Abstract

Title of Document:	THE MICHIGAN CENTRAL STATION: RE-DISCOVERING IDENTITY AMONG RUINS
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The Michigan Central Station will be re-conceptualized as a landmark representing a sustainable and active community building for the surrounding area. This will be an example of a method for designing in derelict areas where buildings have lost their original purpose and identity. Creating multiple programmatic models to be tested and analyzed for their social and cultural implications will help develop a set of strategies and ideas to re-discover identity for the train depot and its surrounding context. Physical strategies will be identified for adaptive reuse; each will be developed further through interaction with these complementary paradigms. While respecting Detroit's history of industry and culture and exploring the implications of revision, the research done will provide ideas to create a new life for the Michigan Central Station and stimulate a new urban community. Complementary physical strategies will be overlaid with these paradigms to further develop strategies for adaptive reuse of the train depot.

THE MICHIGAN CENTRAL STATION: RE-DISCOVERING IDENTITY AMONG RUINS

By

Emilie Michelle Rottman

Thesis submitted to the Faculty of the Graduate School of the
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of the requirements for the degree of
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Preface

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Foreword

Growing up in the Metro-Detroit area, I have always been fascinated by the architecture of the city. I find it remarkable that this Great American City could witness such a rise and fall within one hundred years of history. To this day, Detroit holds so many beautiful buildings that remain underappreciated. This thesis grew out of my interest with one particular building, The Michigan Central Station.

The abandoned depot has gradually acquired graffiti and vandalism over the years. Just shy of its 100th birthday, I was naturally drawn to this building. This desolate ruin just carried something so interesting about it, yet it was strange and peculiar at the same time. Ultimately, I become fascinated by the Station's irony of its beauty and its quirks. The "Motor City" had invested so much time, money and energy into a facility that is not at all related to the automobile. The building shows such elegance and prominence, but its image never quite fit the location it was constructed in.

Going into this thesis, all I knew was that I wanted to work with this building in some way. However, I had absolutely no idea what to do. How do you design for derelict areas that have lost their identity and purpose? In fact, why should anything be done? This thesis attempts to develop a method for working in areas like this. Where the research and re-discovery of the Michigan Central Station's identity could be looked at as a model to create new purpose for many of the industrial cities that have lost their reason for being.

Dedication

I would like to dedicate this thesis to the City of Detroit. The city was once the fourth largest in the country. It is the home to the creator of the assembly line, which revolutionized the manufacturing industry. It is the birthplace of Motown. And it is the most traveled border crossing between the United States and an adjoining country. I have learned so much from Detroit's history. I hope that I could provide new knowledge in return, so that one day Detroit will become a Great American City once again

Acknowledgments

I would like to thank my parents and my sister for their constant support and encouragement throughout my life. I have greatly valued their endless dedication and involvement in my academic career. Their pride for everything I have accomplished has always helped me pursue to do even more. I would like to thank my extended family and friends for their constant phone calls and reminders to have fun and enjoy life outside of studio.

I would like to thank the faculty at the School of Architecture, Planning and Preservation for providing me so many wonderful opportunities that have helped shape my academic and future career. I would like to thank my committee, Garth Rockcastle, Matt Bell and Brian Kelly for pushing me to think about the design process and not being afraid to make bold design moves, and for guiding me to implement design changes that not only impacted the building, but made interventions to benefit the surrounding community.

I would like to thank the many professionals I contacted for additional research. Specifically I would like to thank Jennifer Dennis at the Ambassador Bridge, Michael Ewing of Williams Jackson Ewing, Steven Greenberg of RTKL, Michael Poris of McIntosh Poris Associates, and the staff at the Burton Historical Collection of the Detroit Public Library. Without their assistance, I would not have been able to accomplish the research and work that I have done.

Table of Contents

List of Figures

Chapter One: Introduction

Designing for Derelict Areas

In Architecture, we have not perfected the design process of working with abandoned buildings in adaptive reuse. Our profession has an almost limitless toolbox with which to design on a blank slate, but has not developed the same regard for sites that have their own presence. Our traditional approach has developers focused on the fitting of a presupposed program into a hopefully blank shell. However, that method limits our abilities to explore all of the opportunities. The history of the building, the context of its location, the experiential qualities of the spatial organization can all influence the purpose of what the building should be. "Conversion work brings the architect face to face with history, and this contact can generate novel architectural solutions which feature an ideal combination of past and present."[1] Taking the experiences and functions of the building from the past and applying the same movement through new functions can create a dialogue about time and memory adding layers and more dimension to re-discovering identity and purpose for a space.

"The history of towns is the story of their successive layers, of the reshaping of their monuments, and of the additions which bear testimony to each succeeding age."[2] However, for cities and buildings that lost their purpose, architects tend to ignore the problem. "Cities today are experiencing a crisis… They have been molded to represent a single social philosophy, to serve a single industry, or to perform a single dominant function. This overlay has suppressed their role as venues for social and political freedom and has collided with their intrinsically multifarious nature."[3] Instead of

attempting to develop ideas and solutions for vacant locations, the buildings are left to languish in their loss and abandonment.

Designing for derelict areas needs to be studied and further developed within architecture. This thesis will focus on Detroit as an example setting for the syndrome of the zombie city – a body that has lost its soul. "The downtown alone, more than two hundred abandoned buildings that are on the National Register of Historic Places."[4] With Detroit's enormous surplus of empty buildings, it would be ludicrous to propose new construction. With the city's current status of severe economic recession, developers lack the interest and the creativity to invest in this depressed location. Detroit's reputation in and of itself is enough to cause "6 in 10 non-Michigan residents think Detroit and Southeast Michigan is a poor place to live; 1 in 2 think it's a poor place to invest in, and 1 in 3 think the region is a poor place to do business."[5]

Detroit's complex situation gives architects and designers the greatest opportunity; we have the ability to re-imagine and redesign the physical identity of a city. We can "preserve" in a way that may reinvest and reinvigorate its social and economic lifestyle. "Instead of trying to return to the once glorious state, cities like Detroit…must reinvent themselves to exist in a condition of movement rather than stasis. It is not enough to keep people from abandoning a place. This must be supplemented by creating an environment that will attract people to the place."[6] By test fitting multiple ideas, critically analyzing their implications we can develop forward-thinking design methods. We can explore how to re-discover purpose and identity to design for areas that lost their reason for being.

Detroit must rebuild itself by accepting and utilizing the embodied energy and

materials of its surplus of abandoned structures. The community is aware of this need. "55% of southeast Michigan residents associated the revitalization of the city with more jobs, and 53% of residents also included new uses for vacant and abandoned properties as a way to revitalize the city."[7]

This thesis will explore these issues by using the Michigan Central Station as a prototype to develop a potential method for studying, analyzing and re-discovering identity of abandoned buildings. This process will allow architects to look at a variety of possible realities to unlock the potential of a building's purpose through design.

Why the Michigan Central Station?

One might ask, why focus on the Michigan Central Station, especially if there are a plethora of structures to choose from? "Some city officials consider it among the ugliest behemoths to pockmark Detroit and have considered demolition, but others see it as the industrial age's most gracious relic, a Beaux Arts gem turned "gothic" from neglect but steeped in haunting beauty."[8]

Figure 1: Rendering of the Michigan Central Station

The shear size of the train station, with its 500,000 square feet including its eighteen-story tower, represents the grandeur the civilians saw for trains in this location. There is clearly a level of irony with this train depot and the fact that it resides in the "Motor City." This building has witnessed the rise and fall of one of the Great American cities and carries a unique relationship with the automobile capital. What happened? Clearly there is some history within Detroit that relates to the rise of automotive industry and the fall of alternative modes of transportation. Over time, these extremes impacted the entire city. What better place to start the exploration of Detroit's new identity than with a look into its past history of industry and transportation.

Although the Michigan Central Station is not located in the Central Business District of Detroit, its location is in fact more prominent because of the Ambassador Bridge. More than 9,000 cars cross the Ambassador Bridge daily. While waiting to pass the security check, the first image seen entering the United States is the Michigan Central Station (See Figure 3). This bridge is the most traversed vehicular connection between the United States and an adjoining country. This image of the Michigan Central Station is crucial, because it represents the impression of the city of Detroit.

Figure 2: Panoramic View of Detroit from Windsor, Canada

Figure 3: View of the Michigan Central Station from Security Check

"Detroit is an anomaly among world cities. It is at once a center of manufacturing known worldwide and located at the apex of one of the richest regions in the United States, and simultaneously the ultimate shrinking, post industrial city. The city has suffered unprecedented devastation, population loss, and disinvestment. This same condition, however, creates an open laboratory for social and physical experimentation that attracts hardy residents, expanding corporations, self-reliant urban pioneers, artists and musicians."[9] By exploring multiple solutions, architects are capable of researching and testing an unlimited number of resolutions, which allows them to explore all of the possibilities and choose the best one. Instead of waiting for suggestions on what to do, this process will allow the architecture profession to explore a variety of ideas and offer a

more concrete solution. In this scenario, the goal will be to develop a feasible strategy for reusing large-scale derelict infrastructure. "It is through these ironies that a non-traditional approach to the creation of a future post-industrial city might be discovered…what type of city might be premised on population shrinkage, collective individualism, economic classlessness, subsistence economics and the arts?"[10] Through research and the development of a new design process an answer will emerge.

Chapter Two: Background

The History of the Michigan Central Station

Architect's Warren & Wetmore, Reed & Stem, built the Michigan Central Station in Detroit in 1913. The Michigan Central Railroad was a subsidiary of the New York Central Railroad and it only seemed fitting to use the same architects responsible for Grand Central Station in New York City. Although the grand plans were set, the new station unfortunately never received its grand opening. The existing downtown station burnt down and the Michigan Central Station had to open its doors earlier than originally scheduled.

From the start, the transit facility housed many quirks, including its structure. The station looked to be a typical load bearing Beaux Arts Building. While in fact, it was built with contemporary structural techniques. "The structure is of steel skeleton construction, with reinforced concrete floors and plastered terra cotta partitions."[11] The exterior is simply a thin layer of material that covers the support system in a similar manner as to how we build today.

Figure 4: Diagram Illustrating Column Spacing and Framing System

Figure 5: Construction of the Michigan Central Station 1912

Figure 6: Construction of the Michigan Central Station 1913

At the time of its construction the city needed to expand in its use of the rail, so the city decided to design The Michigan Central Station to replace the existing downtown station. "It was decided that another, much larger depot should be built near the entrance to the underwater tunnel... By spring 1910 about fifty acres of property had been acquired."[12] The new train depot location was selected for a couple of reasons. First of all, "The Michigan Central Station was sited west of downtown, with the theory being that the residential neighborhood situated between the station and the Central Business District, generally regarded as slum, would be cleared as downtown inevitably expanded westward."[13] This never occurred because of economic circumstances; the train depot was completed just prior to the Great Depression. The Station's placement and orientation were selected to best work with the rail infrastructure (see Figure 7).

