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TEMPORARY STRUCTURES

[why do we need them?]

Masters of Architecture Thesis
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Abstract

Temporary structures have been around since mankind first existed. They fall under the premise of tents and shelters, places of ritual or meditation. Yet, with its long history, it is still up for debate whether or not it should be classified as architecture. Permanent structures are what everyone seems to imagine when picturing architecture yet architecture is so much more. Temporary structures have the ability to exist in places in which permanent architecture could never thrive. They have the ability to be flexible in program, size, shape, material and whatever else one wants to try. Temporary structures typically express an issue or emphasis a point. They have the ability to be something more than merely an installation or a building which, once its purpose has been used, is abandoned. Temporary structures are what gives architecture its ability to thrive. They are the perfect juxtaposition to permanent structures allowing a spectrum to exist between the two categories giving architecture itself a well-founded ability to exist

Thesis Statement

Temporary structures have more often than not been pushed aside as merely art pieces or simple installations. It is time to celebrate temporary structures and all that they can do for society. They have the ability to be whatever one can imagine. The temporary structures are not defined by their materials or their size, not by their program or their location. Rather, a temporary structure is a temporary because of its intention. The initial intention of the designer to create a temporary structure allows it to succeed in its attended function. Every piece of the structure has been though out in great detail. Every piece has its place; nothing is done merely for aesthetics. Temporary structures are at a more humanistic scale than almost any other type of architecture. It is an integral part of what makes architecture great and should be celebrated as such.

Questions

Why design a temporary structure?

Temporary structures are great for instances in which a permanent structure could not be built. They have the flexibility of not just structure but of site as well. This allows them to be placed almost anywhere. They also are able to emphasis a point or an issue in a unique way. The structures also have an ability to bring architecture to the masses in a more understandable way in a humanistic scale.

How is it different from a permanent structure?

A temporary structure only exists for a short time. It is also only created for a temporary purpose. The structure itself usually does not leave a mark on the site(s) it sits on unlike a permanent structure. Also, a temporary structure is usually built for the masses versus a permanent structure which is built for a client's specific needs.

How would you be able to tell?

Temporary structures are usually identifiable by their construction method as well as the materials in which they are constructed by. Few temporary structures are built from heavy materials such as concrete or masonry. The construction is also important to note as many-not all-temporary structures do not have permanent connections. Site should also be observed as a permanent structure is limited by code to be placed only in certain areas whereas a temporary structure can be placed just about anywhere.

What makes it temporary?

A temporary structure is a structure in which the designer(s) specifically designed it with the intention of a limited duration of life. This initial intention is the key to what defines a temporary structure. It is temporary by its ability to be taken away with relative ease with little to no trace left behind.

Distinction between Categories

To better understand the relationship between permanent and temporary structures there was an attempt to place definitions on both categories. To do so, it seemed necessary to compile a large amount of case studies to better understand the similarities of each group. At first the analysis examined each structure for the length of time of its existence. Although this seemed like a simple task, it became more complex as the status of temporary and permanent structures started to overlap. This clarified the two initial categories of permanent and temporary as well as established a third category labeled ambiguous. The temporary category is defined as a structure in which the original intention was for a limited existence. A permanent structure is meant to endure through time. An ambiguous structure is one in which the structure, due to human involvement, has changed. For example, the Eiffel Tower was originally meant to be a temporary structure and was meant to last for only 20 years. Due to the two world wars, the tower was never demolished and thus became an icon for Paris. It was structurally modified to continue standing safely.

Temporary

Function	Reason	Type	Site
residence	basic need	full enclosure	fixed
shelter	perspective	open air space	multiple
installation	community	visual only	typology
communal		partial enclosure	


[1]

Function	Reason	Type	Site
residence	basic need	full enclosure	fixed
shelter	perspective	open air space	multiple
installation	community	visual only	typology
communal		partial enclosure	


[2]

Function	Reason	Type	Site
residence	basic need	full enclosure	fixed
shelter	perspective	open air space	multiple
installation	community	visual only	typology
communal		partial enclosure	


[3]

Function	Reason	Type	Site
residence	basic need	full enclosure	fixed
shelter	perspective	open air space	multiple
installation	community	visual only	typology
communal		partial enclosure	


[4]

Function	Reason	Type	Site
residence	basic need	full enclosure	fixed
shelter	perspective	open air space	multiple
installation	community	visual only	typology
communal		partial enclosure	

[5]

Function	Reason	Type	Site
residence	basic need	full enclosure	fixed
shelter	perspective	open air space	multiple
installation	community	visual only	typology
communal		partial enclosure	


[6]

Permanent


[7]

Function	Reason	Type	Site
residence	basic need	full enclosure	fixed
shelter	perspective	open air space	multiple
installation	community	visual only	typology
communal		partial enclosure	


[8]

Function	Reason	Type	Site
residence	basic need	full enclosure	fixed
shelter	perspective	open air space	multiple
installation	community	visual only	typology
communal		partial enclosure	


[9]

Function	Reason	Type	Site
residence	basic need	full enclosure	fixed
shelter	perspective	open air space	multiple
installation	community	visual only	typology
communal		partial enclosure	

Ambiguous


[10]

Function	Reason	Type	Site
residence	basic need	full enclosure	fixed
shelter	perspective	open air space	multiple
installation	community	visual only	typology
communal		partial enclosure	


[11]

Function	Reason	Type	Site
residence	basic need	full enclosure	fixed
shelter	perspective	open air space	multiple
installation	community	visual only	typology
communal		partial enclosure	

Mini-Sketch Problem

The Alley Project was a way to better understand the relationship between the site, community and structure itself as well as the difference with choosing a temporary structure rather than a permanent one. For a successful experiment, the issue of safety was chosen and an alley was designed for the site. The idea was, like most alleys, safety becomes an issue especially at night. As clearly stated by Charles Bernardini, "In today's world, however, residential alleys open to the public are perhaps the most vulnerable physical aspect of our city. They are windows of opportunity for criminals and unsafe at night, particularly for women and seniors." [1] With ever evolving cities, alleys have started to lose the very function they intended. Many believe that the best way to deal with such an issue is to close the alleys. This is wrong.

[1]Bernardini, Charles R. "Alleys And Crime." Chicago Tribune. Chicago City Council, 26 Jan. 1996. Web. 09 Jan. 2014. <http://articles.chicagotribune.com/1996-01-26/news/9601260196_1_buildings-blocks-rear>.

[13]

[14]

When a part of the city starts to lose its function, instead of simply walling it off, it would seem better to re-purpose the use of the space to revitalize the area.

To keep the initial study as a controlled experiment, the alley was fabricated from the knowledge of existing alleys. This allowed for perfect conditions to test the idea of temporary versus permanent. The idea was to address the safety issue in the alley and figure out a way to revitalize the community at the same time. One of the biggest factors facing this project was the community's view of the alley.

The initial structure designed was the temporary structure which allowed for an open air market as well as sitting space in the center. When dealing with the structure of the design, it was pertinent to keep a clear visual line through the alley as well as some how visualizing queuing the separation between the stalls. The overall plan was a five stall layout for the market. Each stall would be operated by an owner during the day and at night would remain open for inhabitants. With deliberate lighting, the entire alley and the surrounding areas would be lit well enough to allow a passerby to feel safe.

The goal of the temporary structure would be to promote the community's ability to overcome a preconceived notion of what a place is, as the alley was deemed unsafe. This empowerment is to better the community's understanding of their surroundings and environment.

The mini-sketch problem was successful due to what was garnered from the design process itself. Once the sketch problem was complete it was re-evaluated and a list of components were listed in which one would need to pay attention too. These were compared and contrasted with components pulled from the design of a permanent structure. Many people might assume that designing a temporary structure is quite simple yet it still requires a lot of design work, though unlike permanent structures, most of the design work cannot be seen

Further Study

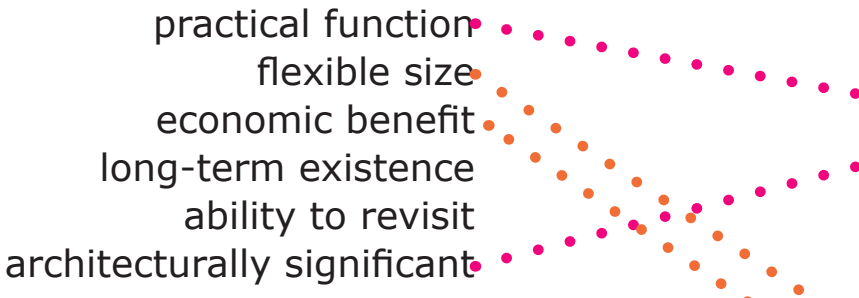
To take this mini-sketch to the next level, it makes sense to better elaborate on the elements of which it is deemed temporary. The physical construction of the project as well as the type of site it is located or can be located in is of some importance. Also, whether or not the structure can be used or simply a similar structure can be built for other alleys. All of these statements relate back to why people build temporary structures and what truly makes them temporary.

Compare & Contrast

After completion of the mini-sketch problem, components were extracted. The first set of components were the pros and cons of designing both a permanent and temporary structure. It can be seen in Figure [15] that there seems to be an equal number of similarities as there are differences. The biggest differences to note would be the scale, site and cost. Permanent structures have the ability to be any size, though once built they usually only expand rather than reduce mass. The structures have two major cons which are the high cost as well as the fixed site. Temporary structures on the other hand are at a more human scale. They are low cost typically and have the flexibility of site: sometimes multiple sites for one structure. Figure [16] expresses elements which should be considered when designing each type of structure. One will notice the vast array of similarities. Both deal with a user and as such many of the elements are the same. The designer merely expresses them differently depending on the type of structure.

Permanent

Pros



Cons

Similarity

Temporary

Pros

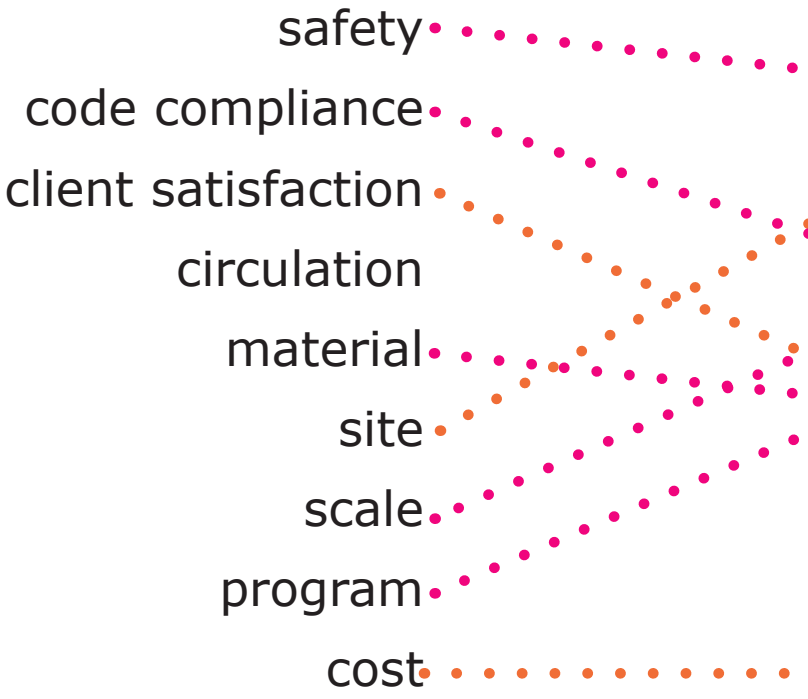
flexibility
structure
site
function
short-term existence
emphasis of an issue or asset
low cost

