I, Alexander J Mega, hereby submit this original work as part of the requirements for the degree of Master of Architecture in Architecture (Master of).

It is entitled:
Urban Brewpub: Constructing Interactions through Movement, Pause, and Encounter

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Urban Brewpub: 

Constructing Interactions through Movement, Pause, and Encounter

A thesis submitted to the Graduate School of 
The University of Cincinnati

in partial fulfillment of the requirements for the degree of

MASTER OF ARCHITECTURE

In the School of Architecture and Interior Design
of the College of Design, Architecture, Art and Planning

2012

by

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Abstract

Social spaces, those designed to bring multiple people together, are some of the most frequently encountered environments. However, they routinely fail to encourage social interaction, the reason for which they have arguably been designed.

Part of the problem is the designing of social spaces according to preconceived notions of how those spaces are supposed to appear or function. By understanding them through notions of movement, pause, and encounter, these places can better serve the variety of needs of their inhabitants.

Using an urban brewpub as an example, a design will be developed via a logic that employs these themes at multiple scales in a way that can directly impact its visitors. Lessons from this investigation can be applied to other buildings and spaces that benefit from the interaction of people with each other and their environment.
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The idea of a brewery came to me through my previous studies as an undergraduate. As a former chemistry major, I became aware of a student group that would create beer through an understanding of chemistry and biology. Unable to join this group after switching to philosophy, I began collaborating with a similarly interested classmate. For me, this hobby was a way to express creativity, develop new skills, and enjoy something that I had crafted. It combined the satisfaction of refining something by hand with the experiences of taste, smell and the company of friends.

Architecturally, a brewpub is a synthesis of a number of important considerations. It is a balance between an industrial facility and a social destination. As a potentially large facility, it could serve as a neighborhood landmark and shape the identity of the area’s built environment. How does the building itself, its location, and the layout of its parts facilitate social interaction and economic growth? Such a project should function as a private business while aiming to be more of a civic landmark.
The photographs of Edward Burtynsky show the negative ways in which industrialization changes the landscape. How can growth and development resist the trend towards entropy and shape a location in a positive way? Architectural projects are at times estranged from the socio-economics of their context. While rooted in the realities of the present, the built environment should support growth in all of its meanings. What is the relationship between an industry and its processes? How might an urban setting change this interaction as well as the elements necessary for success? Often, processes only seem efficient when they are understood in part. An element of environmental responsibility naturally arises when the cycles of making are managed within a single scope. Furthermore, by taking ownership for all that is created and not just what is sold, there is the opportunity to understand craft today in an honest and meaningful way. The goal for this project will be to combine a responsible approach to systems of production with a meaningful approach to the facility’s experiential aspects.
Background

How do “movement, pause and encounter” exist in architecture and affect social interactions?

This is the paradox of architecture: although “space” is its first and highest objective, architecture occupies itself with “non-space”, with the material limiting the space, which influences the space outwards as well as inwards. Architecture obtains its memoria, its spatial power and its character from this material.

-Andrea Deplazes
Literature Review

In the biological sense, a community is a group of interacting organisms sharing a populated environment. German sociologist Ferdinand Tönnies distinguished between two forms of human relation: Gemeinschaft (community) and Gesellschaft (society or association). The former is characterized by a unity of will or a feeling of togetherness whereas the latter relates more to self-interest and goal-orientation. Tönnies admits that in the real world, groups of people always exhibit a combination of these two forces.

In the influential Great Good Place, sociologist Ray Oldenburg presents the idea of Third Places and the role of informal spaces. The first place (home) and the second place (work) are where people spend most of their day. Oldenburg argues that people used to spend more time at casual public spots, which allowed for bonding, social cohesion and the exchange of ideas. Throughout the twentieth century, the workplace has gluttonized the waking hours and suburbs have diluted natural community relations.

Sociologist Jane Jacobs presents similar concerns in The Death and Life of Great American Cities. Her focus is less on social ‘hotspots’ and more on the ordering of urban space at the larger scale. She sees the decay of the agora in the United States as the result of the zoning of cities according to use. By cleaving residential, commercial and industrial areas, their identity becomes one-dimensional. As a result these areas are uninteresting, less used, and more prone to crime. Her solution involves privileging pedestrian areas, increasing density, mixing use. Her thinking was revolutionary in its rejection of the hyper-rational planning of 1950’s and 60’s. Somewhat ironically, her tenets of natural city arrangements were picked up by the New Urbanists, who have been criticized for their formulaic, pre-planned developments.

According to twentieth-century architect and theorist Christian Norberg-Schulz, place is defined by nouns unlike space which is a locational and more analytic system of prepositions. He writes in Genius Loci, Towards a Phenomenology of Architecture that place has a greater accumulation of meanings and memories than space, the significance of which can be more or less exhausted by a map and a three-dimensional model. Place incorporates ideas such as character, time, belonging, and enclosure. Moreover, a place performs a certain amount of presencing, in which its meaning asserts itself and comes to the forefront of our consciousness. When Norberg-Schulz talks of character, he means the significance, atmosphere, or feeling of a place. This signifies that places are not value-free. When we encounter a place, it imposes on us certain moods. In this way, we are unable to experience a place without somehow being affected by its characteristics. This is not to say that an architect has complete control over the character of a building over time. Nonetheless, he or she has the ability and the obligation to imbue it with a relevant character from its outset.
Background Summary

While there appear to be significant sociological underpinnings to this project, it is perhaps best to see these texts as a starting point. They serve to add another dimension to the otherwise project-oriented thesis. Analyzing the previous examples, successful brewpubs tie into a neighborhood’s historical narrative and help to shape the future of that neighborhood in a positive way. They attract similar successful business, increase foot traffic, and promote a healthy economy. They also do more; they are meeting grounds and serve a certain civic function. Without making a drinking establishment appear too grandiose, they allow people to gather and share in a collective identity. Socializing while enjoying locally-crafted goods helps to maintain a community’s positive self-image.
Analysis

Proposition

The relationship between the community and a brewpub is a large topic, one that could be hamstrung by the limited ability of an architect to fully understand a community and its desires. Rather than slipping towards sociological criticism, the focus should be narrowed to consider four main points: energy consumption, programming, urban design, and multivalent activities. In doing so, the intent will be to maximize effectiveness by doing some of the things architects do best.

