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ADAPTIVE REUSE OF WAREHOUSES IN RELATION TO
NEIGHBORHOOD COHESION AND IDENTITY: a case study of
New Orleans, Oklahoma City, and Minneapolis

a thesis submitted in partial fulfillment of the requirements for the Honors
Program of the Department of Architecture at the Fay Jones School of
Architecture + Design

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May 2017

ABSTRACT

Historical industrial warehouse districts in American cities have a unique and interesting history because of their rapid development and, in most cases, a subsequent neglect. However, because of its historical significance, its usual central location within the city, and architectural features, the warehouse district has become a focus for revitalization. Warehouse districts already have a historic identity and a cohesiveness in urban fabric and building typologies, but what are the effects of adaptive reuse in relation to the identity of the buildings and the district? In this thesis, three cities (New Orleans, Minneapolis, and Oklahoma City) with established and revitalized warehouse districts are analyzed and compared to determine what elements of the warehouse district and its buildings are kept through the process of adaptive reuse to support a cohesive sense of identity throughout the district. Each city is investigated through social and economic factors, the urban context, the marketed identity of the district, and the physical features of the buildings. Even though New Orleans, Minneapolis, and Oklahoma City have different backgrounds, they all expressed a level of preservation in the revitalization of their warehouse district - specifically in building exteriors and urban fabric. Influenced by city guidelines and historical context, the adaptive reuse of warehouse district buildings acknowledge the presence of the district identity and tend to preserve the areas notable characteristics more than independent, separate buildings converted for reuse.

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INTRODUCTION

INTRODUCTION

Cities have a need to constantly evolve in order to sustain their existence in a world with fluctuating demands. Often, one can see and experience how a city has developed, grown, or declined over time simply by looking at the fabric of existing buildings. The shift in street pattern and organization of varying districts reflect how the city developed and morphed throughout. Many buildings are answers to industrial or economic factors, and most cities have designated industrial districts that at one point defined the energy of the city. These buildings and districts make up the context of the city, but what happens when their original function is no longer essential to the city? Should there be a new building for every new purpose? Is there a reason to preserve historic buildings? Many of these areas have degraded over time or become abandoned, becoming an eyesore and a problem for the city. So could these once busy industrial buildings be adapted and modified for current demands - something that could respond to both the old and the new? An article in the *Urbanist* titled “Adapt, Transform, Reuse” describes the importance of the role of historic buildings for the future.¹

“Great cities are built in layers: New buildings can help reinforce older urban forms and old buildings can be reimaged to serve new uses. It is the juxtaposition of old and new that gives cities their interesting corners, their urban surprises, their texture. Imagine a city where time has stopped – no new buildings are allowed to be built, and the ones that do exist must retain their original use. Such a city would lose its vitality due to lack of change. Imagine another city where no old buildings or forms are retained– everything is torn down and built new. This second city would also lack vitality but for another reason – because it has no history, no soul.”

¹ “Adapt, Transform, Reuse.” *The Urbanist*. SPUR. July 2013. <http://www.spur.org/publications/urbanist-article/2013-07-04/adapt-transform-reuse>

Adaptive reuse strategies in architecture can balance the need for change while at the same time communicate the regional language and history of the place. Adaptive reuse is already becoming common practice for startup businesses or residential needs, but these projects usually encompass only a single building or piece of property. Former industrial districts have the potential to be converted at a larger neighborhood scale and respond to greater societal needs by becoming public and community geared districts. Giving these areas new uses while building off the cultural history can revitalize the local community in a way that is different and more enriching than constructing new sectors of the city.

This research will be an in depth analysis and comparison of three cities (New Orleans, Oklahoma City, and Minneapolis) and their strategies for incorporation of adaptive reuse to rejuvenate former industrial areas in the form of warehouse districts to better serve the demands of the current city. Warehouse districts were chosen for study because they are historically clearly defined sections of the city that were reactive to multiple influences in their development. For each of these cities, the warehouse district was a major contributor to the city's heritage; therefore, efforts were made to preserve that image even though the rest of the city had transformed around the area. Building typology and use will be studied as well as how they are transformed, whether there is a lot of physical alterations or if the buildings are more preserved. This addresses the question of how the language of the historical building context is reflected in the progression of the city. With an increasing use of adaptive reuse in these areas to rejuvenate the district as a whole, what are the effects of adaptive reuse in relation to the identity of the buildings and the district? In many cases, certain typological features of warehouses (the base structure, fenestration, entryways, etc.) remain in the process of adaptive reuse, so in what way are those architectural elements expressed to keep the historical identity of the district yet still contribute to a successful and progressive revitalization? The factors of success for

these districts will be determined and compared among the cities by their impact on local communities both economically and socially to show how these once historic areas have become new urban regenerators.

For the organization of this research, the relationship of the industrial warehouse district to the city will first be discussed. Several correlating trends occur between warehouse districts across the United States which gives some basis for comparison among the case studies. The different types of adaptive reuse strategies in architecture are also studied along with their role in city planning actions for warehouse districts. Revitalization and adaptation of these districts occur at different scales that are interrelated. The redevelopment of the warehouse districts in New Orleans, Oklahoma City, and Minneapolis are all investigated on these multiple scales and approaches - these layers of investigation are the broader societal influences of political and economic factors, the urban scale of fabric and expression, the strategies of district branding and creating a sense of public identity, and the general adaptations of the architectural components of the buildings with building type and occupancy in mind. Because each of these cities have reestablished their warehouse districts as prominent districts within the city, their success will be compared with the cohesiveness of the district and the type of intervention that affected redevelopment.

ROLE OF INDUSTRIAL DISTRICTS

HISTORICAL OVERVIEW

The rise of industrial districts, especially warehouse districts, within cities was centered on the industrial revolution and the need to efficiently move and store trade items. Across the United States of America, towns began to arise and flourish along newly constructed railroads after the reconstruction era (post-civil war). Americans were moving across the country, and the rush to own land became a dominant force. During this time in the middle to late nineteenth century, cities such as Minneapolis and Oklahoma City began to form around these new opportunities of trade and distribution. For the case of New Orleans, the city arose around the port and played a major role in the shipping industry. For each of these cities, the industrial districts were composed primarily of warehouse buildings designed to store large quantities of produce or equipment. Even though many historical industrial districts did not survive as a priority investment for cities, they left an impression and an image of what defined the city at one time.

RISE AND DECLINE OF INDUSTRIAL DISTRICTS

All cities grow, change, and evolve in response to multiple variables. A major stimulus for North American cities was the industrial revolution, which caused rapid growth, changes in the economy, and a new type of architecture. Industrial districts became the heart of cities and places of opportunity. However, over the course of time, these districts saw less production and began to deteriorate due to investments elsewhere. These areas that once defined the city turned into eyesores, but new uses for these areas are bringing them a brighter future.

The increase of industrialism was driven by many factors, but what mostly influenced new industrial districts was the development of new technology. The innovation of power driven machinery allowed for higher rates of production and manufacturing than pure manual labor and changed the way businesses could operate.¹ With the ability to produce goods in larger quantities, tradesmen expanded their reach of business and allowed for a larger market economy to form. All of this was made even more possible with the entry of a new era of transportation - railroads. Suddenly, people could expand their business from a small local level to a larger regional and even national level. Minneapolis is a good example of how industries benefited from the combination of machinery and railroads. Agricultural equipment for sowing, cultivating and harvesting crops were manufactured and dealers were able to store these products and supply the majority of the northwest territories. Minneapolis became the prime location for people in the more western territories to restock because of the access to railroads.² The expansion of railroad construction initiated the creation of new towns; they developed around transportation becoming new stopping points along the locomotive lines and served as access to more land.

¹ Klein, Maury, and Harvey A. Kantor. *Prisoners of Progress: American Industrial Cities, 1850-1920*. New York: Macmillan, 1976., 5

² Minneapolis Community Planning & Economic Development (CPED) Planning Division. *Minneapolis Warehouse District Design Study*. Minneapolis Heritage Preservation Commission, October 28, 2009.

Production industries centered and thrived on the ease of transportation, which sparked a new type of urban development and building type. Factory buildings and warehouses large enough to accommodate production machinery and goods were constructed in concentrated areas - creating an industrial community for workers and a new era of large enterprises.³ These new industrial districts were often constructed near the center of the city because they were the main economic source and had the need of close proximity to transportation. As a result, the city grew around the industrial district. Large enterprises began to dominate these districts because they were able to buy large lots of land and have access to a large market. Because of the heavy machinery used for manufacturing, factories were designed and built along with buildings for storage and warehousing. The call for these new building typologies were in response to a need for large open spaces to accommodate all the workers and machinery. The buildings also had to allow for good ventilation and large amounts of natural light to fill the space. As these industrial districts were forming, the population dramatically increased in cities because of the availability of jobs and ease of access to goods. Industrialism shaped the city and established the status of the city as a nucleus for manufacturing.

The efficiency of mass production heightened capitalism in the United States, but as cities began to grow and develop, industrial districts slipped from being the forefront of the city image. Cities shifted from being industrial centers and company towns to having a more diverse economy instead on relying solely on original industrial establishments. Urban areas increasingly began to be identified with leisurely living because of the access to many products that were not as available to agrarian living. Urbanism moved more towards consumerism and less about amount of production. Over time, industrial districts began to develop negative connotations with the associations to pollution, declining economies, and hard labor.⁴ There became less investment in the industrial

³ Klein, Maury, and Harvey. *Prisoners of Progress*.

district for major cities; thus leading to deindustrialism after the mid-twentieth century. Deindustrialism is defined as “a widespread systematic disinvestment in the nation’s basic productive capacity.” Many companies completely relocated and left behind abandoned industrial districts and shut down factories. Cost was a major influence for companies; they reinvested in areas with lower wage requirements, weaker worker unions, and cheaper land for larger factories. Often, these relocations were outside of the city to less urbanized areas. This trend carried out not only on regional levels but also on the international level with foreign investments to less developed countries.⁵ Another major reason for the relocation of industry was the introduction of an effective highway system that rivaled rail lines. As shown in Fig. 1, roads were constructed along similar routes as the existing railways, but they extended to more regions of the nation. Supervalu Inc. is an example of a wholesale grocer company that had roots in the Minneapolis warehouse district and eventually relocated in response to the efficiency that the highway system brought. The company began in 1870 as B.S. Bull and Company, later changed to Winston and Newell Company in 1926, had the first modern grocery warehouse in the industrial North Loop of Minneapolis, was the first distribution company to use motorized trucks, and by 1979 had relocated headquarters to a suburb of Minneapolis and operated eleven other distribution centers.⁶ The relocation and closures of multiple companies ultimately left industrial areas neglected. As a result, former industrial districts developed a negative image, but cities are now looking to bring these areas back to the forefront as new investments.

⁴ Short, J. R., L. M. Benton, W. B. Luce, and J. Walton. “Reconstructing the Image of an Industrial City.” *Annals of the Association of American Geographers* 83, no. 2 (1993), 208

⁵ Bluestone, Barry, and Bennett Harrison. *The Deindustrialization of America: Plant Closings, Community Abandonment, and the Dismantling of Basic Industry*. New York: Basic Books, 1982

⁶ “SUPERVALU INC. - Grocery Retail and Supply Chain Services - About SUPERVALU.” SUPERVALU INC. Accessed September 19, 2016. <http://supervalu.com/about.html>.

SUPERVALU DISTRIBUTION CENTERS

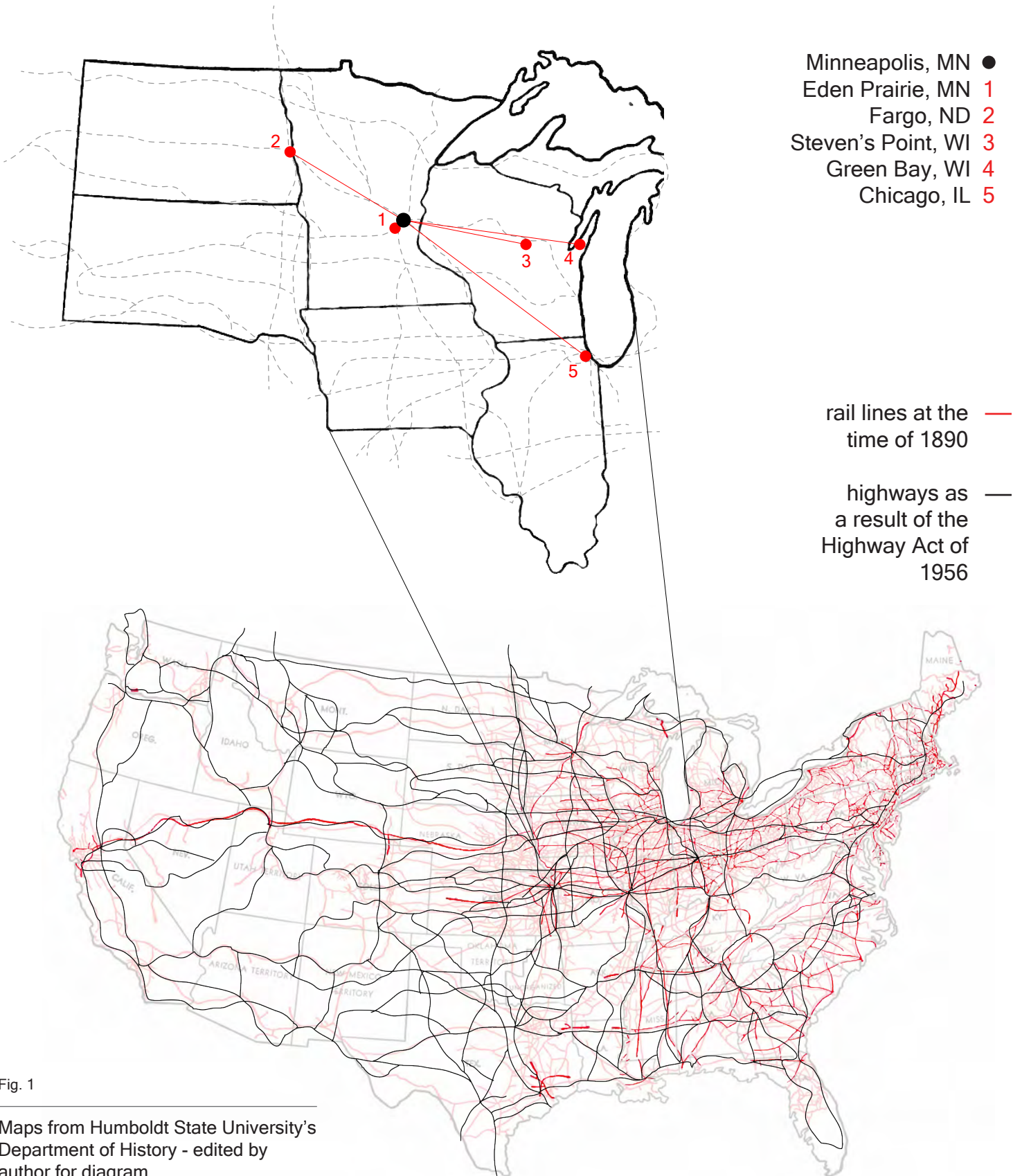


Fig. 1

Maps from Humboldt State University's Department of History - edited by author for diagram

THE WAREHOUSE TYPOLOGY

The industrial warehouse building is only one of three major building types that comprise historic industrial districts; the other two are production sheds and powerhouses.¹ It is also commonly referred to as an industrial loft because the building is often several stories tall with a large production space at the top. Overall, the warehouse buildings were constructed for general purposes and served multiple functions including commercial, storage, and manufacturing. They were the typical industrial mixed use building. This typology allowed companies to house commercial business space on the ground floor (evidenced by large storefront windows), some office space, and light machine manufacturing or storage on the upper floors. Precedents for the industrial warehouse can be found in early European industrial cities. Port cities that were heavily influenced by European immigrants and trade built warehouses that closely resembled the construction methods of those of the European cities.² This style can be clearly seen in New Orleans with the narrow and long proportioned buildings that occupy the dimension of the block. In districts such as the ones in Minneapolis and Oklahoma City that had areas developed later in the beginning of the twentieth century, buildings increased in size to inhabit a higher percentage of the block area.