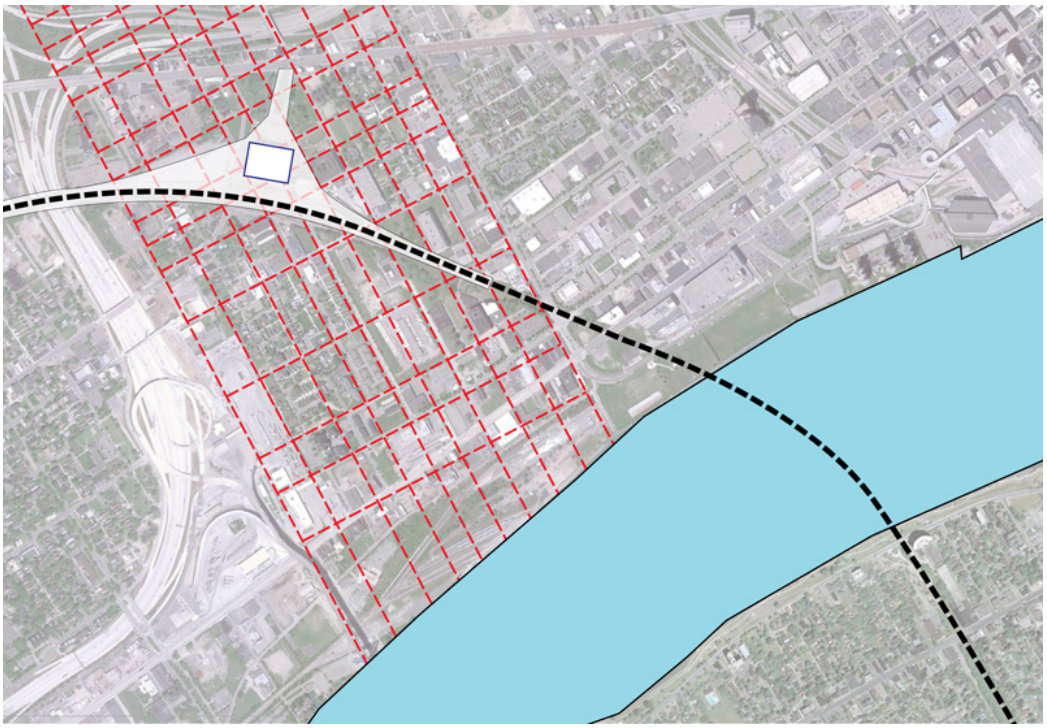

Figure 7: Diagram Illustrating the Rail Infrastructure within the Grid of the City

The city wanted to connect the rail system to Windsor, Canada through a tunnel under the Detroit River. "The tunnel was aligned to minimize interference from car-ferries and existing railroad structures. In an effort to cut down on the street crossings, an elevated portion track work extended for 2.5 miles to west Detroit's shops and yards."[14]

Figure 8: Bird's Eye view of the MCS Train Yards, 1968

This solution unfortunately made the station very difficult to get and it also made it very difficult to travel other parts of the city. Many of through ways were blocked and cut off from the addition of the train yards (see Figure 8). The Michigan Central Station became a set piece within the grid of the city. Without the projected expansion of the city, the depot now resided in the slum outskirts of Downtown Detroit. Residents of

Detroit had to rely on the city public transit to bring passengers to and from the station (See Figure 9).

Figure 9: Map of Detroit Street Car System, 1923

Several streetcar lines brought civilians to the train depot (see Figure 10). "Michigan Central Station consists of a three-story train depot and an eighteen-story office tower... When the building opened, it was the tallest railroad station in the world."[15] There were numerous facilities and luxurious amenities including a newsstand, a barbershop, a restaurant, a smoker's room and bathing facilities where travelers could freshen up. The office tower facilitated more than five hundred offices. "There were three main entrances to the station for the passengers, but the building had been designed with the expectation that at least 75 percent of the people would come on street cars and will use the East Entrance from the street car loop. "[16]

Figure 10: View of Street Car Entry, 1940

This design created some peculiarities in the spatial organization for a traditional Beaux Arts Building. From the exterior, the Michigan Central Station appears to be symmetrical and its primary spaces would be oriented off of the formal main entry (see Figure 11).

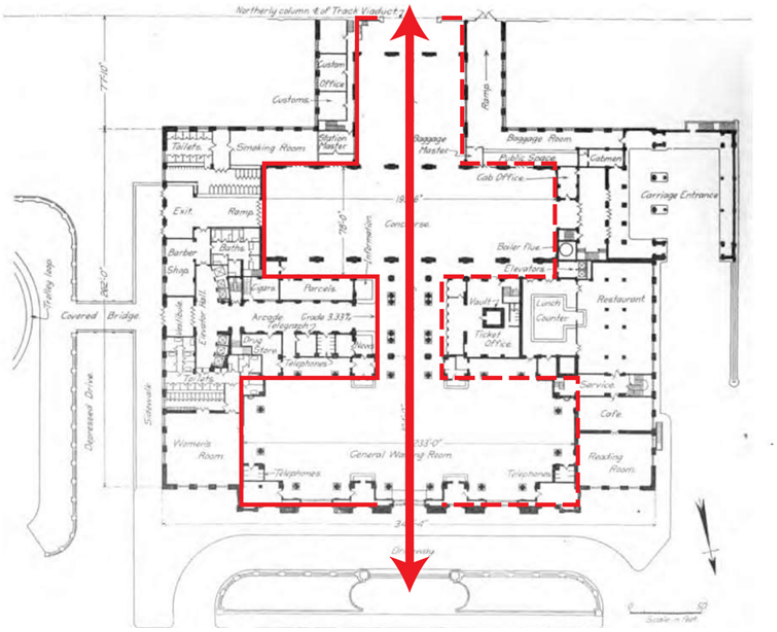

Figure 11: Diagram Illustrating Traditional Axis

However, with the majority of pedestrian traffic entering from the East Entrance, the architects choose to add another direction of orientation (see Figure 12).

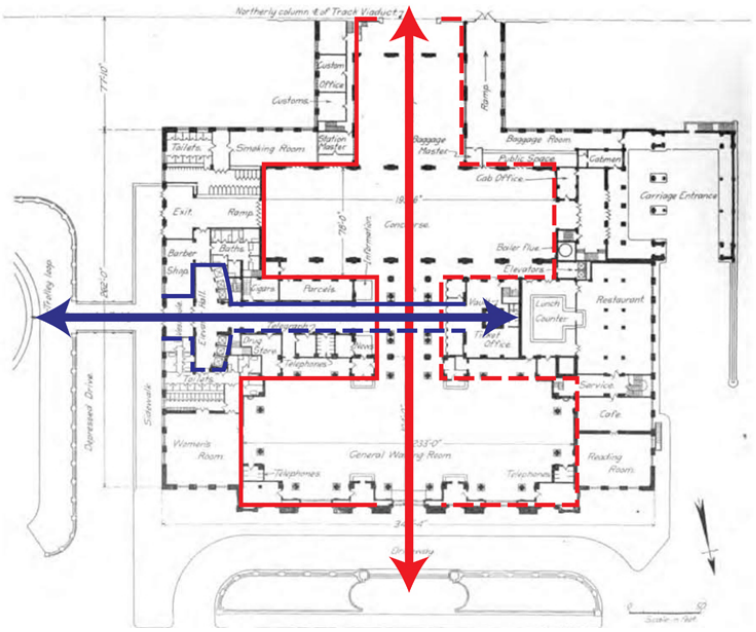

Figure 12: Diagram Illustrating the Axis of the Michigan Central Station

Typically the elevators for the office tower would be centrally located within the building. However, this secondary axis allowed for the main elevator lobby (see Figure 13) to be located toward one end of the building. This design made the office tower orientated around the building's secondary axis. On the ground floor, the design created a lovely arcade (see Figure 14) with small retail shops leading up to the Ticket Lobby (see Figure 15). Unfortunately the solution also created a rather jarring experience for the circulation within the office tower (see Figure 16). The sterile walls combined with the long narrow hallway created a less pleasant experience for the workers at the station.

Figure 13: View of the Elevator Lobby, 1917

Figure 14: View of the Arcade, 1916

Figure 15: View of Ticket Lobby, 1916

Figure 16: View of Office Floor, 1916

The rest of the ground floor level was designated for passengers of the rail. The formal waiting room (see Figure 17) could be entered from the main entrance or from the Ticket Lobby. Passengers could sit on mahogany benches and gaze at the chandeliers and Gustavino Vaults while waiting for their train. There were also private quarters for each sex on the ends of the waiting room; this way men and women traveling alone could feel safe and comfortable during their journey. On the other side of the Ticket Lobby was the Concourse (see Figure 18). This is where patrons formed a line to hand their ticket to the conductor and board the trains. The station also housed a restaurant along with convenience retail shops such as a newspaper stand and barbershop.

Figure 17: View of the Formal Waiting Room, 1944

Figure 18: Passengers Line Up in the Concourse Area to Board Trains

The peak of rail travel in the United States was during the beginning of World War II. More than 200 trains left the Michigan Central Station each day. "In the 1940s, more than four thousand passengers a day used to cram the cavernous waiting room... more than three thousand people worked in its office tower."[17] During the 1950's, trains experienced a major decline due to competition from highways and intercity airline traffic. The trolley system in Detroit was disbanded in 1956 and passenger travel through Michigan Central decreased to around 1,000 passengers per day in the late 50's. During the 70's, there were fewer than a dozen trains coming and going each day. In 1971, the federal government formed Amtrak and took over the Train Depot that year. On April

16, 1975 the station was added to the National Register of Historic Places. Finally "in April of 1985, Conrail announced they would try to sell the station - or abandon it."[18] Kaybee Corporation purchased the station in hopes that it would be converted into a retail and office center. Insufficient development occurred due to a lack of financial creditability by the new owner.

"The Depot's size and location on the outskirts of downtown, the rise of the automobile and plane travel and the decline in the city's population were all working against the station's survival."[19] The Michigan Central Station shut its doors on January 5, 1988. The station was purchased in 1989 by Mark Longton Jr. to be converted into a casino and hotel. However, city voters could not approve this proposal in a timely manner and Longton folded before the city came to a decision.

The Controlled Terminals Inc. of Detroit acquired the station, it is currently owned by billionaire Manuel "Matty" Moroun. His company also owns the Ambassador Bridge that connects the United States to Canada. There have been threats to demolish the facility since 1994, and numerous new proposals to restore the station. Some of the proposals have included an international trade and customs center, or to serve as the new Detroit police headquarters. It is estimated to cost between $110 to $300 million to restore the station. "Moroun has said that until there is a tenant and a deal lined up to redevelop the property, he will not spend any significant money on preserving it or cleaning it up. For that reason, this once majestic landmark sits as an eerie, debris-strewn monument of Detroit's decline and decay."[20]

Currently, the Michigan Central Station sits empty suffering from neglect and vandalism (see Figure 19). The windows are broken (see Figure 20) and its roof is falling

apart.

Figure 19: View of the Michigan Central Station, 2010

Figure 20: Up-Close View of the Exterior

The main elevator lobby and arcade reside empty and decreped (see Figure 21 and Figure 22). The fine material finishes have crumbled (see Figure 23) and have been covered in graffiti (see Figure 24). Many of the furnishing have been stolen or destroyed (see Figure 25). "Everything and everybody has become mobile. All structures are threatened, and all structures are vulnerable to an extent that they have never been before."[21]

Figure 21: The Elevator Lobby, 2011

Figure 22: View of the Arcade, 2011

Figure 23: View of the Office Hall, 2011

Figure 24: View of the Concourse, 2011

Figure 25: View of the Waiting Room, 2011

The station currently lives a temporal life. On occasion it has been rented out for exhibitions and as background for film sets. These include the film trilogy *Transformers*, the film *The Island* (see Figure 26) and ABCs new television show *Detroit 187*. Although there have been many attempts to restore the station and bring a new life to it, they have been unsuccessful.

Figure 26: Scenes from The Island filmed in the MCS Waiting Room

Analysis and Research of the Site

Figure 27: Aerial of the Michigan Central Station

The Michigan Central Station is 1.5 miles west of the Central Business District. It is directly off of Michigan Avenue, one of Detroit's main arteries of the city. It is less than a mile from the Detroit River. The Train Depot resides between two of Detroit's oldest neighborhoods, Corktown and Mexicantown. The Abandoned Book Depository that was designed by Albert Kahn is directly East of the Station. The Detroit Post Office and Roosevelt Park are also within close proximity.

The surrounding land use includes manufacturing, minimal retail, and low income residential. There are a few amenities surrounding the station, including a couple restaurants, a Hispanic grocery store, and St. Anne's Cathedral, the oldest church in the city.

