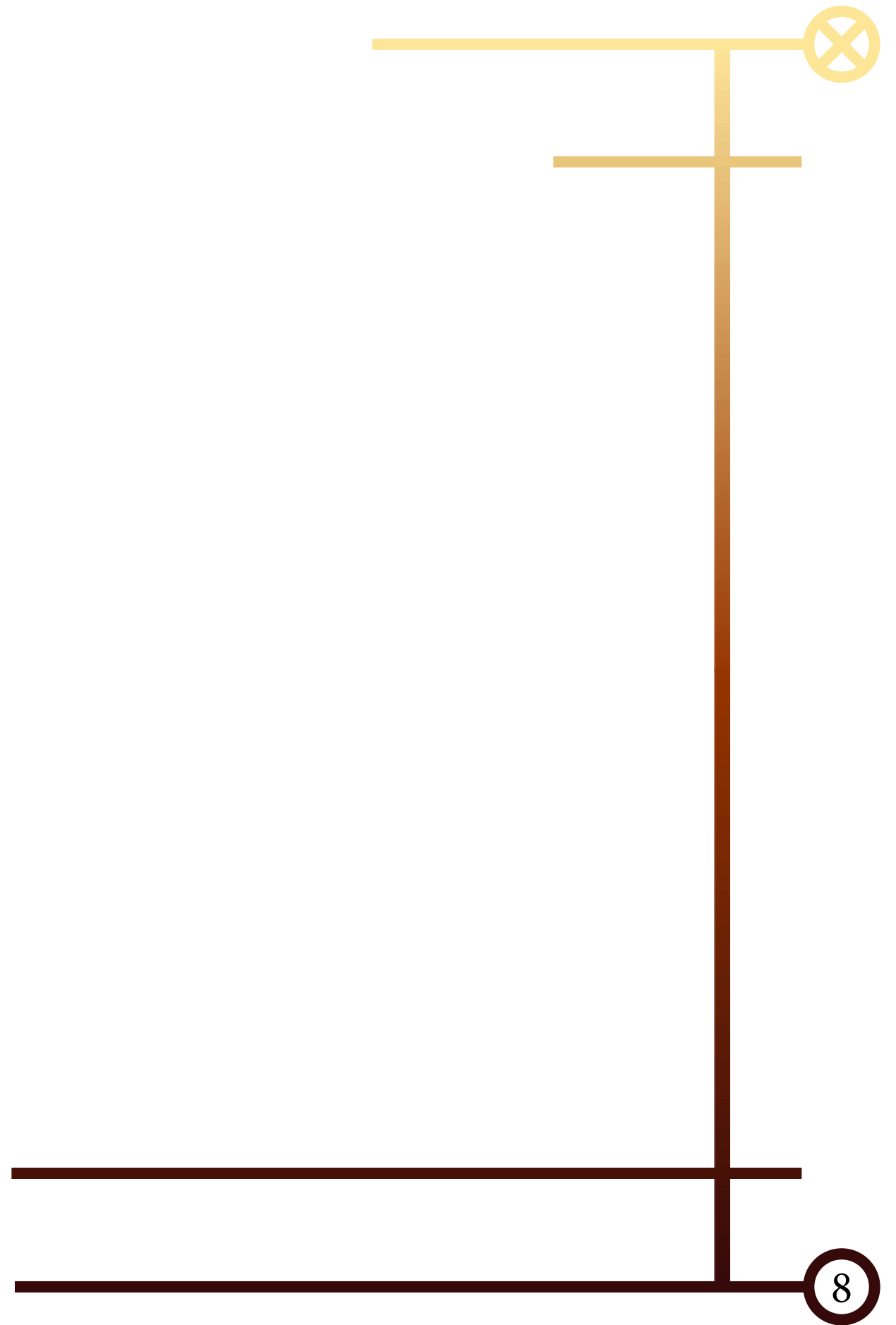
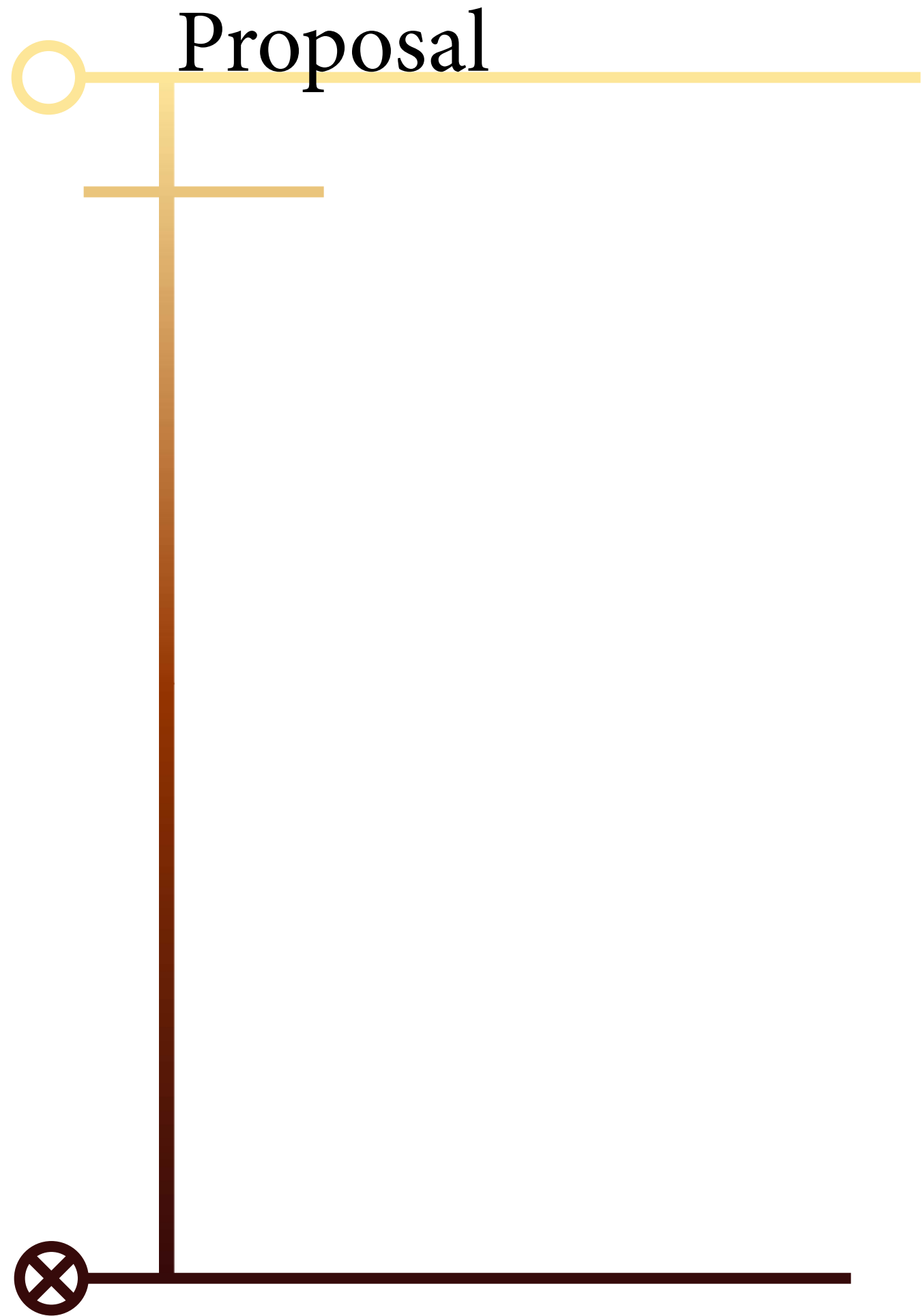
Well planned and integrated systems will allow for a reduced carbon footprint and will promote a sustainable presence in the community. "At Sierra Nevada Brewing Co, sustainability means recognizing the environmental impacts associated with our operations and making a conscious effort to reduce those impacts." (Grossman, 2010)

Theoretical Premise/Unifying Idea

Approaching an integrated design with a holistic view draws upon multiple influences that, when combined, create new design opportunities and solutions.

The Project Justification

With increasing industries, mixed-use buildings provide new jobs and products. These buildings must be looked at in a holistic sense in order to integrate them into the community.



Proposal

Narrative

“He who invented beer was a wise man.” Plato

In 2011, a documentary called “How beer saved the world” was aired. During this forty-minute long special the producers looked at advances in human history and how beer affected these events. Such events include the agriculture revolution, the discovery of microorganisms and even the settlement of Plymouth Rock (Ives, 2011). Liquid Bread, also known as beer, has been an integral part of human history. By studying brewing styles we can start to understand how people lived. There is as much history in beer as there is taste.

My life would be much different had I not cracked my first home brew on October 20, 2011. This first beer was an Irish Red Ale brewed from an extract kit. The beer gods were good to me and this beer tasted great. Since this time I have brewed more than, 300 gallons of beer and more than 50 different types. Brewing to me is more than just a hobby; it’s a life style and an art. Many different walks of life turn to this hobby and each finds a different area of focus. For example, the engineer will always tell you about the new gadget on their system, the biologist will describe in detail the optimum temperatures for enzymatic reactions in the mash, and the cook will tell you how they used their home brew to make some amazing pumpkin bread. I have told people that home brewing is like Alice’s rabbit hole: you can fall as deep as you want and there will always be more to experience.

After brewing a couple beers it becomes clear that brewing can be a less than sustainable process. On average it would take me 25 gallons of water to create five gallons of beer. Through practice and design I have been able to greatly reduce the amount of water that I consume, now it only takes me about 10 gallons of water to produce five gallons of beer. Through design a brewery can also significantly reduce its operation costs and environmental impacts. By using sustainable design practices I will be investigating how unique brewing processes can be integrated into the architecture.

As I study the inner workings of breweries, I will also keep in mind the impact on each site. A destination brewery needs to be seen and experienced. Recently breweries have been finding their way into industrial parks where rent is low and truck access is easy. However, people have to drive to these parks and then drive home. Instead of having people make the trip to the parks, why not bring the brewery to the people?

Breweries within a town can have a strong impact on community functions. The analogy I like to use is comparing a brewery to a local sports team. Much like a sports team, a brewery’s best customers are found in their hometowns. Breweries will invest in their towns to keep their number one fans happy. Most breweries will create seasonal beers that call for release parties. Many breweries will partner with local business for charity events. By having a brewery in a town it increases the diversity of business types, allowing for growth and new possibilities. Currently North Dakota has a limited number of breweries, which is largely due to restrictive laws. It is my desire to help create a platform for breweries entering North Dakota markets.

Proposal

In America, we are currently living in a craft beer revolution. Home brewers are walking out of their garages and basements and attempting to turn their passion into a day job. This large surge in start-up breweries gives architects the possibility to help these breweries create a strong infrastructure, which will create sustainability in both the environment and the competitive marketplace.

Owner

With most start-up brewpubs this building will be owner operated. The shares of ownership will be split between three acting members: brewmaster, master chef and bar manager. Each owner will focus on a different aspect of the brewpub business allowing for strong specialization. While there are three different focal points the business will need to maintain horizontal communication and integration in order to achieve a high quality of service.

Brewmaster/Brewing Staff

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Master Chef/Cooking Staff

The kitchen staff will be responsible for establishing and producing a unique menu for the brewpub. A collaborative process between the cooks and brewers will allow the kitchen to create dishes that utilize the brewing process. The bar staff will provide the kitchen with customer reviews about different dishes' reception. The kitchen will be free to create exclusive dishes for the cuisine of downtown Fargo.

Master Chef/Cooking Staff

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Bar Manager/Bar Staff

The bar staff will be the eyes and ears for both the brewers and cooks. Their daily interactions with customers will provide the brewers and cooks with hungers to satisfy and thirsts to quench. Horizontal integrations, is extremely important for the bar staff. Integration will create a highly knowledgeable staff that will be able to speak intelligently about all the processes within the brewpub.

Proposal

Customers

Patrons of the brewpub will be a wide range of characters. These customers could be families looking to have an enjoyable night out, couples on a date, or regulars chatting with bartenders and friends. The range of customers also may include professors chatting over a meal, college students grabbing a quick beer while they wait to meet up with friends, and even out-of-towners looking for a downtown Fargo experience. Such a range of patrons will require careful consideration when it comes to designing the buildings atmosphere.

Major Project Elements

Brewery – A large space that will encompass all the brewers needs, specifically: brewhouse equipment, fermenters, malt storage, keg/bottle processes, serving tanks and cooling spaces

Kitchen – A clean cooking space that will allow the cooking staff to provide the brewpub with a specialized beer infused menu

Hop garden – Trellis structures allowing on site hop production

Indoors seating – Space designated for customers enjoying the restaurant in a family like setting

Bar space – A durable space that will house the bar and all the beer taps

Expected space for expansion – Planned space for increased production and distribution

Seasonal patio space – Seating that will allow customs to enjoy great weather

Site Region

The site is located on the east side of North Dakota. While this side of state does not have oil fever, it does enjoyed a positive surplus created by the oil companies. According to the Beer Institute North Dakota has been ranked in the top three states in beer consumption per capita between 2003 and 2011 (Beer Institute, 2012). North Dakota is apart of the Great Plains. As such it is the subject of jokes like: “North Dakota is so flat that you can watch your dog run away for four days.”



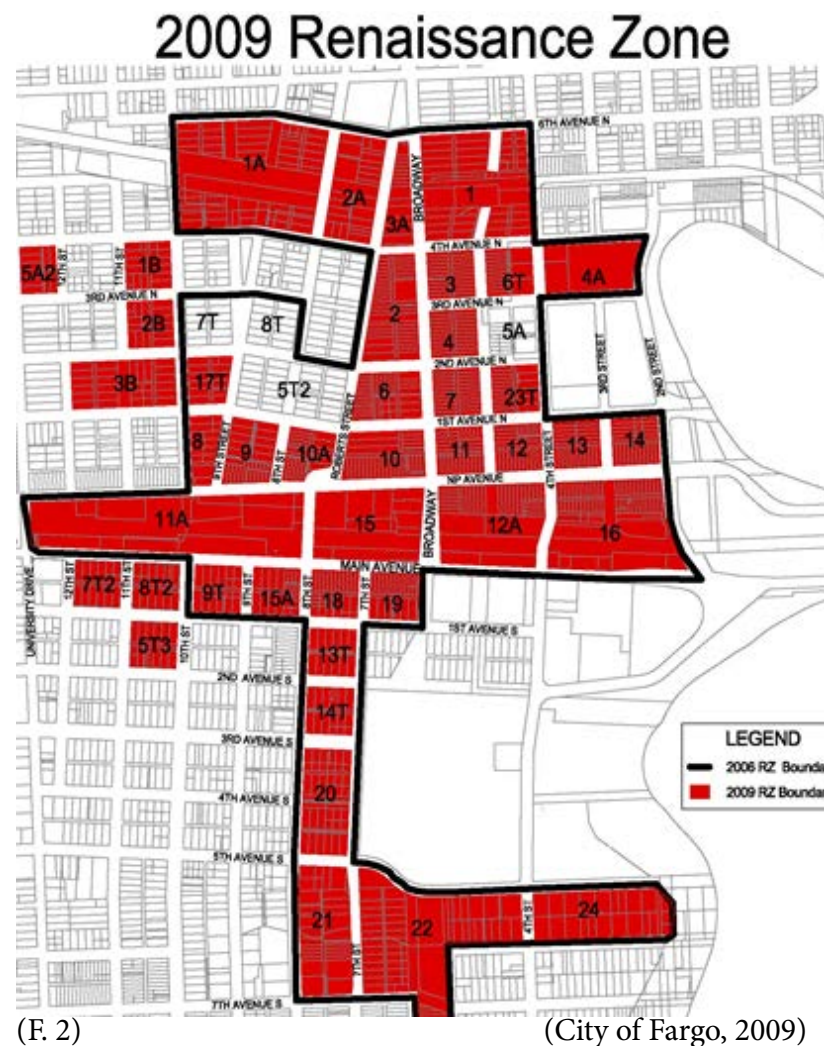
(F. 1)

(Google Maps, 2012)

Proposal

City Site

Fargo is the largest city in North Dakota, with a population of approximately 105,500 people. (City info, 2012) The city is located at the intersection of I-94 and I-29. It is a two and a half hour drive to the Canadian border, a three-hour drive to the state capital and a four-hour drive to the Twin Cities. Fargo is home to North Dakota State University, which has a population of about 14,400 students (Davis, 2012). In 2011, the weather channel hosted a 64-city contest to see who had the worst weather in America. Fargo won first place mainly due to the harsh winters, boiling summers and spring floods. (Erdman, 2011)



The Site

Located on the southeast corner of Broadway Dr. and 3rd Ave N this site is in the heart of downtown Fargo. Currently located on the space is a popular parking space for weekend bar patrons. Sharing the block is the US Bank and Plaza that helps host downtown events like Streets Alive and Cruising Broadway. Business sharing Broadway includes the Atomic Coffee and Dempsey's Irish Pub. The site enjoys a large amount of foot traffic both day and night, as shoppers and bar hoppers walk along Broadway.

Over the years downtown Fargo has seen growth and development that have been aided by the 1999 renaissance zoning. This zoning gives incentives to business owners looking to invest in the city. The site is located on block 4 of the zoning agreement (Renaissance zoning, 2003). Recently, the Kilbourne Group used this site to host an infill competition that generated prospective ideas for the development of the site.



Proposal

Site Importance

This site is an important because of its location and proximity within downtown Fargo. Currently the space is used as a parking lot that sits underutilized on prime real estate. With proper design this site can be developed into a destination space that draws people in to partake in the downtown community. Since the site is in the heart of the city it will need to address a range of design problems and opportunities that will make it into an extremely unique addition to the downtown experience.

Project Emphasis

There will be two primary emphases and one secondary emphasis that are stemming from the theoretical premise/unifying idea. The two primary emphases are divided into internal and external.

Internal emphasis will focus on the integration of the brewing process into the architecture. Emphasis will also be placed on the integration of the brewpub's three main functions. Since brewing is such a dynamic process it presents both spatial and functional concerns.

Exterior emphasis will be an examination the effects building a brewpub in a downtown setting. This will focus on integrating the brewpub in the surrounding downtown and creating intelligent systems of delivery and distribution.

The secondary emphasis will simply ask, "Are breweries good for a community?" Through research and investigation this umbrella question can be answered to influence the future of the industry.

Definition of Research Direction

I will take an in-depth look at the design of local brewpubs. This research will include distribution/delivery systems, sustainable designs and expansion possibilities. By talking with experts in both private and public sectors I will be looking for ideas to improve infill design. I will also be looking at strategies to express the function of the building through the architecture.

Design Methodology Plan

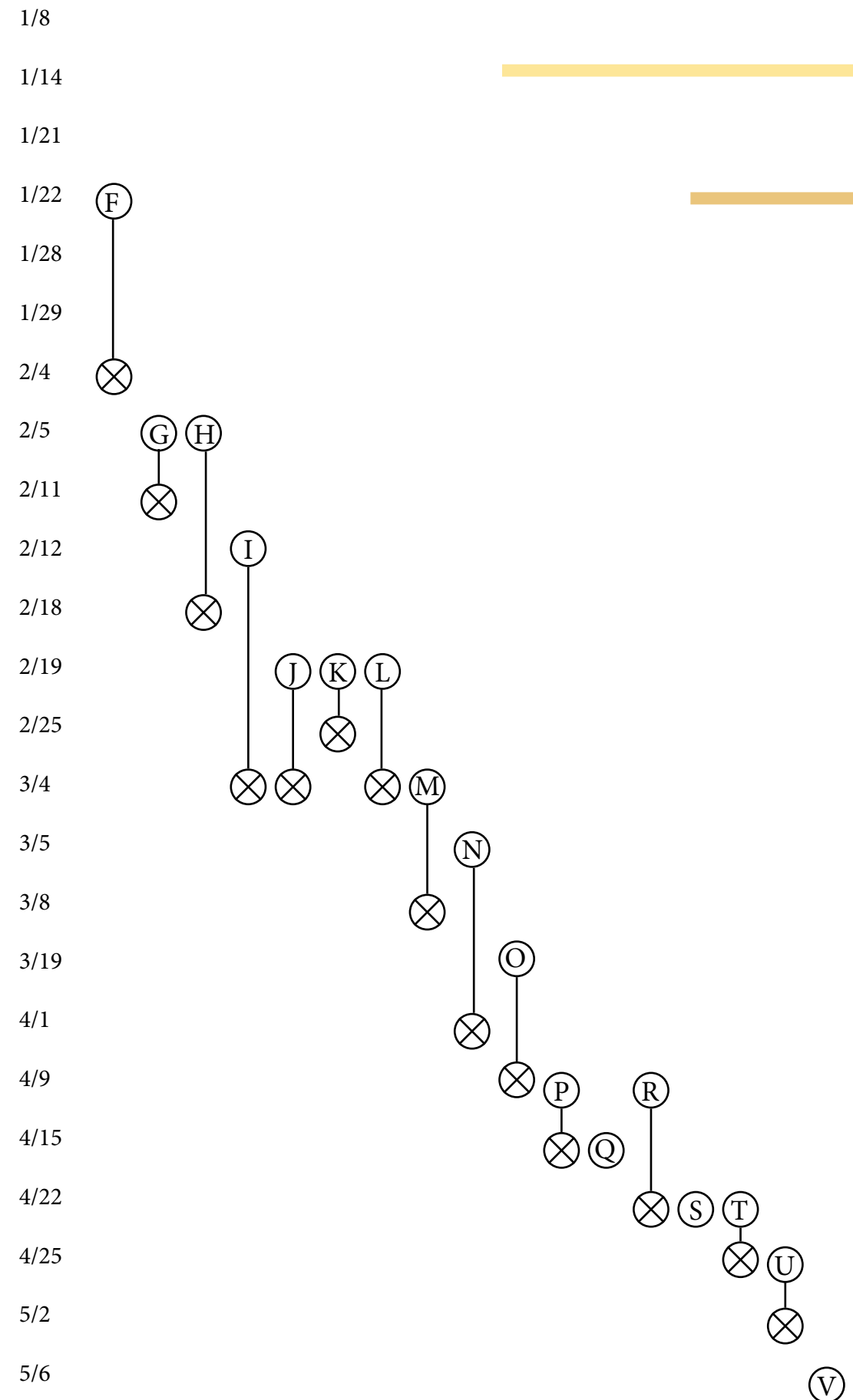
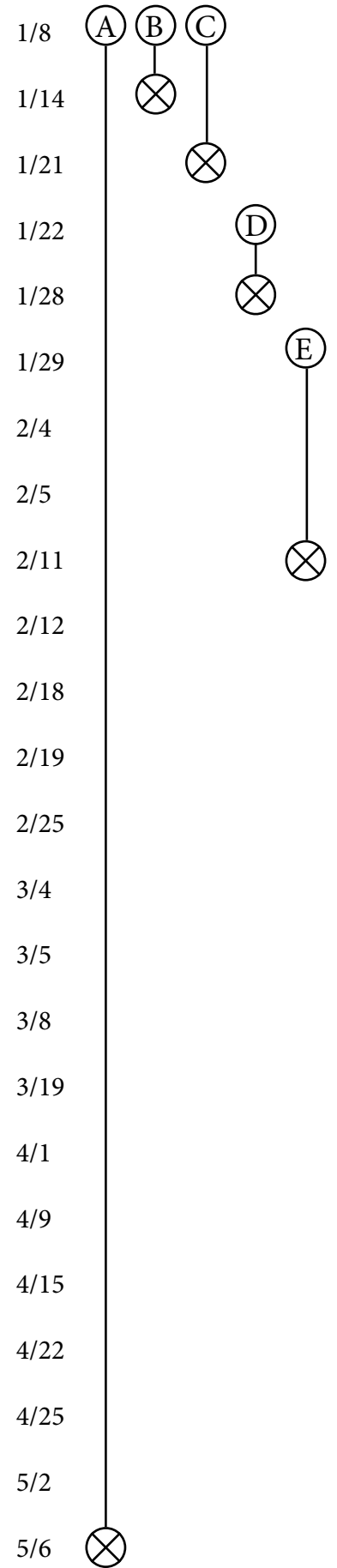
This thesis will use a mix method that relies on both qualitative and quantitative information. A large amount of data will be sourced through interview and site visits. Firsthand experience from experts in the field will provide insightful commentary on the state of the industry.