How are these topics relevant to the overall discussion? Arguably, people can respect and identify with reducing energy consumption and waste because it impacts their community as well as everyone else’s. Progress may be seen as an element of civic pride. Next, programming may not be immediately discernible to visitors but it shapes the building’s atmosphere as well as its functionality. The goal is a comfortable space that is also a productive one because the this combination will help to ensure its longevity.

An investigation into the urban design of Wicker Park will begin to suggest how the brewpub should appear and function on a larger scale. The immediate vicinity as well as the larger neighborhood will be improved or disadvantaged by the building’s size, orientation, materiality, and tectonics. In a way this relates to the business’s marketing strategy and the intention to convey not just what the brewpub sells but what it signifies. There will likely be an attempt to communicate a connection with the old while progressing toward something new. How will the building reflect that? In some cases this happens through the preservation of some existing structure and materials, or the repurposing of some older architectural elements. There may be a play on the prevalent typology of a brewery. Newer technologies and materials will be incorporated yet a consistent language will be maintained throughout. A boxy facility with prominent chimneys may be expected along with an emphasized structure that augments its industrial attributes. Regardless of the final appearance, the desire for this project is to demonstrate function while also controlling sequences of experiences that augment its meaning. Therefore, certain spaces will be more enclosed and singular in their significance while others are open to multiple layers of program and interpretation. Perhaps there will be a network of servant and served spaces that combines with the more linear process of brewing.
Client and Institution

While brewing has been a partner of civilization since its conception, the typology of a brewery began during the Industrial Revolution. A swelling of urban populations and the availability of steam power led to advancements in brewery design, the major concern of which is the heating, cooling, and storing of massive amounts of liquid. Before the proliferation of pumps, the facility was arranged to make the greatest use of gravity’s energy. Georgian and Victorian influences dominated early attempts at this unprecedented typology. After prohibition, Albert Kahn’s brewery designs accepted the industrial nature of the field, yielding efficient and program-centric buildings.¹ These massive breweries dominated for much of the 20th Century, which left a niche for the more local and flavorful beers of the craft movement. In a sense, the market has completed a cycle; efficiencies of scale and centralized production are ceding control to small companies and pubs who craft products that are tailored to their own communities.

There is no reason that a beverage could not exemplify a town as well as an athletic team, type of music, or style of food. Wine advocates often talk of terrior, which comes from the French word for land and indicates that the climate, geography, and geology of a wine is evident in its flavor. The sitespecificity of a brewpub and what it creates is the main strategy for this thesis.

While this project strives for a civic importance, it is ultimately only for those who visit to eat, drink, or partake in one of the facility’s other activities. If it became as open as a park, it might cease to be a safe, comfortable place. This is a rather ordinary limitation, one that affects all similar businesses. Even so, there is the possibility for the brewpub to serve as a community asset, even by those who do not visit. A stadium or ballpark helps to shape a city’s identity, even though it goes unused for much of the year, costs enormous amounts of public funds to build, and is only open to those with disposable incomes. Instead, this design will be more modest and sensitive to the daily life of its vicinity. While this concept is still in development, the idea is for the building to play with the idea of a linear, hand-made craft process. This will evoke and explain what the brewpub stands for, which will hopefully provide a way of further relating to its surroundings.

The client for this project would be a relatively young entrepreneur with some business and brewing experience. To be honest, I am modeling this project on an invitation from a friend to start a brewery in the Chicago
area. As it is his hometown, the owner would have a certain expertise of the project’s site. His relationship to the vicinity is therefore a casual one, in that the project is a place for relaxation in an area of familiarity. With regards to the design of the facility, there is an interest in attracting visitors and admirers with an appealing design, yet the overhead cost should not be so high that it endangers the venture. Steve Hindy of Brooklyn Brewery refers to the desire to over-design a brewery as the 'edifice complex'. In most industrial situations function is the most important aspect of the building, which suggests an approach that maximizes the aesthetics of an otherwise utilitarian project.

A brewery or brewpub must align with its owner in a number of ways. Firstly, it is a machine that digests raw products and refines them to the owner’s specifications. It must, therefore, be appropriately sized to allow for growth, storage, and sufficient production. Too much real estate in an exclusive neighborhood can ruin a company as quickly as being too small to keep up with demand. Additionally, a brewpub needs to represent how the company sees itself. Is it an anachronistic throwback to pre-prohibition drinking establishments? Is it a progressive conception of the future of the industry? Perhaps it is simply a popular neighborhood destination, with its finger on the pulse of the preferences of its customers. There are multiple ways of addressing the building’s significance and the best result will come from a strong collaboration between designer and client.