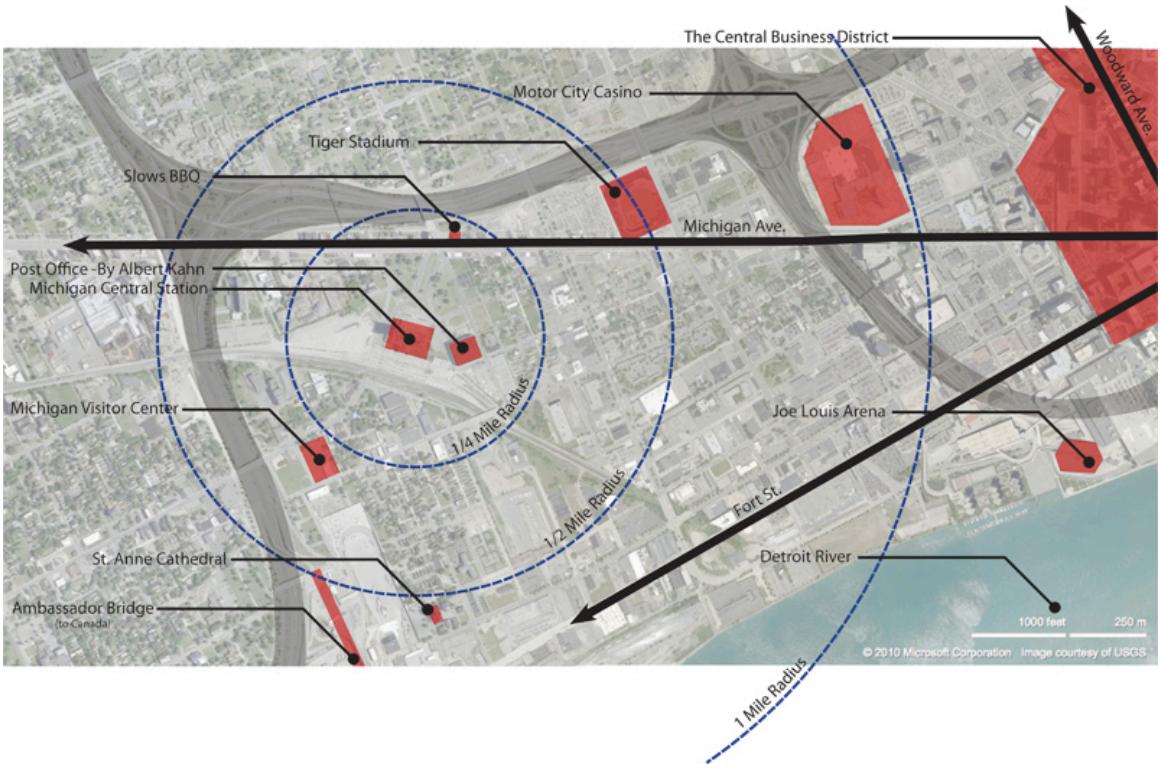

Figure 28: Key Elements that Surround the Michigan Central Station

The train tracks located on the site still actively transports both passenger and freight cars from Detroit to Chicago, Toledo and New York City (see Figure 29). Most recently "the Michigan Department of Transportation was awarded $150 million in federal aid to improve a proposed high-speed rail corridor between Dearborn and Kalamazoo, it will be part of the proposed Pontiac-Chicago route that is part of the Midwest Regional Rail to develop a high-speed rail network."[22] Knowing this, we have an opportunity to invest in the city's history and develop new uses while the land value is still low.

Figure 29: Map of Midwest Train Service

When the Michigan Central Station was built, the city heavily invested in the construction of the train platform. "The train shed superstructure required 3,500 tons and the substructure required 9,000 tons of structural steel."[23] This solution made a barricade between the Station and community South of the tracks (see Figure 30). With the addition of the interstate system (see Figure 31), which surrounds the grounds of the depot, the Michigan Central Station became a fortress within a moat of infrastructure. The isolation of the site coupled with Detroit shrinking population has greatly contributed to the amount of vacant land and sprawl surrounding the Michigan Central Station.

Figure 30: South Side of Elevated Train Track

Figure 31: View of I-75 separating the city

In part, this is due to the fact that the city removed all forms of public transportation that was an integral part of the station's original design. The station is surrounded by acres of land that is covered by track remnants, vacant buildings and poorly maintained parks. However, some development and restoration is occurring surrounding the station. New homes (see Figure 32), restaurants (see Figure 33) and art galleries are starting to invest in pockets of this region.

Figure 32: New Construction Homes Built South of the Michigan Central Station

Figure 33: Nearby shops and restaurants being restored

"In Detroit, the sheer size of its 142 square miles couple with the amount of vacancy and abandonment has made the challenge of providing basic human services difficult."[24] (see Figure 34). To make the area surrounding the Michigan Central Station livable and desirable, amenities need to be within walking distance. The location will need to be utilized twenty-four hours a day, seven days a week. The station and the surrounding area need to have designated functions and clustered amenities to create purpose, instead of a vast wasteland. These changes will make the location become self-sustainable.

Figure 34: Map showing size of Detroit compared to Boston, New York City and San Francisco

The Michigan Central Station will need to take advantage of its visibility and access from Michigan Avenue. This prominent east-west connection radiates out from the Central Business District and directly connects to Ann Arbor, where the University of Michigan resides. Currently, the well-crafted interstate system allows drivers to pass by the portion of Michigan Avenue where the train depot resides (see Figure 35). The Michigan Central Station and any location outside the interstate nodes, has become desolate from the interstate. This portion of Michigan Avenue needs to have new amenities and activities to draw in patrons and residents. This will create a dialogue and a new identity for this community.

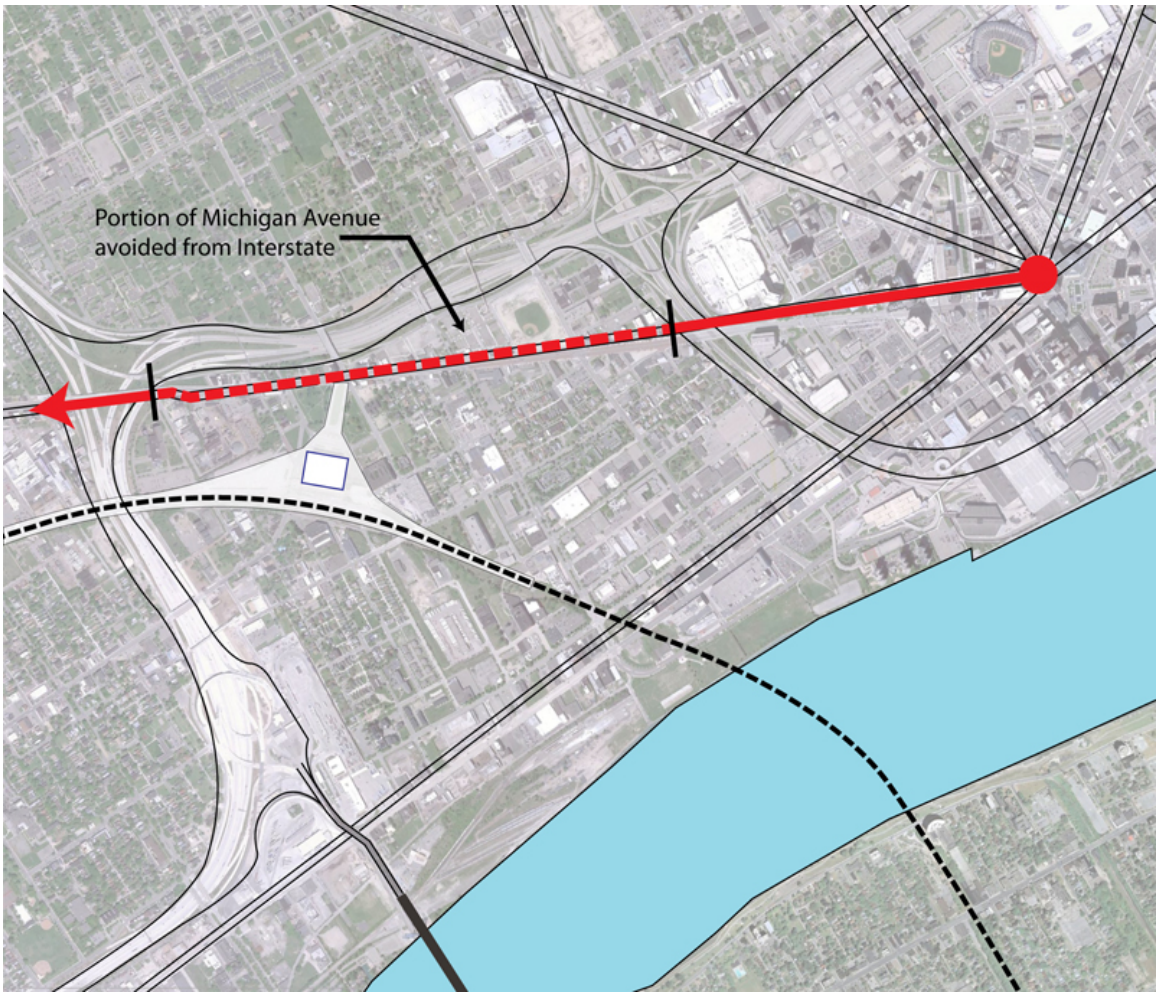

Figure 35: Diagram Illustrating Isolation from Interstate System

Chapter Three: The Potential Future

The Michigan Central Station holds an enormous amount of history and embodied energy within the city of Detroit. "The building contains 7,000 tons of structural steel, with 3,500 tons additional for the train shed, and about 9,000 tons for the viaduct carrying the tracks. About 125,000 cubic feet of stone, 1,500,000 face brick and 7,000,000 common brick were required in the structure. The foundation mat and side walls required 20,000 yards of concrete and 500 tons of reinforcing steel."[25] The amount of material and infrastructure the building holds should be enough of a reason for the city to invest in its future. The question still remains, what should the building become?

In order for the Michigan Central Station and its surrounding context to be sustainable and ensure its use, the building and surrounding land needs to fulfill some necessity. Afterward, education needs to be implemented to promote outreach and ensure the continuous use of the area. This will create a demand to be there which will then allow for amenities to be added promoting a variety of functions for the station and its surrounding neighborhood.

These key functions will generate a new identity and purpose making the area a sustainable community thriving with activities. This can be accomplished by removing the station's boundaries and creating a porous facility where the city can begin to seep in while the Michigan Central Station begins to expand outward. "This history of Detroit has been inscribed by great arcs of production, economic downturns, and shifting populations. Its portrait has been shaped by cars, music, and media exposure that has

perhaps relied more on caricature and negative representation than a more complex and truer presentation."[26] What will its future be shaped like?

The world is constantly changing. Our interest, business practices and investments are in constant flux. Traditionally we rely on standard research methods where minimal ideas are produced. Looking at the extreme possibilities gives us the ability to develop the ultimate solution for the Michigan Central Station. These three extremes are "diversions from reality," "agricultural urgency" and "experimental enlightenment." Each one of these realms offers unique features to study, they allow us the ability to test core values and they all require a significant amount of land and square footage.

Diversions from Reality

The Entertainment industry provides society with an escape. We find activities that transport us to an alternative reality. Our goals are to seek leisure, find suspense and test out limits. Whether we go shopping, attend a sporting event, or put money on the line, our subconscious is yearning for a break from our real lives. The entertainment model structures itself around two distinct parts, Diversions and Reality. The customers and patrons go to diversion types of venues for an escape. The visitors attending wish to not see nor experience anything "real." At the same time, there are performers and employees that support the entertainment. For these individuals, the experience is real. The same space carries a duality between what is real and what is imaginary. The visitors are meant to only reside in the world of escape and intrigue, while the employees are provided access and play integral part in the use of the entire complex. This makes

the building both porous and a fortress at the same time. In essence, there are filters or layers that allow certain elements to seep through, while others are to remain hidden.