Cons

human scale
no economic benefit
weather-conscious
no set legal boundaries

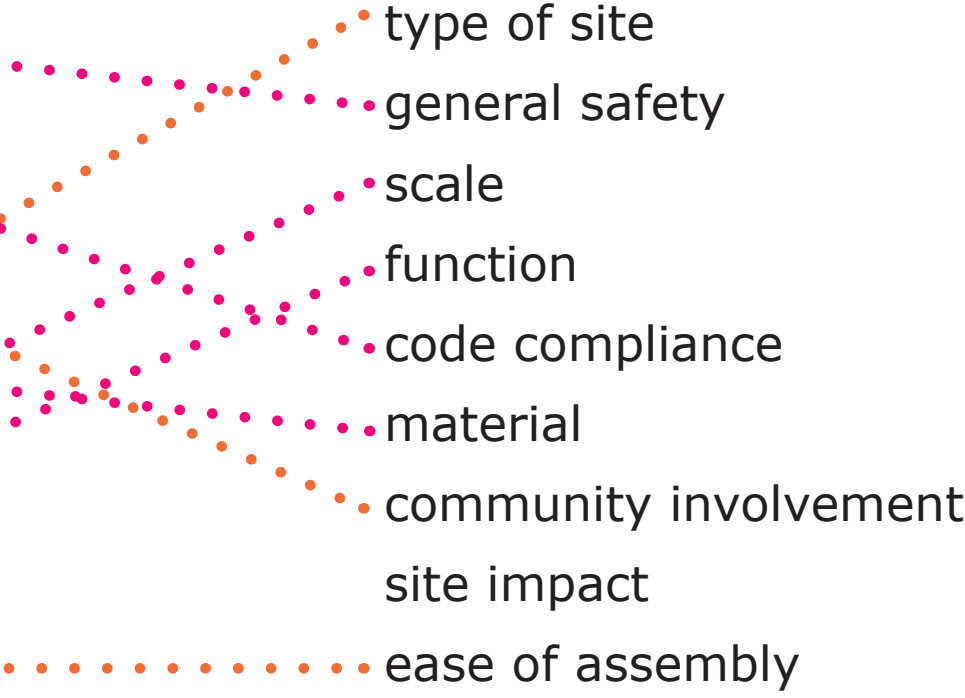
Contrast

Permanent



Similarity

Temporary



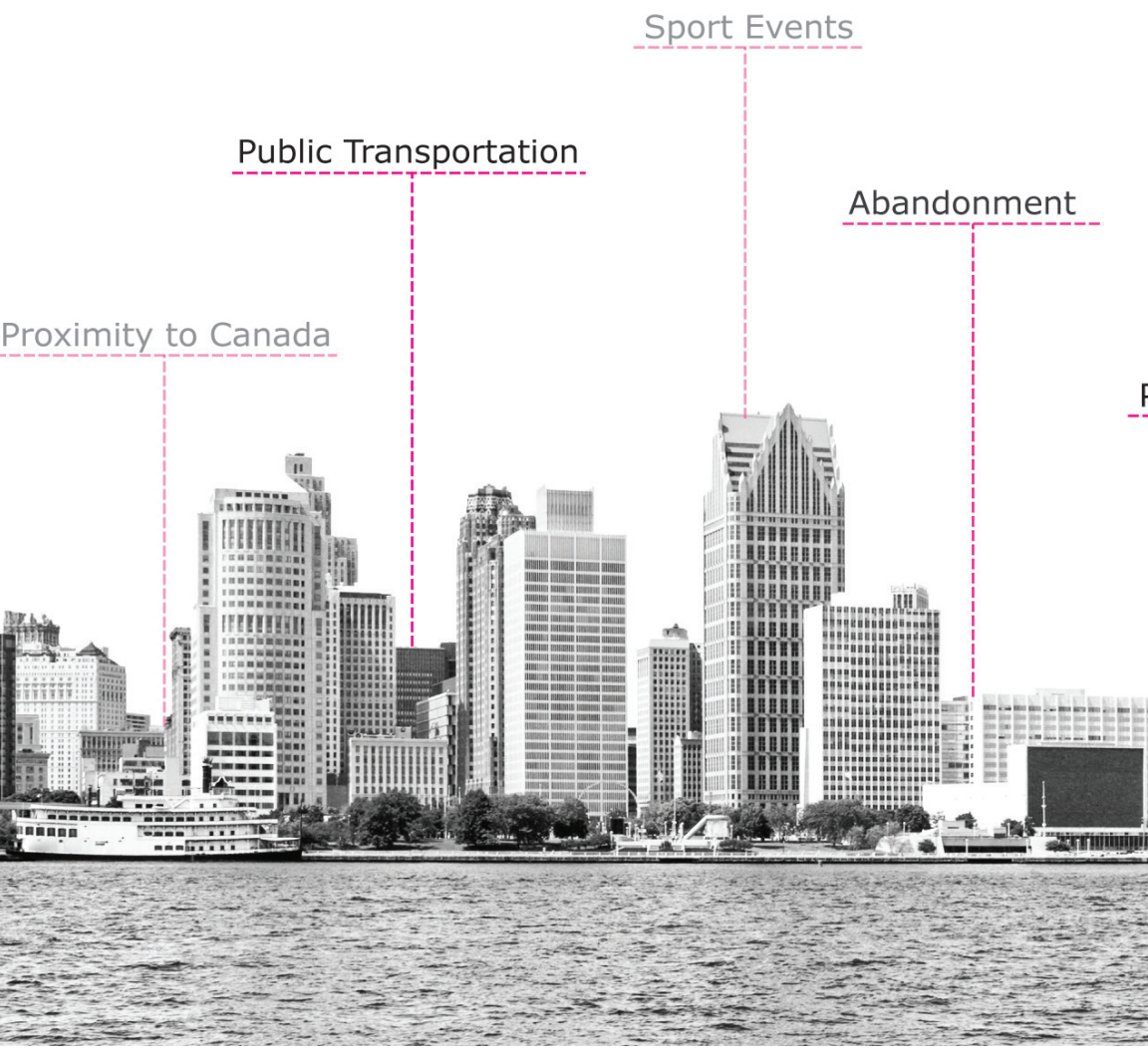
Contrast

Site Selection

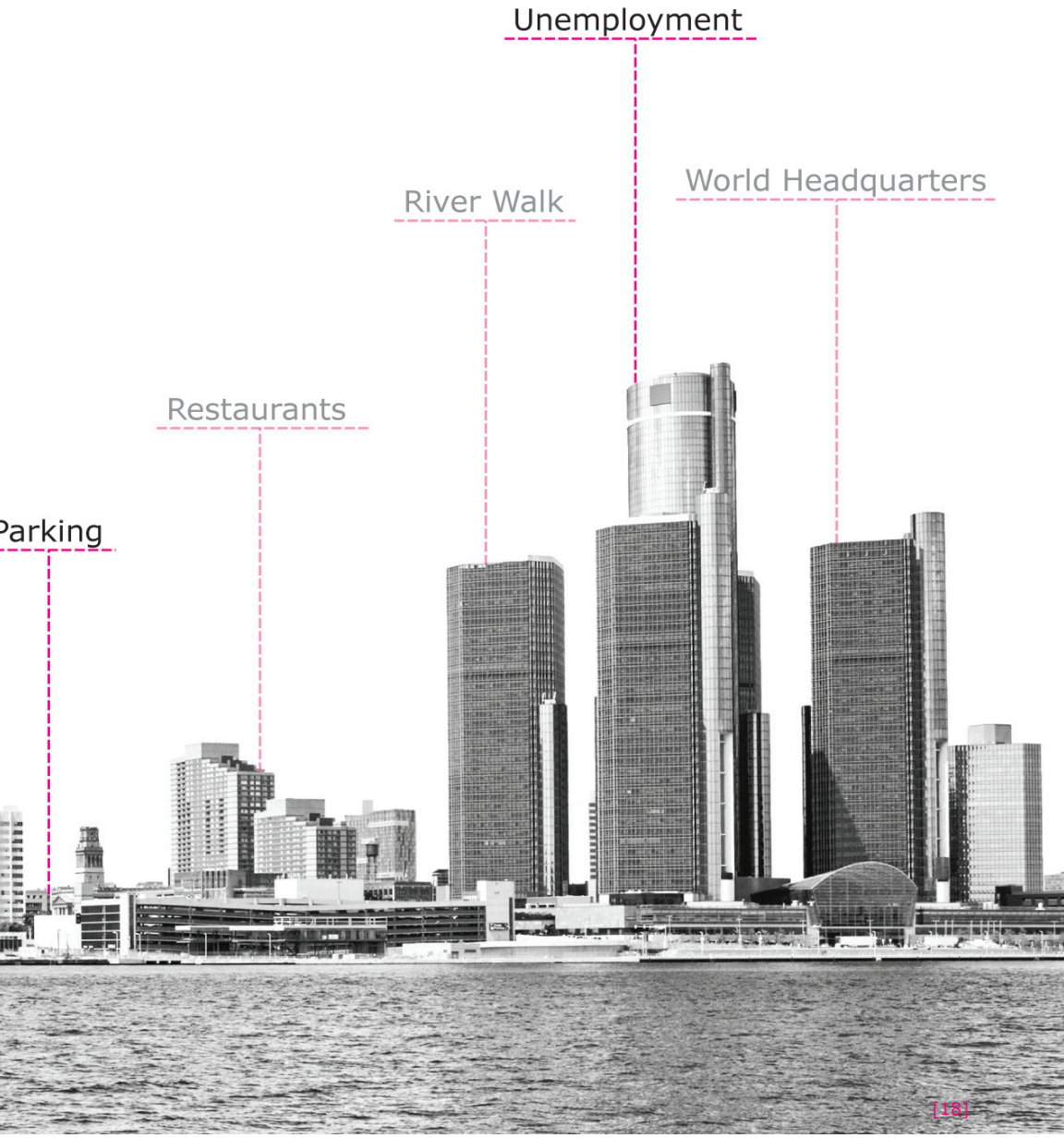
For accessibility reasons it made sense to choose Detroit as the city of implementation. To find a relative and strong enough reason as well as matching site the focus was on downtown Detroit bounding the perimeter of the search area with the freeways. With the search area in place, it was easy to extract the assets and issues of the area. One of the most interesting aspects about downtown Detroit are the event days. The event days are game days or festivals held in downtown. During such times the downtown core is flooded with both vehicular and ambulatory traffic. What was interesting was the amount of parking in downtown itself for vehicular traffic. It would be safe to assume few people truly carpool to downtown thus leaving a wide array of cars for a fewer number of people. This was also juxtapositioned with the limited use of the public transportation in the area.

[17]

The issues of Detroit tend to OVERSHADO



W the assets it possesses.



[18]

The logical approach was to focus on Detroit due to its close proximity. Detroit has seen its share of bad times and a temporary structure could be just what the city needs. This, however, isn't as simple as simply picking a spot, rather, the site and the issue or asset must be chosen at the same time. This gives more compatibility to the design decision.

Detroit covers many square miles and thus finding a small, human scale site would be quite difficult. To narrow down the parameters, the site search area was restricted to only the downtown bounded by the encircling freeways. The freeways create a cavernous area around the downtown section of the city. As such, it seemed appropriate to start in the core of such a large city.

Three sites were initially chosen for different reasons. The first site was meant to deal with a more whimsical approach to the types of areas in Detroit. The second site had to deal with viewing the city from a different perspective. The third site was meant to incorporate other businesses in the area to enliven a space during certain event days.

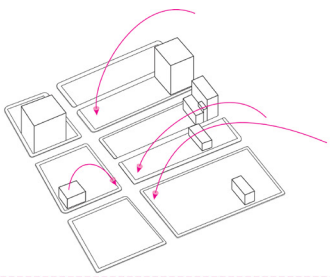
The sites were originally chosen simply by their location in the city. There are three separate zones in the city in which there is sparse interaction among people. Rather, they are simply an area to walk by rather than stop and look around. The first area is on the edge of Greektown. This is where the main thoroughfare stops becoming a main street and instead is overshadowed by the buildings surrounding it. The second area is between the MGM Grand and the Financial District. This area is full of used parking lots during the day and empty lots at night. The third area was the most unusual due to its vary nature in the downtown core. The third area is the place where all of the blocks are paved over as parking lots. It resides to the West of Woodward Avenue. These lots are only used during game days.

All of the chosen sites were meant to have their own unique temporary structure. This started to pose a problem since for two of the sites, there was no real reason to build anything in the first place.

The three sites as seen in Figure [19] are all over the downtown core. The diagrams attached are the initial inspirations for the site. Site one is between two buildings in a small parking lot. The second site is on the top of a parking structure. Specifically the southern corner. The third site is in the area of parking lots surrounded by empty buildings and bars.

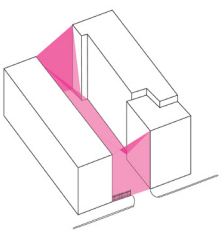
Site 3

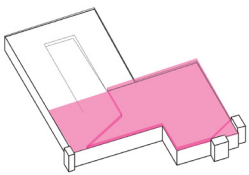
An easily transportable project in which the bars would sponsor the actual use of the space. The bus stop would have easy access to the games, parking and the bar with little hassle.



Site 1

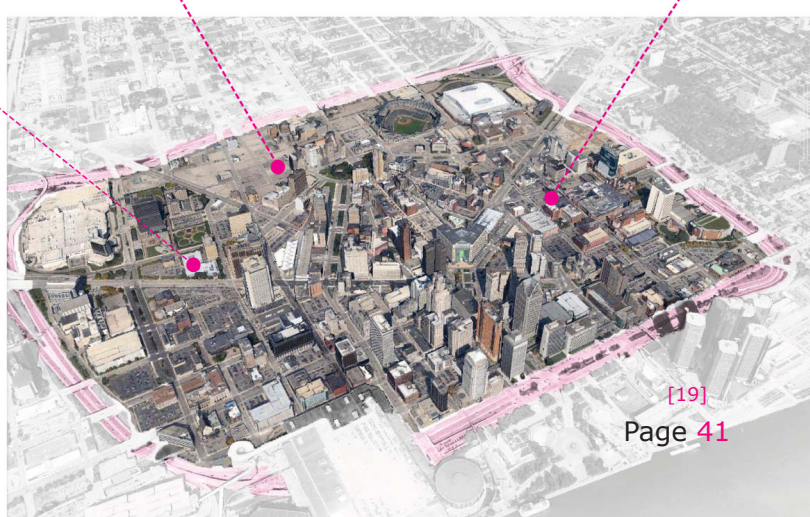
The narrow parking lot between a church and an alley on the edge of Greektown provides the perfect place to create an installation which will allow people to travel from a narrow dark street to a more open lot in the back.





Site 2

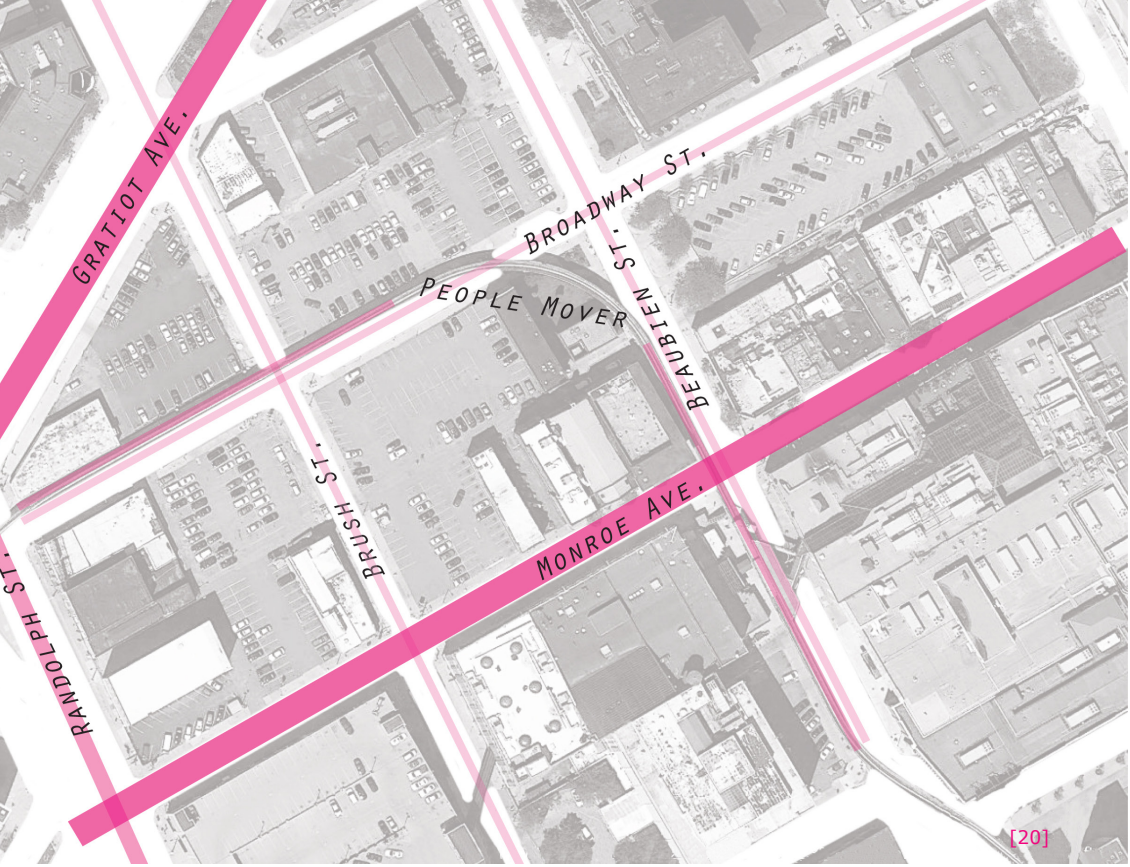
For a project to be well seen in the Motor City, one must understand the view from a car. By placing the temporary pavilion on the top of a parking garage not only does one attract the attention of a passing motorist but also as a garage allows for them to easily stop and investigate.



[19]

Explorations

The explorations were a way to find an appropriate site for the suggested temporary structure. Three sites were chosen from different areas around downtown Detroit. Each was chosen for its particular location and the proposed design is inspired from the asset or issue associated with each site. Even though three sites were originally chosen, upon further consideration, the first two sites-which will be proposed concurrently-did not fit the appropriate nature for the temporary structure. The third site holds the most promise with its ability to integrate itself with the surrounding community rather than attempting to engage it. By originally choosing three sites, it allowed the possibilities for one of the sites to express itself through further analysis.