A brewpub is a restaurant or pub that creates its own beer on site. While many brewpubs are relatively new establishments or chain companies, there are examples of German brewpubs that have maintained production for hundreds of years. Their popularity in the United States is in part due to their history and evolution in Britain. Here, beer was brewed where it was sold until the advent of large-scale breweries. Through the Middle Ages, institutions grew around the beverage, yielding the Brewer’s Guild in London in 1342 and the Edinburgh Society of Brewers in 1598. Reliability and professionalism led to taverns being replaced by larger facilities as a primary source of beer. The trend towards large breweries finally diminished by the 1970’s with the Campaign for Real Ale and Michael Jackson’s World Guide to Beer re-establishing interest and knowledge in traditional brewing methods. This trend spread to the United States in 1982 with the now closed Grant’s Brewery Pub in Yakima, Washington, which was the first of its kind since Prohibi-
Beyond mild and responsible intoxication, a brewpub serves as a social hub for a community. Furthermore, with a little luck it can export its product outside of that community, which can strengthen the area’s identity by acting as a symbol for that area’s values. This has not always been the aim of the brewing industry, which has been given government approval to use large amounts of corn and rice to make a cheaper product that nonetheless is still considered beer. The goal will be to demonstrate craft in every aspect of the project. Rather than a sealed warehouse where cheap ingredients are made into alcohol as quickly as possible, this new Chicago institution will display the care that it employs to its visitors. This will be echoed in the building via materials, connections and spatial arrangements that are unexpected, site-specific and satisfying.

Similar companies operating in Chicago are Piece Pizzeria and Brewery (1927 W. North Ave) and Revolution Brewing (2223 North Milwaukee Ave). The former is a seven-barrel brewery built in a former roofing company garage in Wicker Park. This highly popular establishment which had a dirt floor before its renovation is a source of thin crust pizza and award-winning beers. Located within a few blocks from the proposed site, there is the opportunity to create the beginnings of a brewpub district. Three miles southeast is Revolution Brewing (2323 North Milwaukee Ave.) which also is staffed by former workers of Goose Island Brewery. It’s menu is more diverse and it may be slightly more focused on its beverages. What neither of these businesses express is how their buildings are more than a shelter, with areas furnished with wood panelling and comfortable lighting. They seem to operate under similar attitudes towards architecture as most other restaurants: the structure contains the program but does not necessarily express it. A building that is designed to embody and facilitate a brewpub’s many processes, both tangible and intellectual, will be more functional, meaningful and educational.
Located in West Town, Chicago, Wicker Park is bordered by Bucktown to the north and Ukrainian Village to the south. The neighborhood was characterized by a steady growth of immigrants working in markets and mills. Unscathed by the Great Fire of 1871, Wicker Park attracted wealthy German and Scandinavians who built their large stone mansions in the area.

By the 1930’s, these affluent homeowners had moved further northwest, causing their property to be subdivided by workers looking for affordable housing. Wicker Park was a largely Polish community by the 1940’s, but began its decline from the 50’s. A decade later, it was known for problems with drugs and prostitution, which persisted until the arrival of the urban pioneers of the 1980’s. The 1990’s marked the influx of young professionals seeking moderately priced housing as well as the advent of ever-accelerating gentrification.

The proposed site is a parking lot on Milwaukee Avenue, one of the neighborhood’s major corridors. It was originally a Native American path, and then became a foot trail called the “pathway to prosperity” which led immigrants into downtown Chicago. It was later updated to a wooden board pathway, given a toll booth and was used by horse-
drawn trolleys.

The site itself is a roughly 10,800 square foot parking lot in the commercial heart of Wicker Park. The intersection of Milwaukee, North and Damen, known as the six-point intersection, is zoned for commercial buildings and is a popular destination for retail shopping, restaurants and bars. Foot traffic is further increased by public transportation accessibility, pedestrian paths, and existing bike lanes.

While parking is arguably a valuable commodity in the neighborhood there is a real desire for reduced car traffic in order to reduce congestion and improve safety. The six-point intersection is marked by a considerable number of pedestrian and bicycle accidents. Furthermore, some congestion is the product of drivers circling the neighborhood in search of parking. Applying the thoughts of Jane Jacobs, replacing this parking lot with a local business will not only unify the urban fabric but will reduce traffic because drivers will gravitate towards public transportation.

This Historic Properties map found in the Wicker Park Master Plan by Interface Studio illustrates the results of the Chicago Historic Resources Survey (CHRS), completed in 1995. Properties highlighted in Red have some architectural feature or historical
association that makes them potentially significant in the broader context of the City of Chicago, the State of Illinois, or the United States of America. Properties highlighted in Orange have an architectural feature or historical association that makes them potentially significant in the context of the surrounding community. Properties highlighted in Green, Yellow-Green, and Yellow are considered either too altered or lacking in significance to be included in the CHRS database. Properties highlighted in Blue were built after 1940 and are deemed too recent to be properly evaluated for architectural and historical significance. Many of the mansions in the historic area are currently subdivided into apartments, but the continued rise in gentrification is increasing the number of buildings that are being restored as single-family homes. According to chicagoluxury.blogspot.com, one such home at 1420 North Hoyne was on the market for $4 million.

Below is a plan of the Wicker Park Historic District, which encompasses most of the area bounded by Wabansia, North, Wood, Division, and Claremont Streets. It is 166-acres, has 827 contributing buildings and was listed on the National Register of Historic Places in 1979. According to this information, it does not appear that the apartment build-
ing eventually built by the defendant is within the given boundaries of the historic district. A specific address was not given in the public document of the case. The defendant, Bickerdike Redevelopment Corporation, only has the one apartment building indicated in area of the map below. Perhaps the building has since been demolished, renamed, or was never completed. However, records show that the fight was over a site within the historic district.
Bickerdike Apts and Historic District map, source: google maps and chicagoluxury.blogspot.com
Historical District Concerns:
Wicker Park Hist. Dist. Preservation Fund v. Pierce

Overview

The Wicker Park Historic District Preservation Fund challenged a federally subsidized rental housing project that was being processed and approved by the Department of Housing and Urban Development (HUD). Part of the project was to be built on an empty lot located within the Wicker Park Historic District. The regulations of Section 106 of the National Historic Preservation Act (NHPA) required that the defendant submit evidence of no adverse effect to the site in question. The Advisory Council on Historic Preservation agreed with the evidence provided by Samuel Riley Pierce Jr, the secretary of HUD in support of the defendants Bickerdike Redevelopment Corporation. The court decided that HUD completed its responsibility to consider both the negative and positive effects of the project on the protected district. Furthermore it denied the plaintiff's additional claims that HUD did not provide sufficient information on modifications to the plans and that HUD needed to consider alternative sites. It also rejected claims that HUD had violated executive order 11593, and that it failed to comply with the National Environmental Policy Act.