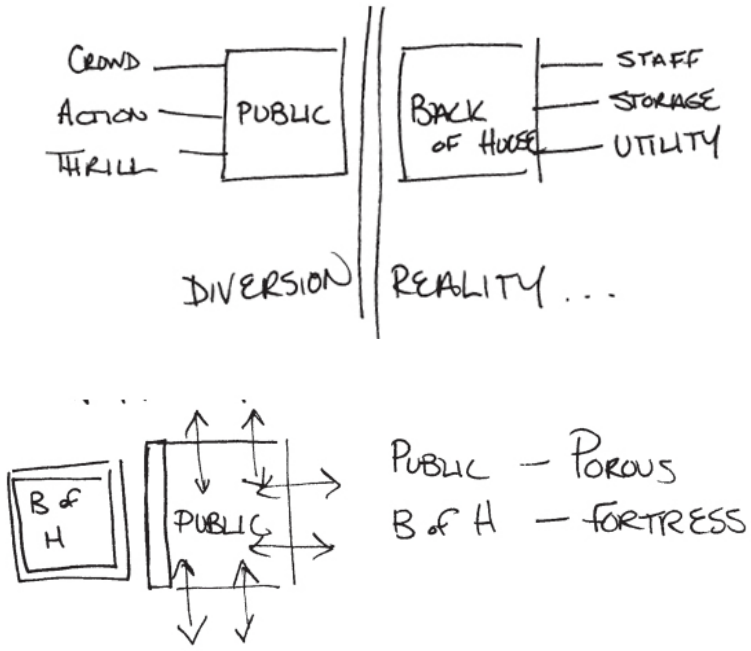

Figure 36: Initial Thoughts about Entertainment

The Michigan Central Station could become an entertainment district for the city of Detroit. By providing amenities that would facilitate a 24/7 hub of activities and events, the train depot and its surrounding area will become a magnet destination where civilians can escape from the day-to-day chores of life. The large amount of square footage affords flexibility to provide many services within the Michigan Central Station. Nearby residents can enjoy dinner before watching a theatrical performance. Guests can stay in one of the hotel suites after attending the formal gala in the original waiting room. Classrooms can take field trips to see the latest exhibition in the concourse. This will be a successful solution as long as the building has functions to keep it running throughout the day and it fulfills activities that are currently missing in that the location.

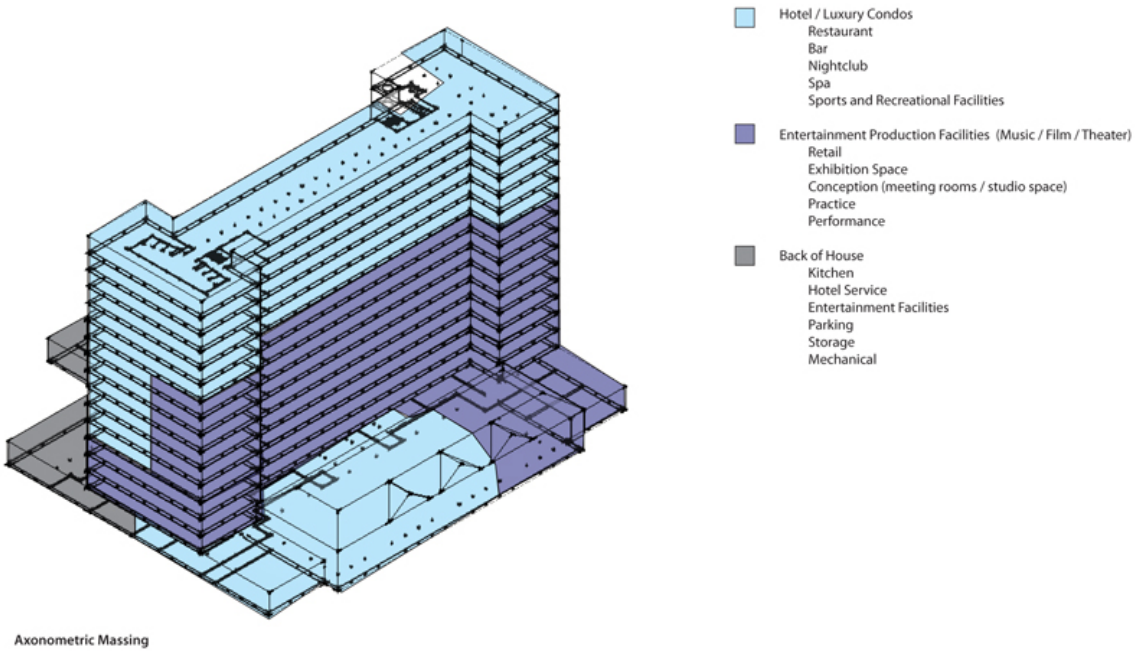

Figure 37: Potential Program for the Entertainment Realm

Agricultural Urgency

The Farming industry provides society with nourishment. We rely on agriculture to give us the ability to sustain ourselves. A farming model structures itself around necessity and our survival depends on it. The land and resources are in demand to provide us with energy and essential nutrients. The farming industry works in a cyclical manner. Its distinct lifecycle from conception to compost emulates human nature. Farming requires the initial planting of seeds, it then adds water and nutrients to ensure its development and growth, once the food is ripened it is prepared and eventually utilized, afterward it is disposed of and the nutrients return to the ground through compost to begin the cycle yet again. As it currently stands, society lacks the knowledge and understanding on where food comes from. There is an extreme disconnect between

the process of making food and preparing food. Traditionally we purchase items at the grocery store and prepare them to eat. This industry is essential to our survival and should be a more integrated part of our lives.

Figure 38: Initial Thoughts about Agriculture

Applying these ideas to the Michigan Central Station could allow the building to become a new type of industry, a living machine. Growth and production of agriculture and alternatives energies could integrate into the structure by creating places to grow food, sell produce, prepare nourishment and compost to develop alternative energy. The building could collect water, house composting and capture an abundance of sun along the South Elevation. Farmers could reside in the station and invest in the natural resources this machine holds. Local residents could purchase food at a farmer's market. Neighboring communities can learn sustainable growth practices or purchase a garden plot to invest in their green thumb. What leads to this scheme's success is the investment in the existing structure. Taking the embodied energy of the building and expanding upon its capabilities to produce new life allows Michigan Central Station to become the energy hub of the city. The Station will become a beacon of sustainable practice and a prototype for living machines.

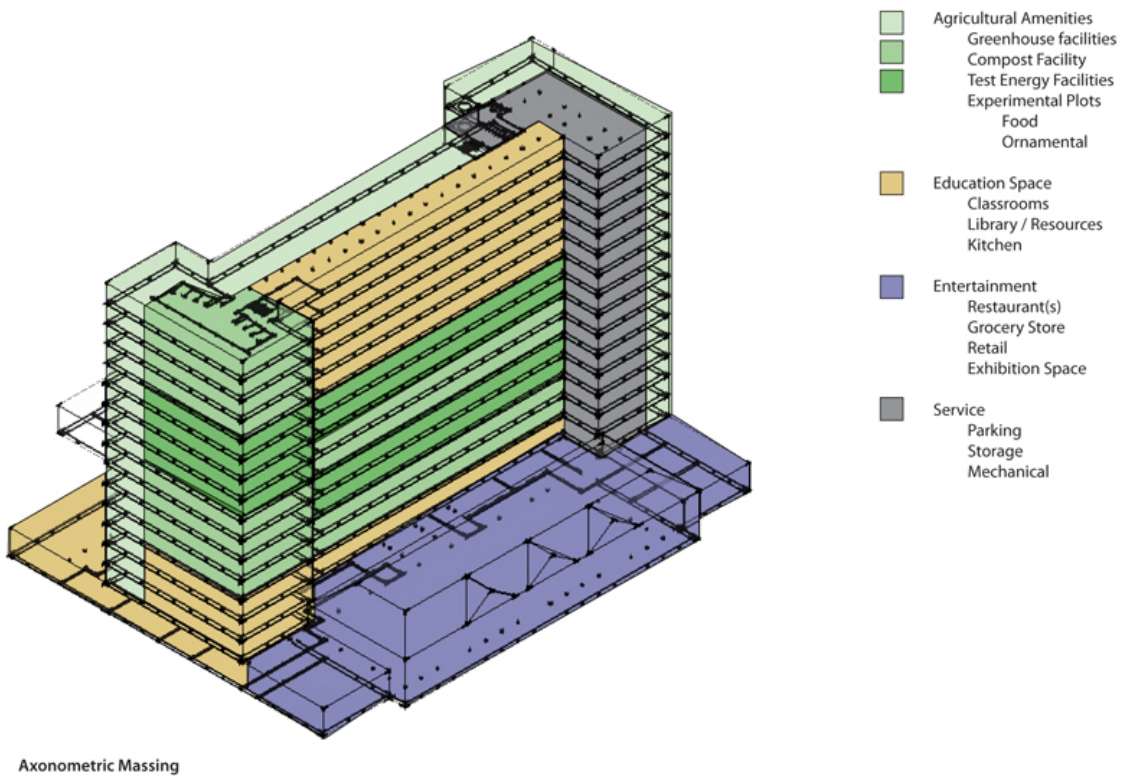

Figure 39: Potential Program for the Agricultural Realm

Experimental Enlightenment

The Research industry provides us with critical analysis. It gives us the option to question and critique why things are the way they are. Society today assumes what we are given is the best form of practice. Many of our day-to-day actions occur because we believe they are the only option. In reality, are we doing what is best? Research helps us determine the greatest practices for today, and it also provides us the opportunity to find superior solutions for tomorrow. Research and critical analysis allows education to be a source of outreach, testing the limits of what society and ingenuity can create.

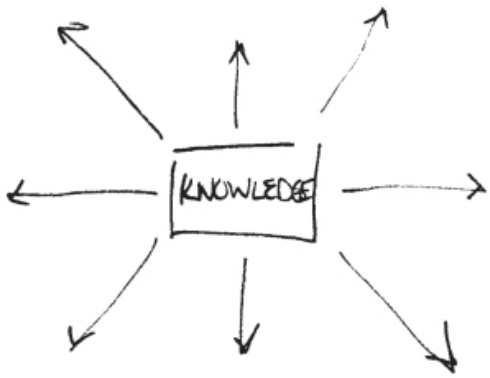

Figure 40: Initial Thoughts toward Research Realm

This scheme allows the Michigan Central Station to promote education and outreach. The height of the Michigan Central Station allows for ideas to be visible at a great distance. The structure's current state provides the ability to make the station into a kit-of-parts where the building can be manipulated and altered to hold experiments and test new ideas. The location allows for machinery or other items to travel on the existing rail and the vast amount of land and building allows for multiple laboratories, classrooms, and testing grounds. The Michigan Universities could invest in the station as a Collaborative Research Center, taking the best programs from each school and providing a location for new ideas to thrive.