[20]

Site 1 | Traffic

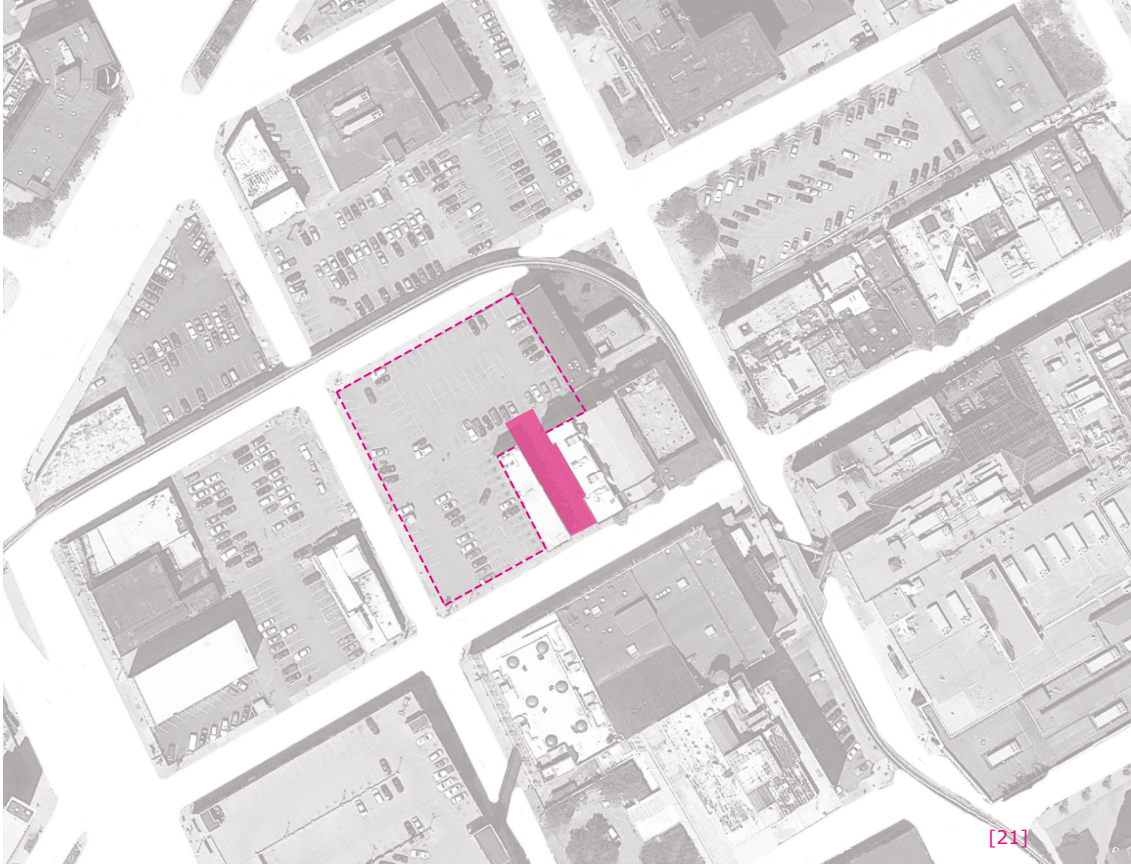
Site 1 is located on the edge of Greektown between two buildings, a church and a bar. It is currently being used as a parking lot for the adjacent church. Close to the site is the People-Mover as well as Gratiot Avenue which runs two blocks North. The Southern end of the site is located on Monroe Avenue which is the main street for Greektown.

Contextual Observations

-The site lies on the edge of Greektown and its main corridor.
-The people mover borders the North while a solid corporate building looms to the South.
-There is not a lot of traffic neither car nor pedestrian along the street.

Existing Materials

-Concrete
-Fencing
-Brick


[21]

Site 1 | Location

Initial Observations

-Empty of People
-Cold Environment
-Used as a parking lot
-Long, narrow space
-Shadowed by both adjacent buildings and the buildings across the street.
-Partially fenced off from the road

Temporary Design

-Art Installation
-The Spiderweb
    -Exploring additional uses to cornered spaces in an urban environment.

Potential Considerations

-Edge of Greektown
-One of the walls has residential windows that cannot be covered.
-It is an existing parking lot with a fence
-No side anchors allowed

For Site 1 it seemed appropriate to take advantage of the amount of people traversing the area to create an interactive installation. To better understand how a successful temporary installation type pavilion works, three case studies were found each expressing their own identity.

The first case study [22] is the Windshape by nArchitects. This installation was created by using pipes and string to create a structure which moved with the wind. This structure was home to many events during its existence and it seemed to be its own living creature.

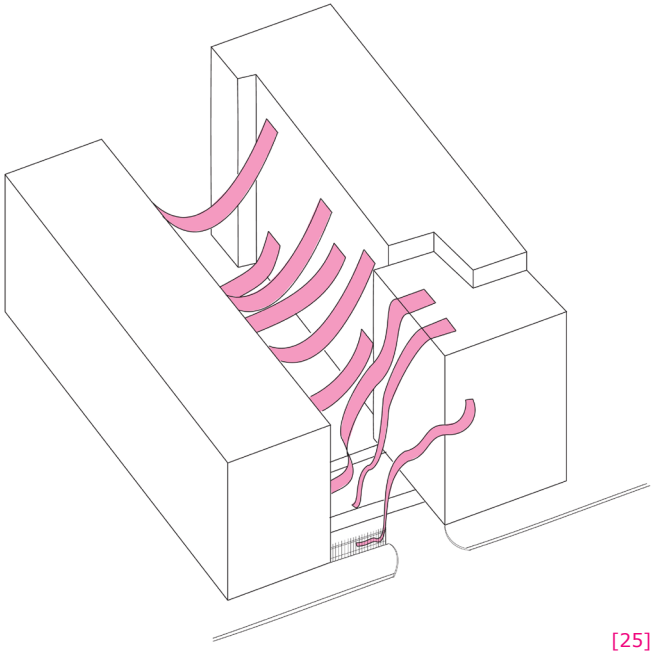
The second case study [23] is the 2008 Serpentine Gallery by Frank Gehry. This structure plays with a series of paneled planes composing the roof as well as an array of cylindrical pieces creating an interesting dynamic roof structure. The pavilion was incredibly popular due to its dynamic roof.

The third case study [24] is the Spiderweb by For Use/Numen They created the installation in the empty Tempelhof former airport. The web was created from clear packaging tape. The installation is so large that one can even sit inside of it.

[22]

[23]

[24]



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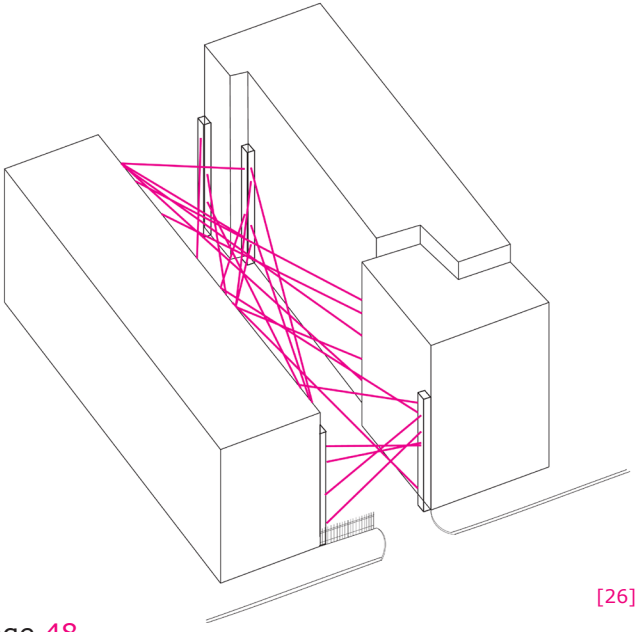


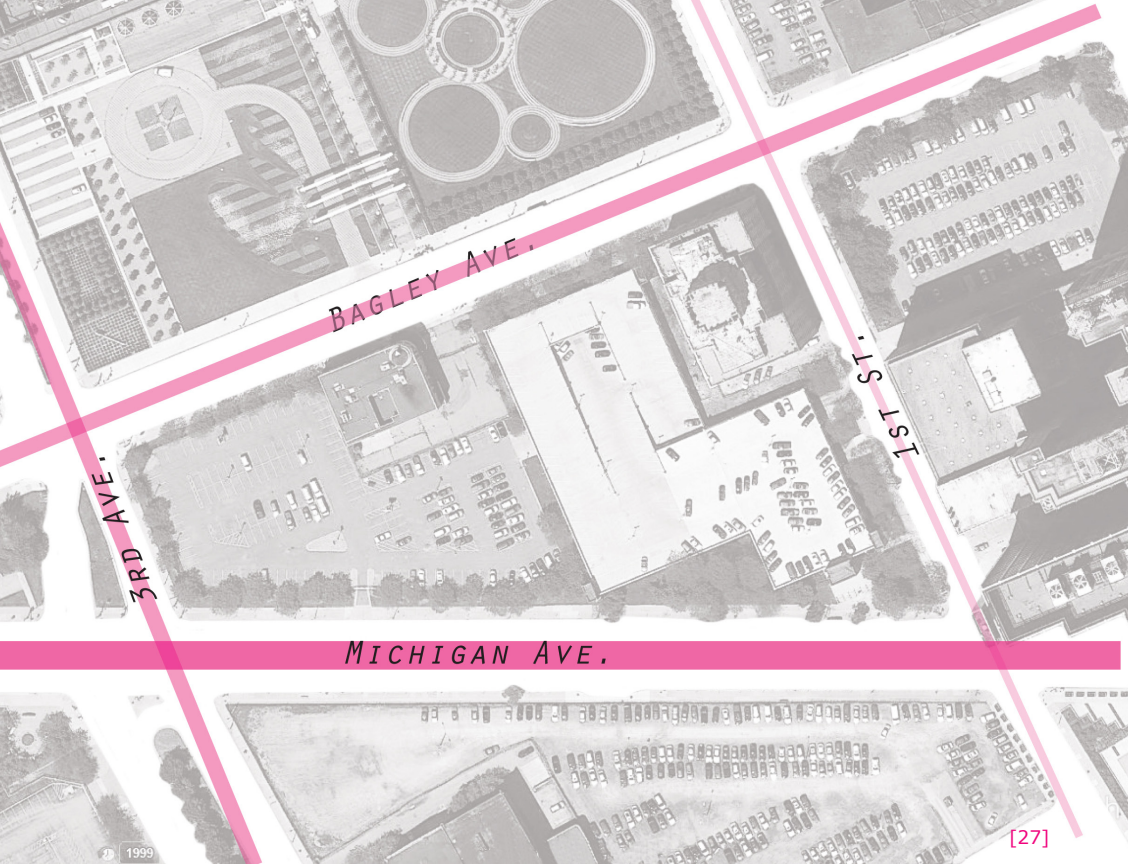
[26]

Site 1 | Proposal 1

The inspiration behind this installation was the free flowing strings of the Windshape as well as the idea of clotheslines in an urban city. The installation consists of large pieces of fabric attached from residents windows to the adjacent building where there is currently no fenestration. The goal would be to let the fabric be white so that the sunlight would pierce through into the space as the absence of light was one of the things noted of the site. The fabric would also ripple with the wind breathing life into the installation.

Site 1 | Proposal 2

The installation was inspired by the spiderweb case study. The idea would be to string thousands of strings together across the site to create a woven pathway that would start at the southern end of the site and extend north. The woven structure was meant to guide people through it ultimately, breaking up the darkened alleys of an urban environment. It was to be made of white string to again bring forth a sense of purity to the city.



[27]

Site 2 | Traffic

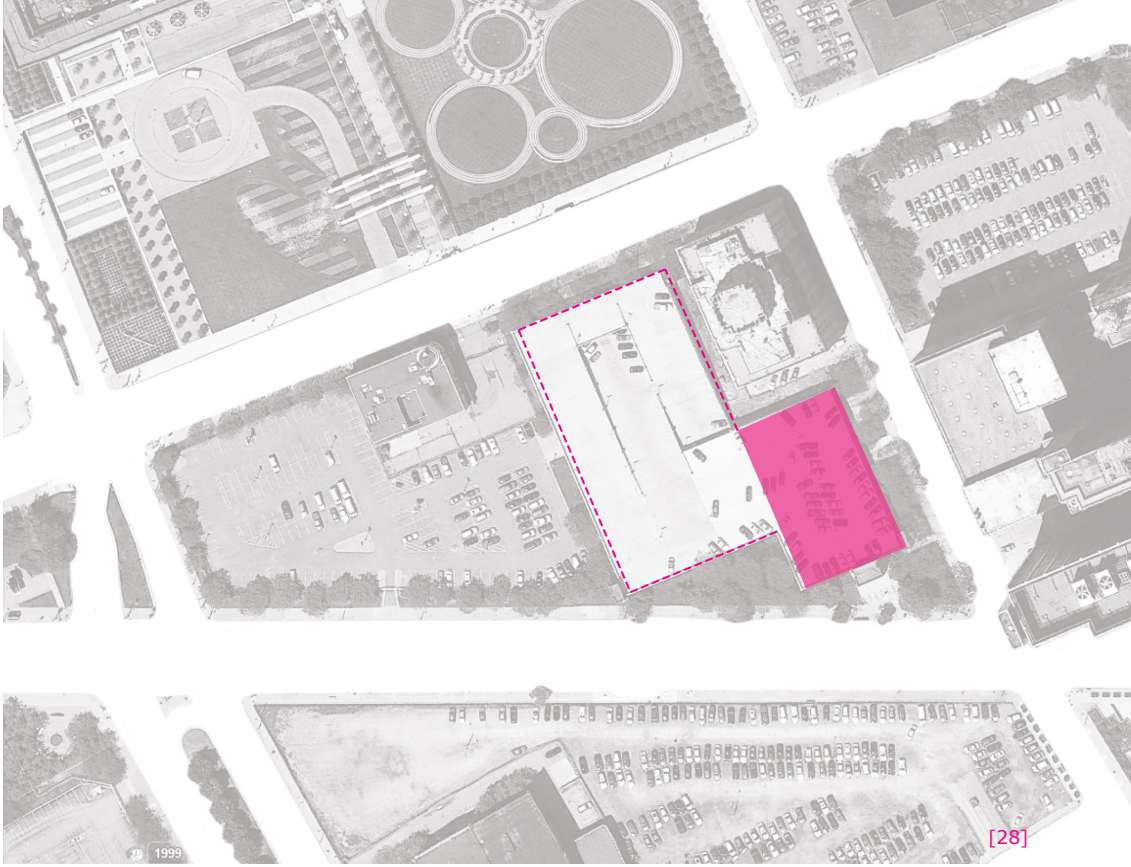
Site 2 is located along Michigan Avenue and Bagley Avenue. The site itself is located at the top of a parking structure which is two stories tall. It is surrounded by parking lots and an array of buildings which tower over the structure.

Contextual Observations

-Traffic is along Michigan Ave and Bagley,not as much pedestrian movement.
-The structure itself falls into a limbo area of the city where there is no real fixed focal point.

Existing Materials

-Concrete
-Reinforcing
-Brick



[28]

Site 2 | Location

Initial Observations

-Empty of People
-Cold Environment
-Architecturally ignored
-Long, narrow space

Temporary Design

-Pavilion
-The Parking Pavilion
-Designed for a safe urban context in a highly visible yet under-utilized space.
-The goal would be to attract people to relax and enjoy the unique experience as well as utilize a common urban space in a new way.

Potential Considerations

-Can support numerous cars (weight not an issue)
-Is at least 2 stories above ground
-Cannot impact the path of vehicles
-Must be safe for pedestrian use (barriers)

Site 2 is unique because it is on top of a parking garage. This not only gives a person a different perspective on the area around the site itself but it also poses certain questions such as what can one do on top of a parking garage which will engage the common pedestrian.

The first case study [29] is the Serpentine Pavilion by Rem Koolhaus. This pavilion was interesting it its ability to attract people to it using its shape and the use of lights to illuminate the exterior skin.

The second case study [30] is the Kunsthülle by OSA Architects. The temporary structure, similar to the first study, was interesting again for its ability to bring people to it without revealing its actual use. This structure was also inspiring with its flexibility in function.