Design Process Documentation Plan

The design process will be documented through digital pictures, drawings and models. The drawings will be scanned and stored digitally. Models will be photographed and held onto until the completion of the project. Site visits will be highly photographed as long as photos are permitted. All digital items will be stored on an external hard drive and an online Dropbox account. Every Friday morning time will be taken to scan and photograph produced materials. Along with weekly documentation, weekly goals will be created and commented on to ensure continued productivity.

Proposal

- (A) Project Documentation
- (B) Context Analysis
- (C) Conceptual Analysis
- (D) ECS Passive Analysis
- (E) ECS Active Analysis
- (F) Structural Development
- (G) Context Redevelopment
- (H) Floor Plan Development
- (I) Envelope Development
- (J) Materials Development
- (K) Structural Redevelopment
- (L) Section Development
- (M) Midterm Review
- (N) Project Revisions
- (O) Preparation for Presentations
- (P) Presentation Layout
- (Q) CD of Boards Due
- (R) Plotting and Model Building
- (S) Exhibits Installed on 5th floor
- (T) Thesis Exhibit
- (U) Final Thesis Review
- (V) Final Document Due



Proposal

Previous Studio Experience

Fall 2008

Tea House
Fargo, ND
Wischer

Boathouse
Minneapolis, MN
Wischer

Spring 2009

Dance Studio
Fargo, ND
Vorderbruggen

Dwelling
Cold Springs, CO
Vorderbruggen

Fall 2009

Moorhead Museum
Moorhead, MN
Crutchfield

New NDSU library
Fargo, ND
Crutchfield

Spring 2010

Ice house
White Bear Lake, MN
Yergens

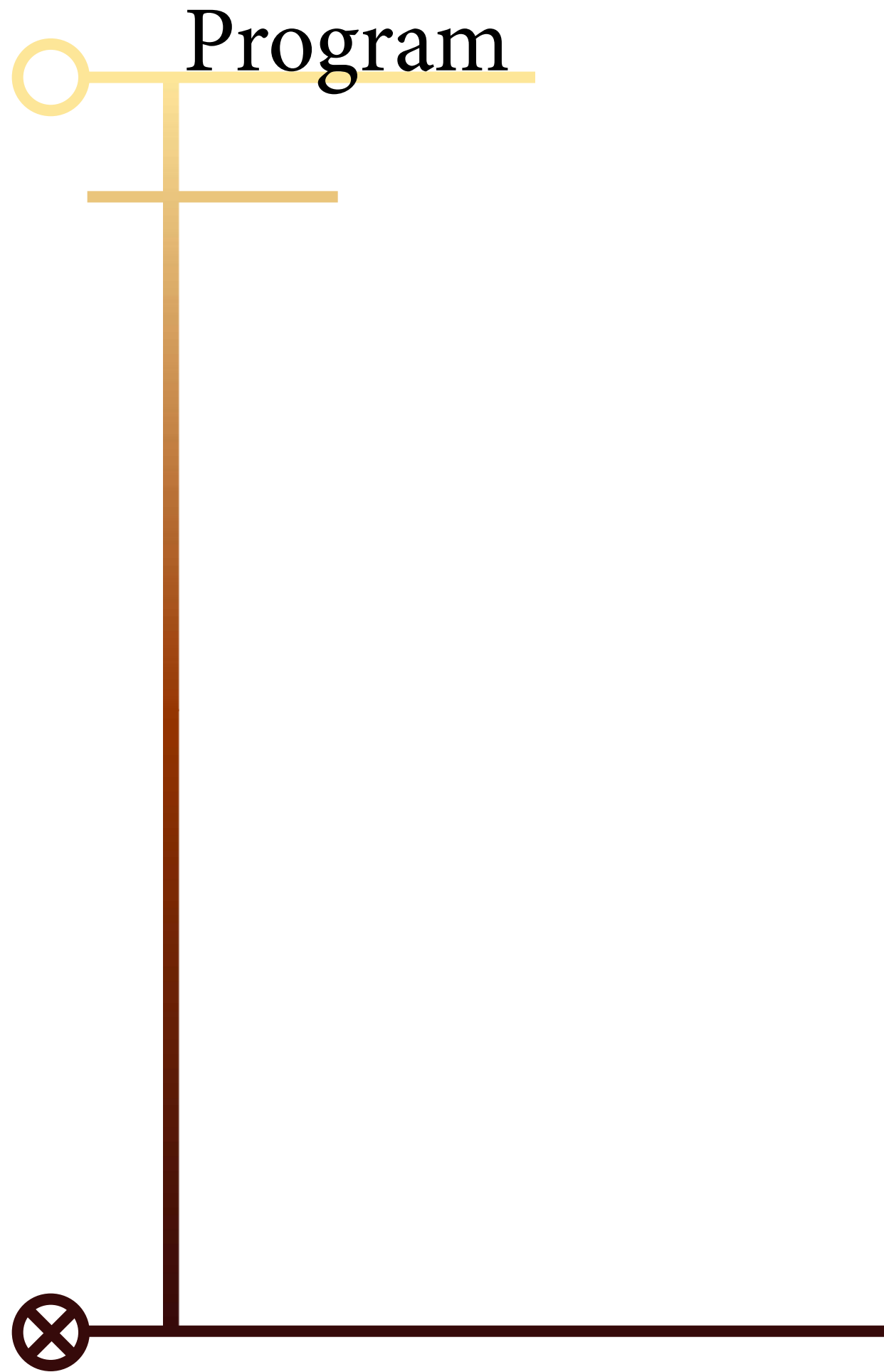
Infill project
Fargo, ND
Yergens

Fall 2010

High Rise
San Francisco, CA
Bakr

Spring / Summer / Fall 2011

Passive house
St. Paul, MN
Srivastava



Program

Inspiration Based on Diverse Influences

Throughout life we are faced with many choices. Some decisions may be as simple as white or wheat? Other choices may have complex and lifelong effects such as kids or no kids? Whether the choice is simple or complex, it directly speaks about our needs, wants, desires and motives. By reviewing our choices, judgments can be made to whether our thought processes should be repeated or learned from.

The choices we make define our lives and influence the lives of others. Members of society who have a large influence are designers, tasked with creating and defining the world around them. Through experience and education, these influencers are treated as experts, and as such are expected to choose the right decision when faced with a problem. However, these problems may lead to unexpected outcomes. Our choices may be seen with positive success or the hard truth of unwanted consequences. If we are to make lasting positive contributions to society, choices must come from multiple influencers.

The Influence of Place

The automobile can be seen as one of the greatest influencers of city planning. This four-wheeled ticket to anywhere allows the owner to cover large distances in the matter of minutes, giving freedom with the press of a pedal. With this freedom families are able to buy a piece of the American dream – a house and land to call their own. Cars have enabled many families to achieve this dream and housing projects have sprung up to match demand. These housing developments are mostly seen as Euclidean single-use zoning. This block zoning allows planners to supply neighborhoods with necessities, while shielding the residential communities from the noises and nuisances created by commercial and industrial buildings. As housing spreads further from its core, community spaces become less local.

In the book *The Great Good Place*, Ray Oldenburg argues that these sprawling neighborhoods are harmful to themselves because they are destroying local community spaces. As families seek to escape to privacy they lose the local corner store and friendly café. Oldenburg starts his argument by defining the three general spaces we live in.

The first place is the home—the most important place of all. It is the growing child's first regular and predictable environment and the one that will have greater effect upon his or her development. (Oldenburg p. 16) This is where we are allowed full privacy from the outside world. A defining trait of the first place is the power to refuse entry. Privacy and seclusion can be easily attained whether it's a nap in the backyard or a romantic night with cuddling and popcorn. The home is a sacred place that builds the foundation on which we live. For these reasons the home is our most important.

Program

The second place is the work setting, which reduces the individual to a single, productive role. It fosters competition and motivates people to rise above their fellow creatures. (Oldenburg p. 16) This space is dynamic in that it allows social interactions through a formal setting. Here, a level of professionalism is expected depending on the nature of work being performed. Through work, people are able to achieve a higher standard of living. A distinctive attribute of the second place is structured use of time. People's work schedules largely define how their time is spent.

The third place in people's lives are community spaces. These are the coffee shops, pubs and hangouts that patrons call their own. It is in these places where people meet for conversation, companionship and cheer. The beauty of the third place is that it is a neutral ground where people can live outside the predictable lifestyles of house and work. Unexpected possibilities are what make the third place unique.

The power of the third place is found in its neutrality. Friends or acquaintances meeting over neutral ground are not bound by the rules of hospitality. Meetings maybe formal or informal, such as passing one another on the street. Richard Sennett says, "People can be sociable only when they have some protection from each other." (Oldenburg p. 22) This means that in this third place, I interact with others yet not be obligated to invite them into my private life.

Because third places are neutral, they act as great levelers between social statuses. This leveling is a passive way for great networking. Meeting others on even ground allows conversations to be informal and simple. "A place that is a leveler is, by its nature, an inclusive place. [Third places] serve to expand possibilities, whereas formal associations tend to narrow and restrict them." (Oldenburg p. 24) People who might never interact with one another in a formal situation may share beers while shooting pool or cheering on the home team. The informal nature of the third place allows people to remove themselves from their day-to-day titles and be one with the crowd.

A major component of the third place is its opportunity for conversation. These spaces are venues for patrons to practice their communication skills. Lively talk fills the air, inviting others to join if they have interest. Entertaining conversations are both fun to overhear and also create white noise across the space. A room full of conversation is much more inviting and warming than a quiet room with people staring into their glasses.



(F. 4)

(Imig, 2012)

Program

In the third place, leveling and conversation create a neutral ground enabling which people to meet the community. “The host’s welcome, though important, is not the one that really matters; the welcome and acceptance extended on the other side of the bar-counter invites the newcomer to the world of third place association.” (Oldenburg p. 34) Bars, cafés and other local meeting spots are only physical spaces. Without staff to open them or people to populate them they are of no value to a community. The choices of community member determine whether the community spaces grow or disappear.

“Before industrialization, the first and second places were one. Industrialization separated the place of work from the place of residence.” (Oldenburg p. 16) Community leaders and planners have been fighting segregated zoning practices by implementing mixed-use strategies. Mixed communities create the three spaces Oldenburg has commented on. Residents are able to have their own private spaces while being close to hangout spaces where they can interact informally with fellow neighbors. Cafés and bars can be incorporated to give jobs to younger generations increase the social diversity. Having diverse spaces not only allows for new residential arrangements, but they also open up avenues for new eating and working options.

The Influence of “Slow”

In America there are two strong craft movements that call for the revival of the artisan craft. The Slow Food and craft beer movements have devoted their time and energies to the promotion of handcrafted flavor.

–In 1986 McDonald’s opened its first store in Italy near Rome’s Spanish Steps. A local named Carlo Petrini was appalled to have an American fast food restaurant moving into the heart of the capital. Petrini helped found the Slow Food movement. In 1989 delegates from 15 different countries gathered to forge the Slow Food manifesto. The following is a powerful segment of their writing:

“In the name of productivity, Fast Life has changed our way of being and threatens our environment and our landscapes. So Slow Food is now the only truly progressive answer.

“That is what real culture is all about: developing taste rather than demeaning it. And what better way to set about this than an international exchange of experiences, knowledge, projects?

“Slow Food guarantees a better future.” (Irving p. 45)

Slow Food is a global grass roots movement that has picked three words to describe what they believe: Good, Clean and Fair. Good represents food that is richly flavorful, local and stimulating. They chose Clean to describe the process in which their foods are created and harvested. This is a strong commitment to preserving the earth’s resources and protecting its ecosystems. Lastly they picked Fair. To consider food as fair it must provide fair wage for the growers, harvesters and people providing our meals.

“By training our senses to understand and appreciate the pleasure of food, we also open our eyes to the world.” (Irving p 4.) Through education Slow Foods works to replace junk food with traditional foods and local dishes. They provide classes to help their communities learn how to create local flavors. Local chapters of Slow Food provide Taste Workshops where trained supervisors will lead class in how to taste new dishes. During these classes explanations about the flavors while eating help students make connections between their taste buds and flavors.

Program

Slow Food also believes in network systems between local food producers and communities. A program called Terra Madre allows producers to be connected so that they may share information about techniques and processes to help them be more efficient. Through this networking of individuals, cooks are able to directly talk with the farmers and producers about their ingredients. Connections like these help the cooks draw inspirations for their dishes, while letting the producers know their products will be treated with the same care they used while producing the food.

Slow Beer

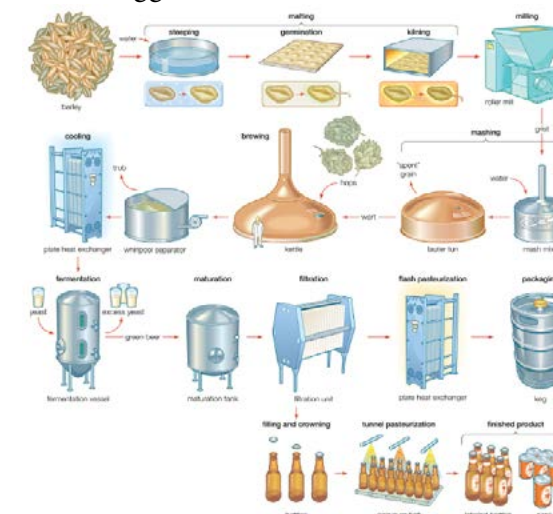
This inter connectivity is also very strong within the craft beer movement. It is common between brewers to help each other out when times are lean or when equipment malfunctions. Much like the goals of the Slow Food, the craft beer movement is dedicated to providing handcrafted local beers to their communities. Educating the community on how beer is made allows their fans to be more connected to the process.

The following is an overview of how beer is brewed. The brewing process draws on many different fields including engineering, industrial production and simple artistry. Many look at the brewing industry as a mixture between science and art. There is a high level of technical science that has allowed us to improve efficiencies and produce beers with a high level of consistency. Technology has allowed people to have an easier access to the hobby of home brewing. Many home brewers take their weekend hobbies and turn them into day jobs. Turing professional usually means a pay cut and longer hours; however brewers see it as a labor of love. “Many have entered the brewing industry from other walks of life, but few leave.” (Crossley 2008)

The brewing process has stayed the same over hundreds of years; but the tools have gotten better. In John Palmer’s book *How to Brew* he writes, “Brewing can be like driving a car. You can get in, turn the key, and off you go, using it to go from point A to point B without much thought about it. Or you can know what’s under the hood--knowing that by checking the oil, changing the spark plugs, and listening for clanking noises you can make that car work more efficiently for you.” (Palmer p.139) It may be simple to just hop in and turn the key, but such a complex process merits taking a deeper look.

The Influence of Process

When making beer there are two major parts: hot side and cold side. Hot side will deal with the processes up until the end of the boil. This includes the mashing of grains, the production of wort, the boiling of wort while utilizing the bittering components of the hops and chilling the boiled wort to room temperature. The cold side processes are all the actions after the boil has been completed. During this time the wort will be aerated, transferred to a fermentation vessel, yeast will be pitched and once fermentation is complete the beer will be processed and carbonated. The finished beer will then be kegged or bottled and distributed.



(F. 5)

(“The best beer,” 2012)

Program

The hot side of brewing can be easily compared with brewing coffee. With coffee, water is boiled and passed through ground up coffee beans. The result is a hot liquid dark in color with a roasty flavor, coffee.

Brewing begins by crushing the malted barley to expose the endosperm allowing the starches to be converted into maltose sugars. The husks of the grain will be used as a filter bed. Next the grains are steeped in water at a specific temperature. This temperature is very specific because it activates different enzymes that will produce different levels of maltose sugars. For example a higher temperature will produce more complex sugars because the alpha amylase is more active creating a beer with more body. Lower temperatures will produce a beer with simple sugars creating a lighter beer that finishes dry. Having control over the temperature during the mashing process is very important for creating the desired flavor and consistency.

After the grain is allowed to rest at a specific temperature the starches will convert into maltose sugars. The wort is then drained into the boil kettle. At this point the mash/lauter-tun will be sparged. During the sparging process heated water is drawn over the grain bed allowing the grains to be washed. By washing the grains brewers want to collect as many sugars as they can. This will determine the efficiency of their system. For commercial brewers a very high efficiency is desired in order to reduce the cost of producing a batch of beer.

Once all the wort is transferred from the mash/lauter-tun to the kettle, the boil is started. During the boil the wort goes through chemical changes that include the darkening of color and the precipitation of unwanted hazing proteins. A major part of the boil is the hop additions. By boiling hops their bitterness is being utilized this done to add a preserving agent to the beer. The bitterness is also used to balance the sweetness from the malt and alcohol. Generally hops are added at four different times: 60 minutes of the boil, 30 minute of the boil, whirlpool and dry hopping. The longer hops are boiled the more bitterness they release, which means the 60-minute addition will produce the majority of the bitterness. The 30-minute addition is seen as the flavor addition and both the whirlpool and the dry hopping addition are purely for aroma.

After the wort has been boiled for the desired amount of time it is time to cold crash. The goal is to move the temperature from 212 degree Fahrenheit to the proper yeast pitching temperature around 60 - 68 degrees as fast as possible. Rapid cooling of the wort will allow for a cold break. This is where unwanted proteins will precipitate out of solution and fall to the bottom of the kettle. Heat exchangers work very well in this process because it will heat up water for the next batch. Breweries will also use a whirlpool tank to reduce the amount of trub that enters the fermenter. The whirlpool whips the cooling wort around so that a vortex is created. The vortex draws in all the large materials like proteins and wasted hops. Once the whirlpool stops all the unwanted chunks will form a cone in the center of the tank allowing the brewers to drain from the side leaving all the trub behind.

Program

Everything after the boil is considered cold side. There is one rule that is law during this stage and that is “Sanitize, Sanitize, Sanitize anything that contacts the wort!” During cold side, brewers must be very cautious with their practice because the risk of infection is extremely high.

Cooled wort is transferred from the whirlpool to the fermenter. These fermenters come in many different forms, but the most common in commercial brewing is the stainless steel conical fermenter. This design is very popular because it allows for easy cleaning, enclosed fermentation and the conical bottom gives brewers the option to collect healthy yeast cakes. A less common fermentation vessel is the open top design. This fermenter allows the yeast to ferment in the open creating a different flavor profile. These fermenters need to be located in an extremely clean environment or the brewers will run a very high risk of infection.

As the wort is moved into the fermenter it will be aerated with pure oxygen. These levels must be controlled in order to create consistency between batches. Once the wort is aerated the most important ingredient is added, yeast.

If dogs are man’s best friend, brewer’s yeast could be considered a close second. The relationship we have with dogs is much like that of brewer’s yeast. Over hundreds of years brewers have been slowly cultivating yeast strains through top and bottom cropping. The brewers have been able to pick the most desirable strains and have developed specific traits like brewer’s yeast’s ability to flocculate, at the end of fermentation yeast cells will clump together and fall out of solution. Yeast cells are the true brewers of beer. By eating the sugars they create alcohols and carbon dioxide giving the beer different esters and flavors. For example the famous Wheihenstephan hefewizen yeast produces distinctive banana and clove flavors.

After the yeast has finished fermenting the beer the brewers will do one of two options: lager the beer or keg and bottle. Lagering the beer is necessary for lager beers because the storage at cold temperatures will help its clarification. The brewers may also keg or bottle once the beer is finished. It is up to the brewery to whether they filter or leave the beer unfiltered. By filtering the beer, yeast and proteins in suspension will be extracted from solution allowing the beer to be more stable. Some brewers feel this affects the flavor of the beer, however if the brewery has a large distribution network it makes more sense to filter. If the brewery decides to produce unfiltered beer they can bottle or keg condition their beers saving money on carbon dioxide costs. During bottling the brewers will introduce unfermented sugars to the bottle allowing the remaining yeast to eat and self-condition the bottles.

From grain to bottle, beer is made up of four main ingredients: water, malt, hops and yeast. Through care and craft these beers are handmade for the consumer. Brewers take pride in their work because even the change of three degrees at the wrong time can change the beer drastically. However, as the homebrewing legend Charlie Papazian says “Relax. Don’t Worry. Have a Homebrew.” (Papazian 2005)

Program

Summary

In my theoretical premise/unifying idea I examine how an integrated design needs to draw upon multiple views and perspectives. Through these multiple influences new design opportunities and solutions can be found. I am proposing that it takes a community to design a church. For thoughtful designs a collaboration of thinkers will draw upon experiences to make the best decisions with their available resources.