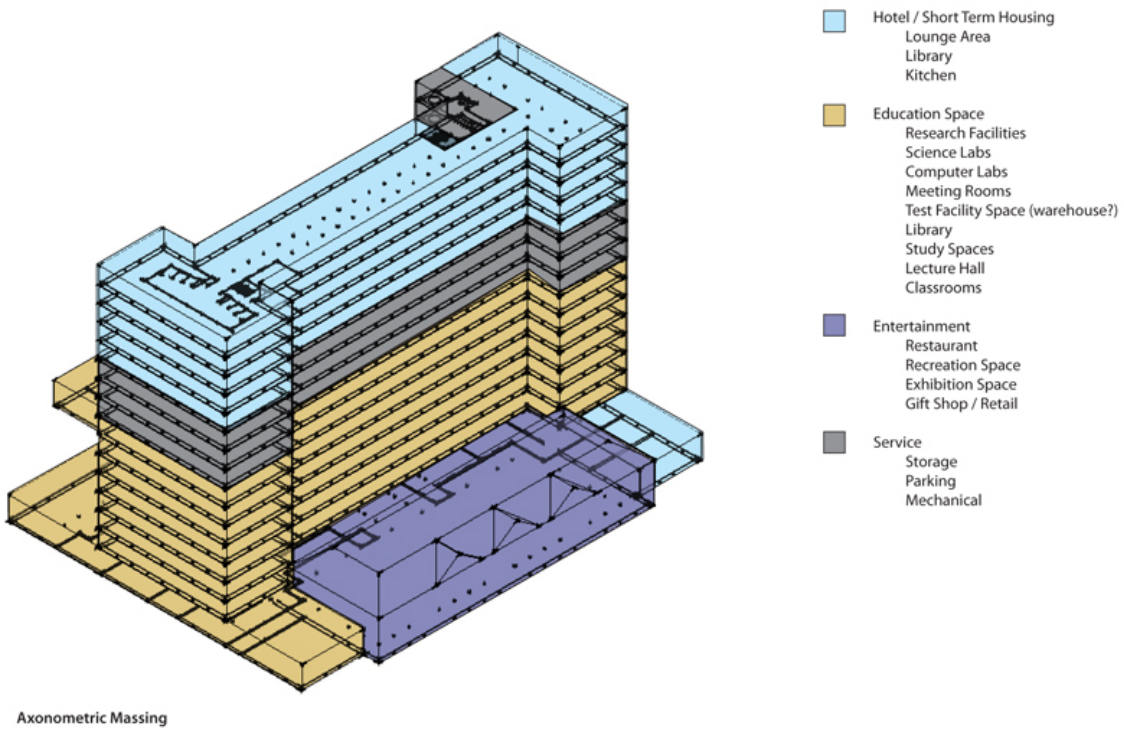

Figure 41: Potential Program for Research Realm

"The city taught us how to not need it any more, with Detroit being the most successfully superannuated city in this country, the place that more people are not from than any other."[27] These realms could provide new demands, giving purpose and reasoning to need the city. All the realms carry elements that can be self-supported within just the Michigan Central Station, but they are also designed to provide the ability to expand if the demand is there.

Chapter Four: Past Precedents

In order to develop new ideas and new strategies, it is essential that we study what has previously been done. Our history provides us with a wealth of knowledge, which we must use to our advantage. The Michigan Central Station is certainly not the first train station to end up in dire disrepair. In fact, as the automotive industry and airline industry have become the prominent modes of transportation many of America's train stations were in or had started off in the same situation as the Michigan Depot. Stations like Grand Central in New York City and Union Station in Washington DC nearly suffered the same fate. Both of these train stations among others have found a way to bounce back. Designers and innovators implemented compelling ideas, which resulted with clever solutions to buildings that were in a state of disrepair.

There are many other facilities that have had to be repurposed as well. As demands of a location change the functions of an existing region may need to be adjusted, where new life can now be added to that area. Adaptively reusing existing structures is one method to successfully re-discover identity and purpose within these abandoned facilities. These design solutions can be implemented at multiple scales; being anything from part of a building, to multiple city blocks. Changes are made to abandoned factories or industrial areas of cities; these alterations create a palimpsest where the layers of history overlap with the new functions, creating a fabric of time. These projects provide a foundation of ideas that could be implemented to work with the Michigan Central Station.

Grand Central Station - New York City, NY

Grand Central Station in New York City once was in similar disrepair, but now is has been fully renovated. “Michigan Central Station in Detroit and New York's Grand Central Terminal were both constructed in 1913 from designs by Warren and Wetmore. But the current scenarios of the two buildings could scarcely be more dissimilar. While Grand Central is lauded for an extensive renovation project… Michigan Central is now run-down and isolated.”[28] This could certainly change. The Michigan Central Station has the same opportunity to revitalize itself and similarly can add value just like the Grand Central Station.

Figure 42: View of the Main Hall of Grand Central Station

In the 1989, William Jackson Ewing was selected by the Metropolitan Transit Authority to develop the master plan for Grand Central Station. At the time, the building

was rapidly deteriorating and the station was known for its crime and ephemeral housing. Both the Terminal and the surrounding neighborhoods were in poor condition, suffering from extreme abuse. The project was successful at rejuvenating the station because of the new amenities that were provided. Williams Jackson Ewing wanted to create a space for New Yorkers. Instead of designing the station specifically for the commuters, they added shops and restaurants that were geared toward the public pouring out onto the streets of Manhattan. This setup successfully integrates the station into the city fabric. The changes made created a destination and fulfilled an unknown demand for the city.

Figure 43: Balcony Level of the Grand Central Station highlighting the retail space

It is important to note, William Jackson Ewing zoned the uses of Grand Central Station to target certain uses within the terminal. The Retail Space at Grand Central Station holds around 170,000 square feet. Additional retail spaces were discovered from within the station's balconies and basement adding 60,000 square feet that was previously unused space. The redesign of the balconies created a space for high-end

restaurants, where tables are setup to overlook the main concourse. This enables restaurant patrons with the ability to people watch and enjoy the ambiance while eating their meal.

Figure 44: Street Level of the Grand Central Station highlighting the retail space

The Ground Floor provides double loaded retail that faces 42nd Street and Vanderbilt Hall, which is an exhibition space within the Terminal. While renovating the station, William Jackson Ewing took note of the amenities missing in the area and incorporated them within Grand Central Station. They discovered the need for a grocery store along with other day-to-day retail shops. The additions of a fresh foods market, a drugstore, a bookstore and other amenities for the city created a new identity for Grand Central. The station was no longer just a point of travel; it became an anchor point within the city. The new retail and amenities provide services for the general public and the design lets Grand Central's retail seep out into the city fabric; it is no longer just confined

within the building perimeter.

Figure 45: Lower Level of the Grand Central Station highlighting the retail space

The Lower Level houses a food court along with retail shops and amenities. This area is directly next to the station platforms and it seemed fitting to designate this area to cater toward commuter needs. Convenience amenities like newspaper stands, sandwich stops and coffee bars are just minutes away from the trains.

The renovation of the Grand Central Station provides a great example on how to repurpose a space. The terminal was originally designed just for traveling. By adding new amenities and designating specific areas for the various functions the station became more than just a destination. The Michigan Central Station could become a place to go to in the same manner. By zoning areas within the station, new amenities can be created and the station can become an integral whole for the city.

Union Station – Washington, D.C.

The District of Columbia's Union Station had a similar fate to that of the Grand Central Station of New York. The train station designed by Daniel Burnham became the eyesore of Capitol Hill. The area surrounding the station had become a location known for its crime and shady characters. The firm of William Jackson Ewing was also hired to assist with the renovation of Union Station in DC.

Figure 46: Exterior View of Union Station

Similar to Grand Central, new amenities were added to create a new purpose for the Station. Union Station is located within a unique area of the city. The terminal acts as a transition point between Capitol Hill and neighboring residential communities (see Figure 47).

Figure 47: Aerial of Union Station

With that in mind, William Jackson Ewing zoned Union Station to hold a variety of new uses. They added a shopping mall (see Figure 48) and movie theater (see Figure 50) to accommodate the neighboring communities. New retail shops and restaurants are located on the street level (see Figure 49) to provide convenience to the millions of tourists that visit the station every year. The purpose of the space was still to accommodate the commuters. Convenience retail, like coffee shops and newsstands, are located near the tracks. This re-design looked at what was missing for the community, not just at the station itself. Extending its uses to cater for tourist, residents and commuters made Union Station a destination instead of just a place of transport.

Figure 48: Mezzanine Level of DC's Union Station

Figure 49: Street Level of DC's Union Station

Figure 50: Lower Level of DC's Union Station

Union Station – Denver, CO

Union Station in Denver, Colorado has a similar site condition to the Michigan Central Station. Its location is isolated from the waterfront and it is separated from the downtown. The tracks and orientation of the station makes itself a boundary and separates itself from the city (see Figure 51). The station is currently undergoing renovations to become a multimodal transit hub. The new uses should integrate the station within the City of Denver. The station will become an anchor for the city's transit, providing a new light rail, commuter rail, regional trains and even a ski lift.

Figure 51: Aerial of Denver's Union Station

This is just another example of transformation and renovation of abandoned or under-utilized space, where new purpose is demonstrated. With creative solutions, and innovative ideas, old buildings can have new life.

Figure 52: Rendering of the Renovated Union Station

Union Station – Cincinnati, OH

Similar to the Michigan Central Station, Union Station in Cincinnati is located Northwest of downtown. The station resides in an industrial area of the city between a major thoroughfare and train yards (see Figure 53). Train service stopped in the 70s, and the city tried to entice developers to invest in the property including advertisements saying "World-famous Cincinnati Union Terminal for lease—$1 per year."[29]

Figure 53: Aerial of Cincinnati's Union Station

The station was converted into a museum and cultural center in 90's. The terminal gained major popularity and subsequently rail service returned to the station. Though its primary function is to service the community as a museum, the return of the rail allows the station to layer its purposes over time.

Figure 54: Exterior View of Cincinnati's Union Station

Figure 55: Interior View of Cincinnati's Union Station

Book Cadillac Hotel – Detroit, MI

Other facilities within the city of Detroit have suffered from vandalism and graffiti similar to the Michigan Central Station. One example was the abandoned Book Cadillac Hotel. The building was recently restored to its previous grandeur. The large ballrooms are hosts to many galas and events. Hotel guests and condo residents enjoy the adjoining restaurants and recreational amenities. The location of the Book Cadillac Westin Hotel is in close proximity to the newly constructed Comerica Park and Ford Field. It is just blocks away from the renovated Fox Theater and the Opera House along the Woodward Avenue Corridor. These examples shows us that the city of Detroit and its residents are willing to invest in their history, and revitalize old and abandoned structures in conjunction with new ones.

Figure 56: Original Condition and Abandoned Condition of the Book Cadillac Hotel

Figure 57: View of the Restored Book Cadillac Hotel

Silo Point – Baltimore, MD

Similar to the Michigan Central Station in size, Silo Point provides a wonderful example of adaptive reuse. "Constructed in 1923, the B & O Railroad grain terminal was the biggest and fastest grain elevator in the world. This beacon of international commerce jutted 300 feet into the air. Today, the 24-story tower rises above Baltimore's Harbor to mark a new era in modern living."[30] Like Michigan Central, this facility resides outside of the Central Business District. Railroad tracks, water views and low-rise buildings surround the complex (see Figure 58).