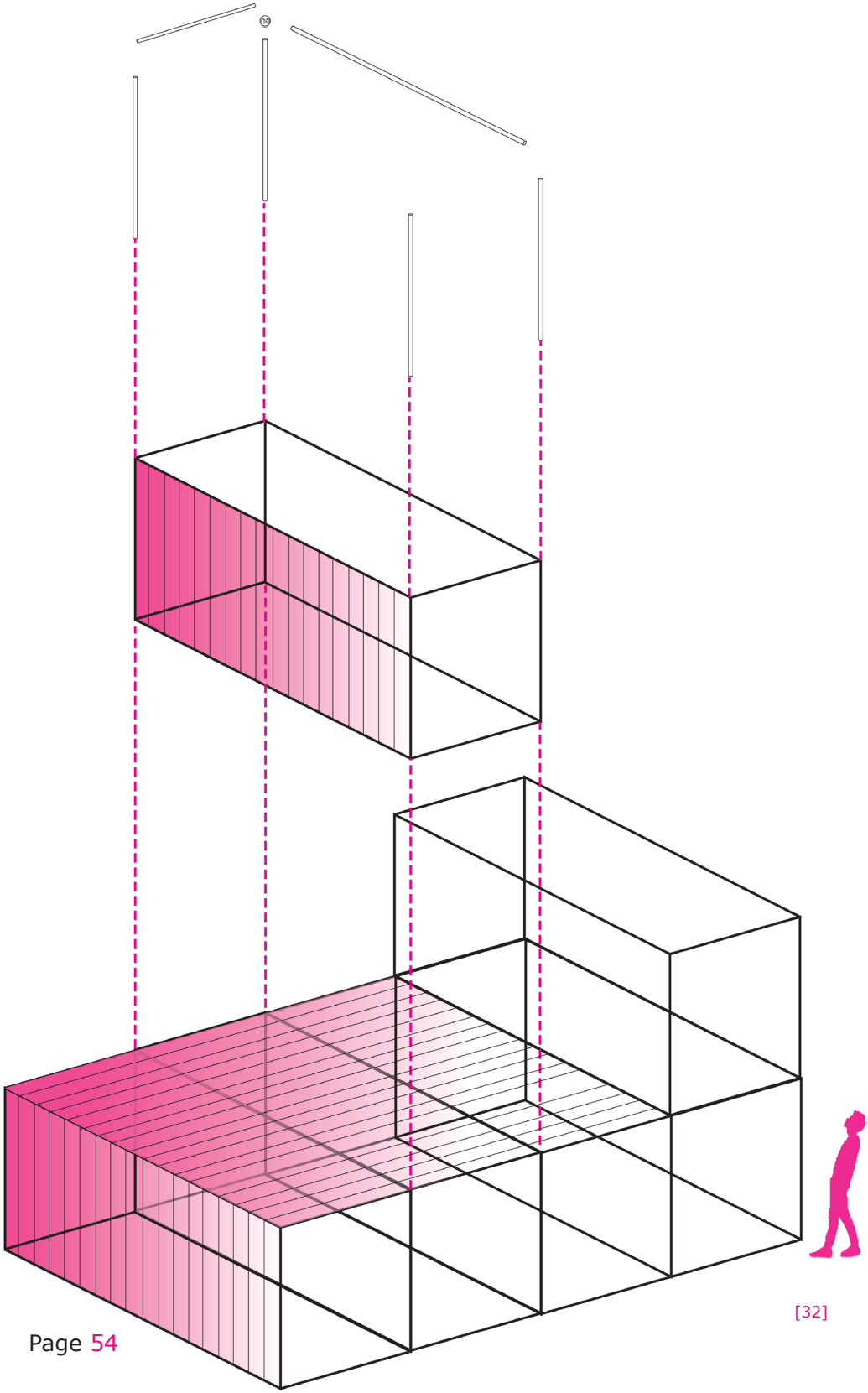
The third case study [31] is Kubix by Modulorbeat. This illuminated temporary night club allows for a new type of experience as once dances to the music while looking up at the night sky.

What is so important about these three case studies are not their forms but rather their ability to attract a common pedestrian to them. Like a fly attracted to the flame. The intention for the second design was to embrace this type of attraction.

[29]

[30]

[31]

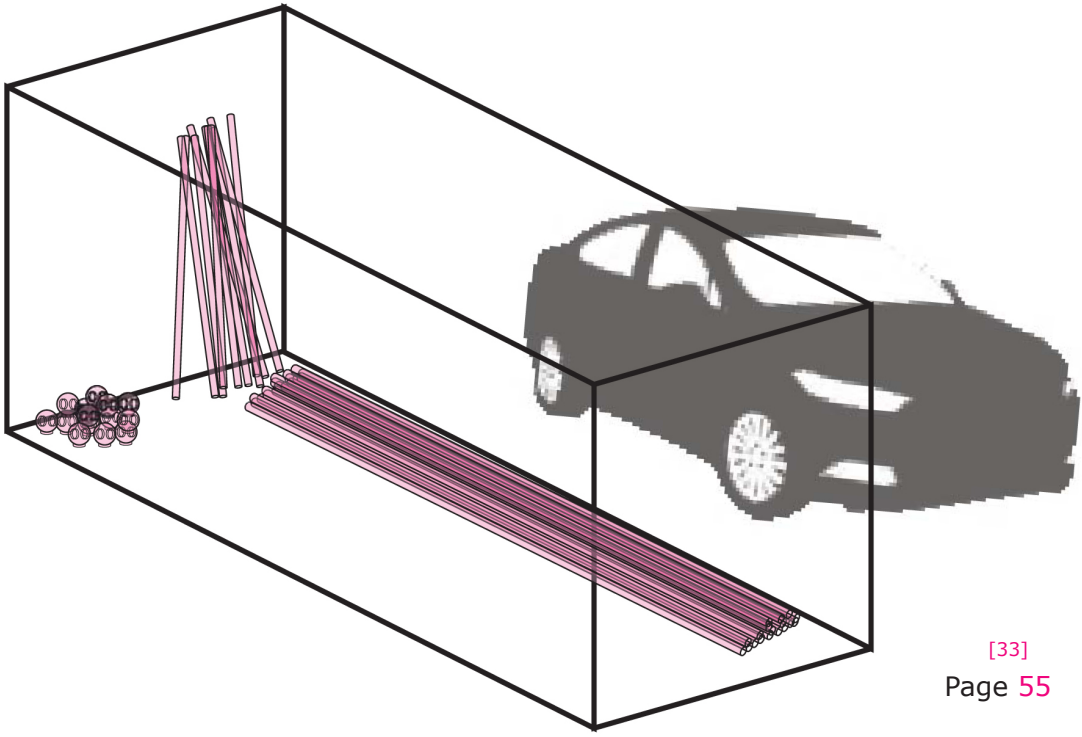


[32]

The design concept for site 2 was for a modular type of structure which could be built and dismantled multiple times. It would be able to change sizes as well as have the ability to create multiple levels. All of the components would be able to fit into a single compartment which would fill the same space as a parking spot. This way the structure would not be in excess of limited space.

The actual function of the structure was a hangout place for the evening times. The structure itself is situated close to the Financial District and the area, after 5pm is usually dead. The idea was to create a hotspot of activity to bring more people into the area on a more consistent basis. The ultimate goal would be for people to open their own shops around the area based off of this focal point.

The downside to this concept, however, was that the function was not needed in Detroit. A focal point is needed in the area but the function itself was not a strong enough reason to design a temporary structure nor would it solidify the argument about temporary structures importance in architecture.



Site 3 | Traffic

Site 3 is located in the empty blocks in the North end of downtown Detroit. For most of the year the blocks are left empty. However, during events such as games, the blocks are filled with cars. It is also just along I-75 which breaks downtown Detroit from the rest of the city.

Contextual Observations

-The site consists of empty parking lots all on the edge of downtown Detroit.
-It is near to the theatre area as well as tiger's stadium
-Used by bar patrons

Existing Materials

-Concrete

Site 3 | Location

Initial Observations

-Empty of People
-Cold Environment
-Used as a parking lot
-Large vacated space
-Used only during games
-Can be dangerous

Temporary Design

-Bus Stops
-By creating multiple bus stops in the sparse area, the people going to games can enjoy the bars as well as get to the games without walking.
-The stops could be sponsored by the bars

Potential Considerations

-The area is used sparingly

Site 3 was a bus stop for people during the event days. As such it needed to be a small yet flexible structure which could be easily moved.

The first case study [36] is the Endessa Pavilion by IAAC. It was built from plywood and solar panels to create a unique space which could sustain itself. The temporary pavilion was located on the shoreline of Barcelona.

The second case study [37] is the Political Pavilion by Antman Gorsetman. The pavilion was a way for politicians to answer questions brought forth by the public. The bright color allows for it to be easily seen across the plaza. The structure itself it built to open up when in use and close to create a shear pink box when closed.

The third case study [38] is the Timber Pavilion by the Emergent Technologies and Design Program. The structure was meant to express the flexibility of wood as well as provide a practical function of shading passerbys in the plaza.

The case studies were meant to convey the flexibility of a temporary structure as well as how to emphasis such a small pavilion. It made sense to add a bright color to associate the structure with the bus system as well as to pay attention to the type of material used.

[36]

[37]

[38]

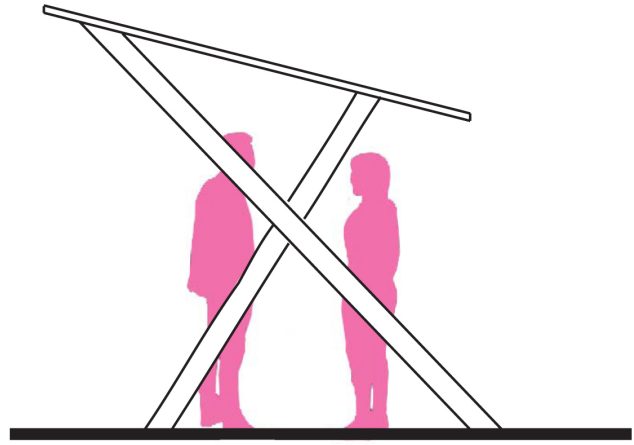
The concept of the bus stop really started to evolve as different designs emerged. The goal was to create a simple yet flexible design solution which would be recognizable to anyone in the area. To do this, simple construction methods were employed as well as basic conceptual plans.

The first design [39] was an open-air pavilion which would basically have a structure solely to rest a roof on. This would block a light rain and the sun. However, the structure could not be changed or adjusted.

The second design [40] was meant to be a tarp like material which would, through tension, create a protective layer over the users. It would be held in place at certain points as well as attached to the ground with a tension cable. The downfall to this was the limited durability of the material as well as the problem of attaching any part of the structure to the ground.

The third design [41] was the most promising with an elevated floor as well as adjustable panels. The idea was to allow flexibility of the space allowing it to be open-air when needed as well as a shelter against the elements.

Ultimately, the final design was an expansion on the third design with the flexible design qualities. This adaptability made a lot of sense when it came it came to the event days. Based on the expected patrons, the bus stop could be built to a certain size.



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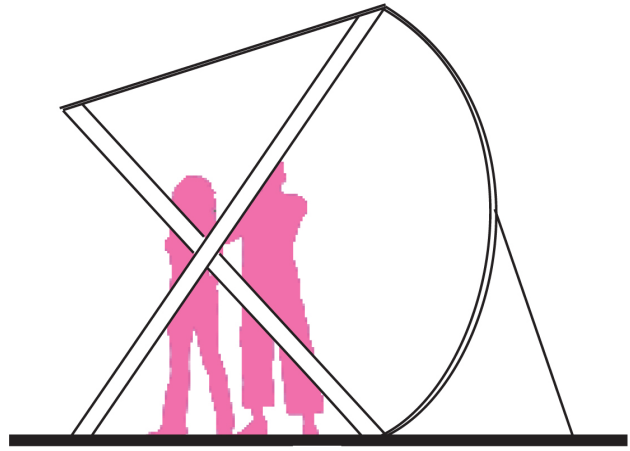

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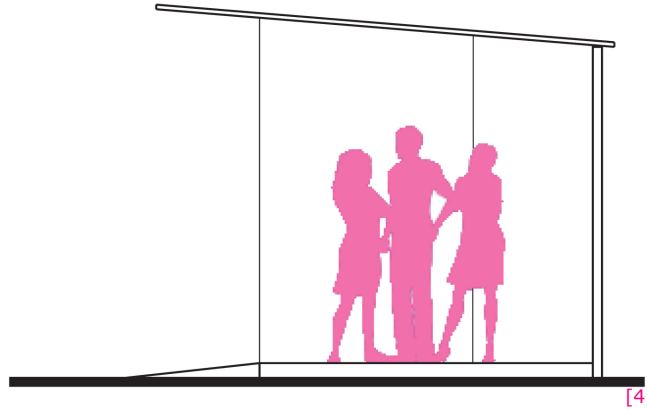


[41]

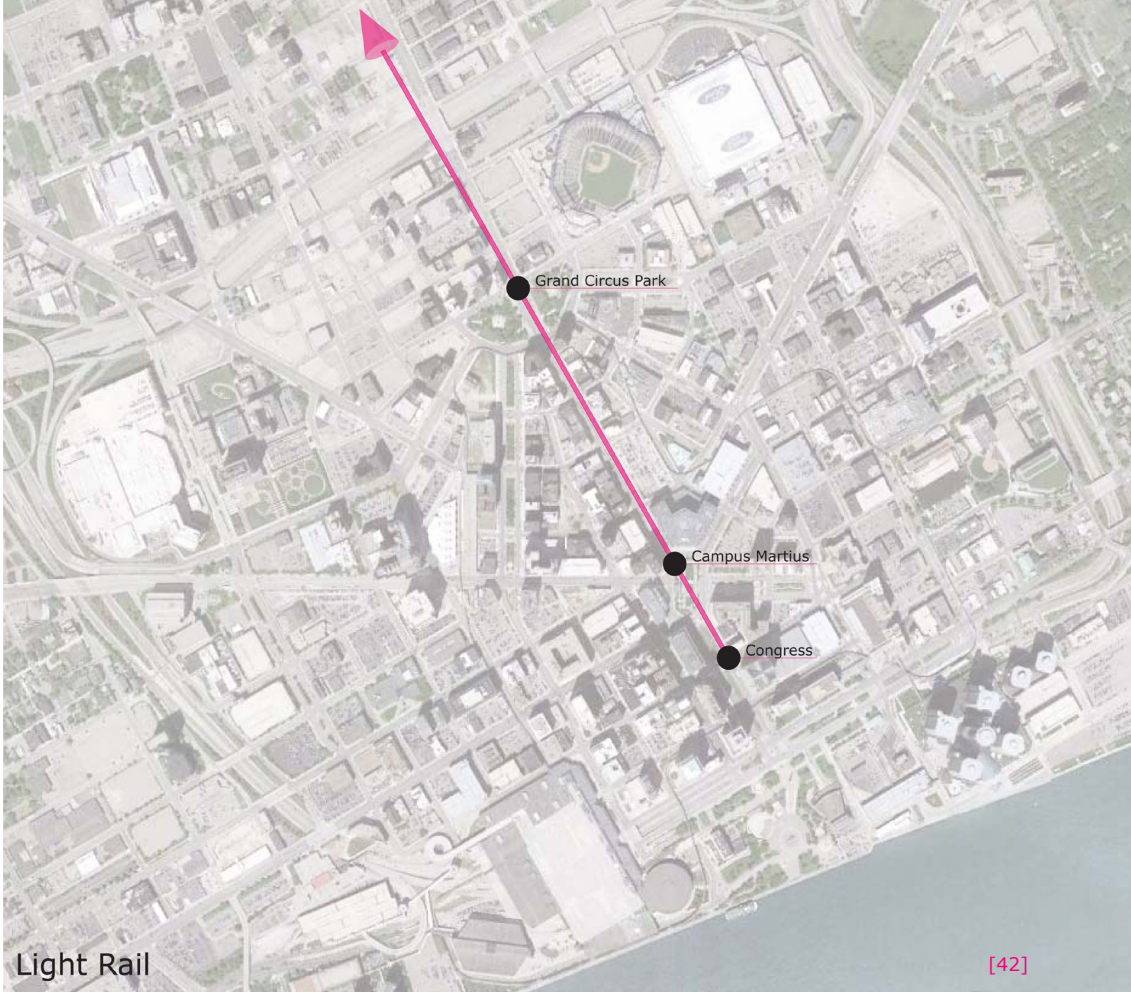
Analysis

The reason behind the structure is the chaos that exists during event days, specifically game days in Detroit. During these events, downtown is packed with people and cars. As such, it is increasingly frustrating to move around in the city unless one walks and even than sometimes they have to walk the whole length of downtown to get to the area one wants to get too. Also, almost all of the parking lots are paid lots. One of the traditions for game day is to hit up one or more of the bars in the area and then go to the game. As such, when going from the bar to the game, there are plenty of people who aren't in the right state of mind.