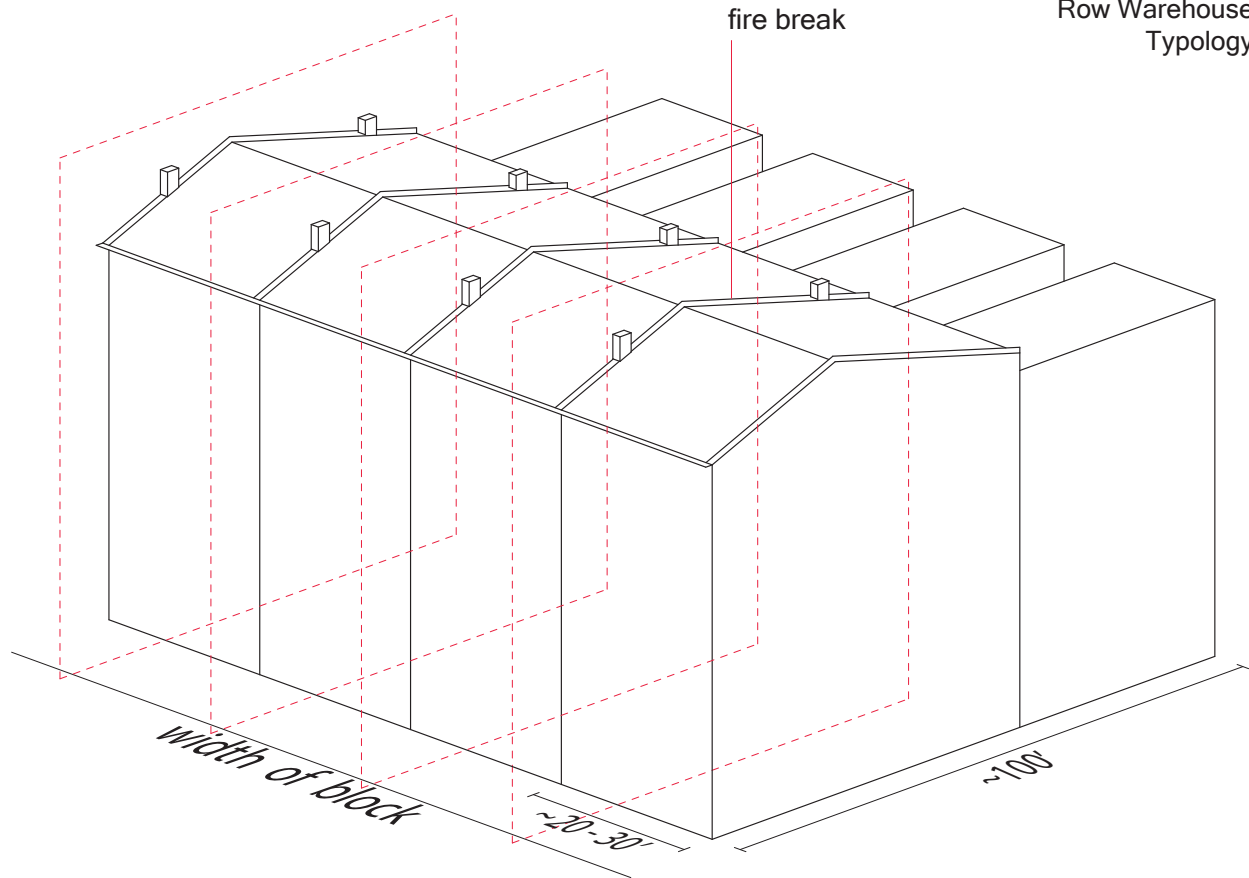
Industrial warehouses were originally constructed purely for efficiency and functionality. The main focuses for warehouse construction were concentrated in large open spaces for adaptable use, abundance in light, air ventilation, and fire protection.³ Large continuous open spaces were necessary for machinery and production; therefore, the roof structure would need to span the entire width of the building for maximum open space. Since warehouses contained multiple functions, uninterrupted open spaces allowed for easy

¹ Bradley, Betsy H. *The Works: The Industrial Architecture of the United States*. New York: Oxford University Press., 25

² Bradley, Betsy H. *The Works*, 29

³ Bradley, Betsy H. *The Works*, 122

Fig. 2
Row Warehouse
Typology



configuration changes - something that is also very useful for today's purpose for adaptive reuse. The narrowness of European warehouses, and consequently the buildings in New Orleans, can be attributed mainly to roof spans that could be easily achieved at the time, which was usually about 25 feet in width (Fig. 2). The narrow building widths were also beneficial for fire protection. Building codes emphasized the prevention of the spread of

Fig. 2 - diagram created by author

fire from building to building since many products and manufacturing methods increased the likelihood of combustibility. Rows of warehouses often occupied whole blocks and were divided by fire containment walls that also held the vertical circulation and ventilation chutes.⁴ Lighting and ventilation were also vital to design not only for the use of machinery, but for worker efficiency and health as well. As a result, warehouses were at the forefront of new fenestration framing technologies such as cast iron and construction methods that allowed for maximum natural light quality. Warehouses needed light to penetrate all the way into the building, so the dimensions of the warehouse were also determined by the amount of fenestration able to be achieved on the outer walls. Since most warehouses were organized in bays for fire protection and the creation of large open areas, the windows were typically arranged in a regular pattern and were the main feature of the facade.⁵ The roof also contributed to natural lighting and ventilation with skylights and operable vents in many industrial building types. Various forms of roofs were used including gabled roofs, flat roofs, sawtooth roofs, and others. Trusses were valuable for some buildings because they provided the ability for wider spans and multiple skylights. Even though the angled roof types allowed for more light and ventilation, the most common roof form found in the case study cities are flat roofs. The flat roof was popular soon after the mid-nineteenth century when fire prevention was a major concern. Built up fire resistant layers became available for use on roofs, and flat roofs required less of a build up. They also provided extra space for the drying of various products in the production cycle and areas for workers to gather or rest.⁶

Common materials used for warehouse construction progressed in relation to new building technologies created for better fire resistance, longer structural spans, and more open facades. Early industrial buildings used timber frame construction because of the low cost for the material and the ease of construction. The timber frame was

⁴ Bradley, Betsy H. *The Works*, 126

⁵ Bradley, Betsy H. *The Works*, 162

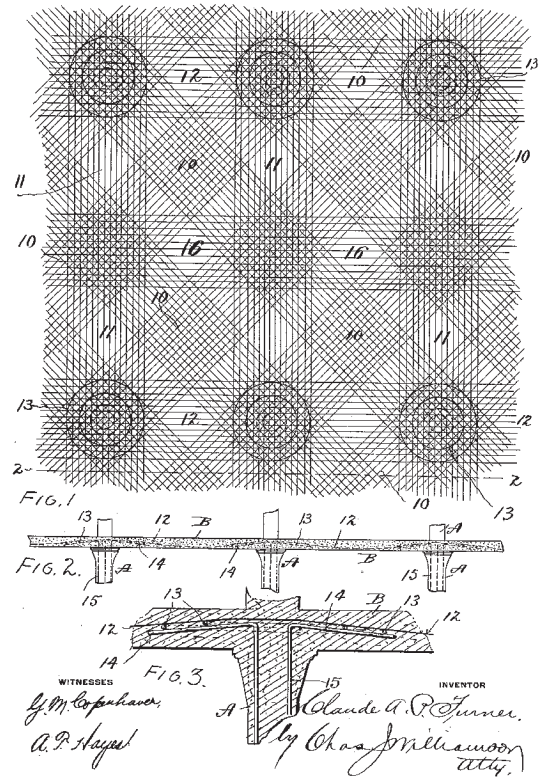
⁶ Bradley, Betsy H. *The Works*, 179

extremely useful for interior construction as it was more flexible for the adaptability of spaces than load bearing masonry walls. However, timber resources began to be depleted, and the use of timber as a main construction material for industrial buildings diminished around 1910.⁷ Masonry was also a traditional building material in the nineteenth century. Stone was a good local resource for most cities, was a good fire resistant resource, and strong in bearing weight. In the 1860's, machine pressed brick, a process that strengthened brick to the point of being the strongest most fire resistant type of brick, gained popularity as material choice for industrial buildings. Structural iron was also in use during this same time period, but mainly just served to frame storefronts and beams for larger bays and openings. It was soon replaced by structural steel; however, steel was an expensive construction material because it had some vulnerability to fire and carried the extra cost of fireproofing members. At the beginning of the twentieth century, reinforced concrete was making a significant impact on engineering and architecture. This proved to be the most economical and fireproof construction method and allowed for larger scale warehouses to be constructed.⁷ Minneapolis became a center for innovations in reinforced concrete; the

C. A. P. TURNER.
REINFORCED CONCRETE SLAB CONSTRUCTION.
APPLICATION FILED JAN. 18, 1912.

1,131,019.

Patented Mar. 9, 1915.



Patent for "Mushroom Columns" and the Green & DeLaitre Wholesale Grocery Company Warehouse, Minneapolis

Fig. 3

⁷ Bradley, Betsy H. *The Works*, 133

⁸ Gasparini, D. A. "Contributions of C. A. P. Turner to Development of Reinforced Concrete Flat Slabs 1905-1909." *Journal of Structural Engineering* 128, no. 10 (October 2002)

Fig. 3 - Minneapolis CPED Planning Division. *The Green & DeLaitre Wholesale Grocery Company Warehouse Historic Designation Study: 500 North Third Street*. Minneapolis Heritage Preservation Commission, April 19, 2010.

wholesale grocers needed larger buildings for storage, and they became the perfect buildings to practice new engineering methods for concrete. C. A. P. Turner, one of the best known engineers to work intensively with reinforced concrete systems in the early twentieth century, influenced the construction methods for warehouses by creating the “mushroom column” for support of flat slab floors (Fig.3). His methods allowed more cost efficient construction and larger spacing in between columns. He worked on many industrial warehouse buildings from Minneapolis to Chicago, Cincinnati, Omaha, Oklahoma City, and other cities.⁸

Architecture in many industrial districts was a showcase for progress in the field. The design of industrial buildings not only reflected the architectural styles of the time but also the technological advances in construction as practiced by C. A. P. Turner. Interestingly, engineers were the primary designers of industrial buildings in the nineteenth and early twentieth century. However, the warehouse buildings often represented the popular architectural styles or movements of the time as they were a part of commercial architecture. For example, Minneapolis has a vast display of the progression of warehouse design ranging from the popular Italianate style to classical revivalist to a more modern style that evolved at the beginning of the twentieth century.⁹ Although contrasting geographically, New Orleans also displayed these same styles indicating that they were nationally recognized. The Italianate style was the prevailing aesthetic up until the end of the nineteenth century until steel and concrete propelled the evolution towards larger scale buildings.¹⁰ Even though warehouses were given common architectural aesthetics, functionality was the main objective. Many ornamentations and decorations frequently seen on the exterior served the role as indicators of the company that owned the building. These included signage, painted murals, and figural ornaments representing the manufactured product. Eventually, as warehouse buildings progressed

⁹ Minneapolis Community Planning & Economic Development (CPED) Planning Division. *Minneapolis Warehouse District Designation Study*. Minneapolis Heritage Preservation Commission, 25

¹⁰ Hawkins, Dominique M. “City of New Orleans HDLC - Warehouse District Historic District.” City of New Orleans Historic District Landmarks Commission, May 2011

and emerged as prominent figures in the city, architects began to be more involved and the modern movement inspired by international architects such as Walter Gropius and Peter Behrens became an influential factor in design. Much of the modern movement in warehouse buildings, though, occurred when companies were constructing outside the center of the city for larger space; thus, these buildings had less of an impact on historic industrial districts.

REFLECTION OF SOCIETY - IMAGE OF PLACE

“Environmental images are the result of a two-way process between the observer and his environment. The environment suggests distinctions and relations, and the observer ... selects, organizes, and endows with meaning what he sees.” - KEVIN LYNCH, *THE IMAGE OF THE CITY*

At one point, the industrial district defined the city; it was the heart of the city and gave it life. As the economic power, the cities were associated with the type of products that its industry produced. Many cities are known for cotton production and textiles, Pittsburgh for steel, New Orleans for coffee, and Detroit for automobiles. There is a sense of place that is created, and that image is developed with those associations, physical attributes, and its culture.

Cities are a direct reflection of society. They are like stories that are continually evolving: the districts or neighborhoods within the city are paragraphs, the buildings that make up the city fabric are the text, and people are the authors.¹ Industrial districts hold a key part to the story that shows the reader a history of advancements that the city has made. Technological advancements in constructing buildings as displayed by warehouses has already been discussed, but industrial districts also highlight multiple movements in manufacturing and production progress. They represent the time of mechanical manufacturing, mills, and the rise of wholesale companies. They define the production society - something that has faded since cities have become less production oriented and more about consumption.

The industrial district also creates a unique sense of place in the city. With the warehouse typology and some factory buildings, there is a cohesiveness to industrial districts - usually brick construction, block buildings, factory towers, and access to transportation features such as railroad tracks. This clear identity of the district creates

¹ Short, J. R., L. M. Benton, W. B. Luce, and J. Walton. “Reconstructing the Image of an Industrial City.” *Annals of the Association of American Geographers* 83, no. 2 (1993): 208

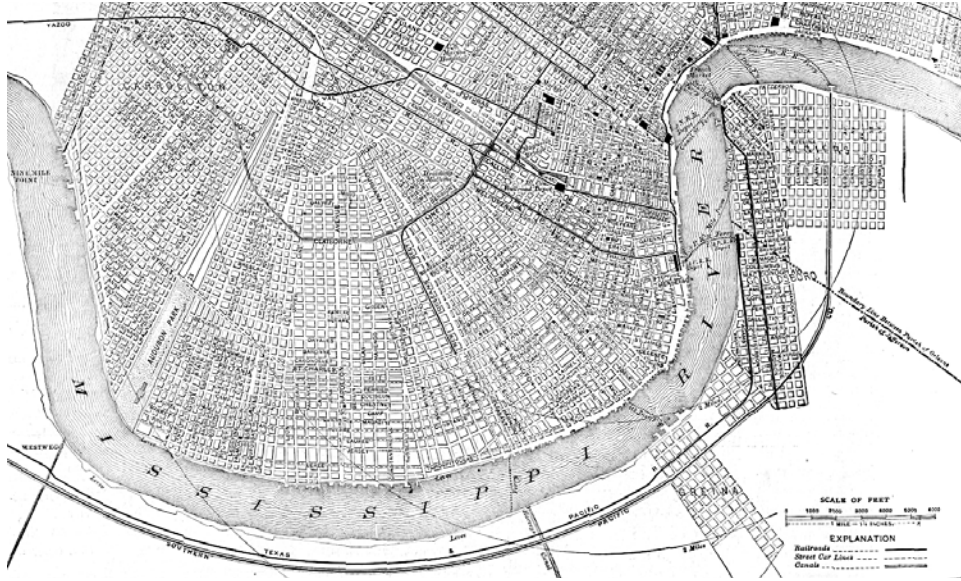
a recognizable reference point in the city.² Today, historic industrial districts still have a strong sense of identity and are often referenced as their own neighborhood with names such as “Bricktown” (Oklahoma City), “The Warehouse District” (Minneapolis, Raleigh), “The Wharf” (San Francisco), “Strip District” (Pittsburgh), or sometimes a new “Arts District” (New Orleans). As already defined districts that were integral to the growth of cities and their heritage, industrial districts lend themselves to preserve that part of a city’s story and continue a new one.

Fig. 4 - Trade Products at Port of New Orleans

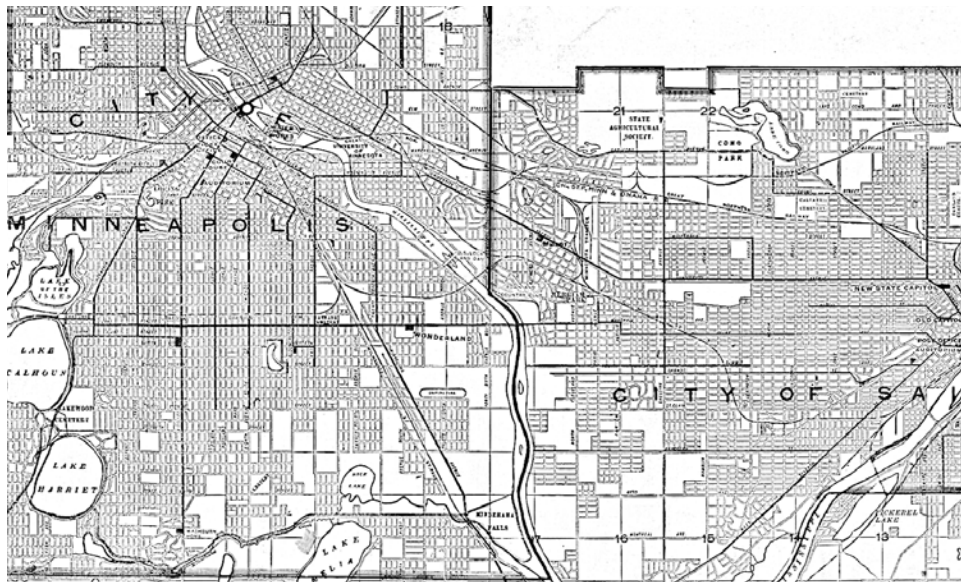


² Lynch, Kevin. *The Image of the City*. Cambridge, MA: MIT Press, 1960.

Fig. 4 - Louisiana State Museum. “Coffee Trade and Port of New Orleans.” Louisiana State Museum Online Exhibitions. <http://www.crt.state.la.us/louisiana-state-museum/online-exhibits/coffee-trade-and-port-of-new-orleans/index>.



NEW ORLEANS - SANBORN MAP 1908



MINNEAPOLIS - SANBORN MAP 1906



OKLAHOMA - SANBORN MAP 1903

Fig. 5

COMPARISONS OF CASE STUDIES

Even though the cities of New Orleans, Minneapolis, and Oklahoma City are located in very different geographical regions of the United States, there is some basis for comparison. Their industrial areas developed as the center of the city (Fig. 5), and each evolved with new markets such as the transportation industry and agricultural industry. Another main comparison between the cities is how all of them were major areas for commercial wholesalers. Each of these industrial districts contained a diverse amount of companies based around trade products and wholesaling. They all have a single district in the city that was designated as the warehouse building district, and each of them suffered from the decline of industrial districts and had a period of time where most of the area was neglected. New Orleans, Minneapolis, and Oklahoma City later put efforts towards bringing businesses back to these districts and they now market them as tourist attractions within the city. The role of each of these industrial districts is now more entertainment focused, but they have all been prominent and cohesive districts since their early development.

Fig. 5 - "Perry-Castañeda Library Map Collection - UT Library Online." University of Texas Libraries.
<https://www.lib.utexas.edu/maps/>.