Factual Background

A. HUD Review/Pre-Litigation

The Bickerdike Redevelopment Project was a plan to build 140 rental units on underdeveloped sites in Chicago’s Near Northwest Side. “Cluster C,” the area of contention, was meant to contain twenty-seven 1-, 2-, and 3-bedroom units on four empty lots in the Wicker Park Historic District. The developers applied for federal funding and were approved for FHA mortgage insurance, § 8 rental subsidies, and tax-exempt bonds. At this point the defendant submitted plans for HUD’s initial technical approval and received an overall 3.8 points out of 5, and with regards to the design’s appropriateness for the neighborhood it received a 4 out of 5. The plan was given an “A-” grade for the Normal and Special Environmental Clearance form regarding its compliance with standards about historic properties. However, HUD did not complete the section of ECO 2/3 that rates the impact on community structures, social fabric, and concerns for aesthetics and urban design. On June 18, 1981, the Old Wicker Park Committee
community group sent a letter of concern to Bickerdike, HUD, and the National Trust for Historic Preservation. It objected to the project’s unsympathetic architectural design, its threat to future private development, its inadequate site planning, and its need for future maintenance. On October, 13, 1981, the federal Advisory Council on Historic Preservation (ACHP) agreed with an HUD report that there was no evidence of adverse effects on the Historic District, giving the project a “A” grade on the previously uncompleted section of the ECO 2/3 form. Then-Senator Charles Percy received a letter from the Old Wicker Park Committee but responded that the project involved no demolition, the project architect completed previous projects that fit with the historic district’s style, and that the project would benefit the district financially and encourage further preservation.  

B. The Litigation

On September 20, 1982, the Wicker Park Historic District submitted a two-part complaint that challenged HUD’s approval of the project, which began cross-motions for summary judgment, a part of the pre-trial process where both parties submit briefs to the judge claiming that the relevant facts of the case can be determined without a trial. 

Cross-Motions For Summary Judgment

HUD’s Duties Under the National Historic Preservation Act and the National Environmental Policy Act

In § 470 of the National Historic Preservation Act, federal agencies must determine a project’s effect on any district, site, building or structure included or eligible for inclusion in the National Register before providing any federal funds. They must also give the Advisory Council on Historic Preservation a reasonable chance to respond to such a project. Furthermore, Executive Order 11593 mandates that non-federally owned “sites, structures and objects of historical architectural or archeological significance” must be preserved and enhanced through federal programs instituted by agencies.
of the executive branch.\footnote{7}

C. Plaintiff’s Claims

1. Alleged Violations of the NHPA

...that HUD (1) ignored certain “adverse effects” that it is required to consider (¶ 16); (2) failed to provide ACHP with “information necessary for adequate consideration of modifications or alterations to the proposed [project] that could avoid, mitigate, or minimize any adverse effects” (¶ 17); (3) did not consider other sites for the project or rehabilitation of existing housing as alternatives to the Bickerdike proposal (¶ 18); and (4) failed to “institute or utilize procedures” that would assure preservation and enhancement of the Historic District (¶ 15).

More broadly, plaintiffs allege that HUD’s approval of funding for construction on lots recently cleared of historic structures is part of a pattern of “continuing encroachment upon the Historic District” (¶ 12) and “create[s] incentives for the razing of historic structures” (¶ 13).\footnote{7}

2. Alleged Violations of NEPA: The Old Wicker Park Committee argued that HUD (a) failed to study the environmental impact of the project or alternatives to the project; (b) did not consider the apartments strain on limited city resources; (c) intended to encroach on the historic district, and; (d) promotes the ruin of historic structures through the use of incentives.\footnote{7}
The court rejected the plaintiff’s claims and decided that HUD’s duty to consider alternative locations would only be in effect if the land itself and not federal funds were a resource, citing Aertsen v. Landrieu, 637 F.2d 12 (1st Cir. 1980). Furthermore it said the only alternative it had to consider was leaving the site vacant, and was not responsible for considering hypothetical uses for the site such as high-cost housing. In addition to the HUD’s findings that the Bickerdike Redevelopment Project had did not violate the NHPA, it noted that developing the empty lot would actually resist further degradation of nearby structures and would be an investment in the neighborhood. HUD provided ample time for review of their documents and had communicated their intentions with numerous community groups. The court found that the project would fit with the architectural fabric of the neighborhood and that demographic qualities are not protected under the NEPA. No compromise strategies were pursued because the plaintiff’s motion for summary judgment was denied.

Wicker Park Historic District Preservation Fund v. Pierce is an example of conflict between two well-intentioned federal policies: the preservation of historic, urban communities and the availability of affordable housing. From this case, one can conclude that in certain circumstances the growth and alteration of a historic district cannot be prevented. If the project is sensitive to the existing built environment and community, and has been advanced and evaluated in good faith, then an otherwise ignored plot can be developed. This would not be the case if the Bickerdike apartments had been placed on a lawn that was historically protected or otherwise caused tangible damage. This controversy was of special interest to me because my thesis project is to design a brewpub in an area that may be part of the Wicker Park Historic District. It too would be on an empty lot and may raise similar concerns about its architectural sensitivity and appropriateness.