As part of my final design, I consider how people's thought processes change depending upon what space they occupy. Ray Oldenburg's book helps shed light on these different spaces. He begins by defining the difference between home and work. At home we are able to be unrestricted and private. At work we must be structured and protective. We spend most of our time between these two spaces, however Oldenburg argues that we really live most of our lives in the third places. It is in these third places where people learn to sing, converse and grow. The third place is the grassroot meeting places. Without these spaces the community, shrinks and become nothing more than islands of structured space.

By applying Oldenburg's considerations to modern practices, we see that mixed-use developments are trying to counter the sprawling nature of Euclidean single-use zoning. Mixed-use developments gather the three spaces of living and integrate them with one another. By having accessible access to these third spaces the community is able to meet one another and grow.

Having mixed spaces in a community allows for easier access to grassroots movements like Slow Food. This movement believes that community grows from the dining table. Slow Food was developed as a resistance to the fast food society and has worked to increased awareness of local handcrafted foods. By bring people together over a slow cooked meal allows for a community to grow from within.

In order bring forth ideas discussed in the theoretical premise/unifying idea a deep understanding of the brewing process is needed. Beer begins as four ingredients: water, malt, hops and yeast. Through an understanding of biology, chemistry, engineering and marketing, beer is made and sold to the masses. By understand the needs of the user, better designs can be created that will improve a brewmaster's brewery design.

As a final thought, we choose how to move our world. Through education and collective thinking, positive choices can be made to improve our lives and the lives of our children.

Every man builds his world in his own image. He has the power to choose, but no power to escape the necessity of choice.

-Ayn Rand

Program

Typological Research

Type – Destination Brewery
Location – Whitefish, Montana
Architect – Joe Escherick
Size – 9000 square feet
Year – 1994

The Great Northern Brewery is the only brewery in Whitefish, Montana. It is an icon in the town due to the tall glass tower that controls the corner of the block. This tower makes the brewery unique in a couple ways. First, the brewery is credited with being the tallest building in Whitefish. Secondly it is where the brewing system is located. The Great Northern Brewery was designed by world renowned architect Joe Escherick in 1994 as a traditional “Gravity Flow” arrangement. (TGNB)

The “Gravity Flow” arrangement is a process that has largely been forgotten in the brewing industry. By using this system each process is setup to flow into the next. It was a common type in early breweries before pumps were invented. With current technology, brewers are not limited to the gravity system because industrial pumps can move liquid to wherever it is needed.



(F. 6)

“Great northern brewery,” 2010

The Great Northern Brewery



(F. 7)

(Emerson, 2010)

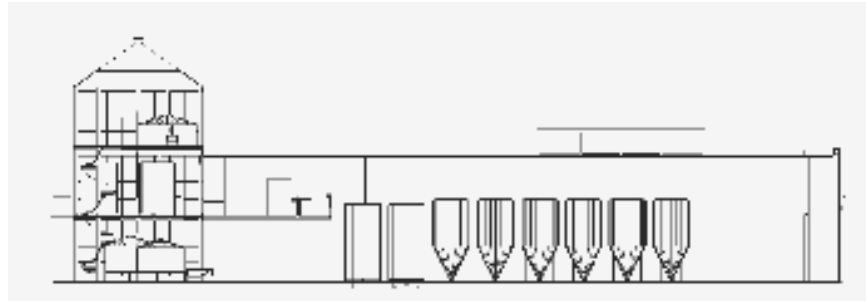
There are pros and cons to having this kind of setup. The great thing about this design is the comprehension. It is simple to tell customer that the brewing process starts at the top and by the time the beer gets to the ground floor it is a finished product. The disadvantage with this system is that the brewer has to run up and down the stairs during the brew day. This inconvenience is really the only negative. Given that a majority of the brew day is spent waiting for water to heat up it makes the process seem more interesting.

Breweries are largely industrial buildings that are designed for the forklift – Efficacy beats poetic expression. The Great Northern Brewery, however, balances both the efficiency of production with an interesting spatial layout. The brewery has a taproom called the Black Star Draught, named after their flagship beer the Black Star Lager. This taproom is positioned in a great location next to the brew house, overlooking the packaging and fermenters. If patrons make it to the brewery early they are able to enjoy a pint while the brewery is in full swing.

This building is a great example of what a brewery can be. So often breweries are located in distant industrial areas and are a hassle to visit. The Great Northern Brewery shows how to be a great destination brewery by having an exposing the brewing process, providing a simple tasting room and controlling the block's corner with an iconic presence.

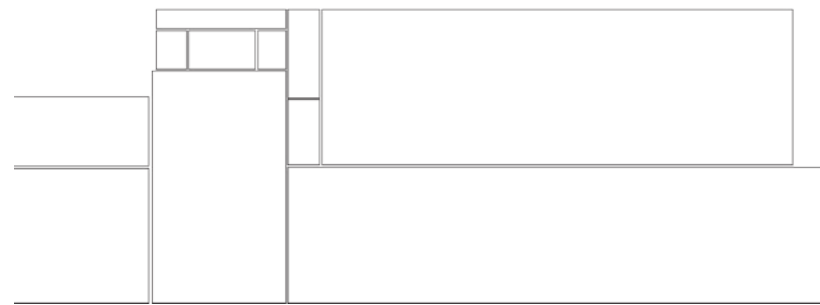
Program

Plan to Section



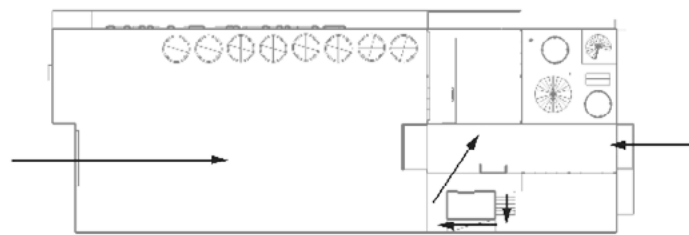
Geometry

(F. 8)



(F. 9)

Circulation

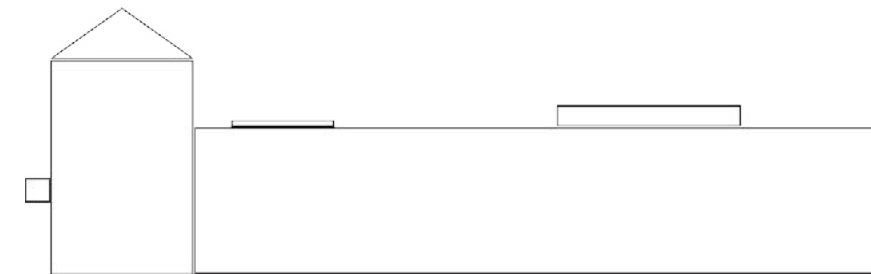


(F. 10)

Hierarchy

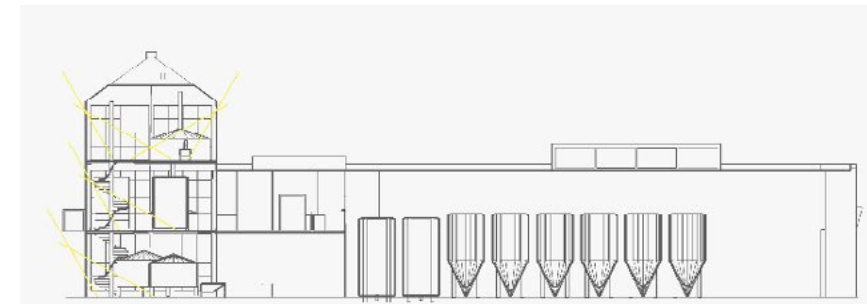
(F. 11)

Massing



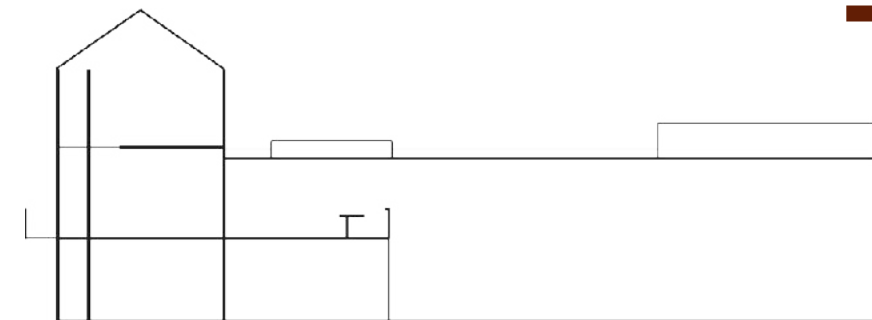
(F. 12)

Natural Light



(F. 13)

Structure



(F. 14)

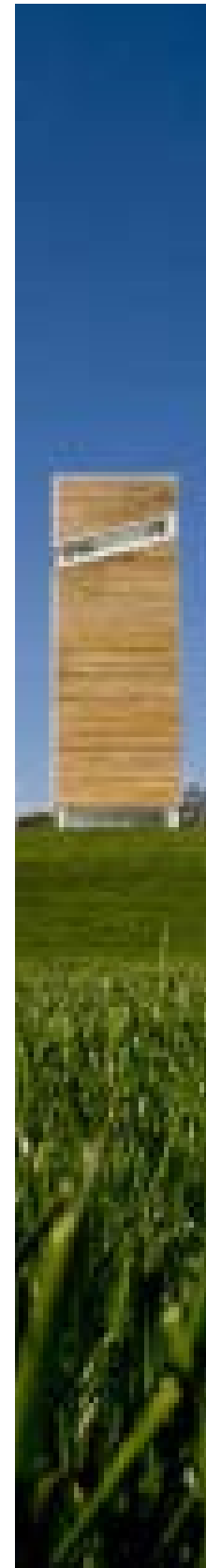
Program

Typological Research

Type – Destination wine tasting venue
Location – Oxley, Australia
Architect – Popov Bass Architects
Size – 300 square meters
Year – 2010

In Oxley, Australia, Popov Bass Architects designed a wine tasting space for Miranda Winery. This space has received architectural praise from notable websites like Archdaily. The space is reknown for its light atrium tower that stands high over the rolling landscape. This project is much like a brewery's tasting room. These rooms do not produce any products but they have a great effect on the brewing process. The value that is created from these types of rooms comes from customer's reactions. Positive reactions reinforce current practices while dissatisfied reactions may cause a reworking of their process.

A trait that this building has in common with others in this case study collection is that it has earned the stature of a destination location. The building rises from the landscape capturing attention like a student raising her hand in class. The project is sited to maximize its exposure from the passing traffic on the "Snow Road" to Bright and cause minimal impact on the King River floodplain. The facility compliments the rural surroundings and vineyards and creates a place for the community to meet. (Archdaily) By creating this presence it spikes people's curiosity and is a point of interest.



(F. 15) (Carlstrom, 2011)



(F. 16) (Carlstrom, 2011)

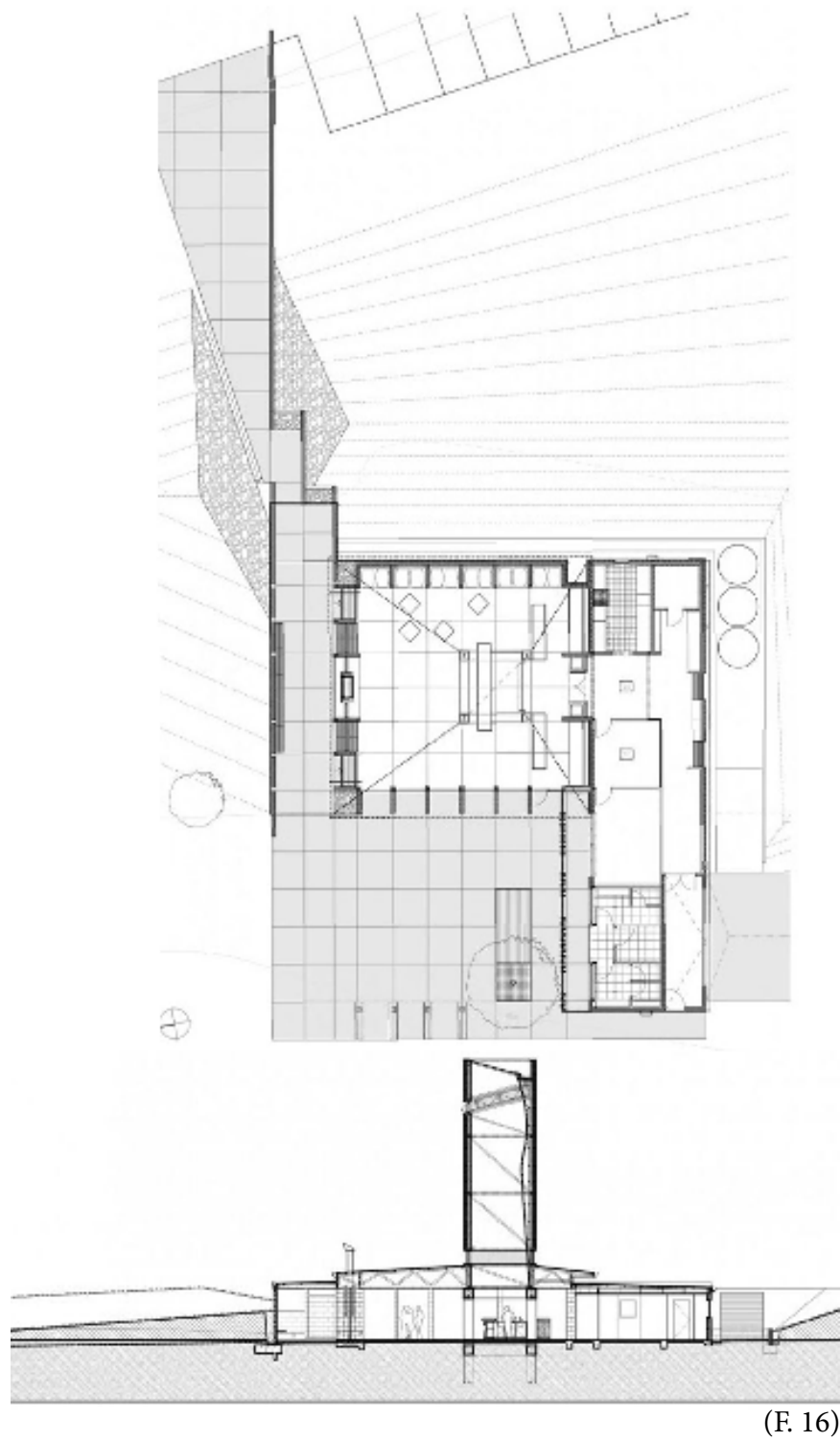
The Miranda Winery also has the common trait of translucency. It is important for the exterior world to see this building as an open book. Since this space is a tasting room there is an expected level of education require explaining the process and flavors. The light atrium in the center of the space creates a stage upon which instructors educate their visitors.

An uncommon trait that separates this case study from the others is its setting. Instead of being located in the heart of the city, it is positioned near its parent winery in a rural landscape. The design is greatly influenced by its surrounding. The building matches the nearby earth berms except for the tower. This creates a subterranean that has a bright atrium. The berms are located on the west and south sides of the building, restricting the views. The architects make up for this by having a visually permeable façade on both the north and east faces. Visitors feel the heaviness of the earth, the lightness of the sky and the openness of the landscape.

I see this building as a great example on how to create destination location. The architects achieved an architectural element acts as a marker in a rolling landscape. Once people have entered the space, a wide range of materials create a welcoming, dynamic atmosphere.

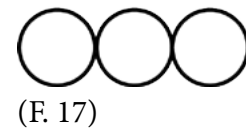
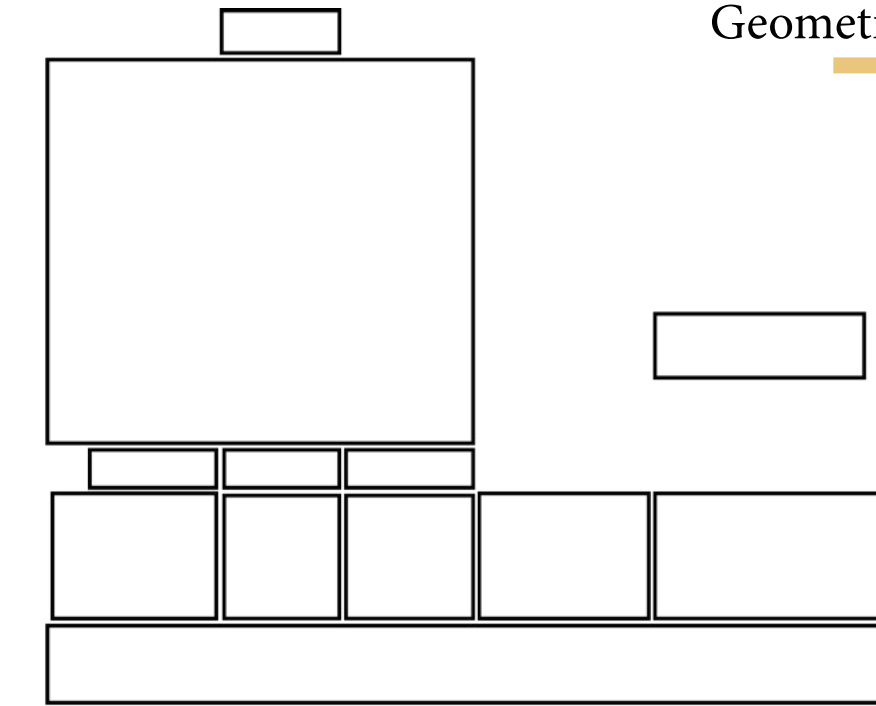
Program

Plan to Section



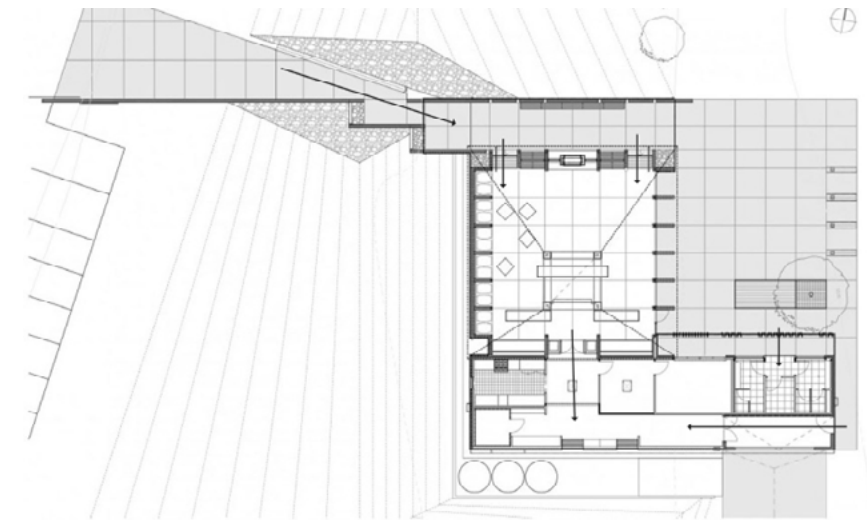
(E. 16)

Geometry



(E. 17)

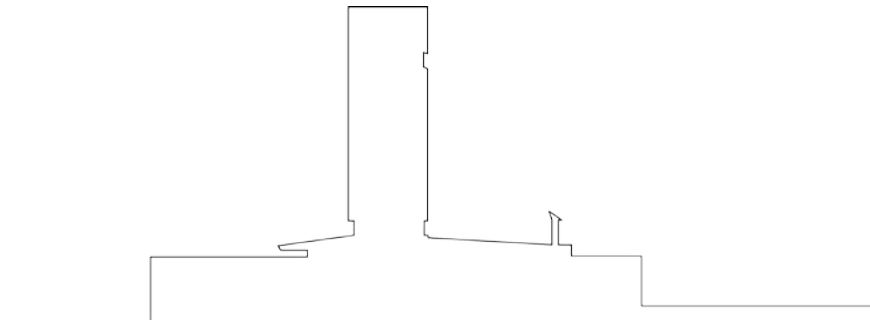
Circulation



(E. 18)

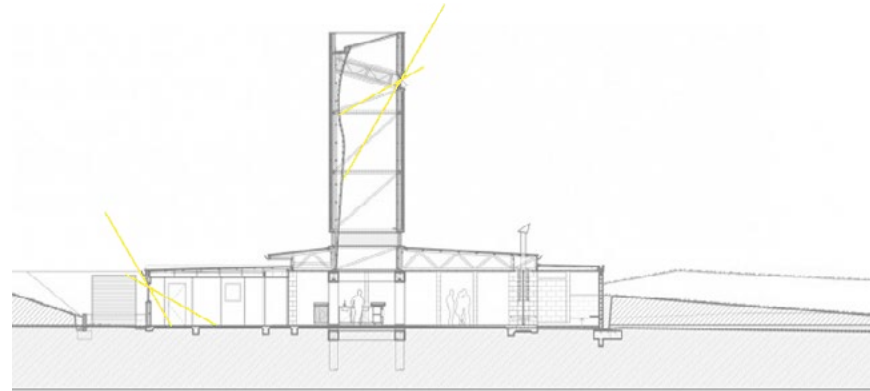
Program

Hierarchy



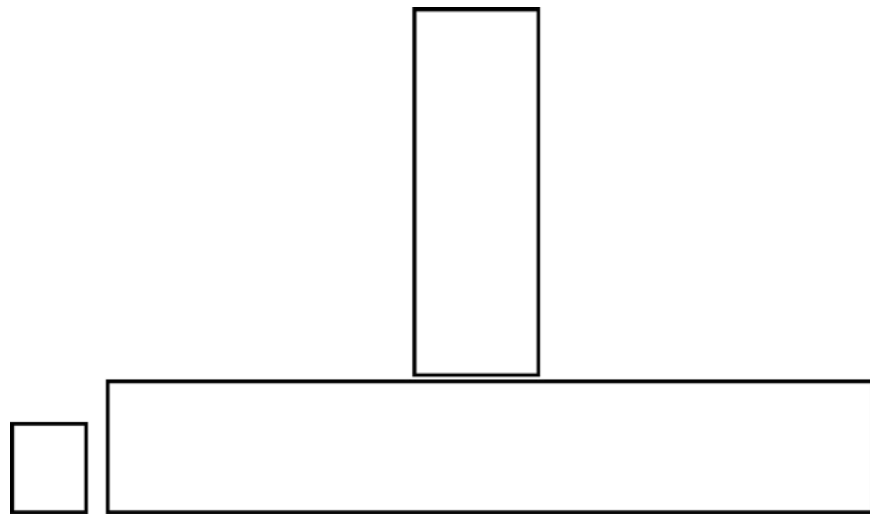
(F. 19)

Natural Light



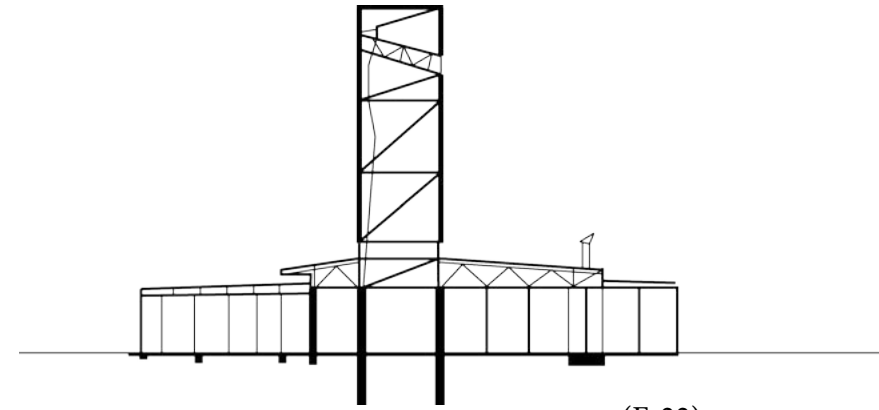
(F. 20)

Massing



(F. 21)

Structure



(F. 22)

Program

Typological Research

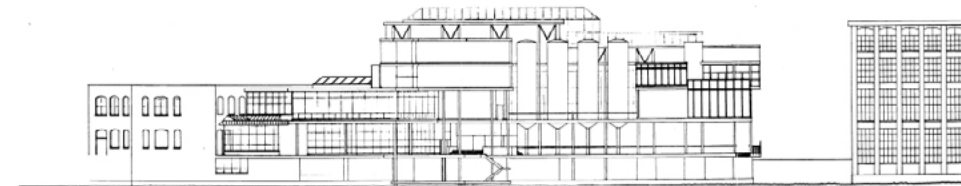
Type – Small brewery with restaurant
Location – Lowell, Massachusetts
Designer – Andrew Garvin
Size – 17,925
Year – 1989

Andrew Garvin's Small Brewery is a very unique case study. It was a project that he designed for his Master of Architecture in 1989 at M.I.T. Since this is a student project, it is not bound by political and economic restrictions. Ideas and concepts can be presented for our judgment. Garvin proposes a mixed-use building that contains a brew house, malt house and restaurant. The building is estimated to be 17,925 square feet. The brew house has been designed to grow to 50,000 barrels (1,550,000 gallons) per year in order for the company to be profitable.