Also, transportation in the city is a joke. There are plenty of permanent nodes in downtown Detroit relating to public transportation. These nodes come from the bus system, the people-mover, and the soon to come M-1 rail. Public transportation is a great way for the city to be economic about transporting people far across the large city, however, Detroit is known for its inability to have a successful public transportation system. It is, however, the Motor City and as such,

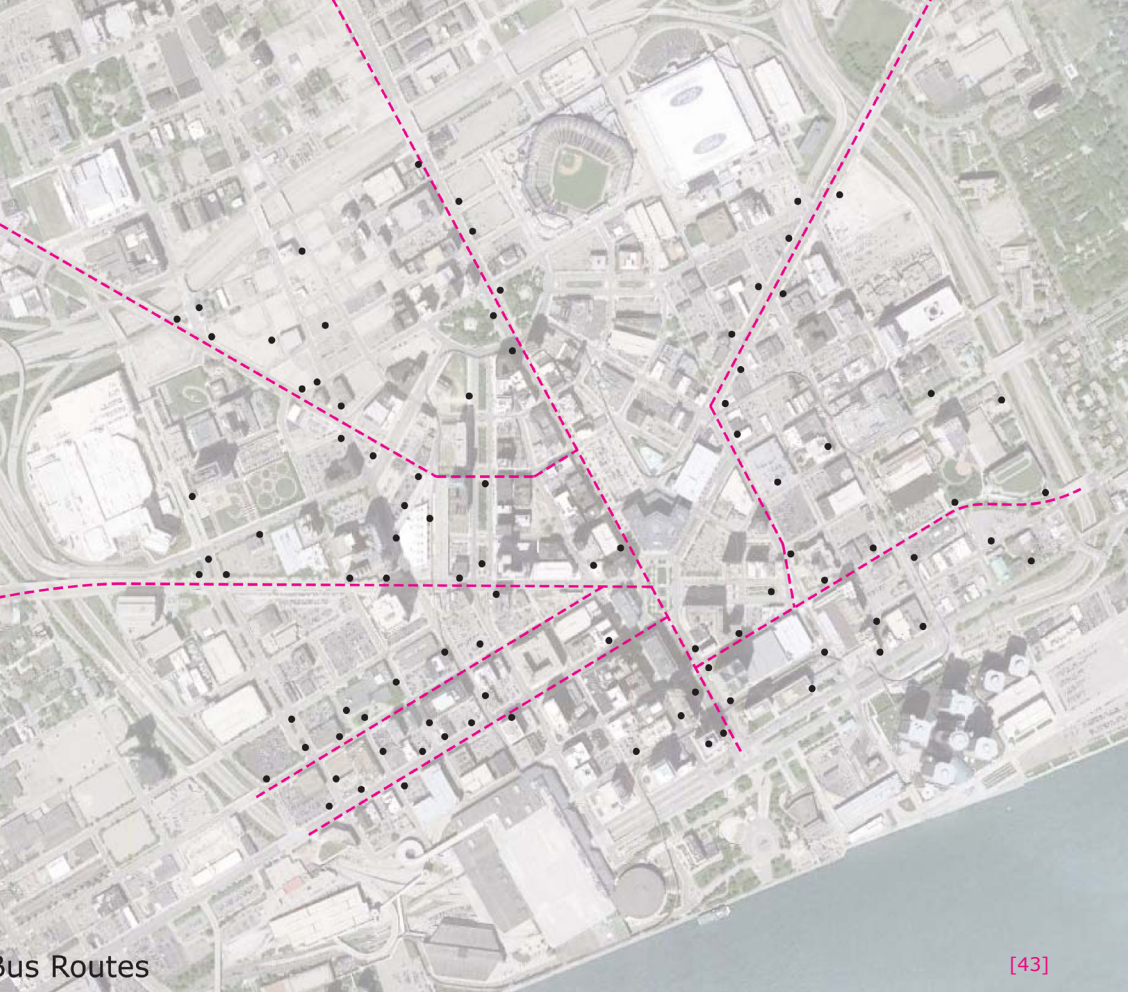
Yet, less than half of people in the city actually own their own car. The people-mover was a great idea, if it had nodes in more useful areas. It does not give access to all of downtown, especially since the city limits are already growing thanks to the new hockey arena which will be built in the near future.

When event days occur in Detroit, the public transportation becomes a way to bring people to the downtown but not to get them to their intended venue. This is where a temporary node becomes important. A temporary node is a structure in which becomes a beacon during a short period of time whose purpose is to be more useful than a permanent structure.



Light Rail [42]

The light rail is a proposed public transportation system in which to carry a large number of people up and down Woodward Avenue, the central spine for downtown Detroit. The issue with this proposed transportation is that it has not been built as of 2014. It is also limited with where the stations may be placed. There are three proposed stations to be built in the coming year: Congress, Campus Martius, and Grand Circus Park. Even though they run along the spine of downtown, they are still not close enough to where the actual events are being held. The light rail will be a great way to bring people to and from downtown Detroit but not through downtown itself.



Bus Routes [43]

The bus routes in Detroit are spotty at best. Detroit was laid out to be the Motor City and as such, during the 1900's the city was not keen to public transportation. Due to this oversight, or public branding as the car companies would insist, the city does not have appropriate public transportation for the masses. Few people in the city of Detroit itself-this excludes the suburbs-own their own car instead relying on others or the poor bus system. Many times the buses do not arrive on time nor always stop.

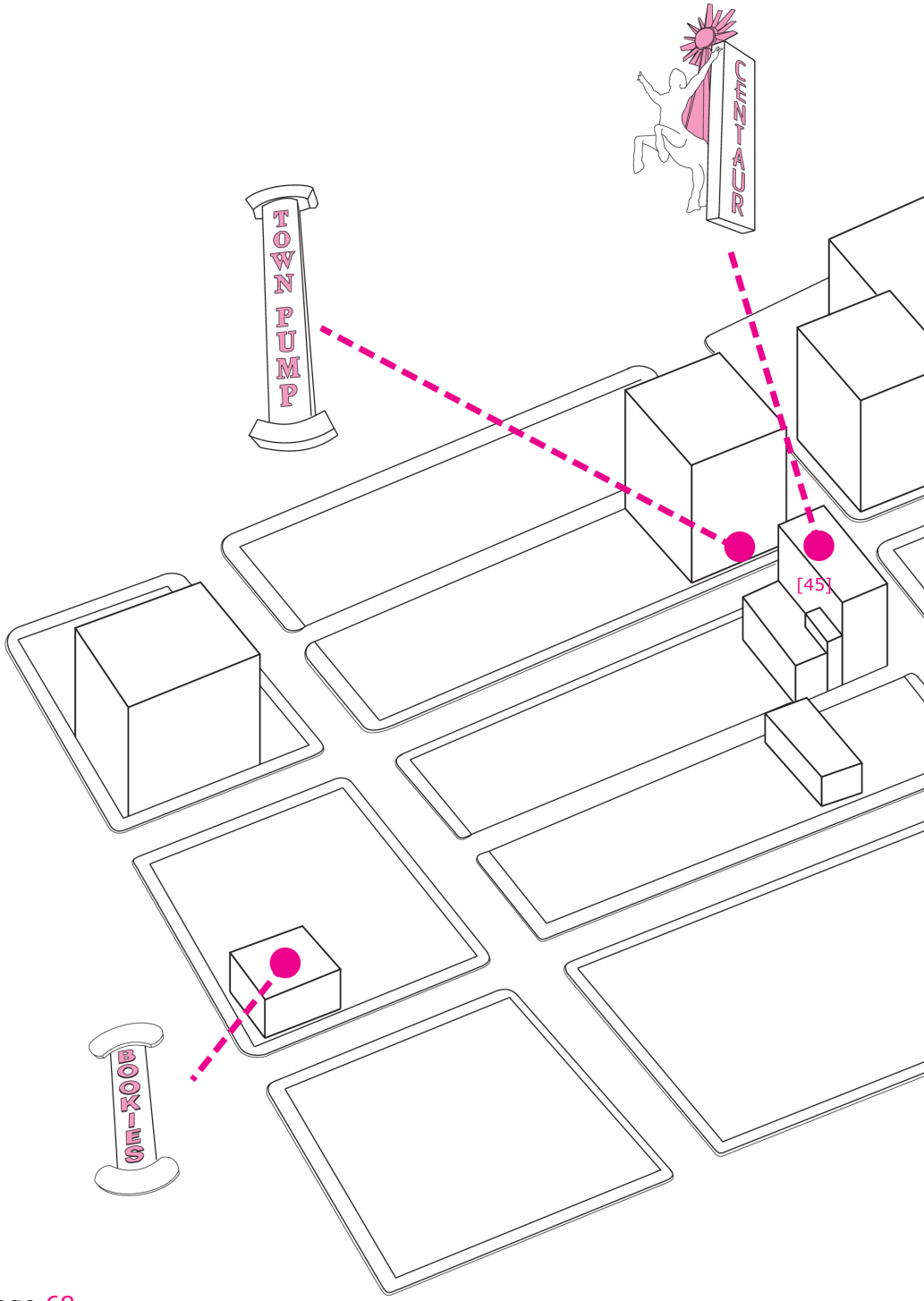
As one can see in the map above, the black dots representing all of the bus stops in downtown and the pink lines showing a few different bus routes can be seen. Even though there seems like quite a few stops in the downtown area, it is obvious to see where the majority of people go when they want to attend the events have the fewest number of stops close by.

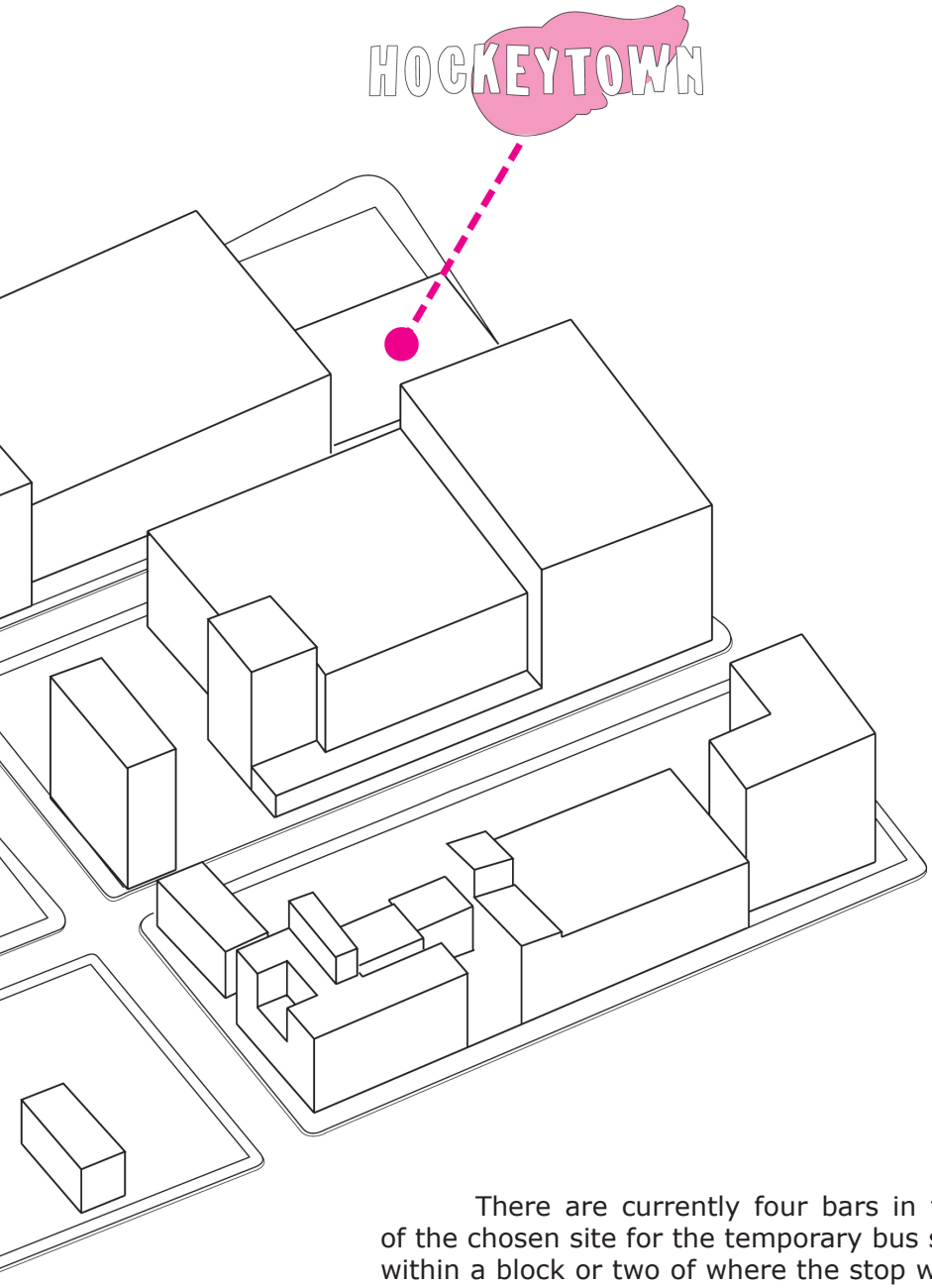
People Mover [44]

The people mover has existed in downtown Detroit since 1987 to give citizens better access to the city as a whole. It was meant to make up for the public transportation failures which had been occurring during that time. The people mover is made up of 13 separate stations all along a 2.9 mile long course. The stations themselves were given to local artists to design murals to make each station unique and represent the artistic side of the city.[2]