ADAPTIVE REUSE STRATEGIES

DEFINING ADAPTIVE REUSE

Buildings, much like living things, run the course of their life as a narrative. They are built for an intended use, but cities, people, culture, economies, among other factors are constantly transforming. Alongside transformations and necessary movements forward in society, whether in light of new advancements or to repair declining areas, some type of preservation is needed. Ada Louise Huxtable states in her “Lessons in How to Heal the City’s Scars” that “historic preservation is not sentimentality but a psychological necessity. We must learn to cherish history and to preserve worthy old buildings ... we must learn how to preserve them, not as pathetic museum pieces, but by giving them new uses.”¹

There is a definitive difference between adaptive reuse and historic preservation. Sometimes buildings are demolished and replaced with something entirely new, but that is not discussed much in depth here because that disregards any idea of preservation or adaptation. Historic preservation is meant to be in service of the conservation of ideas; it does not particularly allow objects to become something new. The National Park Service Secretary of the Interior’s Standards and Guidelines states historic preservation as “the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited

¹ Huxtable, Ada. “Lessons in How to Heal the City’s Scars.” *New York Times*, May 27, 1973.

and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.”² Adaptive reuse in architecture, however, provides the opportunity to preserve some of the identity of buildings while being able to manipulate them for new functions that may not relate to the original intended use. Reuse is more feasible when trying to promote new businesses or redefining a district for areas with already existing prominent buildings without completely restoring the buildings to their original condition. This opens up the architecture to have a new voice in design and allows a layering or combination of styles - a historic industrial and contemporary style for example.

Most buildings are not designed to adapt. Architecture is built with the idea of permanence in mind, but since the world is constantly evolving, structures rarely stay the same. Some buildings adapt well to a change of conditions, and others may not be as versatile. Industrial and commercial buildings usually fair well for reuse. Their typically open plans and large regular divided spaces allow for a variety of uses and can be easily converted again and again. Specifically, warehouses and factories from the late nineteenth and early twentieth century are incredibly adaptable because they were built to handle various kinds of heavy machinery and were designed for functionality with ample natural lighting and ventilation for the large spaces.³ A good example of how a warehouse building has been adapted over time is the Sheridan Heritage Building in Denver, Colorado



TRANSFORMATIONS OF THE
SHERIDAN HERITAGE BUILDING
DENVER, CO

○
1882
Denver City Railway Company
constructed warehouse

Fig. 6

(Fig. 6). It was originally the Denver City Railway Company Building for one of the main transportation companies in Denver in 1882 constructed to house horsecars, stables for the horses, hay and grain, and offices. Barn doors occupied the street facade for the cars. However, after the switch to electric streetcars, the building facade was renovated to include large windows instead of the barn doors in 1892 when it was sold to a new owner to be used for general commercial uses. By 1902, the building served as Hendrie and Boltoff Manufacturing and Supply Company, a mining equipment supplier. The warehouse was converted once again back to general commercial and mixed use, which remains today. It now contains several restaurants, a dry cleaner, and residential lofts. Several changes were made to the facade according to new owners. In addition to the replacement of the original barn doors, numerous signage changes and storefront



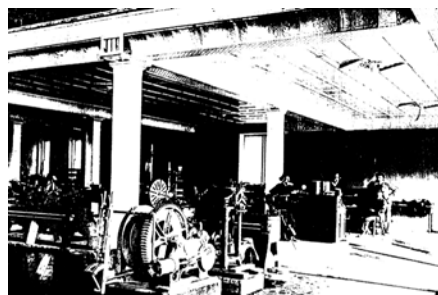
○
Present day



○
1970's - 1980's
Converted to mixed use



○
1902
Hendrie and Boltoff Manufacturing and Supply Company



○
1892

Sold to Mr. Sheridan, converted interior for general commercial use

awnings were attached to the primary face of the building. However, the building retains its overall exterior character. The interior underwent more dramatic changes (from horse stables to restaurants), but the stone piers and cast iron pilasters that defined the structural bays of the building are original to the 1882 construction by the Denver City Railway Company.⁴

² "Secretary's Standards--Preservation Terminology." National Parks Service. https://www.nps.gov/history/local-law/arch_stnds_10.htm.

³ Brand, Stewart. *How Buildings Learn: What Happens after They're Built*. New York, NY:Viking, 1994,109

⁴ Gibson, Barbara. *The Lower Downtown Historic District. Denver, CO: Historic Denver in Cooperation with Denver Museum of Natural History, 1995.*

STRATEGIES

The notion of adaptive reuse in architecture can have multiple implications to different people. It can be carried out and incorporated in design through various methods ranging from a more preservationist point of view to just a subtle nod to the past. There are several design strategies that are ambiguous whether they are reuse projects or just new buildings that refer to historical elements. On the other hand, there are many common identifiable interventions found in adaptive reuse buildings.

Besides taking a historic structure and renovating it for future use, some reuse strategies only involve specific elements of the original structure. For example, the incorporation of only certain building parts into a mostly new structure can be utilized when the original structure would be too costly to renovate. Facadism, when the facade of the building is kept to retain the exterior look but the entire interior structure is replaced, is a common example of this (Fig. 7). The building maintains the contextual character of the environment it is in, but it is given a completely new function on the interior. Encapsulation is another method of

Fig. 7 - Facadism: preserving facade, replacing interior

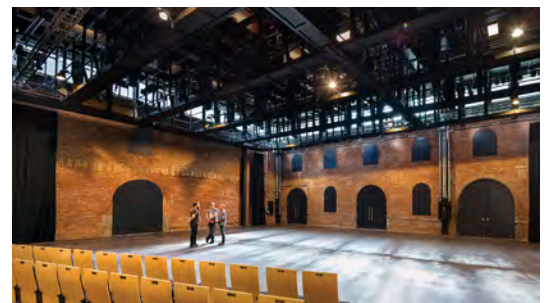
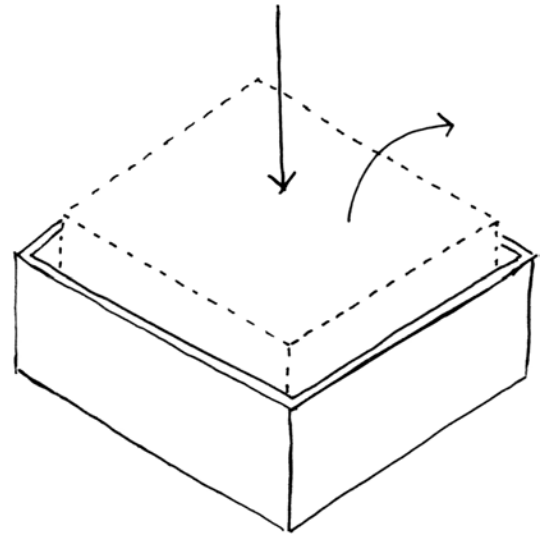


Fig. 8 - St. Ann's Warehouse
Marvel Architects; Brooklyn, NY

Fig. 7 - Diagram drawn by author

Fig. 8 - Images from Marvel Architects. <http://marvelarchitects.com/project/st-anns-warehouse/>

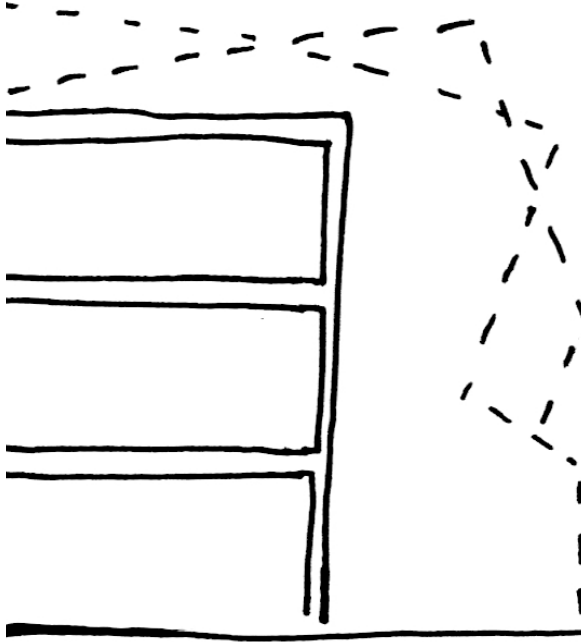


Fig. 9 - Encapsulation:
enclosure around existing
building



Fig. 10
Encapsulation Example

The Culture Yard
AART Architects
Helsingor, Denmark

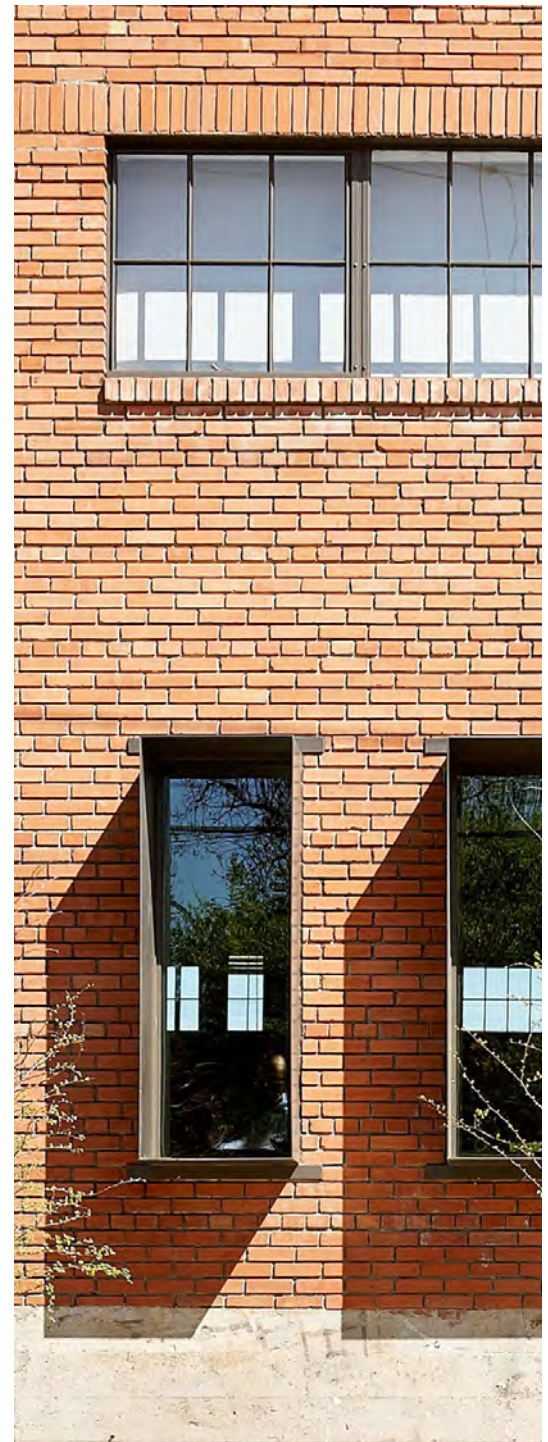


Fig. 9 - Diagram drawn by author

Fig. 10 - Images by Adam Mørk. <http://www.archdaily.com/180161/culture-yard-aart-architects>

incorporating an existing historical structure with new construction (Fig. 9). This involves surrounding the existing structure with new construction to preserve it, but the building as a whole becomes something new to the public eye.¹ There are several examples of this type of strategy used in Europe. An exemplary project with this idea is the Culture Yard by AART Architects in Helsingor, Denmark (Fig. 10). In the United States, however, this strategy is not widely used; buildings tend to have newer additions juxtaposing the existing building, but they do not fully encapsulate and preserve the historic structure.

The most common renovations in adaptive reuse projects are interiors. But even the redesign of the interior can either be conservative and display existing characteristics of the building or be very contrasting to the original style and have a completely new interior such as the strategy used in facadism. The option is up to the designer and whether or not he or she feels the need to preserve some historical character of the building, or if the building has some historical significance that is desired to be restored. Often, when interior renovations are the main focus, the exterior of the building remains relatively the same. However, a common occurrence in adaptive reuse buildings is



Hughes Warehouse Window Modification
Fig. 11

¹ "Adapt, Transform, Reuse." *The Urbanist*. SPUR. July 2013. <http://www.spur.org/publications/urbanist-article/2013-07-04/adapt-transform-reuse>

Fig. 11 - Image by Scott Adams. <http://www.archdaily.com/548804/hughes-warehouse-adaptive-reuse-overland-partners>

changes to the openings in facades to a more new modern approach that relates to newer design styles and that is more attractive to potential customers or users. In the example of the Denver City Railway Company warehouse building, the barn doors for exchanged for large windows more suitable for commercial stores (Fig. 6). The example shown here is the Hughes Warehouse Adaptive Reuse in San Antonio, Texas by Overland Partners (Fig. 12). The designers “wanted to celebrate the raw nature of the space, while clearly communicating the atmosphere of a twenty-first century workplace.”² They utilize the garage door openings as opportunities to allow more light into the building and as design features, but they also kept the intention of clearly displaying new introductions as opposed to the historic structure.

Another reoccurring characteristic to adapted buildings is signage. “Ghost signs” can be found on many historic structures dating as far back as the early nineteenth century, and there are even photography blogs that note ghost sign sightings (Fig. 13). This is probably the original form of modification for reuse of buildings since it displays a change in ownership and gives a type of identity to the building. Historic photographs of the Denver City Railway Company warehouse building show how signage was painted on the facade of the building but then later changed and eventually taken off. Today, people still use signage to quickly mark new adaptations of buildings and it has become a common decoration piece on warehouse buildings.



Fig. 12
Hughes Warehouse
Garage Door
Adaptation
Overland Partners
San Antonio, TX

² “Overland Partners Office Hughes Warehouse Adaptive Reuse.” Overland Partners. Accessed October 03, 2016. <http://www.overlandpartners.com/projects/hughes-warehouse-adaptive-reuse/>.

Fig. 12 - Image by Dror Baldinger and Scott Adams. <http://www.archdaily.com/548804/hughes-warehouse-adaptive-reuse-overland-partners>

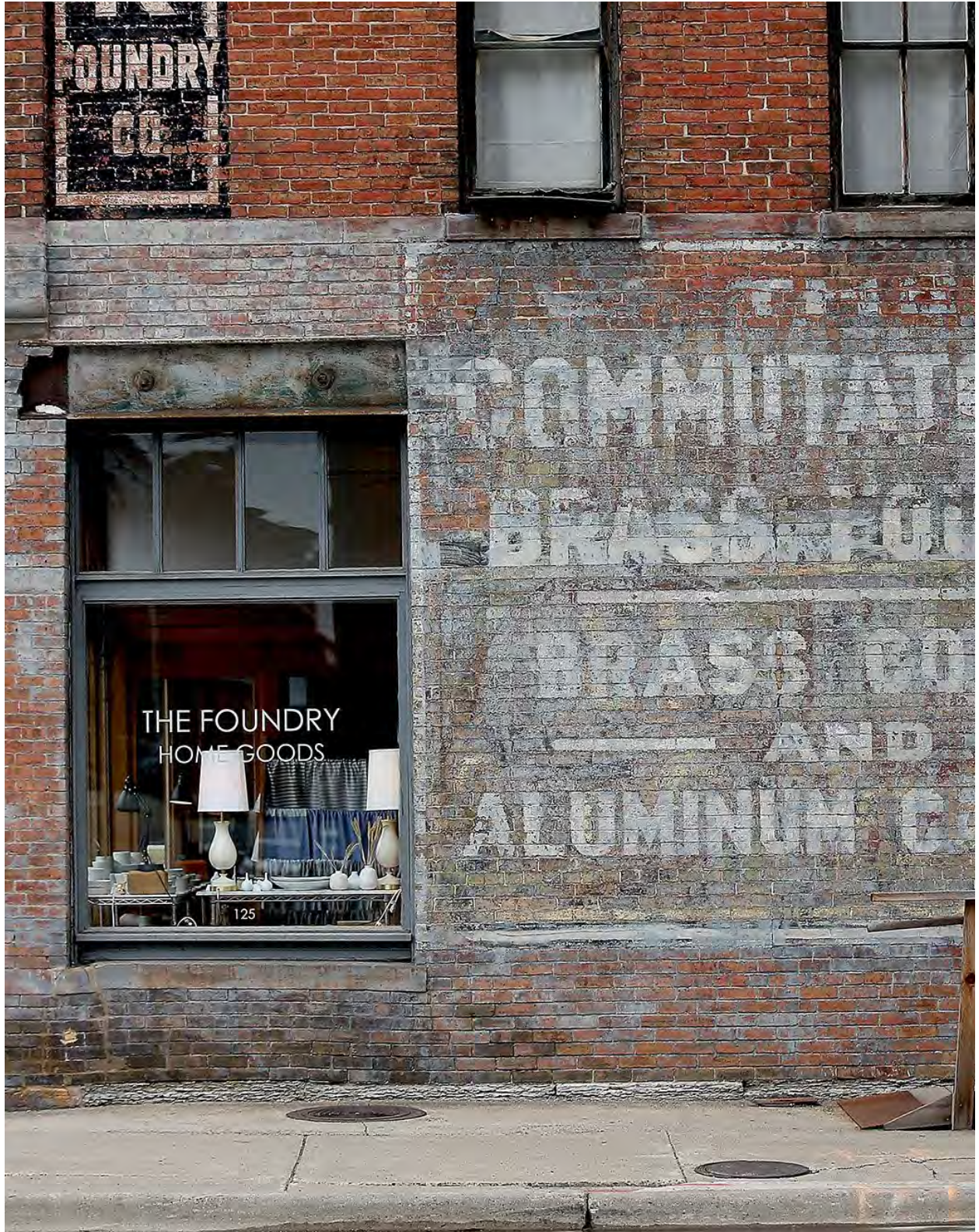


Fig. 13

Fig. 13 - Image of Ghost Sign in Minneapolis - Flores, Elizabeth. May, 2015. Minneapolis Star Tribune

INCENTIVES FOR REUSE

The main topic of debate for adaptive reuse is its usefulness versus demolition and reconstruction. The determination of whether a building should be kept or torn down relies on a case by case basis. However for every instance, financial, environmental, and social parameters are always taken into consideration.