Much like the other case studies, Garvin wants the building to be a place of interest within Lowell. Breweries are inherently interesting places due to their nature. In order to spike interest, the dining facilities are stationed between the brew house and the fermentation room. The simple metaphor Garvin used to explain the building layout was to compare the facility to a valley. The observers would be high up on the sides of the valley being able to look down and see the intricate mesh of metal.

This project was uncommon in the complex design of the spaces. When looking at the floor plans it is easy to get lost in the mix. However this complexity is not detrimental to the building – instead it preys upon visitor's expectations. The brewing of beer is a moderately complex task. Garvin chooses to dedicate a specialized space to each process allowing people to understand each part one at a time.

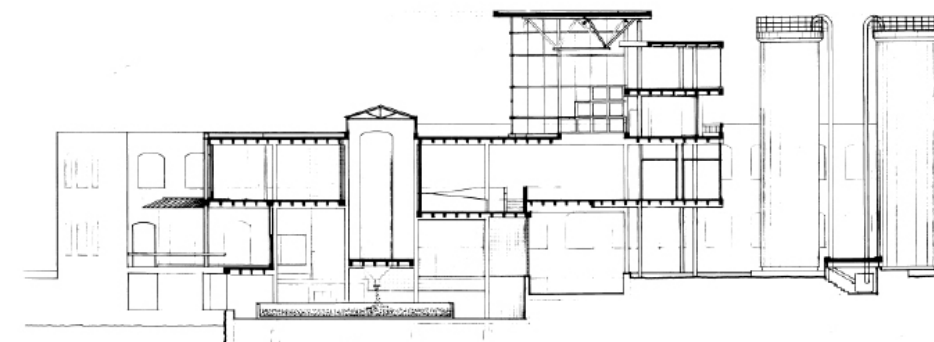
Lowell Small Brewery



(F. 23)

A distinctive component of the site is its connection to the canal adjacent to the site. A boardwalk draws in commuters by developing a human scale space on the northwest façade. While people walk along the canal, they are able to look into the brewery and watch the action.

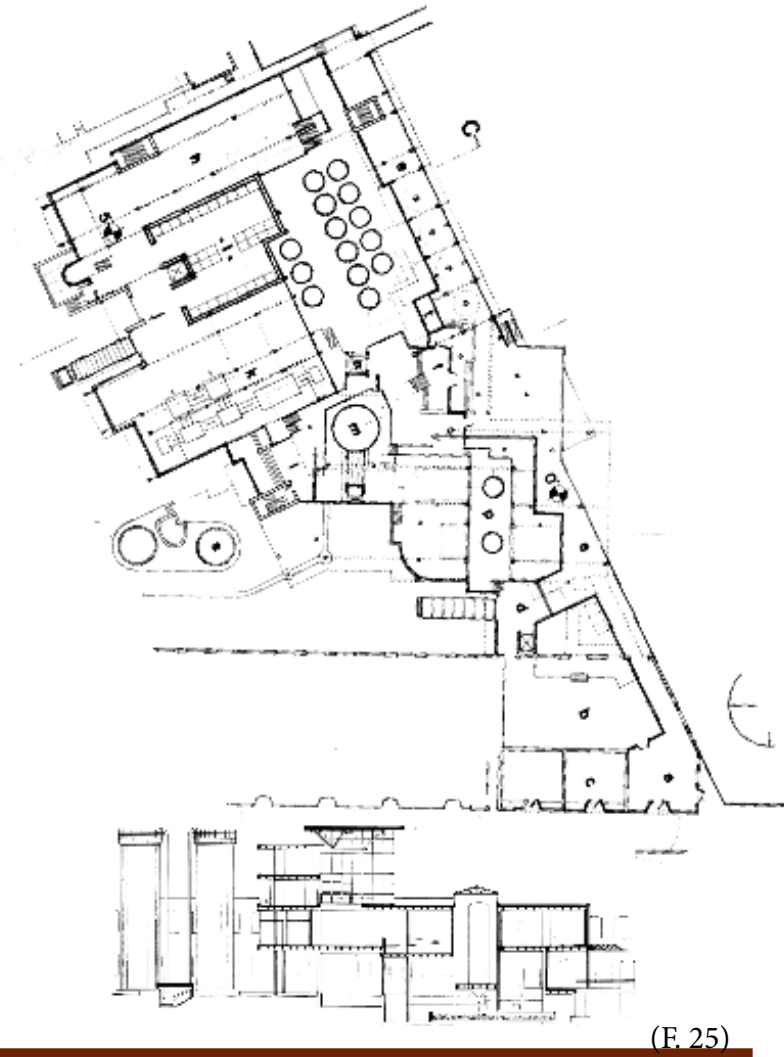
I enjoy Garvin's design and feel it fits into the site well. There is a wealth of complexity and the building has body to it. The part that was most interesting for me was the way he looked at the brewing equipment. Garvin talked about the brewing equipment as an industrial landscape. The interesting shapes and materials used by brewers create a dynamic landscape that viewers can enjoy. This thought process adds a great value to both the equipment and the process of brewing beer. The brewing equipment now becomes the brewer's stage on which they may perform their art. Garvin's project creates a perspective we can use to better appreciate the aesthetic nature of the brewing process.



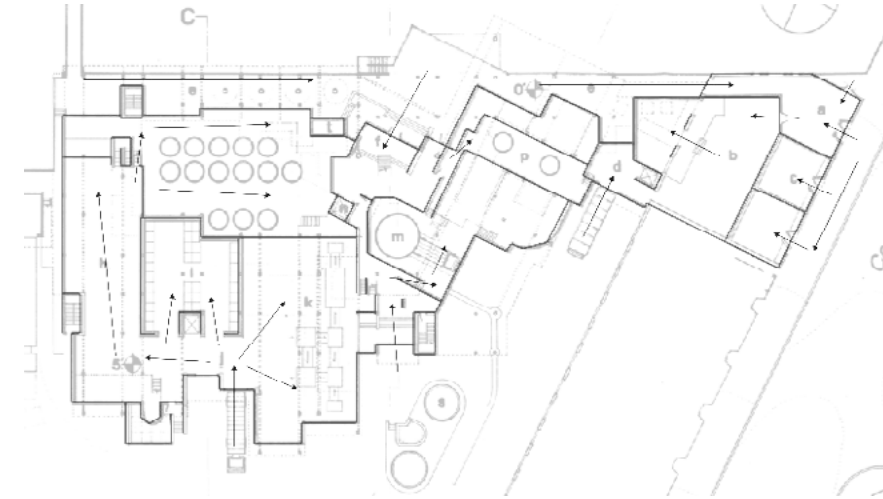
(F. 24)

Program

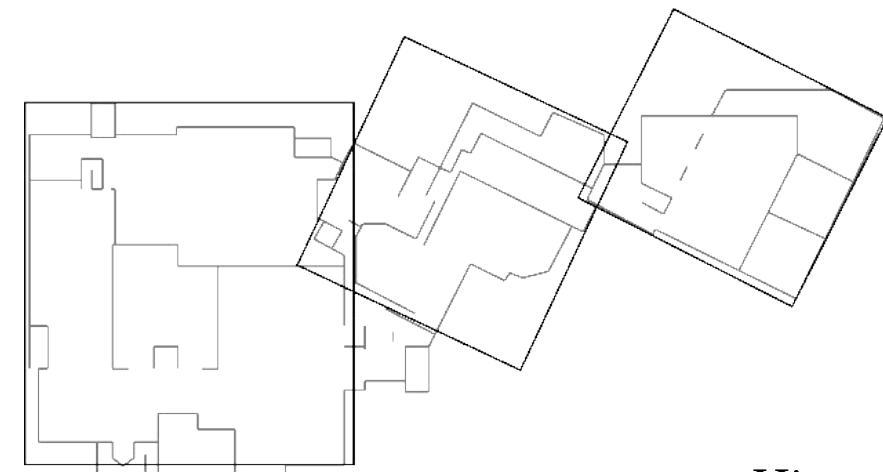
Plan to Section



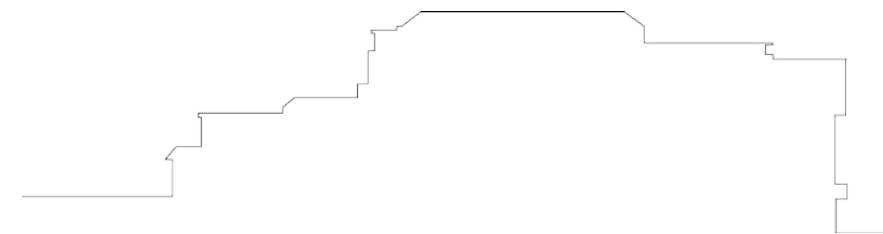
Circulation



Geometry

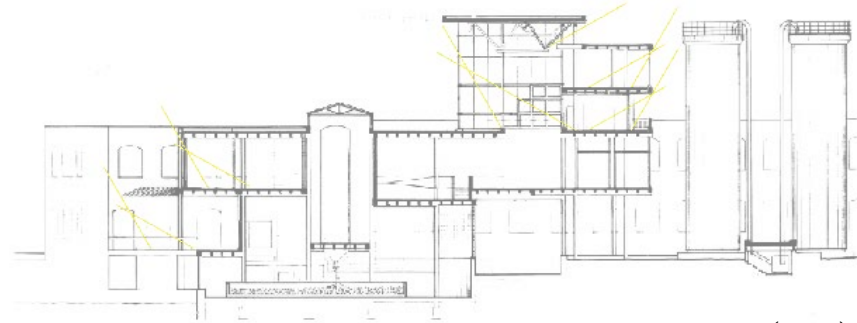


Hierarchy



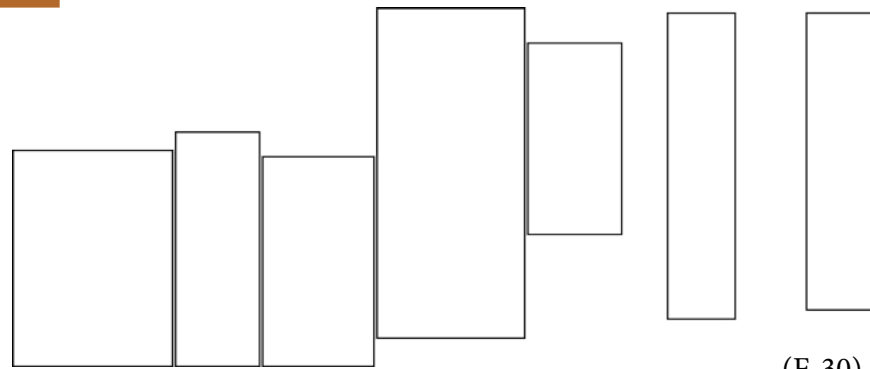
Program

Natural Light



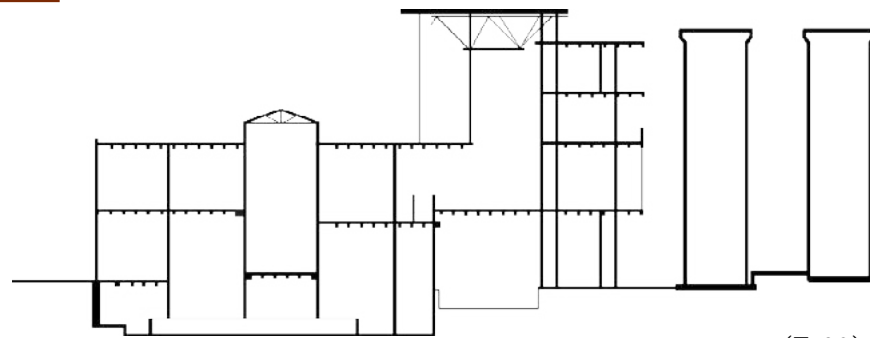
(F. 29)

Natural Light



(F. 30)

Structure



(F. 32)



Program

Typological Research

When looking for inspiration, an open mind allows for diverse influences. The case studies examined were from a wide range of typologies. I picked both physically built structures and theoretical designs. The similarities of the projects lay a strong foundation to drive my design; however the each project's differences also provide a wealth of inspiration that . The projects I chose were The Great Northern Brewery in Montana, Miranda Winery in Australia and the Small Brewery proposed for Lowell, Massachusetts.

A common theme that was present in all three case studies was destination. Each design required customer involvement whether in the brewery's taproom or the winery's tasting room. Each project used different architectural element to market their products. With both The Great Northern Brewery and Miranda Winery, towers were used to capture the attention of passersby. The Lowell Small Brewery employed the use of industrial landscape to great effect, instead of using architectural elements to capture people's attention.

The uncommon attributes between the three projects provide useful information how different techniques can be applied. Each design required presentation of the brewing process. The Miranda Winery solved this problem by creating a stage in the center of the building where the wine sommelier could present. The Great Northern used a Gravity Flow tower to explain their process. The use of this method created a simple to explain process: "Grains go in the top and beer comes out the bottom." Lastly the Small Brewery used spaces to frame each part of the process. This allows customers to examine each piece individually and then apply that knowledge as a whole. Figuring out a way to best describe how the brewing process works will be a very important design challenge.

Conclusion

Each projects seems to fit nicely in its respective site. Both the Great Northern and Lowell Small Brewery are infill projects in urban sites. The Great Northern chooses to stand out in its community by creating the tallest building in Whitefish. By doing this they become a significant place of interest. The Small Brewery becomes apart of the canal façade. By building on the canal their building is able to stand out from the rest. The Miranda Winery is located in the rolling landscape of wine country. The architects here created a building that was largely hidden from site except for the rising tower that acted like a marker. The designers did not want to ha've a bulky building taking up space instead they used the site to create a revealing effect once visitors reached the base of the building.

These projects are exciting examples of what has been done and what could be done. The key questions these case studies ask are: How do you explain the brewing process? How can you best integrate multiple processes into a single building? And how do you create a destination location?

Program

Historical Context

You can't be a real country unless you have a beer and an airline. It helps if you have some kind of a football team, or some nuclear weapons, but at the very least you need a beer.

-Frank Zappa

The history of beer is a long and interesting one that has roots back to the dawn of civilization. This history is filled with marketing geniuses, monumental inventions, passionate artists and a little social disorder.

Historians have looked back in time to try and find out where beer originated. In the documentary How Beer Saved the World experts have said that beer was a catalyst for starting the agricultural revolution. As the story goes, early hunter and gatherers had stored barley grains in a storage container. While the early hunters were out on a hunt, rains had filled the containers with water. The soaked grains began to germinate converting their starches into sugars. Wild yeast then landed in the container and fermented these sugars into alcohol. Whether out of thirst or bravery, one of our ancestors picked up the container and enjoyed that first taste. This discovery some say is the reason why mankind discarded their nomadic lifestyles for agricultural pursuits. (Ives, 2011)

The ancient Sumerians understood the joys of beer well. Their word for beer, "kas," literally means, "What the mouth desires." This gives us a good idea of how central beer was to their culture. (Mosher p. 7) During this time women dominated the brewing process. Women were the alewives who supplied the family with beer and an extra income. The Sumerians even worshiped a deity whose name was Ninkasi, the female goddess who caused the fermentation of malted grains.

As brewers perfected their trade regional style began to emerge. These established styles give us a great insight in the social trends, environmental situations and political policies.

When looking at Belgium, we see exotic styles of beers that are based in spontaneously fermentations. Some of these styles include fruit lambics, saisons and flanders red ales. A key trait amongst these beers is a wealth of fruity flavors. These beers take on the character of the land where they are made. The wine industry calls this terroir. The environmental conditions, especially soil and climate, in which grapes are grown and that give a wine its unique flavor and aroma: the high quality of the region's terroir. (House, 2012) Belgium brewers achieve their unique flavors by capturing wild yeast in the air. When a beer is brewed it is moved to the attic and the exterior vents are opened. Belgium air is allowed to flow across the unfermented beer causing spontaneous fermentations.

While Belgium beers gain their entire flavor from the unique yeast strains, Ireland's flavor is created because of its unique water chemistry. In Dublin, Ireland, the dry Irish stout reigns supreme over all other styles. The reason for this popularity is because of the hard water chemistry. The high alkalinity of the water makes it difficult to produce light pale beers that are not harsh tasting. (Palmer p. 159) Instead brewers have to resort to the use of black malt. The highly roasted black malts used in making Guinness Stout add acidity to the mash. By altering the pH of the mash, the enzymes are able to work effectively to produce the world-renowned dry Irish stout.

Program

Historical Context

To describe Germany without the mention of beer would be like talking about Minnesota without mentioning its lakes. Germany is the home to the lager, hefeweizen and the Reinheitsgebot. The lager and the hefeweizen were the famed styles of Germany. Brewers quickly adapted to brewing with the unique lager strains. The lager strain is a bottom fermenting yeast that requires long storage and cold temperatures. Breweries that specialized in lagers required large basements or caves in which the beer could be stored cold. The benefit to producing lagers is there is less chance for infection. At cold fermentation, temperatures bacteria are less likely to ruin the beer.

The Germans were also known for their wheat beers called hefeweizens. These beers are distinctive since they are brewed with a large amount of wheat malt and the yeast gives off a distinctive banana and clove aroma and flavor. The hefeweizen is an introductory example of how beers can be brewed with adjuncts other than barley. In 1516 the Bavarian Duke Wilhelm IV decreed the Reinheitsgebot. In English this is called the Beer Purity Law. The original text says that, "We wish . . . forthwith that . . . in all our towns and markets and in the countryside no other items be used for beer than barley, hops, and water." (Oliver p. 692) This is considered one of the oldest food safety laws in existence. However this law did kill off some old styles such as the German spiced beer and cherry beer.

The first hopped beers appear around the year 1000 in the north German Hansa trading league city of Bremen. (Mosher p. 12) Hops were a great addition to the brewing process since the boiling the hops extracted bitterness, which creates a preserving agent. England is most noted for its use of hops in their IPAs. The name IPA stood for India Pale Ale. These beers were brewed to be stronger and have a large amount of hop character. The combination of hops and alcohol allowed these beers to travel far distances without spoiling. This mean the IPA was a popular choice for enlisted soldiers on the fringes of the British Empire. England's Burton-on-Trent was blessed with soft water that has a high level of sulfate. This means that the brewers were able to make a lighter colored beer and the sulfate accentuates hop bitterness, making the bitterness seem drier and crisper. (Palmer p.159) (These sound perfect for a shore leave in the tropics.)

Early immigrants to America brought with them their knowledge of brewing. During this time drinking water was not trusted because of pollution problems back in Europe. Because beer is boiled during the brewing process, it is seen as safe. Breweries began to appear throughout the colonies; however after the revolutionary war beer was seen as British and the new Americans tastes moved toward stronger-spirit drinks.

Unrest in Germany and Bohemia – especially political chaos – occasioned by demands for more-democratic governments, forced many to head for America in the 1840s. (Mosher p. 20) This flood of German immigrants brought with them ambition, desire and a lager yeast strain.