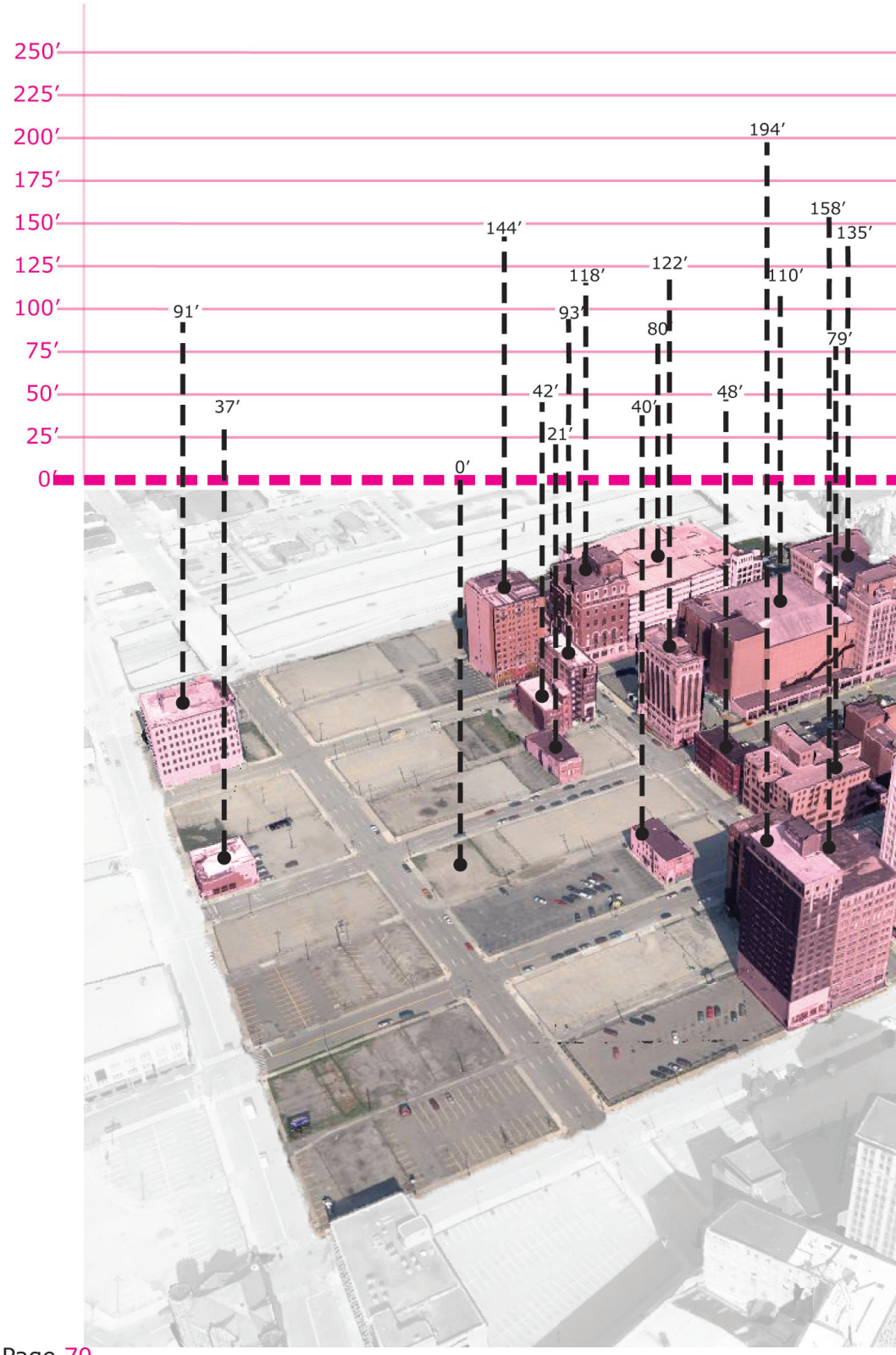
The people mover, though it has been in continual operation since it was first built, is still a fixed local transportation. It does not transverse the expanse of the downtown area rather focusing on just a few of the many aspects of the city. One must walk from the outskirts of downtown-still bounded by the freeways-to get any of the stations since it is focused more on the central core rather than downtown as a whole.

[2]http://www.thepeoplemover.com/WE-LL-TAKE-YOU-THERE!.id.2.htm


CENTAUR
TOWN PUMP
[45]
BOOKIES



There are currently four bars in the area of the chosen site for the temporary bus stop. All within a block or two of where the stop would go. The idea is to have the bars sponsor the creation of the bus stop. This way, they can send their patrons to the bus stop and to the events. Afterwards, they patrons can use the same system to get back to the bars themselves or at least remember the efficiency of their day.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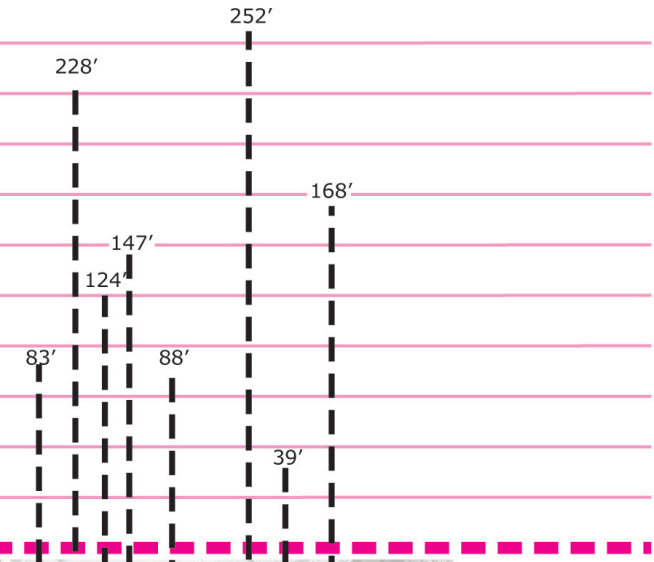


[46]

The site itself is a section of city blocks which have been given over to parking. Many of the surrounding buildings which tower over the area are vacant or under construction. The site was interesting because of the juxtaposition of building heights in the area going from 0-252′ in only a few short blocks.

This truly emphasizes the effect that Detroit has on its urban growth when patches of area which are downtown can be given over for parking lots rather than parking structures.

Temporary Bus Stop

After choosing the site and doing a thorough analysis, it seemed appropriate to design a temporary bus stop. The bus stop would be used during event days only. The goal was to make a structure which can be easily put together, leave no trace behind, and be reused. The thought was that the physical connections should be locks rather than actual screws or any form of permanent connection. The pieces should all slide into place. It also was brought up that the temporary structure should not be the same every time. The structure is meant to create a temporary node where a permanent node cannot fulfill. As such, it needs to be flexible in its size and shape.

Another aspect to the temporary bus stop was the material. Since the bus stop would be used around all types of people, most are probably drunk or willing to deface it, the structure needed to be made out of a durable, light, yet easily cleanable material.

[47]

The Blue Bus Stop [47] by Lorcan O'Herlihy Architects (LOHA) and Bruce Mau Design (BMD) was a unique way to engage the people and the site. The structure is a bus stop with the capabilities to react to the time of day and block the sun continually providing shade along the benches. It also has an integrated lighting system which illuminates the area at night. The design itself is clean and unobtrusive for the city.[3]

The inspiration came from the simplistic yet efficient pieces of the structure itself. Each piece has a purpose to better the experience for the user. The design also carries with it the ability to protect against certain elements throughout the day as well as providing information in an easy manner. Even though the bus stop is a permanent structure, the multitude of stops are each unique based on their condition in the city itself.

A simplistic yet revolutionary way of thinking about a bus stop is the ideal for the temporary bus stop in Detroit.

The Austrian bus stop [48] designed by Chilean architect Smiljan Radic was one of 7 stops designed for the small town of Krumbach in Austria.

The goal was to design bus stops which would bring culture to the town. Many well known designers were chosen to design the seven bus stops. The program itself was a simple pavilion. Many of the designers chose to use materials from the area. They each designed their own bus stop expressing a unique array of design which at the same time fit in to the quiet village.[4]

Similar to the Blue Bus Stop, the design project for the Austrian village wanted a unique, functional design which at the same time would be able to express culture through its simplicity. This is what the design for the temporary bus stop in Detroit attempted to accomplish.

[3]http://www.bustler.net/index.php/article/santa_monicas_big_blue_bus_high_tech_bus_stop_program_wins_aia_design_award/

[4]Stott, Rory. "World Famous Architects Design Bus Stops for Tiny Austrian Village" 24 Oct 2013. ArchDaily. Accessed 24 Apr 2014. <http://www.archdaily.com/?p=441385>

[48]

[49]

Scaffolding was the biggest inspiration to the bus stop. Scaffolding is a temporary structure which leaves behind no trace of its existence, and can be built and changed easily. The initial design of the bus stop was taken from the idea of the structural poles and cross-bracing holding the scaffolding up while still allowing a clear space for people to walk through it. The foundations were also a large part of the design as well since the temporary bus stop could only sit on the ground similar to scaffolding.

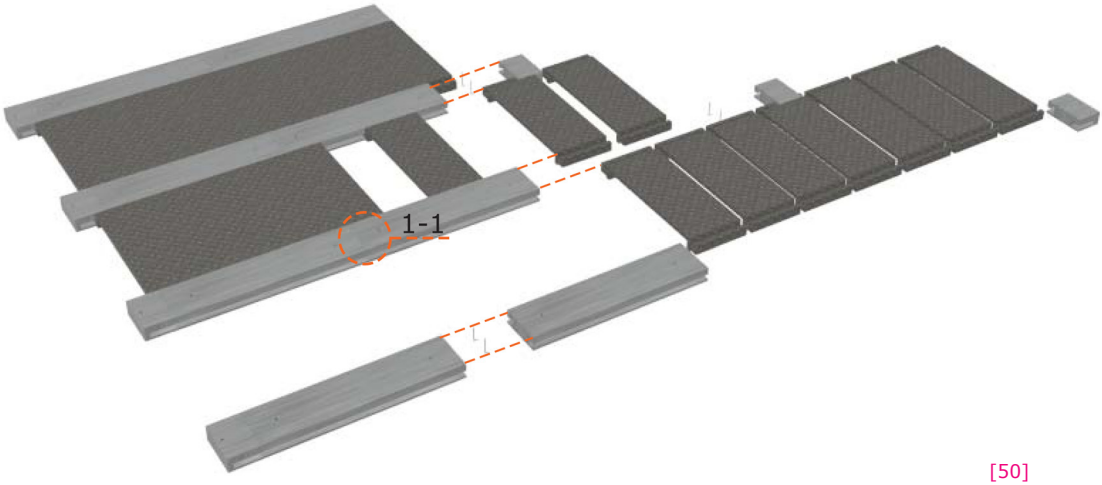
The design for the temporary bus stop is quite simple. The overall system is a series of interconnecting parts which essentially hold each other together. The foundation of the structure is created by sliding floor pieces into the foundation plates. Gravity alone is holding everything to the ground. The floor plates are made of a raised steel which allows friction.

The next step would be to attach the base plates and than lock the structural poles in with a small metal piece. The poles are the essential vertical elements for the construction. After the structural poles are in place, the bracing rods can be secured as well as the roof panels-which slide onto the bracing rods-can be placed as well.

The next step are the cables. There are two different types of cables which hold the structure together using tension. The first is the roof cable which should be placed first. This cable should attach to an eye screw which is screwed into one of the foundation plates. Then the cable is taken through a hold in the roof itself and attached to an eye screw which is screwed into the top segment of the pole. At this point a turnbuckle should be utilized to tighten the cable so that the roof will stay at the angle it is wanted. It takes two cables on either end of the roof panel to hold it into place. After all of the roof panels have been secured, the wall cables may be inserted. These are attached to the far poles where the wall panels will be placed. These will also need to be tightened using a turnbuckle. There are two cables per side-if panels are wanted. The first is the top cable which will support the weight of the wall panel itself and then the bottom cable which will hold the panel in place in case of movement from external forces.

After all of the cables are in place the wall panels can be attached. These are simply hooked onto the wall cables. Finally, the ramp can be placed in the desired location and the structure is ready to go.

This entire construction process should be done by at least two people specifically for the roof panels as well as the cable system to ensure safety.



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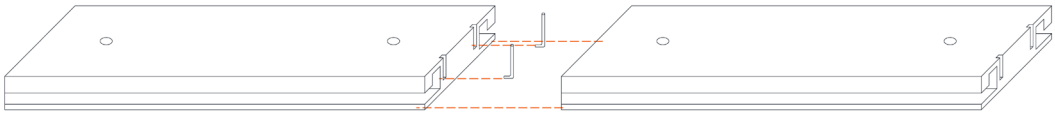

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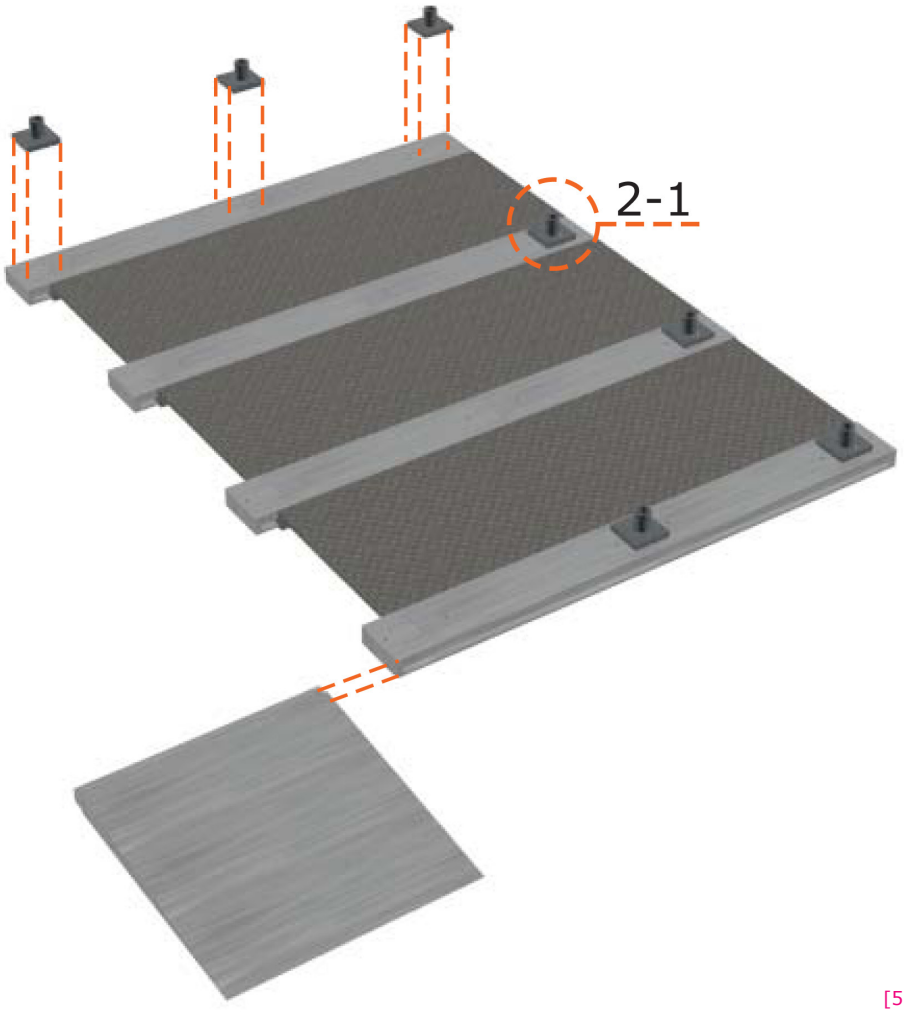

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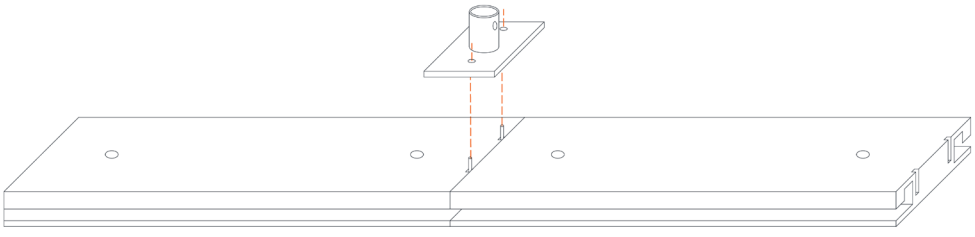