Financial considerations are possibly the strongest driving factor in making a decision for adaptive reuse projects. Reusing buildings for reduce costs of urban development and expansion since the basics for infrastructure and building context is already existing. Even so, assessment needs to be made whether building efficiency would be a cost in the long run - factors such as energy usage and the cost to recycle unused or replaced materials make an impact on this assessment. Another financial consideration is if there is a potential market for the building. In some cases, the location of the building has a low land value and is not attractive for customer investment. However, the lower cost of these projects can draw in new startup businesses or artists looking for studio space for example. The cost of bringing historic buildings up to contemporary standards can sometimes be a deterrent, but often the incentive of social/cultural contributions can attract monetary contributions to support the project. The social/cultural value of a building adds heritage to the location and if added to historical registrations and heritage lists, there may be a relaxation of certain construction requirements that could be a persuasive incentive for developers.^{1,2} For example some mandatory building codes can be modified to allow for more flexibility and ease of reuse of historic structures not in compliance with current building codes. The state of New Jersey adopted a subcode to encourage reuse of historic buildings for housing, and that subcode reduced the requirement to comply with all the

¹ Sfakianaki, Eleni, and Katerina Moutsatsou. "A Decision Support Tool for the Adaptive Reuse or Demolition and Reconstruction of Existing Buildings." *International Journal of Environment and Sustainable Development* 14, no. 1 (2015): 1.

² Bullen, Peter A., and Peter E.d. Love. "Adaptive Reuse of Heritage Buildings." *Structural Survey* 29, no. 5 (2011): 411-21

new safety accessibility code since the existing building was built if the new use does not pose a great increase in hazard, which results in much lower construction costs.³

Demolition of entire buildings also proves to be damaging to the environment because of the increase of waste and energy spent to prepare new building materials. Therefore, even if the building proves to be highly inefficient in energy consumption, it may still be more environmentally healthy to preserve at least the existing basic structure and attempt to reuse the raw materials from the demolition of the rest of the building. The U.S. Green Building Council (USGBC) also recognizes and rewards the efforts of reusing existing buildings. USGBC's Leadership in Energy and Environmental Design (LEED) program is a green building certification program based on a point system for different categories in sustainable design. In the neighborhood development category, adaptive reuse leads to multiple point opportunities under possible headings such as brownfield redevelopment (the restoration of a contaminated site), preferred locations ("development within existing communities and developed places to reduce multiple environmental harms associated with sprawl"), and building reuse.⁴

Even though adaptive reuse is not a new concept - the first industrial warehouse reuse project credited to Ghirardelli Square in San Francisco which was converted in 1964 - more attention and value is given to the construction strategy today. Designers, building owners, and developers are realizing these incentives and sustainability benefits, making this a large market in construction and at the forefront of city redevelopment.

³ Cantell, Sophie Francesca. *The Adaptive Reuse of Historic Industrial Buildings: Regulation Barriers, Best Practices and Case Studies*. Master's thesis, Virginia Polytechnic Institute and State University, May 2005. 15,16

⁴ "LEED Credit Library." U.S. Green Building Council. Accessed October 11, 2016. <http://www.usgbc.org/credits/neighborhood-development/v1.0-pilot>.

ADAPTIVE REUSE AND WAREHOUSE DISTRICTS

NEIGHBORHOOD DEVELOPMENT

Historic industrial areas are inherently identifiable as specific neighborhoods within cities. They take on their own characteristics in building forms, materials, and urban layout. Because many historic warehouse districts are situated towards the center of the city, their land value is fairly high. This should promote an increased amount of attention from the city in discussions about development and urban planning, and adaptive reuse on the neighborhood scale for warehouse districts can help rectify urban decay, provide solutions for urban expansion, respond to current city needs, and possibly become another asset to a city's tourism industry.

Combating neighborhood decay and blight is the first and foremost reason for implementing adaptive reuse strategies in warehouse districts. After going through a decline as a district within the city, the neglected district needs significant attention before the blighted atmosphere spreads to other parts of the city.¹ Areas of Detroit are an example of the negative affect of district abandonments. For any city that has industrial areas as its core or at least near the center, those areas will weigh heavily on that city's image to the general public. It is for this reason that they need to be in careful consideration on the larger city scale in planning.

In order for historic warehouse districts to adapt to contemporary needs and succeed, they go through a typical process of transformation. Cities that are transforming these districts do what they can to promote and prepare the area to attract attention from private parties. However, the revitalization of an area depends on more than the master plan by city officials; it ultimately requires the investment of the developers or future building and business owners. This process of transformation comes after the industrial district

¹ Cantell, Sophie Francesca. *The Adaptive Reuse of Historic Industrial Buildings: Regulation Barriers, Best Practices and Case Studies*. Master's thesis, Virginia Polytechnic Institute and State University, May 2005., 6

declined in its original use and many of the buildings were abandoned or in a deteriorating state. Since many of these districts were highly influential to the development of the city and served as showcases for advancement in building and product technology, they have become valuable to the city. As a result, during the process of revitalization, several cities take the step of designating their former industrial areas as historic districts so as to promote the upkeep of the buildings. In the procedure of designating an area as a historic district, buildings are examined for their historical significance and there may be a decision of which buildings are worth keeping and which would be more reasonable to demolish. Minneapolis has an excellent example of going through the warehouse district building by building describing the historical past, significance, and worth in the Minneapolis Warehouse District Designation Study.² This would be the first step in rejuvenating the neighborhood. Another common step is for an organization to be appointed for oversight of the area. This is typically a direct approach to boost tourism. Neighborhood branding and marketing based on new uses of the area (entertainment, shopping, art galleries, etc.) is also implemented to solidify a district's status in the city. Oklahoma City has named its warehouse district "Bricktown" in order to market it, and the Bricktown Association is a "non profit organization with the goal of promoting the businesses in Bricktown and the district as a whole." They now claim that "Bricktown generates more sales tax revenue than any other single district in Oklahoma City, and is the gateway to our city for tourists, convention attendees, and day trippers from around the region."³

The rejuvenation of these areas requires special attention to the district as a whole. By developing on the neighborhood scale, the historic district can retain its cohesiveness and become a destination spot for visitors, but these efforts need to be supported and incorporated in city planning strategies.

² Minneapolis Community Planning & Economic Development (CPED) Planning Division. *Minneapolis Warehouse District Designation Study*. Minneapolis Heritage Preservation Commission, October 28, 2009.

³ "History." The Bricktown Association. <http://welcometobricktown.com/history>.

INCORPORATION IN CITY PLANNING

Cities that have historic warehouse districts have the opportunity to utilize those areas to address current issues and goals. The needs of the city may include an expanded entertainment area for tourism or sports teams, a more formal arts and cultural area, or accommodation for an increasing housing demand. In order to accomplish these goals, the focus on warehouse districts in city planning phases may include intensive studies, a change in zoning incentives, or an establishment of design requirements.

The issue of housing is at the top of the list of concerns for many cities. To combat the costs and problems associated with urban sprawl, cities are looking towards central districts for conversion to loft living and using specific city planning tactics to do so. Minneapolis compiled a district neighborhood action plan in 2010 for the Warehouse District or, as it is also known, the North Loop. In it, the city had a focus on residential development and neighborhood livability. Their main goal was to “encourage a highly integrated, mixed-use residential development pattern that holds a variety of housing options, suitable to a wide range of household types and income levels.” Through the study of their goal, Minneapolis outlined specific objects in the action plan that included providing a wider range of housing options, encouraging transit oriented development to integrate with other goals of the city, reducing the neighborhood’s carbon footprint, improving safety factors, and preserving the character of the neighborhood.¹ The neighborhood’s association proposed the use of planning strategies to address the need to enhance the living experience in that area. Small zoning changes were made to encourage the mixed use of warehouses, transit oriented development helped provide easier accommodations for residents and visitors alike, and design regulations to preserve the historic character increased the cultural

¹ “Warehouse District North Loop Neighborhood Revitalization Program Phase II Action Plan.” Warehouse District North Loop Neighborhood Association. <http://www.minneapolismn.gov/www/groups/public/@ncr/documents/webcontent/wcms1q-071423.pdf>

value and incentive to reside there.

Zoning regulation choices have the ability to create major changes within a district and propel a city's plan in a certain direction. Obviously, for industrial districts, changing the zoning from industrial to commercial or mixed use is an important first step in allowing the buildings to be adapted for new use. Transfer of Development Rights (TDR) is another planning incentive that cities can put into affect. This is a strategy that Denver has used to attract developers to its lower downtown district which is comprised of mainly warehouse buildings. It was ultimately in service to the Lower Downtown Historic District Ordinance that aimed to loosen restrictions on building uses and encourage the use of all buildings that upheld the character of the district.² The TDR program created opportunities for developers to go beyond barriers and be rewarded for promoting further life of the area.

Without a framework plan to rejuvenate a historic industrial area, it is more likely that area will have less support and incentive to develop. Cities that have undertaken specific strategies to help neglected warehouse districts tend to see better results in neighborhood development.

² Collins, Richard C., Elizabeth B. Waters, and A. Bruce Dotson. *America's Downtowns: Growth, Politics and Preservation*. John Wiley & Sons, 1991., 74-75

SUCCESSFUL REVITALIZATION

What constitutes a successful revitalization of a historic warehouse district? Much of the answer is translated to goals in city action plans; therefore, the implementation of goals and more specific objectives can theoretically facilitate a rejuvenation. Some indicators of a successful revitalization include an increased investment in the area from stakeholders, increased diversity and livability of the area, and a preservation of the idea of place evidenced in the advent of heritage tourism.

An increased investment in the area can be seen through a parallel increase in the conversion of empty buildings to ones with new occupants. Incentives created by the city and a demand for the area help encourage that new investment. New community groups and local business are often the majority of occupants. Artist studios, galleries, community programs, and entertainment venues have the opportunity to move in to a place central in a city and result in prominent arts and entertainment districts (New Orleans, Oklahoma City, and Minneapolis are examples of this). Of course, not all lots in any warehouse district are readily adaptable, and in some cases, a district may have many lots that are empty from demolition and/or are used for parking. In these cases, the steps towards a successful revitalization may include the introduction of new buildings that reflect the characteristics of the district.

Increased programmatic diversity and livability is perhaps one of the more important components to a successful revitalization. These characteristics give a purpose and function to the area and is key to economic sustainability. The reason for the decline in the warehouse districts was the transformation of the industry that made the district no longer useful. New program for the area that relates to the needs or goals of the city can

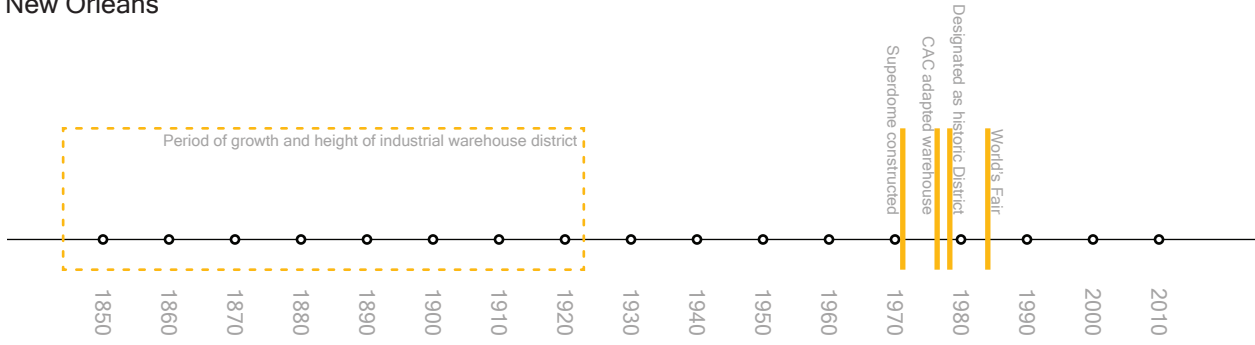
promote the district as an attraction for visitors, which will correspondingly lead to higher investment.

Although a new diversity and program is needed for revitalization, the preservation of heritage serves as a counterbalance. The warehouse district is a representation of the former city and was developed with a clear sense of identity in its building typologies and urban fabric. If the district becomes overrun with a lot of new insertions that disregard historical influences, the area will lose a qualitative component will ultimately become an area of renewal instead of revitalization.

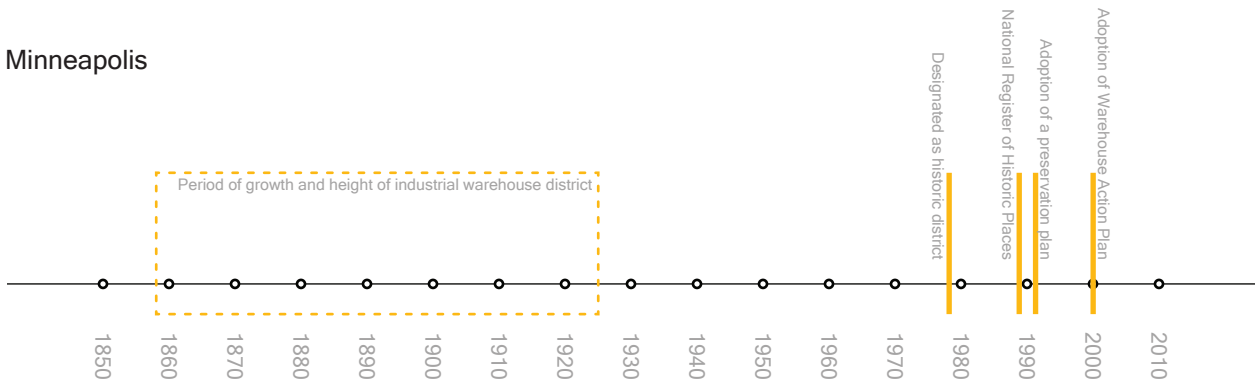
Fig. 14 - diagrams created by author

Fig. 14 - WAREHOUSE DISTRICT TIMELINES

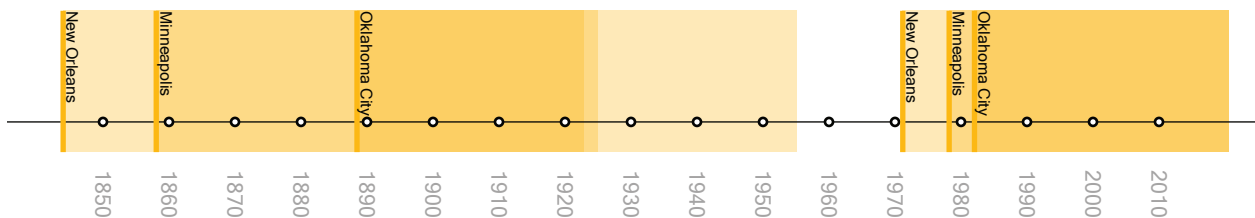
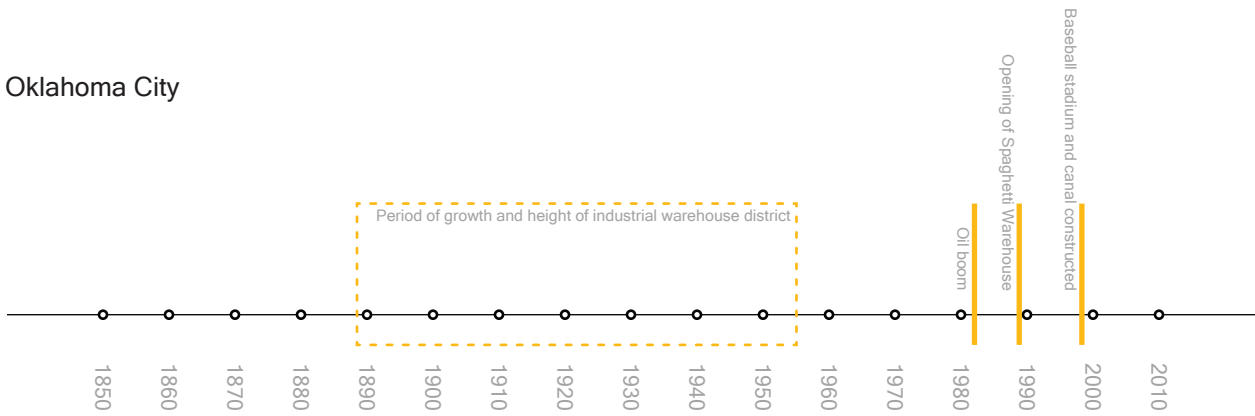
New Orleans



Minneapolis



Oklahoma City



NEW ORLEANS, LA

Established in the early 19th century, the warehouse district in New Orleans served as the link between the port and the shipping industry to the rest of the nation. International trade was prominent in New Orleans, first as a link for the small colonial town to European nations and then as New Orleans became a major trade hub for valuable commodities by importing coffee, sugar, and other agricultural produce as well as exporting cotton. Steamboats were a major factor in the port's success as the second largest port in the nation during the nineteenth century, and railroads carried the trade inland to other cities.¹

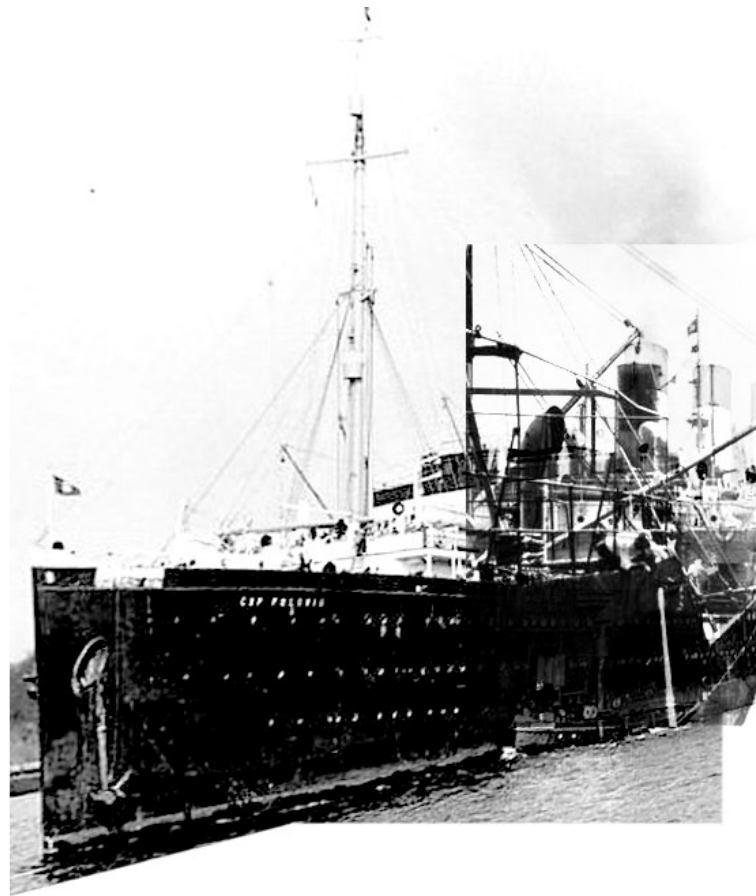


Fig. 16

¹ "Coffee Trade and Port of New Orleans." Louisiana State Museum Online Exhibitions. <http://www.crt.state.la.us/louisiana-state-museum/online-exhibits/coffee-trade-and-port-of-new-orleans/index>.