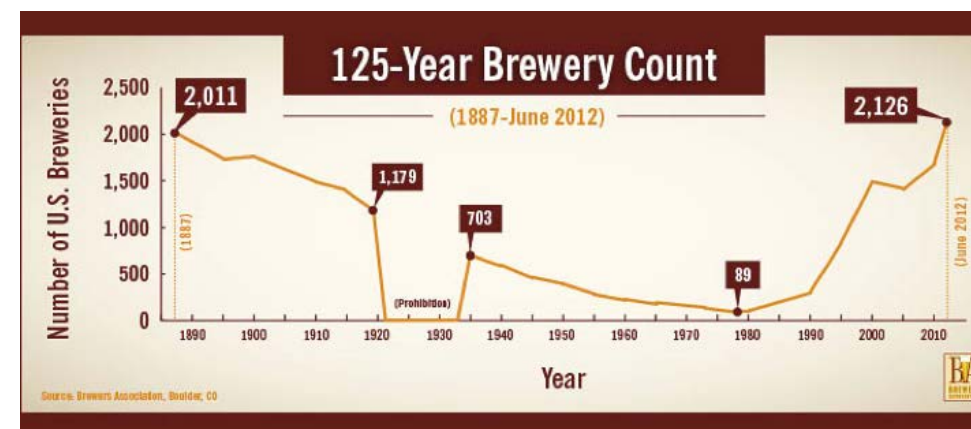
Program

Historical Context

In the graph on the next page, you can see the decline and growth of the brewing industry. Back in 1880 there were over 2,000 different brewers. These breweries ranged from small local operations, to macro monsters like Pabst, Miller and Anheuser-Busch. The larger brewer paved the way for increased production and distribution options. The men at the head of these companies wished to unite the country under one nationwide beer: the pilsner. Once the American public saw this golden clear drink, they were hooked. The macro breweries began to struggle against each other scrapping for every percent of market share they could get. Smaller breweries that were on a thin budget were either shutting down or being eaten up by the bigger guys.

Once Prohibition was enacted in 1919, the game changed. Brewers had to quickly adapt and find new products to produce. Some brewers started brewing near-beer that was legal to produce because it had half a percent of alcohol. But customers found it dreadful. Other breweries created malt extracts. These malt extracts could be used to create home brewed beer. The follow is a poem about homebrewing during Prohibition:

“Mother’s in the kitchen washing out the jugs
Sister’s in the pantry bottling the suds
Father’s in the cellar mixing up the hops
Johnny’s on the front porch watching for the cops.” (Jabloner, 1997)



(F. 33)

(History of Homebrewing, 2012)

The legalization of homebrewing greatly aided the growing craft beer movement. Homebrewers were now educating their friends and families about the unique and possible flavors that were different than just the standard pilsner. Many brewers began their careers as avid homebrewers. With the aid of technology more and more brewers had access to information on how to improve their beers. Brewers began to meet together in clubs and discuss brewing techniques. The Maltose Falcons homebrew club, which is still going strong to this day, was founded in Los Angeles in 1974. (History of homebrewing,” 2012)

In 2012, Paul Gatza presented his state-of-the-industry presentation to the Craft Brewers Conference on May 3rd. In this presentation, Gatza shared important facts about industry positives and concerns: The craft movement has seen a 13% growth while the domestic non-craft has experienced 2.5% decrease in the beer sector. The small brewing industry creates 57,662 full-time jobs and 45,923 part-time jobs. Two other factors that are aiding the craft beer industry is the changing palate of the American consumer and consumers wanting locally made products. (Gatza, 2012)

Program

Historical Context

While there is great growth in the brewing industry, Gatzka shared a couple of concerns. These include: quality, an abundance of microbreweries, crowded marketplaces and ingredient concerns. These concern have a common theme of managing growth. The market will adjust to entering breweries, but bad management and poor quality will reduce market growth.

My take on the industry:

I feel the craft beer industry will continue to grow as long as there is passion for the art. Brewing beer is a labor of love much like that of any painter, artist or chef. The brewer is a student of the past and present, learning the techniques of yesterday and adapting them for tomorrow. The industry is filled with passionate professionals who care about their communities. These people will be the ones with their hands on the throttle and it is their choice to decide how far and fast they will go.

Brewers are the artists of the pint.

Goals

Academic Goals

Academically speaking I want this thesis to be a display of my knowledge and experience that I have learned through my years at NDSU. Through the production of this project I wish to progress my knowledge of the tools of expression. Through multiple medias I would like to improve my ability of expression. With this being my final project I will try and keep a conservative mindset when setting expectations and experimentations. It is my wish to have a completed project by the end of this school year and by keeping a practical mind will save problems later in production.

My hope is that this project will answer that initial questions I ask, but I hope that it will help generate new interest and questions. While these new questions may not be answered during the time span of this project, I hope that they continue my interest of discovery and intrigue.

Professional Goals

This thesis I hope will be a great addition to my portfolio and to be a display of the work that I am able to produce. With the different industries that I am examining I hope to draw a unique perspective while creating my final solution.

While I wish to professionally pursue the architecture profession I want to continue my examination of the brewing profession. It is my desire to work within both fields and to try and bridge the gap between my two passions. Through this thesis I will increase my knowledge in both fields specifically by meeting and developing relationships with professionals in the industry.

Personal Goals

Personally I want this thesis to test me in my ability to undertake a large project while still maintaining a balanced life. This project is a combination of two passions in my life: Architecture and Brewing. By working on this thesis I will better understand their relationship and at the completion of this project I hope to have a better understanding of unique options that this relationship creates.

This thesis I hope will help direct me into a field that I can enjoy and love. By combining my two experiences my wish is to provide a new outlook and perspective in the work that I design. Much like the academic and professional goals I want to look back at this project and have an understanding of the level of work that I can create within a given time.

Program

Narative For site

Fargo –

Fargo is one of those cities that everyone has heard of, but they do not know what it is like. It is commonly described as a small North Dakota town where there is snow 10 months out of the year and everyone talks with a Norwegian accent, which has been highlighted by the Coen Brother's movie Fargo. While this dark comedy was entertaining and reinforced stereotypes for the rest of the country it does not come close to defining the experience of this town. Since most of the country believes this is what Fargo is like; that is what I give them. By playing upon these misconceptions I can have a lot of fun describing the harshness of the climate and even throw in a funny accent. All jokes aside I always insist it's a place that needs to be experienced in order to enjoy. Fargo is filled with gems that need to be found. These gems provide an experience that make you forget you are in North Dakota.

When enjoying Fargo I insist to visitors to eat, drink and dance thru the town. On any given night there is a band performing, interesting food and fun specials. It's a town where people are always inviting and quick to lend a hand. Everyone has jumper cables and they cannot count on their hands how many times they have used them. During the winters it is understood that either you will help push three cars out of a snow bank or you will be pushed out at least once.

Fargo is a town where it tries to act big, yet continues to have a small town feel. The downtown is a world where regulars are created fast and treated well. The interconnectedness between the served and server has built up relationships that allow characters to be born. These characters play a role in the development and growth of the downtown community through their interactions and introductions. These hosts are able to increase a visitor's feeling of belonging; drawing them into fabric of the community.

Fargo is more than the movie, the cold and the flood. Fargo is a city of students, workers and professionals all living their lives. It is a rounded city that has splashes of culture and traditional conservatism blended together. It is a place of home and homecoming where nostalgia wipes away the hardships and helps us remember fond memories.

What is Fargo? It is a town to be experienced and yes, they do have a wood chipper.

Program

Views and Vistas

Currently the space is a vacant parking lot in the center of downtown Fargo. Located on 3rd Avenue and Broadway it has three different views: along Broadway North and South, down 3rd and from within the site. With all three vistas the downtown community is framing the views.

The view down 3rd Avenue has a multitude of buildings including the American Legion and the American Federal Bank. There is a skywalk that frames the distant view of the river and CHURCH. The tallest building is to the east and the buildings get shorter as the view is turned northward.

The views up and down Broadway are the most iconic for Fargo. From standing next to the painted buffalo we can frame Broadway's views into two different views depending which direction you are facing. At this point the small town (north) meets the growing city (south).



(F. 34)

The view to the north becomes less dense as your eyes travel down the street. The commercial buildings turn into churches and then residential developments. There is a railway crossing that is mildly active during the day and more active at night with the Amtrack service. The most notable landmark is the Fargo Theater. With its shiny lights and prominent sign the Fargo Theater is one of the most activity-photographed structures in town.

To the south we see a density of larger buildings. The Radisson rises high on the southeastern corner and is matched by the Black Building on the opposite corner. Between these two buildings is filled with activity and colors. With the Bank of the West filling the view to the south it creates a sense of density. The high storefronts help funnel views into the perspective allow for greater focus on specific details instead of being lost in the landscape.

The last major vista is found from within the site. By walking into the middle of the site the views along the streets are lost. The buildings on all sides, which removes the horizon and makes the site intimate. The façade to the north of the site creates a nice backdrop, while the majority of attention is presented to the south. The large buildings of the south draw the eyes and frame the sky. Directly to the south is a concrete park. This space is home to many community events like Streets Alive and Cruising on Broadway. A great benefit to having this park is the increased access to the southern sky.

Program

Built Features

Since this is an infill project there are many built features surrounding the site. The two most notable features are custom storefront signs and the concrete park. The custom made signs are a staple of down town business. These include the Fargo Theater's large sign, the Hotel Donaldson's corner sign and the big JLBeers sign. These custom made signs allow stores to stand out and create destination markers for people looking down the street. The park to the south is a great place to hold events. It also is a great place to sit and enjoy a meal on a hot summer day.

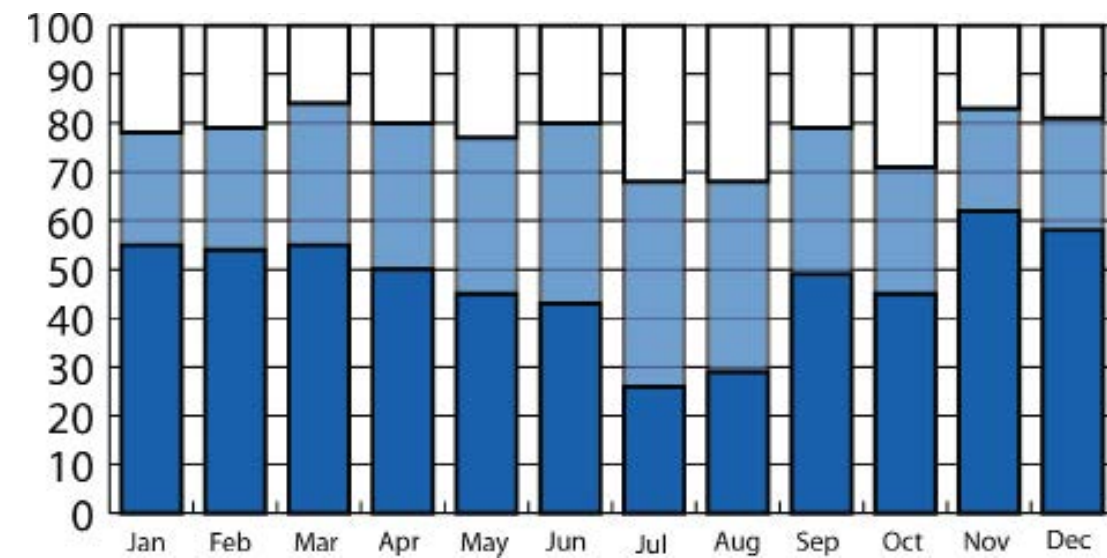


(F. 35)

Light Quality

The site is largely open to the sun all year long. There are shadows created in the morning by the Radisson otherwise there is great access to both southern and western light. Due to the lack of trees on the site there is a high possibility of over exposure if shade is not offered.

Cloud Coverage



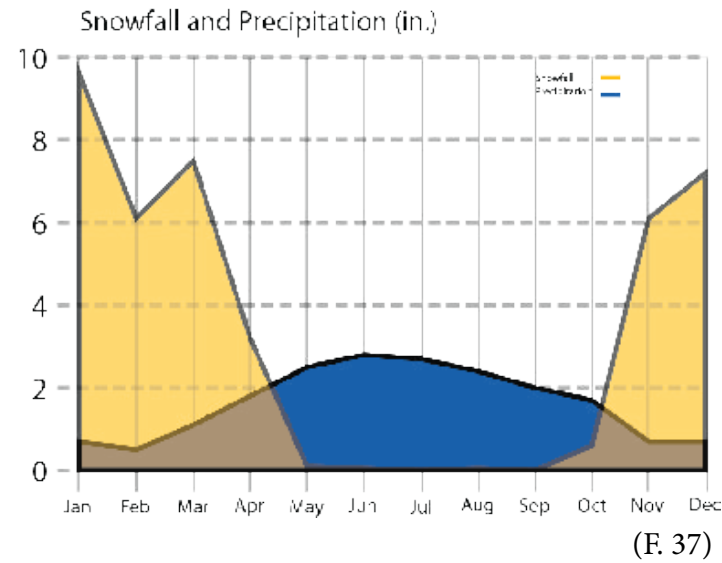
(F. 36)

Vegetation

Downtown Fargo has a team of city workers that tend to the plant life and flower plots during the summer. These workers weed and maintain the colorful displays. However due to the harsh nature of Fargo winters planting arrangements can only survive so long.

Program

Snowfall and Precipitation



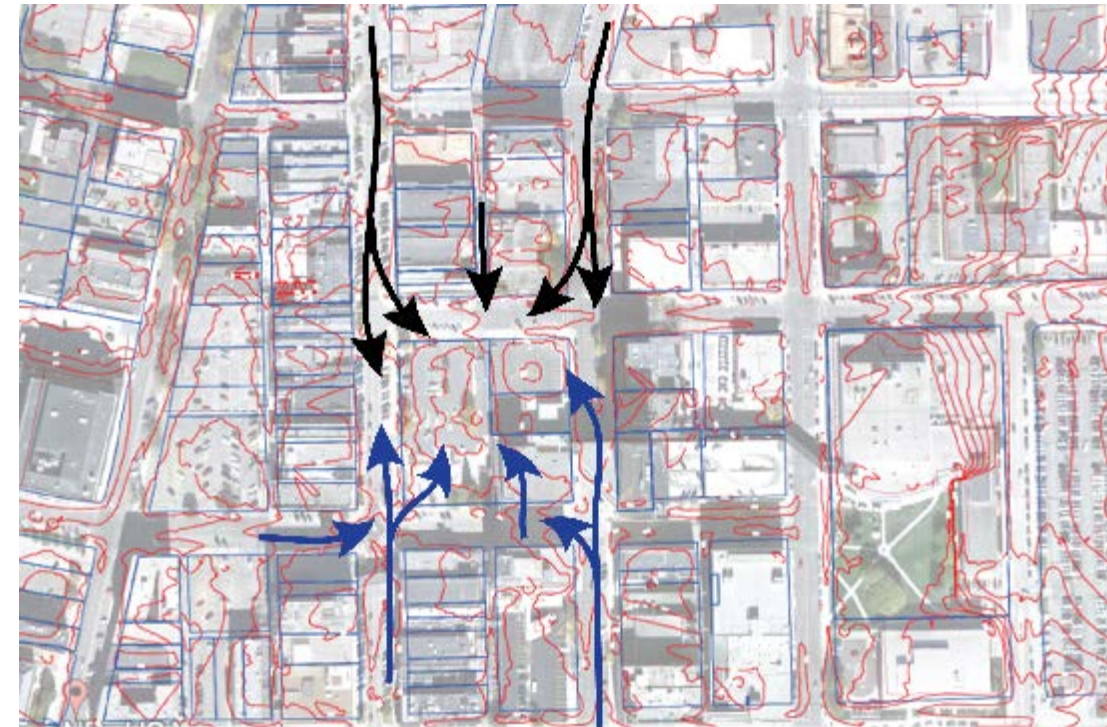
Wind

A common annoyance that bikers have is that while commuting in Fargo there is always a head wind. Fargo tends to have cold winds coming from the North and warmer winds coming from the south. These winds may be a steady breeze or gusting winds. Since Fargo's winters can drop easily below negative ten the wind chill can have dangerous effects. Due to these conditions a vestibule is a very useful architectural element.

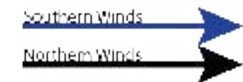
Wind Speed



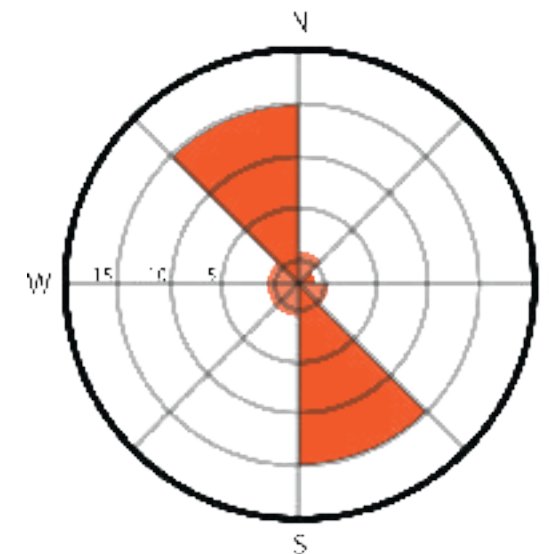
Wind and Structure



(F. 38)



Wind Speed and Direction



(F. 39)

Program

Human Characteristics

The downtown is full of life and full of variety. Visitors are told to eat, drink, shop and dance their way through Fargo. During the summer people will sit out and enjoy the open air and blue sky. At night the street comes alive with the boisterous sounds of an entertaining night. The difference between summer and winter is how long people will mill outside. The harsh cold winters make transitions between warm places much quicker.

Distress

The urban setting makes allows for a more durable construction. The majority of distress is the result of human interactions. Intoxicated persons usually cause these problems as they travel up and down Broadway. The patrols of police cars and bike cops tend to reduce these types of actions. However there is one night of the year that requires extensive clean up and that is Zombie Pub Crawl, a lot of fake blood in the gutters.

Pedestrian Traffic

There is a majority of traffic flow north and south along Broadway. During the day it is comprised mostly of business professionals, students and families going shopping. At night the crowd becomes a mixture of people looking for entertainment. There is a level of traffic flowing East towards the river, however this by no means compares to the density on Broadway.

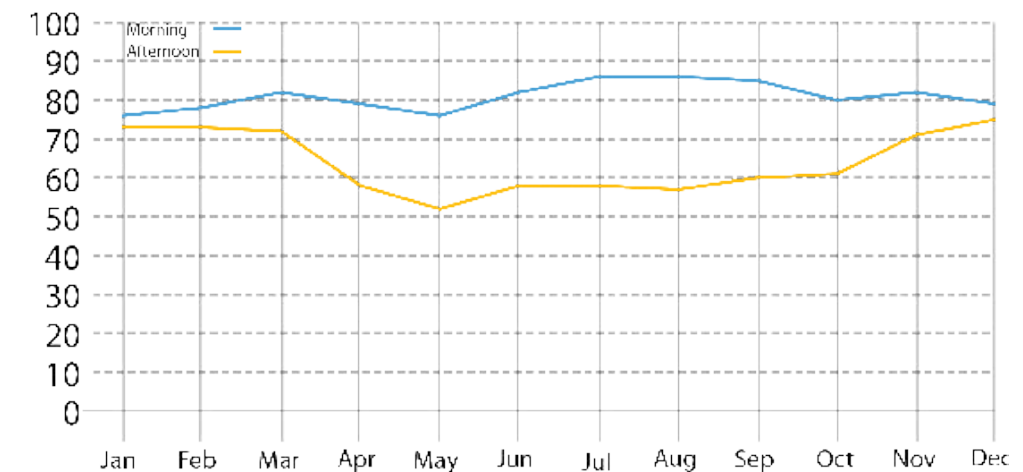
Flow and Noise



(F. 40)

Relative Humidity

Relative Humidity (Percentage)



(F. 41)

Program

Soil Sample

The Fargo series consists of deep, poorly drained, slowly permeable soils on glacial lake plains. The soils formed in fine textured lacustrine sediment. The slope ranges from 0 to 3 percent. (Prochnow, Lunde, Willie & Opdahl, p. 94) A seasonal high water table fluctuates between depths of 0 and 3 feet. (Prochnow, Lunde, Willie & Opdahl, p. 46)

Soil Map



(Prochnow, Lunde, Willie & Opdahl, p. 46)

(F. 42)

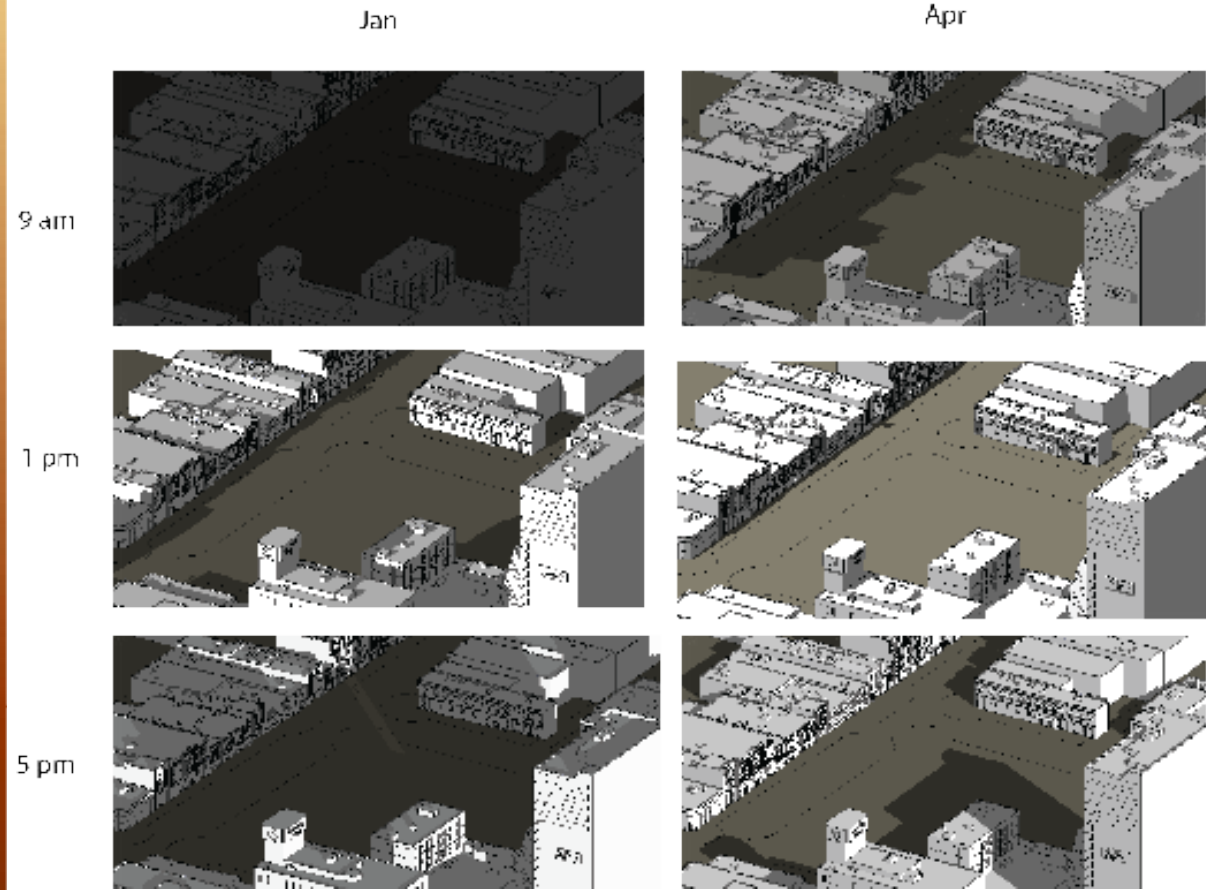
Topography and Slope



(F. 43)