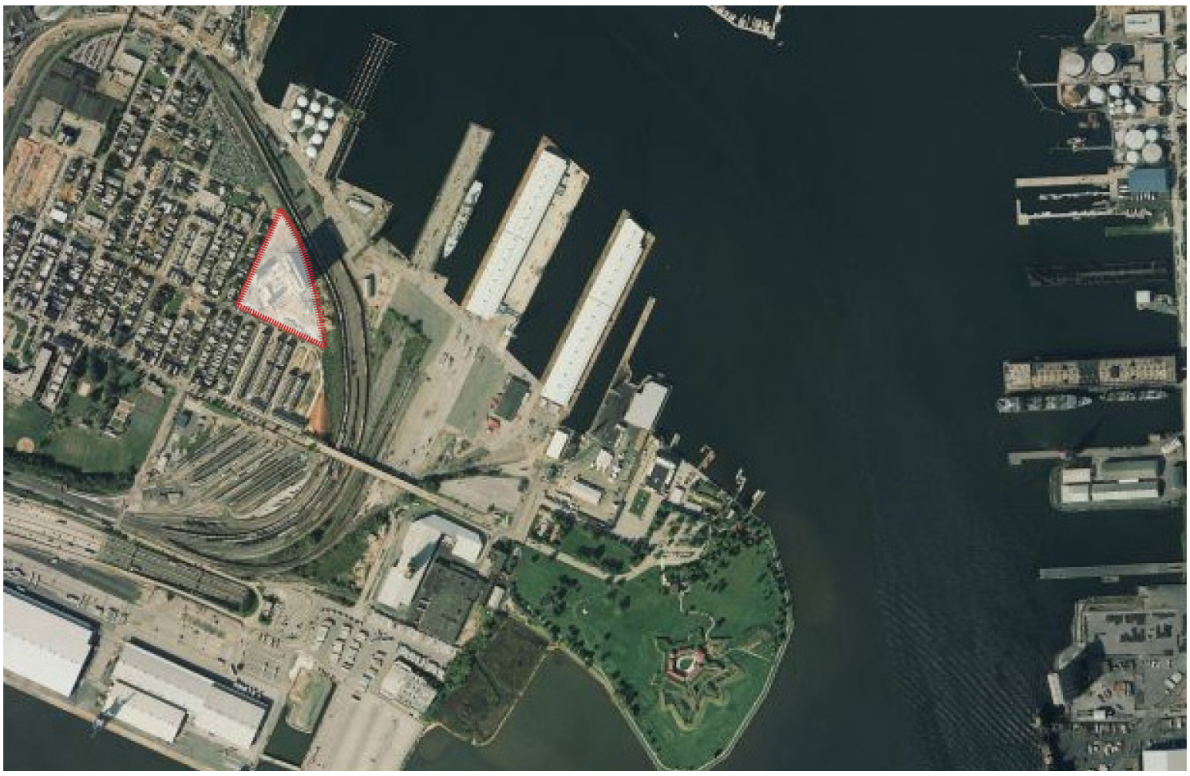

Figure 58: Aerial of Silo Point

The tower of this project is similar in width to the tower of the Michigan Central Station (see Figure 59). This example shows us that new uses can convert an industrial building into a desirable place to live. Despite its location, residents choose to live here for the views and newly created amenities (see Figure 60).

Figure 59: Historic Image of Silo Point as a Grain Terminal

Figure 60: Present Day Image of Silo Point as a Residential Complex

The Kansas City Power & Light District – Kansas City, MO

The Kansas City Power and Light District, is located in an industrial area that is separated from the downtown (see Figure 61). The Cordish Company invested in an area of Kansas City where there are many warehouses and a surplus of highways.

Figure 61: Aerial of Kansas City Power and Light District

They converted this industrial district into an Entertainment Core. The site conditions are similar to the Michigan Central Station where the highway separates and isolates this portion of the city. The Cordish Company developed nine city blocks to help revitalize the area by turning it into The Kansas City Power & Light District. They created an entertainment core with a Sports Venue on one end, and the Convention Center on the other end. These amenities anchor the site whereby creating a demand to be in this area of the city. The designers were able to create a main shopping street that

connects these two venues together. This design allows for restaurants, shops and entertainment along the ground level. Above the retail, they added office space, apartments and a hotel. From this example, we can learn that key elements can anchor a site to provide the initial interest. Afterward, the location can expand to provide neighboring amenities and allow the area to flourish.

Figure 62: Rendering of Kansas City Power & Light District

Chapter Five: Design Proposal

After researching the assorted precedents and testing multiple programmatic elements for the various paradigms, many ideas began to blend together. Elements of entertainment, education and agriculture all carry important roles within our society. By combining these characteristics together, they help to re-discover the identity of the Michigan Central Station. From this research it seemed imperative to develop a set of initiatives. To create new purposes and identity for the Michigan Central Station, the building needs to be self-sustainable, promote education and outreach, and provide a livable community. At the same time, the Michigan Depot needs to relate to its location. The station should hold a dialogue with the City of Detroit attributing its attitude toward industry and production.

The Michigan Central Station will become part of a system, where the facility itself will become a new type of infrastructure. The train station will become a living machine. By using Detroit's rail infrastructure to link the city's existing parks (see Figure 63), the Michigan Central Station will be a key element in the creation of a new park system (see Figure 64). The train depot will serve as a prototype for additional structures located within this park system.

Figure 63: Diagram Illustrating Existing Rail Infrastructure and Parks

Figure 64: Diagram Illustrating Potential Park System

As an element within this park system, the Michigan Central Station will become a mixed-use facility and an agricultural park (Figure 66). The train depot will contain elements that support the surrounding community by providing a wide array of amenities. The station will provide spaces for living, working, education, creation and outreach.

When the train station was originally built, it completely denied the surrounding grid of the city (see Figure 65). The grid of the city will be reintroduced as agricultural plots, where apple trees will divide the farmland. They are not only a form of produce; their low height provides a windbreak for the plants and minimal shade to not block the sun. These trees will best protect and cultivate the various types of agriculture.

The area surrounding the Michigan Central Station could easily survive and just stay as farmland. However, this area can be designed to accommodate new structures if the demand is there. To ensure this possibility, infrastructure such as sewer lines, electrical cables and telephone wires, will be placed within the new streets to allow for the region to potentially redevelop as a city. The agricultural plots are designed to accommodate this growth, whereas the areas of farming could be acres or the size of a backyard.

Cultivating this land for produce will add value and profit to this area. Whether it stays as farming or becomes a development, the Michigan Central Station's surrounding site will prosper. A farmer's market will be added directly in front of the station where the community members can sell their produce. The surrounding neighborhoods will be made aware that a new order for the building has been created and extends out to integrate with the existing and neighboring communities.

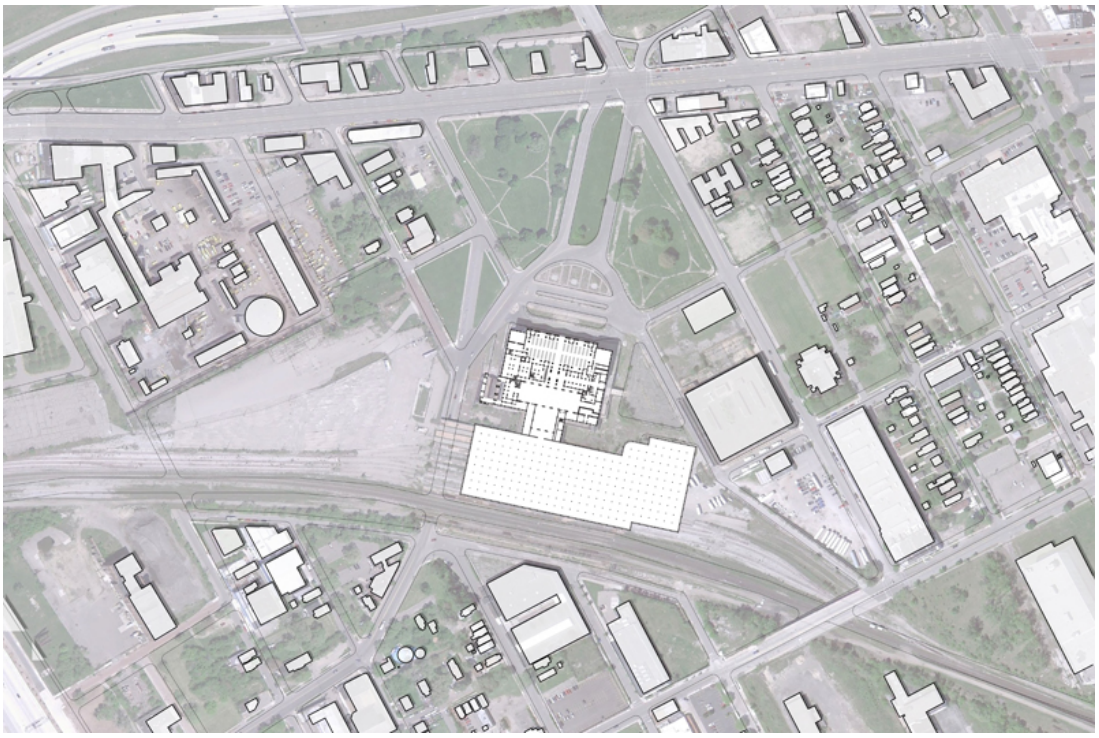

Figure 65: Existing Site Plan

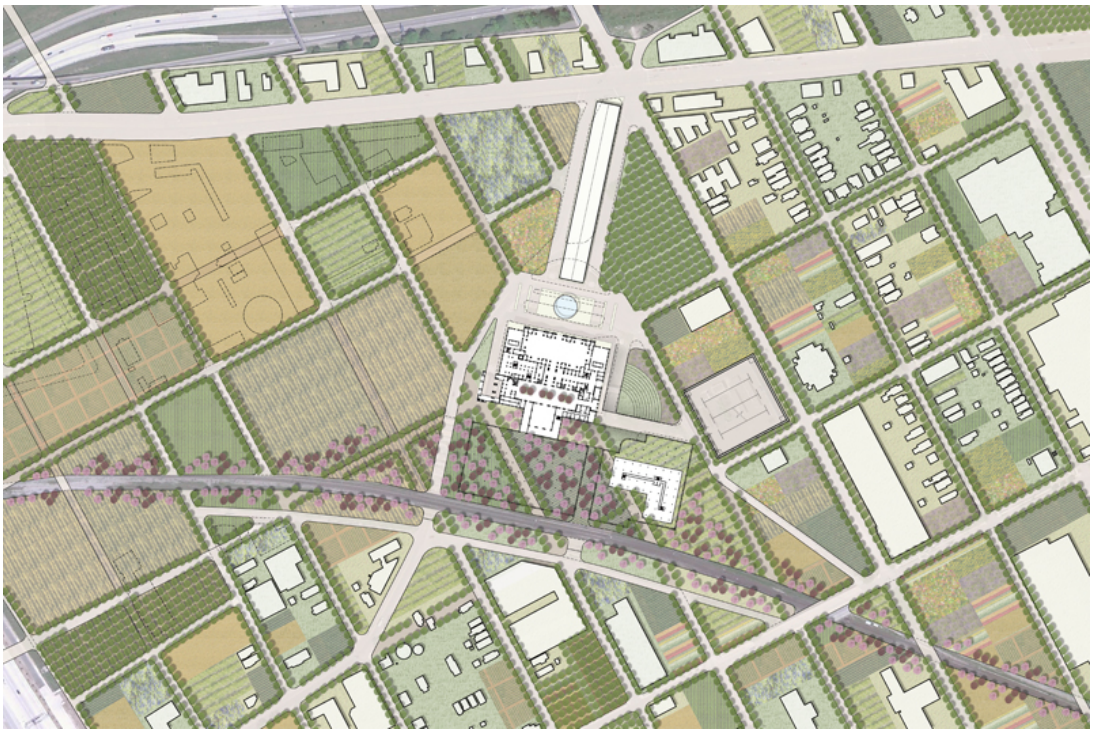

Figure 66: Proposed Site Plan

With the addition of the farmer's market, the Michigan Central Station now extends out into the landscape. To balance this harmony, the landscape is also brought up into the building. The construction method of the train depot allows for the skin of the building to be manipulated. The height and orientation of the building's tower is perfect for collecting energy from the sun. The South Elevation will be altered and converted into a greenhouse. This is one strategy to turn the station into a livable piece of industry. Instead of seeing a relic representing despair (see Figure 67), visitors will be welcomed with a new vision as they wait to enter the country (see Figure 68).

Figure 67: Current View while waiting to enter the United States

Figure 68: Proposed View while waiting to enter the United States

Although the train tracks are still in use, there no longer needs to be the same number of tracks. Many of the track yard remnants can be repurposed. Instead of having a large amount of wasteland (see Figure 69), the train yards can be used for farming, leisurely activities like going for a walk or basking in the sun (see Figure 70).