Fig. 15 - Diagram created by author

Fig. 16 - Collage created by author using historical images of Port of New Orleans and warehouses



Fig. 15 - New Orleans Warehouse District Location



SOCIAL, POLITICAL, ECONOMIC FACTORS

The Warehouse District of New Orleans traces back to the development of the American sector after the Louisiana Purchase in 1803. This was ultimately a response to the French quarter with Lafayette Square as the centerpiece - Lafayette Square still remains a vital part of the historic district with weekly events drawing in both tourists and locals.¹ The area quickly became predominately commercial and the city's central business district. By the 1880's and into the early twentieth century, the scale of the commercial buildings went from two stories to four and five stories reflecting the increase in manufacturing and building technology to construct larger warehouses. These buildings represent the height of the industrial use of the district and are therefore now considered some of the most valuable buildings in the historic district.²

After the district fell into disuse in the second half of the twentieth century because of changes in industry, several factors became catalysts for revitalization of the area. With the construction of the Superdome in 1971, tourism became more of a focus for the city. By 1978, the warehouse district was designated as a historic district to encourage reuse of the area and appeal to visitors and building owners looking to move towards the center of the city. With its prime location near the popular French Quarter, the warehouse district was able to build off the influence of heritage tourism. The 1984 World's Fair hosted by New Orleans provided a major boost in tourism for the city and created a market for expositions to follow. The World's Fair combined with the construction of the New Orleans Convention Center, which began its conception in 1978 when the area was designated as a historic district and was constructed by 1985, set up an attraction for conventions and events that draw large crowds from outside the local area.³ The onset of an increase

¹ "New Orleans Downtown & Warehouse District." New Orleans Warehouse District | New Orleans Neighborhoods. New Orleans Convention & Visitors Bureau. <http://www.neworleanscvb.com/visit/neighborhoods/downtown-warehouse-district/>.

² Hawkins, Dominique M, Catherine E. Barrier. "City of New Orleans HDLC - Warehouse District Historic District." City of New Orleans Historic District Landmarks Commission, May 2011

³ "About Us - Ernest N. Morial Convention Center." Ernest N. Morial Convention Center. 2016. <http://www.mccno.com/about-us/>.

in tourism caused the district to develop commodities for visitors. Hotels, dining, and entertainment realized the opportunity for the warehouses, and as a result moved in and renovated empty buildings near the convention center. Another result stemming from the World's Fair is the conversion of several manufacturing buildings into residential lofts to accommodate the influx of people moving to the area.⁴ The district was purely industrial and commercial previously, but the demand for housing increased with the change of attraction to the area. The Maginnis Cotton Mill near the edge of the district is an example of an abandoned industrial building that was converted to premier lofts after the mill's closing in the mid-1980s. It is now a residential building that embraces its rich history in its diverse unit types with a genuine warehouse feel.⁵

The Warehouse District of New Orleans quickly changed from industrial and commercial to one that's more community and tourism based. Since its designation as a historic district and the impact of continuous conventions and sporting events attracted to the convention center and the Superdome, the warehouse district was seen as a new potential for economic development. A new market for entertainment, community, and residential buildings was able to rejuvenate as well as preserve the rich collection of warehouses.

⁴ Gay, Patricia. "The 1984 World's Fair, the Warehouse District, and the Preservation Industry," *Preservation in Print* 31, no. 5 (June/July 2004)

⁵ "The History Of The Cotton Mill, New Orleans, Louisiana." The Cotton Mill. Accessed November 14, 2016. <http://www.thecottonmillneworleans.com/history/>.

URBAN STUDY

New Orleans is described as a city of districts and wards. The Warehouse District is one of those clearly defined districts in the city situated between the French Quarter (an entertainment district) and the Garden District (a residential district) along the Mississippi River (Fig. 17). Today, the district is bound by the major development of Poydras Street to the north separating it from the French Quarter, Highway 90 and Interstate 10 to the west, and the Pontchartrain Expressway that is the main connection across the river. Within these city dividers, the district was able to maintain its historic identity through certain urban characteristics.

Evidence of the city attempting to preserve historic urban conditions can be seen in the contrast between newer constructions which are kept nearer the peripheries of the district and the historic buildings that comprise the majority of the center of the district area. With major international influence, the warehouses of New Orleans inherited the European typology and consist of narrow buildings organized in rows that span most of the block and

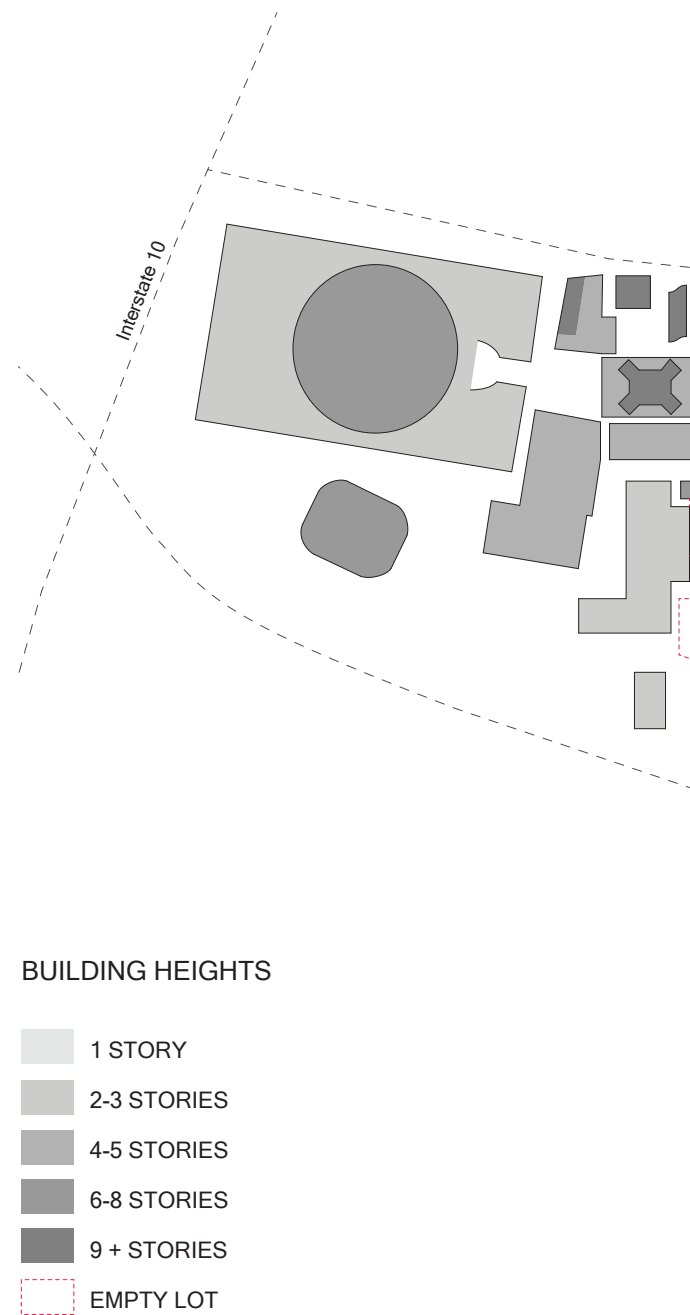


Fig. 17 - Diagram created by author

Fig. 17 - NEW ORLEANS WAREHOUSE ARTS DISTRICT URBAN FABRIC AND BUILDING HEIGHTS



are typically two to four stories tall. This typology is mostly kept in the central block area (Fig. 18), however, as buildings rise beyond six and up to about thirty stories tall in the development along Poydras Street. Since the historic district designation in 1976, the area evolved towards revitalization of existing buildings; therefore, the high-rise building developers and contemporary designs were held to the edges of the district area which was not expanded until 1985 and again in 2007. 400 Poydras Tower, constructed in 1983 at 32 stories, and the Energy Centre, constructed in 1984 at 39 stories, are both examples of tall construction outside but adjacent to the historic structures in the district. The historic district designation preserved the more dense and consistent historic building characteristics along the more notable Julia Street (highlighted by the bold orange line) as well as the 1845-1855 historic building rows along Fulton Street that remain at just two stories (Fig. 19).¹ Buildings that formally were not consistent with the warehouse typology were also located outside of the central historic area around Julia Street. These type of buildings consist of the Mercedes Superdome and the National WWII Museum which are designed more iconically instead of contextually to the fabric of the warehouse district.

Within the fabric of the warehouse district, there are also green spaces which serve as nodes throughout the district. These are highlighted in the map diagram (Fig. 19) and are organized towards the more visited attractions. Lafayette Square is historic in its own sense, but is near the busy intersection of Poydras Street and St. Charles Avenue. Other green spaces are at the convention center, the National WWII museum, and the entry area to the Superdome. The connections between these points in the urban landscape are via the main streets in the district: St. Charles, Julia, Fulton, and Convention Center Boulevard. As a result, these paths get more attention from visitors traveling between area attractions. Revitalization of the buildings along these streets is more valued, and there is a higher percentage of building reuse.

¹ Hawkins, Dominique M, Catherine E. Barrier. "City of New Orleans HDLC - Warehouse District Historic District."

Fig. 18 - NEW ORLEANS WAREHOUSE ARTS DISTRICT - HISTORIC CORE AREA

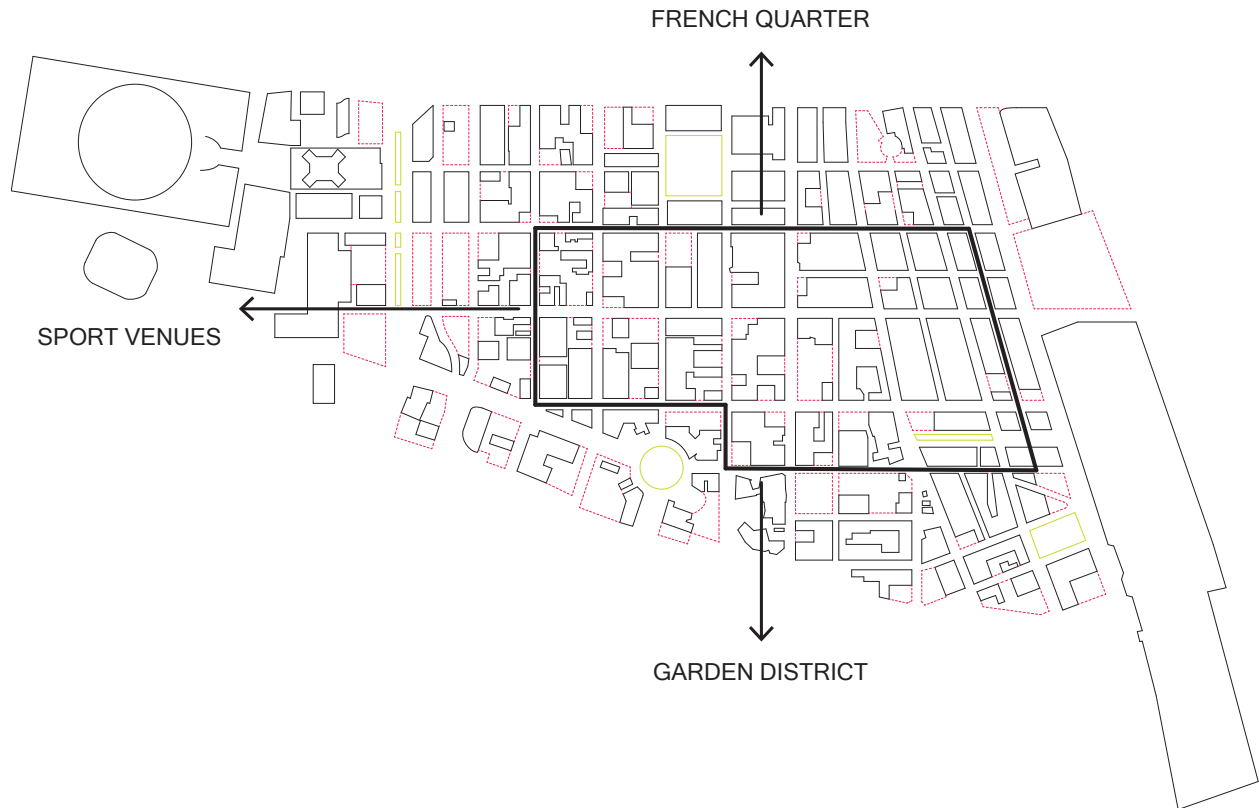


Fig. 19 - NEW ORLEANS WAREHOUSE ARTS DISTRICT - MAIN CORRIDORS AND GREEN SPACE



Fig. 18 and 19 - Diagrams created by author



Fig. 20 - New Orleans Arts District Logo



GALLERIES

1. Alex Board Studio
2. Aridmme Gallery
3. Arthur Ruger Gallery
4. Beata Saska Gallery
5. Boyd | Saitelle
6. Brand New Orleans Art Gallery
7. Callan Contemporary
8. Degas Gallery
9. Gallery 600 Julia
10. George Selimidis Gallery
11. Jed Mulliz V2 Gallery
12. JONATHAN FERRARA GALLERY
13. Julie Silvers Art
14. LeMieux Galleries
15. Martine Chabson Gallery
16. Mallory Page
17. May Gallery and Residency
18. Octavia Art Gallery
19. Soren Christensen
20. Stella Jones Gallery

MUSEUMS & FOUNDATIONS

21. Contemporary Arts Center
22. George Rodrigue Foundation of the Arts
23. Ogden Museum of Southern Art
24. WWII Museum
25. The Poydras Corridor Sculpture Exhibition presented by The Helix Foundation

FRIENDS

26. Aunt Sally's
27. Bittersweet Confections
28. Carmo
29. Cochon - Cochon Butcher
30. Emeril's
31. Herbsaint
32. La Casita
33. The Lafayette Hotel
34. Legacy Kitchen
35. Louisiana Products
36. Loews - Cafe Adelaide and Swizzle Stick Bar
37. Mammoth Espresso
38. Marechal's Restaurant & Wine Bar
39. Mulates
40. New Orleans Auction Galleries
41. The Old No. 77 Hotel & Chandlery
42. Pêche
43. Pulp & Grind
44. Renaissance New Orleans Arts Warehouse District Hotel
45. South Market District

ARTSDISTRICTNEWORLEANS

Fig. 21 - New Orleans Arts District Brochure Map

DISTRICT BRANDING

The role of the Historic Warehouse District went from a trade hub to the now currently named “Arts District.” Along the historic Julia Street, art galleries are the most common building occupancy and have become the main image of the warehouse district (Fig. 21). The first major arts dedicated adaptive reuse project in the district was the Contemporary Arts Center that opened in 1976, just before the historic designation of the district. The Contemporary Arts Center is still a prominent feature of the district, and the city of New Orleans claims it sparked the “transformation from an urban wasteland to what many have called the ‘SoHo of the South.’”¹ Abandoned warehouses soon became filled with places for dining, hospitality, galleries, and residential units. The addition of the New Orleans Convention Center in 1985 drew larger tourism crowds returning a boost in hotel and commercial development along with major support for the art and civic community. Currently there are nineteen art galleries and three museums that define the arts district. They create a corridor along Julia Street, aptly nicknamed “Gallery Row,” using the historic row warehouses from the nineteenth century that originally stored trade products. The city also placed an importance on community engagement. Events such as First Saturday Art Walks along Julia Street and Wednesdays on the Square at Lafayette Square invite the public to the area for free and special entertainment.² The district is also home to the Louisiana Children’s Museum which is described as a “vital local institution.” Since renovating a warehouse and opening in 1986, the museum’s mission has been to engage children in new learning experiences.³ The strive for community engagement by the city and the district has placed a higher value and enthusiasm for the revitalization of the warehouse district.

¹ “Arts District (Warehouse District).” New Orleans Official Guide. Accessed November 14, 2016. <http://www.neworleansonline.com/tools/neighborhoodguide/artsdistrict.html>.

² “Arts District New Orleans.” The Arts District of New Orleans. Accessed November 14, 2016, <http://www.artsdistrictneworleans.com/>

³ “History & Mission.” Louisiana Children’s Museum. Accessed November 14, 2016. <http://lcm.org/history-mission>.

Fig. 20 and 21 - “Arts District New Orleans.” The Arts District of New Orleans

STRUCTURAL RELATIONSHIPS

The relationship between the physical characteristics of the building and its new occupant is a transformation process that balances elements of the existing structure with new additions for the building's adaptation. Certain transformations to the building are common and correlate with the occupancy type; art galleries and dining establishments particularly have different strategies regarding the preservation of historical building elements or conversion to a newer, contemporary look. The most common attributes of buildings that get attention in adaptive reuse is the facade treatment, fenestration, interior surface materials (walls, floors, ceilings), and the expression of the existing building structure.