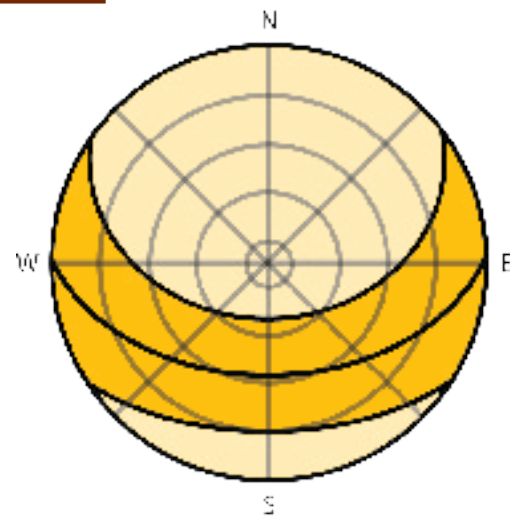
Program

Shadow Studies



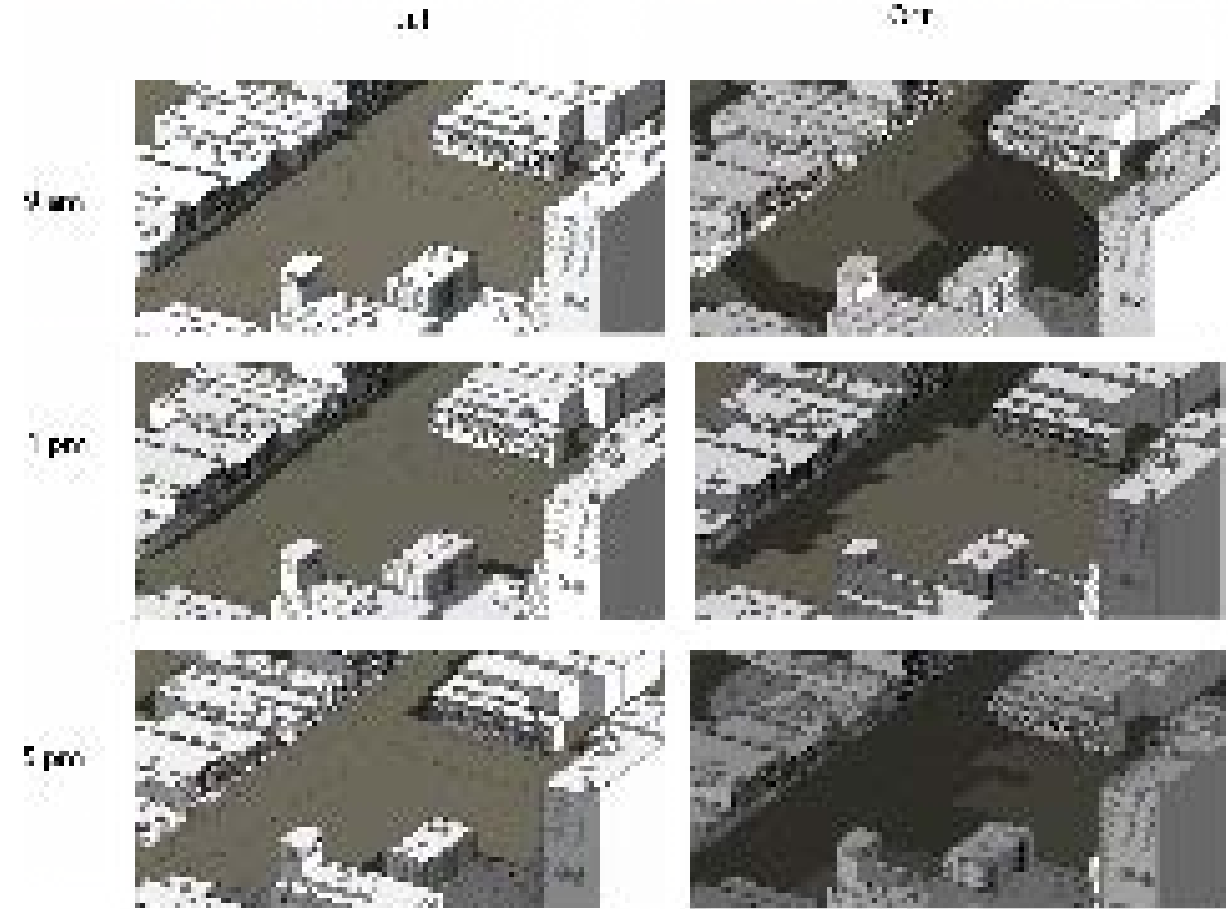
(F. 44)

Solar Path



(F. 45)

Shadow Studies



(F. 46)

Program

South Direction



East Direction



West Direction

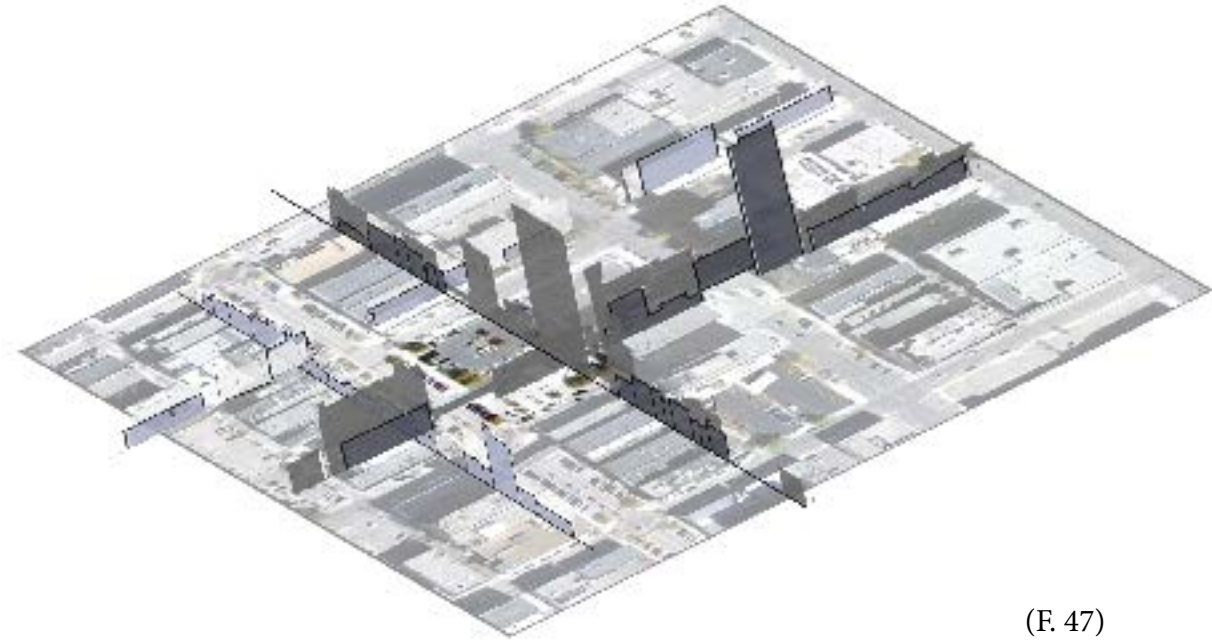


North Direction



Program

Plan and Section Study



(F. 47)

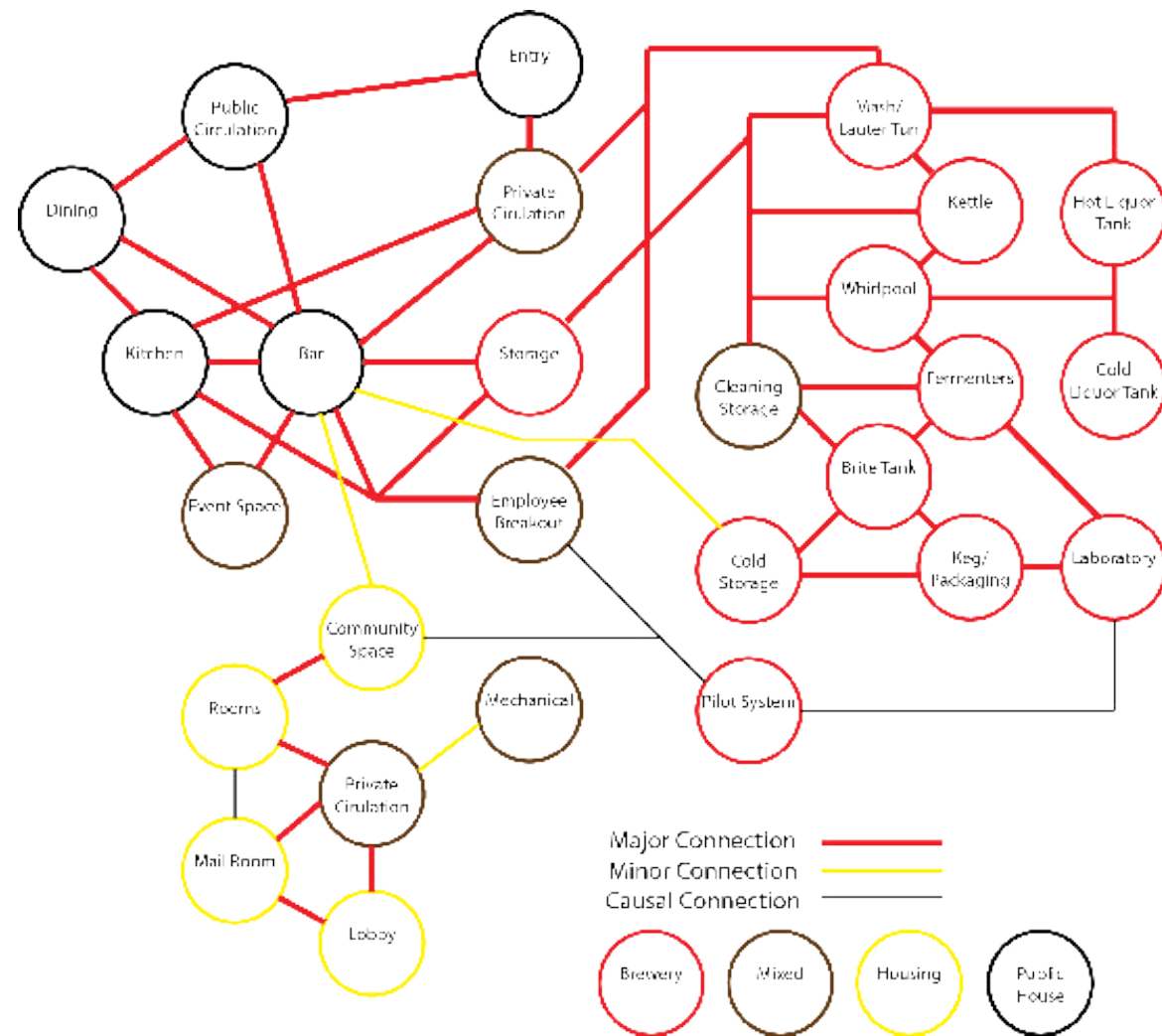
Interaction Matrix

	Public House				Brewery								Housing				Mixed										
	Entry	Dining	Bar	Public Circulation	Kitchen	Storage	Cold Storage	Mash/Lauber Tun	Kettle	Whirlpool	Hot Liquor Tank	Cold Liquor Tank	Fermenters	Laboratory	Keypackaging	Brize Tank	Pilet System	Lobby	Mail Room	Private Circulation	Rooms	Community Space	Mechanical	Cleaning Storage	Employee Breakout Space	Event Space	
Public House																											
Brewery																											
Housing																											
Mixed																											

(F. 48)

Program

Interaction Flow Chart



(F. 49)

Space Sizes

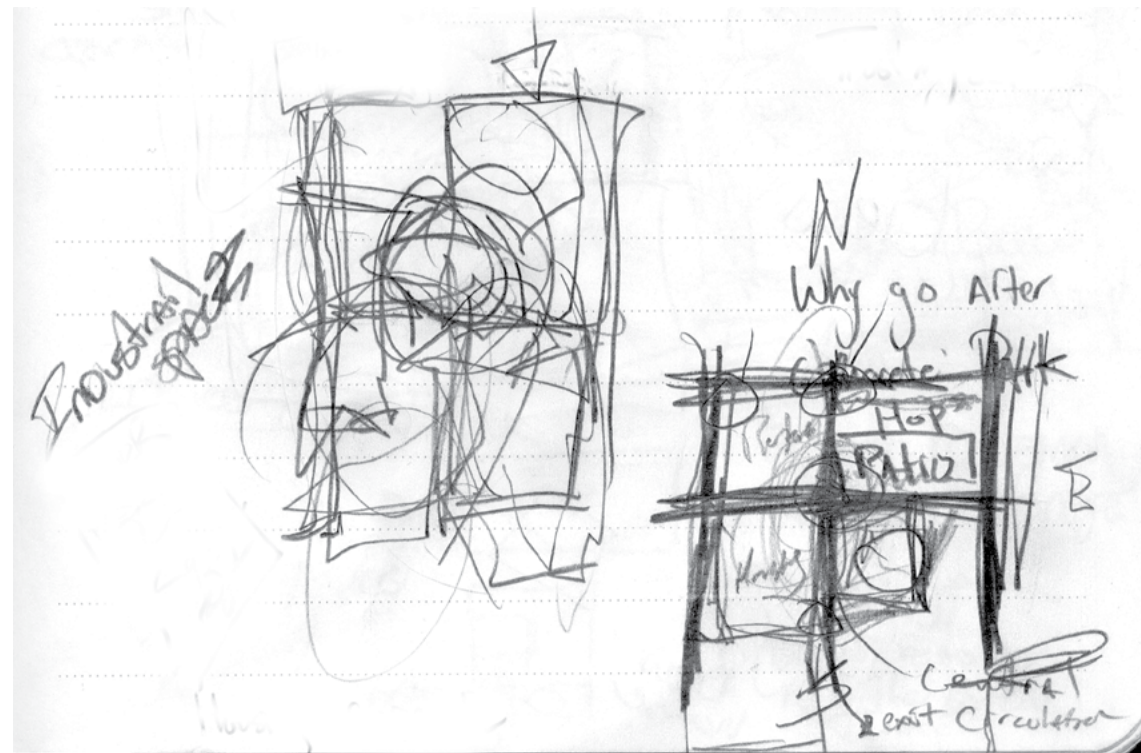
Mash-tun	190
Hot Liquor Tank	150
Lauter-tun	182
Kettle	150
Whirlpool	368
Cold Liquor Tank	200
Fermenters	1050
Gain Room	400
Keg/Package	900
Lab Space	210
Office	160
Lower Bar	250
Upper Bar	448
Employee Lounge	322
Prep. Space	480
Kitchen	679
Greenhouse	810
Observation Point	625
Dining	5136
Mezzanine	1190
Event Space	4745
Walkway	1450
Enclosed Patio	1118
Residential Space	4800
Entry / Mudroom	1400
Cold Storage	265
Mechanical Space	256
Bathroom	1110
Loading Dock	960
Total	30000