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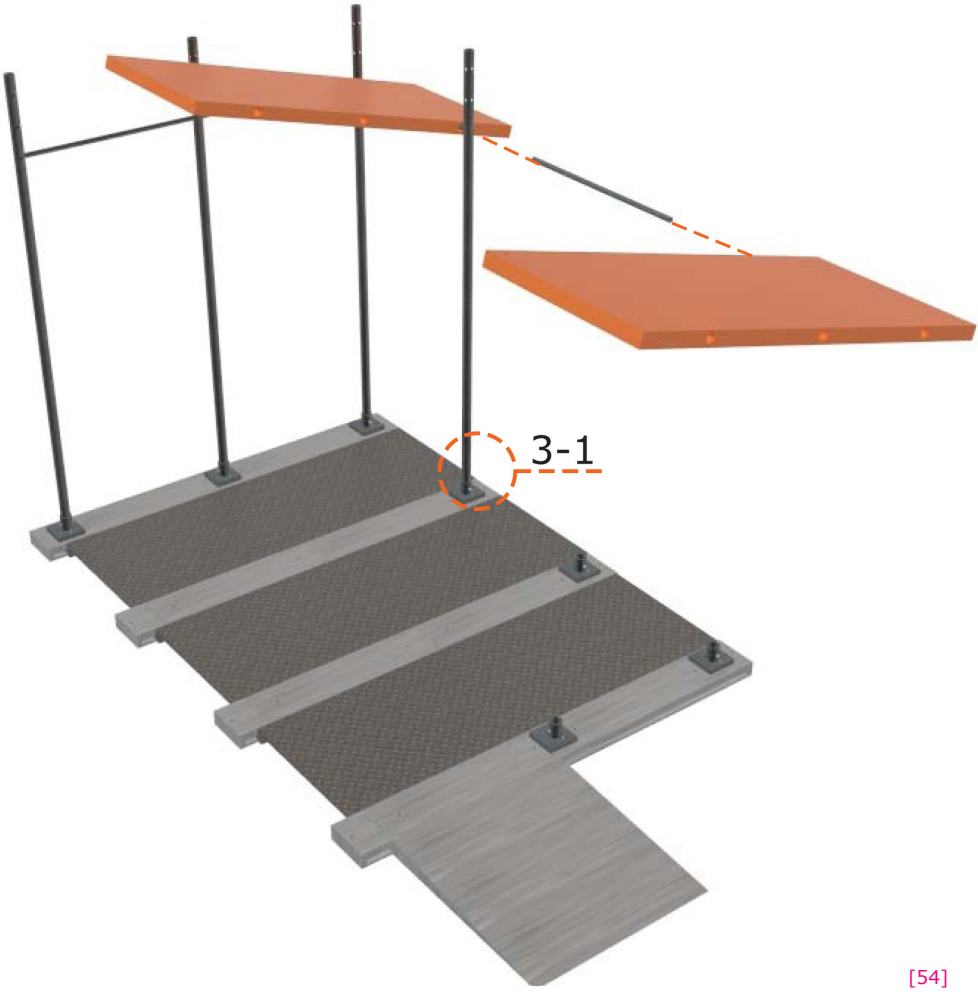

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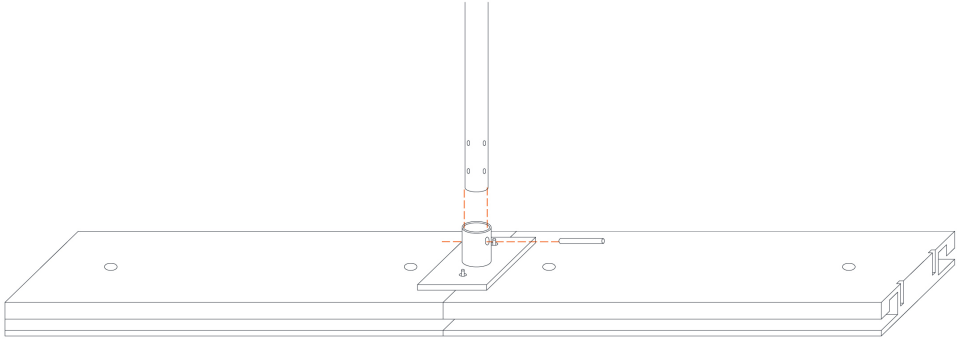

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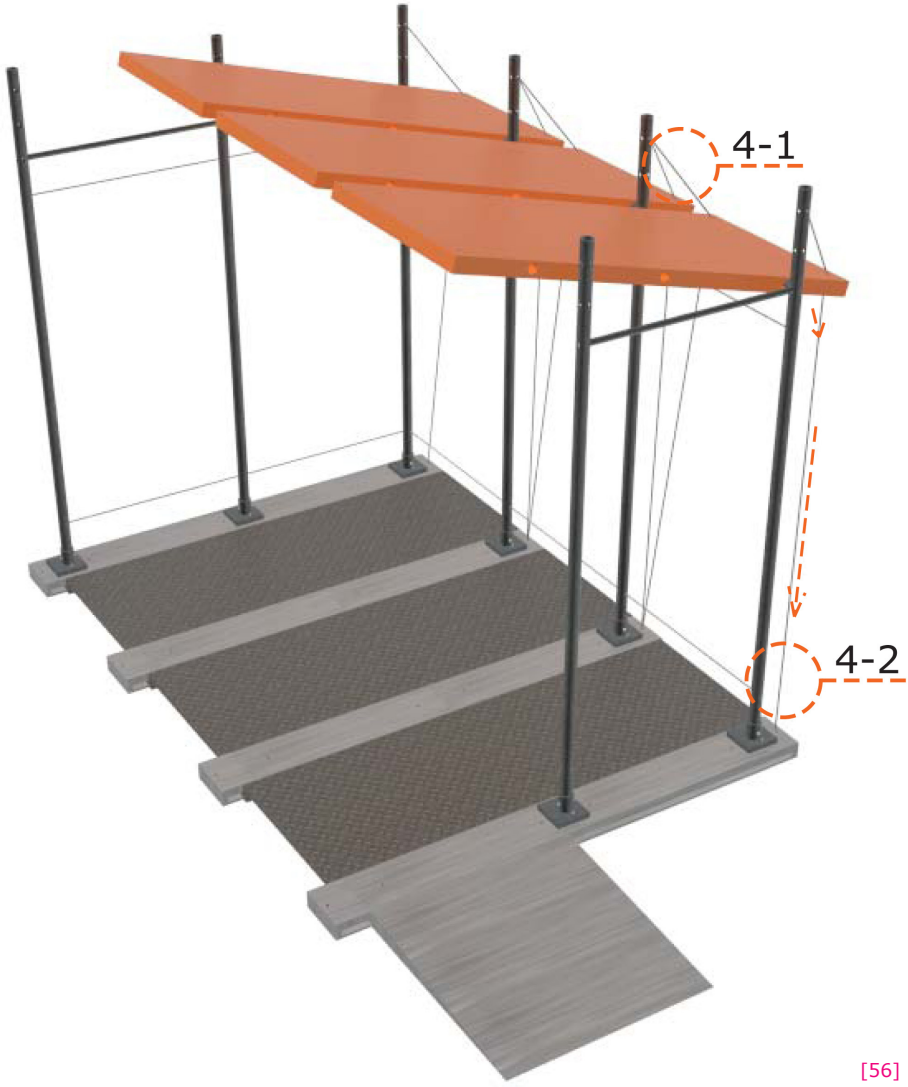

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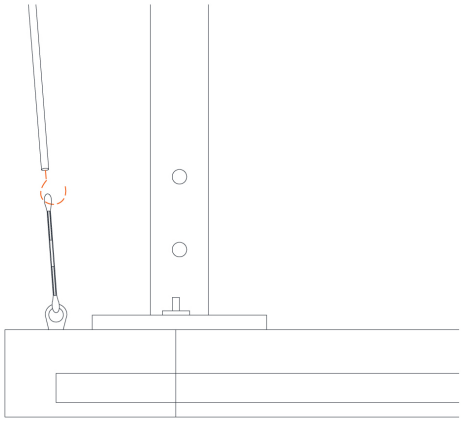

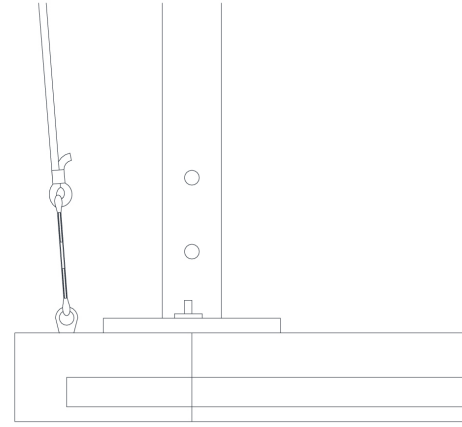

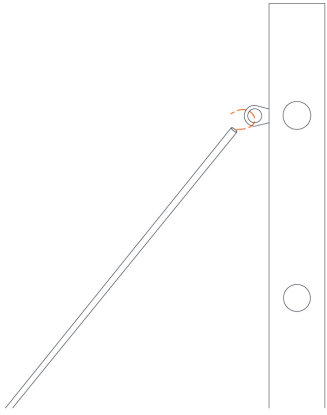

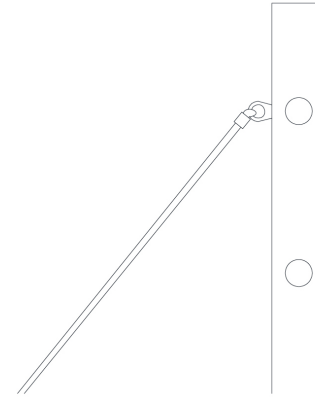

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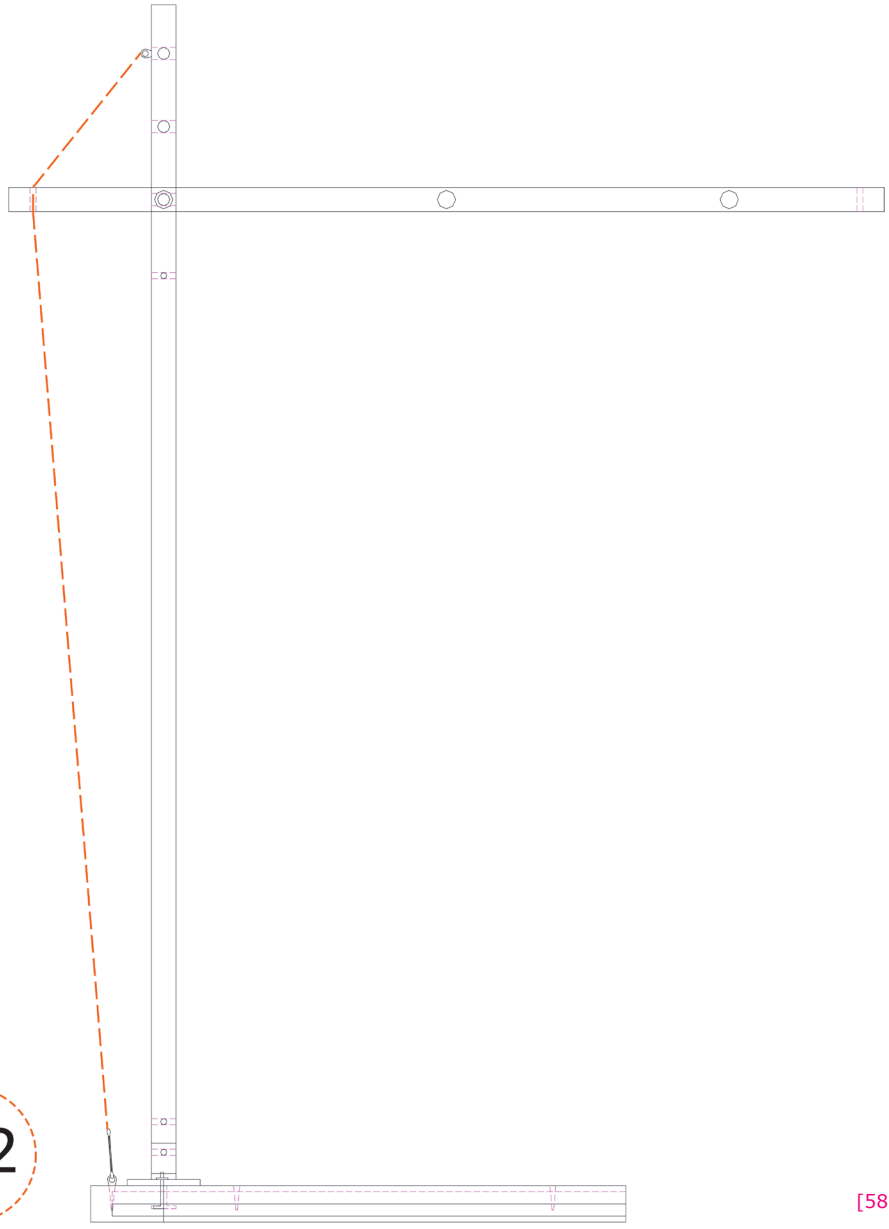

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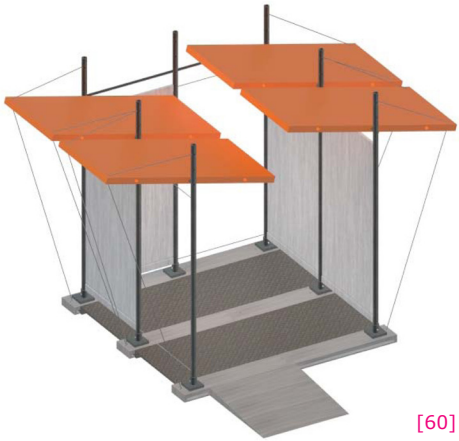

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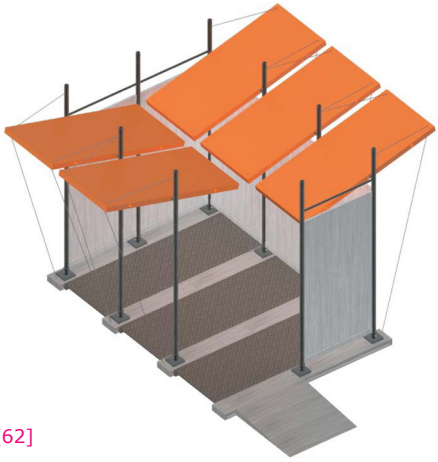

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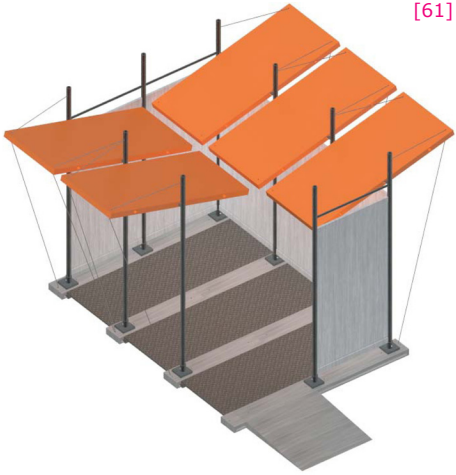