From observation, the art galleries have a significant interior renovation with major focus on transforming surface materials. Fig. 22 and 23 were taken from galleries along Julia Street and are typical of most of the interiors found. They display a simple contemporary design to showcase the art. However, the Octavia Art Gallery (Fig. 22) is a transformation that is less revealing of the historic building qualities. The ceiling, walls, and floor are completely new materials and the original wood beam structure is covered up by the same material as the walls and ceiling. The second example, the Alex Beard Studio (Fig. 23), takes an approach towards expressing the historical elements of the building. The wall surfaces for art display do not conceal the brick wall structure of the building. The windows and entry are also preserved in the same historical fashion. The adaptive reuse projects for art galleries almost solely focus on the interior, and are fairly modest in the New Orleans Warehouse District. Even though newer material finishes are added to surfaces, the layout and structure of the building are maintained with minimal intervention.

Fig. 22

Octavia Art Gallery - Julia St.

The adaptive reuse project has complete new interior surfaces for the function of an art gallery. The existing columnar structure remains but is covered with new surface material that fits the new interior.

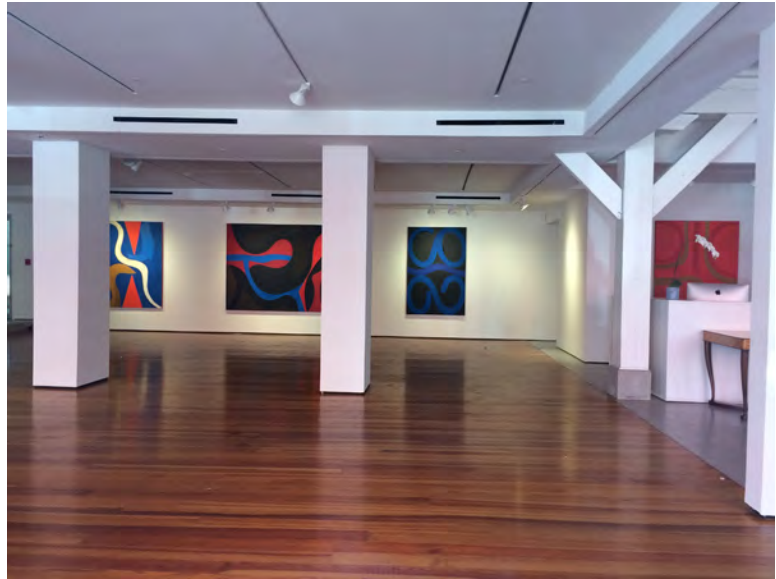


Fig. 23

Alex Beard Studio - Julia St.

Its location in the historic Julia Row building caused a more preservationist approach; it minimally covers the existing brick bearing walls and the historic windows and doorways are maintained.



Fig. 22 and 23 - Photographs taken by author



Fig. 24 - Contemporary Arts Center Interior

Fig. 24 - Photograph taken by author

Alternatively, dining and entertainment establishments such as bars and music venues embrace the historic industrial image. Necessary additions are made for the function of the business, but typically, there is little transformation to building materials or structure. In most cases, the structure is left exposed, expressing the genuineness of the historical building.

Perhaps the most drastic adaptive reuse project in the warehouse district is the renovation of the Contemporary Arts Center (Fig. 24). Only the exterior walls remain from the existing building; all the original warehouse floors were removed in order to insert a new sense of space and circulation that appeals to the contemporary art community. Interestingly, a new structural system was inserted that imitates the traditional wood structure used in the typical warehouse. The new structure references the past with the sense of mimicry, but the effect is also one that mediates between the new and the original components of the building.¹

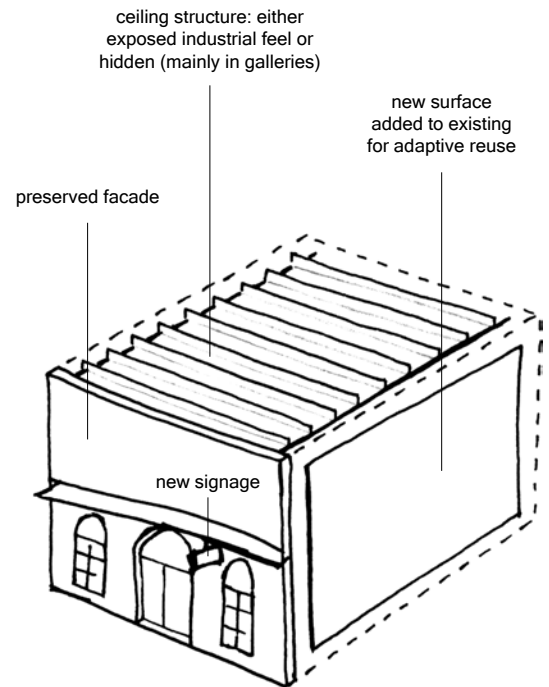


Fig. 25 - Gallery Reuse of Warehouses

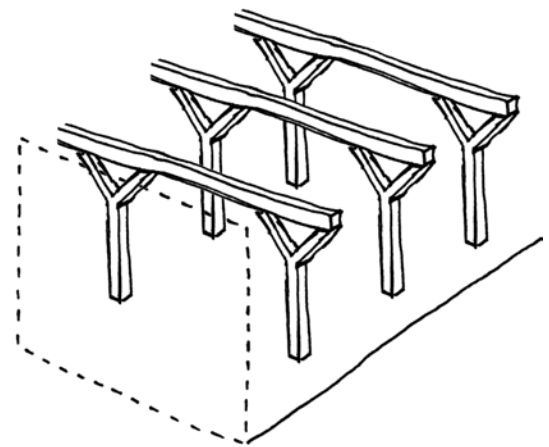


Fig. 26 - Structural Preservation

¹ "Contemporary Arts Center." StudioWTA. Accessed November 14, 2016. <http://studiowta.com/project/contemporary-arts-center/>.

Fig. 25 and 26 - Diagrams drawn by author

REVITALIZATION EFFECTS

The New Orleans Warehouse Arts District has become successful in attracting many visitors to the area because of its revitalization. It is now a place for events, tourists, and locals because of its central location in the city and the use of the buildings for new businesses. The identity of the district as a hub for trade product storage and manufacturing has mostly faded because it is now transformed into the new arts district. There is little indication of the previous use of the buildings, but the district as a whole still has a historic cohesiveness. During the transformation of buildings for new occupants, the exterior of the buildings are largely unmodified. Especially for the row warehouses, this helped preserve the uniform quality of the building even when multiple different businesses remodel the interior. However, there is some variation in amounts of modification to adaptive reuse projects in the district due to historical significance. The more prominent and era defining buildings are more consistent in adaptive reuse design, but the periphery buildings exercise more flexibility in modifications to the original building in aspects such as entryways, fenestration, and street presence. Nevertheless, the social and economic redevelopment of the district as a unique arts district within the city unified the district while minimally disrupting the existing urban fabric.

MINNEAPOLIS, MN

Much like New Orleans and Oklahoma City, Minneapolis was a main distribution center to other parts of the nation - specifically the northwest territories. With access to a waterway and railroads, it was able to house implement dealers for agricultural supplies and become a prime location for new companies. By 1920, up to 300 warehouse businesses were established in Minneapolis and the district grew with technological and architectural innovations such as better assembly lines, elevators, and reinforced concrete.¹



Fig. 28

¹ "Minneapolis Warehouse District Designation Study." Minneapolis Community Planning & Economic Development (CPED) Planning Division. Minneapolis Heritage Preservation Commission, October 28, 2009.

Fig. 27 - Diagram created by author

Fig. 28 - Collage created by author using historical images of Minneapolis

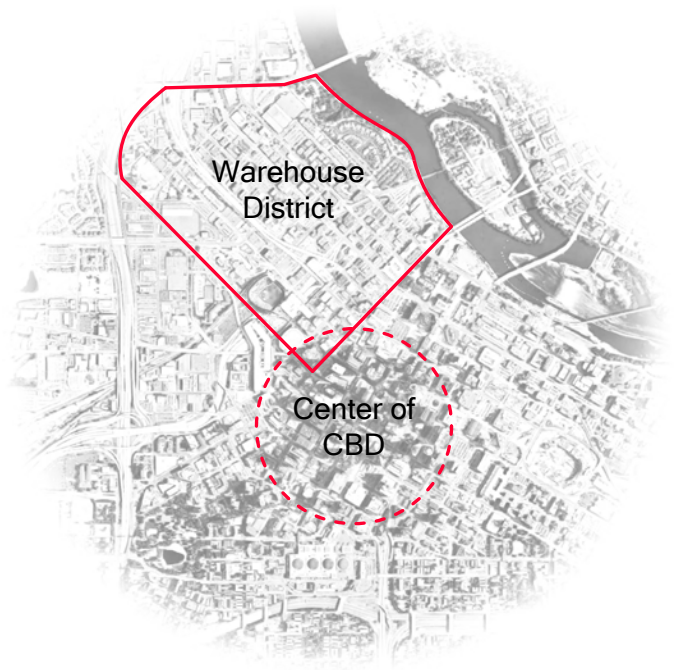


Fig. 27 - Minneapolis Warehouse District Location



SOCIAL, POLITICAL, ECONOMIC FACTORS

The end of the nineteenth century and the first few years of the twentieth century was the defining period of development of the warehouse district in Minneapolis. The district experienced its eventual decline from the 1920s and 1930s to the late 1970s. However, the district had enough of an impact and historic significance to the city that it was designated as a historic district in 1978 and listed on the National Register of Historic Places in 1989, which demanded a better rejuvenation for the area.¹

The height of the district that lasted up until the 1920s culminated from the agricultural industry of the nation and the expansion of the railway network that allowed companies to provide business outward to larger regions. The most influential businesses in the district consisted of agricultural implement dealers and wholesalers that sold products and equipment to customers across the Midwest, USA and southwest Canada. By 1908, Minneapolis's warehouse district was the most successful place in the world for the dealing of agricultural resources. Some of the largest companies were the International Harvester Company of America, the Lindsay Brothers Company, and the Deere-Webber Company. They amounted to being the largest agricultural implementations and producers of harvesting machines in the United States.² The decline of the district was a direct result of the combination of the agricultural industry declining and the fading use of railroads for distribution because of increased shipping rates.³ Regardless, the glory days of the warehousing business had already made its impact on the city fabric, architecture, and history.

After businesses had moved out of the district, several buildings were demolished. In effort to protect the heritage of the area, boundaries were set to declare the region

¹ "Minneapolis Warehouse Historic District Design Guidelines." Minneapolis Community Planning & Economic Development (CPED). Minneapolis Heritage Preservation Commission, March 2, 2010., 4

² "Minneapolis Warehouse District Designation Study." Minneapolis CPED., 19

³ "Minneapolis Warehouse District Designation Study." Minneapolis CPED., 23

as a historic district. The city also took action to draft preservation plans to promote the redevelopment of the area to reflect its historical heritage and significance. The Warehouse Action Plan adopted in 2000 was created to “preserve the distinctive character of the Plan Area, through rehabilitation of buildings, conservation of historic streetscape features, and compatible design for new construction.”⁴ Despite action plans by the city, the district saw relatively low amounts of development due to low land value in relation to the neighboring city center. It was not until the demand for housing increased and plans for a new baseball stadium and use of the rail line for public transportation that redevelopment of the area began to take shape. Housing projects occupied empty sites where warehouses were demolished before the designation of the historic district as well as in adapted existing warehouses. The baseball stadium attracted entertainment businesses, and the rail line increased public access to the area with commuter train and light rail options. With the added diversity and established preservation plans, the warehouse district was able to serve current city needs.

⁴ “Local Designation of National Register of Historic Places Minneapolis Warehouse District.” Minneapolis Community Planning & Economic Development Planning Division, October 29, 2009., 4

URBAN STUDY

Several main factors influenced the development pattern of the warehouse district that are viewed as prominent aspects of the district's value as a historic district. Much like Oklahoma City, the warehouse district of Minneapolis had most of its development centered around rail lines that created corridors through the district. The district can also be divided into smaller areas defined by their time of development, which influenced the form and pattern of buildings. Finally, over time, parts of the district have been transformed in a different design language and introduce new aspects to the area.

In the nineteenth century, warehouse buildings were constructed on the west side of Hennepin Avenue next to the Mississippi River waterfront with the core of the city southeast of the avenue (Fig. 29). Later in the early twentieth century, new rail lines influenced the development of new buildings along 1st through 4th streets. The Great Northern Rail Corridor runs through the middle of the district from the Mississippi River to 5th Street where the ballpark is now located. Buildings oriented towards

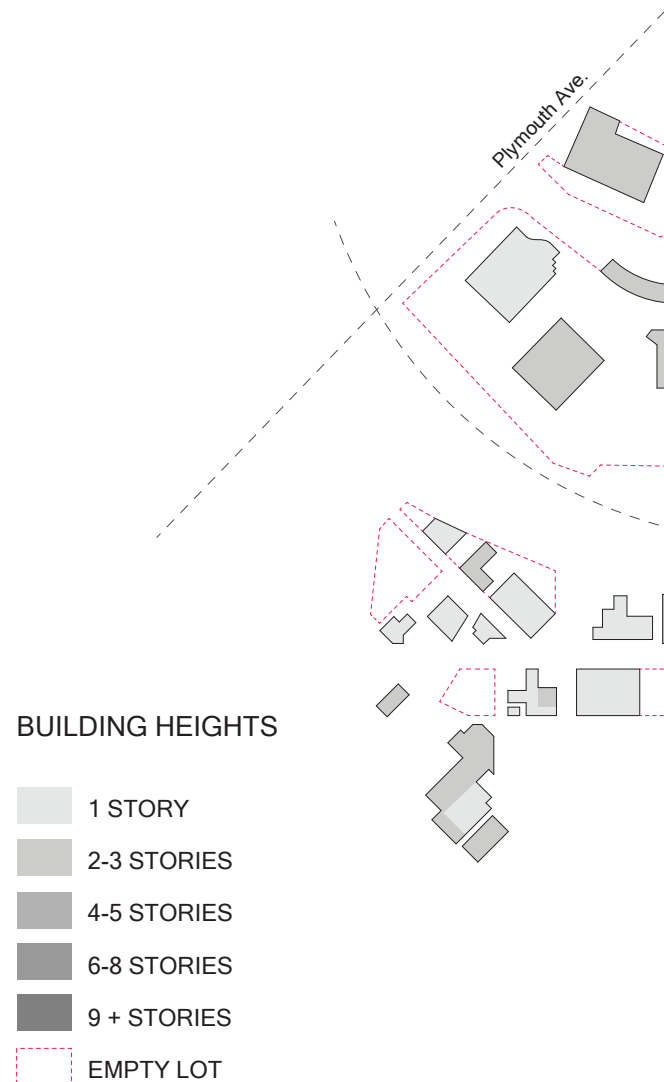
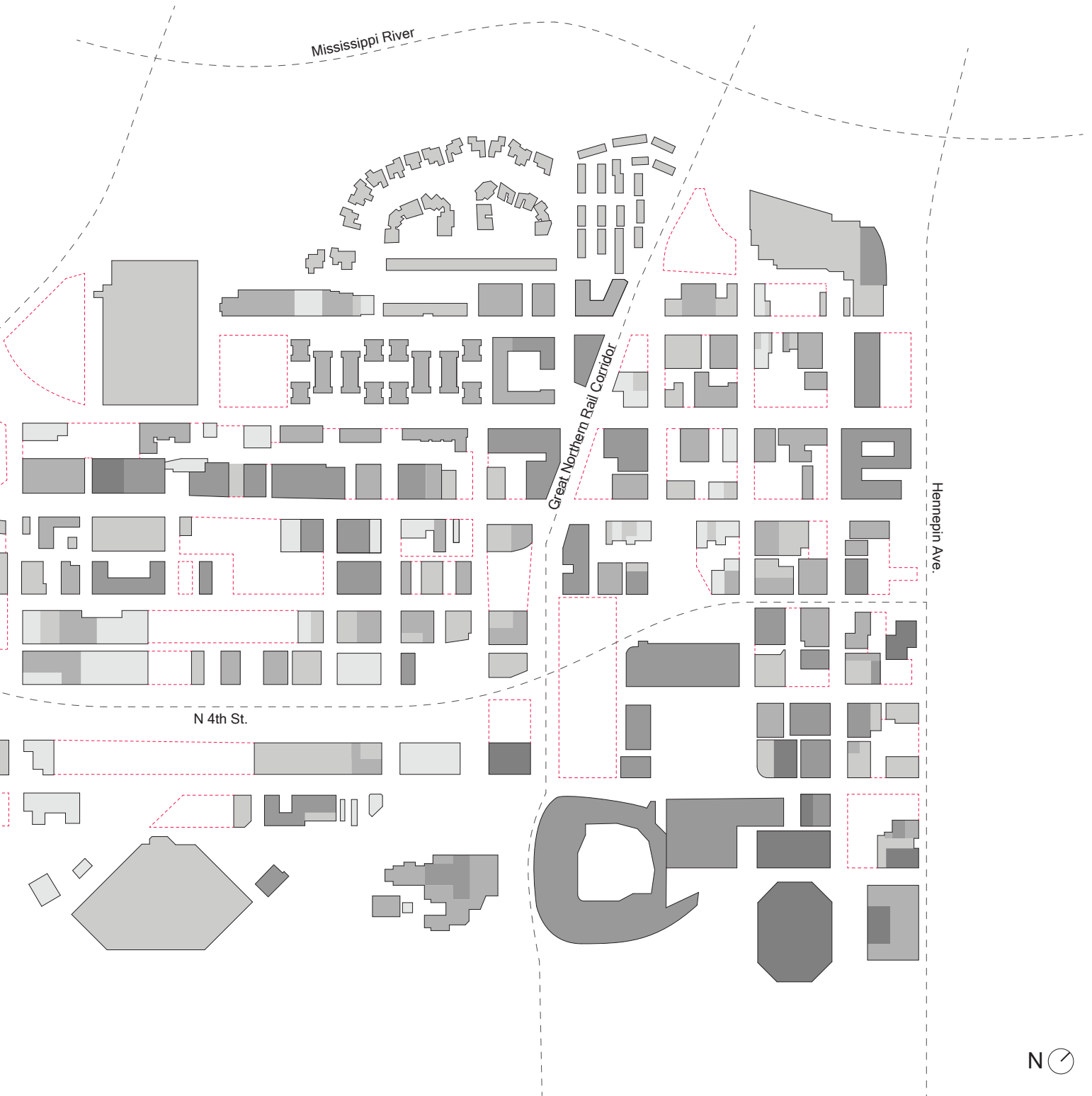


Fig. 29 - Diagram created by author

Fig. 29 - MINNEAPOLIS WAREHOUSE DISTRICT URBAN FABRIC AND BUILDING HEIGHTS



access to the corridor (Fig. 30), and it is still a feature that is protected from any new development from the city's design guidelines and regulations.