Conclusion

The court rejected the plaintiff’s claims and decided that HUD’s duty to consider alternative locations would only be in effect if the land itself and not federal funds were a resource, citing Aertsen v. Landrieu, 637 F.2d 12 (1st Cir. 1980). Furthermore it said the only alternative it had to consider was leaving the site vacant, and was not responsible for considering hypothetical uses for the site such as high-cost housing. In addition to the HUD’s findings that the Bickerdike Redevelopment Project had did not violate the NHPA, it noted that developing the empty lot would actually resist further degradation of nearby structures and would be an investment in the neighborhood. HUD provided ample time for review of their documents and had communicated their intentions with numerous community groups. The court found that the project would fit with the architectural fabric of the neighborhood and that demographic qualities are not protected under the NEPA. No compromise strategies were pursued because the plaintiff’s motion for summary judgment was denied.

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1837: City of Chicago incorporated
1870: Charles and Joel Wicker donate land for Wicker Park
1886: Haymarket Square Riot
1902: First Polish immigrant moves to Wicker Park
1886: Haymarket Square Riot
1902: First Polish immigrant moves to Wicker Park
1950's-1960's: Puerto Rican population replaces Polish
1970: Young middle class begins renovation
1980's-1990's: Gentrification and heavy development

线图：北丹尼大道
Wicker Park timeline and panorama
Community shopping dominates Damen Avenue above north Avenue. The corridor here is more populated and better manicured than North Avenue with its liquor stores and Milwaukee Avenue with its light industrial districts.
Plots along Damen Avenue are mostly mixed use and commercial spaces. The greatest density and variety of usage is located north of North Avenue, which includes areas of residential and greenery.
Major Retail Clusters
Commercial Services

Retail
- 35.9%
- Miscellaneous Retail
- Florists
- Groceries
- Cell Phones
- Hardwares
- Videos
- etc.
- Shoes
- Furniture & Household
- Clothing

Food Services
- 24.0%
- Banks
- Finance & Insurance
- 9.0%
- Bar
- Coffee
- 3.4%
- Ice Cream
- Liquor Store

Other Services
- 17.4%
- Wholesale Trade
- Employment & Educational Services
- Professional Services
- 3.5%
- Real Estate
- Health Care & Social Assistance
- Arts, Entertainment, Recreation
- 3.7%

Salon
- Tatoos
- Laundromat
- Printing
- Dry Cleaners
- Auto related
Restaurants, Bars, Nightclubs

restaurant, bar, nightclub clusters, source: Wicker Park Master Plan
Street Network

The streets in Wicker Park, like almost all of Chicago, are arranged in a predictable and easily navigated grid. The main anomaly here is Milwaukee Avenue, which was originally a Native American trail that developed into a board-paved road for immigrants to commute to Chicago's downtown. One-way streets are found more often to Damen's west than its east. Traffic is also diverted by the Kennedy Expressway which follows the Chicago River.
Pedestrian Streets

Designated pedestrian streets, with their wider sidewalks, are located on Damen Avenue where it intersects with North and Milwaukee Avenues. This relates to the area’s popularity with shoppers as well as the L Train’s stop.
Built Context

Perhaps because of its popularity for shoppers and diners, Damen Avenue has slightly more ground-level parking than nearby Milwaukee Avenue. Buildings here are also smaller in scale and footprint than those along Milwaukee.
Public Transportation

The CTA has the strongest presence of any public transportation options along Damen Avenue. Buses and other trains can best be found where Damen intersects with other corridors.
Bus Usage

The 72 bus has the most boardings and alightings where it intersects with Damen Avenue. In a sense, Damen is more of an artery for automobile and foot traffic. Where it meets other avenues it becomes a strong public transportation hub.
Bicycle Lanes

Damen has an existing southbound marked bicycle lane, which is popular for people headed towards Ukrainian Village.
Damen Ave, Wicker Park
Chicago

Damen Avenue is a two-lane roadway traveling north-south with a designated bicycle lane in each direction. Largely unmetered on-street parking is provided on both sides of Damen Avenue. Five traffic signals are found on Damen Avenue; they are at its intersections with Webster Avenue, Armitage Avenue, North/Milwaukee Avenues, Schiller Street, and Division Street. It is the connective tissue between the park of Wicker Park, Churchill Park, and what will become the Bloomingdale Trail. It’s daily vehicular traffic ranges from 12,000 to 13,900 vehicles per day. These amounts are at a theoretical planning threshold for a four lane roadway, and its traffic congestion suggests it may be over capacity. CTA Route 50 runs slowly along Damen Avenue which makes it a less effective service throughout the area.5

Damen Avenue’s intimacy generally lends itself to casually walking past the shops, cafes, and restaurants that border the roadway, especially above North Avenue. Because trees are more scant than is desirable, many business owners make efforts to design additional landscaping in front of their stores. Some even add their own bench seating. Regarding its negative aspects, The Bloomingdale underpass creates a spatial division, and the underside of the “L” is unattractive, especially on its east side. The intersections at Wabansia, Armitage, and Milwaukee/North pose difficulty to crossers and have few amenities. The park in Wicker Park’s lacks pedestrian lighting and fails to interact with the street.5
Natural Conditions

According to information from Climate Consultant, conventional heating will be necessary for 47.5% of the year and is the most likely comfort strategy for the area. At 18.2%, sun shading is the most relevant passive strategy. Air conditioning will be needed 16.9% of the year, and humidification will be desired for 16.7% of the year. Wind protection is also important, which can be provided by trees and sheltering screens.