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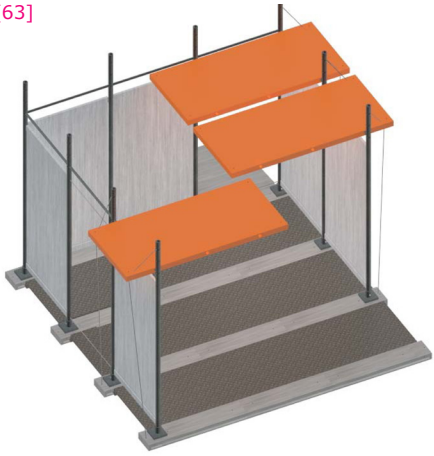
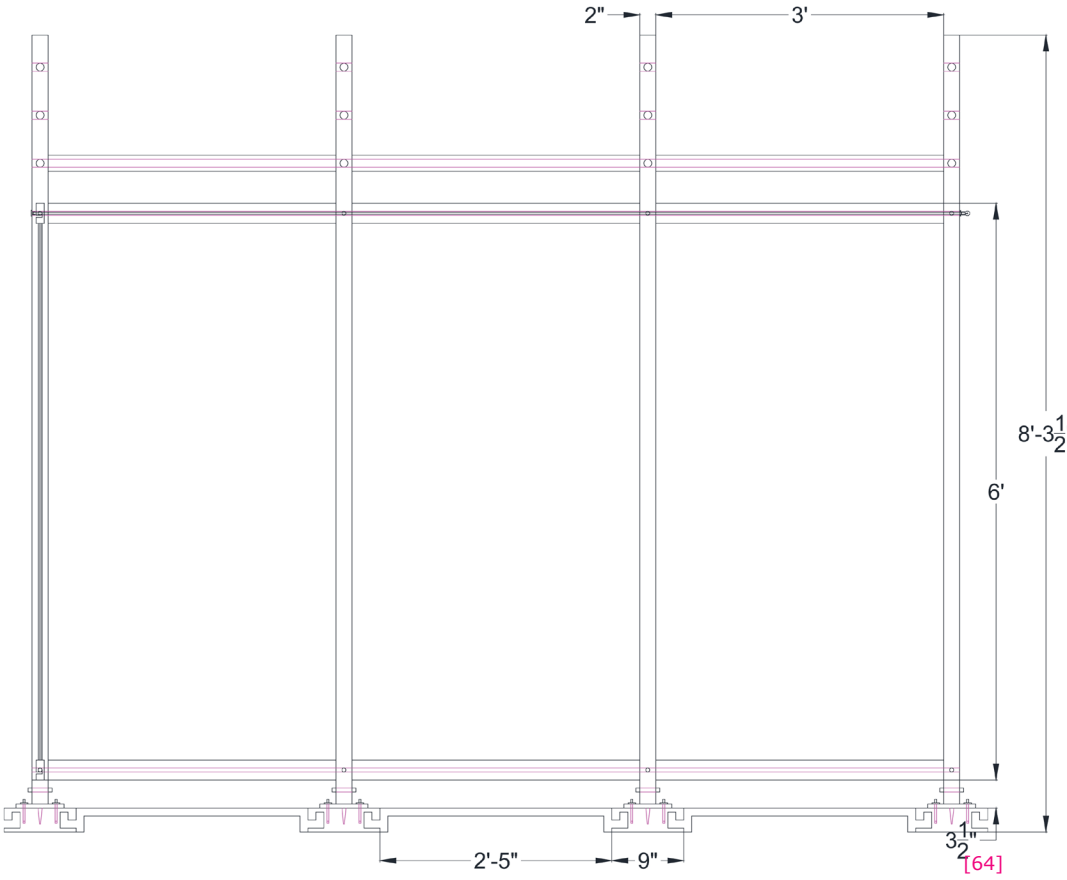


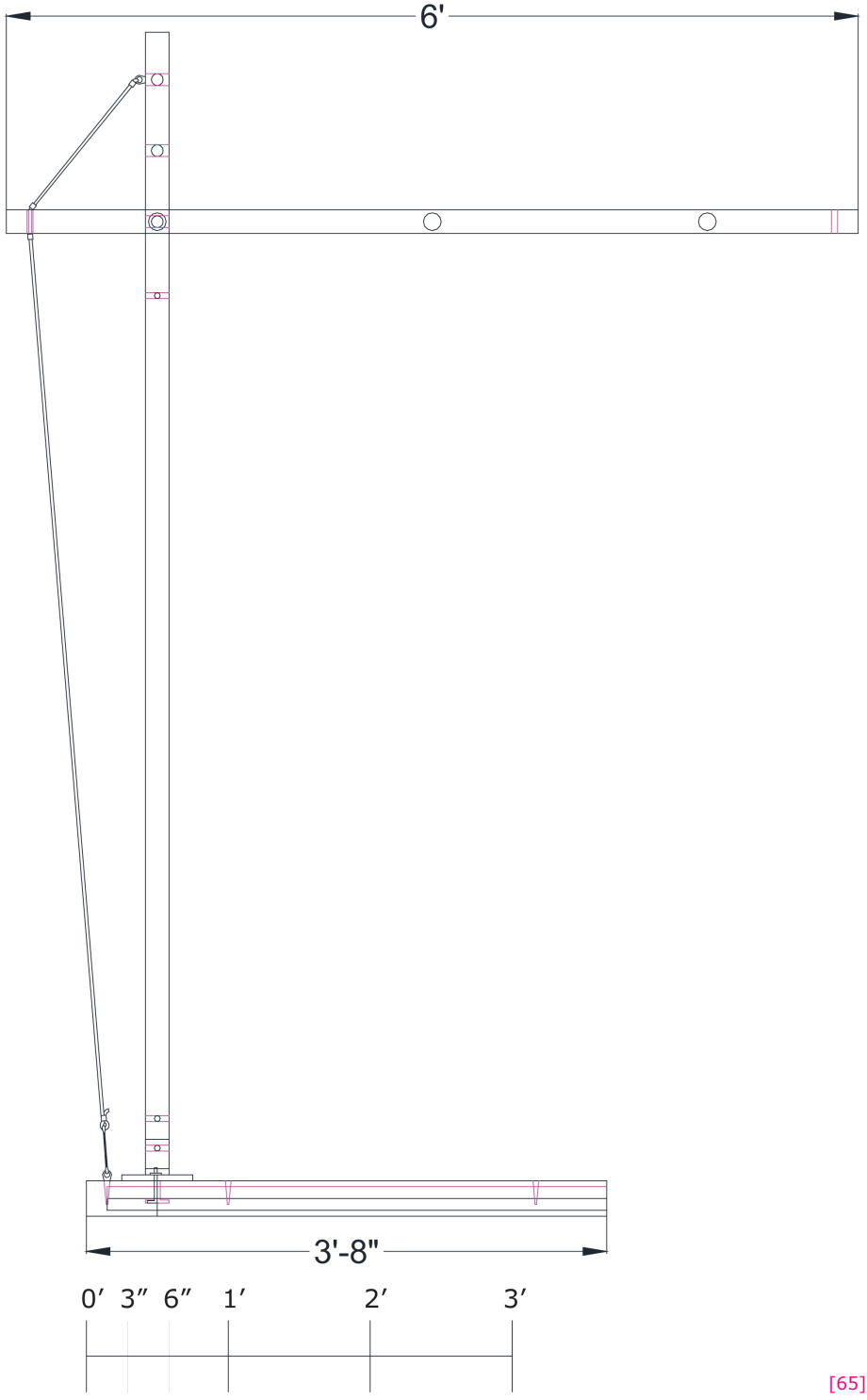
The temporary bus stop can take many different forms. The idea was to allow it to be flexible based on the expected number of users for that day. The roof panels can adjust throughout the day if need be and the panels can be moved easily as well. Once a layout has been chosen, it is easy to install the entire structure. It is also easy to dismantle it as well since none of the pieces are permanently attached.

To further the flexibility of the design, the roof as the symbol piece of construction will have the ability to be changed to different colors or even to add advertisements from the sponsors.



[64]

Images [64] and [65] express what the sections of the structure would look like. Spaces were left to allow air circulation as well as to prevent to much pressure from the wind. As one can see the entire structure fits together in a series of intertwining pieces. The longest piece is the eight foot metal structural pole while the widest piece are the panels which are three feet wide. Many of the pieces fit into a 3x3 area. The pieces are all meant to be taken in a truck or some form of transportation vehicle. The pieces themselves are not solid metal allowing them to be lighter. All are made from some form of steel giving them a high level of durability against the users as well as the elements. The cables should be constantly checked for any fraying which could lead to a failure. *Note: Even if one cable breaks, the structure will still stay in one piece.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3'-8"
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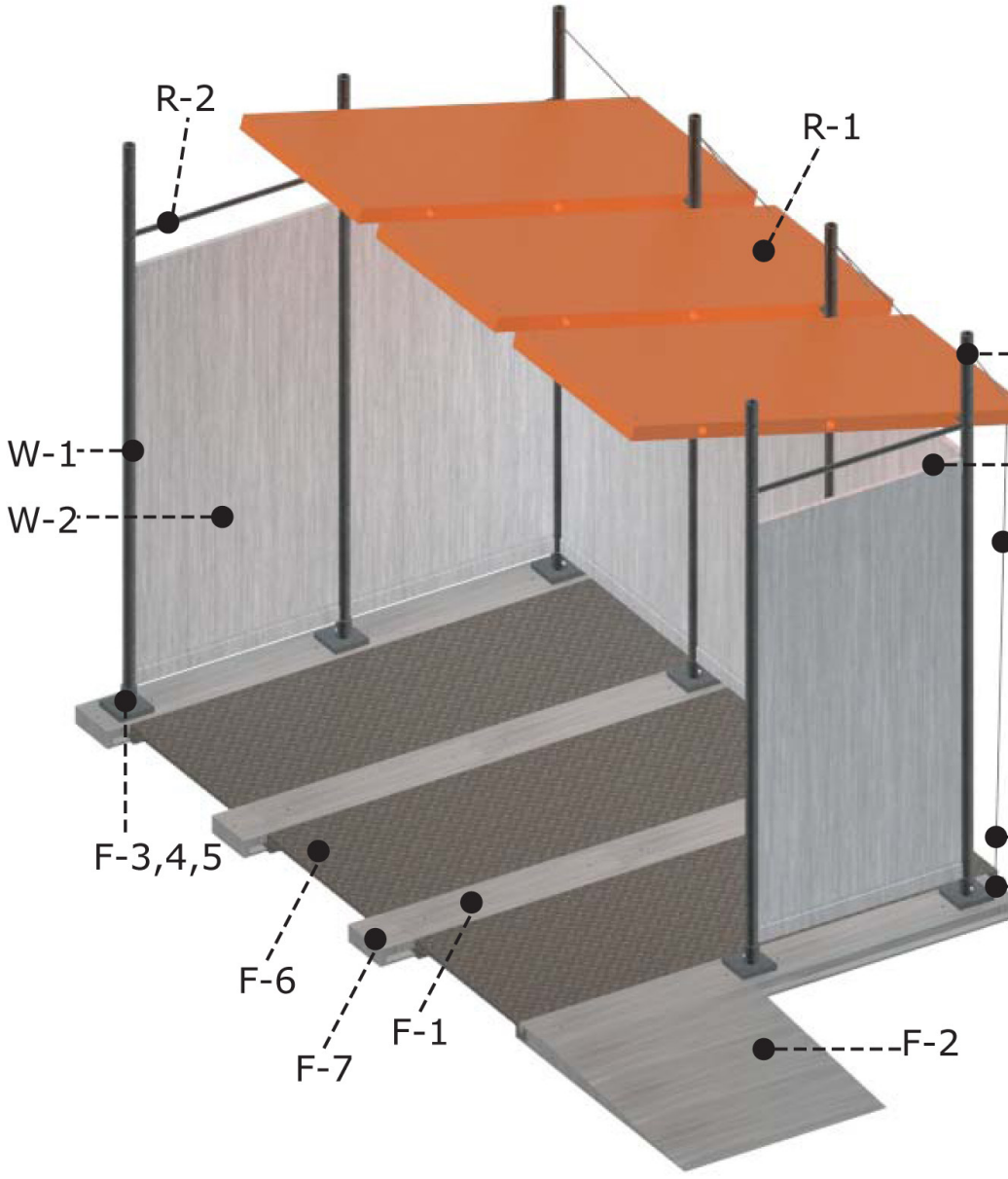
R-2
R-1
W-1
W-2
F-3,4,5
F-6
F-7
F-1
F-2

Optional Layout 1

C-1	3	Panel Cable
C-2	6	Roof Cable
C-3	8	Cable Screw
C-4	6	Turnbuckle
F-1	8	Foundation Plate
F-2	1	Ramp
F-3	7	Base Plate
F-4	14	Screw
F-5	14	Nut
F-6	21	Floor Panel
F-7	8	Foundation Caps
R-1	3	Roof Panel
R-2	6	Roof Brace
W-1	7	Structural Pole
W-2	6	Panel

[66]

Disclaimer

- A truck or transportation vehicle with the capacity to fit a 8’ x 3’ component in.

- 2 people minimum for installation.

- The structure should not be used as a safe place during large storms including but not excluded to: hurricanes, tornadoes, high winds, hail and electric storms.

- The structure should not exist longer than a week in one location. If it does, the cables should be re-tightened for safety reasons.

Further Study

To further the design for the temporary bus stop, a way to advertise as well as change the actual coloring and potentially the materials would be investigated. The prototype should be built with a sponsorship to further the idea of why the temporary structure is built in the first place.

Conclusion

After designing the temporary bus stop, it all came back to the question why design a temporary structure. A temporary structure is so much more than an art project or a shelter. It fills in the gaps left behind by permanent structures. It caps the spectrum of architecture allowing a free flowing world of design to exist. A temporary structure holds so much more meaning than other structures. It expresses what people want expressed. It doesn't hide its flaws, it celebrates them. Temporary architecture is what mankind started with and will continue to use.

It is important, looking back on the bus stop after it has been designed and answer the questions mentioned earlier in the sense of why it's appropriate for the site. By answering these questions, it gives the temporary structure even more strength to stand up on its own to the public next to the great buildings of downtown Detroit. It can stand on its own because the initial intention was for it to be temporary and for it to fill the one purpose the permanent transportation nodes could not.

Why design a temporary structure?

There are three types of permanent transportation nodes in downtown Detroit. All of them connect to the core area of the city but they do not reach out to the outskirts of downtown right before the freeways. This area becomes a barren wasteland of parking. As such, during event days, those parking areas become full of people and vehicles. With no transportation node in the immediate area, people need to make there way to the more populated areas of downtown which can be frustrating and even scary if at night. It made sense to design a temporary bus stop, with the sponsorship of the surrounding bars to take people from the parking to the actual events. The temporary bus stop then becomes its own temporary node which can pop up when needed and disappear when the need has left. This allows for no new infrastructure to the city but adds a more efficient and stress free way for people to enjoy the downtown entertainment.

How is it different from a permanent structure?

The bus stop itself is made up of components which interlock with each other and use gravity to keep them in place. There are no permanent connections anywhere on the structure itself. It is also flexible in the fact that it can become different sizes as well as shapes depending on the estimated need of patrons. It has the ability to become what it's needed versus a permanent bus stop which is typically a sign.

How would you be able to tell?

The temporary structure itself has no permanent connections. The most obvious construction pieces are the cables holding the roof and wall panels in place as well as the structural poles. The structure is made out of a light weight steel which allows a person to see the structure as solidly built but light. The fact that all of the components slide and interlock in a very obvious manner also reflects its transience as a structure.

The structure would also be placed on a sidewalk or in a parking lot. These are places in which a permanent building would rarely be built on. Also, the fact that there are no foundations which secure the structure to the earth is probably one of the biggest pieces of evidence for its transience as a structure. The structure stays where it is based on gravity locking pieces into place as well as the weight of the people using it.

What makes it temporary?

There are many different elements to deem the structure temporary but what really makes it temporary is the initial intention by the designer. The structure was meant to reflect the need for a node in certain areas of downtown Detroit as well as have the ability to come and go when needed. This was accomplished by knowing ahead of time what the structure needed to do and the fact that by having a limited life, it could actually achieve more than a permanent structure in the same area would.

Image Citations

[1] Image courtesy The Buchan Group

Syrkett, Asad. "A Temporary Fix." Architecture Design for Architects. Architectural Record, 23 Feb. 2012. Web. 09 Sept. 2013. <http://archrecord.construction.com/news/2012/02/christchurch-progress.asp>.

[2] Photo by Lindsay Taylor

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[3] Photographer Unknown

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[4] Image courtesy UNStudio

"Burnham Pavilion." UNStudio. UNStudio, 2009. Web. 09 Sept. 2013. <http://www.unstudio.com/projects/burnham-pavilion>.

[5] Photo by Alan Tansey

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