The scale and pattern of the nineteenth century area of development is much smaller in scale in comparison to the buildings of the twentieth century (Fig. 31). The original buildings of the area are two to three stories in height and are narrow with a width of one to three bays. Besides a difference in architectural style, this is fairly similar to most of the warehouses in New Orleans. For the twentieth century buildings, which comprise of most of the warehouse district, the buildings increase in height and width. They are mostly four to five or more stories tall and take up more block space as seen in Fig. 30 and 31. The difference between the two types of construction is a result of the newer construction technology of reinforced concrete and the success and wealth of the businesses that required expansion.¹

The main core of the historic district remains along Washington Avenue, 3rd Street, 5th and 6th Avenues where there is a higher density of preserved warehouse buildings. On the edge of this area with mostly original buildings, there are newer buildings that were built where the original buildings were not preserved. These areas include housing projects, a type of use not native to the original use of the district. These newer buildings follow the design guidelines that require them to fit in with the context of the historical buildings, but further from the historic center, the urban fabric begins to change to better accommodate the idea of the housing project versus the context of the historic district. The ballpark and a new bicycle trail were also added to the warehouse district to produce more use of the area, but these elements build upon the existing urban fabric. The ballpark is at the location of the former rail yards at the end of the Great Northern Rail Corridor. It takes advantage of the existing infrastructure and boosted the use of remaining working

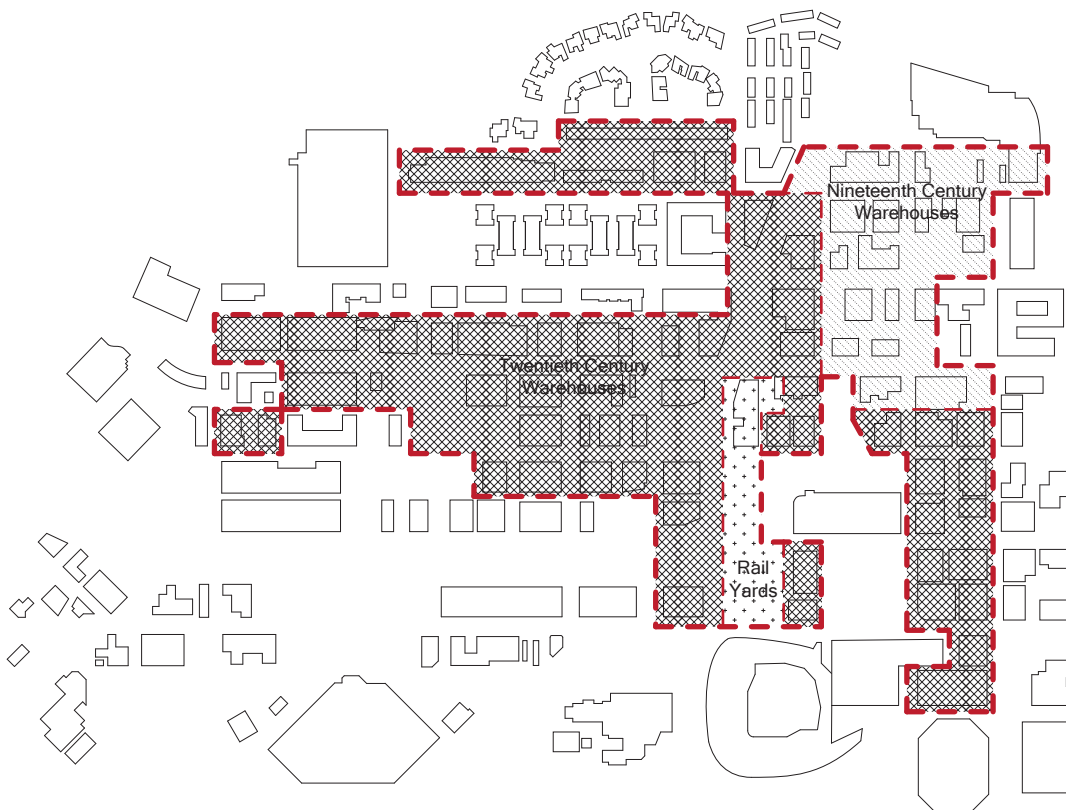
¹ "Minneapolis Warehouse Historic District Design Guidelines." Minneapolis Community Planning & Economic Development (CPED), 6-7

Fig. 30 and 31 - Diagrams created by author

Fig. 30 - MINNEAPOLIS WAREHOUSE DISTRICT - MAIN CORRIDORS/WASHINGTON AVE.



Fig. 31 - MINNEAPOLIS WAREHOUSE DISTRICT - HISTORICAL DEVELOPMENT



rail lines that have several platform stations that serve a commuter train and a couple of light rail lines. The rail corridor also provided an opportunity for the introduction of a new route specifically for bicycles and pedestrians called the Cedar Lake Trail that creates a path from the suburbs of the city to the park system along the Mississippi River.² The city has also encouraged adaptive reuse projects that create green or public space along the historic rail corridors.³

The warehouse district of Minneapolis remains a unique section of the city. It contrasts the taller and more dense area of the central business core and has preserved its historical identity. This could be helped by the fact that the district has clear defining boundaries - first by the river and railroads and later by the interstate and highway system. The two major boundaries from the rest of the city are Hennepin Avenue and the off ramp spurring from Interstate 94. The district's separation from other parts of the city has created a unity and an identity that builds upon the qualities of a former industrial warehouse area.

Fig. 32 - Washington Avenue Street Front



² "Cedar Lake Trail." City of Minneapolis. January 27, 2012. Accessed November 19, 2016. <http://www.minneapolismn.gov/bicycles/projects/cedar-lake-trail>.

³ "Minneapolis Warehouse Historic District Design Guidelines." Minneapolis CPED., 12

Fig. 32 - Images from Google Maps Street View and edited by author

DISTRICT BRANDING

The Minneapolis Warehouse District has been redefined as a mixed use area. Following the diversity of the wholesaling businesses and implement dealers, the district re-branded itself as an expansion of this diversity into a mixed entertainment district with residential units. The Warehouse District also appeals to the people attending events at the ballpark and the Target Center arena as the place to go before and after events. The Minneapolis Warehouse District Business Association uses the phrase “It’s All Here” to describe the variety of businesses that use the district; they include restaurants and bars, nightclubs and live music venues, theaters and galleries, and retail services.¹ The needs of the city for more central city housing, an entertainment revenue boost, and the demand for business space near the city center influenced this kind of diversity in the area, but all of these businesses uphold the historic integrity of the area and keep the identity of the district a unique and recognizable part of the city.



¹ “MPLS Warehouse Entertainment District.” Minneapolis Warehouse District Business Association. <http://mplswarehouse.com/>

STRUCTURAL RELATIONSHIPS

The architecture of the district is the primary feature that inspired the agenda for preservation and revitalization of the area. The buildings represent advances in warehouses and architecture in general as well as the extreme wealth of that part of the city. In his book *Half Century of Minneapolis*, Horace Hudson stated that “many of the structures are models of the best business architecture.”¹ The onset of elevator development and use, structural steel, and reinforced concrete added to the integrity of the district and contributed as the main aspects of historical significance to the district (Fig. 33).

The wealth and success of the business industry from the late nineteenth century to the early twentieth century led to owners being able to afford well known architects and engineers of the area to design their new buildings. One result of this gave buildings extra ornamentation to enhance the identity of the companies. Usually, warehouses were built based on functional design, but the ornamentation offered a visual expression of the type of business that was housed in that building.² A notable example of this is the Deere-Webber Company (also known as the Tractor Works) building which exhibits two deer heads above a Louis Sullivan inspired arched entryway (Fig. 34). Another outcome from the hiring of designers for several buildings in the area is the work of C.A.P. Turner. His work contributed largely to reinforced concrete structures and featured his design of the ‘mushroom column.’³ This column type can be found in several of the warehouse buildings and is an element that is expressed even as new businesses came to occupy the space (Fig. 35). The warehouse buildings of the twentieth century gained value in these architectural components, and as these buildings have been adapted, there has been minimal change in these features.

¹ Hudson, Horace B. *A Half Century of Minneapolis*. Minneapolis: The Hudson Publishing Co., 1908., 434

² “Minneapolis Warehouse Historic District Design Guidelines.” Minneapolis CPED., 7

³ “Minneapolis Warehouse District Designation Study.” Minneapolis CPED., 30

Fig. 33

View Down Washington Ave.

Washington Avenue contains the larger warehouse buildings of the twentieth century.



Fig. 34

Deere-Webber Co. Building

The ornamentation on the Deere-Webber Company Building is evidence of wealth of business and the pride taken in the new warehouses of the twentieth century.



Fig. 33 and 34 - Eslinger, Kim. "Minneapolis Warehouse District Walking Tour With Preserve Minneapolis." Mill City Times. July 23, 2012. <http://millcitytimes.com/news/minneapolis-warehouse-district-walking-tour-with-preserve-mi.html>.



Fig. 35 - Columns Shown in Interior Office Space

Fig. 35 - Photo by Mark Holdridge from Google Maps

The most common interventions to the warehouse buildings involve replacement of windows and interior design. Many buildings that replace the windows out of necessity keep the original sash style in order to not interrupt the historic facade. Since many of the buildings were adapted and divided to contain multiple businesses, the most change for window design appears only at the street level for a more commercial storefront. The interiors are also fitted for each individual business instead of the single appearance of the building as a whole like it once was with one company per building. Some interiors keep the original wall material, but the freestanding mushroom columns are almost always left expressed. Overall, only what is considered historical elements such as the exterior of the building and prominent structural elements are retained during adaptive reuse.

REVITALIZATION EFFECTS

Minneapolis's revitalization of its warehouse district began with preservation efforts for not only the buildings but also the urban fabric and infrastructure. Plans and design guidelines outlined contributing elements to the historic integrity of the district and sought to make sure minimal intervention acted upon them. The ornamentation on facades, advanced structure within the building, and rail infrastructure of the site remained as the historic characteristics of the site, yet they became readily adaptable to new users. The ornamentation is used to identify the building as a whole, but now individual businesses within the building have additional signage secondary to the building's and any new changes to the facade are minimalistic, not to overpower the original character. A common theme among any of the warehouse buildings that have the mushroom reinforced concrete columns is to leave them expressed and exposed but fitting within the new adaptation of the interior space through a new surface treatment or as part of a new organizational strategy within the space. While those elements pertain to individual buildings, perhaps the new use of the existing rail line infrastructure is the most influential. Converting its use to current public transportation methods supports advancement of the city and boosts access to the warehouse district to raise land value for new building owners. Each of the prominent historic factors were able to provide a cohesiveness and historical identity across the district and play a role in support of new development as a response to changes within the city.

OKLAHOMA CITY, OK

Oklahoma City's "Bricktown" (given the name later as a redevelopment effort) grew to be a central hub for not only the city, but also to the country. As a connecting center for railroads, the warehouse district benefited by diverse commercial activity focused on distribution (Fig. 37). Even though the district was Oklahoma City's first industrial area, it was not founded until 1889, making it a slightly younger area than New Orleans and Minneapolis. Therefore, the warehouses were mostly constructed around the time of better building technology in materials that allowed the construction of larger buildings that took up the space of a whole block.¹

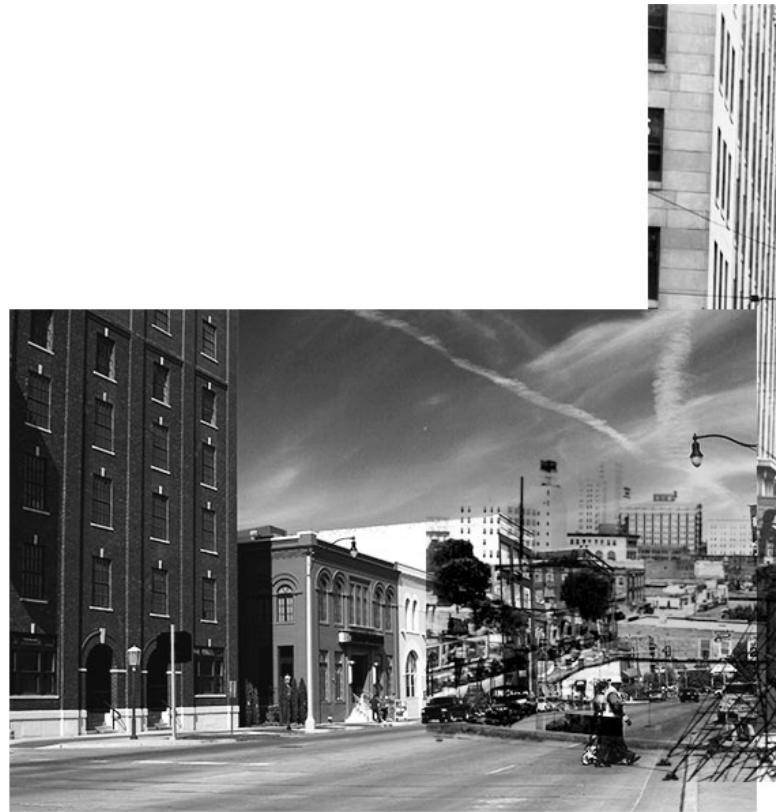


Fig. 37

¹ "History." The Bricktown Association. <http://welcometobricktown.com/history>

Fig. 36 - Diagram created by author

Fig. 37 - Collage created by author using historical images Oklahoma City



Fig. 36 - Oklahoma City Warehouse District Location



SOCIAL, POLITICAL, ECONOMIC FACTORS

Historically, Oklahoma City has been the central hub for wholesaling and distribution. It was a city built around railroads and expansion, and the warehouse district was formed at the intersection of the tracks. The Kansas and Texas Railroad Company and the Sante Fe rail lines were the major tracks that supplied the warehouse district in Oklahoma City, and the city revolved around this area until the use of railroads declined due to automotive transportation along interstates and new airline shipping.¹ Oklahoma City had a rapid rise and quick decline of its central industrial area. After the Land Run of 1889 when settlement became available in the area, the wholesaling warehouse district grew to success by the 1930s. When industrial districts began to move outside the city for more space and interstates became the main mode of transportation, the warehouse district quickly declined and was in complete disrepair by the 1970s.

After the abandonment of the district, the urban renewal strategy employed was the demolition of many of the warehouses. This caused fewer actual historical warehouses to remain, and any new construction to adopt the only the theme of Bricktown to replicate the image of historicalness. It was not until the strong investment by certain developers that the revitalization process really began. Three main people interested in developing the area saw the importance of preserving the architectural heritage and sought to use that as a main draw for visitors and businesses to the area. Together, Neal Horton, Bill Peterson, and John Michael Williams created the Warehouse Development Company to take advantage of developing the area in response to the oil boom in the 1980s. The oil boom was a potential major economic factor for the reuse of the district as a place for investors looking for more office space. However, as the oil boom took a downturn,

¹ Veenendall, Augustus J., Jr. "Railroads." Oklahoma Historical Society. Accessed November 17, 2016. <http://www.okhistory.org/publications/enc/entry.php?entry=RA004>.

the strategy for attracting investors and revitalizing the district had to change. That is when the warehouse district began to be campaigned as a new entertainment district. Even though the Warehouse Development Company initiated the idea of redeveloping the district and adaptive reuse of the original warehouse buildings, it did not last. A man named Jim Brewer, however, carried on the idea. Brewer was able to get restaurants and entertainment venues introduced to the area to attract the beginnings of the steady stream of visitors.

Mostly, Bricktown capitalized on Oklahoma City's sports teams. The opportunity for business was recognized as supplementary entertainment for sports fans and visitors. The Chesapeake Arena for various sports and entertainment just west of Bricktown was beginning to draw crowds to the area, and Bricktown could extend visitors' entertainment experience. This helped inspire the Metropolitan Area Projects (MAPS), a plan to introduce new elements to boost civic popularity. Through a series of tax initiatives, a baseball stadium and a canal were planned and constructed.² Even though these projects had little to do with the historical nature of the original warehouse district, they did eventually become influential in the development of many new restaurants and retail options in the area restoring the liveliness back to the district. The social implications of the MAPS projects brought about a new sense of identity to the area alongside the historic nature of the original warehouses. They have become main attractions that have revitalized the district as "Oklahoma City's premier downtown destination for sports, fine dining, and nightlife."³

² Lackmeyer, Steve. "The Bricktown Collection." Retro Metro OKC. January 31, 2011. Accessed November 17, 2016. <http://www.retrometrookc.org/the-bricktown-collection>.