For the city as a whole, wind is the strongest and most prevalent and from the South around mid-day during the winter months. From the Wicker Park Master Plan:

The majority of residential streets are shaded during the summertime by large street trees; the best coverage is found in the historic residential areas surrounding Wicker Park (the park) and stretching into Bucktown. Residential areas closer to Western Avenue and Ashland Avenue, however, exhibit the least coverage with, in some cases, only a few small trees per block. Portions of North Avenue, Western Avenue and Armitage Avenue (not in the SSA boundary) currently have the fewest street trees in the study area. Overall,
with a tree canopy coverage of roughly 8.6%, WPB’s canopy coverage is below Chicago’s city wide average of 11% overall....Trees in Wicker Park face many challenges and have been a source of conflict. Space is often limited for plantings along commercial corridors, and it is often unclear as to who is responsible for their maintenance.... Despite the conflicts, a quality tree canopy is important for WPB to improve air quality, promote carbon absorption (sequestration) and provide shading which reduces the urban heat island effect. Efforts should be made to improve and expand the tree canopy while recognizing that other options may need to be explored to shade commercial corridors.
A combination of three Victorian buildings in Cleveland’s Ohio City neighborhood, this facility incorporates a brewhouse, tank farm, bottling and packaging line, beer cooler, chemical lab, microbiological lab, taproom, beer garden, beer cellar and multiple rooms for rental. The Great Lakes Brewing Company mitigates waste by converting restaurant oil to biodiesel, reusing spent grains for livestock and baking, recycling most materials, and maximizing the efficiency of the building’s mechanical systems. Besides brewing and baking lessons, the company connects with the community through the Burning River Foundation to support ecological conservation, environmental protection, historic preservation, and maintaining Cleveland’s waterways.

Founded in 1988 by the current governor of Colorado John Hickenlooper, Wynkoop is the first brewpub in the state. Lower Downtown Denver, or LoDo, is a classic example of American industrial archaeology that is comparable to other cities such as Cincinnati, San Francisco, Flagstaff, and Albuquerque in terms of history and architecture. The success of Wynkoop is also a story of the redevelopment of LoDo, or lower downtown, Denver. The brewpub became a magnet for further organic development of the neighborhood in contrast to the previous vision of the area as one dominated by high-rises. The site became known as an innovative location, which resuscitated the areas restaurants, lofts, entertainment venues. Twelve craft beer operations are now found within a square mile of Wynkoop.
Albert Kahn, *Layout Design of the Modern Brewery for Economical Production*

The New Brooklyn Brewery Plan

This programming diagram for a brewpub by Karl Vogel, a student at the University of Pretoria in South Africa, demonstrates the inter-relatedness of the facility’s many parts, as well as the dynamic nature of a process-oriented design. The first drawing shows several hubs (the brew house, restaurant, service bay, and the public area) as well as bustling circulation between these parts. An efficiency emerges in the second diagram, which exhibits comparative compose as well as a more even treatment regarding hierarchy. The initial layout may be more exciting by virtue of its activity but the latter’s logic gives the business a better chance of success. Perhaps there is a case for a frenetic brewpub, but only if it enhances the facility’s ability to entertain and educate.
Precedent: Overlapping Processes

This multi-faceted project in Chicago takes advantage of the by-products of multiple adjacent production operations. Spent grain from the brewery is fed to livestock, used for fertilizer, and fed to fish, which helps to propel a garden and numerous other elements. An expensive yet possibly feasible anaerobic digester converts biological waste into gas that runs a turbine engine and sends power to the rest of the facility. As a result, much of the waste is kept within the plant and used for better purposes.
Mercedes Museum by UNStudio:
http://www.unstudio.com/projects/mercedes-benz-museum

From the UNStudio website:
The Museum’s sophisticated geometry synthesizes structural and programmatic organizations resulting in a new landmark building celebrating a legendary car. The geometric model employed is based on the trefoil organization. The building’s program is distributed over the surfaces which ascend incrementally from ground level, spiraling around a central atrium. The Museum experience begins with visitors traveling up through the atrium to the top floor from where they follow the two main paths that unfold chronologically as they descend through the building. The two main trajectories, one being the car and truck collection and the other consisting of historical displays called the Legend rooms, spiral downwards on the perimeter of the display platforms, intersecting with each other at several points allowing the visitor to change routes.

Precedents:
Flow and Form

From the UNStudio website:

The Museum’s sophisticated geometry synthesizes structural and programmatic organizations resulting in a new landmark building celebrating a legendary car. The geometric model employed is based on the trefoil organization. The building’s program is distributed over the surfaces which ascend incrementally from ground level, spiraling around a central atrium. The Museum experience begins with visitors traveling up through the atrium to the top floor from where they follow the two main paths that unfold chronologically as they descend through the building. The two main trajectories, one being the car and truck collection and the other consisting of historical displays called the Legend rooms, spiral downwards on the perimeter of the display platforms, intersecting with each other at several points allowing the visitor to change routes.
From the UNStudio website:

In this competition new features are identified to constitute Manhattan as model for the global city. Extensive surveys generated diagrams visualizing the existing user flows related to program, time and location. The diagrams map the performance of Manhattan in order to extract parameters for the development of the site. The proposal for the researched area between the 23rd and 42nd street, was to relocate facilities and combine them in effective clusters, which results in well-functioning mixed use areas including all parameters – critical packages. A critical package for the global city is the optimal combination of factors for the site to function effectively with respect to programs, construction, economy, political and feasibility.

While the scope and program in this example are dramatically different from that of a brew-pub, the method of applying kinetic depictions of data to a site model is intriguing. By resisting the urge to determine the realistic and undeniable ways that three dimensional information could be pertinent, a designer could work in a way that is relevant, open-ended and imaginative.
The BMW Central Building is a successful combination of office, industrial, and social spaces. Zaha Hadid, through diagrams of circulation and program, developed a building that integrates plant workers, engineers, administrators, and visitors. By removing columns and walls, she allows the various areas to unfold before the viewer, creating a sense of transparency throughout. This allows more of the whole to be understood from a single vantage point. Furthermore, it demonstrates the intertwined relationships of the various members of the company. In a sense, it is as much a commentary of the company's structure as its design values.
Outcomes and Significance

To summarize the findings of this analysis section, the site in Wicker Park is advantageous due to its foot traffic, demographics, location, and accessibility. A large number of people can be found shopping, eating and socializing in the neighborhood on any given day. Visitors and residents are professionals in their mid-twenties and thirties with disposable incomes. The lot at 1611 North Damen Avenue is just steps away from one of the biggest intersections in Wicker Park, which is also a hub for public transportation.