Process Documentation

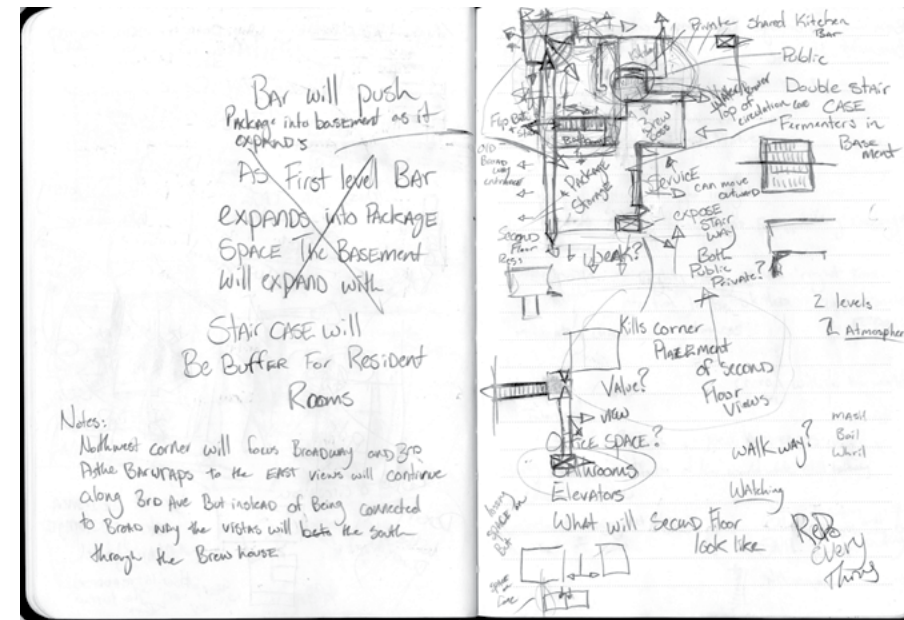


Process Documentation

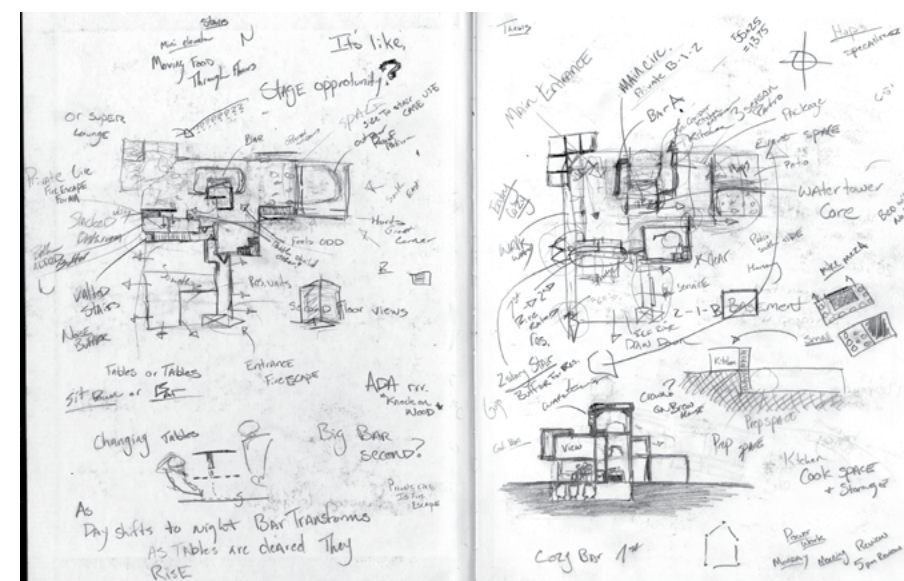
Early Design Sketches



Walkway Development

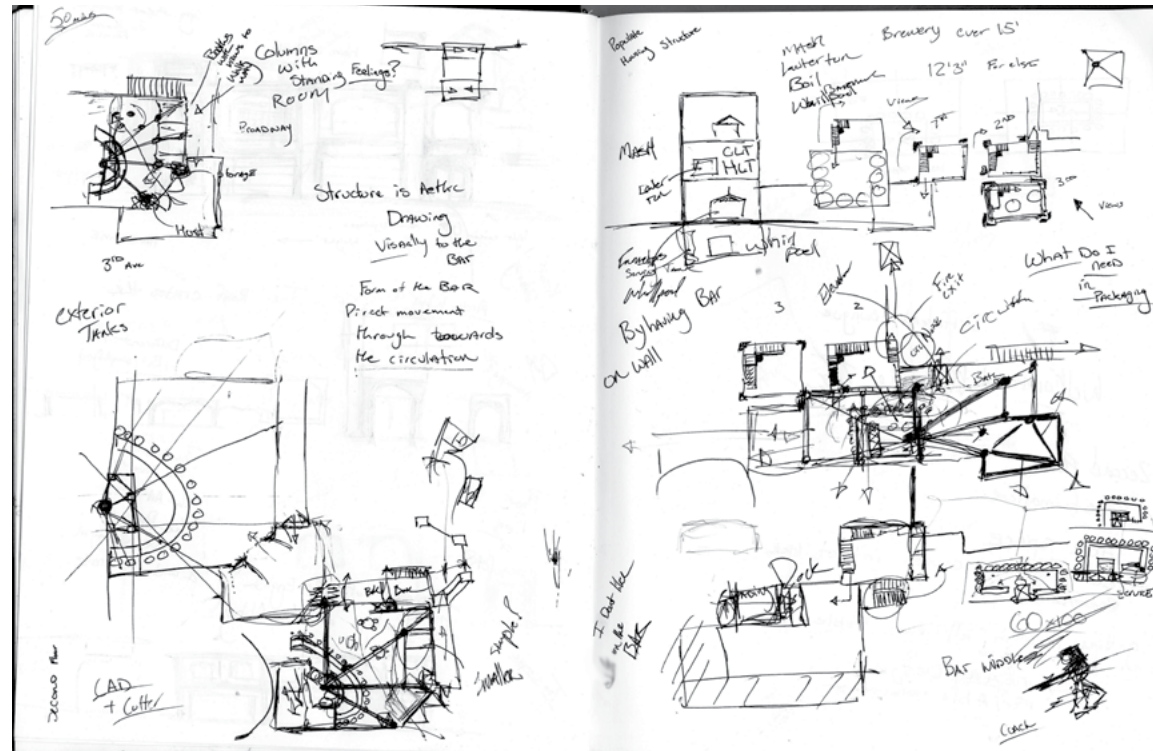


Early Floor Plan Development

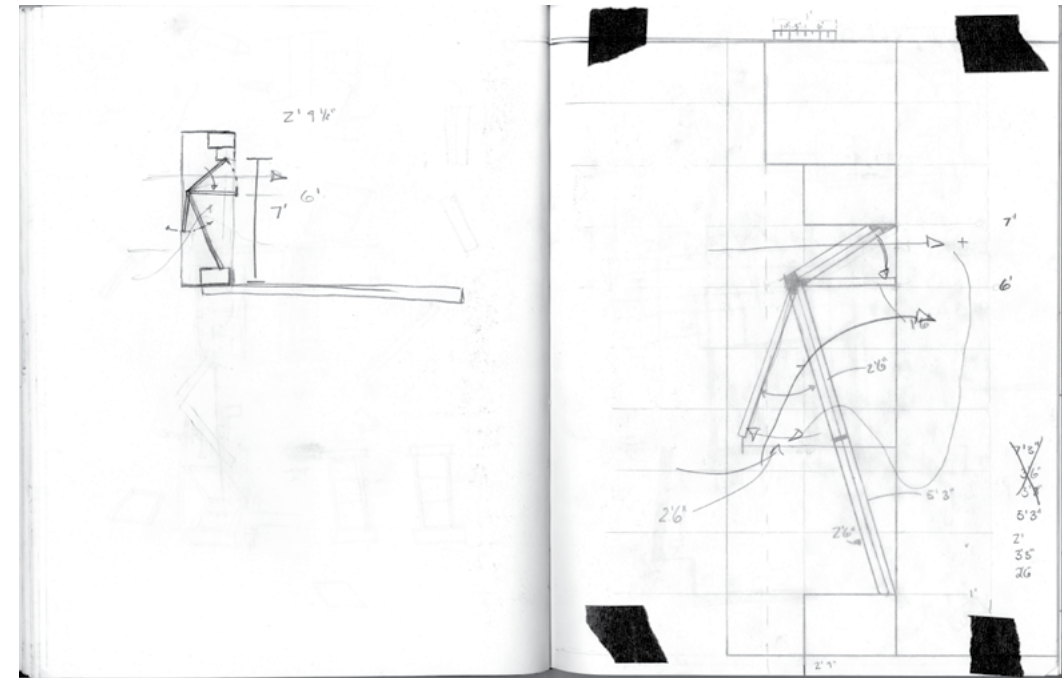


Process Documentation

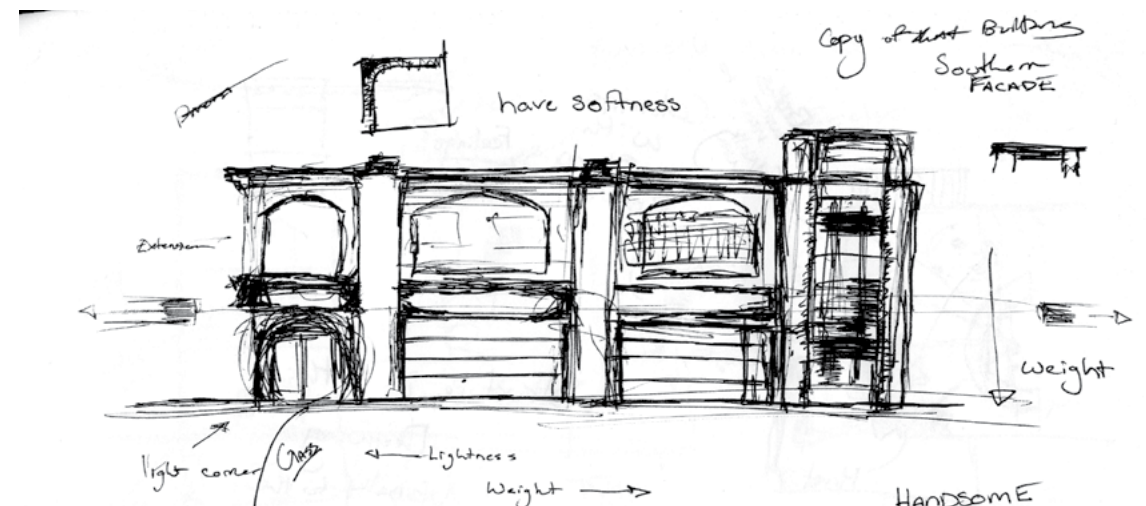
Bar Layout Development



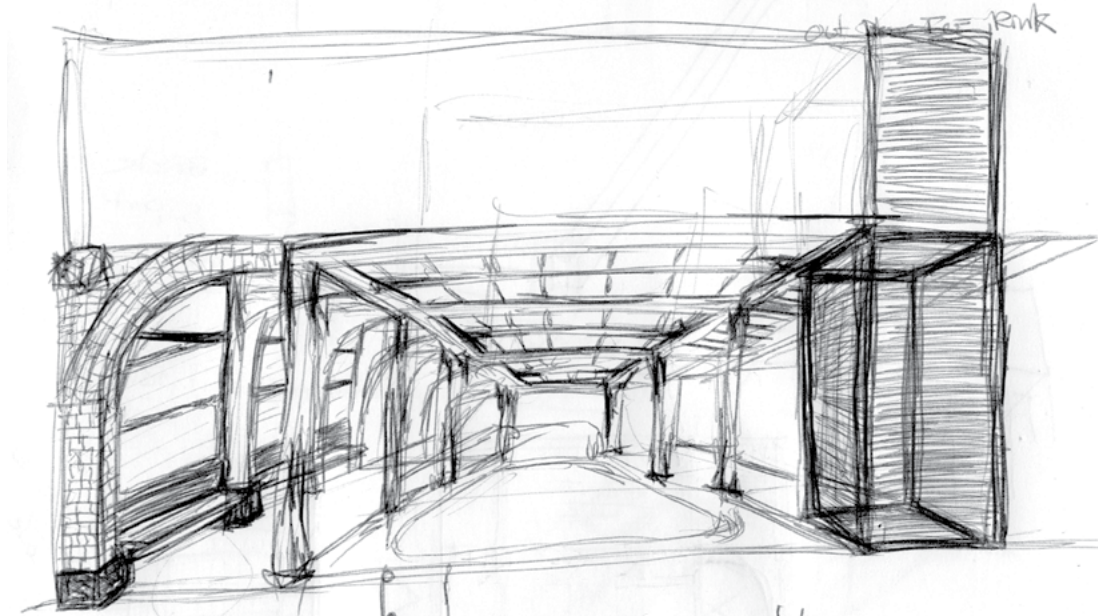
Early Floor Plan Development



Southern Facade

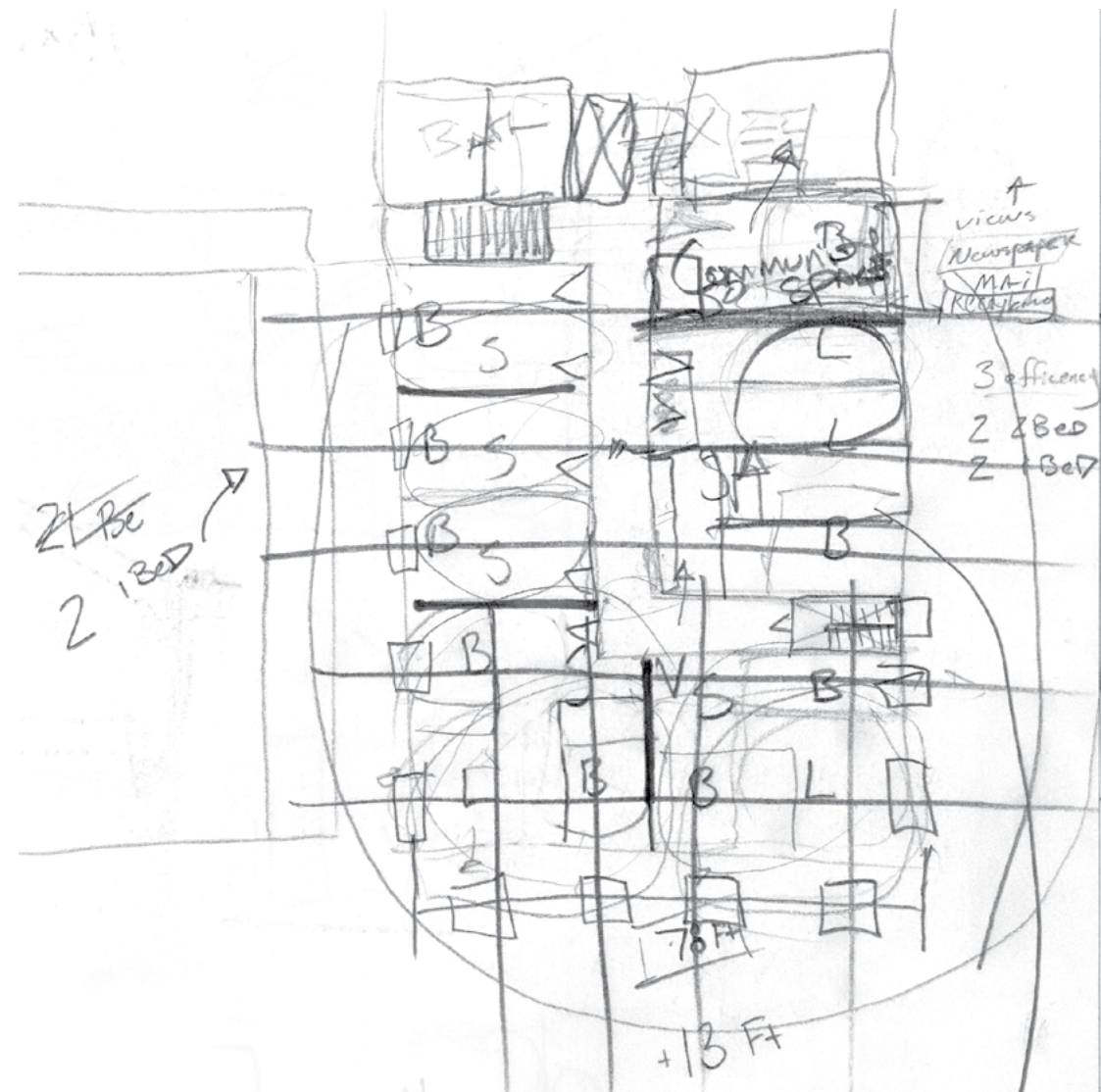


Event Space Rendition

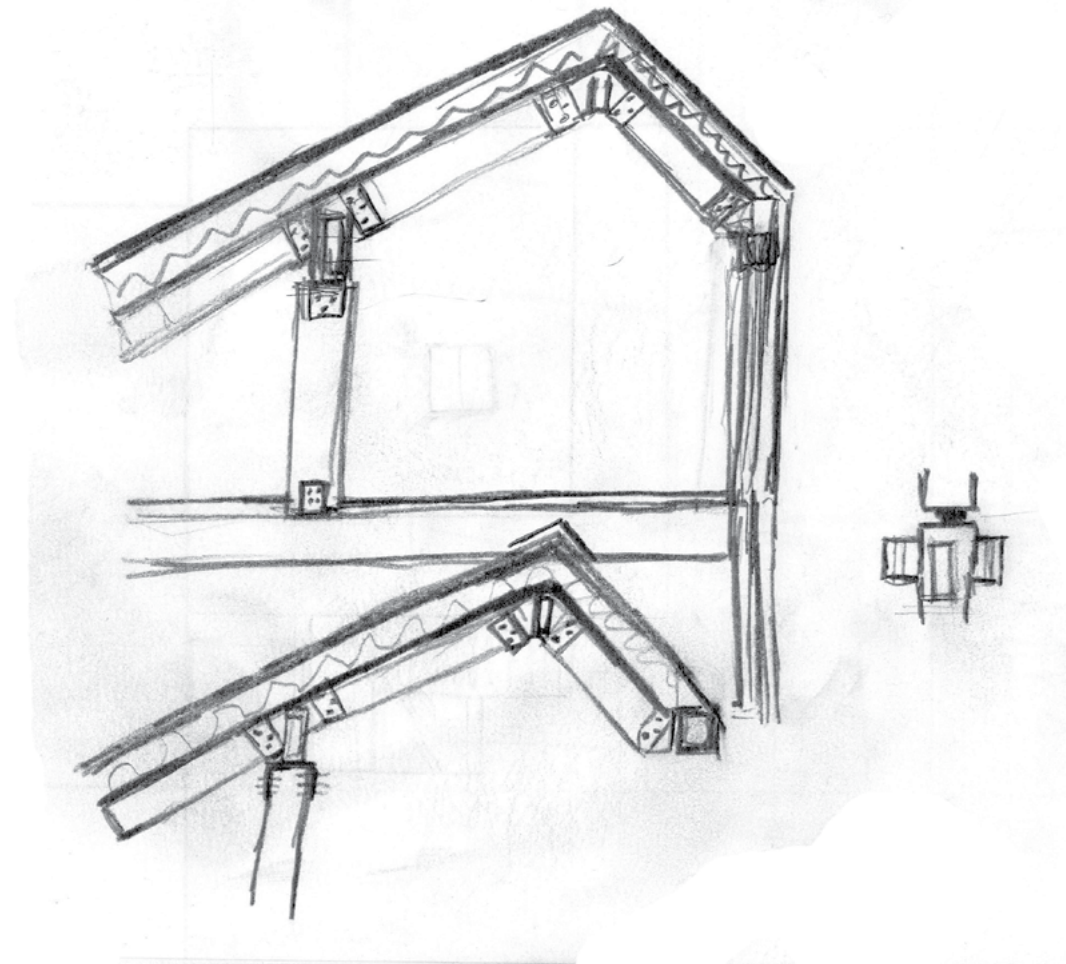


Process Documentation

Bedroom Rendition



Structure Process



Midterm Review



Midterm Review

West Facade



East Section



Brew House Section



South Section



Midterm Review

Front Entrance



Walkway

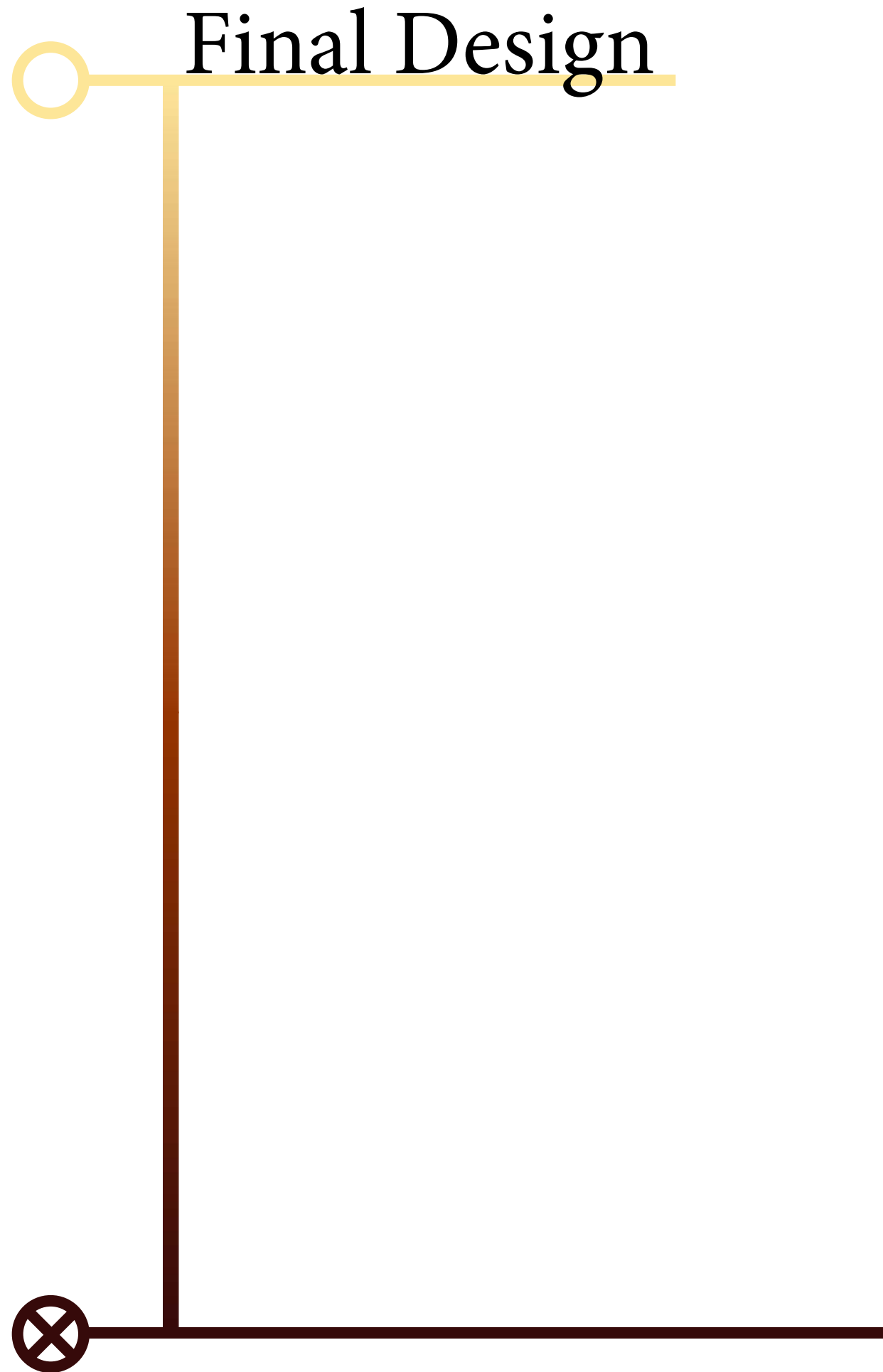


Lower Bar



Upper Bar



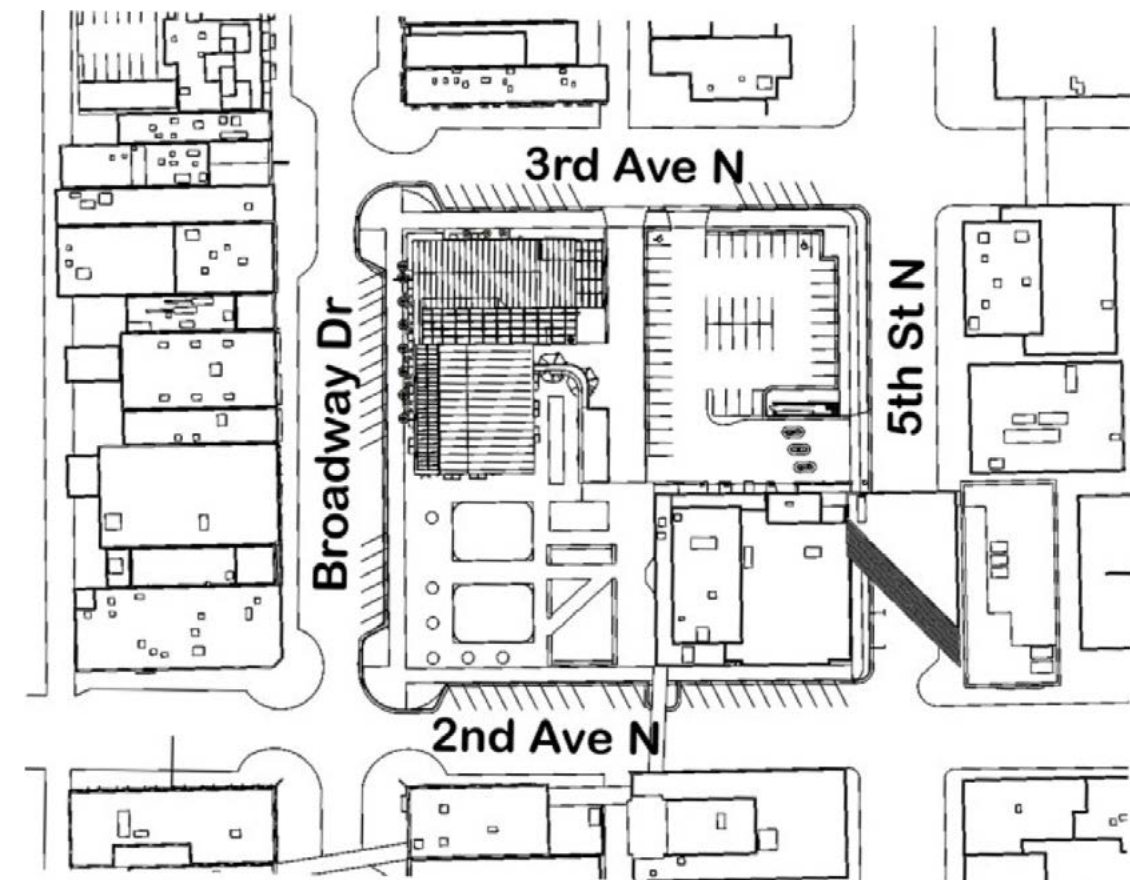


Final Design

Night / Snow Rendering



Site Development



Final Design

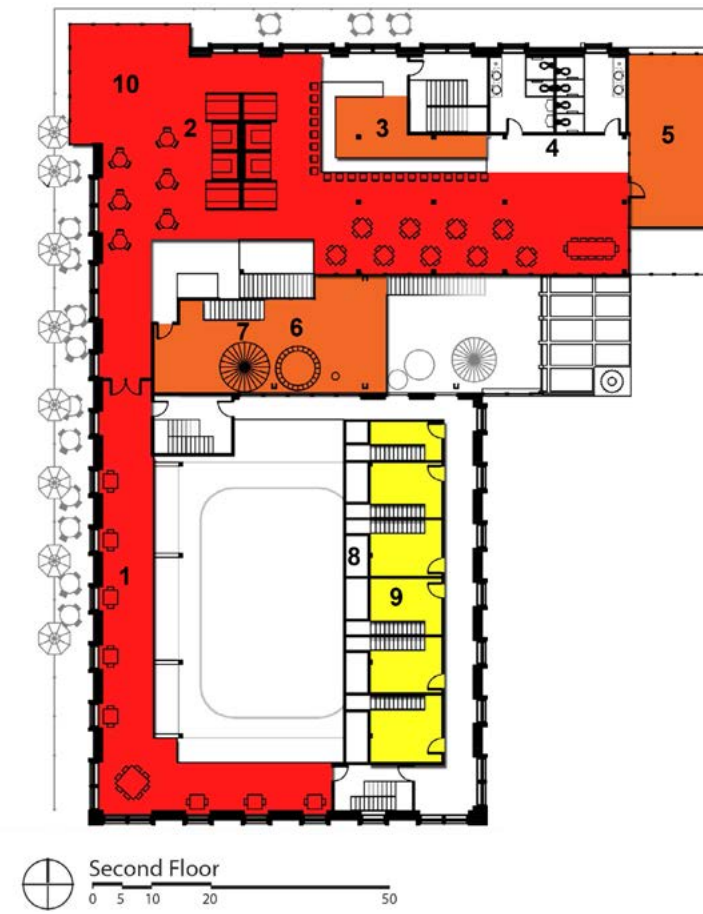
1st Floor Plan

- 1 - Walkway
1450 sq.ft
- 2 - Bathroom
555 sq.ft
- 3 - Lower Dining
2000 sq.ft
- 4 - Lower Bar
250 sq.ft
- 5 - Kitchen
680 sq.ft
- 6 - Keg/Package
900 sq.ft
- 7 - Loading Dock
960 sq.ft
- 8 - Cold Liquor Tank
200 sq.ft
- 9 - Whirlpool Kettle
370 sq.ft
- 10 - Event space
4745 sq.ft