³ "History." The Bricktown Association. <http://welcometobricktown.com/history>

URBAN STUDY

Bricktown is in some ways more uniform and in some ways more diverse than the warehouse districts of New Orleans and Minneapolis. Most of the buildings were constructed with similar characteristics that created the identity of the district, yet the area had many empty lots from 1970s urban renewal demolitions that eventually paved a way for new building infill. Most of the adapted warehouses are along the primary streets of Main Street, Sheridan Avenue, and Oklahoma Avenue (Fig. 38). They almost entirely consist of two to five story red brick warehouses that reflect the time when the area was a wholesaling district. However, outside of this approximately six block area shown in Fig. 39, detached and out-of-context buildings are scattered to the south and east of the district.

The brick facades shaped the identity of the district. They are what inspired the name Bricktown and their influence is seen past the buildings to the roads that have been paved with bricks to add emphasis to this historical characteristic. Since the brick facade is so prominent in the streetscape,

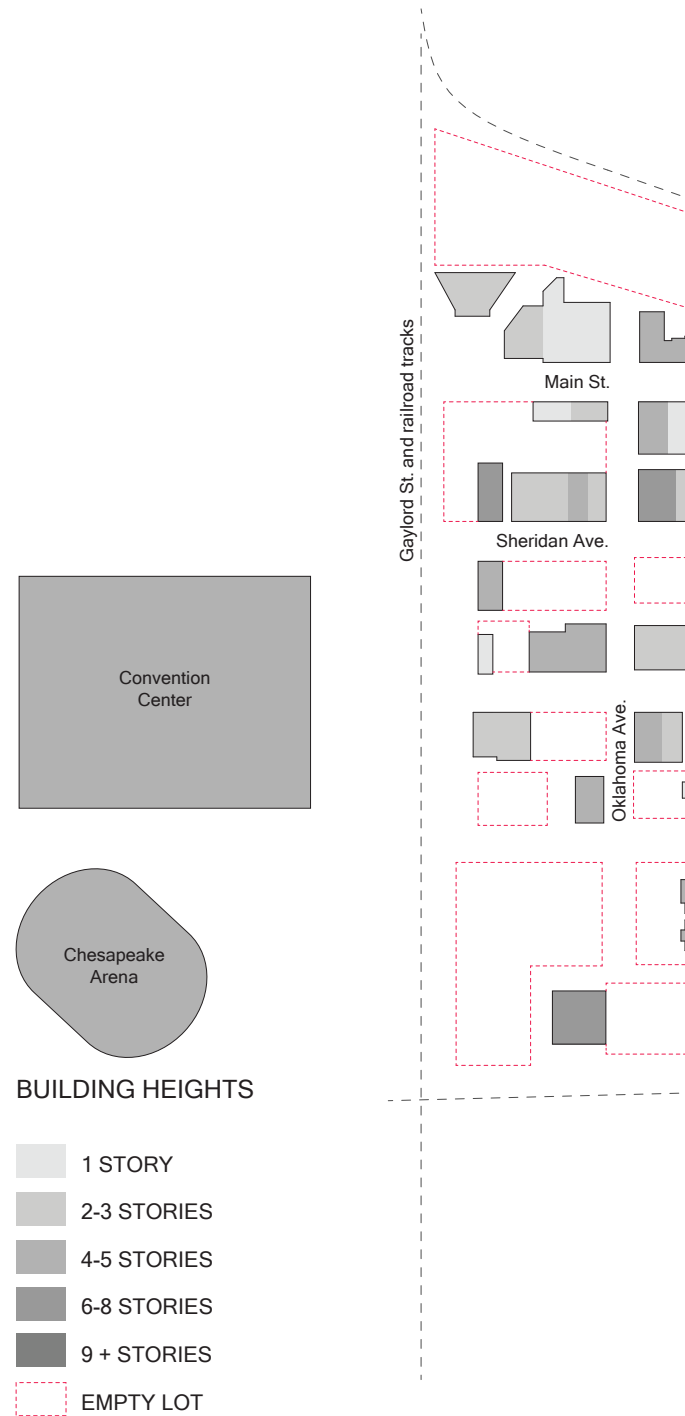
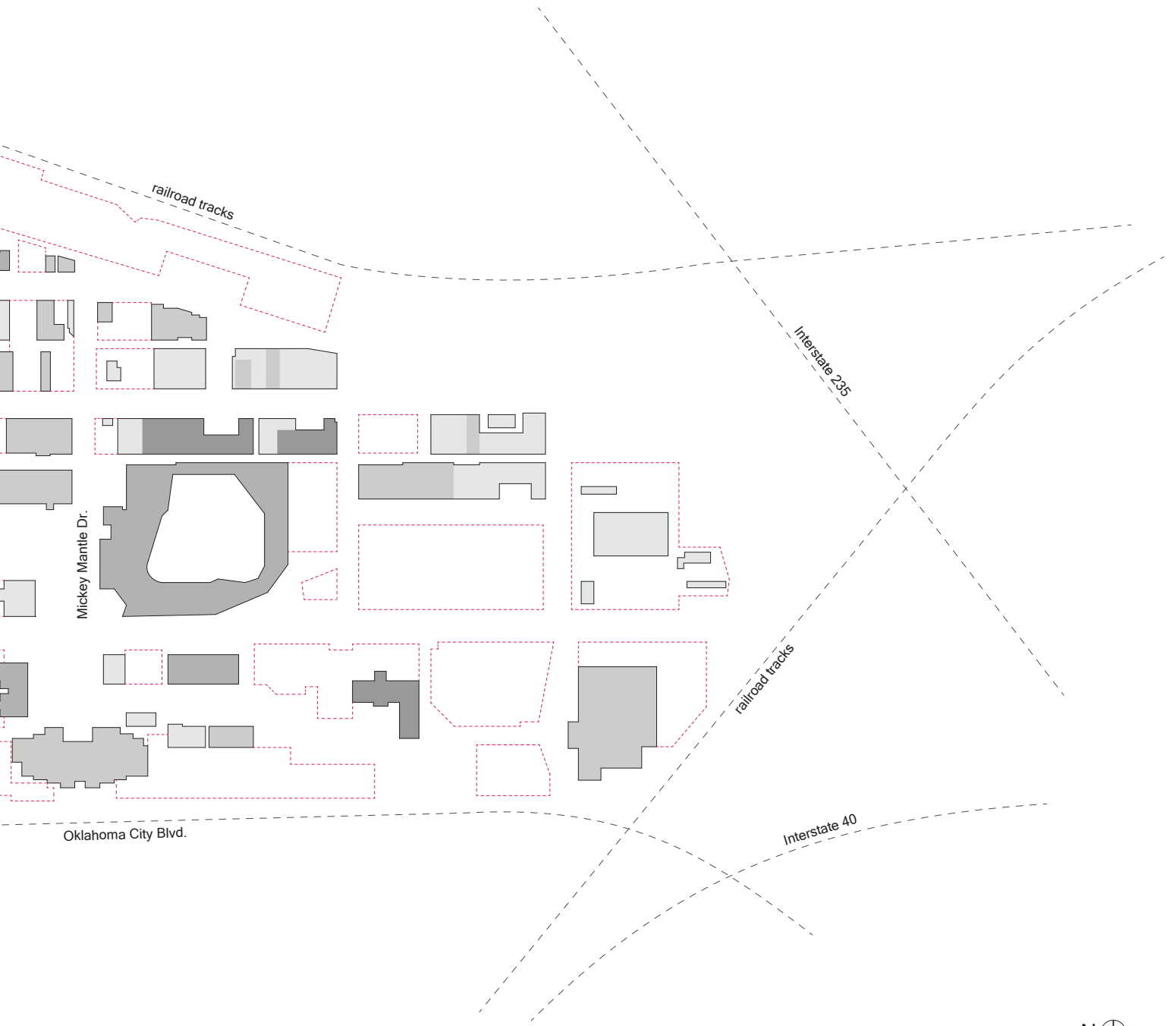


Fig. 38 - Diagram created by author

Fig. 38 - OKLAHOMA CITY BRICKTOWN URBAN FABRIC AND BUILDING HEIGHTS



newer buildings introduced adopted the brick facade to carry a unified theme. For example, the hotels of Hampton Inn & Suites and the Hilton Garden Inn located on the eastern end of Sheridan Avenue display a red brick exterior. This is a response to the downtown development framework established by the city. Bricktown is classified as a special destination (historic) in Oklahoma City's Development Typologies map diagram. The purpose of classification is to define development patterns for future revitalization. For Bricktown, new construction is suggested to resemble the specific architectural style of the brick warehouses to enhance the unity of the historic district.¹

What stands apart for this historic district are the new elements inserted to boost revitalization of the area. These urban elements are the Bricktown Canal and Riverwalk and the Chickasaw Bricktown Ballpark (Fig. 40). Instead of conforming to the historical context of the warehouse district, they were introduced to provide variety and entertainment for the city as part of the Metropolitan Area Projects.² Unlike New Orleans and Minneapolis (and many other cities) which have similar large attractions, Bricktown placed theirs in the center of the district as revitalization efforts instead of at the periphery which constitutes a more historic preservation approach. The ballpark and canal added desired programmatic diversity that compliments the historic nature of the warehouses and draws new and larger crowds to the area.

¹ "Downtown Development Framework." City of Oklahoma City., 14

² "History." The Bricktown Association. <http://welcometobricktown.com/history>
Fig. 39 and 40 - Diagrams created by author

Fig. 39 - OKLAHOMA CITY BRICKTOWN - HISTORIC WAREHOUSE BUILDING CORE



Fig. 40 - OKLAHOMA CITY BRICKTOWN - MAIN CORRIDORS, BALLPARK, AND CANAL





Fig. 41 - Bricktown OKC Logo



Fig. 42 - Bricktown Canal and Revitalization

DISTRICT BRANDING

The name 'Bricktown' itself is a branding and marketing strategy employed by the original developers attempting to revitalize the area through investments in the abandoned warehouses (Fig. 41). The idea was a rich and diverse set of businesses to rebuild the district; a concept that reflected the variety of wholesale businesses that once occupied the buildings. The developers "dreamed up lists of potential tenants - a candy store, an antiques shop, clothing stores, a radio station, cleaners, music stores, restaurants, bars, delis and art galleries."¹ Eventually, that idea of diversity was realized as a needed entertainment district for locals and tourists alike; even a candy store is currently located in one of the former warehouses. The additions of the ballpark and canal later solidified the district as an entertainment area (Fig. 32).

Another component to Bricktown's diversity initiative, is the area of Lower Bricktown. This area is treated differently from the more historic area where there is a concentration of warehouse buildings in that it allows a wider range of building types that include larger retail and hospitality buildings.² A Bass Pro Shops, Residence Inn, and a large movie theater complex now occupy Lower Bricktown.

Bricktown has become a place of grouped attractions. It is a high intensity mixed use area much like the downtown core, but the additions of the ballpark and the canal as well as an adjacency to the convention center and arena give people a specific reason to visit. They serve as the primary generators for the area and as a result have further increased investment in adapting the warehouses to support these new attractions. The warehouses along the canal are integrated with the pedestrian pathways and the sports teams of the area have inspired the opening of celebrity player themed bars and restaurants in adapted warehouses.

¹ Lackmeyer, Steve. "The Bricktown Collection." Retro Metro OKC.

² "Downtown Development Framework." City of Oklahoma City., 15

Fig. 41 - Image from <http://www.news9.com/story/28715074/new-logo-unveiled-for-okc-historic-bricktown> and edited by author

Fig. 42 - Image from <http://directoryofoklahoma.com/gallery>

STRUCTURAL RELATIONSHIPS

The original movement for redevelopment of Oklahoma City's warehouse district was based on the idea of preserving the historic architectural qualities of the remaining warehouses through adaptive reuse. The brick facades, exposed structure, and openness of the warehouses gathered attention from restaurant owners seeking a new location. This was the case for the Spaghetti Warehouse (Fig. 43). The founder of the Spaghetti Warehouse restaurant chain was specifically seeking a location in an industrial run-down urban setting in order to fit the restaurant's brand identity. Bricktown was a perfect candidate and the Spaghetti Warehouse set the tone for more restaurants to follow in similar adaptive reuse strategies.¹ They mostly embrace the historical industrial image through preservation of building exterior and interior with added nostalgic antique-looking elements such as signage and even the use of old streetcars. Brick walls are typically exposed on the interior, the ceiling structure is expressed, and the floors are common industrial finishes (Fig. 44). For the original warehouses, it seems as a more preservationist approach towards use of materials and the visual structure while the occupancy of the building is the transformation. Instead of agricultural products, furniture, or machinery occupying the floor space, there are now tables, chairs, bars, and music stages.

A main historic characteristic that was intentionally kept among most buildings in Bricktown was former company signage painted on facades of the buildings (Fig. 45). These ghost signs that are still clearly visible reveal the genuineness of the facades. They serve as a distinguishing element for the original warehouses versus new buildings that only imitate the historical image of the district. They are also symbols of permanence - the original company owners believed that their companies and buildings were there

¹ Lackmeyer, Steve. "The Bricktown Collection." Retro Metro OKC.

Fig. 43

Spaghetti Warehouse

Antique decorations fill the space, but the genuine historic elements are the structure of the building that is left expressed in the ceiling and columns.



Fig. 44

Put a Cork in It

The interior makes use of the open floor plan and structure of the building.



Fig. 43 - Image from TripAdvisor. https://www.tripadvisor.com/LocationPhotoDirect-Link-g51560-d540745-i58186881-Spaghetti_Warehouse-Oklahoma_City_Oklahoma.html
Fig. 44 - Photo by Frank Modarelli from Google Maps



Fig. 45 - Preserved Signage on Warehouse Buildings in Bricktown

Fig. 45 - Image from <http://www.marriott.com/hotels/photo-tours.mi?marshaCode=okcbr&page-ID=HWARI&imageID=2>



Fig. 46
Hilton Garden Inn

The appearance of the hotel on the exterior is modified to fit the context of the brick facades of the district.

to stay, so they made their signage as one with the facade of the building.² The decision to leave these painted signs on facades retains the influence of the original industry and the image of its thriving times.

Newer buildings to the district have a different treatment. On the exterior, they relate to the original brick warehouses to uphold unity of the district, but on the interior, they have a different character (Fig. 46). Whereas the face of the building and the interior of the warehouse buildings are of the same theme, the interiors of newer constructions have a contrasting style to the industrial theme. Most of these examples are chain companies such as hotels, so the look of the interior adheres to their usual design.

² Lackmeyer, Steve. "The Bricktown Collection." Retro Metro OKC.
Fig. 46 - Image from <https://www.expedia.com/Oklahoma-City-Hotels-Homewood-Suites-By-Hilton-Oklahoma-City-Bricktown.h6924930.Hotel-Information>

REVITALIZATION EFFECTS

The revitalization of Bricktown reveals an effort to project one clear image of the district. Branding and marketing combined with preservation ideals for the remaining original warehouses were major factors for success. The brick facade theme with faded signage showcases that particular part of history for the city and set the tone for future development in new streetscapes and building types. Keeping this recognizable image through adaptive reuse allowed the historical characteristics to create a new atmosphere for a new era. Additionally, redevelopment encouraged the same idea of diversity that the original beginnings of the district had offered, yet it also appealed to the current city and public by building a responsive market for new additions such as the ballpark and canal. Consequently, Bricktown has become a powerful economic generator for Oklahoma City once again.

CONCLUSION

Through the analysis of this research, it has become clear that an importance of adaptive reuse is to capture and promote the identity or the image of the place. This image encompasses past influences as well as future visions. A powerful point that Kevin Lynch discusses in his book *The Image of the City* can be used to describe how changes to a place can give desired outcomes in the image of that environment. He says, “[The observer] should have the power to change that image to fit changing needs. An environment which is ordered in precise and final detail may inhibit new patterns of activity.”¹ Along the same lines, the utilization of adaptive reuse can be directed to help generate revitalization in towards a new image that can both celebrate historical heritage and be progressive in satisfying new city needs.

The warehouse districts of New Orleans, Oklahoma City, and Minneapolis each have played an important role in the development of their respective cities, and each have suffered from declination. Furthermore, similarities also exist in how adaptive reuse within the district is carried forth to uphold the district’s sense of unity. Several key elements of the district had a special emphasis from each of the cities studied. Building facades, signage that was created with the idea of permanence, the integrity of the buildings (their basic structure and overall character), and the fabric typology of the district were strategically used by each city in their revitalization process of the warehouse district. Each adaptation and building renovation project contributed to the overall district. Therefore, the exterior image of the buildings had a high value in preservation to maintain their historical look. Since the warehouse typology is unique, the facade, fenestration, and structure of the building that define that typology were essential for preserving in adaptive

¹ Lynch, Kevin. *The Image of the City*. Cambridge, MA: MIT Press, 1960., 6

reuse. To support this, New Orleans, Oklahoma City, and Minneapolis implemented design guidelines for any adaptive reuse project or new construction within their historic warehouse districts that emphasized designs that acknowledge the historical context of the district. Because of the context of the warehouse district, the revitalization effort is more on an urban scale. A warehouse district already has an established identity, and for many cities, it is a clearly defined section of the city because of a unique urban fabric and building typology. This influences the city to encourage new developers to preserve the idea of the cohesive district and reuse the existing structures with only the interiors of the buildings being radically transformed. As a result, there is less intervention to an adaptive reuse building that is a part of a historic warehouse district as opposed to an individual industrial building that is outside of a defined district of the city.

Even though specific architectural elements of the warehouse building are essential in keeping the identity and heritage of the warehouse district in revitalization efforts, another factor seen in the case studies has a large impact in the rejuvenation of a neglected district. That is the use of the existing buildings and the introduction of new elements to benefit community aspects of the city. This brings a new diversity to the district, and in the case studies, transformed the image of the districts to something more and becoming a new attraction for the city as an entertainment or an arts district. Renovation of the district is geared towards visitor experience with entertainment venues, park space, and civic buildings. The added diversity provides a more sustainable framework for the success of the district. However, it is the combination of preserving the historical heritage of the warehouse district with the existing structures and providing new program that results in a new type of historic district that responds to the new needs of a city.

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