Figure 69: Existing View of Abandoned Train Yards

Figure 70: Proposed View of the Agricultural Fields

The existing building face gives off a negative impression. The rigidity of the bricks and thin windows make the train depot feel like a fortress (see Figure 71). To accommodate the new functions of the greenhouse, the South Elevation can become more lively where the window glazing and plants will change the feeling of the Michigan Central Station (see Figure 72). The new elevation allows the building to act as beacon promoting the new image of Detroit.

Figure 71: Current South Elevation

Figure 72: Proposed South Elevation

The agricultural industry is brought into the Michigan Central Station through a variety of new amenities. The train depot and its surrounding area will become self-sustainable by providing new amenities for education and outreach. Neighboring residents can learn about agricultural practices from the new university, museum and theater that are housed within the station. The Ground Floor (see Figure 73) of the Michigan Central Station will have an entrance for University that specializes in Agriculture and Alternative Energy Research and Cooking School, an entrance for the residences and a public entrance for the Agricultural Museum, Courtyard Café and Experimental Theater.

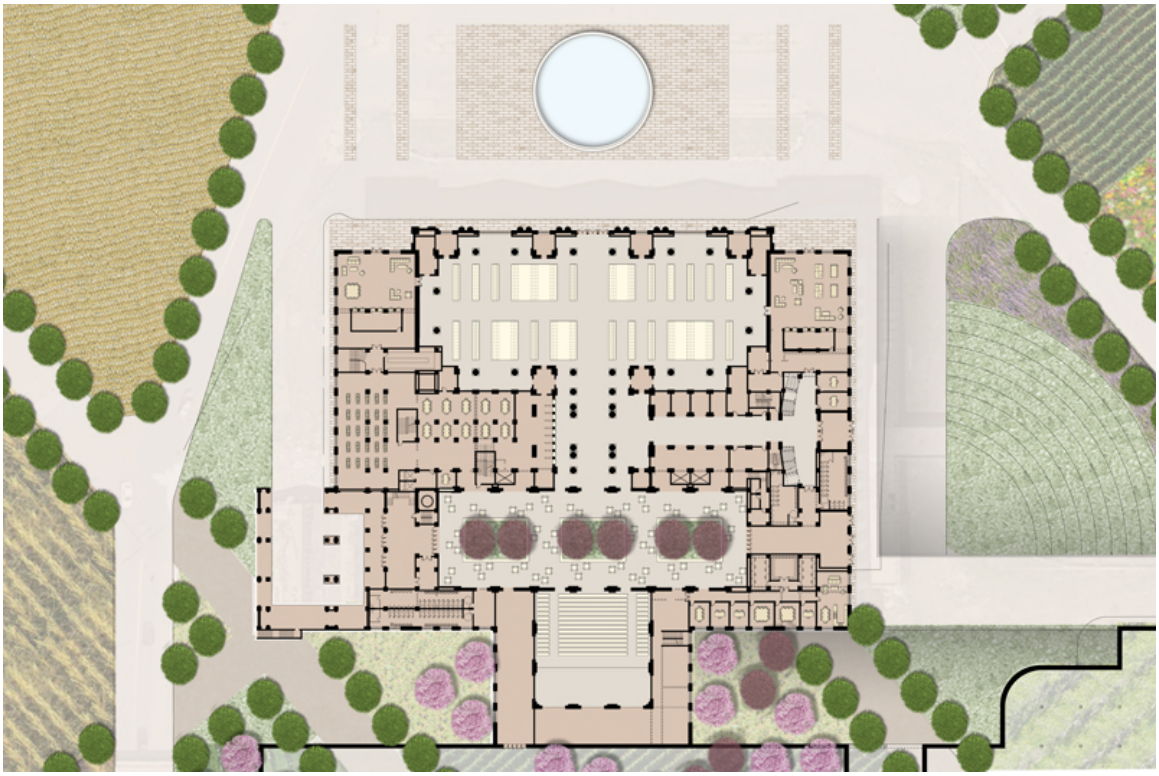

Figure 73: Proposed Ground Floor Level of the Michigan Central Station

The train depot will house an Agricultural Museum (see Figure 75) in the original Waiting Room (see Figure 74), where visitors can learn about the history of agriculture. The benches and chandeliers will be restored to allow an element from the past to become a part of a new memory.

Figure 74: Existing Waiting Room of the Michigan Central Station

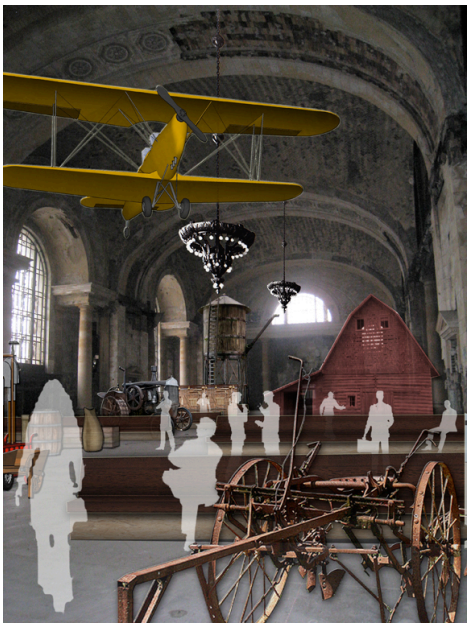

Figure 75: Proposed Agricultural Museum of the Michigan Central Station

Cooking classes will be taught in the location where the restaurant used to be. The Concourse of the station is shown in current state of ruins (see Figure 76) and will be revitalized to become the Courtyard Café (see Figure 77). The roof of the concourse will be removed, and additional vegetation will be physically planted inside the building.

Figure 76: Existing Concourse of the Michigan Central Station

Figure 77: Proposed Courtyard Cafe of the Michigan Central Station

The existing location (see Figure 78) where patrons would descend to board the trains will be turned into an experimental theater (see Figure 79). The slope of the floor makes this a perfect location to add performance space. This provides the Michigan Central Station with an additional form of education, where patrons and performers acquire new knowledge through experience.

Figure 78: Existing Ramp to Board Trains at the Michigan Central Station

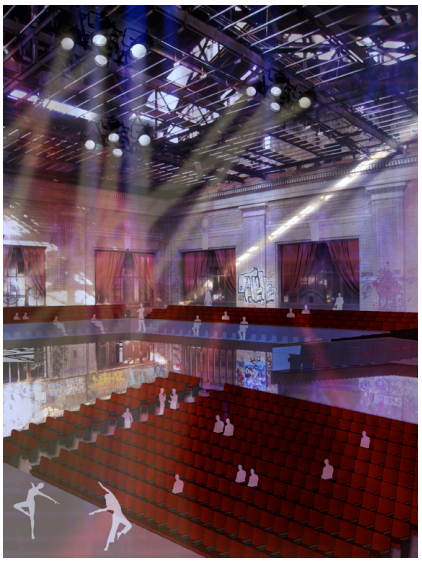

Figure 79: Proposed Experimental Theater at the Michigan Central Station

The Mezzanine Level (see Figure 80) will house classrooms for the Agriculture and Alternative Energy Research Institution. To support the University, student lounge area and study spaces will also be provided. The Classrooms that surround the original Concourse will now have balconies that extend out into the space below. This allows for a new dialogue between the ground floor level and mezzanine level. This floor will also have additional seating and breakout spaces for the Experimental Theater.

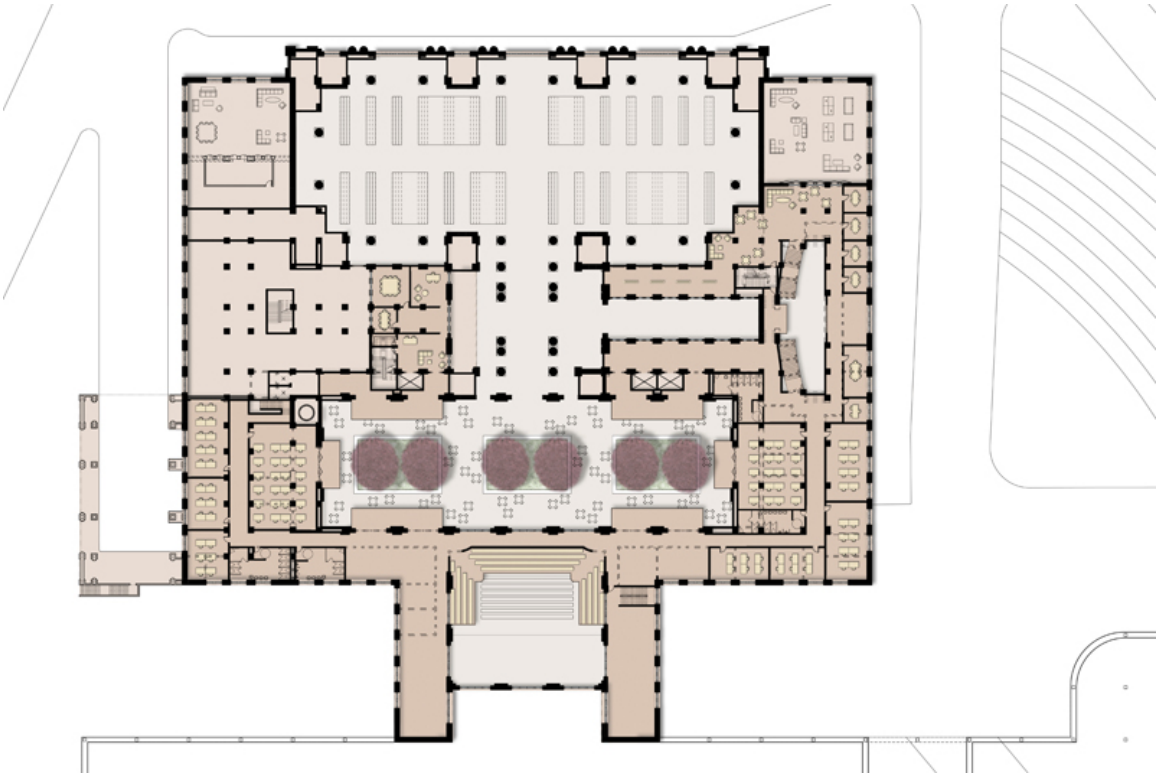

Figure 80: Proposed Mezzanine Level of the Michigan Central Station

The Tower of the Michigan Central Station will now be a residential tower (see Figure 81) instead of a commercial tower. The train depot is a steel-frame structure, which allows for the floor and walls the ability to be altered. The residential tower will shift the hallway to create a less jarring impression by removing the long narrow hallway. Every other floor will be removed to allow for additional light to be brought into the station for the greenhouse (see Figure 84). This solution will provide loft style residential units for the farmers and university professors and students. It will also allow the residents to have a portion of lawn, right outside their door.