While the observation of other brewpubs can yield some underwhelming design suggestions, less conventional precedents may prove more interesting results. Also in Chicago, The Plant indicates how multiple processes of production can be symbiotic and sustainable. Perhaps using some of these techniques on a smaller scale in the brewpub could augment the facility’s demonstrative qualities. Similarly, buildings that celebrate the flowing aspects of their programs could be an appropriate inspiration for this project. Forms based upon the “flowing” of people or processes may be useful in certain limited situations. Applied to the building as a whole, this method can detract from the program and individual experiences, while turning the building into a metaphor rather than a machine.
The brewpub’s operation is a carefully arranged set of interactions, with areas of high concentration flowing to areas of lower. People, like wort in a tank, may pause briefly before moving and lingering elsewhere for longer. It is a dance between patrons, food, water, light, conversation, and countless other items both remembered and forgotten.

Methodology:
Flow and Process

The brewpub’s operation is a carefully arranged set of interactions, with areas of high concentration flowing to areas of lower. People, like wort in a tank, may pause briefly before moving and lingering elsewhere for longer. It is a dance between patrons, food, water, light, conversation, and countless other items both remembered and forgotten.

Dance Diagram (3) ("The Lindy Tuck-In Turn-Man"), Andy Warhol, 1962
Malted Barley (Malt) → GRINDER
  ↓
  HOPPER
  ↓
  MASH TUN
  ↓
  LAUTER TUN
  ↓
  BOILER
  ↓
  FERMENTATION VESSELS
  ↓
  FINISHING TANKS
  ↓
  KEGGING/BOTTLING
  ↓
  Sale

1. Malt is ground to correct texture (Grist)
2. Grist Stored
3. Grist and hot water mixed, heated to specific temperature for a specific amount of time
4. Solids are filtered from the Wort
5. Hops are added to achieve desired bitterness and aroma
6. Yeast converts sugars to alcohol and CO2
7. Final stage where beer is clarified and aged
8. Beer is transferred to final container
Possible Overlapping Processes

- Brewery
- Waste Water
- Beer
- Spent Grain
- Substrate
- Mushrooms
- Spent Substrate
- Feed
- Grain
- Water
- Electricity
- Turbine Generator
- Steam
- Jobs
- Food in a Food Desert
- Restaurant
- Plants/Garden
- Substrate Mushrooms
- Spent Substrate
- Feed
- Algae Pond
- Biodigester
- Bio Gas
- Biodigester
- Substrate
- Spent Grain
- Beer
- Brewery
- Waste Water
- Grain
- Water
Program

Space Standards and Criteria

**Brewery Space Requirements:**
Average production brewery with bottling=1.25-1.75 SF/BBL/Year
Minimum production brewery start-up size requirements: 5,000 square feet industrial space with
20’ ceilings, loading dock, good truck access, 3 phase power, city gas main
Average pub brewery plant with in-house sales only=.06-1.0 SF/BBL/Year (not including restaurant)
Minimum brewpub size requirements: 3,000 square feet in retail area with ample parking and/or high foot traffic

**Energy Use:**
Electrical: 10-15 KWH/BBL
Chiller: 8-20 BTU/BBL
Natural gas: 1.3 therms/BBL

**Ingredients (averages for all malt beers):**
Water usage: 3.0-7.0 BBL per BBL of beer sold
Malt: 45-60 #/BBL
Hops: 0.5-0.8 #/BBL

**Water Usage Breakdown for Pub Breweries:**
Usage & output per 10 BBL, average (pub brewery)
10 BBL in product
12 BBL Cooling-reclaimed
1 BBL Evaporated
2.5 BBL With spent grain

**Effluent (Average for Pub Breweries):**
BOD mg/L 600-1200
COD mg/L 800-1600
TSS mg/L 250-500
pH 5.5-6.5

**Revenue:**
Beer sold retail by the glass in a brewpub $700-$1,000 per BBL
Beer sold retail to go in bottles $300-$375 per BBL,
Beer sold wholesale in kegs to distributors: $120-$150 per BBL.
Beer sold wholesale in bottles to distributors $145-$190 per BBL.
Beer sold wholesale in kegs to accounts $160-$200 per BBL.
Beer sold wholesale in bottles to accounts $190-$250 per BBL.

Brewpubs may become profitable with as little as 250 BBLs of annual beer sales if it is all sold at retail. A brewpub should target beer sales of at least 40% of gross sales. Production breweries generally require 3,000-5,000 barrels of annual sales at wholesale to become profitable. They can often benefit from a modest on site pub, depending on the suitability of the location. A startup production brewery may cost between $125 and $350 per barrel of annual capacity to build depending on quality of equipment, efficiency and other factors. Larger plants cost less.
### Activities