2nd Floor Plan

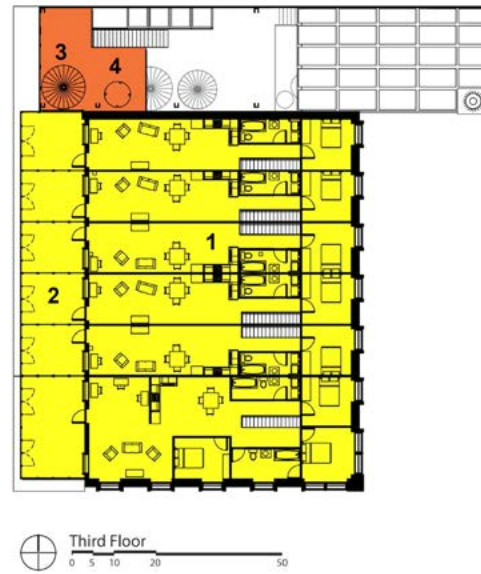
- 1 - Mezzanine
1190 sq.ft
- 2 - Upper Dining
3100 sq.ft
- 3 - Upper Bar
450 sq.ft
- 4 - Bathroom
555 sq.ft
- 5 - Greenhouse
800 sq.ft
- 6 - Boil Kettle
150 sq.ft
- 7 - Lauter Tun
180 sq.ft
- 8 - Mech. Space
300 sq.ft
- 9 - Mudroom
1000 sq.ft
- 10 - Observation Space
625 sq.ft



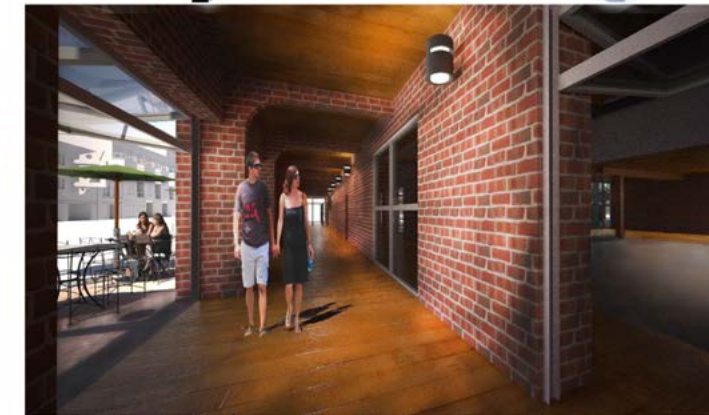
Final Design

3rd Floor Plan

- 1 - Residential Space
4800 sq.ft
- 2 - Patio Space
1100 sq.ft
- 3 - Mash tun
190 sq.ft
- 4 - Hot Liquor Tank
150 sq.ft



Walkway



Basement Floor Plan

- 1 - Fermenters
1050 sq.ft
- 2 - Lab Space
210 sq.ft
- 3 - Grain Room
400 sq.ft
- 4 - Office
160 sq.ft
- 5 - Cold Storage
265 sq.ft
- 6 - Employee Lounge
350 sq.ft
- 7 - Prep. Space
480 sq.ft
- 8 - Mech. Space
500 sq.ft



Lower Bar

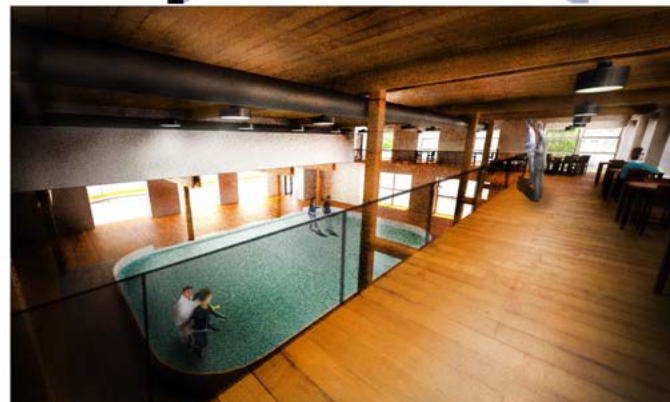


Final Design

Upper Bar



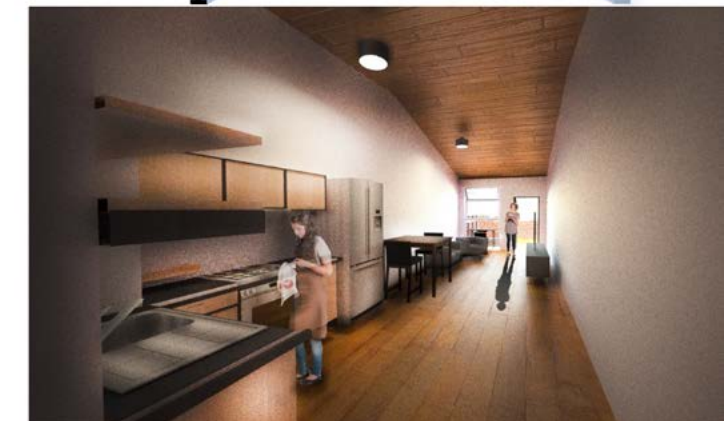
Mezzanine



Walkway

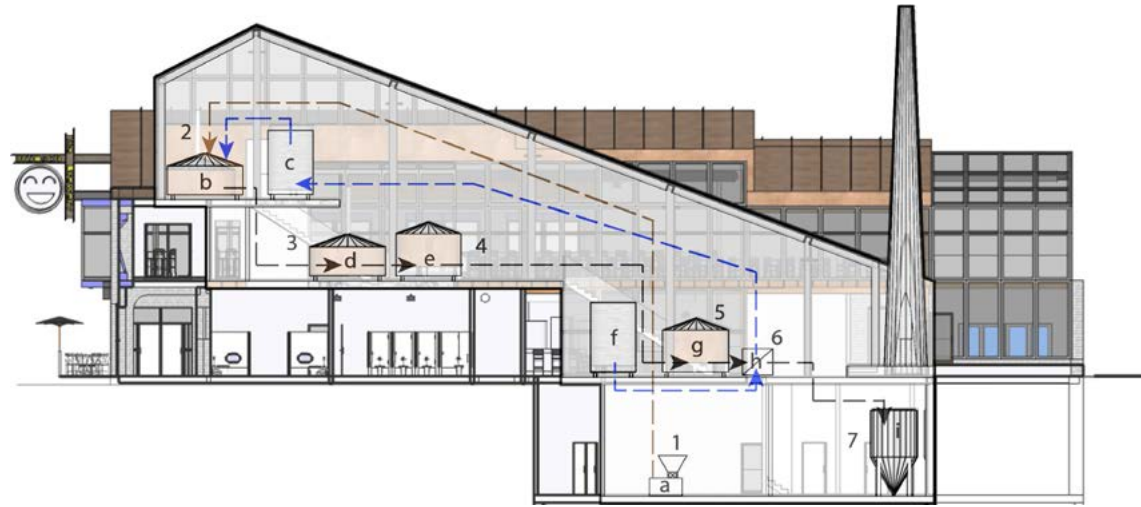


Lower Bar

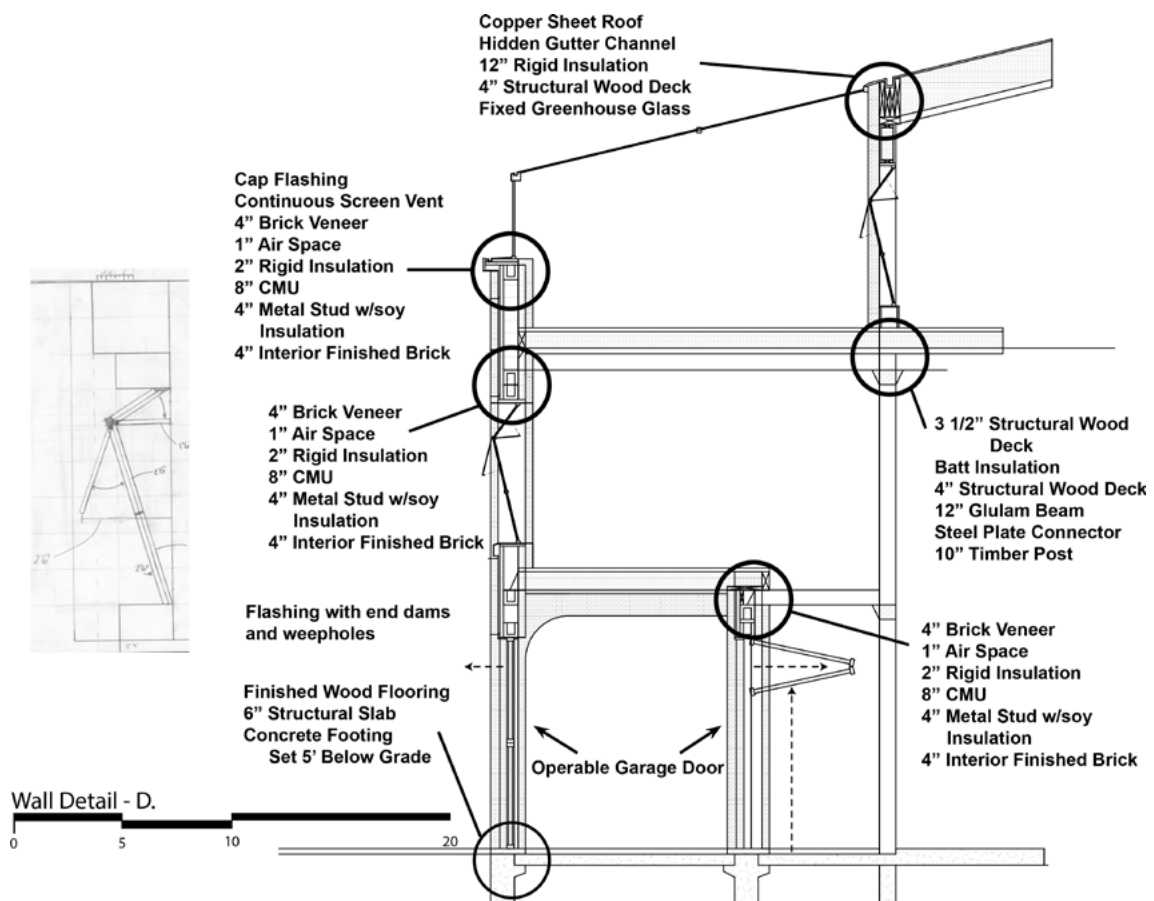


Final Design

Upper Bar



Mezzanine



Walkway



Lower Bar



Final Design

Upper Bar

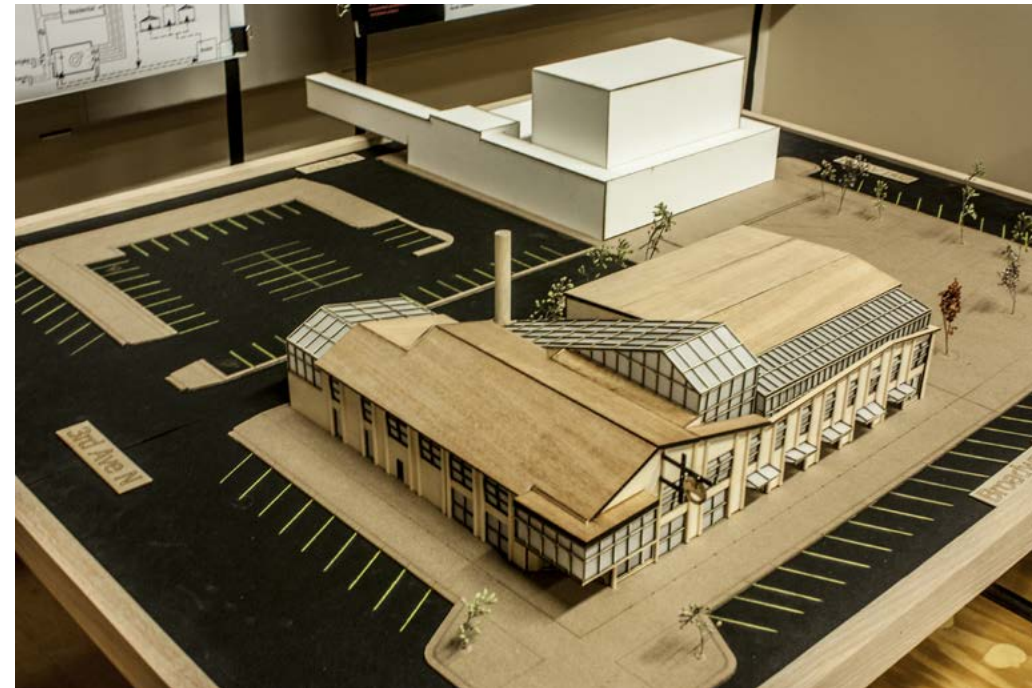


Final Design

Full Display



North Western View



South Eastern View



Final Design

Corner Entrance



Broadway View



3rd Ave N View



Western Facade



Final Design

Final Board



Walkway Mezzanine Housing Unit



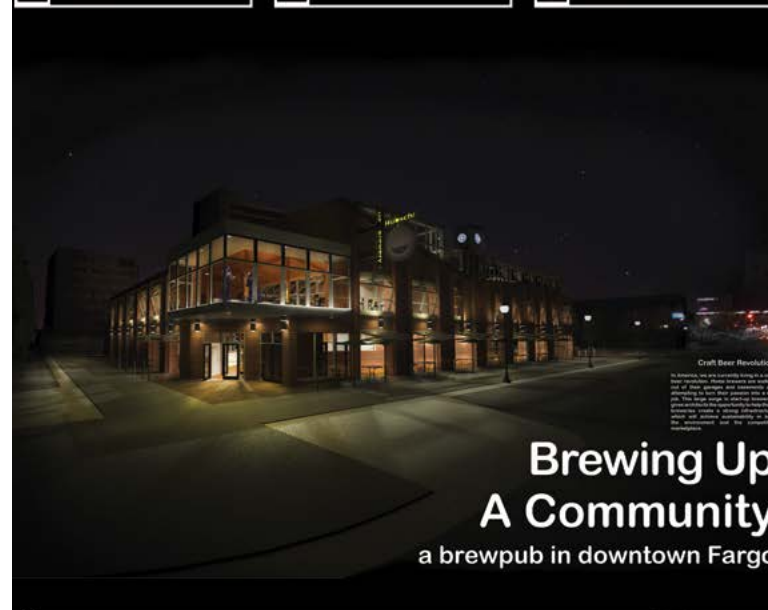
A.



B.



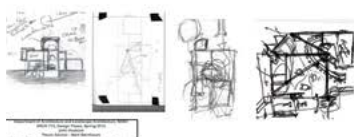
C.



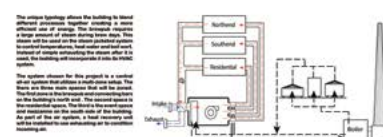
Summer



Early Process



Integration of Systems



Final Board



Brew House Upper Bar Lower Bar



D.



E.



F.

A Life Changing Brew

The craft beer revolution has changed the way we drink beer. It's no longer just a beverage, it's a lifestyle. The craft beer community is growing, and it's bringing a sense of pride and ownership to the industry. This project is a response to that trend, creating a space where the community can come together and enjoy the best beer in the area.

Problem Statement

The current market for craft beer in downtown Fargo is saturated. There is a need for a new space that offers a unique experience and a high-quality product. The project aims to address this need by creating a modern, multi-level brewpub that offers a variety of beer styles and a community-oriented atmosphere.

Theoretical Premises/Underlying Idea

The project is based on the idea of a community-oriented brewpub. The space is designed to be a place where people can come together and enjoy the best beer in the area. The design focuses on creating a warm, inviting atmosphere with high-quality materials and a focus on the craft beer process.

The Project Justification

The project is justified by the growing craft beer market in downtown Fargo. There is a need for a new space that offers a unique experience and a high-quality product. The project aims to address this need by creating a modern, multi-level brewpub that offers a variety of beer styles and a community-oriented atmosphere.

Project Emphasis

The project emphasizes the use of high-quality materials and a focus on the craft beer process. The design focuses on creating a warm, inviting atmosphere with high-quality materials and a focus on the craft beer process.

Site Importance

The site is an important location for the project. It is located in downtown Fargo, a central area with high foot traffic and a strong sense of community. The site is well-served by public transportation and has easy access to parking.



Winter

Floor Plans

1. Wash Room
2. Hot Lager Tank
3. Cold Lager Tank
4. Bar
5. Whirlpool
6. Cold Lager Tank
7. Fermenter
8. Grain Storage
9. Keg / Package
10. Keg Storage
11. Office
12. Lower Bar
13. Upper Bar
14. Engine Room
15. Break Room
16. Kitchen
17. Greenhouse
18. Observation Point
19. Storage
20. Warehouse
21. Event Space
22. Warehouse
23. Enclosed Patio
24. Reception Area
25. Entry
26. Cold Storage
27. Mechanical Space
28. Bathroom
29. Loading Dock

Want to Brew Beer?

The project is a response to the growing craft beer market in downtown Fargo. There is a need for a new space that offers a unique experience and a high-quality product. The project aims to address this need by creating a modern, multi-level brewpub that offers a variety of beer styles and a community-oriented atmosphere.



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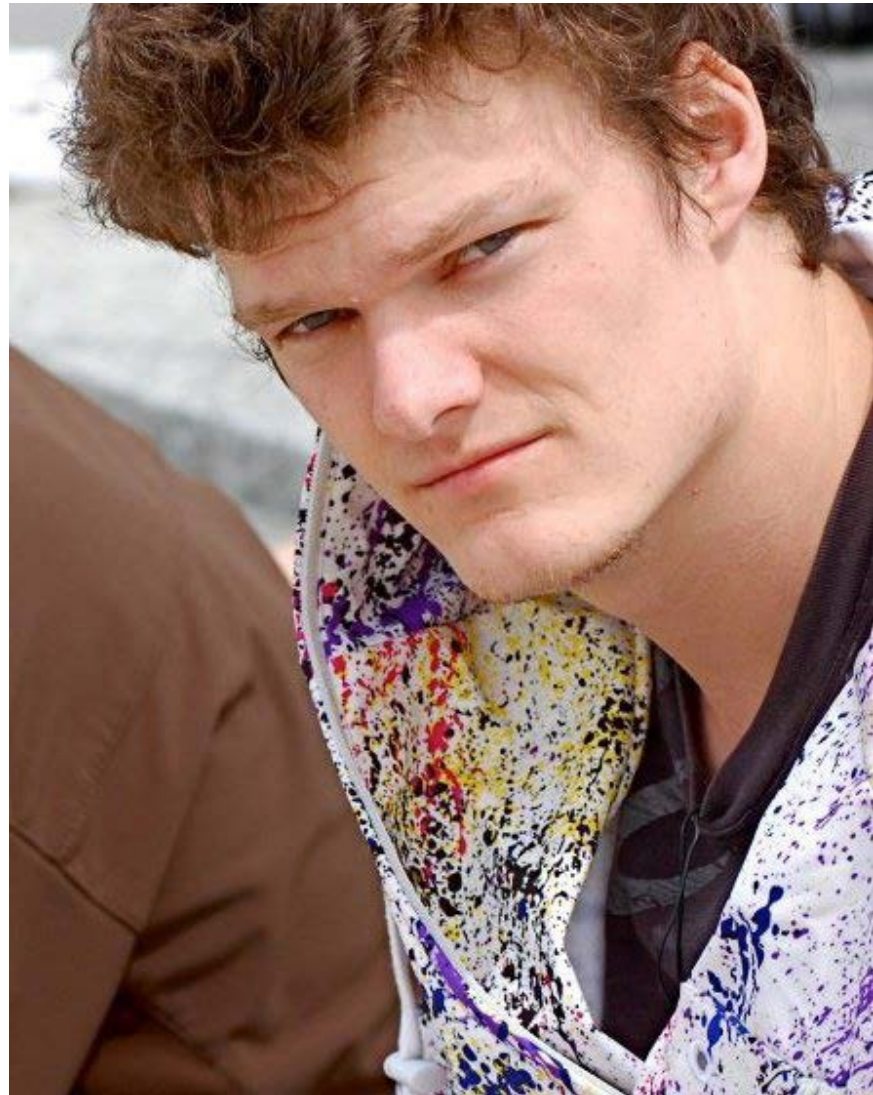
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