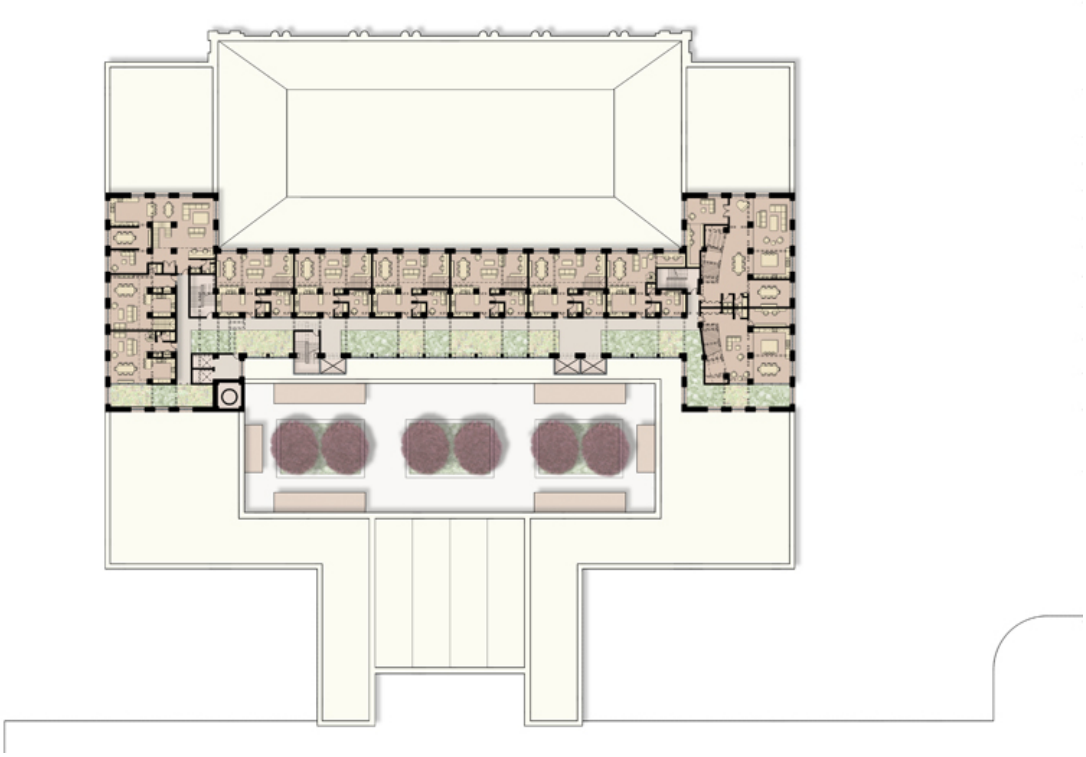

Figure 81: Proposed Typical First Floor of the Residential Tower

The Residential Units will all have a second level within the unit. This design allows for the living areas to be double heighted spaces. The new layout of the units increases the building's ability to be a living machine. Windows can be placed on both

sides of the apartments, which allows for cross-ventilation. The building now captures the energy of both the sun and the wind. The bedrooms of the residences are on the second level, which creates more privacy and a greater sense of security.

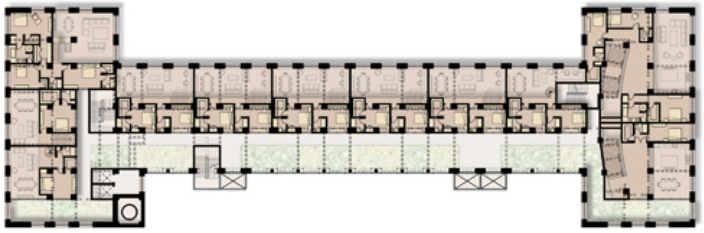

Figure 82: Proposed Typical Second Floor of the Residential Tower

The Rooftop (see Figure 83) will become additional greenhouse space. This Rooftop Greenhouse lets the vision of the new Michigan Central Station be seen from miles away. There will also be a Rooftop Bar and Café for patrons and residents to enjoy the Detroit Skyline in the evenings.

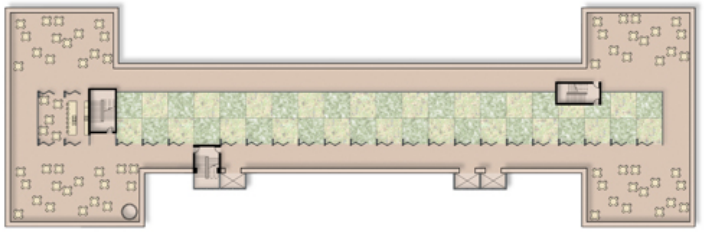

Figure 83: Proposed Rooftop Level of the Michigan Central Station

Figure 84: Proposed Section of the Michigan Central Station

Looking at the history of the building, the social conditions of the city and past precedents helped re-discover purpose and identity among ruins. These design ideas provide both idealistic visions and practical solutions for implementing new life into the Michigan Central Station.

Chapter Six: Concluding Thoughts

This thesis proposal has attempted to develop a method for designing in derelict areas. The Michigan Central Station is being used as an example project to create this new design approach. By researching multiple building types, studying various precedents and exploring the history of the train depot has allowed for the re-discovery of identity and purpose among ruins. The original intentions of this project are quite different than the actual result. What started as an interest with a relic, turned into the realization that architects and designers avoid developing solutions for abandoned locations.

As technology advances, many industrial cities will be experiencing similar conditions to the City of Detroit. The demand for factories will dwindle and the size of these towns will shrink. There will be a greater need for creative and innovative solutions to accommodate these future conditions. With the population of Detroit decreasing, this thesis critically analyzes a serious issue that the city will have to deal with. This thesis serves as a potential model that the City of Detroit could use. Although this process has been a thorough investigation, more work certainly needs to be done to further develop and evaluate this problem.

This yearlong project of research and exploration, developed into a thesis proposal that took an existing ruin and turned it into a living machine. Testing idealistic concepts and developing practical applications created a space that could realistically thrive.

Appendix A – Original Drawings

Figure 85: Site Plan

Figure 86: Ground Floor Plan

Figure 87: Typical Office Floor Plan

Figure 88: Cross Section through Train Shed

Figure 89: Cross Section of the Michigan Central Station

Figure 90: North Elevation

Figure 91: East Elevation

Figure 92: South Elevation

Figure 93: West Elevation

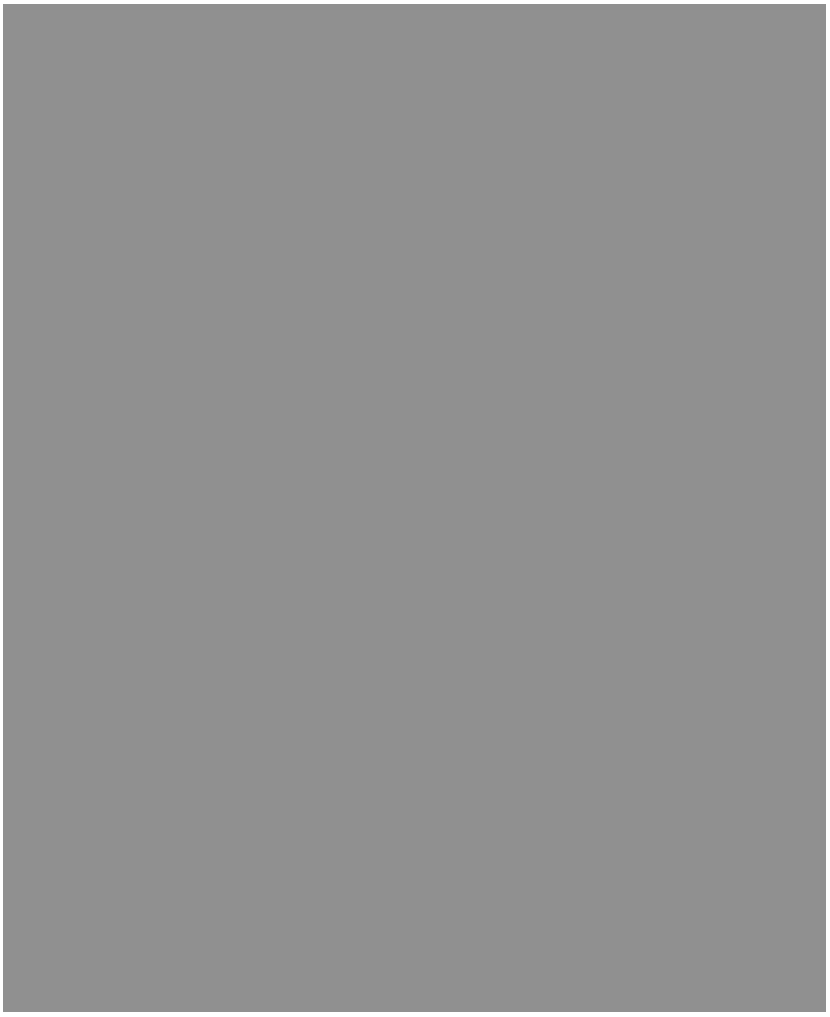

Figure 94: Partial Foundation Plan

Figure 95: Building Foundations

Appendix B – Historic Photos of the Michigan Central Station

Figure 96: Bird's Eye View, 1949

Figure 97: Bird's Eye View, 1949

Figure 98: View of Downtown from the Michigan Central Station, 1928

Figure 99: Bird's Eye View, 1968

Figure 100: Train Yards, 1926

Figure 101: Train Yards, 1964

Figure 102: View from Entrance, 1928

Figure 103: View of Exterior, 1947

Figure 104: View of Exterior, 1919

Figure 105: View of Exterior, 1925

Figure 106: Carriage House, 1916

Figure 107: View of Exterior, 1920s

Figure 108: Concourse, 1973

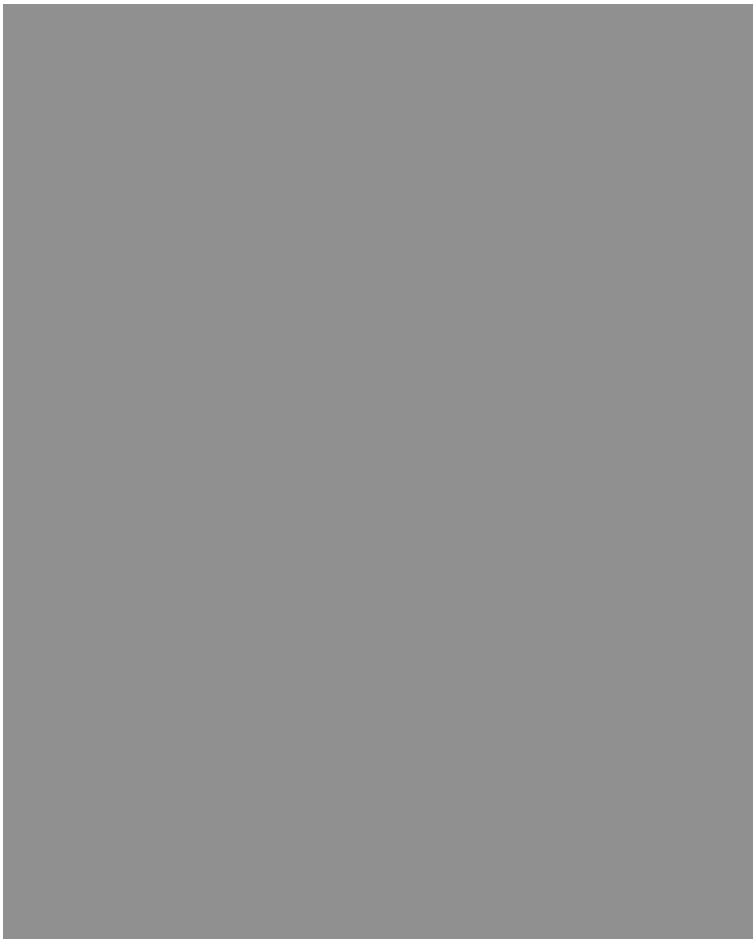

Figure 109: Waiting Room, 1949

Figure 110: Ticket Lobby, 1975

Figure 111: Looking Toward Ticket Lobby, 1916

Appendix C – Current Photos of the Michigan Central Station

Figure 112: Bird's Eye View

Figure 113: View from Entrance

Figure 114: View of Exterior

Figure 115: View of Carriage House

Figure 116: Underpass beneath Train Yards

Figure 117: View of the Exterior

Figure 118: View from Train Yards

Figure 119: View of Exterior

Figure 120: View of Exterior with the Ambassador Bridge

Figure 121: View of Exterior

Figure 122: View of Exterior

Figure 123: View of Ticket Lobby

Figure 124: View of Concourse

Figure 125: View of Concourse Floor

Figure 126: View of Restaurant

Figure 127: View of Tower Stairs

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