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Regulates the mash tun, lauter tun and boiler</td>
<td>80m²</td>
</tr>
<tr>
<td>Storage</td>
<td>Contains extra equipment</td>
<td>25m²</td>
</tr>
<tr>
<td>Reception</td>
<td>Greeting area for public and workers</td>
<td>40m²</td>
</tr>
<tr>
<td>Brew Lab</td>
<td>Area for small scale brewing R&amp;D</td>
<td>100m²</td>
</tr>
<tr>
<td>Mass Storage</td>
<td>Holds kegs, raw materials, recycling</td>
<td>50m²</td>
</tr>
<tr>
<td>Holding Bay</td>
<td>Regulates deliveries and pickups</td>
<td>25m²</td>
</tr>
<tr>
<td>Delivery Yard</td>
<td>Receiving bays</td>
<td>80m²</td>
</tr>
<tr>
<td>Fermentation</td>
<td>Contains multiple conical fermenters- visible</td>
<td>60m²</td>
</tr>
<tr>
<td>Maturing</td>
<td>Beer is aged to improve flavor- visible</td>
<td>50m²</td>
</tr>
<tr>
<td>Lavoratory</td>
<td>Accessible to brewers</td>
<td>30m²</td>
</tr>
<tr>
<td>Conference</td>
<td>Central space for public and company use</td>
<td>75m²</td>
</tr>
<tr>
<td>Restaurant</td>
<td>Food and beer served to public</td>
<td>150m²</td>
</tr>
<tr>
<td>Bar</td>
<td>Beer served to the public</td>
<td>50m²</td>
</tr>
<tr>
<td>Storage</td>
<td>Areas for dry, wet, and cold ingredients</td>
<td>15m²</td>
</tr>
<tr>
<td>Washing</td>
<td>Cleaning dishes and other kitchen equipment</td>
<td>10m²</td>
</tr>
<tr>
<td>Preparation</td>
<td>Area for food preparation</td>
<td>20m²</td>
</tr>
</tbody>
</table>
iterations of programmatic layouts
A brewpub consists of spaces for receiving, storage, brewing, fermentation, bottling, kegging, research, and shipping. It would also include a beer garden and a restaurant, with all of its necessary spaces. In order to reduce its environmental impact, there will need to be rain collection systems, solar panels, and geothermal pumps. As spent grains are useful for fertilizing soil and adding to the nutrition of bread, a hops garden and a bakery may also be included. This multi-faceted program allows for a wide range of members of the community to see the brewpub as relevant to their lives. Whether they visit for a musical performance, a wedding reception, a baking lesson, or to tend to their garden patch, the goal is to maximize the number of people that feel invested in this venture.

A successful brewpub must focus on the overlap between industrial production and community gathering. How does the building itself, its location, and the layout of its parts facilitate social interaction and economic growth? This project provides the opportunity to explore the idea of joinery- the focus of previous investigations- but magnifies the scale and the complexity of a joint to include material transitions, industrial needs, and architectural programming.
These drawings are an attempt to capture how various visitors and workers may traverse through the building. While lines do not account for moments of pause, they suggest how experiences might be ordered and accumulated. The result is the cumulative effect of movement and its potential for both individual narrative and the interaction of multiple parties.
This thesis includes considerations of material transitions and their role in communicating narrative. The following is an investigation into the way in which materials explain the various stages of a production facility.

What is a material transition? Simply, it is a change in the visible materials of a building. This could be a stone wall that gives way to a wooden panel. Greater significance can be found in the qualities of these materials and the way in which they might be juxtaposed (see right). They might be light or heavy, smooth or rough, shiny or dull, warm or cold, bright or dark, soft or hard, homogenous or directional, strong or fragile, flexible or frangible, durable or temporary.

What is the effect of these qualities or combination of qualities? It may be emotional, encouraging a sense of comfort or austerity. It might be surprise in seeing unexpected juxtapositions. The question still remains: how do materials affect the perception of space?

Furthermore, what is the meaning of material transitions? They signify and reinforce differences in a space’s purpose. They encourage a change in behavior. There is a difference between interior and exterior transitions in material. Both suggest programmatic differentiation but have distinct audiences. Exterior ones are more about the building itself, perhaps indicating something functional or programmatic of the building as a whole. Interior variations are more suggestive and experiential due to viewer participation.

What is the significance of spatial elements of material usage? A material can appear heavy or light, but its meaning shifts when its location changes. Rough, dark stone lends a groundedness to a building’s base but adds a sense of unease or wonder when overhead.

Furthermore, buildings have languages of material usage. If wood, for example, is used throughout then its absence is of significance. Material usage controls elements of consistency, order, hierarchy, belonging and otherness. It controls what demands one’s attention. It may also suggest a logic of how the building was made, with one substance used for structure and another for envelope.

Meaning and narrative are universally important and relevant in architecture. Not only are there meanings to uncover in this process of brewing, but narrative itself parallels the process of making. It is directional. Its importance and significance is accrued along the steps of the process. It is goal-oriented, yet the process itself is extremely valuable. The focus is not just about getting to the end of a story, but the way in which that goal is accomplished. The result is a better product that encourages involvement.
Material Transitions

Types of transitions:

- **A**: Large gradual transition
- **B**: Large abrupt transition
- **C**: Small gradual transition
- **D**: Small abrupt transition

Examples:

- **A**: Large gradual transition example
- **B**: Large abrupt transition example
- **C**: Small gradual transition example
- **D**: Small abrupt transition example

Sequences of Transitions

- **Subtle** to **Dramatic** transition sequences
Connectivity Within and Without
Archetypes of Social Space:
Movement, Pause and Encounter
Pause
Volumetric Sketch
The following is the result of concerns that this project was at risk of becoming a mere building. Therefore, instead of converting bubble diagrams into rectangular containers of space, a more intentional translation was desired. A three-dimensional voronoi diagram became an effective way of delineating space yet creating variety. The urban site boundaries truncate this logic, creating a degree of tension between the project's interior and exterior.
Investigation: Transformation of Structure
Investigation: Transformation of Structure
Investigation: Linear Structural Members
Investigation: Linear Structural Members
Investigation: Regularized Structure
Investigation: Circulation Network

Finally, there was a desire to make apparent the social, circulative elements of the brewpub. By tracing the permutations of connections between the building’s spaces, a web of nodes and links is formed. Optimizing these links through an edge-bundling method not unlike the wool thread experiments of Frei Otto generates a hierarchy of pathways as well as a serendipitous emergence of a new organizational structure. The result may be a way to integrate the building’s technics with a visual wayfinding device.
Notes


Selected Bibliography


